CRITICAL AREA DETERMINATION

Guadagno Property
King County, Washington

June 13, 2022

RAEDEKE ASSOCIATES, INC.

Raedeke Associates, Inc.

Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

Report To:	Phil & Ann Guadagno 14282 Olympic Drive SW Vashon Island, WA 98070
Title:	Critical Area Determination Guadagno Property King County, Washington
Project Number:	2022-043-001
Prepared by:	RAEDEKE ASSOCIATES, INC. 2111 N. Northgate Way Ste. 219 Seattle, Washington, 98133 (206) 525-8122
Date:	June 13, 2022

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Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

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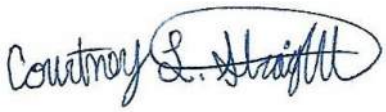
Submitted by:



Signature

Courtney Straight
Printed Name

June 13, 2022
Date

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1.0 INTRODUCTION

1.1 PURPOSE

Raedeke Associates, Inc. was retained by Phil and Anne Guadagno to provide a critical area determination for the slope restoration and reconstruction of a deck on the property located along Olympic Drive SW in unincorporated King County on Vashon Island, Washington. As part of this project, we conducted a site visit to identify and delineate any wetlands, streams, or shorelines on or in the immediate vicinity of the project site. During our site visit, we collected information sufficient to characterize the existing site conditions as well as onsite wetlands. We delineated the Ordinary High Water Mark (OHWM) of the shoreline. We did not locate any wetlands on or adjacent to the site during our investigation.

This report presents the findings of our background information review and our April 22, 2022, site investigation of the project site.

1.2 PROJECT LOCATION

The Guadagno King County project site includes one 0.47-acre parcel located at 14282 Olympic Drive SW in unincorporated King County on Vashon Island, Washington (Figure 1). The project site is identified as King County Tax Parcel No. 888000055, which places the project site in a portion of Section 13, Township 23 North, Range 2 East, W.M. Parcel maps retrieved on-line from King County iMap depict the property boundaries.

The Guadagno King County project site is bordered to the north by the Puget Sound, and to the east, south, and west by single-family homes. The property is accessed from Olympic Drive SW to the south.

2.0 METHODS

2.1 DEFINITIONS AND METHODOLOGIES

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into "Waters of the United States", including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2021, 2022). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions.

Hydrophytic vegetation is defined as "macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (COE 2020). The WIS ratings "reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species" (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as "a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this

area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as driftlines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

2.2 BACKGROUND RESEARCH

Prior to conducting our site visit, we reviewed existing background maps and information for the project site from the U.S.D.A. Natural Resource Conservation Service (NRCS 2022) Web Soil Survey, the U.S. Fish and Wildlife Service (USFWS 2022) National Wetland Inventory (NWI), and King County (2022b) iMap. We also reviewed the Washington Department of Fish Wildlife (2022) Priority Species database (PHS) in order to determine if any endangered or sensitive wildlife was present on or within the immediate vicinity of the project site. In addition, we reviewed current and historical aerial photographs (Google Earth 2022) to assist in the definition of existing plant communities, drainage patterns, and land use.

2.3 FIELD SAMPLING PROCEDURES

We conducted a site visit on April 22, 2022, to identify and delineate wetland and shoreline boundaries within the project site. During our site visit, we also collected information sufficient to describe the general site conditions.

Vegetation, soils, and hydrology were examined in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (2018), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (COE 2020). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled

soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

3.0 EXISTING CONDITIONS

3.1 RESULTS OF BACKGROUND INVESTIGATION

The U.S.D.A. NRCS (2022) Web Soil Survey shows the project site mapped as Alderwood gravelly sandy loam soils series (Figure 2). Alderwood gravelly sandy loam does not meet the criteria of a hydric soil but may contain hydric inclusions including Shalcar and Norma soils. Soil series boundaries are mapped using aerial photo interpretation with limited field verification. Thus, the mapping of soils within an area may vary from one location to another.

