Attachment 3
Cheasty Greenspace **North Loop** Trail **Critical Areas Study and Conceptual Mitigation Plan**

CHEASTY GREENSPACE TRAIL

Critical Areas Study and Conceptual Mitigation Plan

Prepared for
City of Seattle Parks and Recreation

Updated December 2022

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Acronyms and Abbreviations

ATV	all-terrain vehicle
BMPs	best management practices
Corps	U.S. Army Corps of Engineers
dbh	diameter at breast height
DNS	Determination of Non-Significance
DP	data plot
Ecology	Washington State Department of Ecology
ESA	Environmental Science Associates
FWHCA	Fish and Wildlife Habitat Conservation Area
GIS	geographic information system
GMA	Growth Management Act
HPA	Hydraulic Project Approval
IMBA	International Mountain Bicycling Association
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
SPR	Seattle Parks and Recreation Department
PHS	Priority Habitats and Species
RCW	Revised Code of Washington
SDCI	Seattle Department of Construction and Inspections
SEPA	State Environmental Policy Act
SMC	Seattle Municipal Code
USFWS	United States Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area

1.0 INTRODUCTION

The Seattle Parks and Recreation Department (SPR) has constructed the south loop portion of a pilot trail project in the Cheasty Greenspace on Beacon Hill in Seattle, Washington (Figures 1 and 2); the north loop portion is proposed to be constructed. The southern loop, which constitutes phase 1, was completed in October of 2022. The layout of the proposed trail system consists of a two-loop, trail system for use by bicycles and pedestrians. A bridge is proposed where the trail would cross a watercourse; the trail would not cross any wetlands. The bicycle trail would be designed for beginner cyclists. Six entry points are proposed along the perimeter of the greenspace to allow public access to the trail system. The trail is intended as a neighborhood park rather than a destination park and thus no parking would be provided. The bicycle trail would be soft surface, with native mineral soils and the pedestrian trail would be crushed gravel.

In 2014 and early 2015, Environmental Science Associates (ESA) conducted a wetland reconnaissance and a wildlife habitat assessment to provide a baseline of existing conditions, inform the project design process, and determine potential regulatory requirements. The City used the *Wetland Reconnaissance and Wildlife Habitat Assessment* Memorandum (ESA, 2015) to support preparation of the State Environmental Policy Act (SEPA) Checklist. The City SEPA Official issued a Determination of Non-Significance (DNS) on August 17, 2015. This determination was successfully appealed on January 26, 2016. The Hearing Examiner concluded that the "City did not consider all environmental factors" to comply with the procedural requirements of SEPA. The proposed trail alignment was reconfigured from the 2015 proposal to avoid the large wetland complex and steep slope area in the middle of the greenspace. A SEPA DNS was issued on October 15, 2018, for the two-loop trail system (north and south loops), however, was appealed on November 5, 2018. Subsequently, settlement discussions and mediation led to the Department reducing the proposal to one loop on the south end of the greenspace. Following these changes, the DNS was affirmed for the south loop on November 4, 2019. The SEPA determination for the north loop trail project is anticipated in early 2023. The intent of this Critical Areas Study and Conceptual Mitigation Plan is to provide the City with sufficient information to meet the requirements of SEPA and Seattle Municipal Code (SMC) 25.09 with regards to critical areas.

In 2022, this Critical Areas Study was updated to reflect current conditions. ESA conducted a wetland reconnaissance of the previous evaluation area and the features previously identified in 2014-2015 Critical Areas Study. Additionally, an inventory of exceptional trees was conducted (SMC 25.11.020) for those located in the vicinity of the proposed alignment.

2.0 PROJECT HISTORY AND DESCRIPTION

The Cheasty Greenspace is a 28-acre parcel within the Cedar River-Lake Washington watershed in Water Resource Inventory Area (WRIA) 8, Cedar-Sammamish. The greenspace is near the western boundary of the watershed, which drains to Lake Washington. Land use in the watershed is highly urbanized, with residential and commercial uses dominating the area surrounding the greenspace. The Cheasty Greenspace contains one of the few areas of undeveloped forest in the vicinity. It is predominantly deciduous trees and includes some invasive species, although removal of invasive species and replanting with native species have been ongoing in the greenspace for many years. There are no official trails; however, there are social trails or trails developed for restoration work throughout the greenspace. Three narrow Seattle Housing Authority properties abut the greenspace to the east; the majority of these parcels are forested and function as an extension of the greenspace.

In 2012, a group of neighbors proposed the development of pedestrian and mountain bike trails at Cheasty Greenspace as a project through the Parks and Green Spaces Levy Opportunity Fund process. The Opportunity Fund is funded through the 2008 Parks and Green Spaces Levy approved by voters and allows the community to initiate park projects in neighborhoods. The project was contrary to SPR's bicycle policy, and thus the original project was not successful in the Opportunity Fund process. However, there was significant community interest for the trails project, with the North Beacon Hill Community Council voting to support it. Additionally, the North Beacon Hill Neighborhood Plan, in the Comprehensive Plan (City of Seattle, 2016a), includes policy NBH-P34: *Consider the development of pedestrian and bicycle trails through publicly owned greenbelts throughout North Beacon Hill*. In 2013, the group Friends of Cheasty Greenspace at Mountain View secured funding through the Department of Neighborhoods. The group used this funding to hire a landscape architect to develop a preliminary trail design.

The Board of Park Commissioners discussed and deliberated on the 2013 proposal at public meetings on November 14, 2013, and January 9, 2014. Their final recommendation to the SPR Superintendent was that SPR should initiate a pilot project to allow soft-surface mountain bike trails to be built at Cheasty Greenspace, in conjunction with restoration and foot trails. On May 28, 2015, the Board of Park Commissioners approved a pilot project for the pedestrian and bicycle trail. The SEPA Official issued a DNS on August 3, 2015. The SEPA decision was successfully appealed, with a decision made by the Hearing Examiner on January 26, 2016. ESA was retained by SPR to conduct wetland delineations, a wildlife assessment, and redesign the trail to minimize impacts to critical areas.

The original project design was a pedestrian and bicycle perimeter loop trail, with six entry points, primarily separated except near wetlands and steep slopes. The initial trail was redesigned to avoid impacts to wetlands, wetland buffers, the riparian watercourse, and reduce impacts to the riparian management area. The proposed redesigned trail is a two-loop trail system but still has six entry points to allow public access (Figure 2). The two loops can be joined by traveling on 28th Ave S to the east of the greenspace and Cheasty Boulevard to the west. Cheasty Boulevard is proposed as a Neighborhood Greenway, a residential street with low motorized traffic volumes and speeds that is designated and designed to give people walking and biking safe and pleasant travel priority. Generally, the east-west portions of the trail would be multi-use with 4-foot wide standard park design trails. The remaining portions of the trails would be 3-foot wide one-way mountain bike trails. A bridge is proposed where the trail would cross a watercourse. The shared and one-way bicycle trail would each be approximately 1.2 miles in length, with a total of approximately 2.4 miles of trail. The use of the trails for mountain bikes would be a 15-month pilot trail project. Should trail use for mountain bikes be deemed unsuitable after 15 months by SPR, the bicycle portions of the trail would be repurposed for pedestrians only, with no trail redesign. Evaluating the suitability of the trail after 15 months is outside the scope of this report.

The bicycle portion of the trail would have no special mountain bike trail features (e.g., jumps) and would be appropriate for beginner mountain bicyclists. Trail guidelines from the International Mountain Bicycling Association (IMBA) that minimize trail footprint were followed in trail design. The grade was kept to 10 percent or less on the trail and followed the "half-rule": that a trail's grade should never exceed half the grade of its side slope. Any trail construction would use full bench-cut construction cutting from the existing slopes and would outslope the tread of the trail so that rainfall drains easily off of the side of the trail rather than along it. Trail location has avoided what little flat areas were available to prevent any resulting collection basins for water. Existing social trails on the site would be used where feasible.

3.0 METHODS

3.1 Review of Existing Information

Prior to conducting the field investigations, ESA ecologists reviewed existing literature, maps, and other materials to identify wetlands, streams, vegetation types, and wildlife habitats in the Cheasty Greenspace and vicinity. Key data sources included the following:

- National Wetlands Inventory (NWI) (U.S. Fish and Wildlife Service [USFWS], 2017, 2018)
- Priority Habitats and Species (PHS) (Washington Department of Fish and Wildlife [WDFW], 2017, 2018)
- King County iMap (King County, 2017, 2018)
- SalmonScape (WDFW, 2016, 2018)
- City of Seattle geographic information system (GIS) data (City of Seattle, 2017, 2018)
- City of Seattle water and sewer map (City of Seattle, 2016b)
- Historic and current aerial imagery
- eBird data (Cornell Lab of Ornithology, 2017)

Potential wetlands and streams were identified using the above sources, and wildlife habitat was preliminarily mapped through the interpretation of aerial photographs. In addition to the list above, multiple literature sources were reviewed and are listed in Section 8.0, *References*, of this document.

3.2 Wetland Delineation and Watercourse Identification

Field investigations for wetlands and streams were performed over 4 days (October 19, 20, and 31, 2016; and April 5, 2017. Wetlands were identified based on conditions at the time of the field visits by applying the wetland determination method described in the Regional Supplement (Western Mountains, Valleys, and Coast) to the Corps of Engineers (Corps) 1987 Wetland Delineation Manual Corps (Corps, 2010). Wetland investigations were conducted during the growing season as recommended by the Corps manual. In the Seattle area, the growing season varies from year to year; however, it is generally accepted to be from February or March to October or November. Climate Analysis for Wetlands Tables (WETS) from the Natural Resources Conservation Service (NRCS) show the growing season to be February 7 to December 10 (NRCS, 2017). Both hydrophytic vegetation and hydric soil indicators depend on the growing season. Hydrophytic vegetation is present when the plant community is dominated by species that require or can tolerate prolonged inundation or soil saturation during the growing season. Hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Corps, 2010).

The boundaries of wetlands were flagged with plastic survey tape marked “WETLAND DELINEATION,” and the locations will be professionally surveyed by SPR [Note: not yet surveyed, impacts and mitigation based on GPS’ed wetlands]. Data plots (DP) were also established for all wetlands and potential wetland areas. The methods used to identify and delineate wetlands and determine the ordinary high water mark (OHWM) of streams are described in further detail in Appendix A. Wetland determination data sheets are presented in Appendix B.

Wetlands were classified according to the Washington State Department of Ecology's (Ecology) Wetland Rating System for Western Washington (Hruby, 2014). A description of the wetland rating system along with the completed Wetland Rating Forms for all wetlands described in this document are included in Appendix C.

3.3 Wildlife Habitat Assessment and Survey

Wildlife habitat and wildlife species use in the Cheasty Greenspace and vicinity were evaluated in the field during 3 days over the winter and spring seasons (December 19, 2016; April 4 and May 4, 2017). The purpose of the field visits was to characterize habitats, further assess habitat quality, and conduct surveys to observe wildlife species using the greenspace and vicinity. ESA ecologists applied the assessment methods described in *Wildlife Habitat Relationships in Oregon and Washington* (Johnson and O'Neil, 2001) to describe and evaluate common habitat types in the study area. The Johnson and O'Neil study was developed with input from a panel of regional wildlife experts and information collected from more than 12,000 pertinent publications.

ESA ecologists recorded observations of wildlife use during the winter and spring field surveys. Wildlife species (primarily birds) were observed both aurally and visually along informal walking transects across different habitat types and vegetation communities. Animal tracks and sign such as scat, pellets, or excavations were also recorded. Surveys commenced within 1 hour of sunrise and lasted approximately 3 hours. Wildlife habitat in the greenspace was characterized and mapped on aerial photographs.

ESA also conducted a literature review of current wildlife science relevant to pedestrian and bicycle trail impacts on birds to inform impact assessment and mitigation planning.

4.0 FINDINGS

The following sections describe the results of the background review and field investigations for wetlands, streams, and wildlife.

4.1 Existing Information

The City of Seattle GIS data (City of Seattle, 2017) show no streams and six wetlands in the Cheasty Greenspace and on the Seattle Housing Authority properties to the east. The NWI data show the same six wetlands, and also depict a seventh wetland just north of Andover Street and just outside of the Cheasty Greenspace (USFWS, 2017, 2018). A wetland reconnaissance conducted in 2003 found one riparian wetland with an associated stream and a second stream in the study area (Sheldon & Associates, 2003). The wetland-stream complex corresponds to one of the wetlands in the City's GIS database, while the other does not correspond with the City or NWI mapping.

According to the WDFW PHS database, the majority of the Cheasty Greenspace is a considered "Biodiversity Areas and Corridors" (WDFW, 2017, 2018). No occurrences of threatened or endangered or other sensitive species have been documented on the site. No soil survey data are available for the study area.

No streams are documented in the WDFW SalmonScape database (2016) or on the City of Seattle GIS database in Cheasty Greenspace, nor up- or downslope of the site. Seattle's drainage map (City of Seattle, 2016b) shows that a combined (storm and sewer) main drains into a number of culverts along Cheasty Boulevard, including the culvert that feeds Watercourse 1 (described in Section 4.3 below).

4.2 Wetlands

ESA identified a total of 10 wetlands in Cheasty Greenspace (Figure 2; see Photographs). All of these wetlands, except for Wetland 12, were identified in the wetland reconnaissance conducted by ESA in December 2014. These 10 wetlands (Wetlands 1, 2, 3, 4, 5, 6, 8, 9, 11, and 12) are described below. Table 1 summarizes the characteristics of each wetland. Two other potential wetlands that were identified during the wetland reconnaissance (Potential Wetlands 7 and 10) were revisited and determined not to meet wetland criteria; data sheets for these sites are included in Appendix B.

4.2.1 Wetland 1

Wetland 1 is a depressional/slope wetland on the south boundary of Cheasty Greenspace (Photograph 1). It is a forested wetland with a canopy of black cottonwood, and understory vegetation of Himalayan blackberry, soft rush, and English ivy. It also has a large unvegetated area that is seasonally ponded; the unvegetated area is quite hard (compacted) and may have been previously disturbed. The hydrology of Wetland 1 appears to be supported primarily by groundwater (hillside seeps) and precipitation. In October 2016, hydrology indicators observed in the wetland were surface soil cracks and sparsely vegetated concave surface. In April 2017, the wetland was saturated to the surface, and there was ponding of approximately 3 inches in the area that was sparsely vegetated. Soils within the wetland met hydric soil indicator A11 (Depleted Below Dark Surface). Data plots W1, DP-1 and W1, DP-2 characterize this wetland and adjacent upland, respectively. Habitat functions are low due to the lack of diversity in vegetation communities and habitats and poor access to habitat.

The buffer to the north is forested with bigleaf maple, black cottonwood, and beaked hazelnut, with an understory of sword fern and English ivy. This wetland is on the edge of the greenspace and two houses within the buffer to the south would reduce the buffer function. However, the overall functions, values, and protection provided by the buffer are moderate as it is forested and relatively undisturbed for an urban park. Ongoing restoration work in the south portion of the park is improving habitat quality by the removal of invasive species.

Table 1. Summary of Wetlands in Cheasty Greenspace

Wetland ID	Total Wetland Area (square feet)[a]	Hydrogeomorphic Class	Cowardin Class
1	977	Depressional/Slope	Forested
2	2,523	Slope	Emergent and Forested
3	23,949	Slope	Scrub-shrub and Forested
4	92,768	Depressional/Slope	Scrub-shrub and Forested
5	790	Slope	Scrub-shrub
6	1,099	Slope	Scrub-shrub
8	874	Depressional/Slope	Emergent
9	132	Slope	Scrub-shrub
11	795+	Slope	Scrub-shrub
12	3,884	Slope	Scrub-shrub

[a] Wetland 11 was not fully delineated as it is re-forming; see description in Section 4.2.8.

4.2.2 Wetland 2

Wetland 2 is a slope, palustrine emergent and forested wetland in the southeast portion of Cheasty Greenspace, upslope of S Columbian Way (Photograph 2). Vegetation within Wetland 2 includes an emergent community dominated by giant horsetail and common ladyfern, and a forested community dominated by black cottonwood. The hydrology of Wetland 2 appears to be supported primarily by groundwater (hillside seeps) and precipitation. Hydrology indicators observed in the wetland include soil saturation to the surface and a high groundwater table. Soils within the wetland met hydric soil indicator F3 (Depleted Matrix). Data plots W2, DP-1 and W2, DP-2 characterize this wetland and adjacent upland, respectively.

The buffer of Wetland 2 is forested with bigleaf maple, black cottonwood, and beaked hazelnut with an understory of sword fern and English ivy. The overall functions, values, and protection provided by buffer are moderate as it is forested and relatively undisturbed for an urban park. Ongoing restoration work in the south portion of the park is improving habitat quality by the removal of invasive species. Wetland 2 is close to S Columbian Way (less than 100 feet), which is a busy and noisy roadway.

4.2.3 Wetland 3

Wetland 3 is a slope, palustrine mostly scrub-shrub wetland with a forested area at its east edge; it is located in the southeast corner of the park (Photograph 3). The wetland continues off the park property to the east and under the deck of an adjacent house. The scrub-shrub community is dominated by salmonberry and red alder. The forested portion is dominated by red alder and non-native cedar (likely planted). Emergent vegetation is dominated by giant horsetail, common ladyfern, and English Ivy. English Ivy is quite invasive in this area of the park, including in the wetlands. The hydrology is supported primarily by groundwater (hillside seeps) as well as precipitation. A small channel is located within the boundaries of the wetland (Figure 2). The channel is approximately 1 to 2 feet wide and incised; it has concrete culvert placed in some areas, and it ends within the wetland where the slope flattens out. Additionally, a storm drain is immediately to the south of the wetland, which likely drains the wetland away from the downslope houses. Hydrology indicators observed in the wetland were a high groundwater table and soil saturated to the surface. There was also surface flow in the stream channel. Soils within the wetlands met hydric soil indicator F3 (Depleted Matrix). Data plots W3, DP-3 and W3, DP-4 characterize this wetland and adjacent upland, respectively.

The wetland buffer consists primarily of bigleaf maple with an understory of Indian plum and sword fern. The overall functions, values, and protection provided by the buffer are moderate as it is forested and relatively undisturbed for an urban park. Houses and a residential street are immediately adjacent to the east edge of the wetland, limiting the buffer in this location.

4.2.4 Wetland 4

Wetland 4 is the largest wetland in the Cheasty Greenspace; it is located in middle of the park in a natural valley, stretching from the west to the east edges of the park (Figure 2; Photograph 4). It is a slope-depressional, palustrine scrub-shrub and forested wetland. Vegetation is dominated salmonberry, black cottonwood, giant horsetail, and Himalayan blackberry. Hydrology is supported primarily by a high groundwater table and hillside seeps. Water also comes from the west under Cheasty Boulevard, but no culverts were found. There is a channel that begins within the wetland and is culverted at its downstream end, where it is channelized into a storm drain at the east edge of the greenspace. Hydrology indicators observed in the wetland include soil saturation to the surface, a high groundwater table, and seeps from adjacent slopes. Standing water was observed in the wetland during the December 2014 site visit, but not in October 2016. Soils in the wetland met hydric soil indicator A4 (Hydrogen Sulfide) and F6 (Redox Dark Surface). Data plots W4, DP-1 and W4, DP-2 characterize this wetland and adjacent upland, respectively. The wetland has a moderate habitat function as it has more than one plant structure, hydroperiod, and habitat types.

The buffer of Wetland 4 to the north and south is forested (primarily bigleaf maple), with sword fern, beaked hazelnut, cherry laurel, and English ivy in the understory. A portion of the southern wetland boundary and the buffer of the wetland had been modified by illegal activities, and it has since been restored; the restored portion was regraded and planted with native vegetation in 2015 and 2016. The buffer to the southwest is quite steep, in particular adjacent to the SPR work yard, which is 100–150 feet south of Wetland 4. The overall functions provided by the buffer are moderate as it is forested, but there is minimal buffer to the west and east outside of the park.

4.2.5 Wetlands 5 and 6

Wetlands 5 and 6 are small slope, palustrine scrub-shrub wetlands in shallow east-facing ravines. Wetland 5 is dominated by Himalayan blackberry, common ladyfern, and youth-on-age. Wetland 6 is dominated by Himalayan blackberry and red alder (Photograph 5). Hydrology in both wetlands is supported groundwater and precipitation. Soils within both wetlands meet hydric soil indicator F3 (Depleted Matrix); Wetland 5 also meets the criteria for F6 (Redox Dark Surface). Data plots W5, DP-1 and W6, DP1 characterize these wetlands, and W5, DP-2 and W6, DP-2 describe the adjacent uplands.

Habitat functions are low due to the dominance of invasive species and lack of diversity in vegetation communities, hydroperiods, and habitats.

The buffers immediately adjacent to Wetlands 5 and 6 are dense Himalayan blackberry; farther away, the buffers are dominated by bigleaf maple with sword fern and Oregon grape. No regulatory buffer is required for Wetland 5 due to its size (less than 1,000 square feet) and Category IV rating. The buffers provide moderate protection as they are forested, despite the invasive species in the immediate vicinity.

4.2.6 Wetland 8

Wetland 8 is a depressional slope, palustrine emergent wetland on the north end of the greenspace (Photograph 6). It is dominated by an understory of buttercup and red alder saplings. The hydrology of the wetland is supported by a high groundwater table and precipitation. Hydrology indicators observed in the wetlands included soil saturation to the surface, a high groundwater table, and some surface ponding. Soils met hydric soil indicator A11 (Depleted Below Dark Surface). Data plots W8, DP-1 and W8, DP-2 characterize this wetland and adjacent upland, respectively. Habitat functions are moderate because of the landscape potential and proximity to priority habitats.

The buffer of Wetland 8 is forested, dominated by bigleaf maple and black cottonwood, with swordfern and some Himalayan blackberry in the understory. A cleared transmission corridor approximately 5 feet wide crosses the buffer of Wetland 8from east to west along the Andover Street right-of-way. Also see Photograph 7.

4.2.7 Wetland 9

Wetland 9 is a slope, palustrine scrub-shrub wetland in the north of the greenspace on the east edge, upslope of the Rainer Vista Dakota W P-Patch Community Gardens (Photograph 8). Subsurface hydrology likely continues downslope to the east outside of the Cheasty Greenspace but does not appear to be connected to Watercourse 1. Vegetation is dominated by Himalayan blackberry and red alder. The hydrology of the wetland is supported by a high groundwater table and precipitation. It is close to the watercourse but is not likely connected hydrologically because of its location in the landscape. Soils met hydric soil indicator F3 (Depleted Matrix). Data plots W9, DP-1 and W9, DP-2 characterize this wetland and adjacent upland, respectively.

Similar to Wetlands 5 and 6, the buffer adjacent to Wetland 9 is dense Himalayan blackberry, and farther away the buffer is dominated by bigleaf maple with swordfern. The overall functions, values, and protection provided by this buffer are moderate as it is forested, despite the prevalence of invasive species. No regulatory buffer is required for Wetland 9 due to its size (less than 1,000 square feet) and Category IV rating.

4.2.8 Wetland 11

Wetland 11 is a slope, palustrine scrub-shrub wetland in the middle of Cheasty Greenspace (Photograph 9). Wetland 11 has been substantially modified by illegal activities. It is difficult to determine what preexisting conditions were, but it appears that the east portion of the wetland was excavated or filled. It has since been regraded and restored with native vegetation. However, the majority of the plants used in the restoration are upland plants, some of which are not healthy as the wetland appears to be reforming due to the presence of a high groundwater table. Additionally, a small surface channel runs through the restored area. The restored portion of the wetland was not delineated as it is reforming and the trail is not proposed in this area; however, it was considered when rating the wetland. Vegetation is dominated by salmonberry. Hydrology indicators observed in the wetland included soil saturation to the surface and a high groundwater table, and surface flow (channel forming). Soils within the wetland met hydric soil indicators F3 (Depleted Matrix) and F6 (Redox Dark Surface). Data plots W11, DP1 and W11, DP2 characterize the wetland and adjacent uplands, respectively. Testplot B also shows an upland area downslope of the wetland and is the approximately east edge of the reforming wetland.

The buffer area of Wetland 11 consists primarily of patches of Himalayan blackberry and bigleaf maple. There is also a large open area that has been restored to the south of the wetland. The overall functions, values, and protection provided by the buffer are moderate as it is primarily forested despite the invasive species.

4.2.9 Wetland 12

Wetland 12 is a slope, scrub-shrub wetland near the south boundary of Cheasty Greenspace. It is dominated by hardhack with some salmonberry (Photograph 10). Based on its position in the landscape, it may drain to Wetland 1, although no surface or subsurface connections were observed. A social trail crosses the north edge of the wetland, and this area has little vegetation. Some trees have been planted in the wetland buffer to the northeast and a little within the wetland. Hydrology indicators from the April 2017 site visit were saturation to the surface and a high water table. Soils met hydric soil indicator A11 (Depleted Below Dark Surface). Data plots W12, DP1 and W12, DP2 characterize the wetland and adjacent uplands, respectively. Testplot A is also in Wetland 12, but in October 2016, no hydrology indicators were found.

The buffer is forested with bigleaf maple, black cottonwood, and beaked hazelnut with an understory of sword fern. This wetland is on the edge of the greenspace, and Wetland 1 is within the buffer. Ongoing restoration work in the south portion of the park has improved habitat quality by the removal of invasive species.

4.2.10 Potential Wetlands 7 and 10

Potential Wetlands 7 and 10 were identified as needing further investigation in the wetland reconnaissance conducted in late 2014/early 2015 because these areas had some wetland vegetation and hydrology indicators, but lacked indicators of hydric soil to meet the definition of a wetland. Both potential wetlands were revisited and determined to not meet the wetland criteria; see data plot PW7, DP1 in Appendix B.

4.2.11 Wetland Ratings and Buffer Requirements

Under the SMC, wetlands must be classified using Ecology's 2014 Wetland Rating System for Western Washington (SMC 25.09.160) (Hruby, 2014). According to SMC 25.09.160.B, the buffer width required for a wetland depends on the wetland rating, size, and scores for habitat function. Category IV wetlands that are less than 1,000 square feet in area require no buffer according to the SMC.

The ratings and City-required buffer widths for wetlands within the study area are presented in Table 2. Wetland rating forms are included in Appendix C.

Table 2. Summary of 2014 Wetland Ratings and Buffers

Wetland ID	Wetland Category (2014 Wetland Rating System)	2014 Habitat Score	Standard Buffer Width (feet)[a]
1	III	4 (low)	60
2	IV	4 (low)	50
3	III	5 (moderate)	110
4	III	5 (moderate)	110
5	IV	4 (low)	0 (<1,000 sq ft)
6	IV	5 (moderate)	50
8	IV	4 (low)	0 (<1,000 sq ft)
9	IV	4 (low)	0 (<1,000 sq ft)
11	IV	4 (low)	50
12	IV	4 (low)	50

[a] Buffers as per SMC (25.09.160.B). No buffer required on Category IV wetlands less than 1,000 square feet in size.

4.3 Watercourses

4.3.1 Watercourse 1

One watercourse (Watercourse 1) is present in the study area; it flows west to east and extends across the north portion of the greenspace (Figure 2, Photograph 11). Water flows into the watercourse from a culvert under Cheasty Boulevard. The watercourse has a distinct bed and bank, and the OHWM is 1–2 feet wide. Channel depth varies greatly, ranging from non-distinct to quite incised, approximately 4 feet in some spots. A corrugated 12-inch plastic pipe has been placed in the channel and extends from Cheasty Boulevard to approximately three-quarters of the length of the watercourse. The watercourse flows both through and around the pipe; the pipe is not joined to the culvert at Cheasty Boulevard and is not continuous (i.e., there are breaks in pipe). It would be non-fish bearing and is likely seasonal. Riparian vegetation consists predominantly of bigleaf maple, cherry laurel, hawthorn, sword fern, horsetail, English holly, Himalayan blackberry, and Indian plum. The watercourse is in a small natural ravine and may have supported a natural watercourse pre-development. The OHWM of Watercourse 1 was flagged and GPS'ed in the field and surveyed by SPR.

4.3.2 Watercourse Rating and Buffer Requirements

Although no up- or downstream connections were found, the watercourse conservatively meets the criteria of a Type Ns Water. Type Ns streams include all segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Type Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.

Under SMC 25.09.012, the watercourse would be regulated as a riparian watercourse. "*A riparian watercourse is the watercourse of Type F, Np, and Ns waters defined in Washington Administrative Code (WAC) 222-16-030 and 222-16-031 that have fish or wildlife habitat. Pipes, culverts, flow control* *facilities, water quality facilities, and stormwater conveyances are not regulated as riparian watercourses*." The riparian management area is the area within 100 feet of the riparian watercourse measured from the OHWM of riparian watercourses (together these are called a riparian corridor).

4.4 Wildlife Habitat Types

The Cheasty Greenspace contains three major habitat types as described by Johnson and O'Neil (2001): westside lowland conifer-hardwood forest; westside riparian wetlands; and herbaceous wetlands. Figure 3 shows the extent of habitat types in the study area. Riparian and herbaceous wetlands are combined on the figure (the majority of wetland area meets the definition of riparian wetland habitat type rather than herbaceous). Other habitat types in the vicinity of the greenspace include open water and urban/mixed environs.

Westside lowland conifer-hardwood forest, or mixed forest, is the most common habitat type on the site, accounting for over 80 percent of the area (Figure 3). The tree canopy is composed of mostly deciduous broadleaf species with red alder, black cottonwood, and bigleaf maple as the dominant species in the study area (Photographs 11 and 15). Only a few coniferous trees, such as western red cedar, are present. A few mature Pacific madrone are also present. The trees are medium to large, averaging 12 to 24 inches diameter breast height (dbh) with a few large black cottonwood trees measuring over 36 inches dbh (Photograph 13). Understory plants include vine maple, salmonberry, red alder, and Himalayan blackberry. The herbaceous layer contains sword fern, salal, Oregon grape, and trailing blackberry. The tree canopy is mostly multistoried and closed across the greenspace with only a few gaps. Habitat elements observed include snags, downed logs, stumps, moss and lichens, leaf litter, and pockets of forested or emergent wetland.

Westside riparian wetlands include palustrine forested and palustrine scrub-shrub wetlands (Photographs 13 and 14). These habitats in the greenspace are described previously, as well as herbaceous, or palustrine emergent wetlands. See Section 4.2 above.

In general, the forested and wetland habitats in the study area provide substantial wildlife habitat. Interruptions to connectivity are limited within the greenspace, and the habitats are well interspersed. Threats to habitat integrity include the dumping of refuse and multiple species of invasive or nonnative plants, including Himalayan blackberry, English ivy, and English holly, as well as escaped cultivated species such as English laurel (Photograph 17). However, activities to remove these species from the site have been highly successful in recent years, and planted native vegetation is becoming established. In the vicinity of the greenspace, other patches of deciduous or coniferous forest occur in patches disrupted by residential development, roads, and utilities. Habitat connectivity between the greenspace and landscaped habitats on the adjacent golf course (on the west side of the greenspace) exists in some areas. The greenspace is also adjacent to smaller undeveloped patches of forest on the east-facing slopes on both sides of Cheasty Boulevard to the northwest.

4.5 Wildlife Observations

The forested and wetland habitats contain a diverse community of trees and shrubs that provide food and shelter for a number of songbirds and woodpeckers, amphibians, and small mammals. Bird species observed during the winter field investigation included Steller's jay, northern flicker, downy woodpecker, American robin, golden-crowned kinglet, black-capped chickadee, Bewick's and Pacific wren, song sparrow, and Anna's hummingbird (Table 3). Pileated woodpecker excavations were encountered in multiple trees and snags across the greenspace. These bird species are considered common residents in Puget Sound lowlands.

Bird observations during the spring field investigations included additional migratory species such as Wilson's warbler, Pacific flycatcher, vireo species, and Swainson's thrush. Several bird species were confirmed as nesting on the site during field investigations. Evidence of nesting included nest building, territorial behavior, and incubating birds on a nest. Confirmed breeders on the site included Cooper's hawk, red-breasted sapsucker, American crow, song sparrow, and European starling. Other species likely breeding in or in the vicinity of the greenspace include American robin, Bewick's wren, and spotted towhee.

Except for eastern gray squirrel, no mammals or amphibians were observed during field investigation. Species expected to be present in the greenspace include Northern raccoon, Virginia opossum, coyote, Pacific chorus frog, garter snake, and potentially deer.

General observations of wildlife use on the site were recorded during all field visits. Table 3 is a list of wildlife species observed and expected to occur, and includes both the winter and spring surveys. Field survey data sheets are included in Appendix D.

Table 3. Summary of Bird Species Observed and Expected in Cheasty Greenspace

Species Name	Observed	Expected (Resident or Seasonal)	Confirmed Nesting	Probable Nesting	Transient/ Migratory*
Canada Goose	X				X
Common Nighthawk					X
Vaux's Swift		X			
Anna's Hummingbird	X			X	
Rufous Hummingbird		X		X	
Glaucous-winged Gull	X				X
Double-crested Cormorant	X				X
Bald Eagle	X				X
Sharp-shinned Hawk		X			
Cooper's Hawk	X		X		
Red-tailed Hawk	X				
Western Screech-Owl		X			
Barred Owl		X			
Northern Saw-whet Owl		X			
Red-breasted Sapsucker	X		X		
Downy Woodpecker	X			X	
Northern Flicker	X			X	
Pileated Woodpecker	X				
Merlin		X			
Olive-sided Flycatcher		X			
Western Wood-Pewee		X			
Willow Flycatcher					X
Hammond's Flycatcher					X
Pacific Flycatcher	X			X	
Vireo sp.	X				
Cassin's Vireo		X			
Warbling Vireo		X			
Red-eyed Vireo		X			
Steller's Jay	X			X	
California Scrub-Jay		X			
American Crow	X		X		

Species Name	Observed	Expected (Resident or Seasonal)	Confirmed Nesting	Probable Nesting	Transient/ Migratory*
Tree Swallow		X		X	
Violet-green Swallow		X		X	
Barn Swallow		X			
Black-capped Chickadee	X			X	
Chestnut-backed Chickadee	X				
Bushtit	X			X	
Red-breasted Nuthatch	X			X	
Brown Creeper	X				
Pacific Wren	X			X	
Bewick's Wren	X			X	
Golden-crowned Kinglet	X				
Ruby-crowned Kinglet	X				
Swainson's Thrush	X			X	
Hermit Thrush		X			X
American Robin	X			X	
Varied Thrush	X				
European Starling	X		X		
Bohemian Waxwing					X
Cedar Waxwing		X			X
House Finch	X			X	
Purple Finch		X			
Pine Siskin		X			
American Goldfinch	X				
Orange-crowned Warbler		X		X	
Nashville Warbler					X
MacGillivray's Warbler					X
Yellow Warbler		X		X	
Yellow-rumped Warbler	X				
Black-throated Gray Warbler					X
Townsend's Warbler					X
Wilson's Warbler	X			X	
Spotted Towhee	X			X	
Chipping Sparrow					X
Fox Sparrow		X			
Song Sparrow	X		X		
Lincoln's Sparrow					X
White-crowned Sparrow		X			
Golden-crowned Sparrow					X
Dark-eyed Junco	X				
Western Tanager		X			
Black-headed Grosbeak		X			
Brown-headed Cowbird		X		X	

* Includes “flyover” and migratory species not associated with the habitats provided in Cheasty Greenspace.

4.6 Trees

In spring 2018, SPR arborists inventoried all trees greater than 6-inches diameter at breast height (DBH) within 6 feet on either side of the center line of the trail (12 feet total). In 2022, ESA biologists used an updated north trail alignment to document exceptional trees using the same standards. In total, three hundred and eighty-one trees were documented. (See Figure 2 and Appendix E for list of inventoried trees). A tree can be rare or exceptional by virtue of its size, species, condition, cultural/historic importance, age, and/or contribution as part of grove of trees as determined by the method outlined in the Director's Rule 16-2008. The majority of the trees inventoried were Bigleaf Maple (*Acer macrophyllum*) which are exceptional if they are larger than 30-inches DBH. Also found were red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera ssp. trichocarpa*), and bitter cherry (*Prunus emarginata*) which are only exceptional as part of a grove. A grove is a group of 8 or larger than 12-inches DBH that form a continuous canopy. As Cheasty Greenspace is mainly forested with trees larger than 12-inches, it was assumed that inventoried trees larger than 12-inches were part of a grove. Trees that fail to meet the risk criteria, are not exceptional. See Table 4 for a summary of exceptional trees.

Table 4. Summary of Exceptional Trees near the Trail

2018 Inventory	Exceptional		
	Size	Grove	**Total**
Acer macrophyllum	33	61	**94**
Alnus rubra	0	4	**4**
Malus sp.	1	0	**1**
Populus balsamifera ssp. trichocarpa	0	5	**5**
Prunus emarginata	0	1	**1**
2022 Inventory			
Acer macrophyllum	75	170	**245**
Alnus rubra	12	0	**12**
Arbutus menziesii	2	0	**2**
Crataegus monogyna	2	0	**2**
Fraxinus latifolia	1	0	**1**
Populus balsamifera ssp. trichocarpa	2	0	**2**
Salix sp.	8	0	**8**
Thuja plicata	4	0	**4**
Total	**140**	**241**	**381**

4.7 Literature Review

ESA also conducted a literature review of current wildlife science relevant to pedestrian and bicycle trail impacts on birds to inform planning for impact assessment and mitigation. All of the studies found that looked at different types of recreation (e.g., mountain biking, walking) were conducted in large national parks or wilderness areas with quite different habitat and wildlife than found in an urban park such as the Cheasty Greenspace. Only one study was found that included effects of mountain biking specifically on birds (Miller & Knight, 1998). That study concluded that recreational use changed species composition, but it did not examine differences between types of recreation activities. For other wildlife species, studies by Taylor and Knight (2003), Wisdom et al. 2004, and Herrero & Herrero (2000) were the only studies found that distinguished between impacts from mountain biking and other recreation types (usually hiking) on animal behavior. Taylor and Knight (2003) studied bison, mule deer, and pronghorn antelope in Antelope Island State Park, Utah and concluded that there was no significant difference between the response of wildlife to mountain biking and hiking. Wisdom et al. (2004) looked at the effects of off-road recreation (all-terrain vehicles [ATVs], mountain biking, horseback riding, and hiking) on mule deer and elk. They concluded that movement rates and probabilities of flight for elk were higher for ATV and mountain bike riding than for horseback riding and hiking, although elk did not flee about a third of the time. Mule deer showed little measureable response to off-road recreation. Herrero and Herrero (2000) showed that grizzly bear encounters were more common with mountain bikers than hikers along the Highline Trail in Banff National Park. They attributed this to the speed and relative silence of mountain bikes, which allowed mountain bikers to get closer to bears before being detected by the bear. A literature review conducted for Parks Canada in Quinn and Chernoff (2010) looked at the ecological effects of mountain biking on soils, vegetation, water, and wildlife. They found that available published literature indicates that trail-based mountain biking results in similar environmental effects as other forms of summer season trail use. However, they also identified significant data gaps. Many studies have been conducted on large mammals in large wilderness areas, and often did not distinguish between impacts from different recreation types. Erosion and compaction from mountain bikes were the most commonly studied issues; these studies found that soil type, terrain, and technique were all factors in impacts. They found little research on mountain bikes being a vector for the spread of invasive plants, and it was assumed to be similar to hiking and horseback riding. They were not able to find published research on the effects of mountain biking on water quality.

5.0 REGULATORY CONTEXT

The proposed trails have been designed to avoid impacts to wetlands, wetland buffers, and reduce impacts to the watercourse and its buffer, and exceptional trees. There would be no wetland fill, shading of wetlands, work within the OHWM of the watercourse, or removal of exceptional trees. However, the project would result in impacts to the riparian management area (stream buffer) (see Section 6.0 for details). This section summarizes the regulatory context for federal, state, and local authorities likely to require permits or approvals.

5.1.1 U.S. Army Corps of Engineers and Section 404

Wetlands are regulated at the federal and state levels by the Corps and Ecology, respectively. At a federal level, the Corps regulates wetlands and streams (i.e., Waters of the U.S.) under the Clean Water Act through the Section 404 permit process (also known as a Department of the Army permit). The trail would not cross any wetlands and thus avoid wetland shading and wetland fill. As there would be no fill, a Section 404 permit would not be required. See the additional discussion in Section 6.0 below.

5.1.2 Washington State Department of Ecology

Ecology regulates wetlands under Section 401 of the Clean Water Act, which is triggered by the Section 404 permit. Issuance of a 401 Certification means that Ecology has reasonable assurance that the applicant's project will comply with state water quality standards and other aquatic resource protection requirements under Ecology's authority. The trail would not cross any wetlands and thus avoid wetland shading and wetland fill. As there would be no fill or shading, a Section 401 Certification would not be required. See the additional discussion in Section 6.0 below.

5.1.3 Washington State Department of Fish and Wildlife

There would be no work within the OHWM of the watercourse, and thus no Hydraulic Project Approval (HPA) is expected to be required (pending confirmation by WDFW). Only projects that use, divert, obstruct, or change the natural bed or flow of state waters require an HPA from WDFW. The HPA permit is authorized through Chapter 77.55 Revised Code of Washington (RCW), and administered through rules in WAC.

