
THE ENCLAVE AT OAK TREE

THURSTON COUNTY, WASHINGTON

CRITICAL AREAS REPORT

Prepared By:



Curtis Wambach, M.S.
Senior Biologist and Principal



5 July 2023

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Table of Contents

1.0 INTRODUCTION.....	1
1.1 Purpose.....	1
1.2 Property Location	1
1.3 Site Evaluation.....	1
1.4 Property Description.....	1
2.0 METHODOLOGY	2
2.1 Review of Existing Literature	2
2.2 Field Investigation	2
2.3 Wetland Identification	2
2.3.1 Vegetation	3
2.3.2 Soils.....	3
2.3.3 Hydrology	4
2.4 Wetland Classification and Rating	4
3.0 STUDY RESULTS.....	4
3.1 Background Information.....	4
3.1.1 Thurston County Geodata Soils	4
3.1.2 Thurston County Geodata Wetlands & Streams	5
3.1.3 WDFW Priority Habitats and Species (PHS) Database	5
3.1.4 Clean Water Act 303(d).....	5
3.1.5 Total Maximum Daily Load (TMDL)	5
3.1.6 Thurston County Geodata High Groundwater Hazard.....	5
3.1.7 Thurston County Geodata FEMA Floodplain	5
3.1.8 WDFW SalmonScape	6
3.1.9 Thurston County Geodata Shoreline Master Plan	6
3.2 Field Results.....	6
3.2.1 Wetland A	6
3.2.2 Red-tailed Hawk Nesting.....	8
4.0 REGULATORY CONSIDERATIONS	9
4.1 Wetland A	9
4.2 Red Tailed Hawk Nest	9
5.0 LAND USE ACTION	11
5.1 Potential Impacts.....	11
5.2 Proposed Conservation Measures.....	11
6.0 CONCLUSION	12
7.0 REFERENCES.....	14

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Critical Areas Report is to identify and map Critical Areas on and within three hundred (300) feet of the subject property. Potential wetlands and their buffers were evaluated as part of this study. This Critical Areas Report has been prepared to satisfy Thurston County reporting requirements.

1.2 Property Location

The 36.23-acre subject property is located on Marvin Road in Thurston County (**Figure 1; Table 1**).

Table 1. Parcels Comprising Subject Property

No#	Address	Parcel Number	Map Coordinates	Area
1	2402 MARVIN RD SE	11823430100	Section 26 Township 18 Range 1W	18.66
2	2623 WOODGROVE ST SE	11826110000		15.07
3	2535 WOODGROVE ST SE	11826110300		2.50
3 Parcels	Total Size			36.23 acres

Permitting jurisdiction is Thurston County.

1.3 Site Evaluation

A Critical Areas evaluation was performed on the subject property on 25 April 2022.

1.4 Property Description

The 36.23-acre subject property consists of three (3) parcels. Conditions on the western portion of the subject property primarily consist of European grasses, Scotch broom (*Cytisus scoparius*, FACU), and Himalayan blackberry (*Rubus armeniacus*, FAC) with scattered trees and native plants (**Appendix A, Photos 21-24**). The entire subject property, other than the 2.5-acre parcel, contained few trees in 1990, as seen on historical aerial photographs from Google Earth. The 2.5-acre lot was cleared around the year 2000, based on these historical aerial photographs.

Historical aerial photographs show areas of the western portion of the property occasionally mowed and repopulated by yellow-flowered Scotch broom, which can be seen on aerial photographs.

The eastern and southern portions of the subject property have reforested since clearing. Many of the logging roads remain intact throughout the subject property.

Aerial photographs show a wet area on the northern portion of the property. This area remained relatively unchanged since 1990 based on the historical ariel photographs. Seasonal water fluctuations are observable on these historical aerial photographs. Observing the water fluctuations is possible because no trees or shrubs were present in the wet area at least since 1990.

2.0 METHODOLOGY

This report is based on a review of existing information and field investigations. The goal of these efforts is to collect and document existing information that reflects current site conditions for assessing potential impacts.

2.1 Review of Existing Literature

Prior to conducting fieldwork, and throughout the duration of project design, biologists reviewed existing information to identify wetlands, streams, vegetation patterns, topography, soils, wildlife habitats, and other natural resources in the project area.

Existing data sources that were reviewed for this report included but were not limited to the following:

- Washington U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Soil Survey
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), online wetlands mapper
- Washington Department of Fish and Wildlife (WDFW) Salmonscape Database
- Washington Department of Fish and Wildlife (WDFW Priority and Habitat Species (PHS) Database
- Washington State Department of Natural Resources (DNR) Natural Heritage Database
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies

2.2 Field Investigation

A wetland evaluation was performed onsite as well as off-site of the subject property to determine if wetlands, streams, or their buffers extend onto the subject property. The routine on-site determination method was used to identify potential wetlands using the procedures outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the U.S. Army Corps of Engineers (USACE, 2010) Regional Wetland Supplement.

2.3 Wetland Identification

Prior to 2010, biologists delineated wetlands according to the methods specified in the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987). At that time, these methods complied with those in the Washington State Wetland Identification and Delineation Manual (Washington State Department of Ecology [Ecology], 1997).

Following 2010, biologists evaluate wetlands according to the methods specified in the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010). These methods comply with those adopted by Washington State pursuant to Washington Administrative Code (WAC) 173-22-035, Revised Code of Washington (RCW) 90.58.380.

2.3.1 Vegetation

The dominant plants and their wetland indicator status were evaluated to determine whether the vegetation is hydrophytic. Hydrophytic vegetation is generally defined as vegetation adapted to prolonged saturated soil conditions. To meet the hydrophytic vegetation criterion, more than 50 percent of the dominant plants must be facultative, facultative wetland, or obligate, according to the plant indicator status category assigned to each plant species by the USACE National Wetland Plant List. **Table 2** provides the definitions of the indicator status categories. The scientific and common names for plants follow the currently accepted nomenclature. Dominant plant species were observed and recorded on wetland determination data forms for each data plot (**Appendix J**).

Table 2. Key to Plant Indicator Status Categories

Plant Indicator Status Category	Symbol	Description
Obligate Wetland Plants	OBL	Plants that almost always (>99% of the time) occur in wetlands but may rarely (<1% of the time) occur in non-wetlands
Facultative Wetland Plants	FACW	Plants that often (67% to 99% of the time) occur in wetlands but sometimes (1% to 33% of the time) occur in non-wetlands
Facultative Plants	FAC	Plants with a similar likelihood (33% to 66% of the time) of occurring in both wetlands and non-wetlands
Facultative Upland Plants	FACU	Plants that sometimes (1% to 33% of the time) occur in wetlands but occur more often (67% to 99% of the time) in non-wetlands
Upland Plants	UPL	Plants that rarely (<1% of the time) occur in wetlands and almost always (> 99% of the time) occur in non-wetlands

2.3.2 Soils

Soils were excavated to eighteen (18) inches or more below the surface within test pits to evaluate soil characteristics and hydrological conditions throughout the property. Soil chroma (color) is evaluated using the *Munsell Color Chart* (Munsell Color, 1988). Generally, an area must have hydric soils to be considered a wetland. Hydric soil forms when soils are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper portion. Biological activities in saturated soil result in reduced concentrations of oxygen that in turn result in a preponderance of organisms that use anaerobic processes for metabolism. Over time, anaerobic biological processes result in certain soil color patterns, which are used as indicators of hydric soil. Typically, low-chroma colors are formed in the matrix of hydric soil. Bright-colored redoximorphic features form within the matrix under a fluctuating water table. Other important hydric soil indicators include organic matter accumulations in the surface layer, reduced sulfur odors, and organic matter staining in the subsurface.

2.3.3 Hydrology

The project area was examined for evidence of hydrology. The USACE (2005) provides a technical standard for monitoring hydrology on such sites. This standard requires 14 or more consecutive days of flooding or ponding, or a water table twelve (12) in. (thirty [30] cm) or less below the soil surface, during the growing season at a minimum frequency of five (5) years in ten (10) (fifty percent [50%] or higher probability). The USACE 2010 Regional Supplement provides a list of hydrology indicators to evaluate whether the hydrology standard is satisfied. If wetland hydrology, including pooling, ponding, and soil saturation, is not clearly evident, hydrological conditions may be observed through surface or soil indicators. Indicators of hydrological conditions include oxidized root channels, drainage patterns, drift lines, sediment deposition, watermarks, historic records, visual observation of saturated soils, and visual observation of inundation.

2.4 Wetland Classification and Rating

Delineated wetlands were classified according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (USFWS, 1979). Hydrogeomorphic classifications were assigned to wetlands using USACE methods established in *A Hydrogeomorphic Classification for Wetlands* (USACE, 1993) and were then rated using the revised Washington State Wetland Rating System for Western Washington.

3.0 STUDY RESULTS

3.1 Background Information

3.1.1 Thurston County Geodata Soils

Seven (7) non-hydric soil types and one (1) hydric soil type, Mukilteo muck, drained, are mapped on the subject property by the Thurston County Geodata Center database (**Appendix B; Table 3**).

Table 3. Thurston County Geodata Soils Summary

Soil Unit	Hydric	Comments
Spana gravelly loam	No	Mapped on northwestern edge of subject property
Cagey loamy sand	No	Mapped on northwestern portion of subject property
Mukilteo muck, drained	Yes	Mapped on northern portion of subject property in wet area
Alderwood gravelly sandy loam, 3 to 15% slopes	No	Mapped on northeastern portion of subject property
Indianola loamy sand, 15 to 30% slopes	No	Mapped on northeastern property edge
Indianola loamy sand, 0 to 3% slopes	No	Mapped on southwestern portion of subject property
Indianola loamy sand 3 to 15% slopes	No	Mapped on majority of subject property

3.1.2 Thurston County Geodata Wetlands & Streams

No streams are mapped on the subject property or within three hundred (300) feet of the subject property by the Thurston County Geodata Center Database (**Appendix C**). One (1) wetland and associated water body are mapped on the northern portion of the subject property.

3.1.3 WDFW Priority Habitats and Species (PHS) Database

No streams are mapped on the subject property by the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) Database (**Appendix D**).

One (1) fresh water emergent wetland is mapped on the northern portion of the subject property.

Mountain quail (*Oreortyx pictus*) presence is documented on the eastern portion of the subject property in October 1993. Mountain quail is not a State or Federally-listed species that has been introduced to Western Washington for the purpose of hunting. This is a highly managed species where populations have declined in their native range, which includes Asotin, Garfield, and Columbia Counties.

The big brown bat (*Eptesicus fuscus*), little brown bat (*Myotis lucifugus*) and Yuma myotis (*Myotis yumanensis*) are mapped in the township.

3.1.4 Clean Water Act 303(d)

No 303d listed watercourse is mapped on the subject property by the Department of Ecology Water Quality Atlas Map (**Appendix E**). Long lake is located southwest approximately one thousand eight hundred (1,800) feet from the subject property parcel boundary. The subject property and surrounding areas are within the watershed and basin of Long Lake.

3.1.5 Total Maximum Daily Load (TMDL)

No “approved” TMDL is mapped over the subject property or mapped wetland by the Department of Ecology Water Quality Atlas Map (**Appendix F**).

3.1.6 Thurston County Geodata High Groundwater Hazard

A high groundwater hazard area and high groundwater review area are mapped on the northern portion of the subject property by the Thurston County Geodata Center Database (**Appendix G**).

