



# CRITICAL AREAS REPORT

July 10, 2019



**Grand Forest North**  
*Bainbridge Island, Washington*

Prepared for  
**Bainbridge Island Metropolitan  
Park & Recreation District**  
7666 NE High School Road  
Bainbridge Island, WA 98110  
(206) 842-2306

Prepared by  
**Ecological Land Services**  
1157 3rd Avenue, Suite 220A • Longview, WA 98632  
(360) 578-1371 • Project Number 2248.07

## **TABLE OF CONTENTS**

---

<b>INTRODUCTION</b> .....	<b>1</b>
<b>METHODOLOGY</b> .....	<b>1</b>
<b>SITE DESCRIPTION</b> .....	<b>1</b>
<b>VEGETATION</b> .....	<b>2</b>
<b>SOILS</b> .....	<b>3</b>
<b>HYDROLOGY</b> .....	<b>3</b>
<b>NATIONAL WETLAND INVENTORY</b> .....	<b>3</b>
<b>BAINBRIDGE ISLAND CRITICAL AREAS INVENTORY</b> .....	<b>3</b>
<b>WASHINGTON DEPARTMENT OF FISH AND WILDLIFE PRIORITY HABITAT AND SPECIES</b> .....	<b>4</b>
<b>WASHINGTON DEPARTMENT OF NATURAL RESOURCES FPARS</b> .....	<b>4</b>
<b>CONCLUSIONS</b> .....	<b>4</b>
<b>CRITICAL AREAS RECONNAISSANCE</b> .....	<b>4</b>
<b>LIMITATIONS</b> .....	<b>4</b>
<b>REFERENCES</b> .....	<b>5</b>

## **FIGURES & PHOTOPLATES**

Figure 1	Vicinity Map
Figure 2	Site Map
Figure 3	Soil Survey Map
Figure 4	National Wetlands Inventory Map
Figure 5	Bainbridge Island Critical Areas Map
Figure 6	WDFW PHS Map
Figure 7	WDNR FPARS Map
Photoplates	Site Photos

## **APPENDIX A**

Wetland Determination Data Forms

## SIGNATURE PAGE

The information and data in this report were compiled and prepared under the supervision and direction of the undersigned.

A handwritten signature in cursive script that reads "Joanne Bartlett". The signature is written in black ink and is positioned above a horizontal line.

Joanne Bartlett, PWS  
Senior Biologist

## **INTRODUCTION**

---

Ecological Land Services, Inc. (ELS) was contracted by Bainbridge Island Metropolitan Parks and Recreation District (BIMPRD) to complete a critical areas assessment for the North Grand Forest located at the corner of Miller Road and Koura Road, Kitsap County Tax Parcel Number 162502-2-001-2002, within a portion of Section 16, Township 25 North, Range 2 East of the Willamette Meridian, in Bainbridge Island, Washington (Figure 1). This report summarizes findings of the critical areas assessment according to the *Bainbridge Island Municipal Code (BIMC), Chapters 16.20.110 Fish and Wildlife Habitat Conservation Areas (FWHCA) and 16.20.140 Wetlands*.

## **METHODOLOGY**

---

The critical areas assessment followed the Routine Determination Method in the Western Mountains, Valleys, and Coast Region according to the U.S. Army Corps of Engineers, *Wetland 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)* (U.S. Army Engineer Research and Development Center 2010).

The Routine Determination Method examines three parameters—vegetation, soils, and hydrology—to determine if wetlands exist in a given area. Hydrology is critical in determining what is wetland but is often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as “Waters of the United States” by the U.S. Army Corps of Engineers (USACE), as “Waters of the State” by the Washington Department of Ecology (DOE), and locally by Bainbridge Island.

To identify the presence of critical areas, which include FWHCA and wetlands, ELS biologists collected vegetation, hydrology, and soil data at eight test plots in the North Grand Forest. A handheld Trimble Global Positioning System (GPS) was used to locate the test plots and perimeter trail on the site map (Figure 2). Data was collected on June 17, 2019 and revealed that there are no onsite wetlands because the positive indicators were not observed for all three of the wetland parameters. No indicators of other critical areas were observed on or within 300 feet of the study area.