5.1.4 City of Seattle

Critical Areas

The City regulates critical areas under SMC 25.09, *Regulations for Environmentally Critical Areas*. The City updated and adopted changes to their critical areas regulations in early 2017. This section summarizes regulations applicable to the project, but the reader is referred to SMC 25.09 for the complete regulations. Within the Cheasty Greenspace, multiple areas are designated critical areas including a Fish and Wildlife Habitat Conservation Area (FWHCA), wetlands, and geologic hazard areas (Figures 2 and 4).

SMC 25.09.045.H.3.f states that public projects are exempt from SMC 25.09

> "if the purpose is to benefit the public's passive enjoyment of the environmentally critical area, such as, but not limited to, walking trails providing access to a creek or wetland area, when located and designed to minimize environmental disturbance and adverse impacts to the environmentally critical area and buffer. The applicant shall protect vegetation and trees pursuant to a tree and

vegetation plan consistent with best management practices (BMPs). The plan shall be prepared by a qualified environmental professional with experience related to the type of environmentally critical area or buffer where work will occur. In landslide-prone areas, the plan shall also be approved by a geotechnical engineer licensed in Washington with experience in analyzing geological hazards related to slope stability and tree and vegetation removal on steep slope erosion hazard areas. Trail projects shall be:

1. Limited to pervious surface or raised boardwalk, using non-treated wood or other non-toxic material;
2. No more than 5 feet wide;
3. For pedestrian use only;
4. Located in the outer 25 percent of the wetland buffer area; and
5. Located to avoid removal of trees."

Because the proposed trail includes mountain bike use, this exemption does not apply.

Wetlands. Wetland buffer averaging and buffer reductions are allowed under SMC 25.09.160.E. Buffers can be reduced to no less than 75 percent of required buffer widths as long as it will not reduce functions or values and the area is the same as would be required with a standard buffer. Buffers of Category I, II, and III wetlands can be reduced by 20 percent if a vegetated corridor at least 100 feet wide is protected between the wetland buffer and any other priority habitats defined by WDFW. Buffers can be reduced for Category IV wetlands if they do not meet criteria for buffer averaging or for granting a variance.

Fish and Wildlife Habitat Conservation Areas (FWHCAs). The Cheasty Greenspace is mapped and designated by the WDFW as biodiversity areas and corridors; thus, the entire greenspace meets the criteria for an FWHCA. The riparian watercourse together with its riparian management area (i.e., buffer) are a riparian corridor, which is also regulated as an FWHCA. The riparian management area is 100 feet from the top of bank or OHWM (see SMC 25.09.012). Review of proposed development impacts on FWHCA is required under SMC 25.09.200. Development is prohibited within or over the watercourse, and within the riparian management area unless it can be demonstrated that no other access is available; access is provided by a freestanding structure that maintains the natural channel and floodway of the watercourse; that disturbance of the riparian watercourse and corridor is kept to a minimum; and durable and non-toxic materials are used for construction of structures.

Geologic Hazard Areas. Development is allowed on steep slope erosion hazard areas if the applicant demonstrates that all other provisions of SMC 25.09 and all applicable provisions of Title 23 and Chapters 22.800 through 22.808 are met (SMC 25.09.090). No adverse impact on the stability or erosion potential of the steep slope erosion hazard areas may result. The development must also meet criteria outlined in SMC 25.09.090. The Director may require a geotechnical report to verify site conditions and to evaluate the impacts of the development in the steep slope erosion hazard area. A geotechnical report was conducted by HWA Geosciences (2015), and updated based on the redesigned trail in 2018.

Tree Protection

The City regulates trees under SMC 25.11, *Tree Protection*. Per SMC 25.11.040, there are restrictions on tree removal and topping, except as provided in SMC 25.11.030.

The Director's Rule 16-2008 clarifies the definition of "exceptional tree" in SMC 25.11.020. This rule also clarifies the SEPA Plants and Animals Policy (SMC 25.05.675.N.2.c) for the purpose of determining the value of "rare, uncommon, unique or exceptional" trees on sites undergoing environmental review, in order to establish appropriate tree protection mitigating measures. The Director's Rule states that an exceptional tree is a tree that:

- Is designated as a heritage tree by the City; or
- Is rare or exceptional by virtue of its size, species, condition, cultural/historic importance, age, and/or contribution as part of grove of trees as determined by the method outlined in the Director's Rule 16-2008.

A tree that meets the size threshold or grove definition is not considered exceptional if it should be removed based on a risk assessment produced by a qualified professional.

State Environmental Policy Act

SEPA Rules are outlined in SMC 25.05, *Environmental Policies and Procedures*. The SPR is the lead SEPA agency for the project. A SEPA analysis is required for any proposal that requires a state or local agency decision to license, fund, or undertake a project. SEPA requires governmental agencies to consider the environmental impacts before project approval. The SEPA Official issued a Determination of Non-Significance (DNS) on August 3, 2015, but the determination was successfully appealed on January 26, 2016. Since the appeal, the proposed trail alignment was reconfigured from the 2015 proposal to avoid the large wetland complex and steep slope area in the middle of the greenspace. The design changed to individual perimeter loops, one on the south side and one on the north side of the site to avoid critical areas. A SEPA DNS was issued on October 15, 2018, for the two-loop trail system (north and south loops). The two-loop updated design was appealed on November 5, 2018. Following the appeal, settlement discussions and mediation led to SPR reducing the proposal to one loop on the south end of the greenspace. Following these changes, the DNS was affirmed for the south loop on November 4, 2019. The SEPA determination for the north loop trail project is anticipated in early 2023. This Critical Areas Study has been prepared to support the SEPA analysis for the north loop trail project.

6.0 PROJECT IMPACTS AND CONCEPTUAL MITIGATION APPROACH

SPR has designed the proposed trails to avoid and minimize impacts to wetlands and watercourses and their buffers in accordance with the following preferred sequence of mitigation (SMC 25.09.065):

a. Avoiding the impact altogether by not taking a certain action or parts of an action.
b. Minimizing the impact by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, BMPs, and/or by taking affirmative steps to avoid or reduce impact.
c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
d. Reducing or eliminating the impact over time by preservation and maintenance operations.
e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.
f. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

The following sections describe each step of the mitigation sequence for the project.

6.1 Avoidance

SPR has redesigned the proposed trail alignment to avoid wetlands and their buffers, the watercourse, and steep slopes to the greatest extent possible. The redesign considered the wetland and watercourse delineation results, geotechnical input, and community input. The new proposed trail alignment includes two independent loops instead of a single perimeter loop inside the greenspace.

The new proposed trail alignment now avoids all wetland crossings, including Wetlands 4 and 11 (which would have been crossed with the previous trail design). The new alignment would avoid several areas with steep slopes, including the area near the SPR work yard east of Cheasty Boulevard. The trail would still cross the watercourse and its riparian management area. The crossing of the watercourse would be via a bridge and would not be within the OHWM of the watercourse. No exceptional trees would be removed within the wetland or the watercourse buffer.

6.2 Minimization

The redesigned trail alignment also eliminates impacts to wetlands and their buffers in comparison to the previous design. The preliminary trail designs called for separate pedestrian and bicycle trails, while the new proposed trail design includes more shared portions of trail, decreasing the total footprint of disturbed area for the trails. Existing social trails would also be used where possible. For example, the proposed Andover Entry would use an existing social trail and transmission line right-of-way to provide access to the greenspace from the northwest corner instead of the creation of a new trail. The trail was designed with the IMBA trail guidelines and the principle of minimizing trail footprint. The grade was kept to 10 percent or less and follows the “half-rule” that a trail’s grade should never exceed half the grade of its side slopes. The trail would be constructed using full bench-cut, cutting from the existing slopes so that rainfall drains off the side of the trail rather than along it. In addition, flat areas would be avoided to prevent creating collection basins for water. Where possible, the trail would use pre-existing trail on the site. These trails will have no special mountain bike trail features (e.g., jumps). Additionally, exceptional trees will be avoided.

Appropriate BMPs would be used for pollution, sediment, and erosion control during construction. Erosion and sediment control measures include mulching, matting, netting, and filter fabric fencing. Significant short- or long-term water quality impacts are not expected if erosion control BMPs are properly implemented, monitored, and maintained during construction.

6.3 Unavoidable Project Impacts

Although impacts have been avoided and minimized, the project would result in unavoidable impacts to a riparian management area (i.e., watercourse buffer). Project impacts are based on the 90 percent trail design plans (Appendix F). No temporary impacts are anticipated; wetlands, wetland buffers, the watercourse, and the riparian management area would be clearly marked to avoid disturbance during trail construction. We have assumed that no impacts to the watercourse would occur; however, this will need to be verified by WDFW, through the HPA process during permitting. Potential impacts are as follows and shown in Appendix F, Trail Design, Sheet L-1:

- The one-way 3-foot wide mountain bike trail would cross the width of the riparian management area of Watercourse 1. This would impact 3,111 square feet of buffer.
- Watercourse 1 would be crossed with a bridge approximately 4 feet wide and at least 6 feet long; no footings would be placed within the OHWM.

Watercourse 1 crosses most of the width of Cheasty Greenspace from west to east. Crossing Watercourse 1 with the trail is avoided on the downstream (eastern) edge of the watercourse, but it is not possible to avoid crossing it on the upstream side. There would be no impacts to the watercourse itself, and it would be crossed with a bridge approximately 4 feet wide. The watercourse is 1–2 feet wide, and the bridge would be at least 6 feet long and thus outside of the OHWM.

6.4 Compensatory Mitigation Approach

SPR plans to provide compensatory mitigation to offset unavoidable impacts the riparian management area (3,111 square feet). Mitigation concepts were developed in accordance with the City's critical areas mitigation plan information standards (SMC 25.09.065).

The proposed concept for compensatory mitigation for unavoidable impacts includes the following:

- Removal of invasive species from at least 3,111 square feet of the buffer of Watercourse 1.
- Planting of the area with native trees and shrubs including but not limited to sword fern, Douglas fir, and salmonberry.

Native vegetation would improve and riparian functions for wildlife and provide additional protection to the adjacent watercourse. In addition, watercourse buffers reduce sediment and nutrients from entering the wetlands and streams, moderate temperatures, increase plant species diversity, provide wildlife habitat, and deter human disturbance of these resources.

6.5 Mitigation Goals, Objectives, and Performance Standards

The overall goal of the conceptual mitigation plan is to replace the habitats and functions lost or altered as a result of the proposed trail project.

6.5.1 Mitigation Goals

Specific mitigation goals include the following:

- Enhance 3,111 square feet of the buffer of Watercourse 1 through the removal of invasive species and the planting of native trees and shrubs.

6.5.2 Objectives and Performance Standards

Objective 1: Establish native shrub cover in the watercourse buffer areas.

Performance Standard 1a: Year 1—100 percent survival of installed native trees and shrubs species within 1 year of mitigation installation. Survival will be determined by total counts as the area is small.

Performance Standard 1b: Year 2—At least 20 percent coverage of native species in all areas (installed and desirable volunteer).

Performance Standard 1c: Year 3—At least 30 percent coverage by native plant species in all areas (installed and desirable volunteer).

Performance Standard 1d: Year 5—At least 80 percent survival of new trees and shrubs in buffer mitigation areas.

Objective 2: Remove non-native, invasive vegetation in watercourse buffer mitigation areas.

Performance Standard 2: Himalayan blackberry, English ivy, and other invasive species will not exceed 20 percent coverage in all planting areas throughout the 5-year monitoring period.

6.6 Maintenance and Monitoring

The main objective for mitigation monitoring is to document the level of success in meeting the project's performance standards. The following describes the monitoring and maintenance approach for 5 years, as required by SMC 25.09.065.

6.6.1 Schedule

An initial stem count of the installed vegetation will be conducted following construction (an as-built count). Monitoring of mitigation areas will continue annually for 5 years post-construction. A qualified biologist or landscape designer will conduct the monitoring. The as-built plan will be used as the basis for monitoring of plant survival. Monitoring will begin the first full growing season after construction is complete and the plants have been installed.

6.6.2 Data Collection

Shrub and tree cover will be evaluated both quantitatively and qualitatively 1 year after construction, as well as in Years 2, 3, 4, and 5. Data collection will occur during the late summer (i.e., July–September). The following information will be recorded during each of the monitoring site visits:

- Survival rates of installed vegetation during plant warranty period based on total counts.
- General plant health assessment and plant aerial coverage from established sampling total counts.

- Presence of undesirable plants (weedy and/or non-native species) with estimated percent cover.
- Photo documentation of site conditions from established photo points.
- Impacts to the wetland and watercourse buffer from human use (e.g., dumping of debris, bicycle use).
- Signs of wildlife use.

6.6.3 Reporting

Monitoring reports will be prepared by a qualified biologist or landscape designer for review and approval by SPR and the Seattle Department of Construction and Inspections (SDCI) during monitoring Years 1, 2, 3, 4, and 5. The reports will compare the performance standards described in the mitigation plan to the field observations during monitoring, and will recommend species replacements or other maintenance activities, if necessary (see *Maintenance* section below). Reports will present data collected during the site visits and document success in meeting specific performance standards. Photographs will illustrate and document site conditions. Monitoring reports will be submitted by the end of each monitoring year to SPR and the SDCI.

6.7 Maintenance

Maintenance of the mitigation area will begin after completion of the project and continue, as needed, for 5 years. After the initial planting acceptance by the project biologist, the landscaping contractor (or SPR if planted by volunteers) will be responsible for plant survival for a period of 1 year. If the mitigation area is planted by volunteers, the plant survival requirement would not apply. SPR will provide maintenance to the mitigation site, as necessary. Maintenance could include, but may not be limited to, the following:

- Irrigate during dry periods.
- Remove non-native or invasive plant species.
- Add soil amendments and/or mulch.
- Install fencing around woody plants to prevent animal damage.
- Construct fencing to prevent vandalism or damage caused by humans.
- Install supplemental plantings as needed.

Based on monitoring results, SPR will implement the required maintenance and determine how corrective measures will be addressed should they be necessary.

6.8 Contingency

If any portion of the mitigation is not successful, a contingency plan will be implemented. Such plans are prepared on a case-by-case basis to remedy aspects of the mitigation that do not meet the performance standards. The plan, if required, would be developed in cooperation with the regulating agencies.

6.9 Site Protection

Mitigation areas would be protected from future use (except for the purposes of enhancing or restoring the mitigation associated with this project). Development on and any disturbance of them would be prohibited.

6.10 Conceptual Mitigation Project Team

The conceptual mitigation plan for the project was developed by ESA biologists and landscape architects. SPR will be responsible for the implementation and monitoring of the mitigation project.

7.0 LIMITATIONS

Within the limitations of schedule, budget, scope-of-work, and seasonal constraints, ESA warrants that this study was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time this study was performed, as outlined in the Methods section (Appendix A). The results and conclusions of this study represent the authors' best professional judgment, based on information provided by the project proponent in addition to that obtained during the course of this study. No other warranty, expressed or implied, is made.

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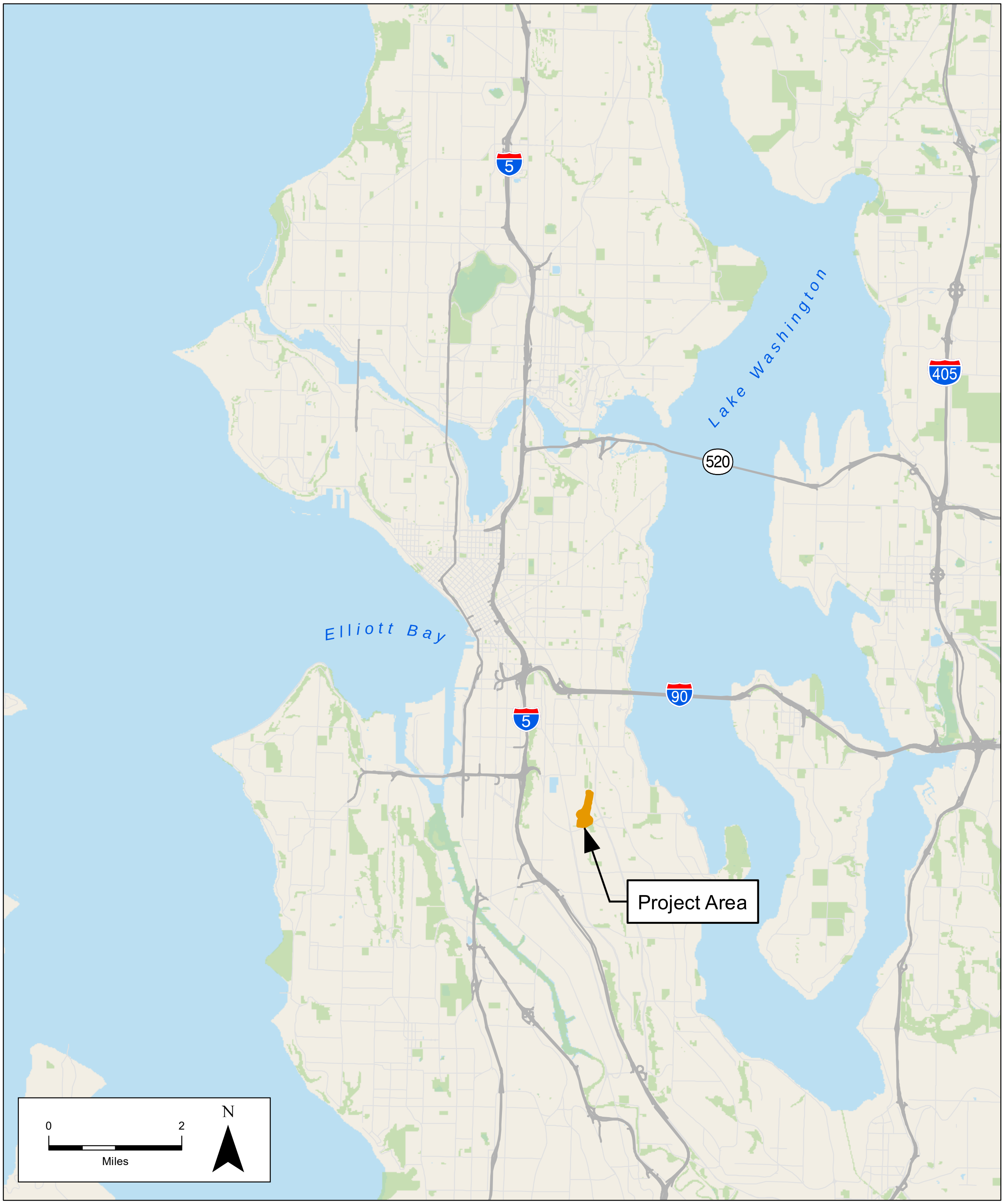
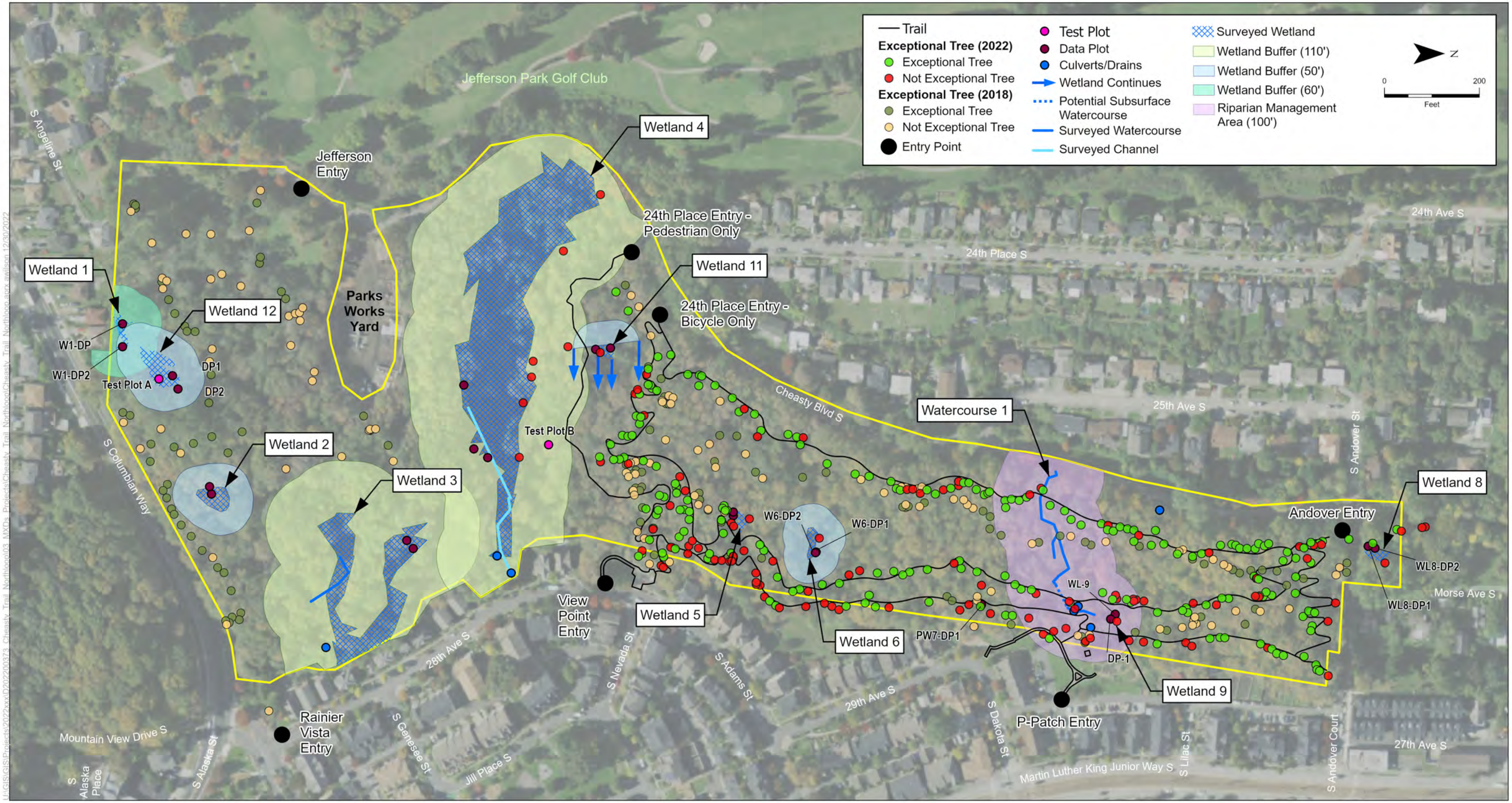
FIGURES AND PHOTOGRAPHS



ESA 2016; OSM 2016

Figure 1
Vicinity Map



SOURCE: NAIP, 2022, ESA 2022, OSM 2014

Cheasty Trail Environmental Review 140744.01

Figure 2
Wetland Delineation and Trail Design

SOURCE: NAIP, 2015, ESA 2017, OSM 2014

Cheasty Trail Environmental Review

Figure 3
Wildlife Habitat Map

ESA

SOURCE: NAIP, 2022, King County, 2014, OSM 2014, ESA 2023

Cheasty Trail Environmental Review . 220373.00

Figure 4
Geologic Hazard Areas

ESA

Photograph 1. Wetland 1, ponding in April 2017

Photograph 2. Wetland 2, December 2015

Photograph 3. Wetland 3, October 2016

Photograph 4. Wetland 4, April 2017

Photograph 5. Wetland 6, October 2016

Photograph 6. Wetland 8, April 2017

Photograph 7. Wetland 8 buffer (facing west, toward Cheasty Boulevard), April 2017

Photograph 8. Wetland 9, October 2016

Photograph 9. Wetland 11, April 2017

Photograph 10. Wetland 12, April 2017

Photograph 11. Watercourse 1, October 2016

Photograph 12. Example of Westside Lowland Mixed Forest Habitat Type

Photograph 13. Snags and black cottonwood in Westside Lowland Mixed Forest Habitat Type

Photograph 14. Example of Westside Riparian Wetland Habitat Type

Photograph 15. Example of Westside Riparian Wetland Habitat Type

Photograph 16. Large bigleaf maples in Westside Lowland Mixed Forest Habitat Type

Photograph 17. Invasive species in Westside Lowland Mixed Forest Habitat Type

APPENDIX A: METHODS

WETLAND DEFINITION AND DELINEATION

Wetlands are formally defined by the U.S. Army Corps of Engineers (Corps) (Federal Register 1982), the Environmental Protection Agency (EPA) (Federal Register 1988), the Washington Shoreline Management Act (SMA) of 1971, and the Washington State Growth Management Act (GMA) as follows:

> *… those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (Federal Register, 1982, 1986).

In addition, the SMA and the GMA definitions add:

> *Wetlands do not include those artificial wetlands intentionally created from non-wetland site, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificially created wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.*

Methods defined in the Western Mountains, Valleys, and Coast Regional Supplement (Corps, 2010) to the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual (Manual) were used to determine the presence and extent of wetlands in the study area. These methods are also consistent with state requirements in WAC 173-22-035.

The methodology outlined in the manuals is based on three essential characteristics of wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Field indicators of these three characteristics must all be present in order to determine that an area is a wetland (unless problem areas or atypical situations are encountered). These characteristics are described below.

The "routine on-site determination method" was used to determine wetland boundaries that had not been previously delineated. Formal data plots were established where information regarding each of the three wetland parameters (vegetation, soils, and hydrology) was recorded. This information was used to distinguish wetlands from non-wetlands. If wetlands were determined to be present within the study area, wetland boundaries were delineated with sequentially numbered colored pin flags or flagging. Data plot locations were also marked with colored flagging. Data sheets for each of the formal data plots evaluated for this Project are provided in Appendix B.

Vegetation

Plants must be specially adapted for life under saturated or anaerobic conditions to grow in wetlands. The U.S. Fish and Wildlife Service (USFWS) has determined the estimated probability of each plant species' occurrence in wetlands and has accordingly assigned a "wetland indicator status" (WIS) to each species. Plants are categorized as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL). Definitions for each indicator status are listed below. Species with an indicator status of OBL, FACW, or FAC are considered adapted for life in saturated or anaerobic soil conditions. Such species are referred to as "hydrophytic" vegetation.

Key to Wetland Indicator Status codes:

OBL	Obligate: species that always occur in standing water or in saturated soils.
FACW	Facultative wetland: species that nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may, on rare occasions, occur in non-wetlands.
FAC	Facultative: species that occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but commonly occur in standing water or saturated soils.
FACU	Facultative upland: species that typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.
UPL	Upland: species that rarely occur in water or saturated soils.

Areas of relatively homogeneous vegetative composition can be characterized by "dominant" species. The indicator status of the dominant species within each vegetative stratum is used to determine if the plant community may be characterized as hydrophytic. The vegetation of an area is considered to be hydrophytic if more than 50 percent of the dominant species have an indicator status of OBL, FACW, or FAC. The Regional Supplement provides additional tests for evaluating the presence of hydrophytic vegetation communities including the prevalence index, morphological adaptations, and wetland non-vascular plants. The Supplement also addresses difficult situations where hydrophytic vegetation indicators are not present but hydric soils and wetland hydrology are observed.

Soils

Hydric soils are indicative of wetlands. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (Federal Register, 1994). The Natural Resources Conservation Service (NRCS), in cooperation with the National Technical Committee for Hydric Soils, has compiled lists of hydric soils (NRCS, 1995). These lists identify soil series mapped by the NRCS that meet hydric soil criteria. It is common, however, for a map unit of non-wetland (non-hydric) soil to have inclusions of hydric soil, and vice versa. Therefore, field examination of soil conditions is important to determine if hydric soil conditions exist.

The NRCS has developed a guide for identifying field indicators of hydric soils (NRCS, 2010). This list of hydric soil indicators is considered to be dynamic; revisions are anticipated to occur on a regular basis as a result of ongoing studies of hydric soils. In general, anaerobic conditions create certain characteristics in hydric soils, collectively known as "redoximorphic features," that can be observed in the field (Vepraskas, 1999). Redoximorphic features include high organic content, accumulation of sulfidic material (rotten egg odor), greenish- or bluish-gray color (gley formation), spots or blotches of different color interspersed with the dominant or matrix color (mottling), and dark soil colors (low soil chroma)

(NRCS, 2010; Vepraskas, 1999). Soil colors are described both by common color name (for example, “dark brown”) and by a numerical description of their hue, value, and chroma (for example, 10YR 2/2) as identified on a Munsell soil color chart (Munsell Color, 2000). Soil color is determined from a moist soil sample.

The Regional Supplement provides methods for difficult situations where hydric soil indicators are not observed, but indicators of hydrophytic vegetation and wetland hydrology are present.

Hydrology

Water must be present for wetlands to exist; however, it need not be present throughout the entire year. Wetland hydrology is considered to be present when there is permanent or periodic inundation or soil saturation at or near the soil surface for more than 12.5 percent of the growing season (typically 2 weeks in lowland Pacific Northwest areas). Areas that are inundated or saturated for between 5 percent and 12.5 percent of the growing season in most years may or may not be wetlands. Areas inundated or saturated for less than 5 percent of the growing season are non-wetlands (Ecology, 1997).

Indicators of wetland hydrology include observation of ponding or soil saturation, water marks, drift lines, drainage patterns, sediment deposits, oxidized rhizospheres, water-stained leaves, and local soil survey data. Where positive indicators of wetland hydrology are observed, it is assumed that wetland hydrology occurs for a sufficient period of the growing season to meet the wetland criteria, as described by Ecology (1997). The Regional Supplement provides methods for evaluating situations in wetlands that periodically lack indicators of wetland hydrology but where hydric soils and hydrophytic vegetation are present.

CLASSIFYING WETLANDS

Two classification systems are commonly used to describe wetlands. The hydrogeomorphic (HGM) system describes wetlands in terms of their position in the landscape and the movement of water in the wetland (Brinson, 1993). The USFWS classification system (Cowardin et al., 1979) describes wetlands in terms of their vegetation communities; these include, for example, emergent, scrub-shrub, and forested community types.

ASSESSING WETLAND FUNCTIONS

The City of Seattle specifies the use of Ecology’s *Washington State Wetland Rating System for Western Washington—Revised* (Hruby, 2014) for rating wetlands. This rating system was developed by Ecology to differentiate wetlands based on their sensitivity to disturbance, their significance, their rarity, our ability to replace them, and the beneficial functions they provide to society. Although this system is designed to rate wetlands, it is based on whether a particular wetland performs a particular function and the relative level to which the function is performed. An assessment of wetland functions is inherent in the rating system. Appendix C provides additional information about the rating system wetland categories and completed rating forms for the Project.

The rating system was designed to differentiate between wetlands based on their sensitivity to disturbance, their significance, their rarity, our ability to replace them, and the functions they provide. In addition to rating a particular wetland, the rating system also provides a qualitative assessment of several wetland functions, including water quality improvement, flood flow alteration, and wildlife habitat. Wetlands are given points based on a series of questions regarding water quality, hydrologic, and habitat functions, and then scored into four categories: Category I (highest score) through Category

IV (lowest score). Because detailed scientific knowledge of wetland functions is limited, evaluations of the functions of individual wetlands are somewhat qualitative and dependent upon professional judgment.

IDENTIFYING STREAMS

ESA marked the locations of the ordinary high water mark (OHWM) of the watercourse in the study area with blue flagging. For purposes of determining its lateral jurisdiction under the Clean Water Act (33 CFR 328.3(e)), the Corps defines the OHWM as: "*that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*" (Corps, 2005). Other physical characteristics that are used to determine the OHWM include wracking; vegetation matted down, bent, or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; bed and banks; water staining; and a change in plant community (Corps, 2005).

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APPENDIX B: WETLAND DETERMINATION DATA SHEETS

SOIL

Sampling Point: PW7 DP1

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 %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					loam	
9-14	10YR 3/1	98	7.5 YR 4/4	2			loam	
14-21	10YR 3/1& 2.5Y 4/6	35&60	7.5YR 4/6	5			loam w/ cobble	mixed matrix

[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: lower layer doesn't start within 12 inches

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): 16
Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 9

Wetland Hydrology Present? Yes ☒ **No** ☐

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

Remarks: rainy October on record, heavy rain over night and until about 9:30am

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: PW7 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 10

Subregion (LRR): LRR A Lat: 47.566058 Long: -122.298413 Datum: NAD1983

Soil Map Unit Name: na NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☐ 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	85	y	FACU
2.			
3.			
4.			
	85 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Corylus cornuta	20	y	FACU
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	25	y	FACU
2. Equisetum telmateia	20	y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	60	y	FAC
2.			
	60 = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	20	x 2 = 40
FAC species	60	x 3 = 180
FACU species	130	x 4 = 520
UPL species		x 5 =
Column Totals:	210 (A)	740 (B)

Prevalence Index = B/A = 3.52

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: test plot B

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 %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					gravelly loamy sand	
12-18	2.5Y 4/3 & 10YR 2/2	80&20	10YR 3/6	trace			gravelly loamy sand, some cobbles	

[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): <1 inch

Water Table Present? Yes ☐ No ☒ Depth (inches):____

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 2

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: Water flowing on surface, seeping a few inches below surface but no water table present. Excessively raining night before and morning of fieldwork. Sheet flow on surface in a number of areas of the park.

This is just south-east of the area disturbed and restored, and just south-east of the area that may potentially form into wetland 11.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 20, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: test plot B

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

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

Subregion (LRR): LRR A Lat: 47.7548 Long: --122.2997 Datum: NAD1983

Soil Map Unit Name: na 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: Test plot B is just east of the eastern/lower edge of an area that had been excavated/disturbed and restored. Wetland 11 may have previously extended to the east. To the east and south east of the delineated portion of Wetland 11 restoration and replanting, primarily with upland plants, has occurred.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 10)			
1. Hedera helix	10	y	FACU
2.			
3.			
4.			
5.			
= Total Cover	10		
Herb Stratum (Plot size: 5)			
1. Ranucus repens	40	y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	40		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	60	y	FAC
2.			
= Total Cover	60		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: test plot A

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/2	100					sandy loam	
11-16	10YR 2/2	85	10YR 3/6	15			loamy sand	
16-19	10YR 4/4	100					sand	

[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: area of surface sheet flow near plot, 0-1 inches of water on surface, and some ponding

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: testplot A

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

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

Subregion (LRR): LRR A Lat: 47.7525 Long: -122.3002 Datum: NAD1983

Soil Map Unit Name: na 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: restoration on north side of Spirea patch, blackberries cleared and replanting has occurred, large patch of Spiraea.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Populus balsamifera	25	y	FAC
2.			
3.			
4.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Spiraea douglasii	90	y	FACW
2. Ilex aquifolium	trace		FACU
3.			
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	5	y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	10	y	FAC
2. Hedera helix	trace		FACU
	10 = Total Cover		
% Bare Ground in Herb Stratum 10			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W12 DP2

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					sandy loam	
12-18	10YR 3/2	50	10YR 4/6 &10YR 5/4	50		M	sandy loam	

[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): 15 inches
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (inches): 12 inches

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: October site visit: one of the rainiest October on record, very rainy night before and until ~9:30am, ground not saturated even at 20 inches.

Site visit April 5, 2017 - saturated to the surface.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: April 5, 2017

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W12 DP2

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): at base of slope Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): LRR A Lat: 47.561068 Long: -122.300669 Datum: NAD1983

Soil Map Unit Name: na 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: likely disturbed in the past

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	30	y	FAC
2. Thuja plicata (Planted)	5	n	FAC
3. Alnus rubra	20	y	FAC
4. Tsuga heterophylla (planted)	trace	n	FACU
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Ribes sanguineum	15	y	FACU
2. Oemleria cerasiformis	5	y	FACU
3. Ribes lacustre (planted)	trace		
4. Mahonia nervosa	5	y	FACU
5.			
	25	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	5	y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	trace	y	FAC
2.			
	trace	= Total Cover	

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 3.05

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: restoration (tree planting) nearby and part of the wetland was trampled as path goes right along the edge of the wetland.

SOIL

Sampling Point: W12 DP1

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
0-9	2.5Y 2.5/1	95	7.5YR 4/6	5	C		sandy loam	
9-16	2.5Y 2.5/1	60	10YR 3/6	40	C	M	sandy loam	

[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): 2 inches

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): to surface

Wetland Hydrology Present? Yes ☒ **No** ☐

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

Remarks: October site visit: one of the rainiest October on record, very rainy night before and until ~9:30am, ground not saturated even at 20 inches.

Site visit April 5, 2017 - saturated to the surface.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: April 5, 2017

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W12 DP1

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): at base of slope Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): LRR A Lat: 47.561068 Long: -122.300669 Datum: NAD1983

Soil Map Unit Name: na 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: likely disturbed in the past

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	trace	n	FAC
2. Thuja plicata	trace	n	FAC
3. Alnus rubra	5	y	FAC
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Spiraea douglasi	50	y	FACW
2. Rubus spectabilis	10	n	FAC
3.			
4.			
5.			
	60	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Juncus effusus	20	y	FACW
2. Polystichum munitum	5	y	FACU
3. Juncus ensifolius	5	y	FACW
4. Ranuanculus repens	trace	n	FAC
5. Agrostis sp.	5	n	
6. Taraxacum officinale	trace	n	FACU
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	trace	y	FAC
2.			
	trace	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 3.05

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: restoration (tree planting) nearby and part of the wetland was trampled as path goes right along the edge of the wetland.

SOIL

Sampling Point: W11 DP1

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 3/2	100					loam	
12-18	10YR4/3 & 10YR3/2	80&20	10YR 3/6	trace			loam	

[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: very rainy night before and morning.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 20, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W11 DP2

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.):hillslope Local relief (concave, convex, none): none Slope (%): 10

Subregion (LRR): LRR A Lat: 47.563803 Long: -122.300527 Datum: NAD1983

Soil Map Unit Name: na 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ilex aquifolium	60	y	FACU
2. Alnus rubra	45	y	FAC
3.			
4.			
	105 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Oemleria cerasiformis	5		FACU
2. Rubus spectabilis	10	y	FAC
3. Hedera helix	5		FACU
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	30	y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus ursinus	trace		FACU
2.			
	trace = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	55	x 3 = 165
FACU species	90	x 4 = 360
UPL species		x 5 =
Column Totals:	145 (A)	525 (B)

Prevalence Index = B/A = 3.62

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: W11 DP1

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
0-9	10YR 2/1	100					sandy loam	
9-16	2.5Y 3/1	97	7.5Y 3/4	3			loamy sand	

[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): 5

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 20, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W11 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR): LRR A Lat: 47.563888 Long: -122.300541 Datum: NAD 1983

Soil Map Unit Name: na 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: Downslope/east of the delineated portion has been disturbed by human activities. It appears that a large area was excavated and the wetland may have previously extended to the east. To the east and south east of the delineated portion restoration and replanting primarily with upland plants has occurred. Water flows from the delineated area, both as sheet flow and a small newly forming channel. Soil does not display wetland characteristics east of the delineated portion but hydric herbs are present and some of the upland vegetation planted is not healthy. A stream channel or wetland may form over time. There was no disturbance in the delineated portion of the wetland (normal circumstances in delineated portion). Eastern extent of wetland/stream area ~ TestPlot B

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Rubus spectabilis	90	y	FAC
2. Oemleria cerasiformis	trace		FACU
3.			
4.			
5.			
	90	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Athyrium filix-femina	5	y	FAC
2. Polystichum munitum	5	y	FACU
3. Lysichiton americanus	trace		OBL
4. Hedera helix	trace		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	15	y	FAC
2.			
	15	= 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W9 DP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/2	100					sandy loam	
11-16	10YR2/2 & 10YR3/3	65&35	10YR 4/6	trace	C		Sandy loam	
16-18	10YR4/2 & 10YR2/2	77&20	7.5YR 4/6	3	C		loamy sand	

[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): 12

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 5

Wetland Hydrology Present? Yes ☒ **No** ☐

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

Remarks: heavy rain overnight, until about mid-morning.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 20, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: WL9 DP2

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): slope Slope (%): 20

Subregion (LRR): LRR A Lat: 47.566806 Long: -122.298311 Datum: NAD1983

Soil Map Unit Name: na NWI classification: PFOB

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	20	y	FAC
2. Acer macrophyllum	20	y	FACU
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. Equisetum telmateia	7	y	FACW
2. Polystichum munitum	5	y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	12	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	85	y	FAC
2.			
	85	= Total Cover	
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: WL9 DP1

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
0-5	10YR 2/2	100					sandy loam,	roots
5-18	5Y 4/1	85	7.5YR4/4 & 7/5YR5/6	10&5	C		gravelly sandy loam	

[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): 4

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: water flowing subsurface, heavy rain overnight, until about mid-morning. Overland flow ~25feet up from wetland, flowing in to wetland.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W9 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 10

Subregion (LRR): LRR A Lat: 47.566832 Long: -122.298354 Datum: NAD1983

Soil Map Unit Name: na NWI classification: PFOB

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	30	y	FAC
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. Athyrium filix-femina	20	y	FAC
2. Equisetum telmateia	15	y	FACW
3. Urtica dioica	trace		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	80	y	FAC
2.			
	80	= Total Cover	
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: Willows in buffer at bottom (east) end of wetland.