3.1.7 Thurston County Geodata FEMA Floodplain

No FEMA floodplain is mapped on the subject property (**Appendix H**). A floodplain is mapped in Long Lake approximately one thousand eight hundred (1,800) feet southwest of the subject property.

3.1.8 WDFW SalmonScape

No documented salmon presence is mapped on or within three hundred (300) feet of the subject property by Washington Department of Fish and Wildlife (WDFW) Salmonscape database (**Appendix I**). A sockeye salmon (*Oncorhynchus nerka*) stream is mapped approximately three thousand (~3,000) feet of the subject property.

3.1.9 Thurston County Geodata Shoreline Master Plan

No shorelines are mapped on the subject property.

3.2 Field Results

No streams have been identified on the subject property or within three hundred (300) feet of the subject property during the site evaluation (**Figure 2**).

One (1) wetland, labeled Wetland A, has been identified and delineated on the northern portion of the subject property (**Figure 2; Appendix A, Photos 1-20**). A summary of the Critical Areas results is provided in **Table 4**.

Table 4. Summary of Critical Areas Results

Wetlands						
Wetland	Area of Wetland		Cowardin Class	Buffer Condition	Habitat Features	Comments
	On-site	Total				
Wetland A	113,776 sf (2.61 acres)	199,454 sf (4.58 acres)	PEMC ¹ PFOC ²	Forest, grass lawn, oaks, and invasive, nonnative weeds	Logs, snags, & amphibian habitat	Located on the northern portion of the subject property

1. PEMC: Palustrine Emergent Seasonally-flooded
2. PFOC: Palustrine Forested Seasonally-flooded

3.2.1 Wetland A

Wetland A is a very shallow, seasonally-flooded depression almost entirely vegetated by a dense monotypic growth of the non-native, invasive weed reed canarygrass (*Phalaris arundinacea*, FACW) (**Figure 2**). This wetland remains almost entirely unchanged since at least 1990, based on historical aerial photographs from Google Earth.

The wetland location is consistent with the Thurston County Geodata Center database and other Agency databases. The Thurston County Geodata Center maps the USDA soil type in the wetland as Mukilteo muck, 'drained', which indicates a historical land use that may have altered the soils, hydrology, and vegetation of Wetland A.

The Wetland A boundary has been marked using orange ribbon flagging tied to vegetation and labeled A-1 through A-36 (**Figure 3**). Wetland flags were GNSS located using a Trimble Geo 7x with sub-foot accuracy.

Wetland Conditions

Wetland A is a very shallow depression almost completely vegetated by a monotypic dense growth of the non-native, invasive weed reed canarygrass (*Phalaris arundinacea*; FACW) (**Appendix A, Photos 5-20**). A dense monotypic growth of reed canarygrass dominates the entire wetland other than for the southern edge, which is forested with limited understory vegetation. A monotypic patch of Douglas spirea (*Spiraea douglasii*, FACW) occurs under the forest canopy and extends from the tree cover forming a relatively small scrub-shrub class that does not meet the size threshold for recognition under the DOE Wetland Rating Form (**Figure 6; Appendix A, Photo 4**). The majority of vegetation forming the forested understory consists of monotypic reed canarygrass (**Appendix A, Photos 15-20**).

Wetland classification under the Cowardin (1979) Wetland Classification System consists of:

- Palustrine Emergent Seasonally-flooded (PEMC)
- Palustrine Forested Seasonally-flooded (PEMC)
- Palustrine Scrub-Shrub Seasonally-flooded (PSSC) (does not qualify for DOE (2014) Wetland Rating Form)

Hydroperiods and vegetation classes used in the DOE (2014) *Wetland Rating System* are illustrated in **Figure 6**.

The majority of area within one (1) km of Wetland A consists of high intensity land use (**Figure 8**). Less than ten percent (<10%) of the area within one hundred fifty (150) feet of Wetland A contains potential sources of pollutants (**Figure 7**). Habitat within one (1) kilometer is shown in **Figure 8** and the wetland contributing basin is shown in **Figure 9**.

Hydrology

Hydrology derives from local precipitation and high groundwater. Standing water was observed in the wetland during the site evaluation (**Appendix A, Photos 15 & 16**). No inlets or outlets were identified on the wetland.

Vegetation

Dominant plant species identified in Wetland A include:

- Reed canary grass (*Phalaris arundinacea*, FACW)

Non-dominant plant species identified in Wetland A:

- Red alder (*Alnus rubra*, FAC)
- Oregon ash (*Fraxinus latifolia*, FACW)
- Douglas spirea (*Spiraea douglasii*, FACW)
- Willow (*Salix spp.*, FAC)
- Salmonberry (*Rubus spectabilis*, FAC)
- Himalayan blackberry (*Rubus armeniacus*, FAC)

Dominant upland plant species in the wetland buffer include:

- Scotch broom (*Cytisus scoparius*, FACU)
- Himalayan blackberry (*Rubus armeniacus*, FAC)
- Snowberry (*Symphoricarpos albus*, FACU)
- Bracken fern (*Pteridium aquilinum*, FACU)
- Red alder (*Alnus rubra*, FAC)
- Douglas Fir (*Pseudotsuga menziesii*, FAC)
- Beaked hazelnut (*Corylus cornuta*, FACU)
- Ocean spray (*Holodiscus discolor*, FACU)

Other plant species in the wetland buffer include:

- Oregon white oak (*Quercus garryana*, FACU)
- Tall Oregon grape (*Mahonia aquifolium*, FACU)

Soils

Wetland soils consist of a black (10YR 2/1) sandy mucky silt from the surface to seven (7) inches below the surface and a very dark gray (10YR 3/1) silty sand from seven (7) to eighteen (18) inches below the surface.

Upland soils consist of a dark yellowish brown (10YR 3/4) sandy silt from the surface to twenty (20) inches below the surface.

Habitat Features

Downed woody debris and amphibian habitat features have been identified in Wetland A (**Appendix K**).

3.2.2 Red-tailed Hawk Nesting

A red-tailed hawk (*Buteo jamaicensis*) active nest was identified in a Douglas fir tree located on the northeast corner of the subject property (**Figure 2**). The red-tailed hawk is no longer a protected species under state regulations. The red-tailed hawk is not State-listed or a Priority Species; thereby, no State habitat regulations should restrict construction activities. Although this species is no longer a State Priority Species, the WDFW Area Habitat Biologist should be contacted to verify if any conservation measures are required.

4.0 REGULATORY CONSIDERATIONS

Wetland regulatory considerations have been summarized in **Table 5**.

Table 5. Summary of Regulatory Considerations

Wetland	Area of Wetland		Category	Habitat Score	Standard Buffer	Reduced Buffer	Comments
	On-site	Total					
Wetland A	113,776 sf (2.61 acres)	199,454 sf (4.58 acres)	III	4 (L, L, M)	140 ft	105ft	Approval authority may allow buffer reduction for Tract D stormwater facility.

4.1 Wetland A

Wetland A has been classified as a Category III wetland using the Department of Ecology (2014) *Wetland Rating System for Western Washington* as required under TCC 24.30.030---*Wetland categories*. Wetland A is a depressional wetland under the DOE (2014) *Wetland Rating System for Western Washington*.

Under TCC 24.30.045---*Wetland buffers---Standard width*, wetland buffers are calculated based on the habitat score determined by the Washington State Department of Ecology (2014) *Wetland Rating System*. Wetland A scored a “Low (L)” potential to provide habitat, a “Low (L)” landscape potential to support habitat, and a “Medium (M)” potential value to society. Wetlands that rate as an L, L, M (order of ratings are not important) receive a score of four (4) points for total habitat functions (**Appendix K**).

The standard buffer for wetlands that score four (4) points for Habitat Functions provided by the rating of L, L, M require a buffer width of one hundred forty (140) feet (TCC Table 24.30-1---*Standard Wetland Buffer Widths*) (**Figure 4; Table 5**).

4.2 Red Tailed Hawk Nest

Although the red-tailed hawk may not be State protected, the species is protected under the Migratory Bird Treaty Act (MBTA). Prohibitions of the MBTA make it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds, or attempt to engage in any of those actions. These apply only to actions directed at migratory birds, their nests, or their eggs. Injury to or mortality of migratory birds that results from, but is not the purpose of, an action (*i.e.*, incidental taking or killing) is not prohibited by the MBTA.

If the proposed land use action involves removal of the Douglas fir tree, contact the U.S. Fish and Wildlife Service to receive updated information on inactive nest removal or to obtain the permits required to remove an active nest.

Under the MBTA, a permit is not needed to destroy inactive bird nests, provided the nest is destroyed and not kept. An inactive bird nest is one without eggs or chicks present. The Nest Destruction Migratory Bird Permit Memorandum (MBPM-2; April 15, 2003) provides additional guidance on nest destruction.

Removal of the tree must take place outside of the active red-tailed hawk nesting season unless a permit is obtained through the U.S. Fish and Wildlife Service. A permit is required to destroy an active bird nest (one with eggs or chicks present). Active red-tailed hawk nesting may occur March through September.

The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter, transport, import, and export, and take. The other prohibitions of the MBTA - capture, pursue, hunt, and kill - are inapplicable to nests. The regulatory definition of take, as defined by 50 CFR 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt hunt, shoot, wound, kill, trap, capture, or collect. Only collect applies to nests.

While it is illegal to collect, possess, and by any means transfer possession of any migratory bird nest, the MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. The MBTA does not authorize the service to issue permits in situations in which the prohibitions of the Act do not apply, such as the destruction of unoccupied nests. Some unoccupied nests are legally protected by statutes other than the MBTA, including nests of threatened and endangered migratory bird species and bald and golden eagles, within certain parameters.

While destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs, is illegal and fully prosecutable under the MBTA. Thereby, the USFWS and the WDFW Area Habitat Biologist should be contacted, and all applicable permits obtained in the event of removing the nest or nesting tree.

5.0 LAND USE ACTION

The project represents a single-family residential subdivision of 182 lots on 36.23 acres (**Figure 5**).

5.1 Potential Impacts

No wetland or buffer impacts are proposed as part of this project. The project would entirely avoid wetland and buffer impacts. No streams or stream buffers occur on the subject property. Thereby, no stream or stream buffer impacts would occur.

Unavoidable impacts would include one (1) small, isolated oak tree with a diameter of one and one quarter (1.25) inches (**Figure 5**). This one (1) small, isolated oak tree currently provides no measurable habitat value.

5.2 Proposed Conservation Measures

Under TCC Chapter 24.01.037---*Mitigation Sequencing*, mitigation actions associated with development proposals impacting critical areas shall adhere to mitigation sequencing. Mitigation sequencing has been applied to the proposal to the greatest extent practicable (**Table 6**)

Table 6. Mitigation Sequencing Applied to Proposed Project

Section	Ranked Mitigation Measure	Proposed Conservation Measure
A	Avoiding the impact altogether by not taking a certain action or parts of an action	Critical Area and buffer impacts have been completely avoided. Oak trees have been avoided to the greatest extent practicable.
B	Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts	The project was redesigned to avoid wetland and buffer impacts and to minimize any potential impacts to oak trees.
C	Rectifying the impact by repairing, rehabilitating, or restoring the affected environment	A larger oak stand would be rehabilitated and restored to replace potential habitat loss.
D	Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action	The proposed impact would be rehabilitated over time through the enhancement of a larger oak stand.
E	Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and/or	This proposal would compensate for potential impacts by enhancing a substitute environment in the form of enhancing an existing high quality oak stand.
F	Monitoring the impact and taking appropriate corrective measures.	No monitoring is proposed at this time.