The USFWS (2022) NWI shows that the portion the project site in the intertidal area along the Puget Sound shoreline contains an estuarine, and marine wetland E2AB/USN (Figure 3). Wetlands shown on the NWI are general in terms of location and extent, as they are determined primarily from aerial photograph interpretation. Thus, the number and extent of existing wetlands located within the project area may differ from those marked on an NWI map.

King County (2022b) iMap depicts the intertidal area on the north end of the subject parcel as a wetland (Figure 4).

The WDFW (2022) PHS database map shows the beach at the project site as a breeding area for surf smelt (Figure 5). The PHS map also identifies the intertidal area at the north end of the subject parcel as an estuarine and marine wetland. The Washington Natural Heritage Program (2021) database does not identify a natural heritage feature within the section where the project is located.

3.2 RESULTS OF FIELD INVESTIGATIONS

The project site consists of one 0.47-acre parcel that contains a garage, house, deck, gardens, and a mowed lawn. The lawn area is dominated by Kentucky bluegrass (*Poa pratensis*, FAC), bentgrass (*Agrostis sp.*), and common dandelion (*Taraxacum officinale*, FACU). The slope contains native plantings including holly-leaf Oregon grape (*Mahonia aquifolium*, FACU), common snowberry (*Symphoricarpos albus*, FACU), blood currant (*Ribes sanguineum*, FACU), pineland sword fern (*Polystichum munitum*, FACU), salmon raspberry (*Rubus spectabilis*, FAC), and salal (*Gaultheria shallon*, FACU). The western property line is planted with a row of western red arborvitae (*Thuja plicata*, FAC). The eastern property line contains common snowberry (FACU) and pineland sword fern (FACU).

Soils across the project site vary between hydric and not hydric. The soil behind the bulkhead has over 5 inches of dark grayish brown (10YR 4/2) silt clay loam (Sample Plot 1). The soil at the top of the slope near the western property line consists of 6 inches of dark brown (10YR 3/3) gravelly sandy loam soils over olive brown (2.5Y 4/3) gravelly sandy loam with dark yellowish brown (10YR 3/6) redoximorphic concentrations within

the soil matrix (Sample Plot 2). Soil at the top of the slope near the eastern property line consists of 8 inches of olive brown (2.5Y 4/3) silt clay loam soils with dark yellowish brown (10YR 4/4) redoximorphic concentrations within the soil matrix over gray (2.5Y 5/1) silt clay loam soils with dark yellowish brown (10YR 4/4) redoximorphic concentrations within the soil matrix (Sample Plot 3). Soils near the shoreline and the eastern property line meet the hydric soil criteria depleted matrix (F3) as defined by the COE wetland delineation manual (Environmental Laboratory 1987) and the regional supplement (COE 2010) (Figure 6). During our site investigation, we did not observe any indicators of wetland hydrology such as a shallow groundwater table, soils saturation within the upper 12 inches of the soil profile, or any secondary indicators of wetland hydrology (water-stained leaves, drift deposits, areas of seasonal ponding, algal mats, etc.) within the project site.

3.2.1 Puget Sound Shoreline

As noted above, the property is bordered to the north by the Puget Sound (Figure 6). We marked the OHWM with pink and black flagging. A rock bulkhead is located along the Puget Sound OHWM. The bulkhead appears to correspond to the location of the marine OHWM with a more natural marine, cobble and substrate beach environment extending to the north. The Puget Sound shoreline is designated as a Type S water or "shoreline of the state."

4.0 REGULATORY CONSIDERATIONS

Wetlands are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including King County (2022a) code. Regulatory considerations pertinent to wetlands identified within the study area are discussed below; however, this discussion should not be considered comprehensive. Additional information may be obtained from agencies with jurisdictional responsibility for, or interest in, the site. A brief review of the U.S. Army Corps of Engineers regulations and King County policy, relative to wetlands, is presented below.