SOIL

Sampling Point: W8 DP2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	90	10 YR 4/4	10%			silt loam	
4-16	10YR 5/1	60	7.5YR 4/6	40%	C	M	silt loam	

[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): moist top 4" but not below

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: April 5, 2017

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W8 DP2

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): at base of slope Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): LRR A Lat: 47.561068 Long: -122.300669 Datum: NAD1983

Soil Map Unit Name: na 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	40	y	FAC
2. Alnus rubra	20	y	FAC
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Rubus bifrons (R. armeniacus)	20	y	FAC
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	25	y	FACU
2. Ranunculus repens	10	y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Hedera helix	10	y	FACU
	10	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 3.05

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: POBA – 18+ inches DBH likely 30 years old

SOIL

Sampling Point: W8 DP1

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
0-8	2.5Y 3/1	95	10 YR 6/8	5			sandy loam	
8-16	10YR 5/1	45%	7.5YR 4/6	50%			silt loam	compacted soil layer
	5Y 5/1	5%						

[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:___compacted silt______________________________

Depth (inches):_8- 16+ 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): 2 inches ponding

Water Table Present? Yes ☒ No ☐ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: April 5, 2017

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W8 DP1

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): at base of slope Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): LRR A Lat: 47.561068 Long: -122.300669 Datum: NAD1983

Soil Map Unit Name: na 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	10	y	FAC
2.			
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Rubus bifrons (R. armeniacus)	20	y	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1.Equisetum hyemale	2	n	FACW
2. Ranunculus repens	50	y	FAC
3.Agrostis sp.	30	y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	82	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = 3.05

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: W6 DP2

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
0-5	10YR 3/3	100					loam	
5-18	10YR 3/3	97	10YR 3/6	3			clay loam, charcoal in layer	

[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): 14

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W6 DP2

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 20

Subregion (LRR): LRR A Lat: 47.565093 Long: -122.298829 Datum: NAD1983

Soil Map Unit Name: none 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	30	y	FACU
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Alnus rubra	20	y	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	10	y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	100	y	FAC
2.			
	100	= Total Cover	

% Bare Ground in Herb Stratum _____

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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W6 DP1

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 %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					loam	saturated
5-18	10YR 4/2	93	10YR 3/6	7			loam	not saturated

[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): 5

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: Water coming in from side of pit, at 5 inches, but not saturated below. Possibly perched water table.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W6 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR A Lat: 47.565097 Long: -122.298835 Datum: NAD1983

Soil Map Unit Name: na NWI classification: PFOB

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis	10	y	FACW
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Alnus rubra	35	y	FAC
2. Rubus spectabilis	trace		FAC
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Athyrium filix-femina	15	y	FAC
2. Tolmiea menziesii	15	y	FAC
3. Polystichum munitum	15	y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	100	y	FAC
2.			
	100 = Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W5 DP2

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 %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					sandy loam	
9-18	10YR 4/3 & 10YR 2/1	35&65					sandy loam	

[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: depleted matrix is only 35% in second layer, not sufficient to meet criteria for A11.

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): 4
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (inches): 2

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 20, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W5 DP2

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 20

Subregion (LRR): LRR A Lat: 47.564615 Long: -122.299161 Datum: NAD 1983

Soil Map Unit Name: n/a 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	30	y	FACU
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Alnus rubra	5	y	FAC
2. Ilex aquifolium	10	y	FACU
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	30	y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	70	y	FAC
2.			
	70	= Total Cover	

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W5 DP1

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
0-9	10YR 2/1	100					sandy loam	
9-18	10YR 2/1	95	7.5YR 4/6	5			sandy loam	

[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): 0-1

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

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: very rainy night before and morning of fieldwork.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 20, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W5 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 20

Subregion (LRR): LRR A Lat: 47.564616 Long: -122.299131 Datum: NAD1983

Soil Map Unit Name: na NWI classification: PFOB in NWI near W5 &W6

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Corylus cornuta	10	y	FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Athyrium filix-femina	40	y	FAC
2. Tolmiea menziesii	30	y	FAC
3. Carex obnupta	trace		OBL
4. Urtica dioica	trace		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	60	y	FAC
2.			
	60	= 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[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: W4-DP3

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
0-6	10YR 3/2 &10YR 4/1	80 & 15	10 YR 5/6	5%			sandy loam	
6-18	10YR 2/1	95	5YR 4/6	5		M	silt loam	

[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): 11

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

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: Cheasty Trail Pilot Project City/County: Seattle/King County Sampling Date: April 5, 2017

Applicant/Owner: City of Seattle State: WA Sampling Point: W4- DP3

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope, flat Local relief (concave, convex, none): concave Slope (%): 40

Subregion (LRR): LRR A Lat: 47.563111 Long: -122.299658 Datum: NAD 1983

Soil Map Unit Name: no data available NWI classification: PFOB

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: buffer and southern edge of wetland had been disturbed by human activity. The area has been restored and replanted.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	5	Y	FAC
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Rubus spectabilis	80	y	FAC
2. Oemleria cerasiformis	trace	N	FACU
3.			
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Lysichiton americanus	trace	n	OBL
2. Equisetum telmateia	80	y	FACW
3. Athyrium filix-femina	15	n	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	10	n	FAC
2. Hedera helix	60	Y	FACU
	70 = 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W4 DP2

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
0-14	10YR 2/2	100					sandy loam	
14-21	2.5Y 4/2	70	7.5YR 4/6	30	RM	M	loamy sand	

[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): 14

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 19, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W4 DP2

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 40

Subregion (LRR): LRR A Lat: 47.563192 Long: -122.299588 Datum: NAD 1983

Soil Map Unit Name: none NWI classification: PFOB

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus laurocerasus	20	y	FACU
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Corylus cornuta	70	y	FACU
2. Rubus spectabilis	5		FAC
3. Ilex aquifolium	15		FACU
4. Hedera helix	80	y	FACU
5.			
	170 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	65	y	FACU
2. Equisetum telmateia	trace		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ________

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: plot on relatively steep slope

SOIL

Sampling Point: W4-DP1

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
0-7	10YR 2/1	100		0			silty sandy loam	
7-24	10YR 2/1 & 2.5Y 3/1	45&45	7.5YR 4/3	10	RD	M	silty sandy loam	

[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): 12, seep at 4”

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

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: Cheasty Trail Pilot Project City/County: Seattle/King County Sampling Date: Oct 19, 2016

Applicant/Owner: City of Seattle State: WA Sampling Point: W4- DP1

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope, flat Local relief (concave, convex, none): concave Slope (%): 40

Subregion (LRR): LRR A Lat: 47.563111 Long: -122.299658 Datum: NAD 1983

Soil Map Unit Name: no data available NWI classification: PFOB

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: buffer and southern edge of wetland had been disturbed by human activity. The area has been restored and replanted. Plot is on the edge of the wetland boundary, vegetation doesn't meet because upland plants are included in the plot.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Sorbus aucuparia	5	y	UPL
2. Prunus laurocerasus	5	y	FACU
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Rubus spectabilis	50	y	FAC
2. Corylus cornuta	trace	n	FACU
3. Oemleria cerasiformis	trace	n	FACU
4. Hedera helix	80	y	FACU
5.			
	130	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Equisetum telmateia	15	y	FACW
2. Polystichum munitum	5	y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	trace	n	FAC
2.			
	trace	= Total Cover	
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species 15	x 2 = 30
FAC species 50	x 3 = 150
FACU species 90	x 4 = 360
UPL species	x 5 =
Column Totals: 155 (A)	540 (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: Acer macrophylum is upslope of the plot, rooted outside of the plot, thus excluded. Hedera helix is invasive (cover 80-100% of the ground in buffer which stretches into the fringe of the wetland), it is not found in the wetter areas of the wetland. The area has been restored and replanted. Plot is on the edge of the wetland boundary, on a steep slope and thus vegetation from upland is included in the plot.

SOIL

Sampling Point: W3 DP4

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
0-9	10YR 2/2	100						sandy loam
9-20	10YR 3/3	100						gravelly sandy loam

[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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 19, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W3-DP4

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 20

Subregion (LRR): LRR A Lat: 47.562771 Long: -122.298799 Datum: NAD1983

Soil Map Unit Name: na NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ☐ 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophylum	70	y	FACU
2. Prunus laurocerasus	5		FACU
3.			
4.			
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Corylus cornuta	5		FACU
2. Oemleria cerasiformis	30	y	FACU
3. Mahonia aquifolium	trace		FACU
4. Hedera helix	50	y	FACU
5.			
	65	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Equisetum telmateia	trace		FACW
2. Polystichum munitum	50	y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	trace	y	FAC
2.			
	trace	= Total Cover	
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: included RUAR as dominant b/c it's the only vine.

SOIL

Sampling Point: W3 Dp3

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 %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	98	7.5YR 3/4	2	C	matrix	sandy loam	
9-20	5Y 5/2 & 5Y 4/1	85&10	10YR 4/6	5	C	matrix	loamy sandy	2 matrix colors

[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): 7

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 19, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W3 DP3

Investigator(s): Claire Hoffman, Michael Muscari Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 20

Subregion (LRR): LRR A Lat: 47.562733 Long: -122.298868 Datum: NAD1983

Soil Map Unit Name: na NWI classification: PFOB, PEM1B

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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.)			
2.			
3.			
4.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Corylus cornuta	10		FACU
2. .Hedera helix	70	y	FACU
3.			
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Equisetum telmateia	60	y	FACW
2. Polystichum munitum	20		FACU
3. Urtica dioica	20		FAC
4. Athyrium filix-femina	50	y	FAC
5			
6.			
7.			
8.			
9.			
10.			
11.			
	150 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	trace	y	FAC
2.			
	trace = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: Acer macrophyllum (rooted outside the wetland), included RUAR as dominant because is the only vine

SOIL

Sampling Point: W2 DP2

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 2/2	100					sandy loam	

[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: soil moist but not saturated

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W2 DP2

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR): LRR A Lat: 47°33'49.57"N Long: 122°18'1.56"W Datum: NAD1983

Soil Map Unit Name: na 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	60	y	FACU
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Oemleria cerasiformis	5	y	FACU
2. Corylus cornuta	20	y	FACU
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Polystichum munitum	80	y	FACU
2. Urtica dioica	trace		FAC
3. Vaccinium parvifolium	5		FACU
4. Hedera helix	15		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	trace		FAC
2.			
	trace = Total Cover		
% Bare Ground in Herb Stratum 0			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W2 DP1

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
0-8	10YR 2/1	100					sandy loam	
8-16	10YR 4/2	90	10YR4/6	10			sandy loam	

[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): 9

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): surface

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: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W2 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR A Lat: 47.561600 Long: -122.299231 Datum: NAD1983

Soil Map Unit Name: na 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: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	trace		FACU
2. Populus balsamifera	10	y	FAC
3.			
4.			
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Corylus cornuta	5	y	FACU
2. Alnus rubra	trace		FAC
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Equisetum telmateia	90	y	FACW
2. Tolmiea menziesii	10		FAC
3. Lysichiton americanus	5		OBL
4. Athyrium filix-femina	30		FAC
5. Urtica dioica	5		FAC
6. Hedera helix	20		FACU
7.			
8.			
9.			
10.			
11.			
	160	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	5	y	FAC
2.			
	5	= Total Cover	
% Bare Ground in Herb Stratum 10			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: W1 DP2

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
0-9	7.5YR 2.5/2	100					sandy loam	
9-16	2.5Y 5/1	80	7.5YR 4/4	20			loamy sand with cobbles	
16-18	2.5Y 5/2	100					sandy clay loam	

[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: one of the rainiest Octobers on record, very rainy night before and until ~9:30am. Meets criteria for B8, but seems unusual it is not wet at all given rainfall.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W1 DP2

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): at base of slope Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): LRR A Lat: 47.561071 Long: -122.300474 Datum: NAD1983

Soil Map Unit Name: na 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: likely disturbed in the past

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	85	y	FAC
2.			
3.			
4.			
	85	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. grass sp.	5		
2. Hedera helix	30	y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	10	y	FAC
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[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: primarily bare ground

SOIL

Sampling Point: W1 DP1

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
0-9	7.5YR 2.5/1	100					sandy loam	
9-20	7.5YR 2.5/1 & 2.5Y 5/1	40&40	7.5YR 4/6	20		M	sandy loam with clay	mixed matrix

[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: ground hard, compacted

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: one of the rainiest October on record, very rainy night before and until ~9:30am.

Site visit April 5, 2017 - saturated to the surface, and ponding approximately 3 inches in area that had surface soil cracks in October.

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

Project/Site: Cheasty Trail Pilot Project City/County: Seattle, King Sampling Date: Oct 31, 2016

Applicant/Owner: City of Seattle Parks State: WA Sampling Point: W1 DP1

Investigator(s): Claire Hoffman, Jessica Redman Section, Township, Range: SE-16-24-4

Landform (hillslope, terrace, etc.): at base of slope Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR): LRR A Lat: 47.561068 Long: -122.300669 Datum: NAD1983

Soil Map Unit Name: na 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: likely disturbed in the past

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus balsamifera	60	y	FAC
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 10)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5)			
1. Juncus effusus	10	y	FACW
2. Polystichum munitum	5	y	FACU
3. Hedera helix	10	y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	25		
Woody Vine Stratum (Plot size: 5)			
1. Rubus armeniacus	20	y	FAC
2.			
= Total Cover	20		

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 3.05

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:

APPENDIX C: ECOLOGY RATING FORMS

Washington State Wetland Rating System

The observed wetlands were rated using the 2014 Washington State Department of Ecology's *Wetland Rating System for Western Washington* (Hruby, 2014). This system was developed by Ecology to differentiate wetlands based on their sensitivity to disturbance, their significance, their rarity, our ability to replace them, and the beneficial functions they provide to society. Wetlands are categorized using the Ecology rating system according to the following criteria:

Category I wetlands represent a unique or rare wetland type; or are more sensitive to disturbance; or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime.

Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions.

Category III wetlands have a moderate level of function. They have been disturbed in some ways, and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

Category IV wetlands have the lowest levels of functions and are often heavily disturbed.

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 1 Date of site visit: 4/5/2017

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training Mar-17

HGM Class used for rating Depressional & Slope Wetland has multiple HGM classes? ☑ Yes ☐ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	M	M	L	
Landscape Potential	M	M	L	
Value	H	M	M	**Total**
Score Based on Ratings	7	6	4	**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	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	X

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	5
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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☑ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

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

☑ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☐ NO - go to 7 ☑ **YES** - The wetland class is **Depressional**

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

☑ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

NOTES and FIELD OBSERVATIONS:
wetland is depressional / slope

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	1
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	3
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	4
Total for D 1 Add the points in the boxes above	**8**

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	0
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	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	**1**

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

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 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 ___1___

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 or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	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 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 wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit points = 5 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	3
Total for D 4 Add the points in the boxes above	**6**

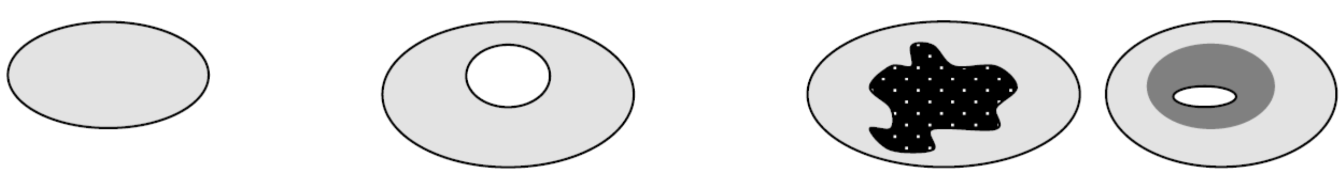
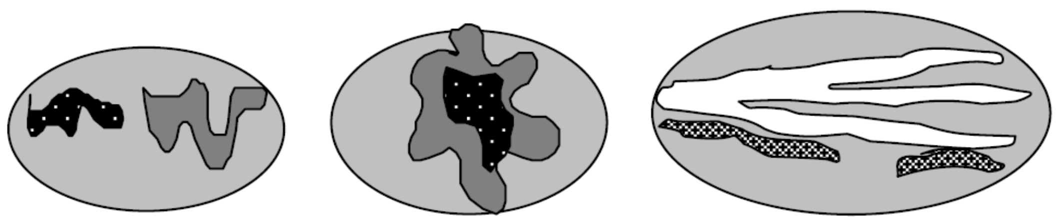
Rating of Site Potential If score is: ☐**12 - 16 = H** ☑**6 - 11 = M** ☐**0 - 5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic function of the site?	
D 5.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
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	**2**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): ● Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 ☑ ● Surface flooding problems are in a sub-basin farther down-gradient. points = 1 ☐ Flooding from groundwater is an issue in the sub-basin. points = 1 ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why points = 0 ☐ There are no problems with flooding downstream of the wetland. points = 0	1
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	**1**

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

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed — 4 structures or more: points = 4 ☐ Emergent — 3 structures: points = 2 ☐ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points - 1 ☑ Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if*: ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated — 4 or more types present: points = 3 ☑ Seasonally flooded or inundated — 3 types present: points = 2 ☐ Occasionally flooded or inundated — 2 types present: points = 1 ☑ Saturated only — 1 types present: points = 0 ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** — **2 points** ☐ **Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^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, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points — **Low** = 1 point — **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3 points 	2

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	1
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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

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

WDFW Priority Habitats

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

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

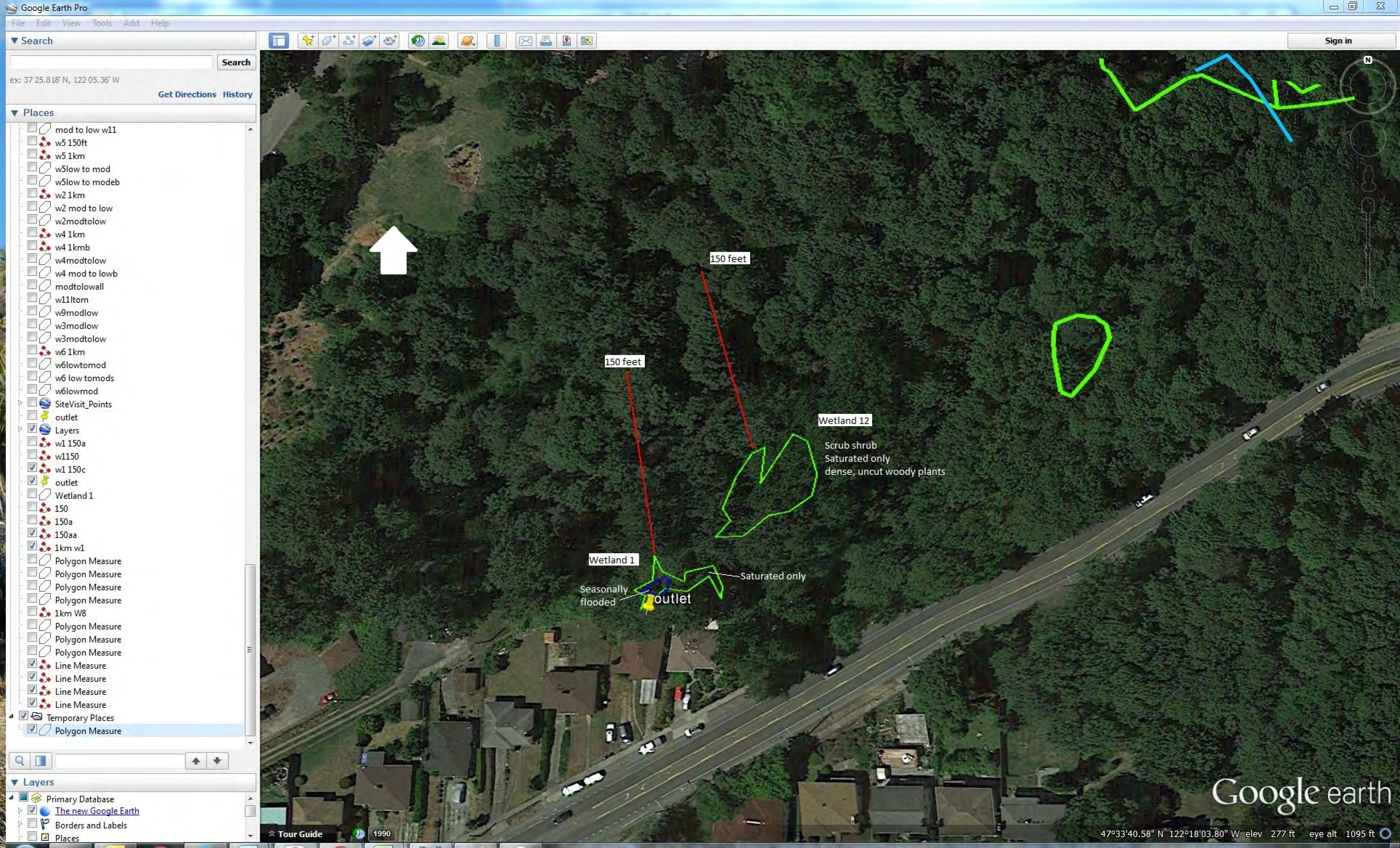
- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☐ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☑ No = **Is not a bog**	

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**	
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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	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Search
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outlet
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150aa
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Polygon Measure
Polygon Measure
Polygon Measure
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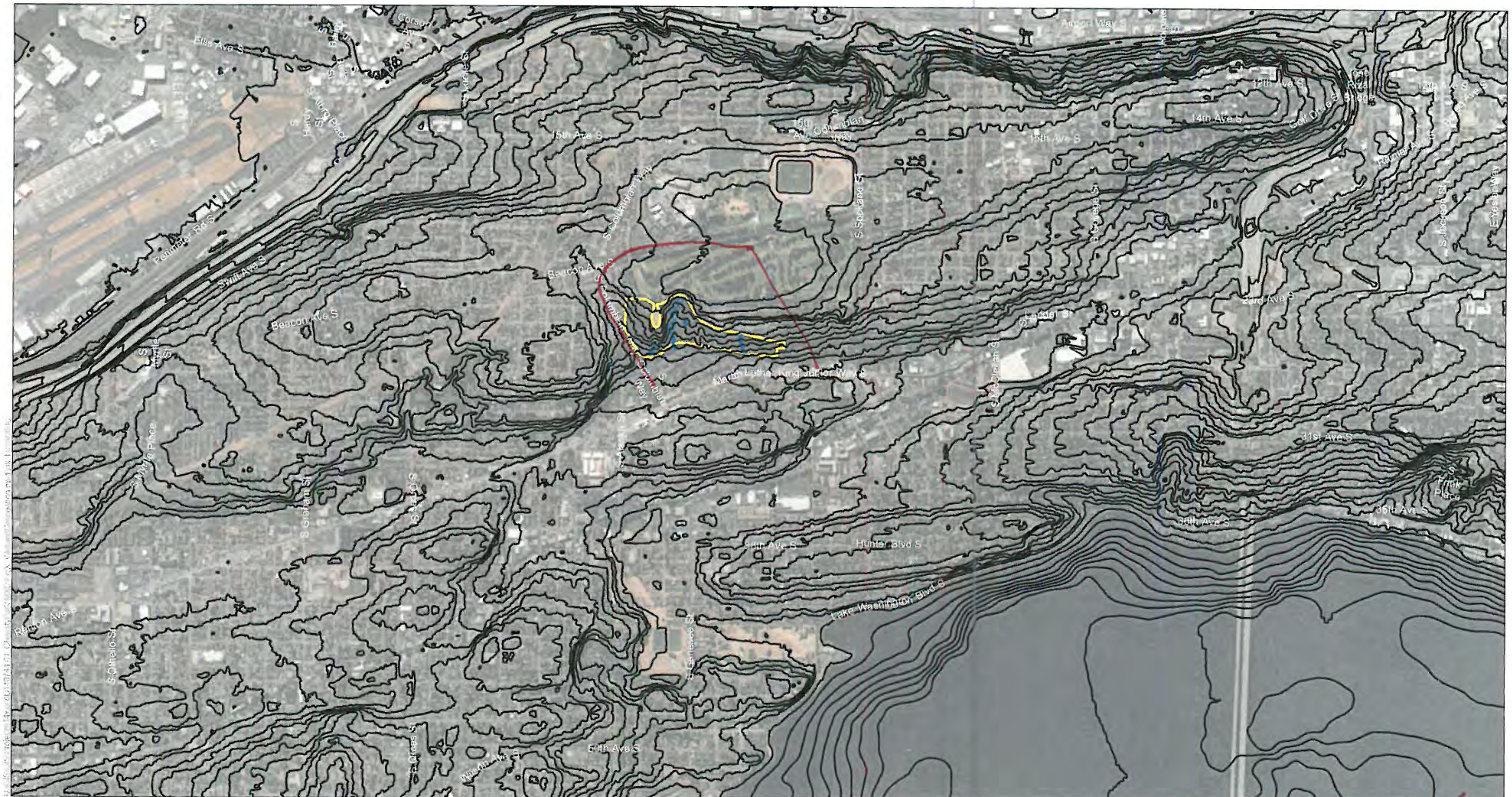
Polygon Measure
Polygon Measure
Polygon Measure
Line Measure
Line Measure
Line Measure
Line Measure
Temporary Places
Polygon Measure
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Sign in
150 feet
150 feet
Wetland 12
Scrub shrub
Saturated only
dense, uncut woody plants
Wetland 1
Saturated only
Seasonally
flooded
outlet
Tour Guide
1990
Google earth
47°33'40.58" N 122°18'03.80" W elev 277 ft eye alt 1095 ft



SOURCE: ESA 2013 (aerial), ESA 2016, OSM 2014

→N Contributing Basin

Cheasty Trail Environmental Review. 140744.01

Figure 2

Wetland Delineation

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Atlas

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

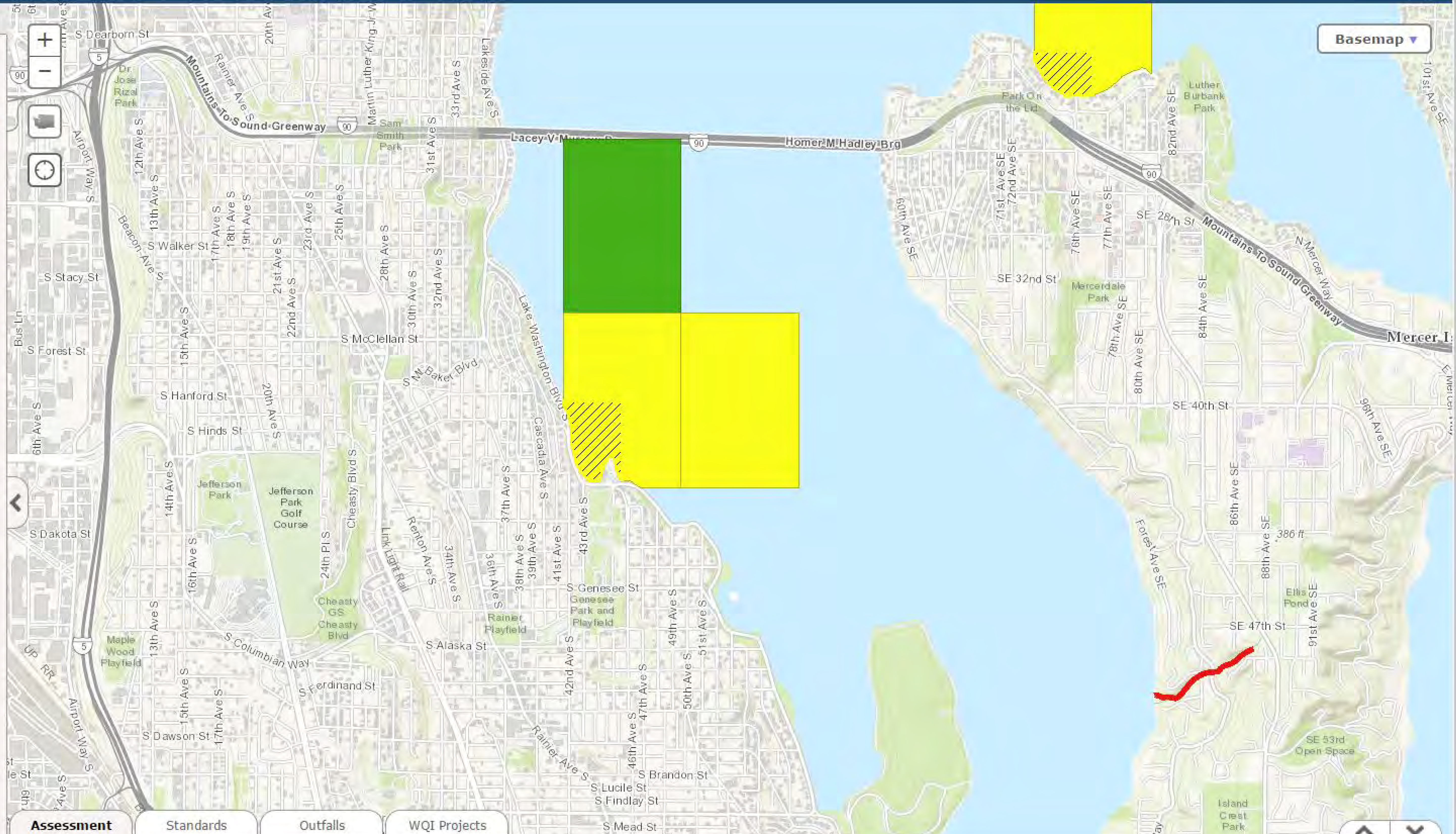
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

10%

0 0.2 0.4mi

Basemap



Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

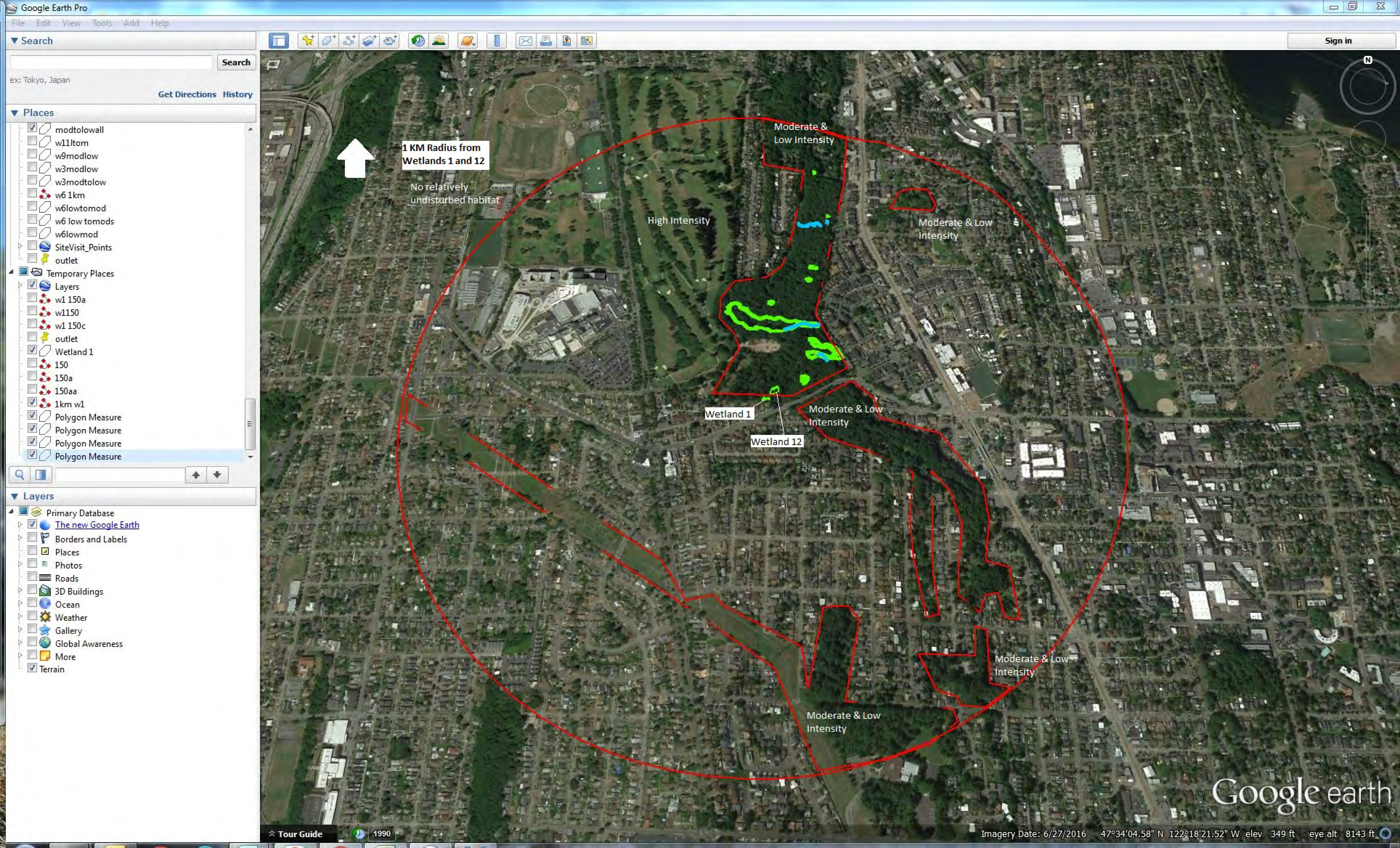
Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue


1 KM Radius from
Wetlands 1 and 12
No relatively
undisturbed habitat
High Intensity
Moderate &
Low Intensity
Moderate & Low
Intensity
Wetland 1
Wetland 12
Moderate & Low
Intensity
Moderate & Low
Intensity
Moderate & Low
Intensity
Imagery Date: 6/27/2016 47°34'04.58" N 122°18'21.52" W elev 349 ft eye alt 8143 ft
Google earth

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 2 Date of site visit: 31-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Slope Wetland has multiple HGM classes? ☑ Yes ☐ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
		List appropriate rating (H, M, L)		
Site Potential	L	L	L	
Landscape Potential	L	L	L	
Value	H	M	M	**Total**
Score Based on Ratings	5	4	4	**13**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**Category**
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	**x**

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

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

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☐ NO - go to 5 ☑ **YES** - The wetland class is **Slope**

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

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

☐ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☐ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less points = 3 Slope is > 1% - 2% points = 2 Slope is > 2% - 5% points = 1 Slope is greater than 5% points = 0	1
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	3
Total for S 1 Add the points in the boxes above	**4**

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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other Sources Yes = 1 No = 0	0
Total for S 2 Add the points in the boxes above	**0**

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? A*nswer YES if there is a TMDL for the basin in which the 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*

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

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	1
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	**1**

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

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

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

1

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

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

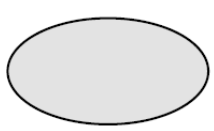
1

H 1.3. Richness of plant species
Count the number of plant species in the wetland that cover at least 10 ft^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, Canadian thistle***

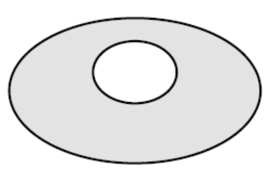
If you counted:	> 19 species	points = 2
	5 - 19 species	points = 1
	< 5 species	points = 0

1

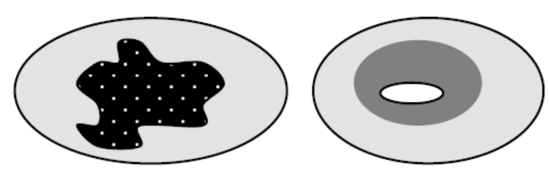
H 1.4. Interspersion of habitats
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



None = 0 points

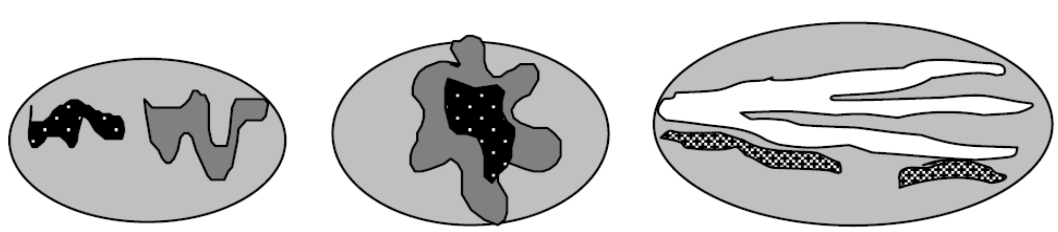


Low = 1 point



Moderate = 2 points

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



1

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	1
Total for H 1 Add the points in the boxes above	**5**

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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (7 % moderate & low intensity land uses / 2) = 3.5% If total accessible habitat is: > $^{1}/_{3}$ (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (22 % moderate & low intensity land uses / 2) = 11% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0	1

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

WDFW Priority Habitats

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

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

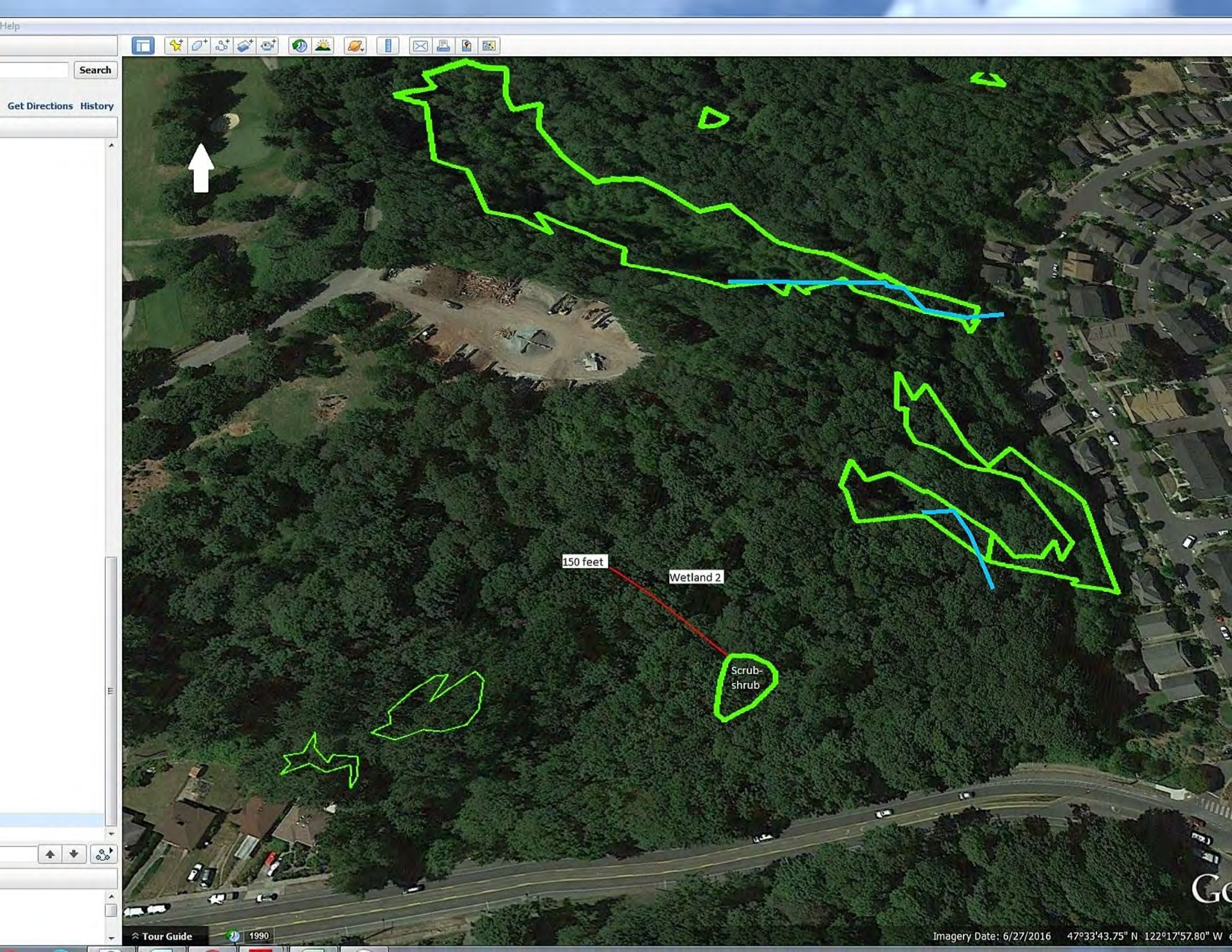
- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches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