TCC Chapter 24.35.015---*Mitigation Sequencing*, is identical to TCC Chapter 24.01.037, other than stating that the redesign, reconfiguration, or relocation of a proposal to avoid impacts shall be preferable to submittal of a mitigation proposal. The proposal has been redesigned to avoid Critical Areas and their buffers and to minimize impacts to oak trees to the greatest extent practicable.

To compensate for the loss of one (1) small, isolated oak tree with a diameter of one and one quarter (1.25) inches, enhancement of a high-quality oak stand totaling forty-one thousand four hundred thirty-six (41,436) sf located on the southwestern corner of the subject property. Non-native, invasive weeds degrade understory habitat value. Non-native, invasive weeds would be removed from the understory plant community through manual removal. Roots of non-native, invasive weeds would be dug up and removed. Trash and debris would also be removed from the oak stand.

The proposed oak habitat enhancement would provide greater habitat value than the one (1) small, isolated oak tree.

6.0 CONCLUSION

The purpose of this Critical Areas Report is to identify and map Critical Areas on and within three hundred (300) feet of the subject property. Potential wetlands and their buffers were evaluated as part of this study. This Critical Areas Report has been prepared to satisfy Thurston County reporting requirements.

The 36.23-acre subject property consists of three (3) parcels. Conditions on the western portion of the subject property primarily consist of European grasses, Scotch broom (*Cytisus scoparius*, FACU), and Himalayan blackberry (*Rubus armeniacus*, FAC) with scattered trees and native plants (**Appendix A, Photos 21-24**).

One (1) wetland, labeled Wetland A, has been identified and delineated on the northern portion of the subject property (**Figure 2; Appendix A, Photos 1-20**). A summary of the Critical Areas study results is provided in **Table 4**.

Wetland A has been classified as a Category III wetland using the Department of Ecology (2014) *Wetland Rating System for Western Washington* as required under TCC 24.30.030---*Wetland categories*. Wetland A is a depressional wetland under the DOE (2014) *Wetland Rating System for Western Washington*.

Under TCC 24.30.045---*Wetland buffers---Standard width*, wetland buffers are calculated based on the habitat score determined by the Washington State Department of Ecology (2014) *Wetland Rating System*. Wetland A scored a “Low (L)” potential to provide habitat, a “Low (L)” landscape potential to support habitat, and a “Medium (M)” potential value to society. Wetlands that rate as an L, L, M (order of ratings are not important) receive a score of four (4) points for total habitat functions (**Appendix K**).

The standard buffer for wetlands that score four (4) points for Habitat Functions provided by the rating of L, L, M require a buffer width of one hundred forty (140) feet (TCC Table 24.30-1--- *Standard Wetland Buffer Widths*) (**Figure 4; Table 5**).

Wetland A is a shallow depression almost completely vegetated by a monotypic dense growth of the nonnative, invasive weed reed canarygrass (*Phalaris arundinacea*; FACW) (**Appendix A, Photos 13-18**). A dense monotypic growth of reed canarygrass dominates the entire wetland other than for the southern edge, which is forested with limited understory vegetation. A monotypic understory of Douglas spirea (*Spiraea douglasii*, FACW) extends from the tree cover forming a relatively small scrub-shrub class that does not meet the size threshold for recognition under the DOE Wetland Rating Form (**Figure 6**).

Under TCC 24.30.045---*Wetland buffers---Standard width*, wetland buffers are calculated based on the habitat score determined by the Washington State Department of Ecology (2014) *Wetland Rating System*. Wetland A scored a “Low (L)” potential to provide habitat, a “Low (L)” landscape potential to support habitat, and a “Medium (M)” potential value to society. Wetlands that rate as an L, L, M (order of ratings are not important) receive a score of four (4) points for total habitat functions (**Appendix K**).

The standard buffer for wetlands that score four (4) points for Habitat Functions provided by the rating of L, L, M require a buffer width of one hundred forty (140) feet (TCC Table 24.30-1--- *Standard Wetland Buffer Widths*) (**Figure 4; Table 5**).

No Critical Areas or buffer impacts are anticipated from a land use project proposed on the subject property. In compliance with mitigation sequencing, Critical Areas and their buffers would be completely avoided and impacts to oak trees would be minimized to the greatest extent practicable. An unavoidable impact includes the loss of one (1) small, isolated oak tree located on Lot 6. This one (1) small, isolated oak tree provides no measurable habitat value. Potential loss of habitat value would be replaced through the enhancement of the existing higher quality oak stand located on the subject property in Tract B (**Figure 5**). This oak stand contains almost an acre of mature oak trees forming a complete canopy. Non-native invasive weeds, trash, and debris would be removed from the understory, enhancing habitat value beyond any potential loss by removing one (1) small oak tree. Removing non-native invasive weeds would provide a head start for oak saplings and native understory plant species typically associated with oak stands.

7.0 REFERENCES

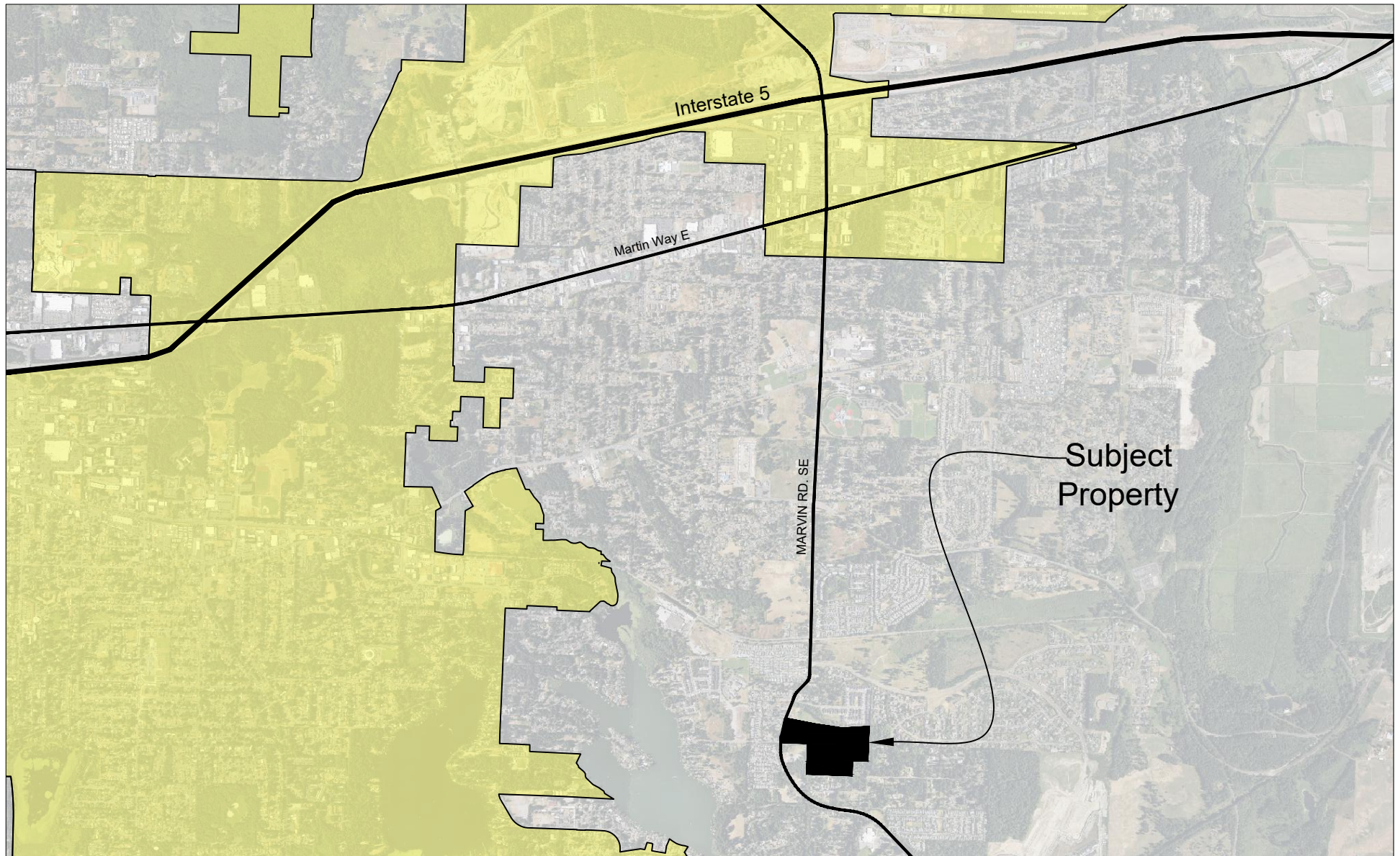
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FIGURES



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 City of Lacey

Figure 1

The Enclave
 at Oak Tree

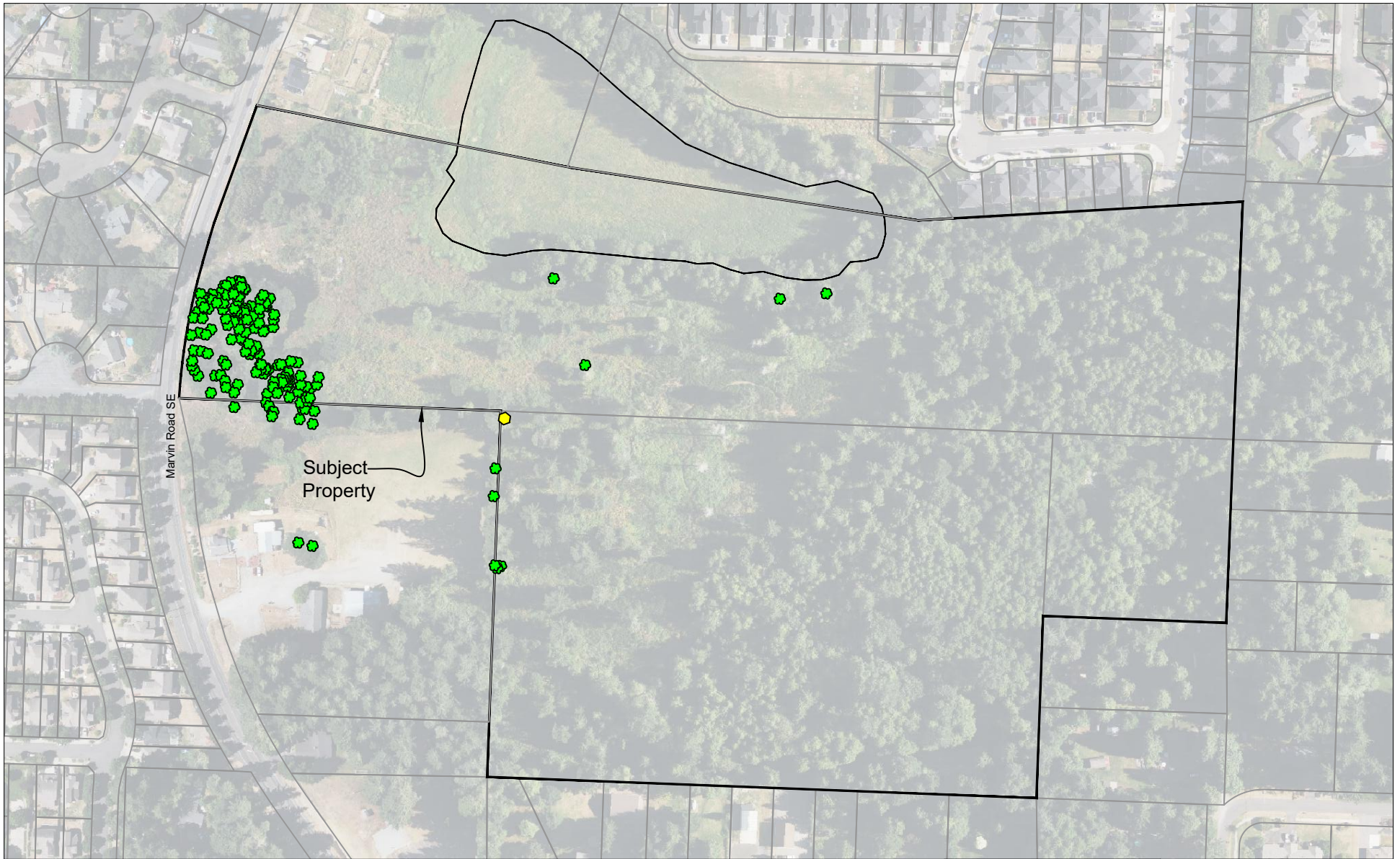
Vicinity Map



Scale: 1" = 3000'