4.1 FEDERAL CLEAN WATER ACT (U.S. ARMY CORPS OF ENGINEERS)

Federal law (Section 404 of the Clean Water Act) discourages the discharge of dredged or fill material into the nation's waters, including most wetlands and streams, without a permit from the U.S. Army Corps of Engineers (COE 2021, 2022). The COE makes the final determination as to whether an area meets the definition of "Waters of the U.S." as defined by the federal government (Federal Register 1986:41251), and thus, if it is under their jurisdiction.

We should caution that the placement of fill within wetlands or other "Waters of the U.S." without authorization from the COE is not advised, as the COE makes the final determination regarding whether any permits would be required for any proposed alteration (COE 2021, 2022). Because the COE makes the final determination regarding permitting under their jurisdiction, a jurisdictional determination from the COE is generally recommended prior to any construction activities, if any modification of wetlands is proposed. A jurisdictional determination would also provide evaluation and confirmation of the wetland delineations by the COE.

4.2 WASHINGTON STATE

Under Section 401 of the Clean Water Act, an activity involving a discharge in waters of the U.S. authorized by a federal permit must receive water quality certification by the affected certifying agency. In Washington State, the certifying agency is WDOE, which has regulatory authority over waters of the state, including streams and isolated wetlands, under the state Water Pollution Control Act (90.48 RCW) and the Shoreline Management Act (90.58 RCW).

4.3 KING COUNTY

King County (2022a) code regulates wetlands, streams, and shorelines as critical areas. Alterations of critical areas and their buffers are generally prohibited, except as allowed under certain conditions. All direct impacts must be mitigated through creation, restoration, or enhancement. King County (2022a) has the final authority to determine ratings, buffers, and allowed uses of critical areas, their buffers, and other sensitive areas that are under their jurisdiction.

King County (2022a) provides a range of buffer widths for shorelines depending on the water type and location in relation to the Urban Growth Area. The King County (2022b) iMap Urban Growth Area layer identifies the project site as rural. King County (2022a) code Section 21A.24.358 requires a 165-foot-wide buffer for Type S waters outside the Urban Growth Area.

5.0 LIMITATIONS

We have prepared this report for the exclusive use of Phil and Anne Guadagno and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Phil and Anne Guadagno.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