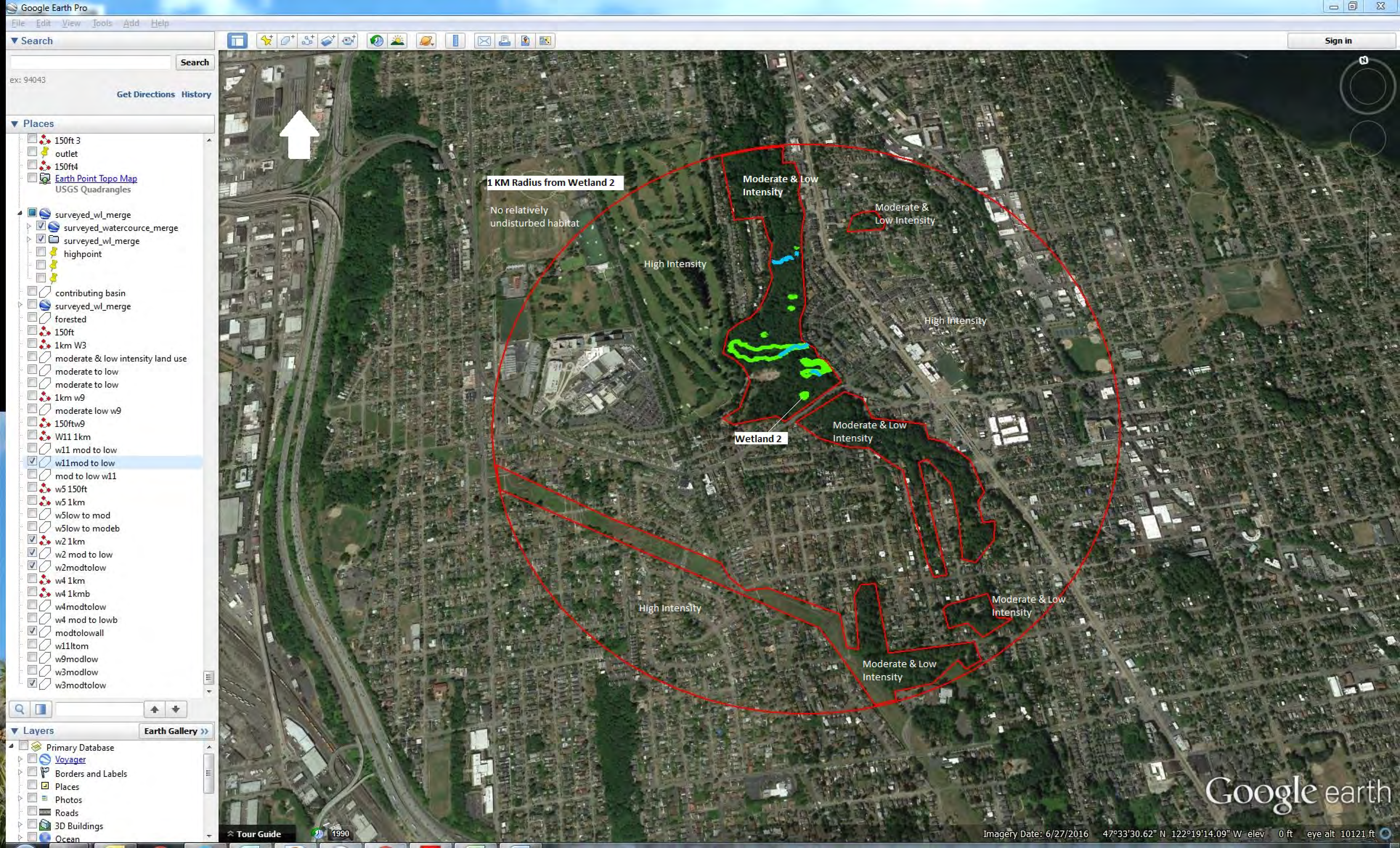
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☑ No = **Is not a bog**	

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**	
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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	


Help
Search
Get Directions
History
150 feet
Wetland 2
Scrub-shrub
Tour Guide
1990
Imagery Date: 6/27/2016
47°33'43.75" N 122°17'57.80" W


1 KM Radius from Wetland 2
No relatively undisturbed habitat
High Intensity
Moderate & Low Intensity
Moderate & Low Intensity
High Intensity
Wetland 2
Moderate & Low Intensity
High Intensity
Moderate & Low Intensity
Moderate & Low Intensity
Imagery Date: 6/27/2016 47°33'30.62" N 122°19'14.09" W elev 0 ft eye alt 10121 ft
Google earth

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Atlas

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

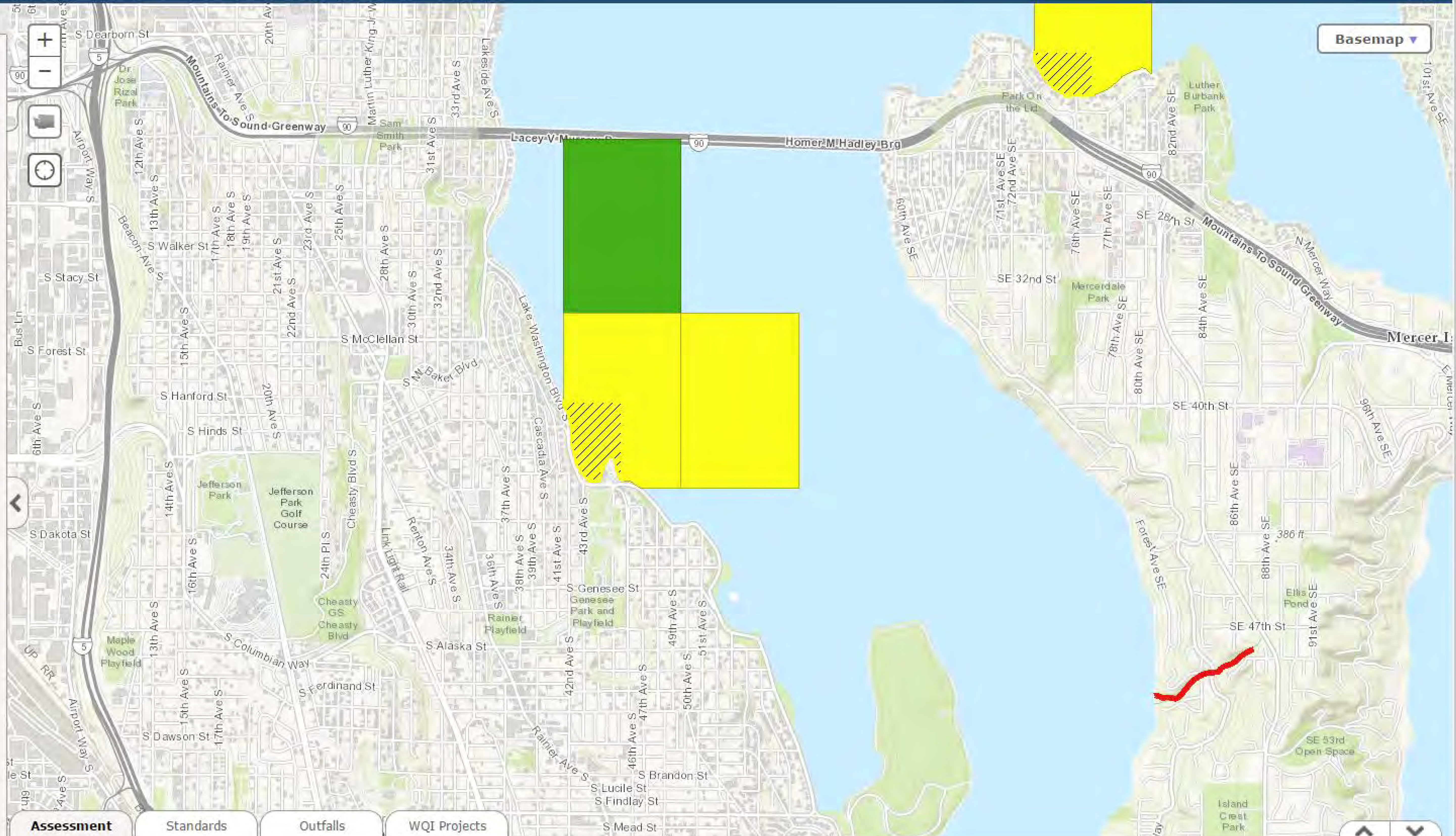
Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1



Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

Change map data transparency

10%

0 0.2 0.4mi

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 3 Date of site visit: 20-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
List appropriate rating (H, M, L)				
Site Potential	L	M	M	
Landscape Potential	L	L	L	
Value	H	H	M	**Total**
Score Based on Ratings	5	6	5	**16**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☐ NO - go to 5 ☑ **YES** - The wetland class is **Slope**

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

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

☑ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☑ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less points = 3 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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other Sources Yes = 1 No = 0	0
Total for S 2 Add the points in the boxes above	**0**

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? A*nswer YES if there is a TMDL for the basin in which the 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*

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	1

Rating of Site Potential If score is: ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

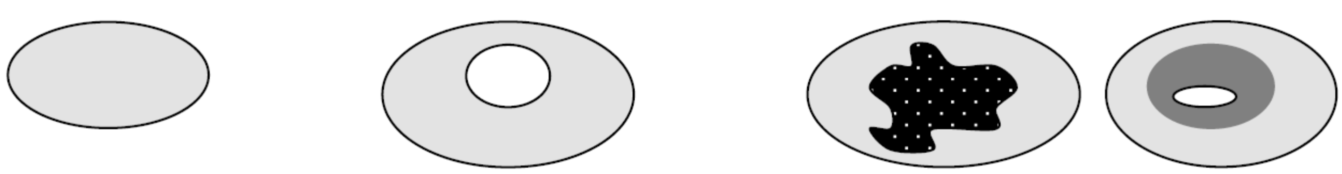
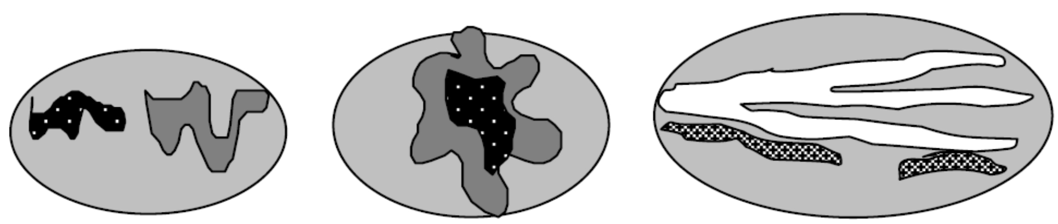
S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient 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	
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:
observed wetland continues into/around house immediately outside of park property. House may have water issus.

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed — 4 structures or more: points = 4 ☐ Emergent — 3 structures: points = 2 ☑ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points - 1 ☑ Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if*: ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated — 4 or more types present: points = 3 ☐ Seasonally flooded or inundated — 3 types present: points = 2 ☐ Occasionally flooded or inundated — 2 types present: points = 1 ☑ Saturated only — 1 types present: points = 0 ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☑ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** — **2 points** ☐ **Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^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, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3 points 	2

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	2
Total for H 1 Add the points in the boxes above	**7**

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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0	1

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

WDFW Priority Habitats

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

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

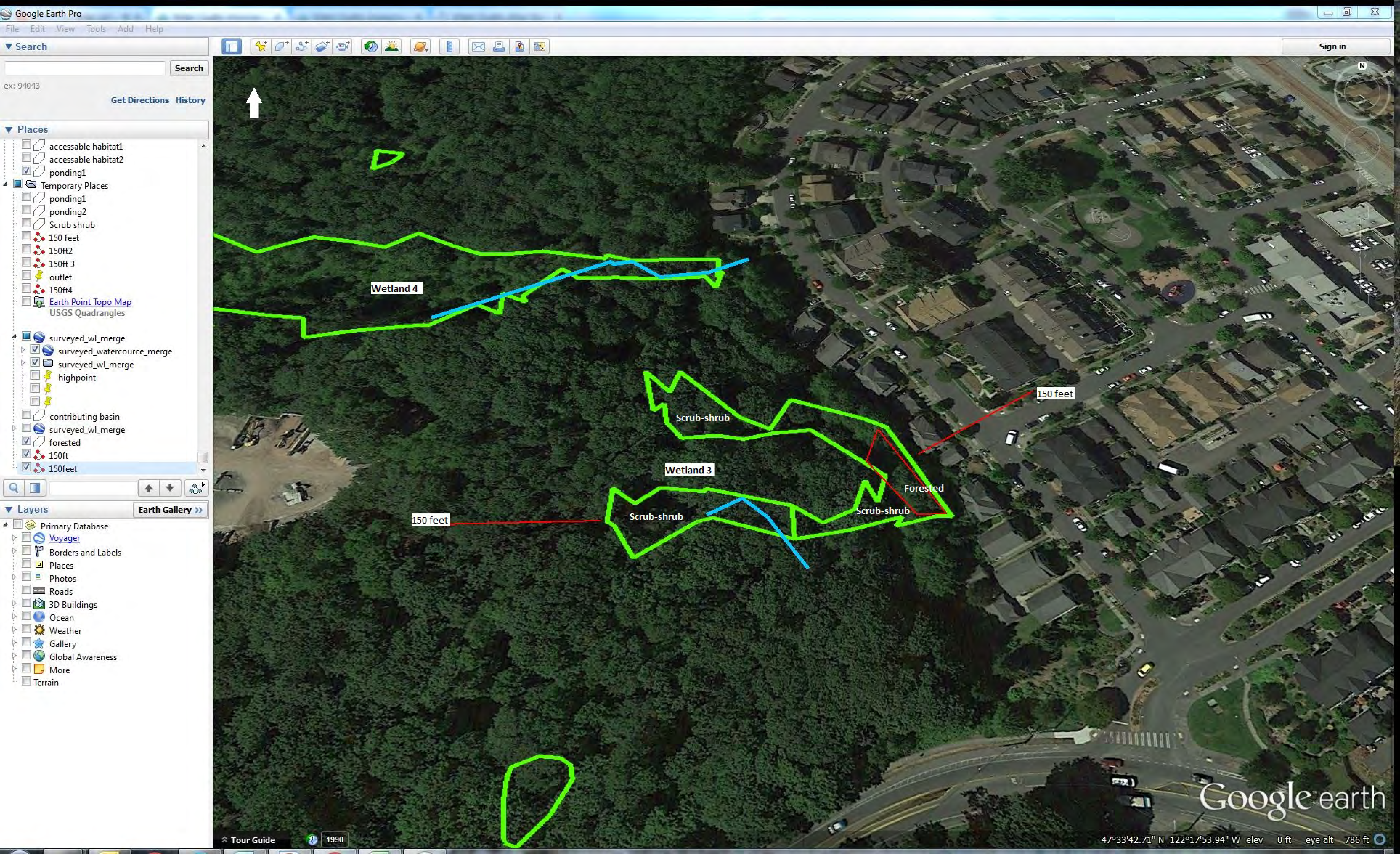
- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

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**	
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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	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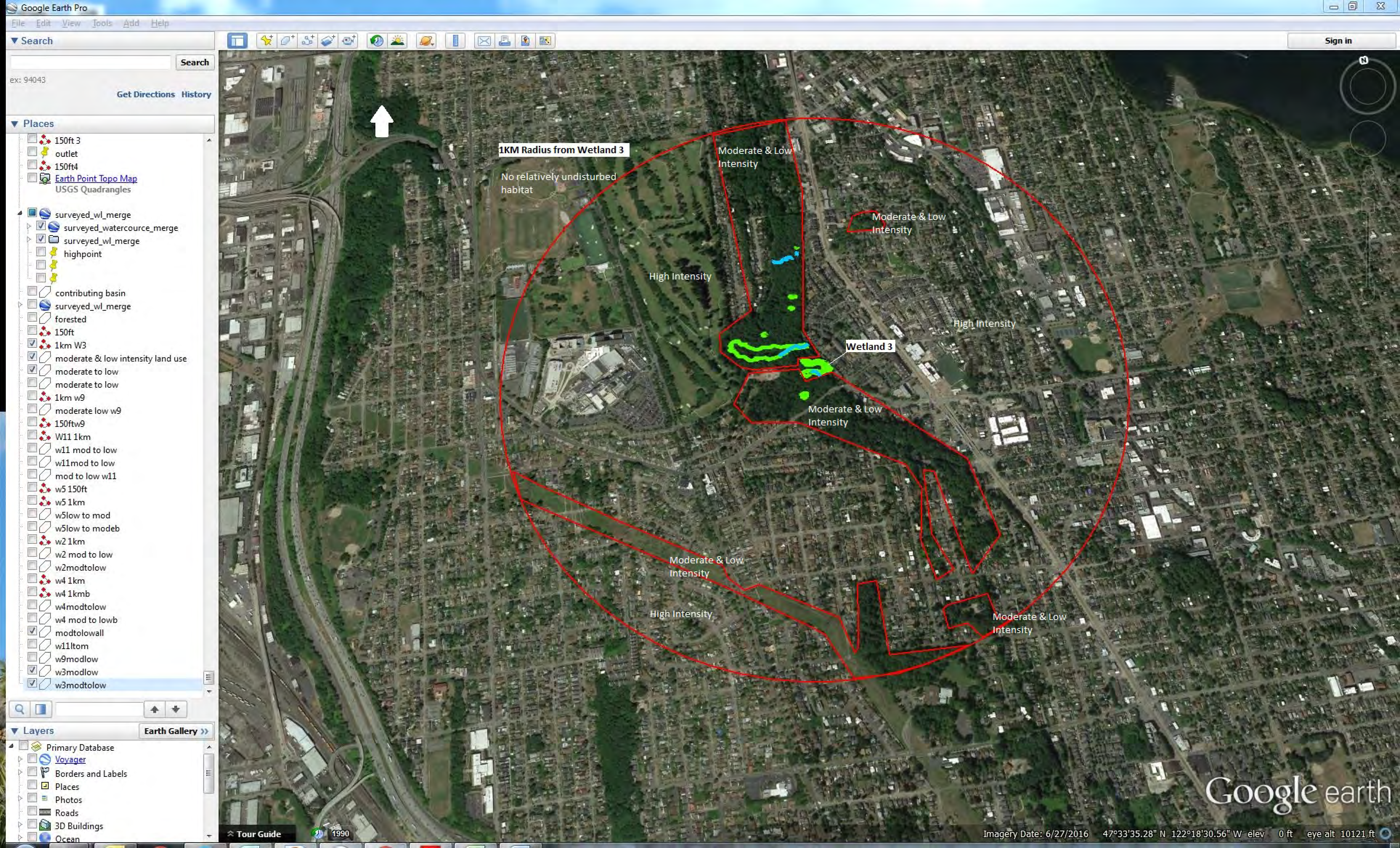

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surveyed_wl_merge
highpoint
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surveyed_wl_merge
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1km W3
moderate & low intensity land use
moderate to low
moderate to low
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W11 1km
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w2modtolow
w4 1km
w4 1kmb
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Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Sign in
1KM Radius from Wetland 3
No relatively undisturbed habitat
Moderate & Low Intensity
Moderate & Low Intensity
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DEPARTMENT OF ECOLOGY State of Washington

Washington State **Water Quality Atlas**

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Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

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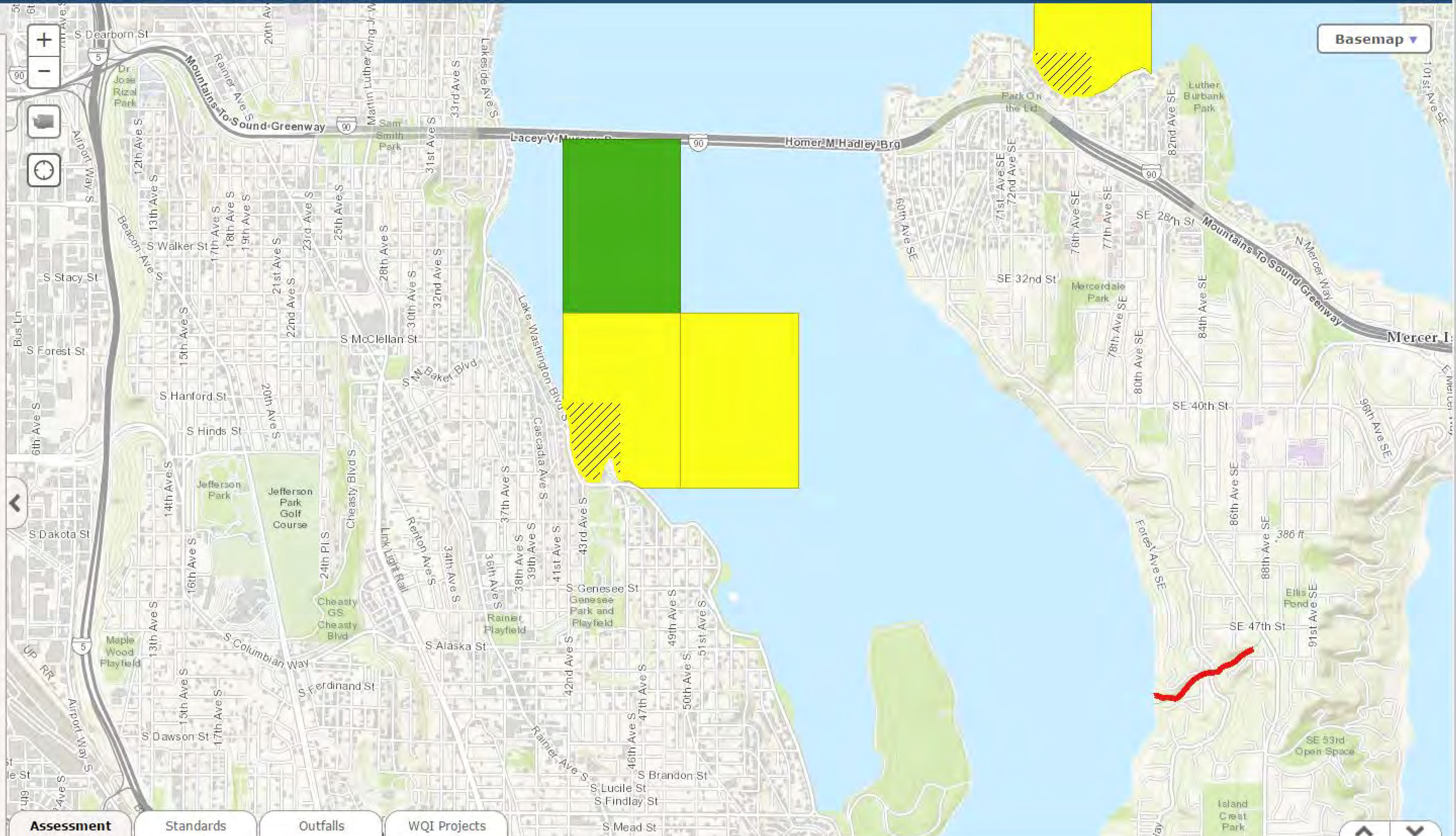


Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 4 Date of site visit: 20-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Depressional & Slope Wetland has multiple HGM classes? ☑ Yes ☐ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	M	M	M	
Landscape Potential	H	H	L	
Value	H	L	M	**Total**
Score Based on Ratings	8	6	5	**19**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	5
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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☑ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

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

☑ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☑ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☑ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

NOTES and FIELD OBSERVATIONS:
Wetland is depressional and slope. Wetland is on a slope and water flows to the east into a culvert (outlet). There are also areas of ponding.

Wetland name or number W4

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	1
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	**6**

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

D 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	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3? Source golf course; adjacent human disturbance & restoration Yes = 1 No = 0	1
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 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 W4

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) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 4 points = 2 points = 1 points = 0	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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet ☑ The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	points = 7 points = 5 points = 3 points = 3 points = 1 points = 0	5
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* ☑ The area of the basin is less than 10 times the area of the unit The area of the basin is 10 to 100 times the area of the unit The area of the basin is more than 100 times the area of the unit ☐ Entire wetland is in the Flats class	points = 5 points = 3 points = 0 points = 5	5
Total for D 4	Add the points in the boxes above	**10**

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

D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 5.2. Is > 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*

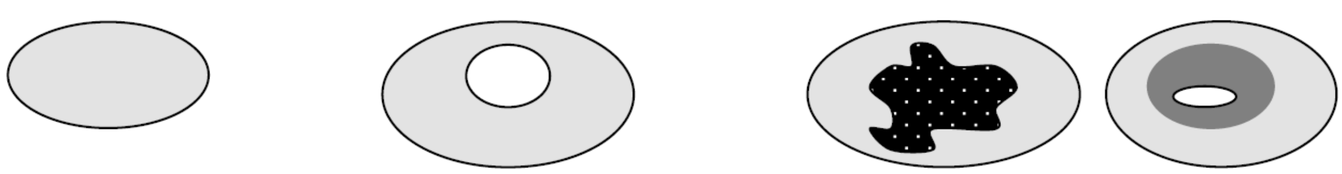
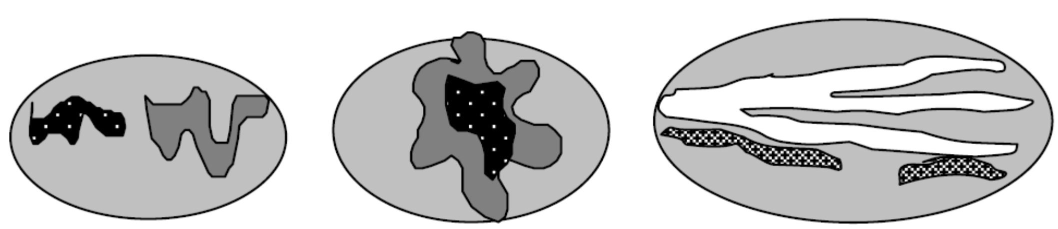
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): ● Flooding occurs in a sub-basin that is immediately down-gradient of unit. ☑ ● Surface flooding problems are in a sub-basin farther down-gradient. ☐ Flooding from groundwater is an issue in the sub-basin. ☐ 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 ☑ There are no problems with flooding downstream of the wetland.	points = 2 points = 1 points = 1 points = 0 points = 0	1
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	**1**

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

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ☐ Aquatic bed — 4 structures or more: points = 4 ☐ Emergent — 3 structures: points = 2 ☑ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points - 1 ☑ Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if*: ☑ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	2
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ☐ Permanently flooded or inundated — 4 or more types present: points = 3 ☑ Seasonally flooded or inundated — 3 types present: points = 2 ☐ Occasionally flooded or inundated — 2 types present: points = 1 ☑ Saturated only — 1 types present: points = 0 ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☑ Seasonally flowing stream in, or adjacent to, the wetland ☐ **Lake Fringe wetland** — **2 points** ☐ **Freshwater tidal wetland** — **2 points**	2
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^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, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3 points 	3

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	3
Total for H 1 — Add the points in the boxes above	**11**

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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

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

WDFW Priority Habitats

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

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

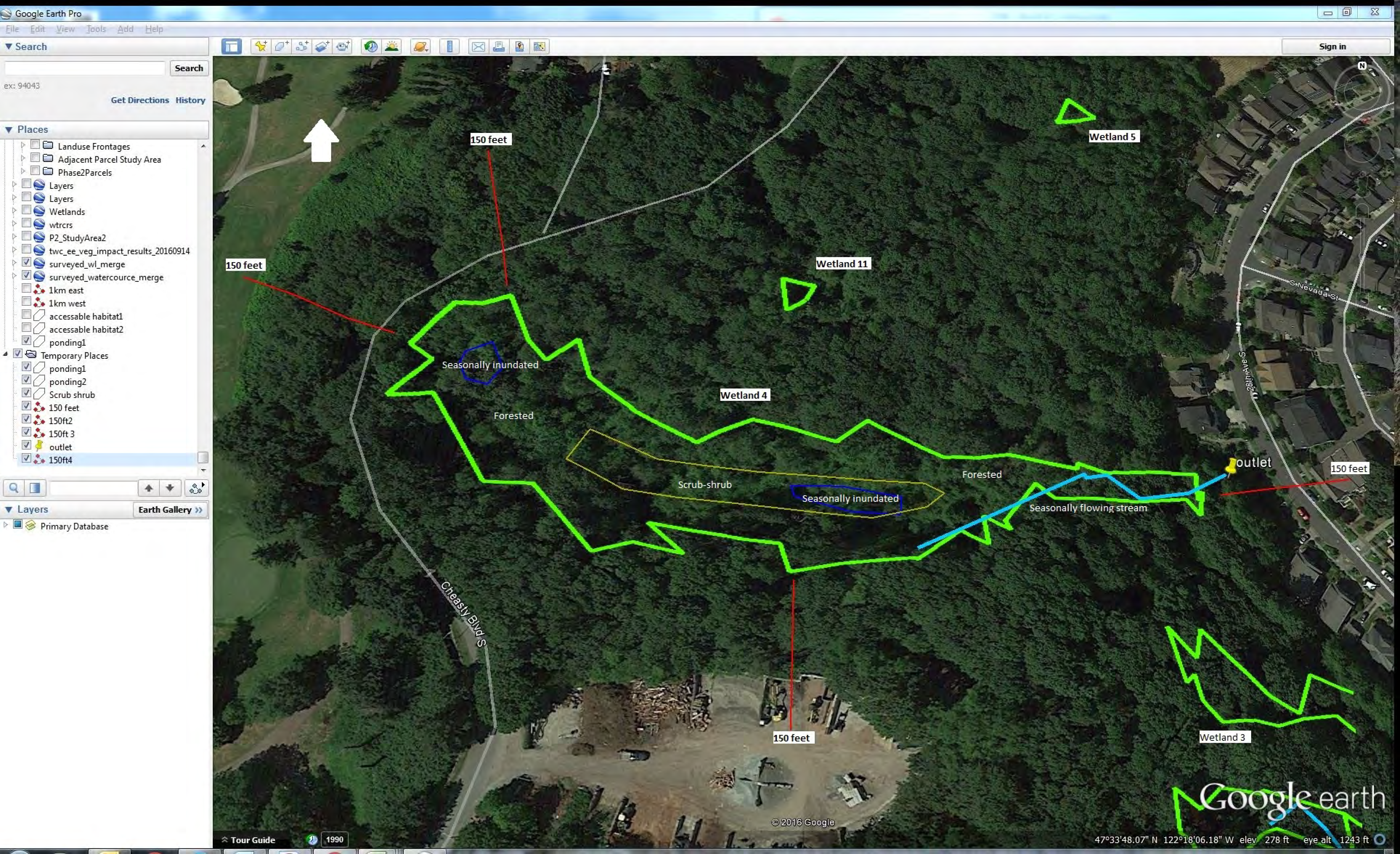
- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

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**	
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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	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Search
Search
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Get Directions History
Places
Landuse Frontages
Adjacent Parcel Study Area
Phase2Parcels
Layers
Layers
Wetlands
wtrcrs
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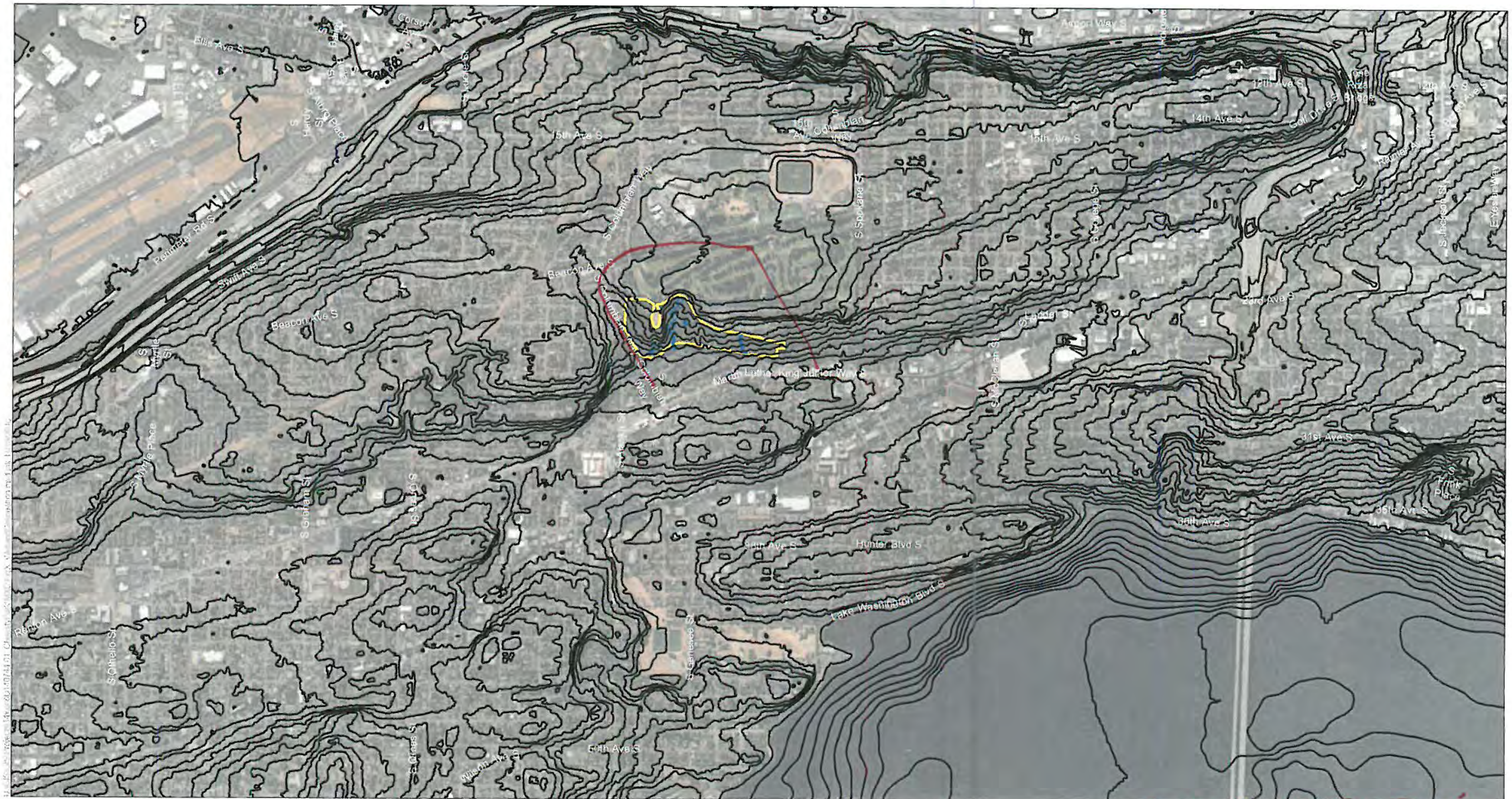
surveyed_watercource_merge
1km east
1km west
accessable habitat1
accessable habitat2
ponding1
Temporary Places
ponding1
ponding2
Scrub shrub
150 feet
150ft2
150ft 3
outlet
150ft4
Layers
Earth Gallery
Primary Database
Sign in
150 feet
150 feet
Wetland 5
Wetland 11
Seasonally inundated
Wetland 4
Forested
Scrub-shrub
Seasonally inundated
Forested
outlet
150 feet
Seasonally flowing stream
Cheasty Blvd S
S Nevada St
150 feet
Wetland 3
Google earth
© 2016 Google
Tour Guide
1990
47°33'48.07" N 122°18'06.18" W elev 278 ft eye alt 1243 ft



SOURCE: ESA 2013 (aerial), ESA 2016, OSM 2014

→N Contributing Basin

Cheasty Trail Environmental Review. 140744.01

Figure 2

Wetland Delineation

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Atlas

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

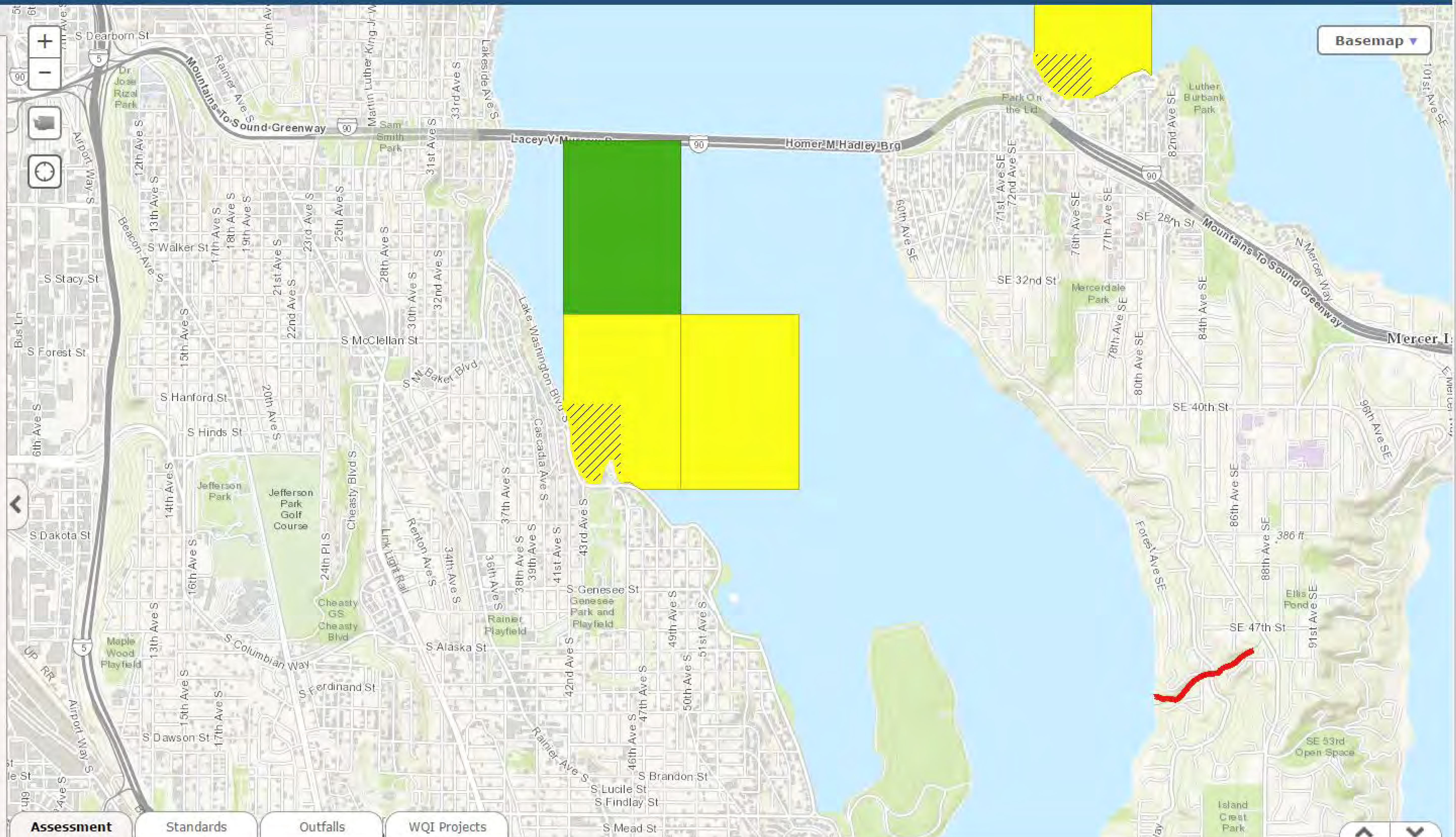
Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

10%

0 0.2 0.4mi



Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

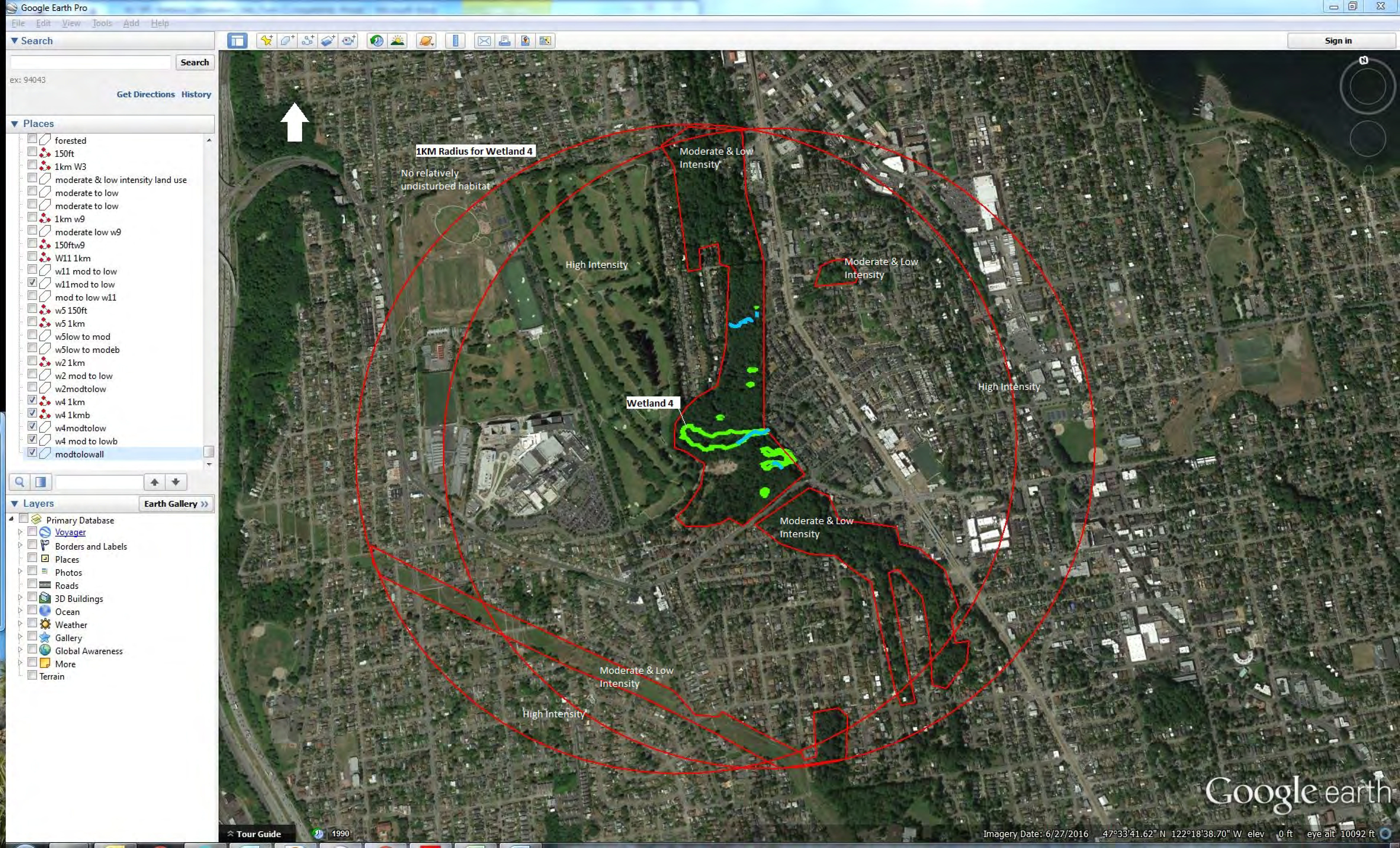
Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue



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Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Sign in
1KM Radius for Wetland 4
No relatively
undisturbed habitat
Moderate & Low
Intensity
High Intensity
Moderate & Low
Intensity
High Intensity
Wetland 4
Moderate & Low
Intensity
Moderate & Low
Intensity
High Intensity
Tour Guide
1990
Imagery Date: 6/27/2016 47°33'41.62" N 122°18'38.70" W elev 0 ft eye alt 10092 ft
Google earth

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 5 Date of site visit: 20-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
			List appropriate rating (H, M, L)	
Site Potential	L	M	L	
Landscape Potential	L	L	L	
Value	H	M	M	**Total**
Score Based on Ratings	5	5	4	**14**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☐ NO - go to 5 ☑ **YES** - The wetland class is **Slope**

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

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

☐ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☐ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less — points = 3 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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other Sources — Yes = 1 No = 0	0
Total for S 2 — Add the points in the boxes above	**0**

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? A*nswer YES if there is a TMDL for the basin in which the 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*

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	1

Rating of Site Potential If score is: ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	1
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	**1**

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

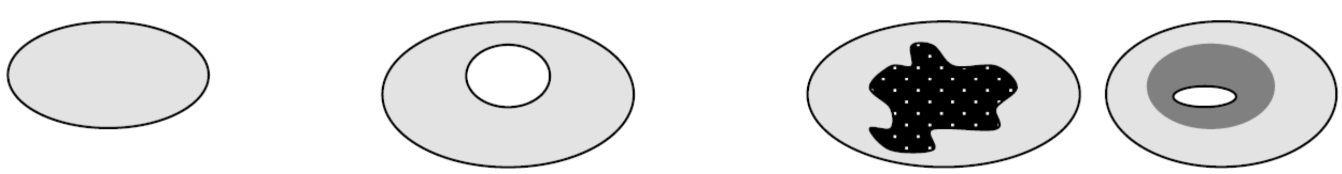
NOTES and FIELD OBSERVATIONS:
Dense uncut rigid plants are blackberries, emergent plants are not dense

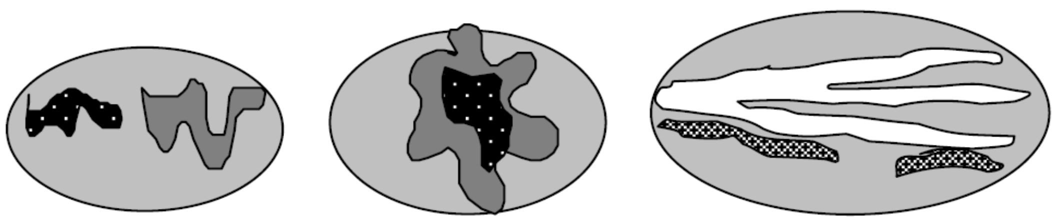
<table>
<tr><th colspan="2">These questions apply to wetlands of all HGM classes.
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat</th></tr>
<tr><td colspan="2">H 1.0. Does the site have the potential to provide habitat?</td></tr>
<tr><td>H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.