 0 3000'

4 July 2023



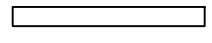

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-  Wetland (Verified)
-  Wetland (Unverified)
-  Oaks Trees
-  Red-tailed hawk's nest

Figure 2
 The Enclave
 at Oak Tree
 Existing Conditions



Scale: 1"= 250'



0 250'

4 July 2023

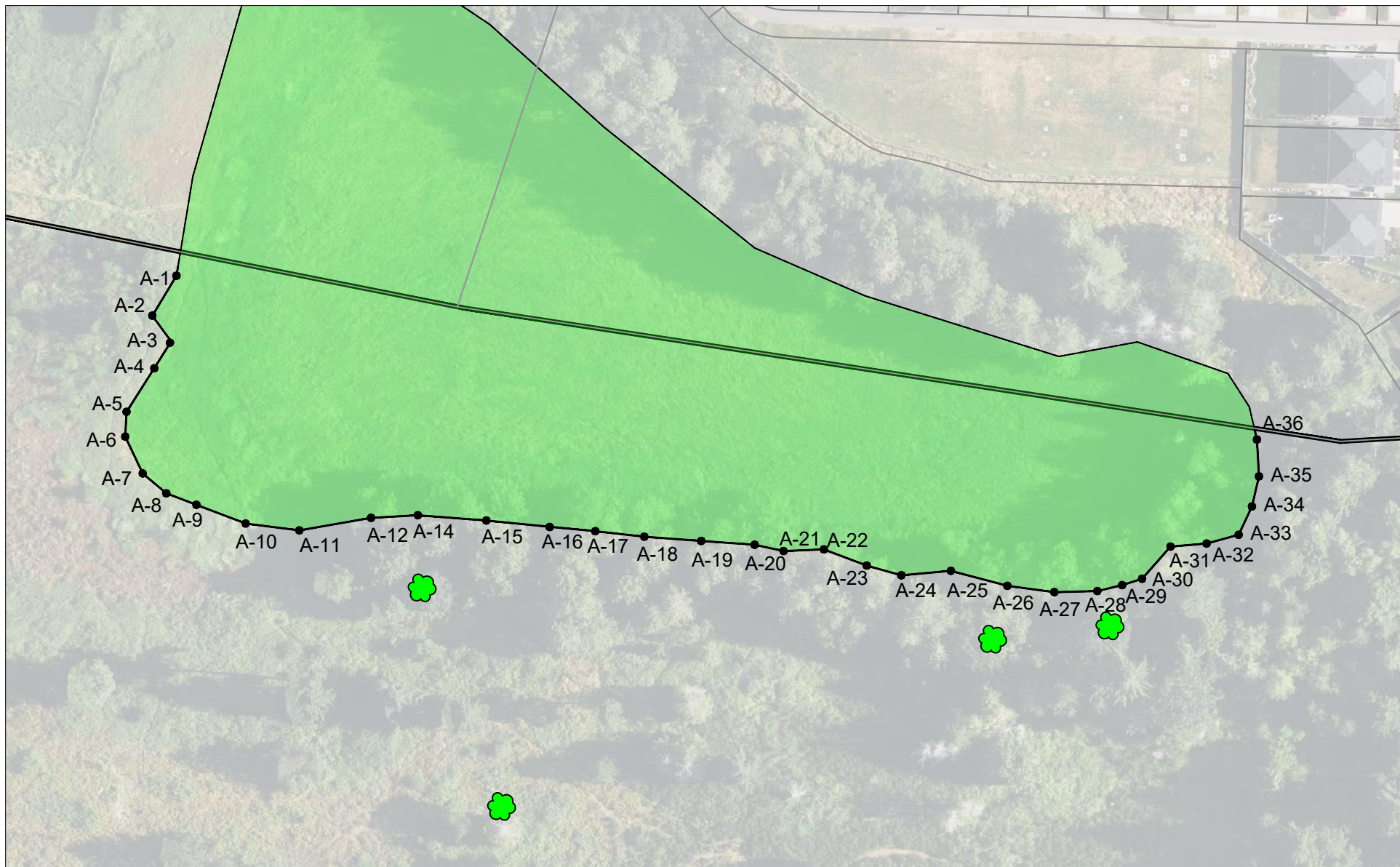
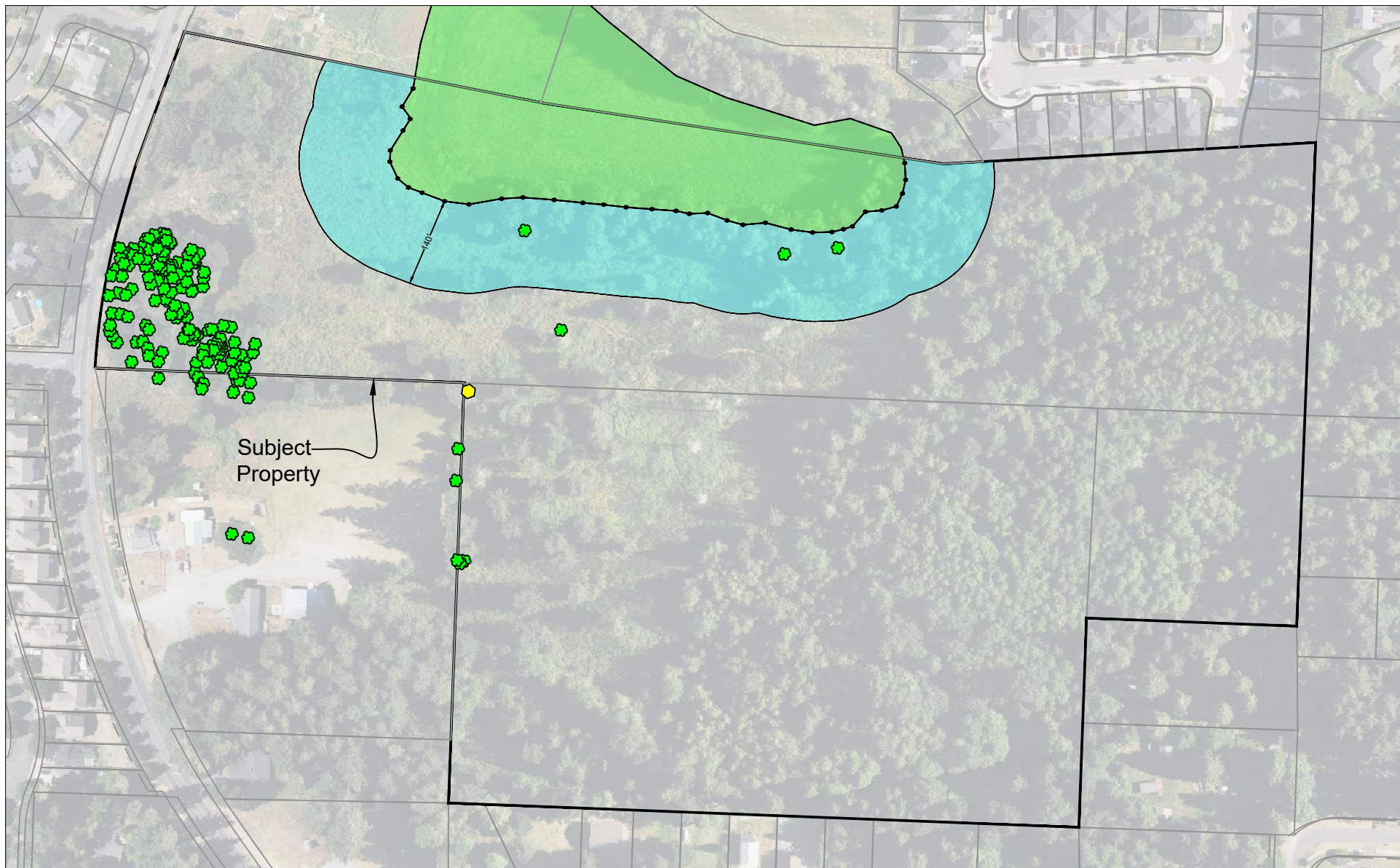


Figure 3
 The Enclave
 at Oak Tree
 Wetland
 Delineation



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Wetland (Verified)

Wetland (Not Verified)