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FIGURES

FIGURE 1 - Regional & Vicinity Map

Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA

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PREPARED: 05/27/2022

BY: CLS

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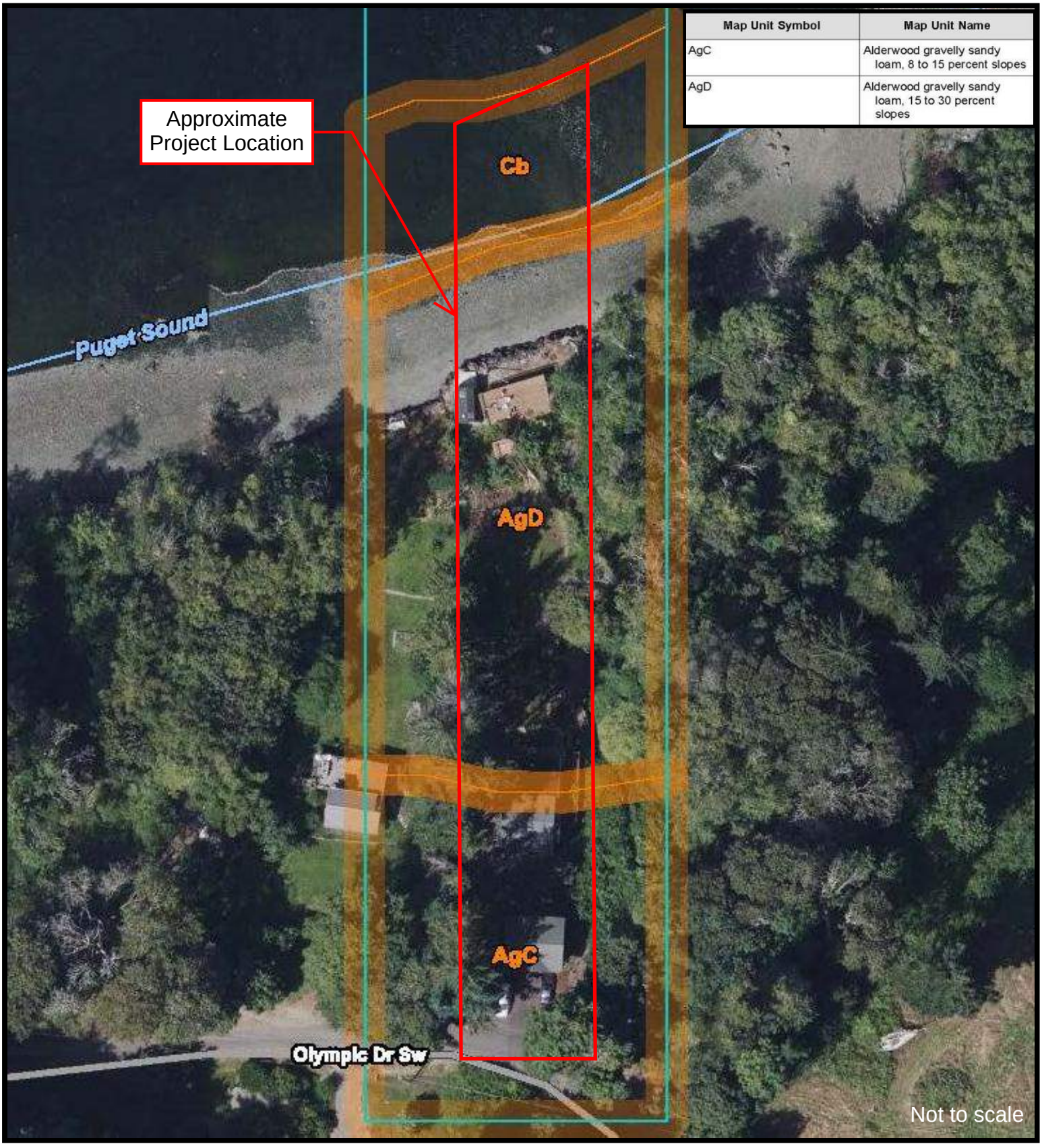

Map Unit Symbol	Map Unit Name
AgC	Alderwood gravelly sandy loam, 8 to 15 percent slopes
AgD	Alderwood gravelly sandy loam, 15 to 30 percent slopes

FIGURE 2 - NRCS Web Soil Survey Map

Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA

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BY: CLS

Image source: NRCS Web Soil Survey https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

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FIGURE 3 - National Wetland Inventory Map
Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA
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Wetlands

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

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Legend:

- class 1
- class 2 perennial
- class 2 salmonid
- class 3
- unclassified
- Wetland (1990 SAO)
- Lakes and large rivers