☐ Aquatic bed — 4 structures or more: points = 4
☐ Emergent — 3 structures: points = 2
☑ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points - 1
☐ Forested (areas where trees have > 30% cover) — 1 structure: points = 0
If the unit has a Forested class, check if:
☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon</td><td>0</td></tr>
<tr><td>H 1.2. Hydroperiods
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods).

☐ Permanently flooded or inundated — 4 or more types present: points = 3
☐ Seasonally flooded or inundated — 3 types present: points = 2
☐ Occasionally flooded or inundated — 2 types present: points = 1
☑ Saturated only — 1 types present: points = 0
☐ Permanently flowing stream or river in, or adjacent to, the wetland
☐ Seasonally flowing stream in, or adjacent to, the wetland
☐ Lake Fringe wetland — 2 points
☐ Freshwater tidal wetland — 2 points</td><td>0</td></tr>
<tr><td>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, Canadian thistle

If you counted: > 19 species — points = 2
5 - 19 species — points = 1
< 5 species — points = 0</td><td>1</td></tr>
<tr><td>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
</td><td>0</td></tr>
</table>

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	0
Total for H 1 — Add the points in the boxes above	**1**

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

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

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

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

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**

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*)

☐ 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 on p. 100).

☐ 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

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

☐ 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?

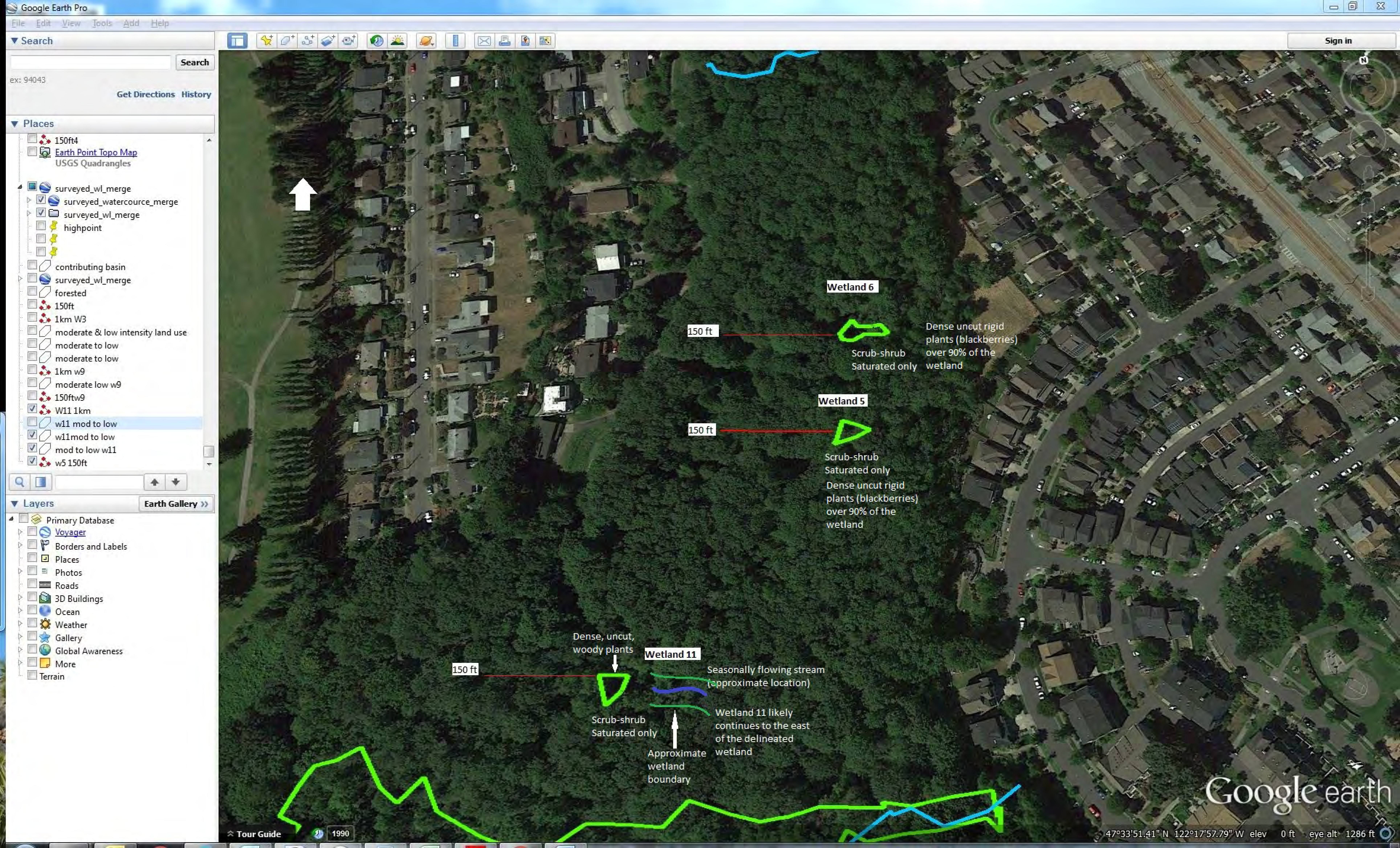
☐ Yes = **Category II** ☐ No - Go to **SC 6.3**

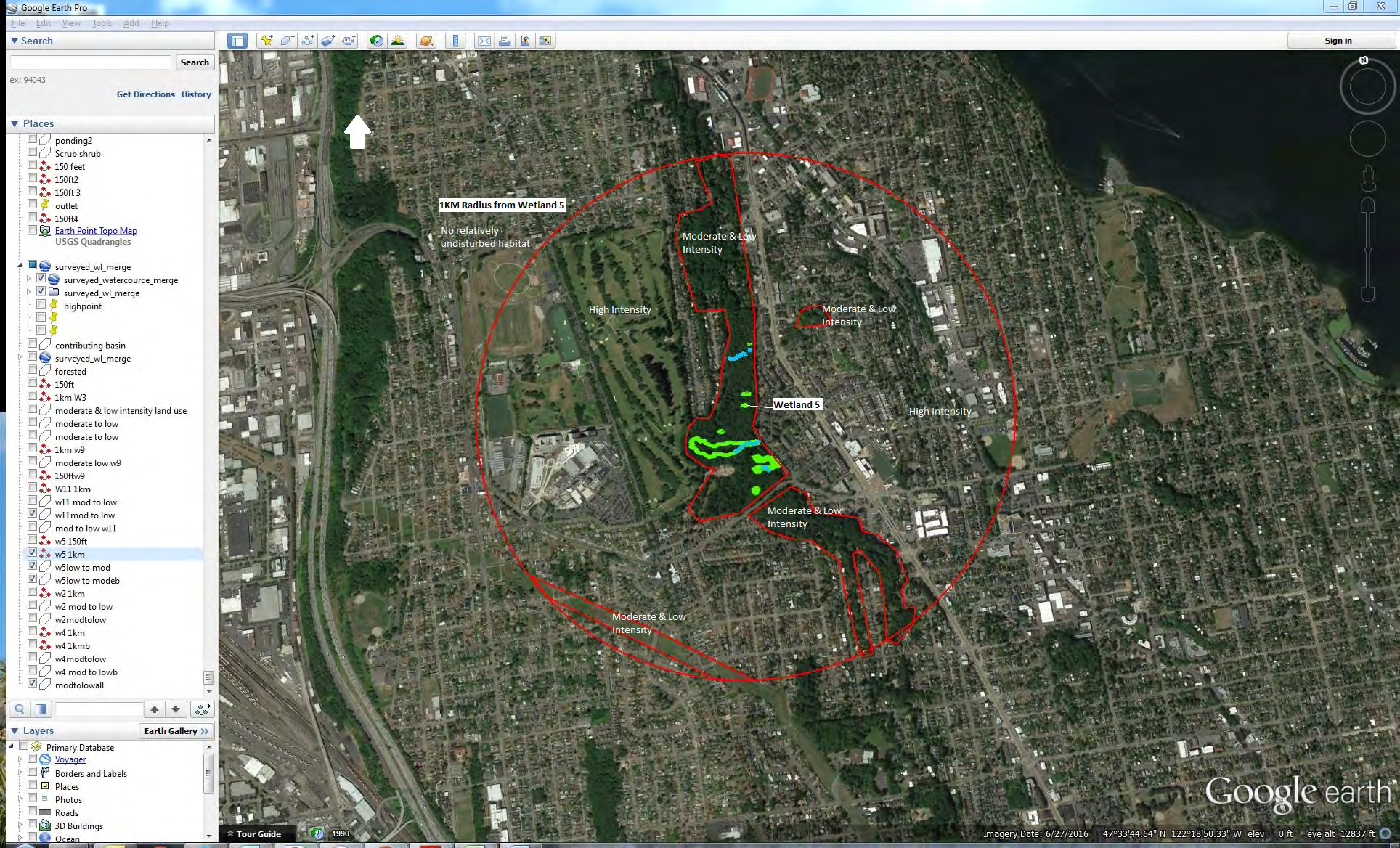
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac?

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

Category of wetland based on Special Characteristics

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


Google Earth Pro
File Edit View Tools Add Help
Search
Search
ex: 94043
Get Directions History
Places
150ft4
Earth Point Topo Map
USGS Quadrangles
surveyed_wl_merge
surveyed_watercource_merge
surveyed_wl_merge
highpoint
contributing basin
surveyed_wl_merge
forested
150ft
1km W3
moderate & low intensity land use
moderate to low
moderate to low
1km w9
moderate low w9
150ftw9
W11 1km
w11 mod to low
w11mod to low
mod to low w11
w5 150ft
Layers
Earth Gallery
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Sign in
Wetland 6
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid plants (blackberries) over 90% of the wetland
Wetland 5
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid plants (blackberries) over 90% of the wetland
Dense, uncut, woody plants
Wetland 11
150 ft
Seasonally flowing stream (approximate location)
Scrub-shrub
Saturated only
Wetland 11 likely continues to the east of the delineated wetland
Approximate wetland boundary
Google earth
Tour Guide
1990
47°33'51.41" N 122°17'57.79" W elev 0 ft eye alt 1286 ft


1KM Radius from Wetland 5
No relatively
undisturbed habitat
Moderate & Low
Intensity
High Intensity
Moderate & Low
Intensity
Wetland 5
High Intensity
Moderate & Low
Intensity
Moderate & Low
Intensity
Imagery Date: 6/27/2016 47°33'44.64" N 122°18'50.33" W elev 0 ft eye alt 12837 ft

HTTP 404 Error Message × | Water Quality Assessme × | Water Quality Atlas Map ×

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Atlas

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

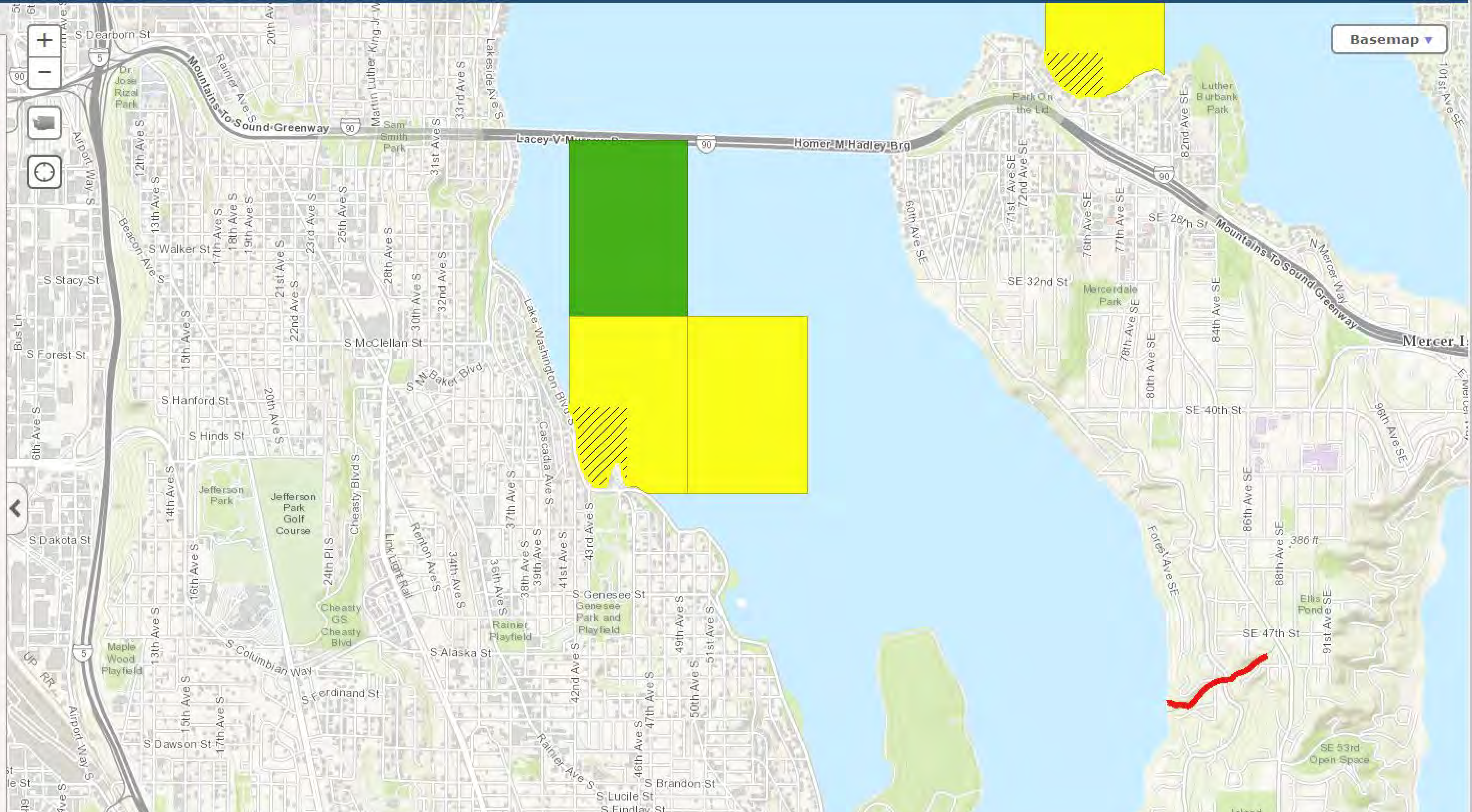
Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

10%

0 0.2 0.4mi



Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): wetland 6 Date of site visit: 31-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	L	M	M	
Landscape Potential	L	L	L	
Value	H	M	M	**Total**
Score Based on Ratings	5	5	5	**15**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	x

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☐ NO - go to 5 ☑ **YES** - The wetland class is **Slope**

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

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

☐ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☐ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less — points = 3 Slope is > 1% - 2% — points = 2 Slope is > 2% - 5% — points = 1 Slope is greater than 5% — points = 0	1
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	**3**

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

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

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? A*nswer YES if there is a TMDL for the basin in which the 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*

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	1

Rating of Site Potential If score is: ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	1
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	**1**

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

NOTES and FIELD OBSERVATIONS:
Dense uncut rigid plants are blackberries

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

☐ Aquatic bed	4 structures or more: points = 4	0
☐ Emergent	3 structures: points = 2	
☑ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points - 1	
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0	

If the unit has a Forested class, check if:

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

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

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

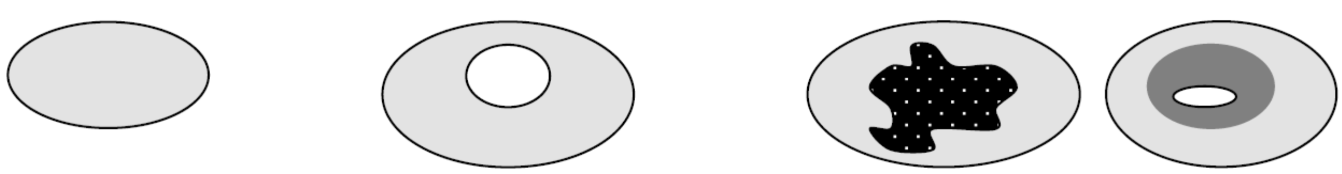
H 1.3. Richness of plant species

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, Canadian thistle***

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

H 1.4. Interspersion of habitats

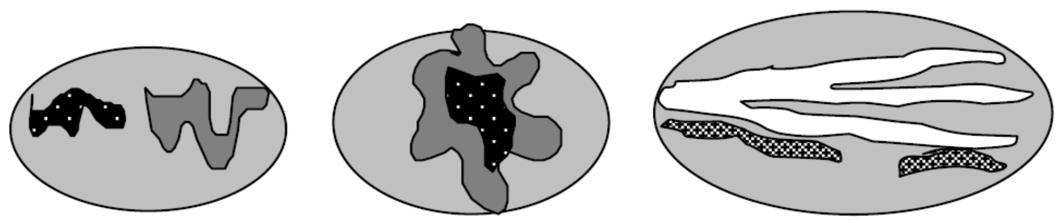
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



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

0

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



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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	0
Total for H 1 — Add the points in the boxes above	**1**

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

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

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

WDFW Priority Habitats

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

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

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**

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*)

☐ 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 on p. 100).

☐ 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

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

☐ 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?

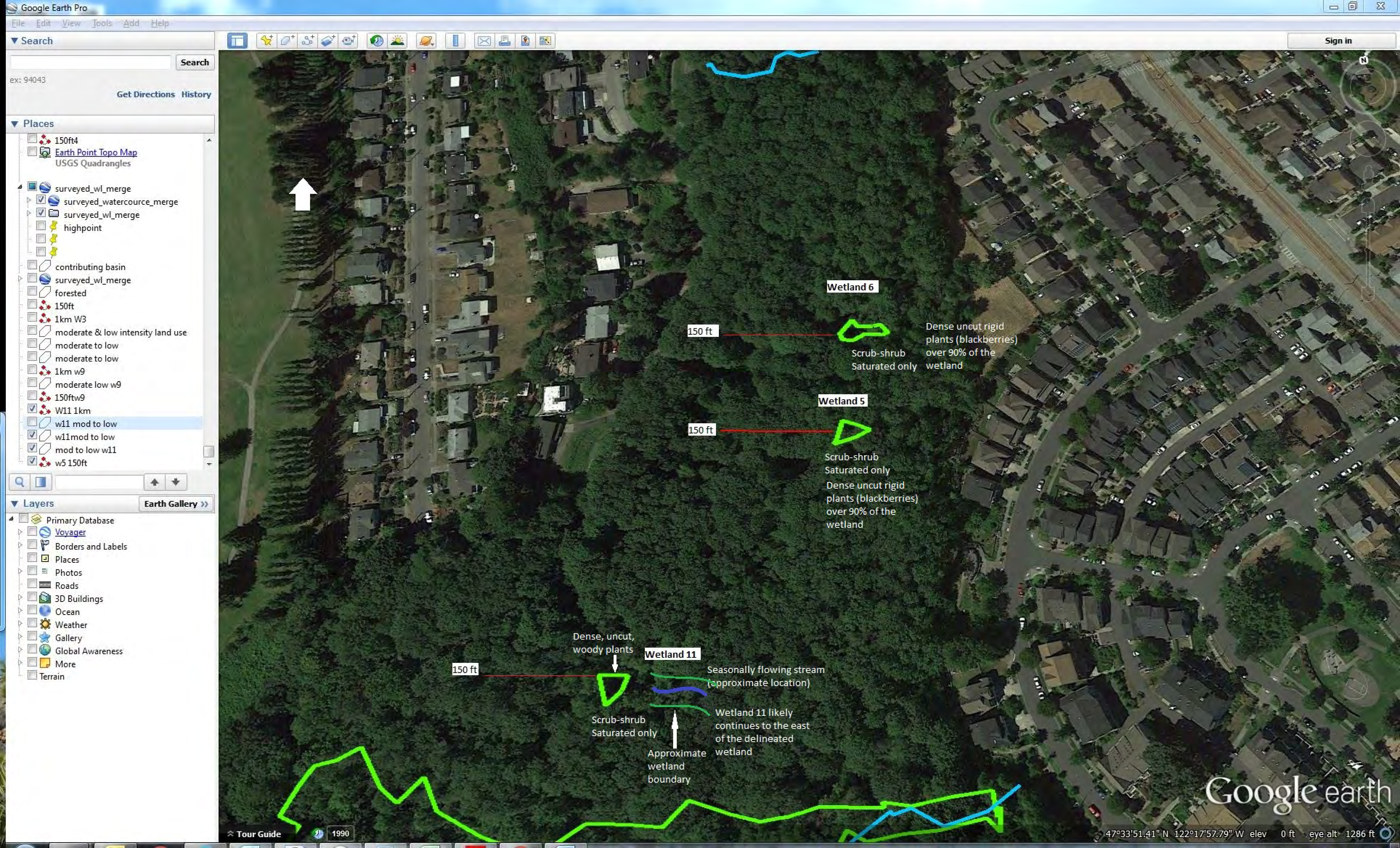
☐ Yes = **Category II** ☐ No - Go to **SC 6.3**

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**

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form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highpoint
contributing basin
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forested
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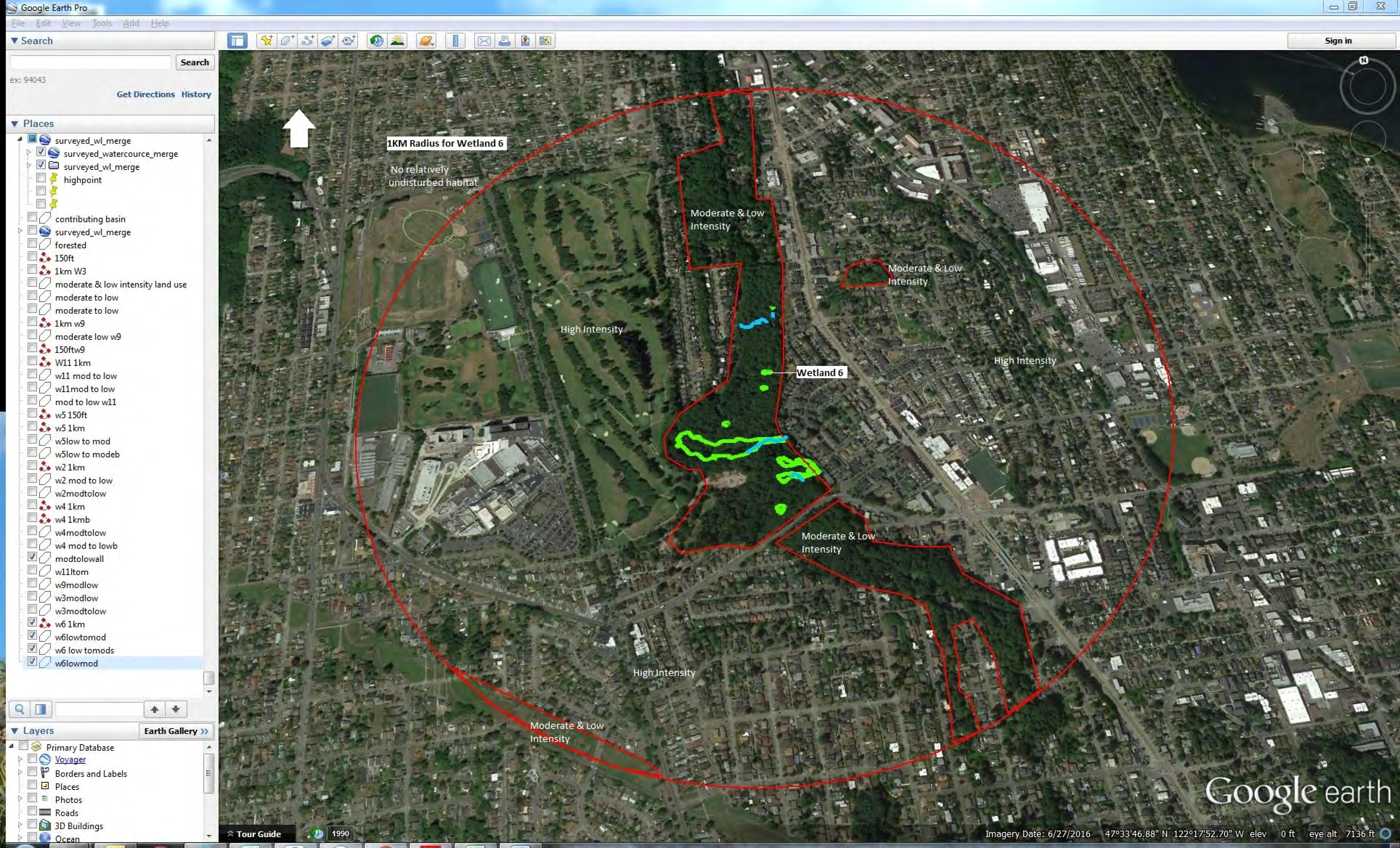
1km W3
moderate & low intensity land use
moderate to low
moderate to low
1km w9
moderate low w9
150ftw9
W11 1km
w11 mod to low
w11mod to low
mod to low w11
w5 150ft
Layers
Earth Gallery
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Sign in
Wetland 6
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid plants (blackberries) over 90% of the wetland
Wetland 5
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid plants (blackberries) over 90% of the wetland
Dense, uncut, woody plants
Wetland 11
150 ft
Seasonally flowing stream (approximate location)
Wetland 11 likely continues to the east of the delineated wetland
Scrub-shrub
Saturated only
Approximate wetland boundary
Tour Guide
1990
Google earth
47°33'51.41" N 122°17'57.79" W elev 0 ft eye alt 1286 ft



Google Earth Pro
1KM Radius for Wetland 6
No relatively
undisturbed habitat
Moderate & Low
Intensity
Moderate & Low
Intensity
High Intensity
Wetland 6
High Intensity
Moderate & Low
Intensity
High Intensity
Moderate & Low
Intensity
Imagery Date: 6/27/2016
47°33'46.88" N 122°17'52.70" W elev 0 ft eye alt 7136 ft
Google earth

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State **Water Quality Atlas**

Home **Add Map Data** **Clear Map Data**

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

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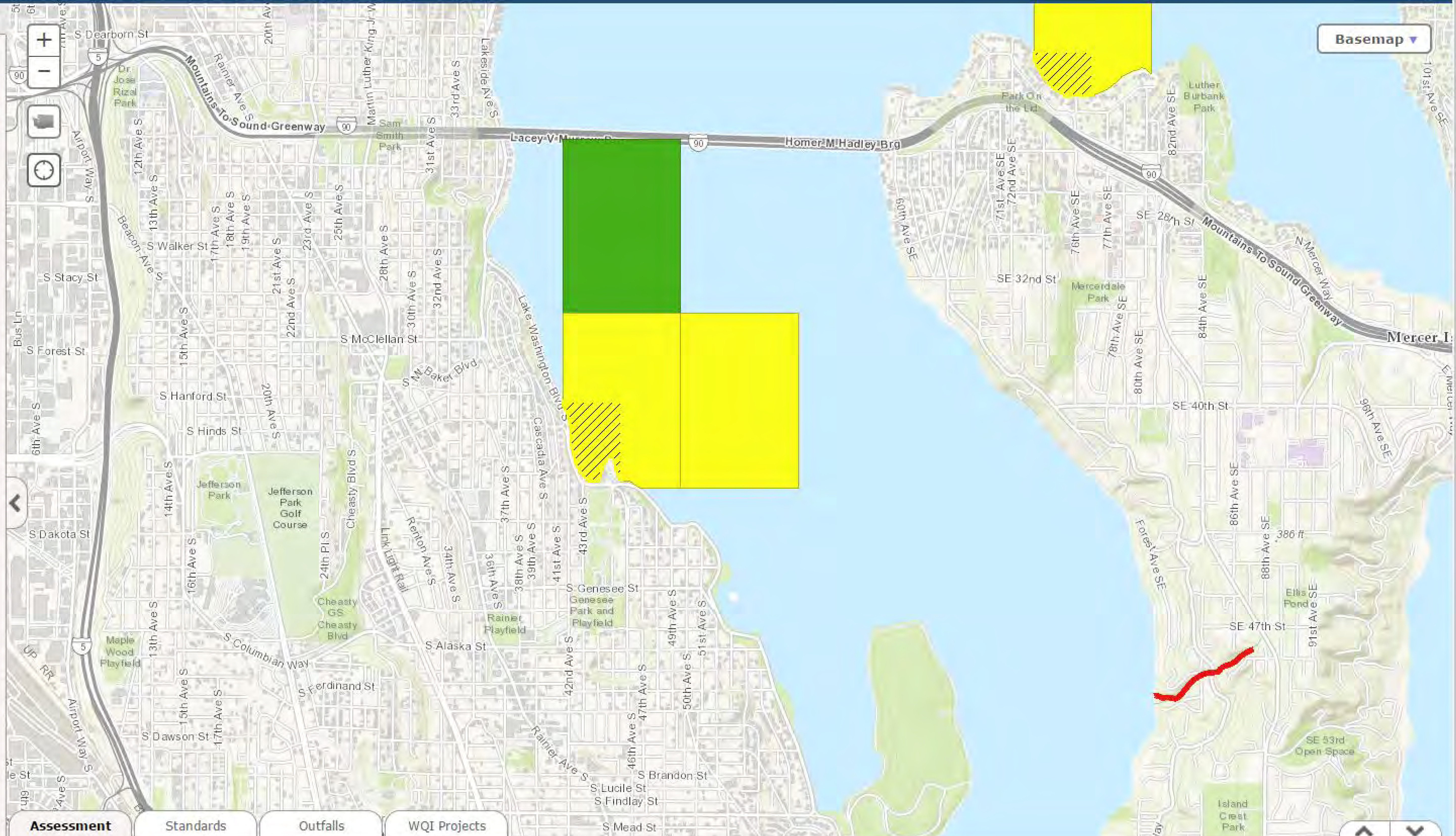


Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 8 Date of site visit: 28-Jun-22

Rated by Rachelle Tews Trained by Ecology? ☑ Yes ☐ No Date of training Mar-20

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☑ Yes ☐ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map ESRI, 2022

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	L	M	L	
Landscape Potential	M	M	L	
Value	H	L	M	**Total**
Score Based on Ratings	6	5	4	**15**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	

Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☑ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

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

☑ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☑ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☑ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

NOTES and FIELD OBSERVATIONS:
Slope and Depressional wetland

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	2
Total for D 1 Add the points in the boxes above	**9**

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

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

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

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 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*

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) Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	 points = 4 points = 2 points = 1 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 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet ☐ The wetland is a "headwater" wetland Wetland is flat but has small depressions on the surface that trap water Marks of ponding less than 0.5 ft (6 in)	 points = 7 points = 5 points = 3 points = 3 points = 1 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 wetland to the area of the wetland unit itself.* ☐ The area of the basin is less than 10 times the area of the unit The area of the basin is 10 to 100 times the area of the unit The area of the basin is more than 100 times the area of the unit ☐ Entire wetland is in the Flats class	 points = 5 points = 3 points = 0 points = 5	3
Total for D 4	Add the points in the boxes above	**8**

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

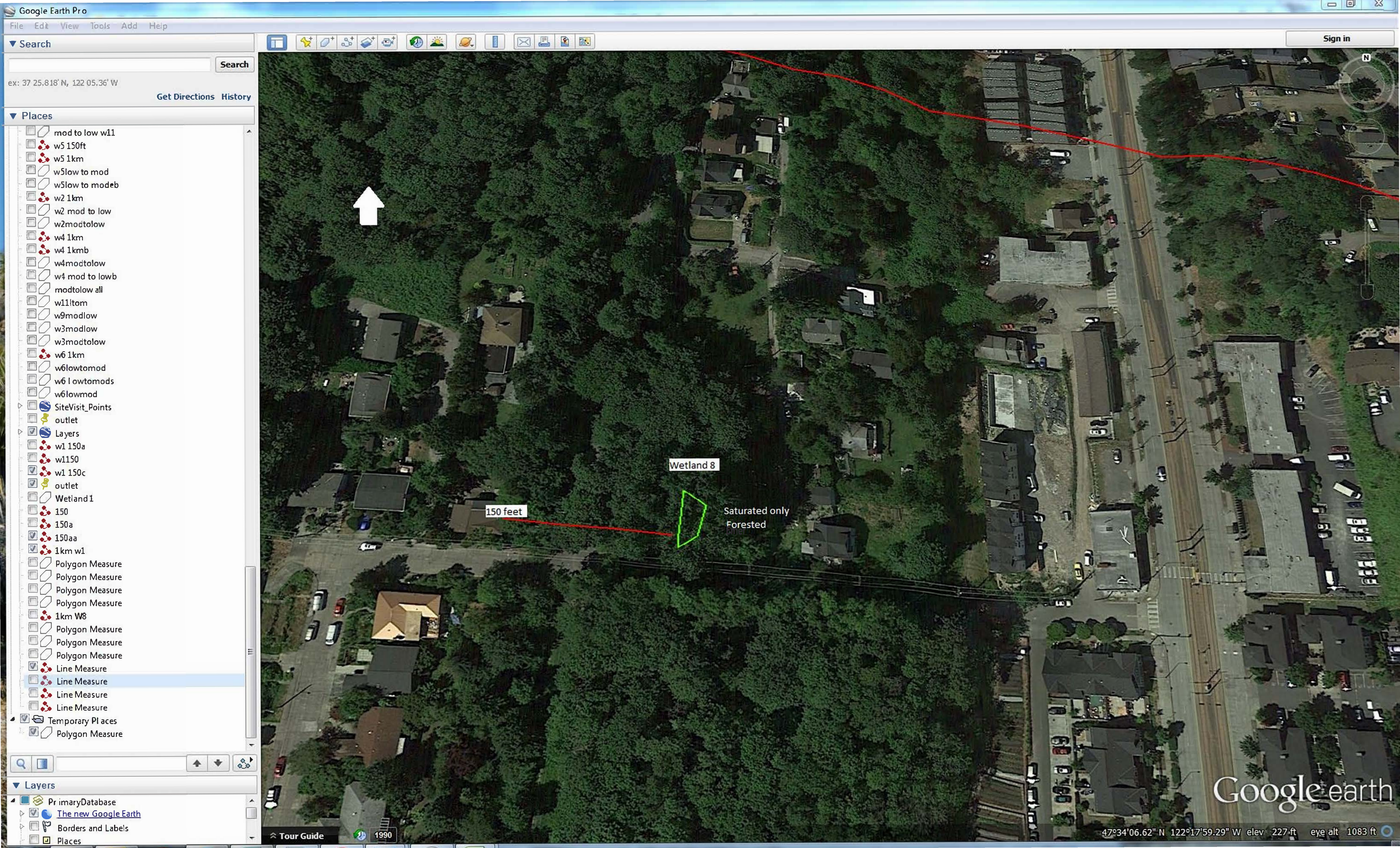
D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?	Yes = 1 No = 0	0
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	Yes = 1 No = 0	0
D 5.3. Is more than 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	**1**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. ☐ • Surface flooding problems are in a sub-basin farther down-gradient. ☐ Flooding from groundwater is an issue in the sub-basin. ☐ 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 = 2 points = 1 points = 1 points = 0	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	**0**