Oaks Trees



Red-tailed hawk's nest



Wetland Buffer

Figure 4

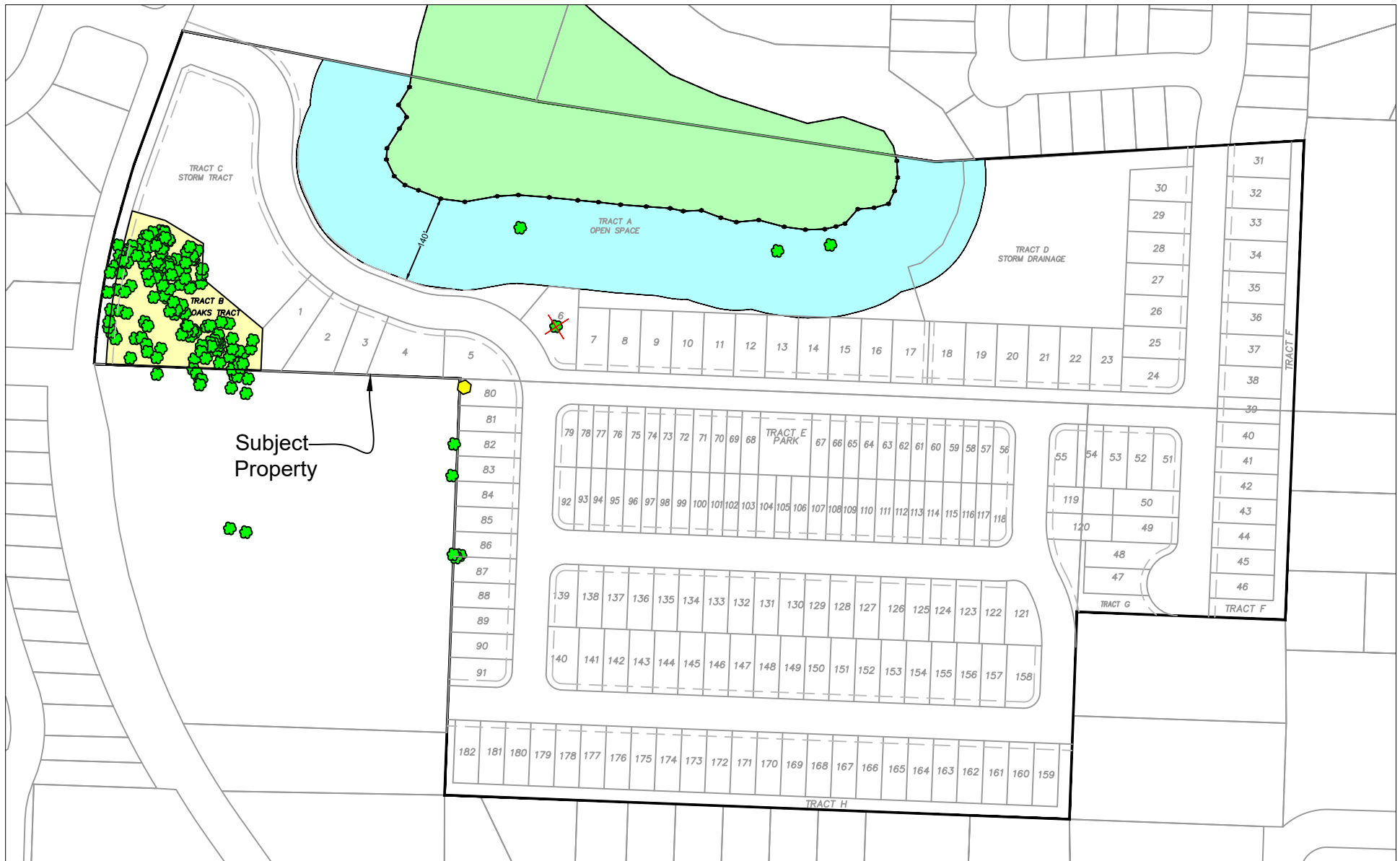
The Enclave
at Oak Tree
Wetland Buffer



Scale: 1"= 220'

0 220'

4 July 2023



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Wetland (Verified)



Wetland (Not Verified)



Oaks Trees



Red-tailed hawk's nest



Wetland Buffer



Oak Stand Enhancement



Oak Impacts (1.25 Inch DBH)

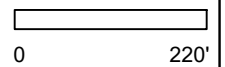
Figure 5

The Enclave
at Oak Tree

Site Plan



Scale: 1"= 220'



4 July 2023



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- Emergent Seasonally-flooded (177,056 sf; 89.04%)
- Forested Seasonally-flooded (20,245 sf; 9.90%)
- Scrub Shrub Seasonally-flooded (2,126 sf; 1.04%)

Wetland 199,454 sf (4.57 acres)

Figure 6
The Enclave
at Oak Tree
Hydroperiods &
Vegetation Classes



Scale: 1"= 100'

0 100'

4 July 2023

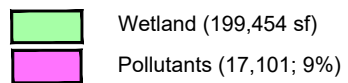
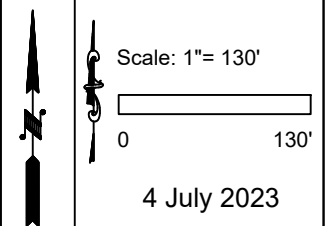
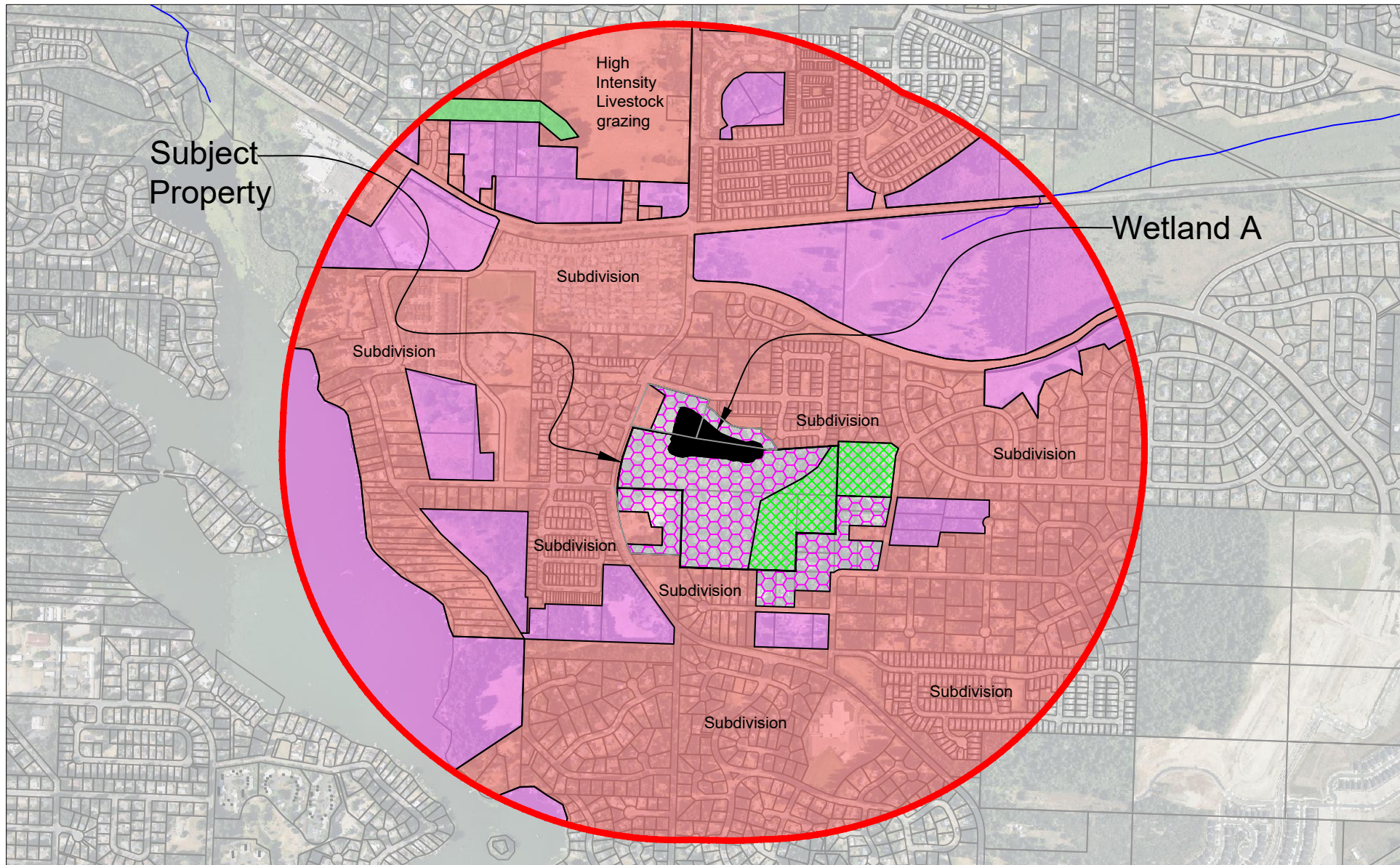


Figure 7
 The Enclave
 at Oak Tree
 Potential Pollutants





Accessible Habitat (672,689 sf, 15.4 acres, 1.6%)



Accessible Moderate to Low Intensity Land Use
(1,875,833 sf, 43 acres, 4.5%)



Relatively Undisturbed Habitat
(894,848 sf, 20.5 acres, 2.2%)



Low to Moderate Intensity Land Use
+ accessible Low to Moderate
(12,893,211 sf, 296 acres, 31.2%)



High Intensity Land Use
(27,280,277 sf, 626 acres, 66.1%)



1km Polygon
(41,268,082 sf, 947.38 acres)

H2.1: 1.6% + 4.5% / 2 = 3.9% (0 points)

H2.2: 2.2% + 31.2% / 2 = 17.8% (2 points)

H2.3: High Intensity = 66.1% (-2 points)

Figure 8

The Enclave
at Oak Tree

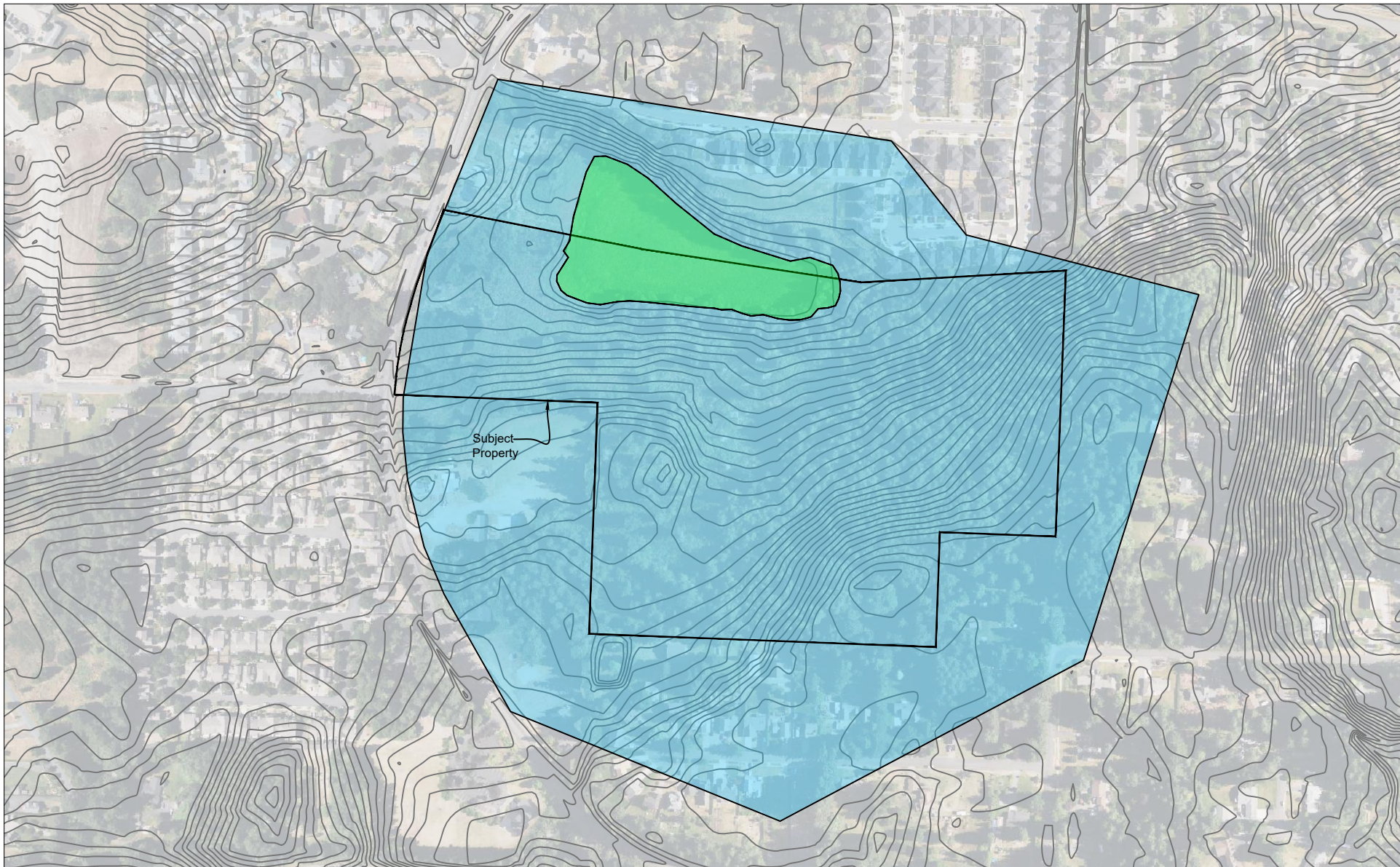
1 KM Polygon



Scale: 1"= 1200'