FIGURE 4 - King County iMap

Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA

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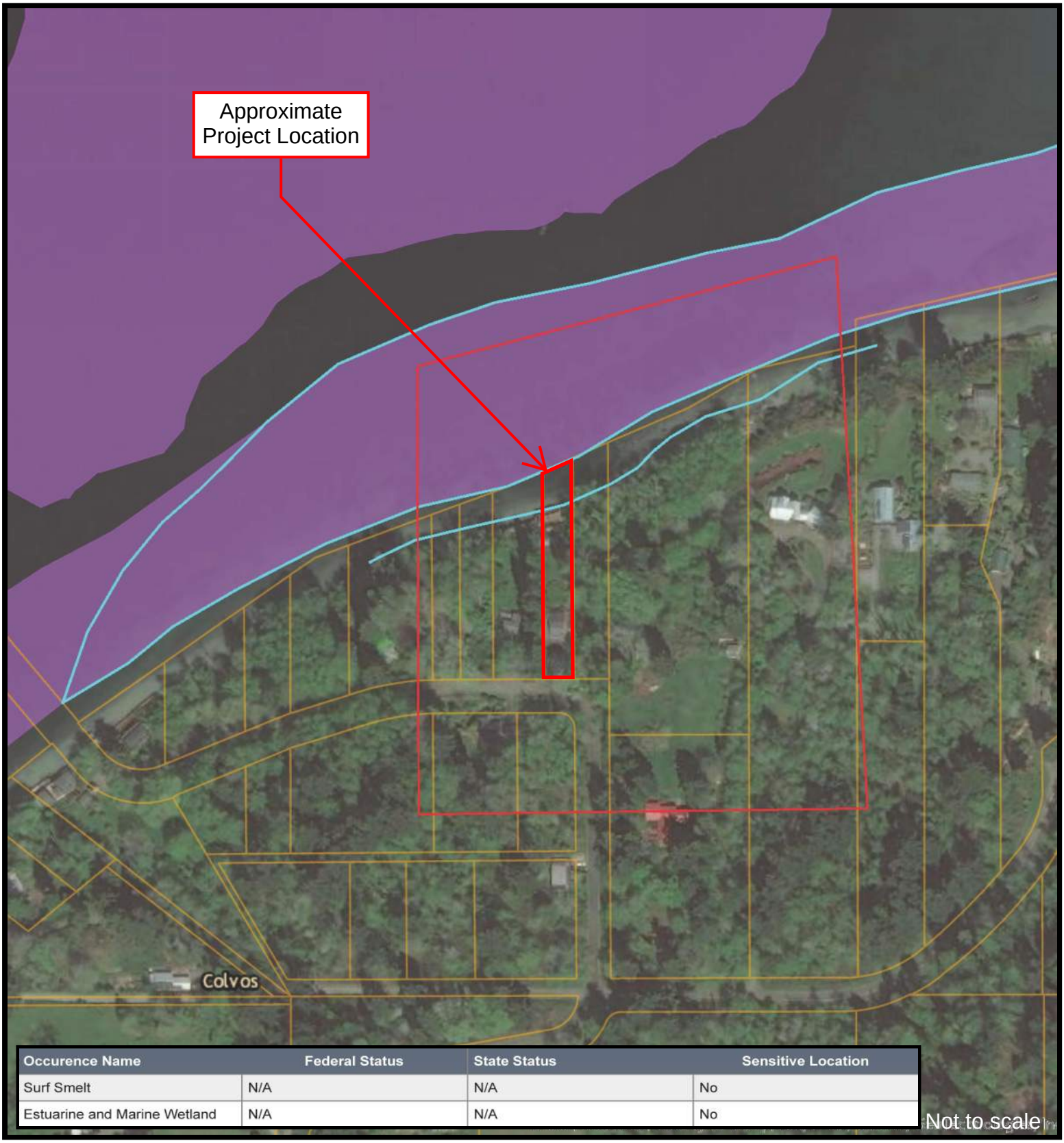

Occurence Name	Federal Status	State Status	Sensitive Location
Surf Smelt	N/A	N/A	No
Estuarine and Marine Wetland	N/A	N/A	No

Not to scale

Legend:

- Mapped Species

FIGURE 5 - WDFW Priority Habitats & Species

Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA

RAI PROJECT: 2022-043-001

PREPARED: 05/27/2022
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SOURCE INFORMATION: Washington Fish and Wildlife Priority Habitat & Species Online Mapping tool - http://apps.wdfw.wa.gov/phsontheweb/

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FIGURE 6 - Guadagno King County - Existing Conditions

RAI Project #: 2022-043-001
Date: 05/27/2022
Created by: C. Straight

Note: Shoreline OHWM boundaries are based on GPS coordinates and interpretation of aerial imagery. Boundaries are approximate and for planning purposes only.

APPENDIX A

Field Survey Data

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

Project/Site: Guadagno King County City/County: Vashon Island, King County Sampling Date: April 22, 2022

Applicant/Owner: Phil and Anne Guadagno State: WA Sampling Point: SP 1

Investigator(s): Annamaria Clark & Courtney Straight Section, Township, Range: S13, T23N, R2E, W.M.