Rating of Value If score is: ☐ **2 - 4 = H** ☐ **1 = M** ☑ **0 = L** *Record the rating on the first page*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w6 l owtomods
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Polygon Measure
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Line Measure
Line Measure
Line Measure
Line Measure
Temporary Pl aces
Polygon Measure
Layers
Pr imaryDatabase
The new Google Earth
Borders and Labels
Places
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Tour Guide
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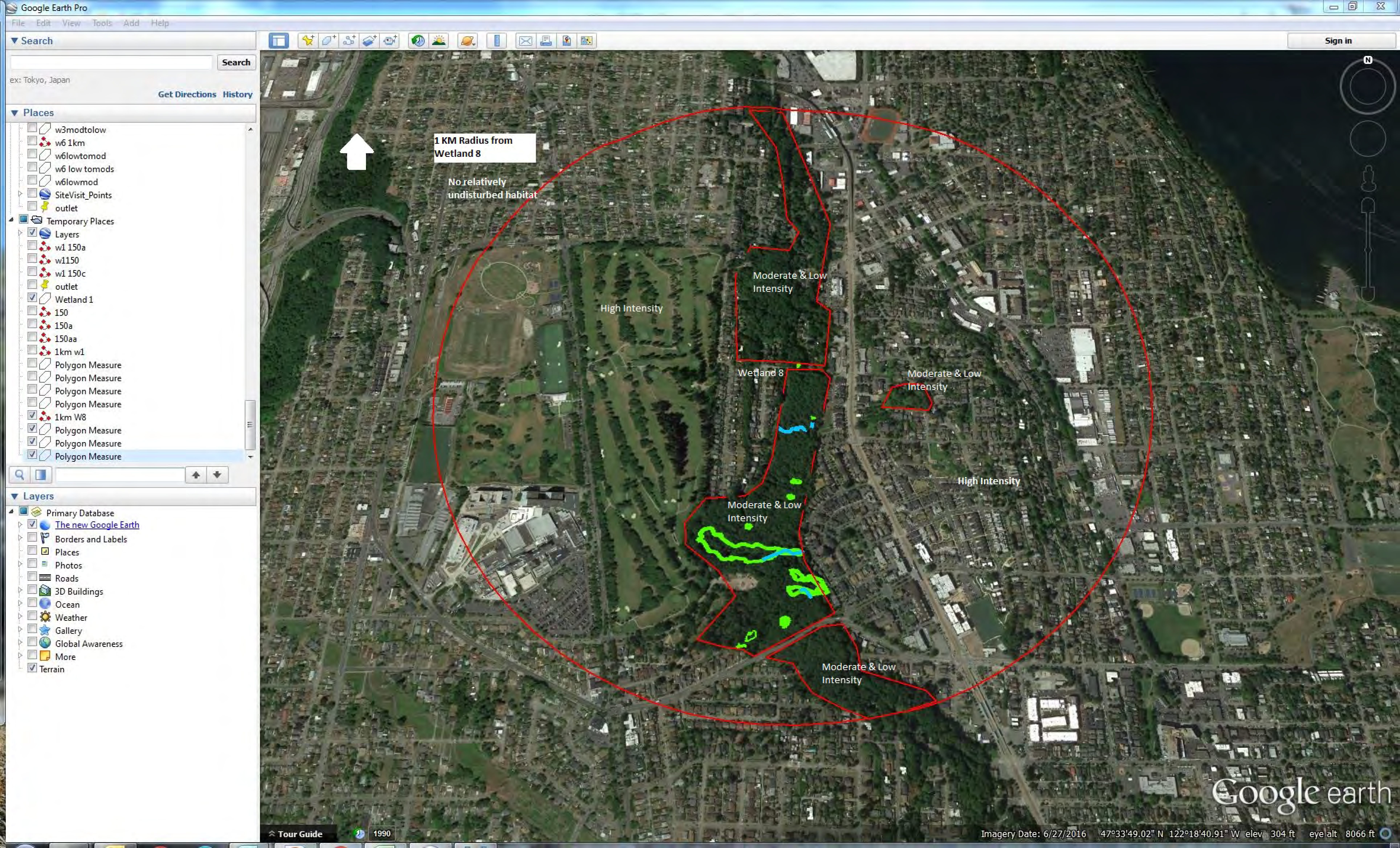
Google earth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Places
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outlet
Temporary Places
Layers
w1 150a
w1150
w1 150c
outlet
Wetland 1
150
150a
150aa
1km w1
Polygon Measure
Polygon Measure
Polygon Measure
Polygon Measure
1km W8
Polygon Measure
Polygon Measure
Polygon Measure
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Sign in
1 KM Radius from Wetland 8
No relatively undisturbed habitat
High Intensity
Moderate & Low Intensity
Wetland 8
Moderate & Low Intensity
High Intensity
Moderate & Low Intensity
Moderate & Low Intensity
Tour Guide
1990
Imagery Date: 6/27/2016 47°33'49.02" N 122°18'40.91" W elev 304 ft eye alt 8066 ft
Google earth

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State **Water Quality Atlas**

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

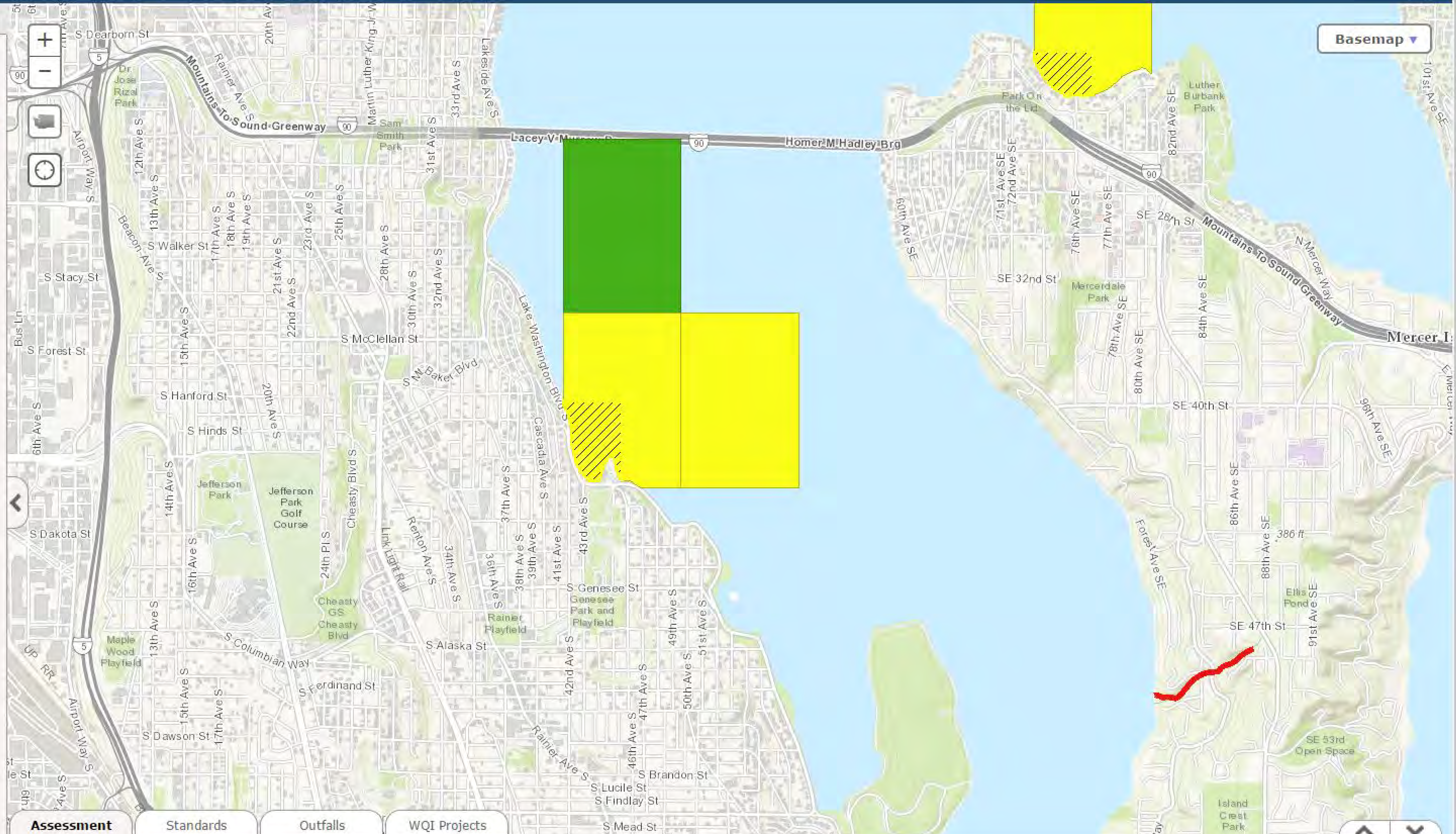
Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

10%

0 0.2 0.4mi



Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details

No filter applied, to view records filter data

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 9 Date of site visit: 20-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map google earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	**Improving Water Quality**	**Hydrologic**	**Habitat**	
		List appropriate rating (H, M, L)		
Site Potential	L	M	L	
Landscape Potential	L	L	L	
Value	H	M	M	**Total**
Score Based on Ratings	5	5	4	**14**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	**Category**
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	x

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

☐ **NO - Saltwater Tidal Fringe (Estuarine)** ☐ **YES - Freshwater Tidal Fringe**

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

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

☑ NO - go to 3 ☐ **YES** - The wetland class is **Flats**

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

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

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☑ The wetland is on a slope (*slope can be very gradual*),
☑ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
☑ The water leaves the wetland **without being impounded.**

☐ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

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

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
☐ The overbank flooding occurs at least once every 2 years.

☑ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☐ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality	
S 1.0. Does the site have the potential to improve water quality?	
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less points = 3 Slope is > 1% - 2% points = 2 Slope is > 2% - 5% points = 1 Slope is greater than 5% points = 0	1
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	**3**

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

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

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? A*nswer YES if there is a TMDL for the basin in which the 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*

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	1

Rating of Site Potential If score is: ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	1
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	**1**

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

NOTES and FIELD OBSERVATIONS:
in park below wetland, a lot of water flowing across grass and paved areas. Dense uncut woody vegetation is blackberries.

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

☐ Aquatic bed	4 structures or more: points = 4	0
☐ Emergent	3 structures: points = 2	
☑ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points - 1	
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0	

If the unit has a Forested class, check if :

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

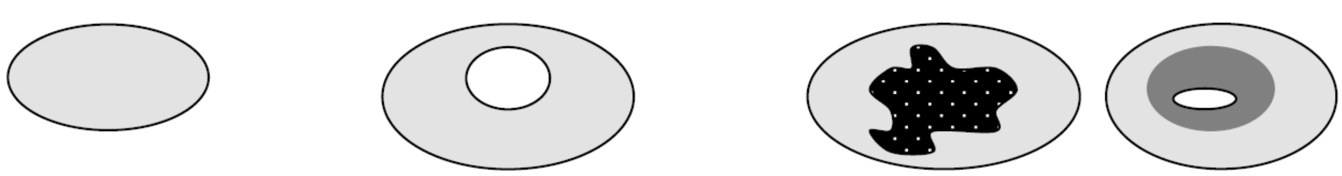
H 1.2. Hydroperiods
Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

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

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, Canadian thistle***

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

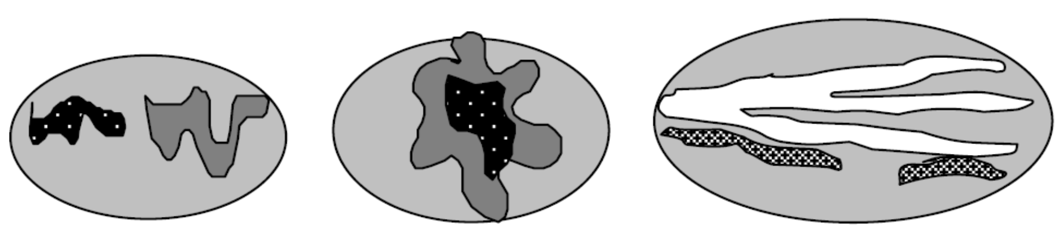
H 1.4. Interspersion of habitats
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



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

0

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



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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	0
Total for H 1 — Add the points in the boxes above	**0**

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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^{1}/_{3}$ (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (17 % moderate & low intensity land uses / 2) = 8.5% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	0
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**-2**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

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

WDFW Priority Habitats

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

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

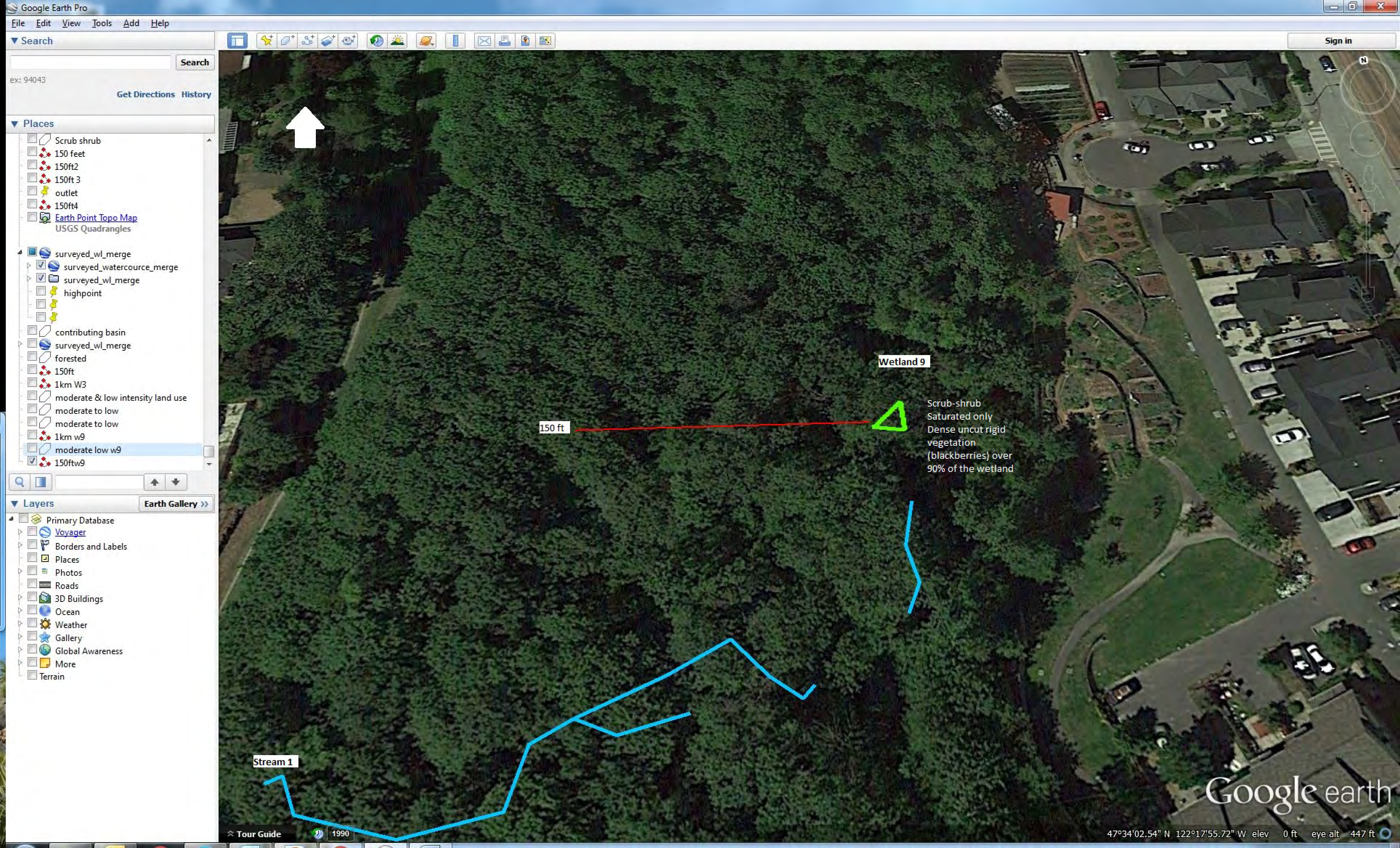
- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

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**	
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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	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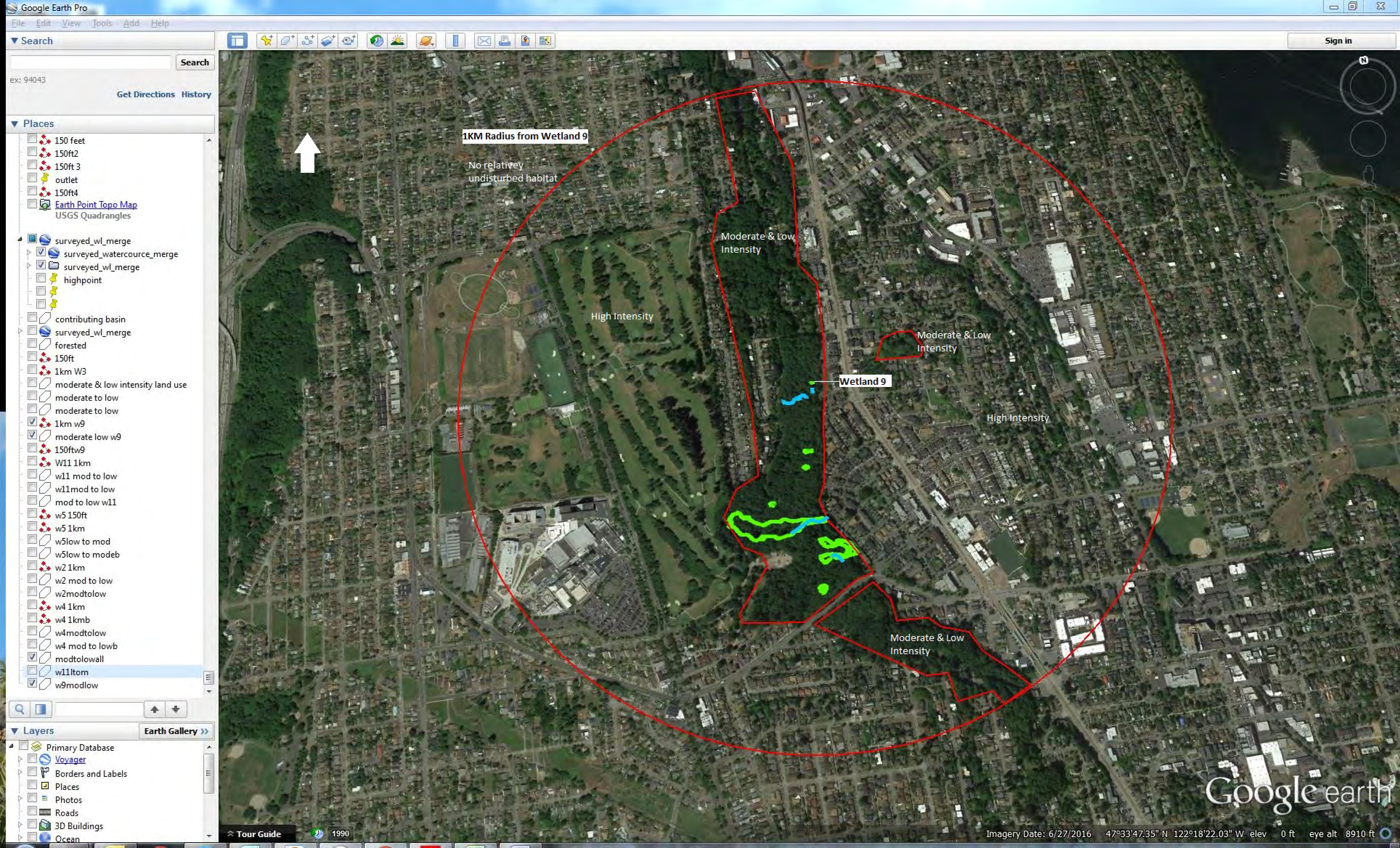
File Edit View Tools Add Help
Search
Search
ex: 94043
Get Directions History
Places
Scrub shrub
150 feet
150ft2
150ft 3
outlet
150ft4
Earth Point Topo Map
USGS Quadrangles
surveyed_wl_merge
surveyed_watercource_merge
surveyed_wl_merge
highpoint
contributing basin
surveyed_wl_merge
forested
150ft
1km W3
moderate & low intensity land use
moderate to low
moderate to low
1km w9
moderate low w9
150ftw9
Layers
Earth Gallery
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Sign in
Wetland 9
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid
vegetation
(blackberries) over
90% of the wetland
Stream 1
Tour Guide
1990
Google earth
47°34'02.54" N 122°17'55.72" W elev 0 ft eye alt 447 ft


Google Earth Pro
File Edit View Tools Add Help
Search
Search
ex: 94043
Get Directions History
Places
150 feet
150ft2
150ft 3
outlet
150ft4
Earth Point Topo Map
USGS Quadrangles
surveyed_wl_merge
surveyed_watercource_merge
surveyed_wl_merge
highpoint
contributing basin
surveyed_wl_merge
forested
150ft
1km W3
moderate & low intensity land use
moderate to low
moderate to low
1km w9
moderate low w9
150ftw9
W11 1km
w11 mod to low
w11mod to low
mod to low w11
w5 150ft
w5 1km
w5low to mod
w5low to modeb
w2 1km
w2 mod to low
w2modtolow
w4 1km
w4 1kmb
w4modtolow
w4 mod to lowb
modtolowall
w11tom
w9modlow
Layers
Earth Gallery
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Sign in
1KM Radius from Wetland 9
No relativey
undisturbed habitat
Moderate & Low
Intensity
High Intensity
Moderate & Low
Intensity
Wetland 9
High Intensity
Moderate & Low
Intensity
Google earth
Tour Guide
1990
Imagery Date: 6/27/2016 47°33'47.35" N 122°18'22.03" W elev 0 ft eye alt 8910 ft

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Atlas

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

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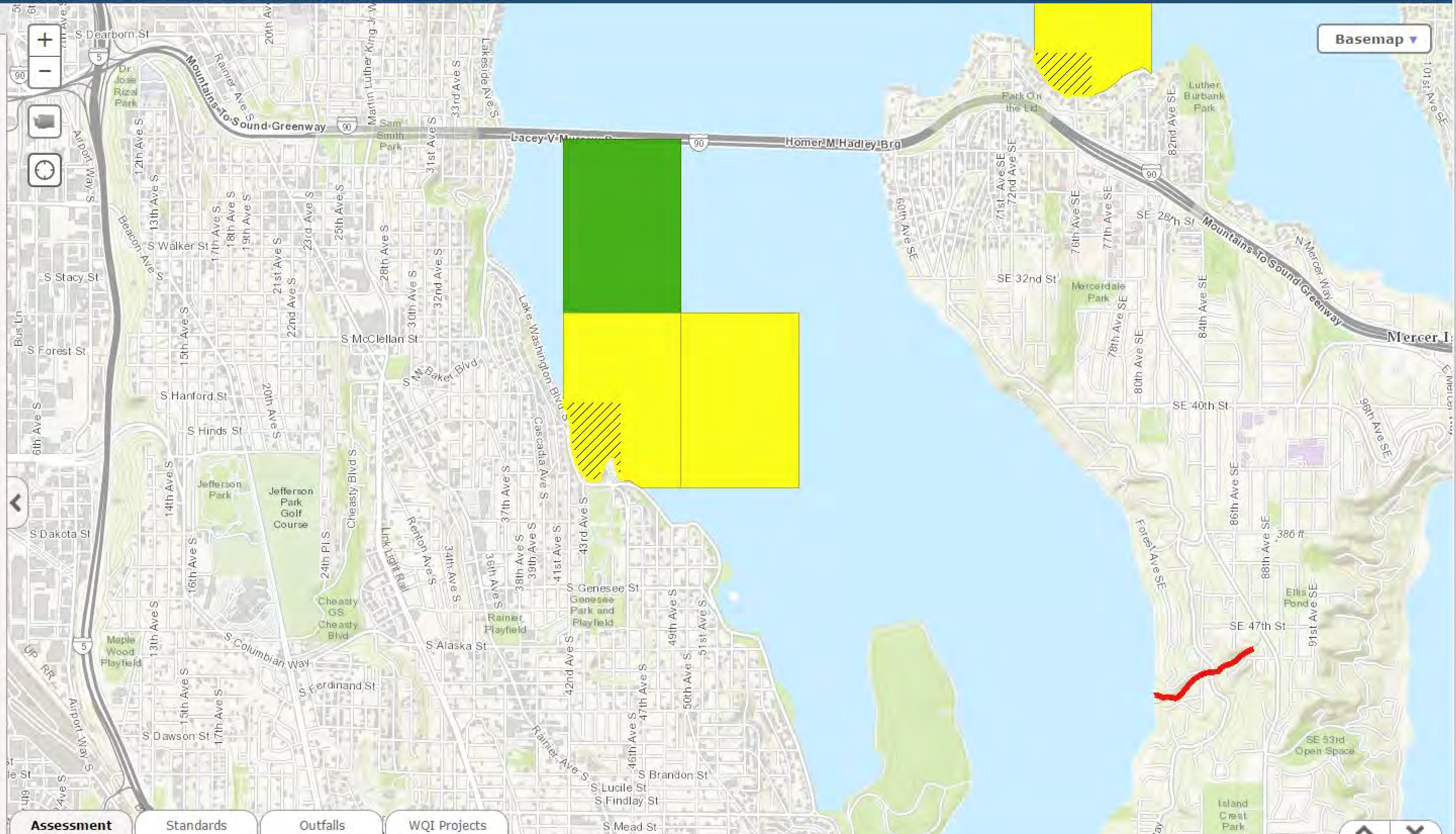

Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
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52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 11 Date of site visit: 20-Oct-16

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training 2008

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	L	L	L	
Landscape Potential	L	L	L	
Value	H	M	M	**Total**
Score Based on Ratings	5	4	4	**13**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	x

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☐ NO - go to 5 ☑ **YES** - The wetland class is **Slope**

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

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

☐ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☐ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☐ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5% Slope is greater than 5%	points = 3 points = 2 points = 1 points = 0	1
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 Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ¼ of area Does not meet any of the criteria above for plants	points = 6 points = 3 points = 2 points = 1 points = 0	2
Total for S 1	Add the points in the boxes above	**3**

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

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

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? A*nswer YES if there is a TMDL for the basin in which the 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*

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

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	1
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	**1**

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

NOTES and FIELD OBSERVATIONS:
downslope of the delineated portion of the wetland, the wetland had been disturbed by human activity (homeless encampment) and subsequently restored. Wetland is reestablishing, a channel is also forming. Wetland soils are not evident in restored area. Restoration is recent (within the last 1 or 1 years). Upland plants that were planted are not growing well in wet areas. Restored area included in rating even though it was not delineated.

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

☐ Aquatic bed	4 structures or more: points = 4	0
☐ Emergent	3 structures: points = 2	
☑ Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points - 1	
☐ Forested (areas where trees have > 30% cover)	1 structure: points = 0	

If the unit has a Forested class, check if :

☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

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

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

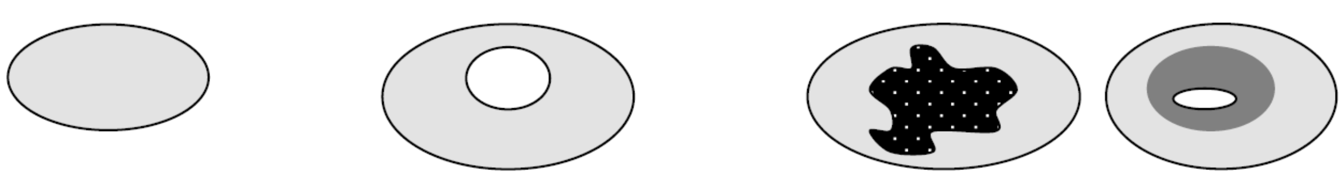
H 1.3. Richness of plant species

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, Canadian thistle***

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

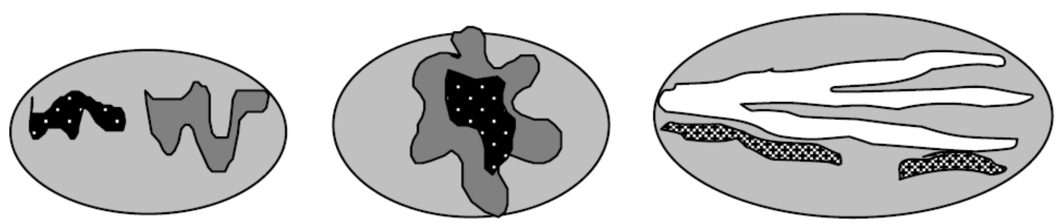
H 1.4. Interspersion of habitats

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



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

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



Score: 2

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	1
Total for H 1 — Add the points in the boxes above	**5**

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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon — points = 3 20 - 33% of 1 km Polygon — points = 2 10 - 19% of 1 km Polygon — points = 1 < 10 % of 1 km Polygon — points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of 1 km Polygon — points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use — points = (-2) ≤ 50% of 1km Polygon is high intensity — points = 0	-2
Total for H 2 — Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m — points = 1 Site does not meet any of the criteria above — points = 0	1

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

WDFW Priority Habitats

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

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

- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

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

- ☐ **Old-growth/Mature forests**: Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

- ☐ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

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

- ☐ **Westside Prairies**: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

- ☐ **Instream**: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

- ☐ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).

- ☐ **Caves**: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

- ☐ **Cliffs**: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

- ☐ **Talus**: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

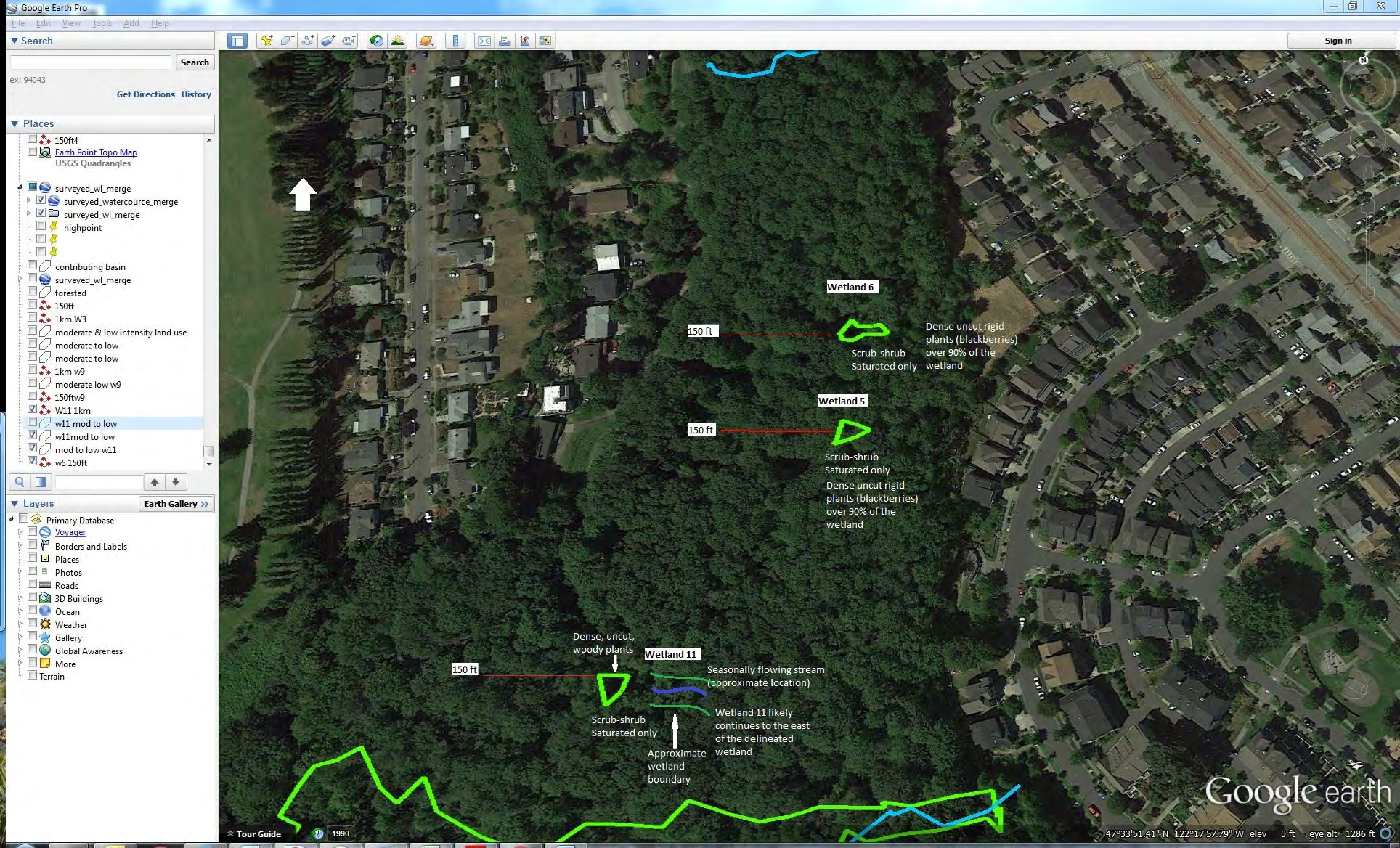
- ☑ **Snags and Logs**: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

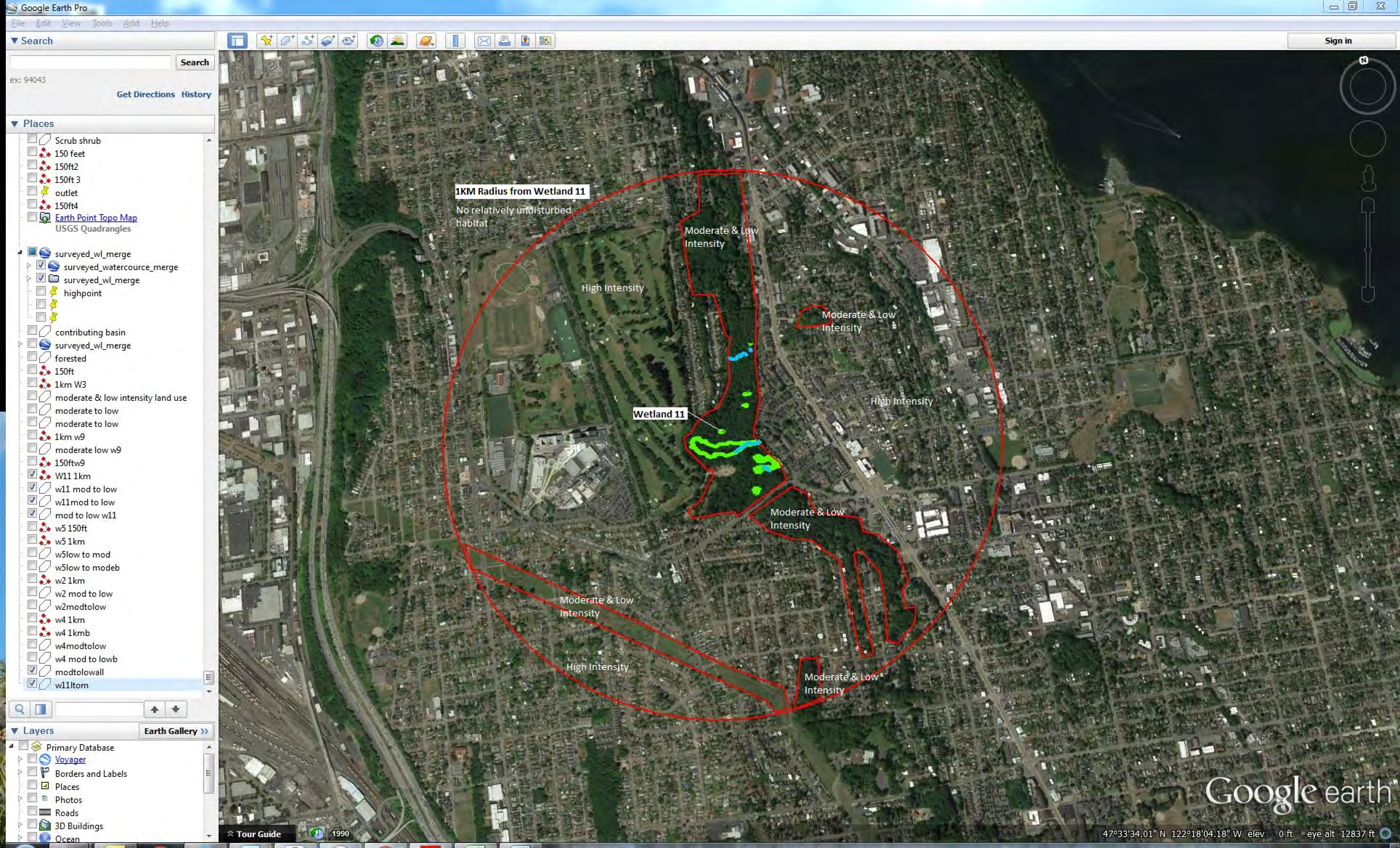
Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☑ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☑ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***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 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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	


Google Earth Pro
Search
Places
150ft4
Earth Point Topo Map
USGS Quadrangles
surveyed_wl_merge
surveyed_watercource_merge
surveyed_wl_merge
highpoint
contributing basin
surveyed_wl_merge
forested
150ft
1km W3
moderate & low intensity land use
moderate to low
moderate to low
1km w9
moderate low w9
150ftw9
W11 1km
w11 mod to low
w11mod to low
mod to low w11
w5 150ft
Layers
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Wetland 6
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid plants (blackberries) over 90% of the wetland
Wetland 5
150 ft
Scrub-shrub
Saturated only
Dense uncut rigid plants (blackberries) over 90% of the wetland
Dense, uncut, woody plants
Wetland 11
150 ft
Seasonally flowing stream (approximate location)
Wetland 11 likely continues to the east of the delineated wetland
Scrub-shrub
Saturated only
Approximate wetland boundary
Tour Guide
1990
Google earth
47°33'51.41" N 122°17'57.79" W elev 0 ft eye alt 1286 ft


Google Earth Pro
1KM Radius from Wetland 11
No relatively undisturbed habitat
Moderate & Low Intensity
High Intensity
Moderate & Low Intensity
High Intensity
Wetland 11
Moderate & Low Intensity
Moderate & Low Intensity
High Intensity
Moderate & Low Intensity
Search
Places
Scrub shrub
150 feet
150ft2
150ft 3
outlet
150ft4
Earth Point Topo Map
USGS Quadrangles
surveyed_wl_merge
surveyed_watercource_merge
surveyed_wl_merge
highpoint
contributing basin
surveyed_wl_merge
forested
150ft
1km W3
moderate & low intensity land use
moderate to low
moderate to low
1km w9
moderate low w9
150ftw9
W11 1km
w11 mod to low
w11mod to low
mod to low w11
w5 150ft
w5 1km
w5low to mod
w5low to modeb
w2 1km
w2 mod to low
w2modtolow
w4 1km
w4 1kmb
w4modtolow
w4 mod to lowb
modtolowall
w11ltom
Layers
Earth Gallery
Primary Database
Voyager
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Tour Guide
1990
47°33'34.01" N 122°18'04.18" W elev 0 ft eye alt 12837 ft
Google earth

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State **Water Quality Atlas**

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

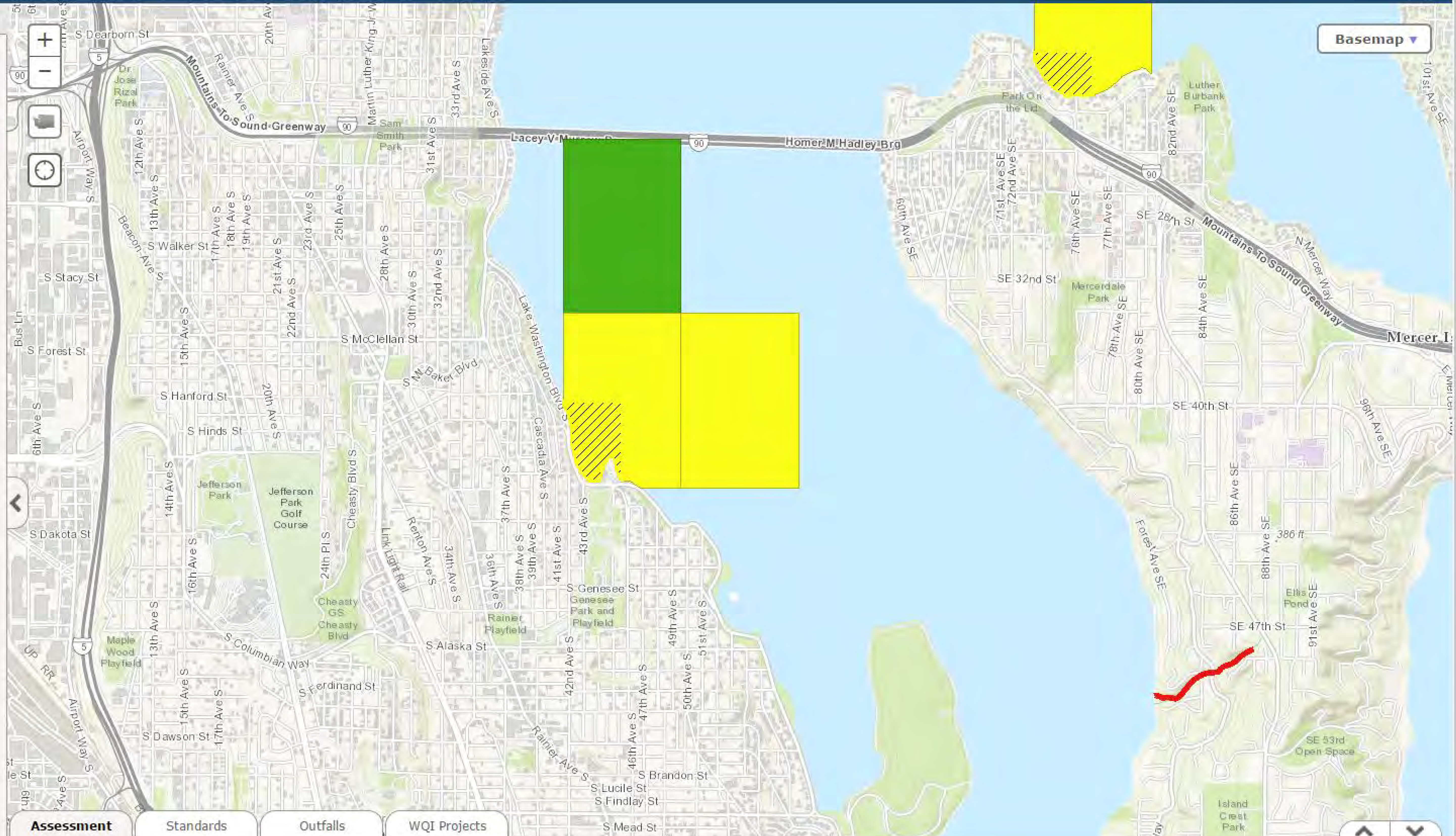
Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