0 1200'

4 July 2023



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Wetland A
Pollutants (3,382,115 sf; 16x wetland)

Figure 9
The Enclave
at Oak Tree
Contributing Basin



Scale: 1"= 400'

0 400'

4 July 2023

APPENDIX A

Photographs

Wetland A No Ponding in November



Photo 1. Wetland A with no ponding in November



Photo 2. Reed canarygrass with no ponding in Wetland A



Photo 3. No ponding in Wetland A and its buffer



Photo 4. No ponding, forested with Douglas spirea understory

Wetland A Delineation in April



Photo 5. Flag A-5 tied to Scotch broom



Photo 6. Wetland Delineation, Flag A-7, Scotch broom



Photo 7. Wetland Delineation, Flag A-8, Scotch broom



Photo 8. Wetland Delineation, Flag A-9, Scotch broom



Photo 9. Wetland Delineation, Flag A-10, Scotch broom



Photo 10. Wetland vegetation monotypic reed canarygrass



Photo 11. Reed canarygrass and very shallow seasonal flooding



Photo 12. Wetland vegetation monotypic reed canarygrass



Photo 13. Flag A-18, under canopy, reed canarygrass, ponded



Photo 14. Emergent wetland area, reed canarygrass, Flag A-19



Photo 15. Large area of reed canarygrass, ponded



Photo 16. Under canopy, reed canarygrass dominates wetland