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.47851 Long: -122.49055 Datum:

Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None

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

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

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

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

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

Remarks: Sample Plot 1 is located in the northeast corner of the shoreline above the bulkhead.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Rosa sp.	5	Y	Unk
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 1 m)			
1. Poa pratensis (Kentucky bluegrass)	40	Y	FAC
2. Taraxacum officinale (common dandelion)	10	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (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 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 40	x 3 = 120
FACU species 10	x 4 = 40
UPL species 0	x 5 = 0
Column Totals: 50 (A)	160 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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: Rosa sp. not included in analsis as WIS unknown. No indicators of hydrophytic vegetation observed.

SOIL

Sampling Point: SP 1

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 4/2	90	10YR 4/4	10	C	M	Si. Cl. L.	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: Refusal - hard pan

Depth (inches): 5

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: No primary or secondary indicators of wetland hydrology observed.

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

Project/Site: Guadagno King County City/County: Vashon Island, King County Sampling Date: April 22, 2022

Applicant/Owner: Phil and Anne Guadagno State: WA Sampling Point: SP 2

Investigator(s): Annamaria Clark & Courtney Straight Section, Township, Range: S13, T23N, R2E, W.M.

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): 5-10

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.47851 Long: -122.49055 Datum:

Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None

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

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

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

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

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

Remarks: Sample Plot 2 is located at the top of the slope in the lawn near western property line.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata (western red arborvitae)	40	Y	FAC
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Cratageous douglasii (black hawthorn)	2	Y	FAC
2.			
3.			
4.			
5.			
	2	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Poa pratensis (Kentucky bluegrass)	50	Y	FAC
2. Agrostis sp.	15	N	Unk
3. Taraxacum officinale (common dandelion)	5	N	FACU
4. Equisteum arvense (field horsetail)	5	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 15

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
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:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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: Agrostis sp. not included in analsis as WIS unknown.

SOIL

Sampling Point: SP 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/3	100					Gr. S. L.	
6-13+	2.5Y 4/3	90	10YR 3/6	10	C	M	Gr. S. L.	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No indicators of hydric soils observed.

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: No primary or secondary indicators of wetland hydrology observed.

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

Project/Site: Guadagno King County City/County: Vashon Island, King County Sampling Date: April 22, 2022

Applicant/Owner: Phil and Anne Guadagno State: WA Sampling Point: SP 3

Investigator(s): Annamaria Clark & Courtney Straight Section, Township, Range: S13, T23N, R2E, W.M.

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): 5-10

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.47851 Long: -122.49055 Datum: _____

Soil Map Unit Name: Alderwood gravelly sandy loam NWI classification: None

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

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

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

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

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

Remarks: Sample Plot 3 is located at the top of the slope in a depresion near the eastern property line.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra (red alder)	30	Y	FAC
2. Sorbus aucuparia (European moutain ash)	10	Y	NI
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Prunus laurocerasus (cherry laurel)	30	Y	NI
2. Malus fusca (Oregon crabapple)	30	Y	FACW
3. Rubus ursinus (California dewberry)	10	N	FACU
4. Rubus armeniacus (Himalayan blackberry)	5	N	FAC
5. Ilex aquifolium (English holly)	5	N	FACU
6. Lonicera ciliosa (orange honeysuckle)	5	N	NI
7. Hedera helix (English ivy)	5	N	FACU
8. Rubus spectabilis (salmon raspberry)	3	N	FAC
	93	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Ranunculus repense (creeping buttercup)	50	Y	FAC
2. Vinca minor (common periwinkle)	20	N	NI
3. Equisteum arvense (field horsetail)	20	N	FAC
4. Pteridium aquilinum (northern bracken fern)	10	N	FACU
5. Polysticum munitum (pineland sword fern)	2	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	102	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1.			
2.			
	0	= 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: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
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:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - 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: Sorbus acuparia, Pruns laurocerasus, Lonicera ciliosa, and Vinca minor not included in analsis as WIS unknown.

SOIL

Sampling Point: SP 3

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 4/3	90	10YR 4/4	10	C	M.	Si. Cl. L.	
8-14+	2.5Y 5/1	90	10YR 4/4	10	C	M	Si. Cl. L.	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks: No primary or secondary indicators of wetland hydrology observed.