10%

0 0.2 0.4mi



Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland 12 Date of site visit: 5-Apr-17

Rated by Claire Hoffman Trained by Ecology? ☑ Yes ☐ No Date of training Mar-17

HGM Class used for rating Slope Wetland has multiple HGM classes? ☐ Yes ☑ No

NOTE: Form is not complete with out the figures requested (*figures can be combined*).
Source of base aerial photo/map Google Earth

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

1. Category of wetland based on FUNCTIONS

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	List appropriate rating (H, M, L)			
Site Potential	L	M	L	
Landscape Potential	L	L	L	
Value	M	M	M	**Total**
Score Based on Ratings	4	5	4	**13**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

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

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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (*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 undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	1
Hydroperiods	H 1.2	1
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	1
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to another figure*)	S 4.1	1
Boundary of area within 150 ft of the wetland (*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 undisturbed 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

HGM Classification of Wetland in Western Washington

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

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

☑ NO - go to 2 ☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1

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

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

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

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

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

☑ NO - go to 4 ☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)

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

☐ NO - go to 5 ☐ **YES** - The wetland class is **Slope**

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

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

☑ NO - go to 6 ☐ **YES** - The wetland class is **Riverine**

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

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

☑ NO - go to 7 ☐ **YES** - The wetland class is **Depressional**

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

☑ NO - go to 8 ☐ **YES** - The wetland class is **Depressional**

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

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

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

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

SLOPE WETLANDS

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

S 1.0. Does the site have the potential to improve water quality?		
S 1.1. Characteristics of the average slope of the wetland: (*a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance*) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5% Slope is greater than 5%	 points = 3 points = 2 points = 1 points = 0	3
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 Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ¼ of area Does not meet any of the criteria above for plants	 points = 6 points = 3 points = 2 points = 1 points = 0	2
Total for S 1	Add the points in the boxes above	**5**

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	0
S 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question S 2.1? Other Sources	Yes = 1 No = 0	0
Total for S 2	Add the points in the boxes above	**0**

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? A*nswer YES if there is a TMDL for the basin in which the unit is found*?	Yes = 2 No = 0	0
Total for S 3	Add the points in the boxes above	**1**

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

SLOPE WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream erosion	
S 4.0. Does the site have the potential to reduce flooding and stream erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. *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	1

Rating of Site Potential If score is: ☑ **1 = M** ☐ **0 = L** *Record the rating on the first page*

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

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

S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) points = 2 Surface flooding problems are in a sub-basin farther down-gradient points = 1 No flooding problems anywhere downstream points = 0	1
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	**1**

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

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

- ☐ Aquatic bed — 4 structures or more: points = 4
- ☐ Emergent — 3 structures: points = 2
- ☑ Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points - 1
- ☐ Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

- ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon

Score: 0

H 1.2. Hydroperiods

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

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

Score: 0

H 1.3. Richness of plant species

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

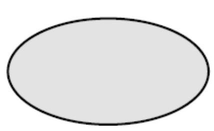
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

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

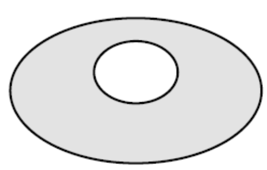
Score: 1

H 1.4. Interspersion of habitats

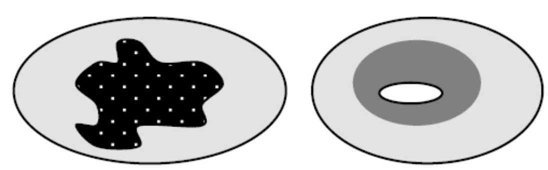
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always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



None = 0 points

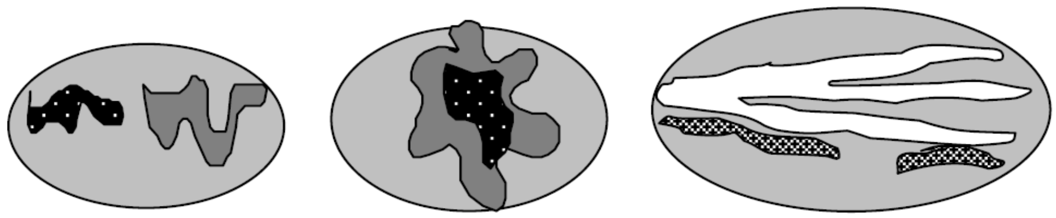


Low = 1 point



Moderate = 2 points

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



Score: 0

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 extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ 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 for list of strata*)	2
Total for H 1 Add the points in the boxes above	**3**

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 function of the site?	
H 2.1 Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* 0 % undisturbed habitat + (10 % moderate & low intensity land uses / 2) = 5% If total accessible habitat is: > $^1/_3$ (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	0
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* 0 % undisturbed habitat + (20 % moderate & low intensity land uses / 2) = 10% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0	-2
Total for H 2 Add the points in the boxes above	**-1**

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 ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0	1

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

WDFW Priority Habitats

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

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

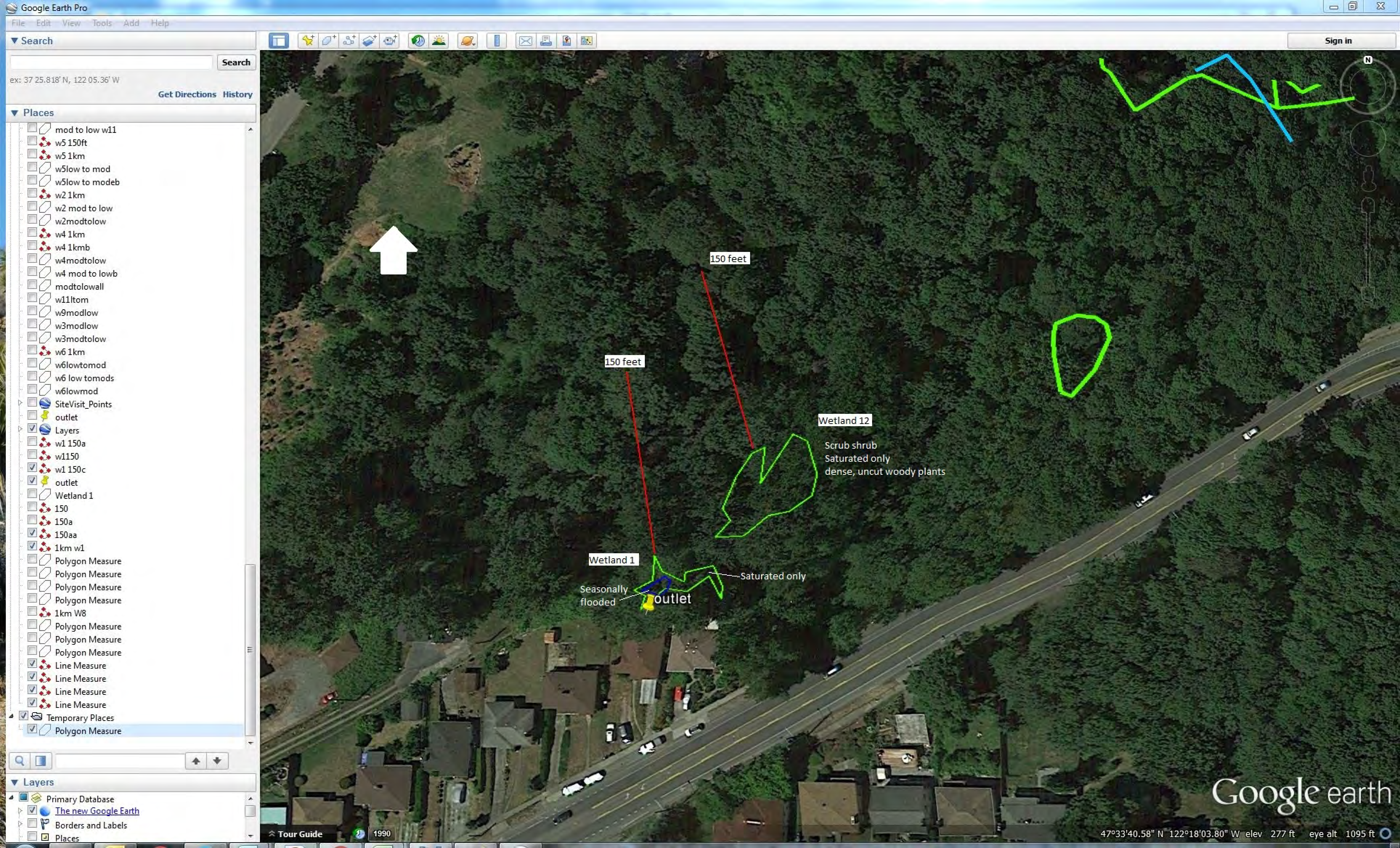
- ☐ **Aspen Stands**: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☑ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds**: Variable size patches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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. List 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**	
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 page 25) ☐ 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**	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to **SC 2.2** ☐ No - Go to **SC 2.3** SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = **Category I** ☐ No = **Not WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☐ Yes - **Contact WNHP/WDNR and to SC 2.4** ☐ No = **Not WHCV** SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☐ Yes = **Category I** ☐ No = **Not WHCV**	
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 = **Is 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 = **Is a 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 = **Is a Category I bog** ☐ No = **Is not a bog**	

SC 4.0. Forested Wetlands Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***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 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*) ☐ 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 on p. 100). ☐ 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 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 ☐ 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**	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	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Search
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Polygon Measure
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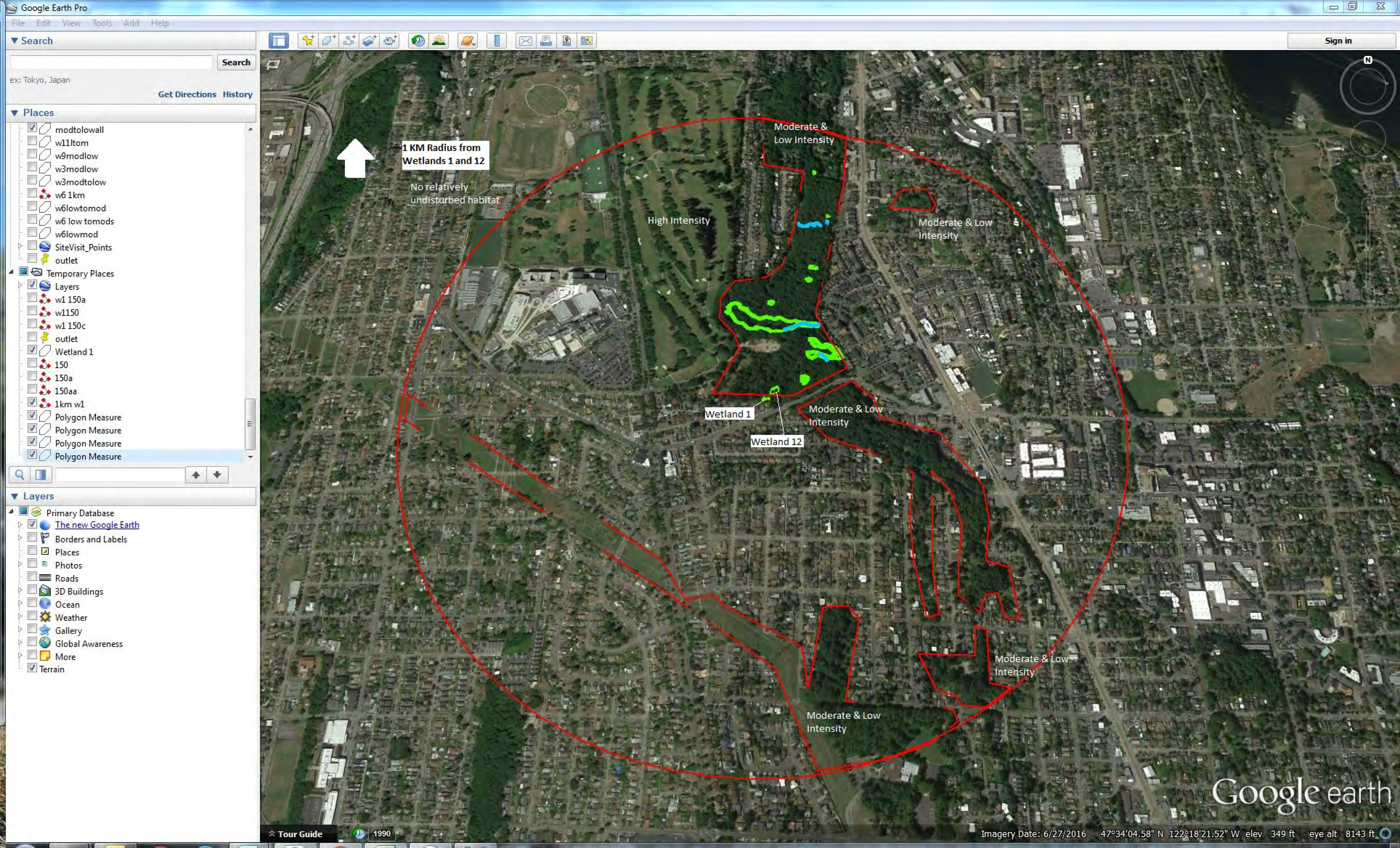
Line Measure
Line Measure
Line Measure
Temporary Places
Polygon Measure
Layers
Primary Database
The new Google Earth
Borders and Labels
Places
Sign in
150 feet
150 feet
Wetland 12
Scrub shrub
Saturated only
dense, uncut woody plants
Wetland 1
Saturated only
Seasonally flooded
outlet
Tour Guide
1990
Google earth
47°33'40.58" N 122°18'03.80" W elev 277 ft eye alt 1095 ft



Google Earth Pro
1 KM Radius from Wetlands 1 and 12
No relatively undisturbed habitat
High Intensity
Moderate & Low Intensity
Moderate & Low Intensity
Wetland 1
Wetland 12
Moderate & Low Intensity
Moderate & Low Intensity
Moderate & Low Intensity
Imagery Date: 6/27/2016 47°34'04.58" N 122°18'21.52" W elev 349 ft eye alt 8143 ft
Google earth

HTTP 404 Error Message | Water Quality Assessme | Water Quality Atlas Map

State of Washington [US] | https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y&RT=0&Layers=23,29&Filters=n,n,n,n

DEPARTMENT OF ECOLOGY State of Washington

Washington State Water Quality Atlas

Home | Add Map Data | Clear Map Data

Legend | Filter Data | Zoom To | Tools

Add or remove map data

Assessed Waters/Sediment

Water

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment

- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Change map data transparency

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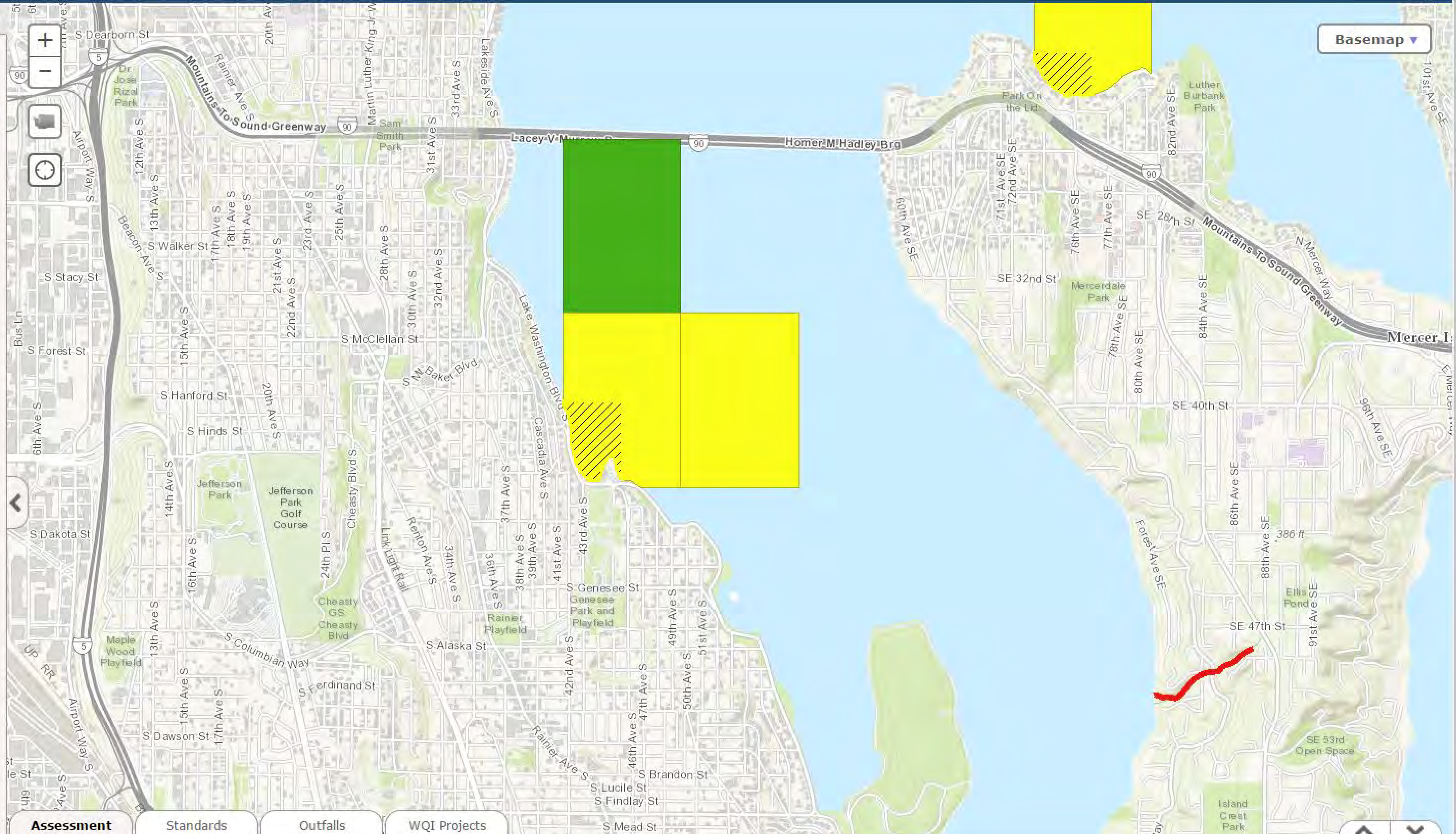

Assessment | Standards | Outfalls | WQI Projects

Zoom to selection | Export to csv

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
No filter applied, to view records filter data						

Showing 0 to 0 of 0 entries

Previous Next

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
4672	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
4676	4C	WASHINGTON LAKE	Invasive Exotic Species	Habitat
500005	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500006	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500007	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
500038	2 RANK 4	WASHINGTON LAKE	Sediment Bioassay	Sediment
12193	5	WASHINGTON LAKE	Bacteria	Water
12206	5	WASHINGTON LAKE	Bacteria	Water
43482	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
51591	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51592	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51593	5	WASHINGTON LAKE	2,3,7,8-TCDD (Dioxin)	Tissue
51706	5	WASHINGTON LAKE	4,4'-DDD	Tissue
51767	5	WASHINGTON LAKE	4,4'-DDE	Tissue
52642	5	WASHINGTON LAKE	Mercury	Tissue
52703	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52704	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52705	5	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Tissue
52766	5	WASHINGTON LAKE	Total Chlordane	Tissue
52853	5	WASHINGTON LAKE	Total Phosphorus	Water
74460	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74461	5	WASHINGTON LAKE	4,4'-DDE	Tissue
74775	5	WASHINGTON LAKE	Bacteria	Water
76477	5	WASHINGTON LAKE	Dieldrin	Tissue
76478	5	WASHINGTON LAKE	Dieldrin	Tissue
76479	5	WASHINGTON LAKE	Dieldrin	Tissue
77049	5	WASHINGTON LAKE	Chlordane	Tissue
77050	5	WASHINGTON LAKE	Chlordane	Tissue
77064	5	WASHINGTON LAKE	Chlordane	Tissue
500009	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
500010	5	WASHINGTON LAKE	Sediment Bioassay	Sediment
8078	2	WASHINGTON LAKE	Lead	Water
11960	2	WASHINGTON LAKE	Ammonia-N	Water
11963	2	WASHINGTON LAKE	Ammonia-N	Water

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
11964	2	WASHINGTON LAKE	Ammonia-N	Water
11970	2	WASHINGTON LAKE	Ammonia-N	Water
12207	2	WASHINGTON LAKE	Bacteria	Water
12264	2	WASHINGTON LAKE	Mercury	Water
12272	2	WASHINGTON LAKE	Mercury	Water
12311	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12312	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12313	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12314	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12315	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12316	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12317	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
12318	2	WASHINGTON LAKE	Polychlorinated Biphenyls (PCBs)	Water
51644	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51645	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
51646	2	WASHINGTON LAKE	2,3,7,8-TCDD TEQ	Tissue
11972	1	WASHINGTON LAKE	Ammonia-N	Water
11973	1	WASHINGTON LAKE	Ammonia-N	Water
12183	1	WASHINGTON LAKE	Bacteria	Water
12186	1	WASHINGTON LAKE	Bacteria	Water
12189	1	WASHINGTON LAKE	Bacteria	Water
12190	1	WASHINGTON LAKE	Bacteria	Water
12194	1	WASHINGTON LAKE	Bacteria	Water
12195	1	WASHINGTON LAKE	Bacteria	Water
12196	1	WASHINGTON LAKE	Bacteria	Water
12197	1	WASHINGTON LAKE	Bacteria	Water
12200	1	WASHINGTON LAKE	Bacteria	Water
12201	1	WASHINGTON LAKE	Bacteria	Water
12202	1	WASHINGTON LAKE	Bacteria	Water
43481	1	WASHINGTON LAKE	Toxaphene	Tissue
43483	1	WASHINGTON LAKE	Mercury	Tissue
43484	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
43485	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
43486	1	WASHINGTON LAKE	Heptachlor	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
43487	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
43488	1	WASHINGTON LAKE	Endrin	Tissue
43492	1	WASHINGTON LAKE	Beta-BHC	Tissue
43493	1	WASHINGTON LAKE	Alpha-BHC	Tissue
43494	1	WASHINGTON LAKE	4,4'-DDT	Tissue
43495	1	WASHINGTON LAKE	4,4'-DDE	Tissue
43496	1	WASHINGTON LAKE	4,4'-DDD	Tissue
51827	1	WASHINGTON LAKE	4,4'-DDT	Tissue
51949	1	WASHINGTON LAKE	Alpha-BHC	Tissue
52010	1	WASHINGTON LAKE	Beta-BHC	Tissue
52403	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
52464	1	WASHINGTON LAKE	Heptachlor	Tissue
52585	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
52854	1	WASHINGTON LAKE	Total Phosphorus	Water
52855	1	WASHINGTON LAKE	Total Phosphorus	Water
52856	1	WASHINGTON LAKE	Total Phosphorus	Water
52857	1	WASHINGTON LAKE	Total Phosphorus	Water
52858	1	WASHINGTON LAKE	Total Phosphorus	Water
52859	1	WASHINGTON LAKE	Total Phosphorus	Water
52860	1	WASHINGTON LAKE	Total Phosphorus	Water
52861	1	WASHINGTON LAKE	Total Phosphorus	Water
52862	1	WASHINGTON LAKE	Total Phosphorus	Water
52863	1	WASHINGTON LAKE	Total Phosphorus	Water
52864	1	WASHINGTON LAKE	Total Phosphorus	Water
52865	1	WASHINGTON LAKE	Total Phosphorus	Water
74484	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74485	1	WASHINGTON LAKE	4,4'-DDD	Tissue
74772	1	WASHINGTON LAKE	Bacteria	Water
74776	1	WASHINGTON LAKE	Bacteria	Water
75112	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75114	1	WASHINGTON LAKE	4,4'-DDT	Tissue
75221	1	WASHINGTON LAKE	Beta-BHC	Tissue
75222	1	WASHINGTON LAKE	Beta-BHC	Tissue
75309	1	WASHINGTON LAKE	Endrin	Tissue

LISTING_ID	CATEGORY_2014	WATERBODY_NAME	PARAMETER_NAME	MEDIUM_NAME
75310	1	WASHINGTON LAKE	Endrin	Tissue
75311	1	WASHINGTON LAKE	Endrin	Tissue
75400	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75401	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75402	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75403	1	WASHINGTON LAKE	Endrin Aldehyde	Tissue
75486	1	WASHINGTON LAKE	Heptachlor	Tissue
75487	1	WASHINGTON LAKE	Heptachlor	Tissue
75563	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75564	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75565	1	WASHINGTON LAKE	Heptachlor Epoxide	Tissue
75645	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75646	1	WASHINGTON LAKE	Hexachlorobenzene	Tissue
75791	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75792	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75793	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
75794	1	WASHINGTON LAKE	Hexachlorocyclohexane (Lindane)	Tissue
77219	1	WASHINGTON LAKE	Toxaphene	Tissue
77220	1	WASHINGTON LAKE	Toxaphene	Tissue
77236	1	WASHINGTON LAKE	Toxaphene	Tissue
77243	1	WASHINGTON LAKE	Endosulfan	Tissue
78987	1	WASHINGTON LAKE	Endosulfan	Tissue
78988	1	WASHINGTON LAKE	Endosulfan	Tissue
78989	1	WASHINGTON LAKE	Endosulfan	Tissue
79488	1	WASHINGTON LAKE	Mercury	Tissue
79502	1	WASHINGTON LAKE	Mercury	Tissue

APPENDIX D: BIRD SURVEY DATA SHEETS

BIRD SURVEY DATA SHEET

Project / Site: CHEASTY GREENSPACE 140744.01	**Date:** 12-13-16
Scope / Purpose: WINTER SURVEY	**Time:** 8:30 am – 11:00 am
Observers: ILON LOGAN & PETER CARR	**County / State:** KING / WA
Survey Conditions: Cold & calm, occ. light wind **TEMPERATURE** ~35° **WEATHER** CLEAR **PARTLY-CLOUDY** OVERCAST **PRECIPITATION** **NONE** MIST DRIZZLE RAIN	**Site Activity Notes:** High level of ambient noise -planes overhead (every 1-3 mins) -traffic on Cheasty Blvd & others -light rail regular noise from bells & crossings

4-ltr code	Species	Initial Position	Detection Method	If AUD S or C	Sex M	Sex F	Sex U	Behavior / Notes
GCKI	Golden-crowned kinglet	FLT / **GRD**	**VIS** / AUD		X	X		F
SOSP	Song sparrow	FLT / **GRD**	**VIS** / AUD				X	F
BCCH	Black capped chickadee	FLT / **GRD**	**VIS** / **AUD**	X			X	F, FL
CBCH	Chestnut-backed chickadee	FLT / **GRD**	**VIS** / AUD				X	F
BEWR	Bewick's wren	FLT / **GRD**	**VIS** / AUD				X	F
NOFL	Northern flicker	**FLT** / GRD	**VIS** / **AUD**	X			X	F, FL, AL
RCKI	Ruby-crowned kinglet	FLT / **GRD**	**VIS** / AUD				X	F
PAWR	Pacific wren	FLT / **GRD**	**VIS** / AUD				X	F
BRCR	Brown creeper	FLT / **GRD**	**VIS** / AUD				X	F
AMGO	American goldfinch	**FLT** / GRD	VIS / **AUD**	X			X	FL
AMRO	American robin	FLT / **GRD**	**VIS** / **AUD**	X			X	F
RBSA	Red-breasted sapsucker	FLT / **GRD** tree	**VIS** / AUD				X	F, FL excavations obs
SPTO	Spotted towhee	FLT / **GRD**	**VIS** / **AUD**	X			X	F
RTHA	Red-tailed hawk	**FLT** / GRD	**VIS** / **AUD**	X			X	FL over S end of greenspace
DCCO	Double-crested cormorant	**FLT** / GRD	**VIS** / AUD				X	FL
BAEA	Bald eagle	**FLT** / GRD	**VIS** / AUD				X	FL west of greenspace
STJA	Steller's jay	**FLT** / GRD	**VIS** / AUD				X	FL, F
ANHU	Anna's hummingbird	FLT / **GRD**	**VIS** / **AUD**	X			X	Perched & vocalizing
DOWO	Downy woodpecker	FLT / **GRD**	**VIS** / **AUD**	X			X	F
DEJU	Dark-eyed junco	FLT / **GRD**	**VIS** / AUD				X	FL, F

Data Codes	Other notes:
Initial Position (choose one): FLT = in flight GRD = on ground / tree **Detection Method:** VIS = visual/seen AUD = aural/heard **If AUD (pick one):** S = song C = call **Behavior Codes:** F = Forage, FL = flying, R= resting/roosting, FS = flushed, AL = alert posture (erect w/neck extended, not vocalizing), A = antagonistic behavior (chase or aggressive contact), CO = copulation, NM = carrying nest material	Eastern gray squirrel (2)

BIRD SURVEY DATA SHEET

Project / Site:	CHEASTY GREENSPACE 140744.01	**Date:**	12-13-16
Observers:	ILON LOGAN & PETER CARR	**Time:**	8:30a START

~~Transect / Point~~	Species	Initial Position	Detection Method	If AUD S or C	Sex M	Sex F	Sex U	Behavior / Notes
GWxW	Glaucous-winged x Western gull	FLT / GRD	VIS / AUD				X	FL over greenspace
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					
		FLT / GRD	VIS / AUD					

Data Codes	Initial Position (choose one): FLT = in flight GRD = on ground Detection Method: VIS = visual/seen AUD = aural/heard If AUD (pick one): S = song C = call Behavior Codes: F = Forage, FL = flying, R= resting/roosting, FS = flushed, AL = alert posture (erect w/neck extended, not vocalizing), A = antagonistic behavior (chase or aggressive contact), CO = copulation, NM = carrying nest material	Other notes:

BIRD SURVEY DATA SHEET

Project / Site: CHEASTY GREENSPACE 140744.01	Date: 4-4-17
Scope / Purpose: SPRING SURVEY	Time: 6:35a - 8:40a
Observers: ELON LOGAN & PETER CARR	County / State: KING / WA
Survey Conditions: Overcast, no wind TEMPERATURE ~45° ↑ WEATHER CLEAR PARTLY-CLOUDY OVERCAST PRECIPITATION NONE MIST DRIZZLE RAIN	Site Activity Notes: High level of background noise as previously noted. Spring conditions - plants leafing out, flowers blooming (red currant, salmon-berry, skunk cabbage, etc.)

~~Transect~~ 4 tr / Point	Species	Initial Position	Detection Method	If AUD S or C		Sex M	Sex F	Sex U	Behavior / Notes
AMRO	American robin	FLT / GRD	VIS / AUD					X	AL, F, FL
HOFI	House finch	FLT / GRD	VIS / AUD	X		X			Singing west of greenspace
RCKI	Ruby-crowned kinglet	FLT / GRD	VIS / AUD	X		X			F
BEWR	Bewick's wren	FLT / GRD	VIS / AUD	X		X		X	F
AMCR	American crow	FLT / GRD	VIS / AUD					X	Some individ in park; flyovers
GWxW	Glaucous winged x Western hybrid gull	FLT / GRD	VIS / AUD					X	FL
SOSP	Song sparrow	FLT / GRD	VIS / AUD	X					F
SPTO	Spotted towhee	FLT / GRD	VIS / AUD					X	F
BCCH	Black-capped chickadee	FLT / GRD	VIS / AUD	X		X			Several ♂ singing
STJA	Steller's jay	FLT / GRD	VIS / AUD					X	
NOFL	Northern flicker	FLT / GRD	VIS / AUD					X	Several drumming
DEJU	Dark-eyed junco	FLT / GRD	VIS / AUD					X	
ANHU	Anna's hummingbird	FLT / GRD	VIS / AUD	X		X			Several individuals (~5)
COHA	Cooper's hawk	FLT / GRD	VIS / AUD			X	X		NM; Pair in courtship, extremely active, vocalizing, moving, inter-acting.
PAWR	Pacific wren	FLT / GRD	VIS / AUD	X		X			F
AMGO	American goldfinch	FLT / GRD	VIS / AUD					X	FL
BRCR	Brown creeper	FLT / GRD	VIS / AUD					X	F
RBNU	Red-breasted nuthatch	FLT / GRD	VIS / AUD					X	
RBSA	Red-breasted sapsucker	FLT / GRD	VIS / AUD					X	F
VATH	Varied thrush	FLT / GRD	VIS / AUD					X	5 notes heard only

Data Codes **Initial Position (choose one):** FLT = in flight GRD = on ground / TREE **Detection Method:** VIS = visual/seen AUD = aural/heard **If AUD (pick one):** S = song C = call **Behavior Codes:** F = Forage, FL = flying, R= resting/roosting, FS = flushed, AL = alert posture (erect w/neck extended, not vocalizing), A = antagonistic behavior (chase or aggressive contact), CO = copulation, NM = carrying nest material	**Other notes:** Sunrise 6:43a Eastern grey squirrel (2)

BIRD SURVEY DATA SHEET

Project / Site:	CHEASTY GREENSPACE 140744.01	**Date:**	4-4-17
Observers:	ILON LOGAN & PETER CARR	**Time:**	6:35a START

~~Transect~~ / ~~Point~~	Species	Initial Position	Detection Method	If AUD S or C		Sex M	Sex F	Sex U	Behavior / Notes
BUSH	Bushtit	FLT / GRD	VIS / AUD					X	F
CBCH	Chestnut-backed chickadee	FLT / GRD	VIS / AUD					X	F
YRWA	Yellow rumped warbler	FLT / GRD	VIS / AUD	X		X			
GCKI	Golden-crowned kinglet	FLT / GRD	VIS / AUD					X	F
EUST	European starling	FLT / GRD	VIS / AUD					X	NM
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						

Data Codes

Initial Position (choose one): FLT = in flight GRD = on ground
Detection Method: VIS = visual/seen AUD = aural/heard
If AUD (pick one): S = song C = call
Behavior Codes: F = Forage, FL = flying, R= resting/roosting, FS = flushed, AL = alert posture (erect w/neck extended, not vocalizing), A = antagonistic behavior (chase or aggressive contact), CO = copulation, NM = carrying nest material

Other notes: Migrant species have not yet arrived (mostly); Birds active @ dawn. Much quieter by 8:30a.
COHA active nesting building; they have an alternate nest site in vicinity (according to pedestrian on Cheasty blvd).

BIRD SURVEY DATA SHEET

Project / Site: CHEASTY GREENSPACE 140744.01	**Date:** 5-4-17
Scope / Purpose: SPRING SURVEY (3)	**Time:** 6:00a - 9:30a
Observers: ILON LOGAN & PETER CARR	**County / State:** KING / WA
Survey Conditions: Heavy fog, no wind **TEMPERATURE** ~55° 98% humidity **WEATHER** CLEAR PARTLY-CLOUDY OVERCAST **PRECIPITATION** NONE MIST DRIZZLE RAIN	**Site Activity Notes:** Abundant spring plant growth

~~Transect~~ 4LTR / Point	Species	Initial Position	Detection Method	If AUD S or C		Sex M	Sex F	Sex U	Behavior / Notes
	Redbreasted sapsucker	FLT / GRD	VIS / AUD					X	N - Nesting in snag S of maint. yard
AMRO	American robin	FLT / GRD	VIS / AUD	X				X	7+ in greenspace singing.
DEJU	Dark-eyed junco	FLT / GRD	VIS / AUD	X				X	F
EUST	European starling	FLT / GRD	VIS / AUD					X	N - in snag in meadow - S of maint yard
BCCH	Black-capped chickadee	FLT / GRD	VIS / AUD	X				X	F
AMGO	American goldfinch	FLT / GRD	VIS / AUD		X			X	FL
SPTO	Spotted towhee	FLT / GRD	VIS / AUD		X			X	F
SOSP	Song sparrow	FLT / GRD	VIS / AUD	X		X			AL, F
AMCR	American crow	FLT / GRD	VIS / AUD		X			X	
CAGO	Canada goose	FLT / GRD	VIS / AUD		X			X	FL
BEWR	Bewicks wren	FLT / GRD	VIS / AUD	X		X			
HOFI	House finch	FLT / GRD	VIS / AUD	X		X			
WIWA	Wilsons warbler	FLT / GRD	VIS / AUD	X		X			F
PAWR	Pacific wren	FLT / GRD	VIS / AUD	X		X			F
STJA	Steller's jay	FLT / GRD	VIS / AUD		X			X	A
SWTH	Swainson's thrush	FLT / GRD	VIS / AUD					X	F
PSFL	Pacific-slope flycatcher	FLT / GRD	VIS / AUD	X		X			
NOFL	Northern flicker	FLT / GRD	VIS / AUD					X	
DOWO	Downy woodpecker	FLT / GRD	~~VIS~~ / AUD		X	X			F
GWWG	Glaucous winged gull	FLT / GRD	VIS / AUD					X	

Data Codes **Initial Position (choose one):** FLT = in flight GRD = on ground / tree **Detection Method:** VIS = visual/seen AUD = aural/heard **If AUD (pick one):** S = song C = call **Behavior Codes:** F = Forage, FL = flying, R = resting/roosting, FS = flushed, AL = alert posture (erect w/neck extended, not vocalizing), A = antagonistic behavior (chase or aggressive contact), CO = copulation, NM = carrying nest material N = nesting confirmed	**Other notes:** SUNRISE @ 5:48 AM

BIRD SURVEY DATA SHEET

Project / Site: CHEASTY GREENSPACE 140744.01	**Date:** 5-4-17
Observers: ILON LOGAN & PETER CARR	**Time:** 6:00a START

Transect / Point	Species	Initial Position	Detection Method	If AUD S or C		Sex M	F	U	Behavior / Notes
COHA	Cooper's hawk	FLT / GRD	VIS / AUD			X	X		N - ♀ likely on eggs. R
ANHU	Anna's hummingbird	FLT / GRD	VIS / AUD	X		X			F, AL
RBNU	Red-breasted nuthatch	FLT / GRD	VIS / AUD	X		X			F
BUSH	Bushtit	FLT / GRD	VIS / AUD		X			X	F
CBCH	Chestnut-backed chick	FLT / GRD	VIS / AUD					X	F
VIREO	VIREO SP.	FLT / GRD	VIS / AUD					X	Probable/unconfirmed
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						
		FLT / GRD	VIS / AUD						

Data Codes	**Initial Position (choose one):** FLT = in flight GRD = on ground **Detection Method:** VIS = visual/seen AUD = aural/heard **If AUD (pick one):** S = song C = call **Behavior Codes:** F = Forage, FL = flying, R= resting/roosting, FS = flushed, AL = alert posture (erect w/neck extended, not vocalizing), A = antagonistic behavior (chase or aggressive contact), CO = copulation, NM = carrying nest material	**Other notes:**

APPENDIX E: TREE INVENTORY

Table E-1. Trees in along Cheasty South portion of the Trail

Tree ID	Species	DBH	Condition	Exceptional	Notes
1	*Acer macrophyllum*	7	Good	No	
2	*Alnus rubra*	19	Poor	No	Phytophora
3	*Acer macrophyllum*	40	Good	Likely, grove	
4	*Acer macrophyllum*	40	Poor	No	
5	*Acer macrophyllum*	29	Fair	Likely, grove	
6	*Acer macrophyllum*	24	Good	Likely, grove	
7	*Acer macrophyllum*	76	Fair	Likely, grove	
8	*Acer macrophyllum*	17	Fair	Likely, grove	
9	*Acer macrophyllum*	70	Fair	Likely, grove	
10	*Acer macrophyllum*	10	Good	No	
11	*Prunus avium*	11	Good	No	
12	*Prunus avium*	12	Good	No	
13	*Prunus avium*	9	Good	No	
14	*Picea sp*	18	Fair	Unknown	
15	*Acer macrophyllum*	32	Fair	Likely, grove	
16	*Acer macrophyllum*	28	Dead	No	
!1	*Acer macrophyllum*	52	Good	Likely, grove	
!10	*Alnus rubra*	12	Dead	No	
!11	*Alnus rubra*	13	Good	Likely, grove	
!12	*Alnus rubra*	18	Poor	No	Phytophora
!13	*Alnus rubra*	19	Fair	Likely, grove	Phytophora
!14	*Acer macrophyllum*	22	Dead	No	
!15	*Acer macrophyllum*	34	Poor	No	Kretz,
!16	*Alnus rubra*	16	Poor	No	Phytophora
!17	*Acer macrophyllum*	86	Good	Likely, grove	Co doms, kretz
!18	*Acer macrophyllum*	28	Good	Likely, grove	
!19	*Acer macrophyllum*	10	Good	No	
!2	*Acer macrophyllum*	6	Good	No	
!20	*Acer macrophyllum*	39	Good	Likely, grove	Codom
!21	*Acer macrophyllum*	13	Good	Likely, grove	Hollow cavity at base
!22	*Acer macrophyllum*	49	Very Poor	No	Kretz, stringy, codom, arm?
!23	*Acer macrophyllum*	57	Poor	No	Heave root, decline, lean, should be removed if trail over roots.
!24	*Acer macrophyllum*	21	Good	Likely, grove	
!25	*Acer macrophyllum*	14	Good	Likely, grove	
!26	*Acer macrophyllum*	32	Good	Likely, grove	Codom
!27	*Acer macrophyllum*	16	Good	Likely, grove	
!28	*Acer macrophyllum*	14	Good	Likely, grove	
!29	*Acer macrophyllum*	13	Fair	Likely, grove	
!3	*Acer macrophyllum*	9	Good	No	
!30	*Acer macrophyllum*	27	Good	Likely, grove	
!31	*Acer macrophyllum*	30	Good	Likely, grove	
!32	*Acer macrophyllum*	10	Good	No	
!33	*Acer macrophyllum*	56	Good	Likely, grove	