Photo 17. Under canopy, reed canarygrass dominates wetland



Photo 18. Under canopy, Reed canarygrass dominates wetland



Photo 19. Western part of wetland, reed canarygrass, ponded



Photo 20. Southern part of wetland boundary, reed canarygrass

Wetland A Buffer



Photo 21. Buffer, Himalayan blackberry & scotch broom



Photo 22. Buffer, Himalayan blackberry & scotch broom



Photo 23. Buffer, Himalayan blackberry & scotch broom



Photo 24. Buffer, Himalayan blackberry & scotch broom

Red Tailed Hawk



Photo 24. Hawk activity near nesting tree



Photo 25. Douglas fir providing nesting features



Photo 26. Occupied red-tailed hawk (*Buteo jamaicensis*) nest

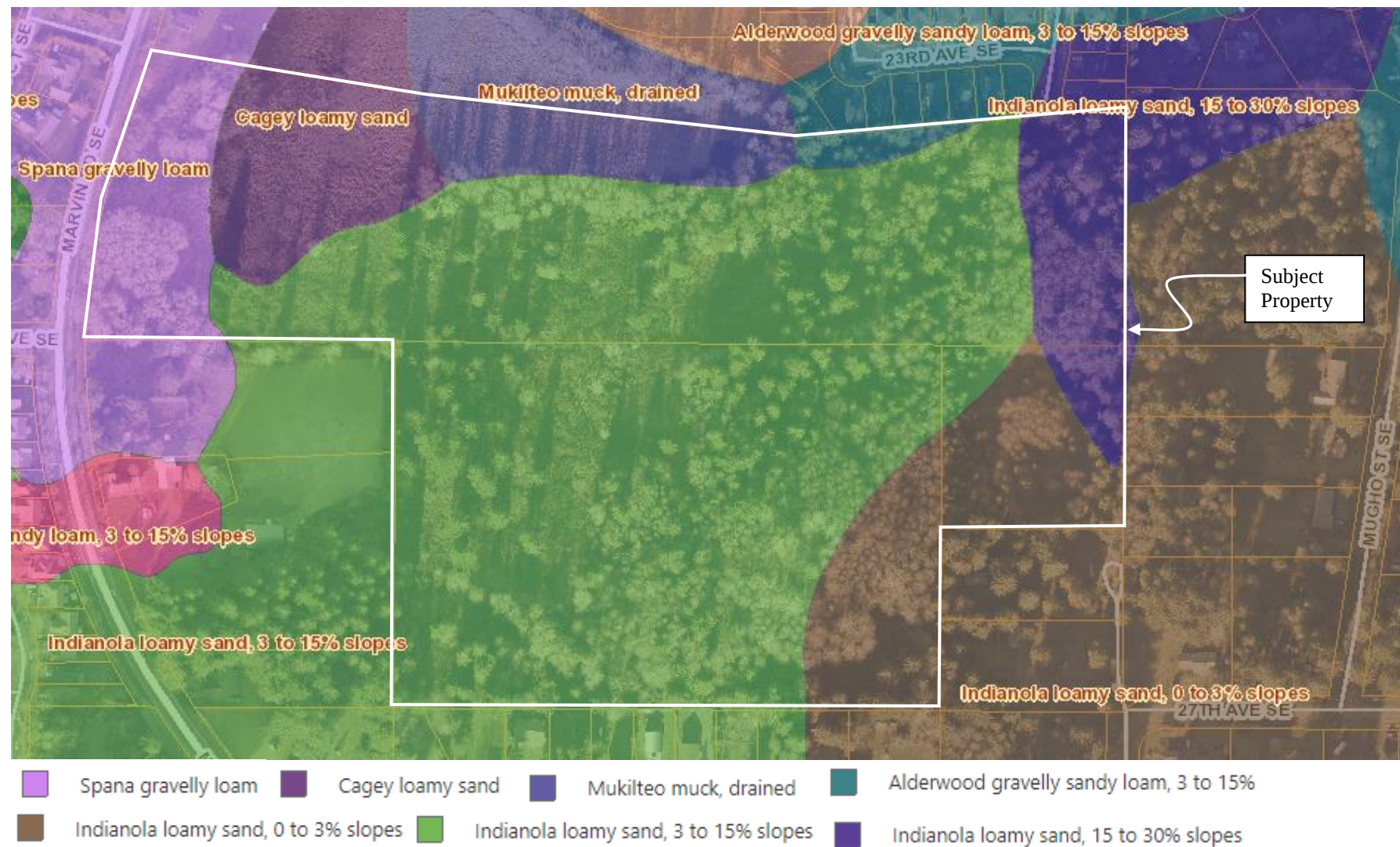


Photo 27. Hawks engaging near nesting area

APPENDIX B

Thurston County Geodata

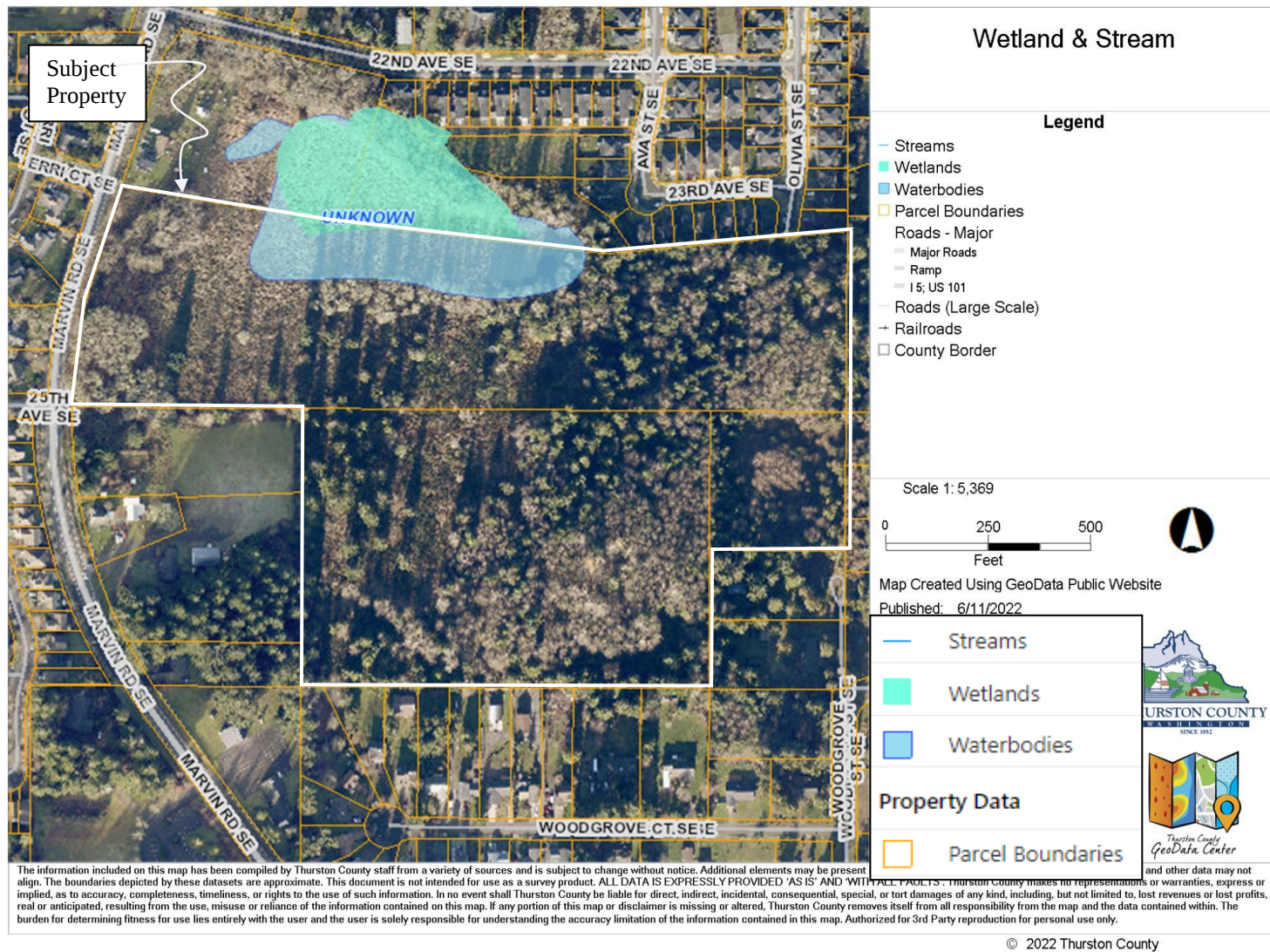
Soils



APPENDIX C

Thurston County Geodata

Wetlands & Streams

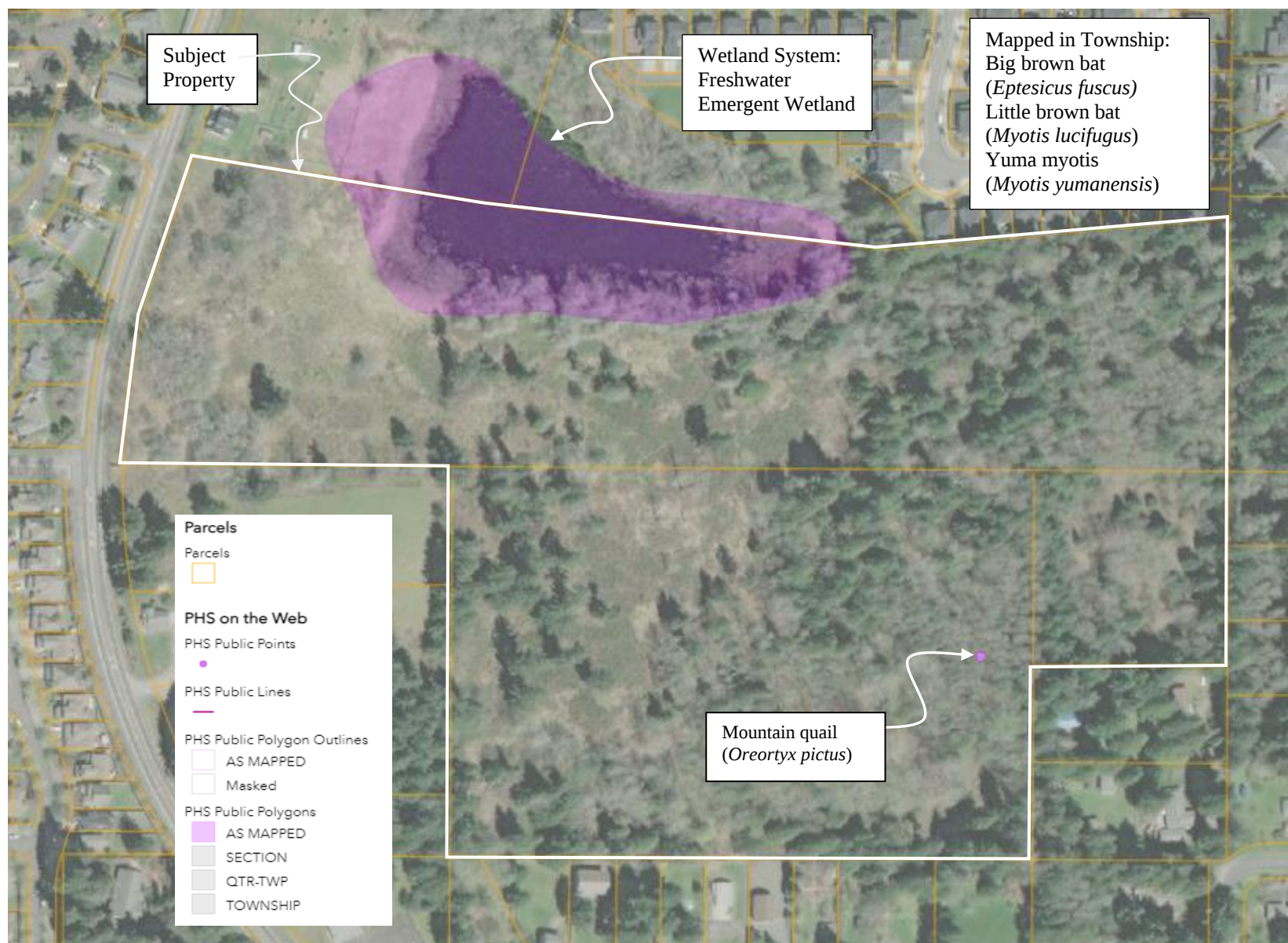


APPENDIX D

Washington Department of Fish and Wildlife (WDFW)

Priority Habitats and Species (PHS)

Database



APPENDIX E

Clean Water Act

303 (d) List



APPENDIX F

Total Maximum Daily Load

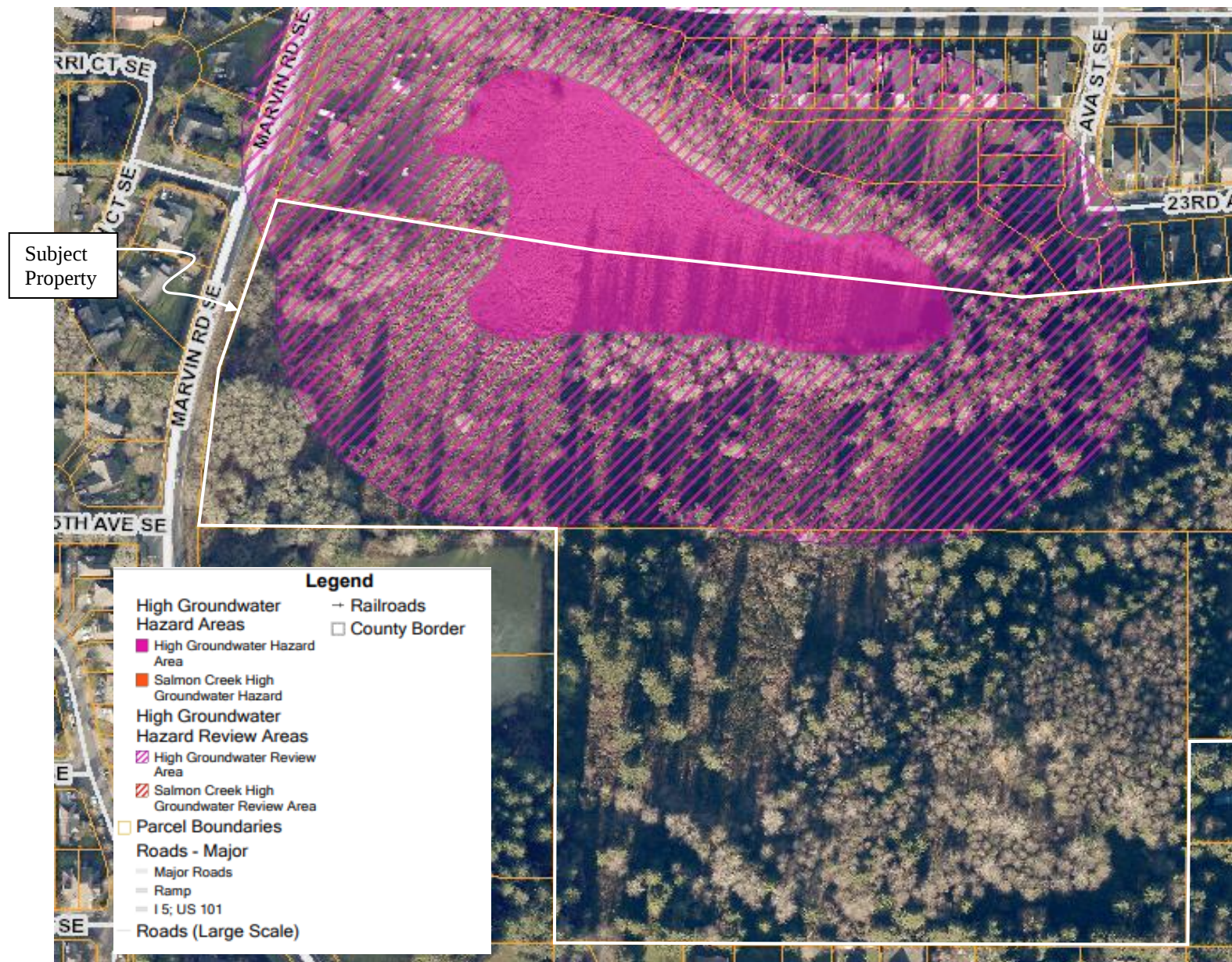
(TMDL)



APPENDIX G

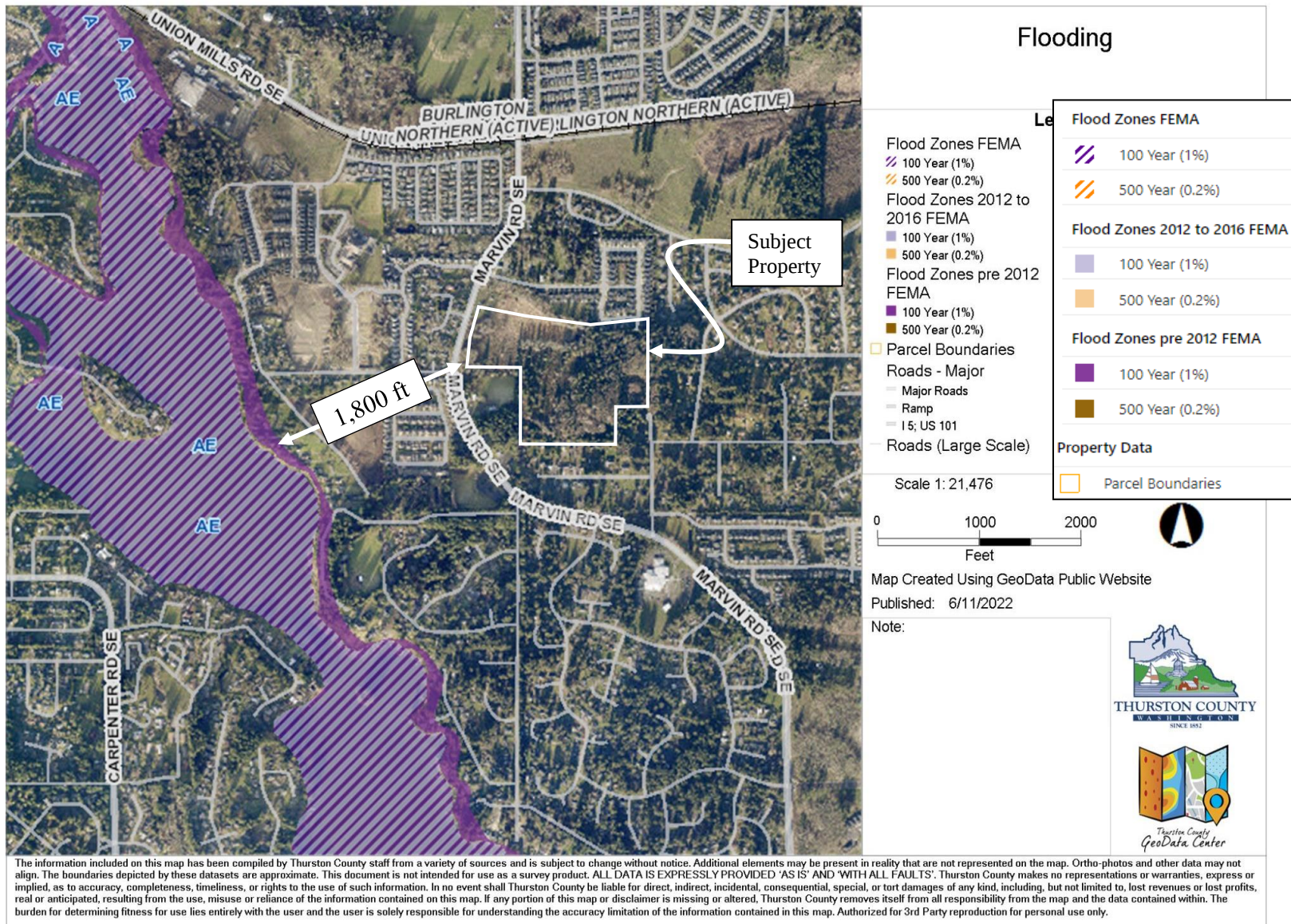
Thurston County Geodata

High Groundwater Hazard Area



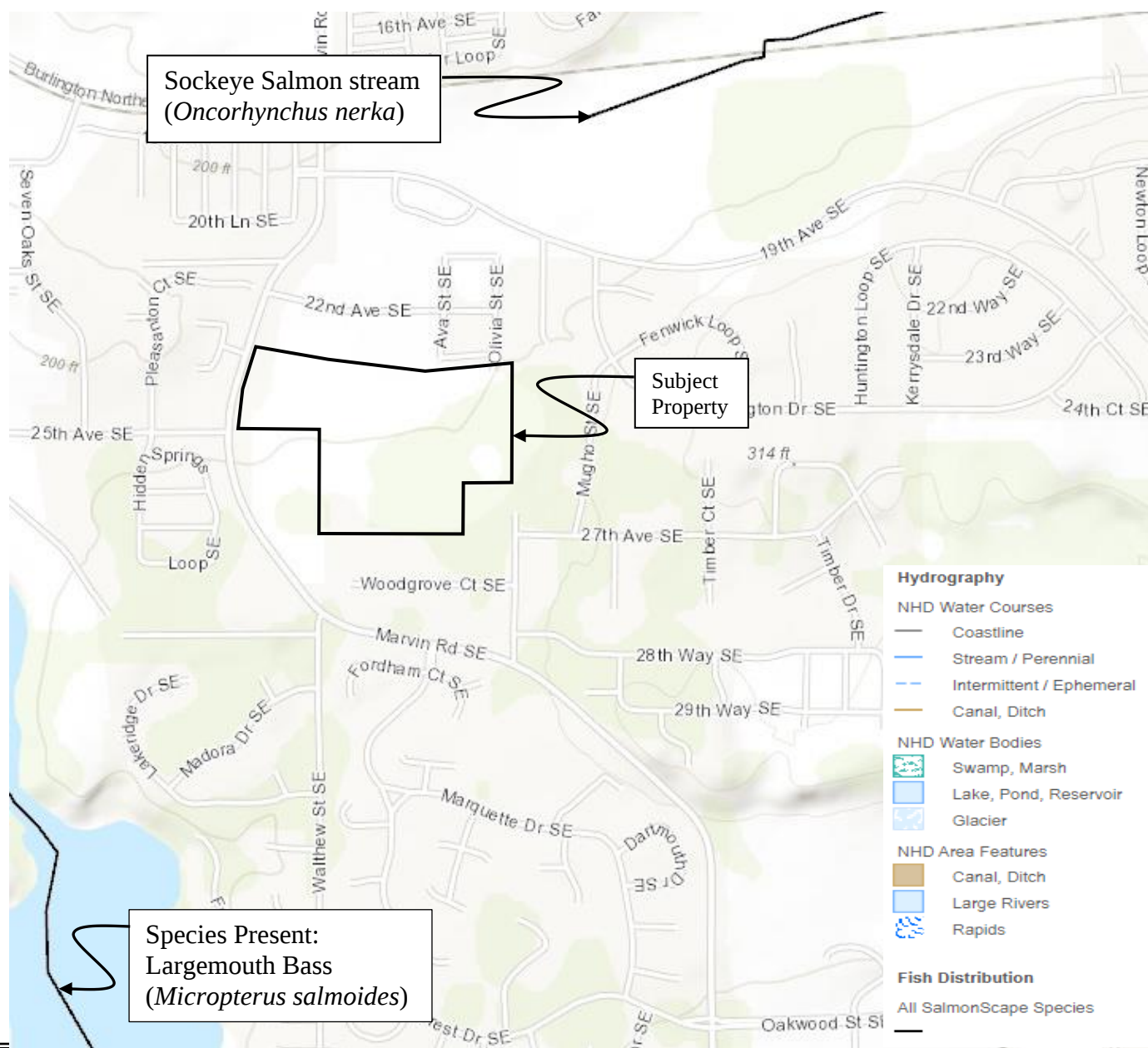
APPENDIX H

FEMA Floodplains



APPENDIX I

SalmonScape



APPENDIX J

Wetland Datasheets

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

Project/Site: McAllister Spring Marvin Road City/County: Thurston County Sampling Date: 27 May 2022
 Applicant/Owner: McAllister spring State: WA Sampling Point: TP-A1
 Investigator(s): Curtis Wambach Section, Township, Range: Section 23 Township 18 Range 1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Are Vegetation No, Soil No, or Hydrology No 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: 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
1. <u>Oregon ash (Fraxinus latifolia)</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>60</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: 12 ft)				
1. <u>Douglas spirea (Spiraea douglasii)</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>130</u> x 2 = <u>260</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>16</u> x 4 = <u>64</u> UPL species _____ x 5 = _____ Column Totals: <u>201</u> (A) <u>409</u> (B) Prevalence Index = B/A = <u>2.03</u>
2. <u>Thinbleberry (Rubus parviflorus)</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>35</u> = Total Cover				
Herb Stratum (Plot size: 6 ft)				
1. <u>Reed Canarygrass (Phalaris arundinacea)</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	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.
2. <u>Slough sedge (Carex obnupta)</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Trailing blackberry (Rubus ursinus)</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
4. <u>Lady fern (Athyrium filix-femina)</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
5. <u>Cleavers (Galium aparine)</u>	<u>1</u>	<u>No</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>106</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: 1 _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-7'	10 YR 2/1							Sandy mucky silt
7-18'	10 YR 3/1							Sandy Silt

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³: ☐ 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:			
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
☒ 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)	☐ 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): <u>1"</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>Surface</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>Surface</u> (includes capillary fringe)		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: McAllister Spring Marvin Road City/County: Thurston County Sampling Date: 27 May 2022
 Applicant/Owner: McAllister spring State: WA Sampling Point: TP-A2
 Investigator(s): Curtis Wambach Section, Township, Range: Section 23 Township 18 Range 1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Are Vegetation No, Soil No, or Hydrology No 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: 20 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. <u>Douglas fir (Pseudotsuga menziesii)</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Oregon white oak (Quercus garryana)</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Oregon ash (Fraxinus latifolia)</u>	<u>30</u>	<u>No</u>	<u>FACW</u>	
4. <u>Western red cedar (Thuja plicata)</u>	<u>20</u>	<u>No</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>285</u> x 4 = <u>1140</u> UPL species _____ x 5 = _____ Column Totals: <u>340</u> (A) <u>1275</u> (B) Prevalence Index = B/A = <u>3.75</u>
			<u>160</u> = Total Cover	
Sapling/Shrub Stratum (Plot size: 12 ft)				
1. <u>Beaked hazel (Corylus cornuta)</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Sala (Gaultheria shallon)</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	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.
3. <u>Snowberry (Snow berry)</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			<u>105</u> = Total Cover	Hydrophytic Vegetation Present? Yes ☐ No ☒
Herb Stratum (Plot size: 6 ft)				
1. <u>Thimbleberry (Rubus parviflorus)</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Low oregon grape (Mahonia nervosa)</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Trailing blackberry (Rubus ursinus)</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes ☐ No ☒
4. <u>Sword fern (Polystichum munitum)</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☐ No ☒
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☐ No ☒
			<u>75</u> = Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☐ No ☒
			_____ = Total Cover	
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: TP-A2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-2'								Duff
2-18'	10YR 3/4							Silty Sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³: ☐ 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:			
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
☐ 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)	☐ 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? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No hydrology indicators			

APPENDIX K

Wetland Rating Form

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 25-Apr-22Rated by Curtis Wambach Trained by Ecology? ☒ Yes ☐ No Date of training ContinualHGM 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 Google Earth and Autodesk**OVERALL WETLAND CATEGORY** III (based on functions ☒ or special characteristics ☐)**1. Category of wetland based on FUNCTIONS**

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

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>List appropriate rating (H, M, L)</i>				
Site Potential	M	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	

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	Figure 5
Hydroperiods	D 1.4, H 1.2	Figure 5
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	Figure 2
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	Figure 6
Map of the contributing basin	D 4.3, D 5.3	Figure 8
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	Figure 7
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	Appendix E
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	Appendix F

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

HGM Classification of Wetland in Western Washington

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

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

☒ NO - go to 2

☐ YES - the wetland class is **Tidal Fringe** - go to 1.1

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

☒ NO - **Saltwater Tidal Fringe (Estuarine)**

☐ YES - **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands.*

*If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

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

☒ NO - go to 3

☐ YES - The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO - go to 4

☐ YES - The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps.
It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**.

☒ NO - go to 5

☐ YES - The wetland class is **Slope**

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

5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding
from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO - go to 6

☐ YES - The wetland class is **Riverine**

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

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

☐ NO - go to 7

☒ **YES** - The wetland class is **Depressional**

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

☒ NO - go to 8

☐ **YES** - The wetland class is **Depressional**

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

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

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

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

NOTES and FIELD OBSERVATIONS:

slope + depressional = depressional

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	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	

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	5
Wetland has persistent, ungrazed, plants > 1/2 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	

D 1.4. Characteristics of seasonal ponding or inundation:

<i>This is the area that is ponded for at least 2 months. See description in manual.</i>		2
Area seasonally ponded is > 1/2 total area of wetland	points = 4	
Area seasonally ponded is > 1/4 total area of wetland	points = 2	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	

Total for D 1

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 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	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3?		0
Source	Yes = 1 No = 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	1
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	0

Total for D 3

Add the points in the boxes above

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

Record the rating on the first page

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 | 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 | |

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

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

D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the 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 | 3 |
| The area of the basin is 10 to 100 times the area of the unit | points = 3 | |
| The area of the basin is more than 100 times the area of the unit | points = 0 | |
| ☐ Entire wetland is in the Flats class | points = 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 **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): | | 1 |
| • Flooding occurs in a sub-basin that is immediately down-gradient of unit. | points = 2 | |
| ☒ • Surface flooding problems are in a sub-basin farther down-gradient. | points = 1 | |
| ☐ Flooding from groundwater is an issue in the sub-basin. | points = 1 | |
| ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why | points = 0 | |
| ☐ There are no problems with flooding downstream of the wetland. | points = 0 | |

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 | 1 |
| ☒ Emergent | 3 structures: points = 2 | |
| ☐ Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| ☒ Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| ☐ 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 | 0 |
| ☒ 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 |

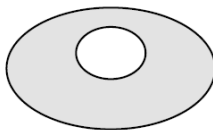
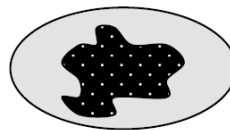
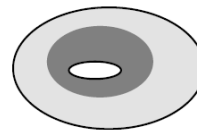
H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft². *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 | |

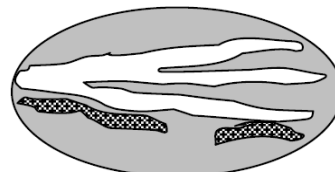
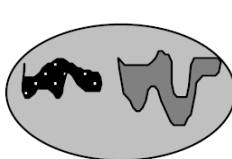
H 1.4. Interspersion of habitats

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

1

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. <i>The number of checks is the number of points.</i>		2
☒ 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 (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) ☒ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) ☐ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)		
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 <i>only habitat that directly abuts wetland unit</i>). <i>Calculate:</i> 1.6 % undisturbed habitat + (4.5 % moderate & low intensity land uses / 2) = 3.85%		
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. <i>Calculate:</i> 2.2 % undisturbed habitat + (31.2 % moderate & low intensity land uses / 2) = 17.8%		
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		2
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		0

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		1
Site has 1 or 2 priority habitats (listed on next page) within 100m points = 1		
Site does not meet any of the criteria above points = 0		

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

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:

<http://wdfw.wa.gov/conservation/phs/list/>

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

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

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

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
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 <i>Spartina</i> , 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? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☒ 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? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> ☐ 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 (<i>needs to be measured near the bottom</i>) ☐ 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 ft²) ☐ 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)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> 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	