Tree ID	Species	DBH	Condition	Exceptional	Notes
!33	*Acer macrophyllum*	20	Good	Likely, grove	
!34	*Acer macrophyllum*	8	Good	Likely, grove	
!35	*Acer macrophyllum*	24	Good	Likely, grove	
!36	*Acer macrophyllum*	42	Good	Likely, grove	
!36	*Acer macrophyllum*	30	Poor	No	Heaving
!37	*Salix lasiandra*	9	Very Poor	No	
!38	*Acer platanoides*	27	Good	No	
!39	*Malus sp*	21	Good	Yes	
!39	*Acer macrophyllum*	8	Good	No	
!4	*Acer macrophyllum*	10	Good	No	
!40	*Acer macrophyllum*	15	Good	Likely, grove	
!41	*Corylus cornuta*	10	Good	No	
!42	*Corylus cornuta*	14	Good	No	
!43	*Acer macrophyllum*	19	Good	Likely, grove	
!44	*Acer macrophyllum*	40	Good	Likely, grove	
!5	*Acer macrophyllum*	11	Good	No	
!6	*Acer macrophyllum*	80	Poor	No	Kretz
!7	*Alnus rubra*	12	Poor	No	Phytophora
!8	*Alnus rubra*	18	Poor	No	Phytophora
!9	*Acer macrophyllum*	14	Good	Likely, grove	
?1	*Salix lasiandra*	6	Fair	No	
?10	*Ilex aquifolium*	14	Dead	No	
?11	*Acer macrophyllum*	23	Fair	Likely, grove	
?12	*Acer macrophyllum*	62	Good	Likely, grove	
?13	*Acer macrophyllum*	18	Good	Likely, grove	
?14	*Acer macrophyllum*	21	Good	Likely, grove	
?15	*Acer macrophyllum*	23	Good	Likely, grove	
?16	*Acer macrophyllum*	6	Fair	No	
?16	*Acer macrophyllum*	30	Good	Likely, grove	
?18	*Populus trichocarpa*	41	Good	Likely, grove	
?2	*Populus trichocarpa*	25	Fair	Likely, grove	
?3	*Populus trichocarpa*	21	Fair	Likely, grove	
?4	*Populus trichocarpa*	31	Good	Likely, grove	
?5	*Populus trichocarpa*	32	Poor	No	
?6	*Populus trichocarpa*	24	Poor	No	
?7	*Ilex aquifolium*	14	Very Poor	No	
?8	*Acer macrophyllum*	10	Good	No	
?9	*Acer macrophyllum*	18	Fair	Likely, grove	

Table E-2. Trees in along Cheasty North portion of the Trail

Tree ID	Species	DBH	Condition	Exceptional	Notes
17	*Acer macrophyllum*	16	Fair	Likely, grove	
19	*Acer macrophyllum*	13	Dead	No	
20	*Acer macrophyllum*	26	Poor	No	
21	*Acer macrophyllum*	8	Dead	No	
22	*Acer macrophyllum*	36	Good	Likely, grove	
23	*Acer macrophyllum*	11	Dead	No	
24	*Acer macrophyllum*	17	Good	Likely, grove	
25	*Acer macrophyllum*	14	Fair	Likely, grove	
26	*Acer macrophyllum*	10	Dead	No	
28	*Acer macrophyllum*	108	Fair	Likely, grove	Multi-stemmed
28	*Acer macrophyllum*	11	Poor	No	
29	*Acer macrophyllum*	11	Fair	No	
30	*Acer macrophyllum*	11	Fair	No	
31	*Acer macrophyllum*	27	Good	No	
32	*Acer macrophyllum*	63	Fair	Likely, grove	
33	*Prunus avium*	17	Fair	No	
33	*Unknown*	27	Poor	No	
35	*Acer macrophyllum*	18	Good	Likely, grove	
36	*Acer macrophyllum*	12	Fair	No	
37	*Acer macrophyllum*	11	Fair	No	
38	*Acer macrophyllum*	34	Good	Likely, grove	
39	*Acer macrophyllum*	11	Fair	No	
40	*Acer macrophyllum*	11	Fair	No	
41	*Acer macrophyllum*	17	Fair	Likely, grove	
42	*Acer macrophyllum*	33	Good	Likely, grove	
44	*Acer macrophyllum*	17	Fair	Likely, grove	
45	*Acer macrophyllum*	21	Good	Likely, grove	
45	*Acer macrophyllum*	17	Poor	No	
46	*Acer macrophyllum*	12	Poor	No	
47	*Acer macrophyllum*	10	Dead	No	
48	*Acer macrophyllum*	20	Fair	Likely, grove	
49	*Acer macrophyllum*	12	Fair	No	
50	*Acer macrophyllum*	17	Good	Likely, grove	
51	*Acer macrophyllum*	27	Good	Likely, grove	
52	*Acer macrophyllum*	21	Dead	No	
52	*Arbutus menziesii*	12	Good	No	
53	*Acer macrophyllum*	12	Fair	No	
54	*Acer macrophyllum*	27	Fair	Likely, grove	
55	*Prunus avium*	8	Good	No	
56	*Acer macrophyllum*	21	Dead	No	
57	*Acer macrophyllum*	15	Good	Likely, grove	
58	*Acer macrophyllum*	14	Dead	No	
59	*Acer macrophyllum*	47	Good	Likely, grove	
60	*Acer macrophyllum*	11	Good	No	
61	*Acer macrophyllum*	9	Fair	No	
62	*Acer macrophyllum*	35	Fair	Likely, grove	

Tree ID	Species	DBH	Condition	Exceptional	Notes
63	*Acer macrophyllum*	7	Good	No	
64	*Acer macrophyllum*	16	Good	Likely, grove	
65	*Acer macrophyllum*	11	Fair	No	
66	*Acer macrophyllum*	9	Dead	No	
67	*Acer macrophyllum*	14	Good	Likely, grove	
68	*Acer macrophyllum*	24	Good	Likely, grove	
69	*Arbutus menziesii*	10	Dead	No	
70	*Acer macrophyllum*	34	Fair	Likely, grove	
71	*Acer macrophyllum*	14	Dead	No	
72	*Acer macrophyllum*	25	Dead	No	
73	*Acer macrophyllum*	17	Good	Likely, grove	
74	*Acer macrophyllum*	35	Fair	Likely, grove	
75	*Acer macrophyllum*	18	Good	Likely, grove	
76	*Acer macrophyllum*	16	Good	Likely, grove	
!45	*Alnus rubra*	15	Good	Likely, grove	
!46	*Alnus rubra*	18	Good	Likely, grove	
!47	*Alnus rubra*	11	Good	No	
!48	*Acer macrophyllum*	8	Good	No	
!49	*Acer macrophyllum*	54	Poor	Likely, grove	
!50	*Acer macrophyllum*	34	Good	Likely, grove	
!50	*Acer macrophyllum*	9	Good	No	
!52	*Acer macrophyllum*	17	Good	Likely, grove	
!53	*Acer macrophyllum*	24	Good	Likely, grove	
!54	*Prunus emarginata*	8	Good	Likely, grove	
!55	*Acer macrophyllum*	30	Good	Likely, grove	
!56	*Acer macrophyllum*	32	Poor	No	
!57	*Acer macrophyllum*	13	Poor	No	
!58	*Acer macrophyllum*	12	Good	No	
!59	*Acer macrophyllum*	28	Good	Likely, grove	
!60	*Acer macrophyllum*	50	Good	Likely, grove	
!61	*Acer macrophyllum*	21	Good	Likely, grove	
!62	*Acer macrophyllum*	11	Good	No	
!63	*Acer macrophyllum*	7	Good	No	
!64	*Acer macrophyllum*	41	Good	Likely, grove	
!65	*Acer macrophyllum*	10	Good	No	
!66	*Acer macrophyllum*	47	Good	Likely, grove	
!66	*Acer macrophyllum*	44	Good	Likely, grove	
!67	*Acer macrophyllum*	7	Good	No	
!68	*Acer macrophyllum*	20	Good	Likely, grove	
!69	*Acer macrophyllum*	28	Good	Likely, grove	
!71	*Acer macrophyllum*	19	Poor	No	
!72	*Acer macrophyllum*	19	Fair	Likely, grove	
!73	*Acer macrophyllum*	22	Good	Likely, grove	
!74	*Acer macrophyllum*	13	Good	Likely, grove	
!75	*Acer macrophyllum*	72	Fair	Likely, grove	378 post
!76	*Acer macrophyllum*	9	Dead	No	

Tree ID	Species	DBH	Condition	Exceptional	Notes
!77	*Acer macrophyllum*	8	Good	No	
!78	*Acer macrophyllum*	6	Good	No	
!79	*Acer macrophyllum*	10	Good	No	
!80	*Acer macrophyllum*	25	Fair	Likely, grove	
!81	*Acer macrophyllum*	23	Poor	No	
!82	*Acer macrophyllum*	17	Good	Likely, grove	
!83	*Acer macrophyllum*	21	Good	Likely, grove	
!84	*Acer macrophyllum*	15	Poor	No	
!85	*Acer macrophyllum*	38	Good	Likely, grove	
!86	*Acer macrophyllum*	9	Good	No	
!87	*Acer macrophyllum*	11	Good	No	
!88	*Acer macrophyllum*	11	Good	No	
!89	*Acer macrophyllum*	45	Poor	No	
!90	*Acer macrophyllum*	19	Dead	No	
!91	*Acer macrophyllum*	28	Very Poor	No	
!92	*Acer macrophyllum*	32	Fair	Likely, grove	
!93	*Acer macrophyllum*	22	Good	Likely, grove	
?19	*Prunus avium*	7	Good	No	
?20	*Unknown*	11	Good	No	
?21	*Acer macrophyllum*	19	Fair	Likely, grove	452
?22	*Acer macrophyllum*	18	Good	Likely, grove	
?23	*Acer macrophyllum*	11	Dead	No	
?23	*Acer macrophyllum*		Poor	No	Almost dead, partially failed, remove with trail construction 450
?24	*Acer macrophyllum*	26	Fair	Likely, grove	3 stems
?25	*Acer macrophyllum*	10	Poor	No	
?26	*Acer macrophyllum*	7	Fair	No	
?26	*Acer macrophyllum*	12	Poor	No	
?27	*Acer macrophyllum*	11	Fair	No	
?27	*Acer macrophyllum*	8	Poor	No	
?29	*Acer macrophyllum*	6	Poor	No	
?30	*Acer macrophyllum*	19	Fair	Likely, grove	2 stems
?31	*Acer macrophyllum*	25	Poor	No	448
?32	*Acer macrophyllum*		Fair	Unknown	
?33	*Acer macrophyllum*	26	Fair	Likely, grove	3 stems
?34	*Salix lasiandra*	24	Poor	No	
?35	*Populus trichocarpa*	30	Fair	Likely, grove	2 stems
?36	*Prunus avium*	20	Good	No	11 stems-prunus
?37	*Acer macrophyllum*	22	Excellent	Likely, grove	
?37	*Populus trichocarpa*	7	Good	No	
?38	*Acer macrophyllum*	13	Poor	No	
?39	*Acer macrophyllum*	12	Good	No	435
?40	*Acer macrophyllum*	11	Fair	No	2stems
?41	*Acer macrophyllum*	6	Fair	No	
?42	*Acer macrophyllum*	25	Good	Likely, grove	3stems

Species	Condition	DBH	DBH_2	DBH_3	Excep_Stat	DBH_4	DBH_5	DBH_6
ACMA	F	24	0	0	Exceptional	0	0	0
ACMA	F	21	0	0	Exceptional	0	0	0
ACMA	F	9	0	0	Exceptional	0	0	0
ACMA	F	23	0	0	Exceptional	0	0	0
ACMA	G	21	0	0	Exceptional	0	0	0
ACMA	G	19	0	0	Exceptional	0	0	0
ACMA	dead	9	0	0	Exceptional	0	0	0
ACMA	P	26	0	0	Exceptional	0	0	0
ACMA	F	14	0	0	Exceptional	0	0	0
ACMA	F	15	0	0	Exceptional grove	0	0	0
ACMA	F	12	0	0	Exceptional grove	0	0	0
ACMA	F	12	0	0	Exceptional grove	0	0	0
ACMA	F	9	0	0	Exceptional grove	0	0	0
ACMA	F	19	0	0	Exceptional grove	0	0	0
ACMA	F	7	0	0	Exceptional grove	0	0	0
ACMA	F	15	0	0	Exceptional grove	0	0	0
ACMA	F	15	0	0	Exceptional grove	0	0	0
ACMA	F	30	0	0	Exceptional grove	0	0	0
ACMA	dead	14	0	0	Exceptional grove	0	0	0
ACMA	G	8.5	0	0	Exceptional grove	0	0	0
ACMA	G	10	0	0	Exceptional grove	0	0	0
ACMA	P	8.5	0	0	Exceptional grove	0	0	0
ACMA	P	9	0	0	Exceptional grove	0	0	0
ACMA	F	13	0	0	Exceptional grove	0	0	0
ACMA	G	18.5	0	0	Exceptional grove	0	0	0
ARME	F	8	0	0	Exceptional grove	0	0	0
ACMA	G	12	12.5	0	Exceptional grove	0	0	0
ACMA	F	9	0	0	Exceptional grove	0	0	0
ACMA	F	18	0	0	Exceptional grove	0	0	0
ACMA	P	7.5	8.5	0	Exceptional grove	0	0	0
ACMA	P	12.5	0	0	Exceptional grove	0	0	0
ACMA	F	8	0	0	Exceptional grove	0	0	0
ACMA	F	9	0	0	Exceptional grove	0	0	0
ACMA	F	11	0	0	Exceptional grove	0	0	0
ACMA	P	8	9	0	Exceptional grove	0	0	0
ACMA	P	8	8	0	Exceptional grove	0	0	0
SASC	G	9	0	0	Exceptional grove	0	0	0
ACMA	P	12	0	0	Exceptional grove	0	0	0
ACMA	G	18	0	0	Exceptional grove	0	0	0
SASC	G	14	0	0	Exceptional grove	0	0	0
PREM	G	18	0	0	Exceptional grove	0	0	0
ALRU	P	14	11	0	Exceptional grove	0	0	0
ALRU	G	13	0	0	Exceptional grove	0	0	0
ALRU	F	18	0	0	Exceptional grove	0	0	0
ACMA	F	18	19	16	Exceptional grove	0	0	0
ACMA	F	22	21	16	Exceptional grove	0	0	0

ACMA	G	24	0	0	Exceptional grove	0	0	0
ACMA	F	11	0	0	Exceptional grove	0	0	0
ACMA	P	12	0	0	Exceptional grove	0	0	0
ACMA	F	10	12	12	Exceptional grove	0	0	0
ACMA	F	10	0	0	Exceptional grove	0	0	0
ACMA	F	12	12	0	Exceptional grove	0	0	0
SAsp	G	9	0	0	Exceptional grove	0	0	0
ACMA	F	18	18	0	Exceptional grove	0	0	0
ACMA	F	18	0	0	Exceptional grove	0	0	0
ACMA	G	8	8	0	Exceptional grove	0	0	0
POBA	G	18	0	0	Exceptional grove	0	0	0
ALRU	G	9	0	0	Exceptional grove	0	0	0
CRDO	G	8.5	0	0	Exceptional grove	0	0	0
ALRU	P	11.5	0	0	Exceptional grove	0	0	0
POBA	G	21	0	0	Exceptional grove	0	0	0
SAsp	F	13	14	0	Exceptional grove	0	0	0
ALRU	G	13	0	0	Exceptional grove	0	0	0
ALRU	G	14	0	0	Exceptional grove	0	0	0
ACMA	G	14	0	0	Exceptional grove	0	0	0
ACMA	F	11	12	0	Exceptional grove	0	0	0
ACMA	P	11	9	0	Exceptional grove	0	0	0
ACMA	F	12	0	0	Exceptional grove	0	0	0
ACMA	F	19	19	18	Exceptional grove	0	0	0
ACMA	G	20	0	0	Exceptional grove	0	0	0
ACMA	F	19	22	0	Exceptional grove	0	0	0
ALRU	P	10	0	0	Exceptional grove	0	0	0
ACMA	F	18.5	0	0	Exceptional grove	0	0	0
ACMA	F	30	0	0	Exceptional grove	0	0	0
ACMA	G	27	0	0	Exceptional grove	0	0	0
ACMA	F	30	0	0	Exceptional grove	0	0	0
ACMA	G	15	0	0	Exceptional grove	0	0	0
ACMA	G	13	0	0	Exceptional grove	0	0	0
ACMA	F	31	15	0	Exceptional grove	0	0	0
ACMA	G	11	0	0	Exceptional grove	0	0	0
ACMA	P	8	0	0	Exceptional grove	0	0	0
ACMA	F	21	0	0	Exceptional grove	0	0	0
ACMA	f	17	12	0	Exceptional grove	0	0	0
PRsp	F	9	0	0	Exceptional grove	0	0	0
ACMA	G	13	19	18	Exceptional grove	18	17	0
ACMA	F	17	17	18	Exceptional grove	0	0	0
PREM	G	10	0	0	Exceptional grove	0	0	0
ACMA	G	28	29	0	Exceptional grove	0	0	0
ACMA	G	26	0	0	Exceptional grove	0	0	0
ACMA	G	27	0	0	Exceptional grove	0	0	0
ACMA	G	13	12	0	Exceptional grove	0	0	0
ACMA	P	9.5	0	0	Exceptional grove	0	0	0
ACMA	G	17	0	0	Exceptional grove	0	0	0

ACMA	G	13.5	0	0	Exceptional grove	0	0	0
ACMA	G	8.5	9	0	Exceptional grove	0	0	0
ACMA	G	11	0	0	Exceptional grove	0	0	0
ACMA	F	29	0	0	Exceptional grove	0	0	0
ACMA	F	11	0	0	Exceptional grove	0	0	0
ACMA	G	17	0	0	Exceptional grove	0	0	0
ACMA	G	16	16	0	Exceptional grove	0	0	0
ACMA	G	16	0	0	Exceptional grove	0	0	0
ACMA	F	12	0	0	Exceptional grove	0	0	0
ACMA	P	12	13	0	Exceptional grove	0	0	0
ACMA	F	11	0	0	Exceptional grove	0	0	0
ACMA	F	9	0	0	Exceptional grove	0	0	0
ACMA	F	18	0	0	Exceptional grove	0	0	0
ACMA	P	9.5	0	0	Exceptional grove	0	0	0
ACMA	F	14	19	16	Exceptional grove	0	0	0
ACMA	F	17.5	0	0	Exceptional grove	0	0	0
THPL	G	21.5	0	0	Exceptional grove	0	0	0
ALRU	F	9.5	0	0	Exceptional grove	0	0	0
ACMA	F	23	0	0	Exceptional grove	0	0	0
ACMA	F	39.5	0	0	Exceptional grove	0	0	0
ACMA	F	15.5	0	0	Exceptional grove	0	0	0
ACMA	F	18.5	0	0	Exceptional grove	0	0	0
ACMA	F	24	0	0	Exceptional grove	0	0	0
ACMA	P	9	10	0	Exceptional grove	0	0	0
ACMA	F	11	0	0	Exceptional grove	0	0	0
ACMA	F	36	0	0	Exceptional grove	0	0	0
ACMA	F	15	0	0	Exceptional grove	0	0	0
ACMA	F	9.5	13.5	23	Exceptional grove	0	0	0
ACMA	G	18	0	0	Exceptional grove	0	0	0
ACMA	F	16	0	0	Exceptional grove	0	0	0
ACMA	G	13	0	0	Exceptional grove	0	0	0
ACMA	F	12	0	0	Exceptional grove	0	0	0
ACMA	G	21	24	0	Exceptional grove	0	0	0
SAsp	G	8.5	0	0	Exceptional grove	0	0	0
SAsp	G	10	0	0	Exceptional grove	0	0	0
SAsp	G	8	0	0	Exceptional grove	0	0	0
ACMA		31	0	0	Exceptional grove	0	0	0
ACMA	F	10	0	0	Exceptional grove	0	0	0
ACMA	F	13	0	0	Exceptional grove	0	0	0
ACMA	F	11.5	11	0	Exceptional grove	0	0	0
ACMA	F	9.5	0	0	Exceptional grove	0	0	0
ACMA	P	19	0	0	Exceptional grove	0	0	0
ACMA	G	14.5	0	0	Exceptional grove	0	0	0
ACMA	F	12.5	0	0	Exceptional grove	0	0	0
ACMA	P	10.5	0	0	Exceptional grove	0	0	0
ACMA	P	8.5	0	0	Exceptional grove	0	0	0
ACMA	F	15.5	14	12	Exceptional grove	0	0	0

ACMA	G	14	18	0	Exceptional grove	0	0	0
ACMA	P	28	0	0	Exceptional grove	0	0	0
ACMA	P	15	0	0	Exceptional grove	0	0	0
ACMA	F	8	0	0	Exceptional grove	0	0	0
ACMA	F	17	8	0	Exceptional grove	0	0	0
ACMA	F	17	0	0	Exceptional grove	0	0	0
ACMA	F	14.5	0	0	Exceptional grove	0	0	0
THPL	G	23	0	0	Exceptional grove	0	0	0
ACMA	F	12	14	27	Exceptional grove	17	0	0
ACMA	F	21	0	0	Exceptional grove	0	0	0
ACMA	F	21	0	0	Exceptional grove	0	0	0
ACMA	F	19	19	21	Exceptional grove	0	0	0
ACMA	F	14	0	0	Exceptional grove	0	0	0
PRsp	G	8	0	0	Exceptional grove	0	0	0
ALRU	F	9	0	0	Exceptional grove	0	0	0
SAsp	G	10	15	0	Exceptional grove	0	0	0
ACMA	P	20	0	0	Exceptional grove	0	0	0
ACMA	F	12.5	0	0	Exceptional grove	0	0	0
ALRU	branch	10	0	0	Exceptional grove	0	0	0
ACMA	F	18	16	0	Exceptional grove	0	0	0
CRDO	G	8	0	0	Exceptional grove	0	0	0
ACMA	P	12	0	0	Exceptional grove	0	0	0
ACMA	P	9.5	12	0	Exceptional grove	0	0	0
ACMA	F	11.5	0	0	Exceptional grove	0	0	0
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ARME	G	16.5	0	0	Not Exceptional	0	0	0
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THPL	G	39	0	0	Not Exceptional	0	0	0
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ACMA	P	12.5	0	0	Not Exceptional	0	0	0
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ACMA	G	15	0	0	Not Exceptional	0	0	0
ACsp	G	10.5	0	0	Not Exceptional	0	0	0
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ACMA	F	14	15	0	Not Exceptional	0	0	0
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ACMA	F	14	0	0	Not Exceptional	0	0	0
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THPL	G	10	0	0	Not Exceptional	0	0	0
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ACMA	F	13	0	0	Not Exceptional	0	0	0
ACMA	F	15	0	0	Not Exceptional	0	0	0
PRsp	G	8	0	0	Not Exceptional	0	0	0
ACMA	P	17	16.5	0	Not Exceptional	0	0	0

ACMA	F	27	0	0	Not Exceptional	0	0	0
ACMA	F	18	0	0	Not Exceptional	0	0	0
ACMA	F	15.5	0	0	Not Exceptional	0	0	0
ACMA	F	13.5	0	0	Not Exceptional	0	0	0

APPENDIX F: TRAIL DESIGN

Cheasty Greenspace North Loop Trail

Record # 000207-22PA

Building & Land Use Pre-Application

Owner:
City of Seattle Department of Finance & Administrative Services,
City Purchasing & Contracting Services

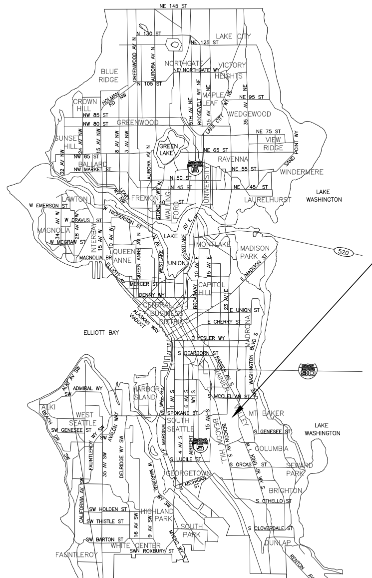
Administering Department:
City of Seattle Department of Parks and Recreation, Planning & Development Division
300 Elliott Avenue West, Suite 100, Seattle, WA 98119
Project Manager: Mike Schwindeller 206-615-1165

Project Design Team:
Environmental Science Associates
2801 Alaskan Way, Suite 200, Seattle, WA 98121
Primary Contact: Sona Greenberg 206-789-9658

Project Address:
1635 S Columbian Way
Seattle, WA 98108

Assessor's Parcel Number:
162404-9161

LEGAL DESCRIPTION
POR OF W 1/2 OF SE 1/4 LY ELY OF CHEASTY BLVD NLY OF COLUMBIAN WAY & WLY OF LN BEG AT PT ON NLY MGN OF COLUMBIAN WAY 511.57 FT NELY OF S LN OF SUBD TH N 22-23-11 W 668.36 FT TH N 09-21-54 E 1745.96 FT TO N LN OF SUBD



VICINITY MAP
CITY OF SEATTLE - NOT TO SCALE

Project Site Location

LOCATION MAP
BEACON HILL - SCALE 1"=1,000'

STANDARD ABBREVIATIONS

Aban	Abandon(ed)
Adj	Adjust
ADA	Americans with Disabilities Act
AIC	Aerial Interconnect
Al	Aluminum
AP	Angle Point
Approx	Approximate
Asph	Asphalt
ABW	Asphalt Bike Way
ATB	Asphalt Treated Base
ACV	Automatic Control Valve
AVB	Automatic Vacumn Breaker
Ave	Avenue
Avg	Average
BV	Ball Valve
BOC	Beginning of Curb
BO	Blow Off
BF	Bottom Face
Br	Brick
Blkhd	Bulkhead
BfV	Butterfly Valve
Cb	Cable
Cal	Caliper
CIP	Cast Iron Pipe
CB	Catch Basin
CL	Center Line
C–C	Center to Center
CLF	Chain Link Fence
Ch	Chamber
Cl	Class
CO	Clean Out
Clr	Clearance
Conc	Concrete
CBW	Concrete Bike Way
CC	Concrete Culvert
CW	Concrete Walk
Cond	Condition
Cd	Conduit
Conn	Connect
CMP	Corrugated Metal Pipe
Cont	Continuous
Cr	Cross
Cu Ft	Cubic Feet
Cu Yd	Cubic Yard
Culv	Culvert
C&G	Curb and Gutter
CR	Curb Radius
Dept	Department
Dia	Diameter
DB	Direct Burial Cable
DGV	District Gate Valve
DCV	Double Check Valve
Dwy	Driveway
DIP	Ductile Iron Pipe
Ea	Each
Esmt	Easement
Ecc	Eccentric
Elec	Electric/Electrical
ECb	Electric Cable
ECd	Electric Conduit
ED	Electric Duct
EMH	Electric Manhole
EV	Electric Vault
El	Elevation
Elev	Elevation
Encl	Enclosure
EOC	End of Curb
Eq	Equal
Ex	Existing
Exp	Expansion
Ft	Feet
FLP	Field Light Pole
Fig	Figure
FF	Finished Floor
FG	Finish Grade
FS	Finished Surface (paving)
FM	Force Main
Gal	Gallon
GPM	Gallons Per Minute
Galv	Galvanize/Galvanized
GIP	Galvanized Iron Pipe
GSP	Galvanized Steel Pipe
GM	Gas Meter
G Reg	Gas Regulator
Gas V	Gas Valve
Gr	Grade
Gnd	Ground
GP	Guy Pole
HH	Handhole
HPG	High Pressure Gas
HPS	High Pressure Sodium
Horiz	Horizontal
HB	Hose Bib
HC	Hose Connection
Hse	House
Hyd	Hydrant
In	Inch/Inches
Inl	Inlet
ID	Inside Diameter
IE	Invert Elevation
Inv	Invert (Line)
IP	Iron Pipe
Irrg	Irrigation
IRC	Irrigation Controller
Irrg	Irrigation
IH	Irrigation Head
Jt	Joint
JB	Junction Box
KV	Kilovolt
LIT	Large Inlet Top
Lt	Left
LP	Light Pole
LF	Lineal Feet
Loc	Location/Locate
MH	Manhole
MCV	Manual Control Valve
MDV	Manual Drain Valve
Max	Maximum
MJ	Mechanical Joint
MVL	Mercury Vapor Light
Min	Miniumum
Misc	Miscellaneous
ML	Monument Line
NIC	Not In Contract
NTS	Not To Scale
No.	Number
OC	On Center
OD	Outside Diameter
Pav	Pavement
PPB	Pedestrian Push Button
PDP	Perforated Drain Pipe
PS	Pipe Sewer Combined
PSS	Pipe Sewer Sanitary
PSD	Pipe Storm Drain
PSDD	Pipe Storm Drain Detention
PE	Plain End
PL	Plate
PCC	Point of Compound Curvature
PC	Point of Curvature
PI	Point of Intersection
PRC	Point of Reverse Curve
PT	Point of Tangency
PVC	Polyvinyl Chloride
LBS	Pounds
PSI	Pounds per Square Inch
PP	Power Pole
PPL	Power Pole with Light
PRV	Pressure Reducing Valve
PVB	Pressure Vacumn Breaker
PL	Property Line
Prop	Proposed
Qty	Quantity
R	Radius
RR	Railroad
Rlwy	Railway
Reconn	Reconnect
Red	Reducer
Ref	Refer/Reference
Reinf	Reinforcing/Reinforcement
RCP	Reinforced Concrete Pipe
Reloc	Relocate
Rem	Remove
R&R	Remove and Replace
Repl	Replace
Req'd	Required
Ret	Retire(d)
Rt	Right
R/W	Right of Way
RGS	Rigid Galvanized Steel
RS	Rigid Steel
Rdwy	Roadway
RD	Roof Drain
SB	Sand Box
SCL	Seattle City Light
SED	Seattle Engineering Dept.
SWD	Seattle Water Department
SG	Subgrade
SD	Service Drain
Sht	Sheet
SS	Side Sewer – Combined
SSS	Side Sewer – Sanitary
Sl	Sleeve
Spcs	Spaces
Spec	Specification(s)
SH	Sprinkler Head
Sq	Square
Std	Standard
Stl	Steel
Stl P	Steel Pipe
St	Street
SDS	Street Designation Sign
SLHH	Street Light Handhole
SNS	Street Name Sign
Struct	Structural/Structure
SL	Survey Line
T	Tee
Tel	Telephone
TCb	Telephone Cable
TCd	Telephone Conduit
TC	Top of Curb
THH	Telephone Handhole
TVCb	Television Cable
TVHH	Television Handhole
Temp	Temporary
TH	Testhole
TF	Top Face
Tr	Traffic
TrCb	Traffic Cable
TrCd	Traffic Conduit
TCHH	Traffic Handhole
TrSB	Traffic Signal Box
TrSP	Traffic Signal Pole
XP	Transmission Pole
Typ	Typical
VCh	Valve Chamber
V/Var	Variable
Vert	Vertical
VB	Valve Box
V/C	Vertical Curve
W	Water
WM	Water Meter
WCR	Wheel Chair Ramp
w/	With
WP	Wood Pole
WSP	Wood Stave Pipe

SHEET INDEX

Project Description:

This project proposes constructing a 1.0-mile, one-loop bike trail, 0.4-mile multi-use trail, and 0.1 mile hike-only connector trail in Cheasty Greenspace in the Beacon Hill neighborhood of Seattle (see Vicinity Map and Location Map, this sheet). In 2012, a group of neighbors proposed the development of pedestrian and mountain bike trails at Cheasty Greenspace as a project through the Parks and Green Spaces Levy Opportunity Fund process. The Opportunity Fund is funded through the 2008 Parks and Green Spaces Levy approved by voters and allows the community to initiate park projects in neighborhoods. The project was contrary to Seattle Parks and Recreation (SPR)'s bicycle policy, and thus the original project was not successful in the Opportunity Fund process. However, there was significant community interest for the trails project, with the North Beacon Hill Community Council voting to support it. Additionally, the North Beacon Hill Neighborhood Plan, in the Comprehensive Plan (City of Seattle, 2016b), includes policy NBH-P34: Consider the development of pedestrian and bicycle trails through publicly owned greenbelts throughout North Beacon Hill. In 2013, the group Friends of Cheasty Greenspace at Mountain View secured funding through the Department of Neighborhoods. The group used this funding to hire a landscape architect to develop a preliminary trail design.

The trail is designed to avoid impacts to wetlands, and minimize impacts to steep slopes, wetland buffers, the watercourse, and the riparian management area (watercourse buffer). The proposed North Loop trail design provides a one-direction bicycle loop, multi-use connector trail, and hike-only trail that connects to an existing hike-only trail. Cheasty Greenspace North Loop provides two public hiking-only access points, two bicycle-only access points, and three multi-use access points. All proposed trail would be soft surface, with native mineral soils. The trails have been designed to minimize impacts to wetland and watercourse buffers. The bicycle trails are for beginner to intermediate riders and are not anticipated to be a mountain biking destination.

>>>>CAUTION - CALL 811<<<<
UTILITY NOTIFICATION CENTER
BEFORE YOU DIG!
WWW.CALL811.COM

Also, verify all underground utilities not located by the 811 service by using a commercial location service and call SPR Inspection Request Line (206) 684-7034.

NO.	REVISION – AS BUILT	DATE
7		
6		
5		
4		
3		
2		
1		

ADDRESS OF PROPERTY: 1635 S COLUMBIAN WAY, SEATTLE, WA 98108
OWNER: CITY OF SEATTLE DEPARTMENT OF FINANCE & ADMINISTRATIVE SERVICES, CITY PURCHASING CONTRACTING SERVICES
LEGAL DESCRIPTION: POR OF W 1/2 OF SE 1/4 LY ELY OF CHEASTY BLVD NLY OF COLUMBIAN WAY & WLY OF LN BEG AT PT ON NLY MGN OF COLUMBIAN WAY 511.57 FT NELY OF S LN OF SUBD TH N 22–23–11 W 668.36 FT TH N 09–21–54 E 1745.96 FT TO N LN OF SUBD
ASSESSOR'S PARCEL NO: 162404–9161

REVIEWED:
PARK ENGINEER DATE

All work done in accordance with the City of Seattle Standard Plans and Specifications in effect on the date shown above, and supplemented by Special Provisions.

ESA
2801 Alaskan Way, #200
Seattle, WA 98121
P: (206) 789-9658
F: (206) 789-9684

90% DESIGN
-
NOT FOR CONSTRUCTION

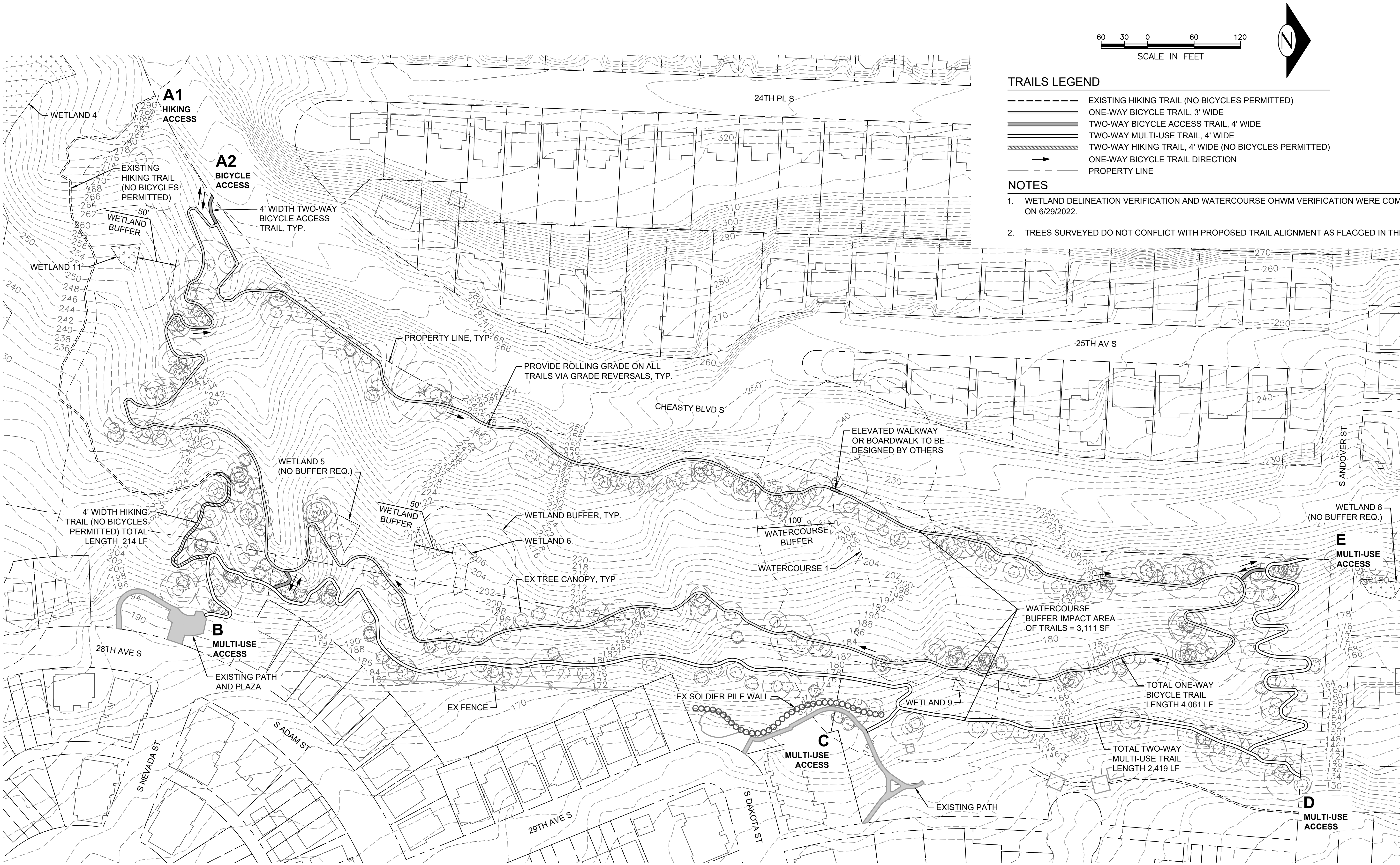
Seattle Parks & Recreation

SEATTLE PARKS DEPARTMENT
CHEASTY NORTH LOOP
COVER SHEET

DESIGNED ABG
DRAWN ABG/TTF
CHECKED SAR
ORDINANCE NO.
SPECIFICATION NO.
SCALE AS SHOWN

DATE 12/30/2022
SHEET 1 OF 20
G-1

miranda nelson - 12/29/2022 11:21:33 AM - p:\01 CAD\2022xxxxx\D202200373.00 - cheasty trail north loop\DWG\G-1 COVER SHEET.dwg



TRAILS LEGEND

- EXISTING HIKING TRAIL (NO BICYCLES PERMITTED)
- ONE-WAY BICYCLE TRAIL, 3' WIDE
- TWO-WAY BICYCLE ACCESS TRAIL, 4' WIDE
- TWO-WAY MULTI-USE TRAIL, 4' WIDE
- TWO-WAY HIKING TRAIL, 4' WIDE (NO BICYCLES PERMITTED)
- ONE-WAY BICYCLE TRAIL DIRECTION
- PROPERTY LINE

NOTES

1. WETLAND DELINEATION VERIFICATION AND WATERCOURSE OHWM VERIFICATION WERE COMPLETED ON 6/29/2022.
2. TREES SURVEYED DO NOT CONFLICT WITH PROPOSED TRAIL ALIGNMENT AS FLAGGED IN THE FIELD.

>>>>CAUTION - CALL 811<<<<
UTILITY NOTIFICATION CENTER
BEFORE YOU DIG!
WWW.CALL811.COM

Also, verify all underground utilities not located by the 811 service by using a commercial location service and call SPR Inspection Request Line (206) 684-7034.

NO.	REVISION – AS BUILT	DATE
7		
6		
5		
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PARK ENGINEER DATE

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90% DESIGN
-
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Seattle Parks & Recreation

SEATTLE PARKS DEPARTMENT

CHEASTY NORTH LOOP

SITE PLAN

DESIGNED ABG
DRAWN ABG
CHECKED SAR
ORDINANCE NO.
SPECIFICATION NO.
SCALE AS SHOWN

DATE 12/30/2022
SHEET 2 OF 20
L-1