## **SITE DESCRIPTION**

---

The North Grand Forest is part of the BIMPRD park system, which is in the southeast corner of Miller Road and Koura Road in the Meadowmeer area of Bainbridge Island, Washington (Figure 1). The park property lies on both sides of Miller Road, but the largest portion of the park is located on the east side (Figure 2). The study area lies inside the perimeter trail, but observations were made in the forest outside the study area (Photoplates 1 and 2). The trail is part of the BIMPRD trail system that runs through other portions of the Grand Forest as well as other parks in

the area. It is a dirt trail that is fairly narrow and does not appear to be as heavily used as the other Grand Forest trails (Photoplates 1 and 2). The park property overall slopes moderately down from east to west with areas of narrow depressional troughs in several locations. It is composed of upland forest with large, old growth trees with a mostly sparse high shrub layer. There are forested openings throughout where a dense high shrub layer has formed within the understory (Photoplates 1, 2, and 3). There were dense low shrub and herbaceous plant layers throughout the study area (Photoplates 2 and 3). The properties around the North Grand Forest include one of the Meadowmeer residential areas to the east, undeveloped forest currently managed by the Bainbridge Island Land Trust to the south, and well used, two lane roads to the north and west (Koura and Miller Roads, respectively).

## **VEGETATION**

---

Data was collected in depressional troughs that form in the east-west sloping terrain. These troughs were the focus of the critical area assessment because critical areas are often found in low depressional areas. The vegetation in these areas was dominated by western red cedar (*Thuja plicata*, FAC) and bigleaf maple (*Acer macrophyllum*, FACU) within the test plot areas but there were also Douglas fir (*Pseudotsuga menziesii*, FACU) and western hemlock (*Tsuga heterophylla*, FACU) trees throughout. The shrub layer was dense where there are openings in the forest canopy and was dominated by salmonberry (*Rubus spectabilis*, FAC), ocean spray (*Holodiscus discolor*, FACU), evergreen huckleberry (*Vaccinium ovatum*, FACU), red huckleberry (*Vaccinium parvifolium*, FACU), hazelnut (*Corylus cornuta*, FACU), and salal (*Gaultheria shallon*, FACU). The herbaceous layer was dominated by sword fern (*Polystichum munitum*, FACU), trailing blackberry (*Rubus ursinus*, FACU), vanilla leaf (*Achlys triphylla*, NL, assumed UPL), foam flower (*Tiarella trifoliata*, FAC), stinging nettle (*Urtica dioica*, FAC), fringe cup (*Tellima grandiflora*, FACU), enchanter's nightshade (*Circaea alpina*, FAC), and bracken fern (*Pteridium aquilinum*, FACU). There also were lower percentages of bleeding heart (*Dicentra formosa*, FACU), wood fern (*Dryopteris expansa*, FACW), and wild ginger (*Asarum caudatum*, FACU) present throughout the upland forest. The hydrophytic vegetation criterion was met at only one of the eight test plots conducted on the study area.

The dominant vegetation found onsite is recorded on the attached wetland determination data forms (Appendix A). The indicator status, following the common and scientific names, indicates how likely a species is to be found in wetlands. Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) – Almost always occur in wetlands.
- **FACW** (facultative wetland) – Usually occur in wetlands, but may occur in non-wetlands.
- **FAC** (facultative) – Occur in wetlands and non-wetlands.
- **FACU** (facultative upland) – Usually occur in non-wetlands, but may occur in wetlands.
- **UPL** (obligate upland) – Almost never occur in wetlands.
- **NI** (no indicator) – Status not yet determined.

## **SOILS**

---

As referenced on the U.S.D.A. Natural Resources Conservation Service (NRCS 2019) website, the soils within the study area include Harstine gravelly ashy sandy loam, 0 to 6 percent slopes (14), Harstine gravelly ashy sandy loam, 15 to 30 percent slopes (16), and Kapowsin gravelly ashy loam, 6 to 15 percent slopes (Figure 3). The soil unit just east of the study area and on the park property is Kapowsin gravelly ashy loam, 0 to 6 percent slopes (22). None of these soil units are classified as hydric (NRCS 2015). Harstine soils are moderately well drained and formed in sandy glacial drift with an influence of volcanic ash over dense glaciomarine deposits. Depth to water table in Harstine soils is more than 80 inches. Kapowsin soils are moderately well drained and formed in volcanic ash mixed with glacial drift over dense glaciomarine deposits. The depth to the water table ranges between 11 and 24 inches below the surface. Areas mapped as hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic vegetation, and hydric soils must all be present to classify an area as a wetland.

Gravelly sandy loam soil profiles were revealed at seven of the eight test plots and generally consisted of two layers with a 2 to 7-inch surface layers that had brown (10YR 2/2) matrix chromas. The subsurface layer had red to reddish brown (7.5YR 4/6 to 10YR 4/6) matrix chromas. A three-layer profile was revealed at Test Plot 8 and consists of a 2-inch brown surface layer (10YR 2/2), a 6-inch light brown intermediate layer (10YR 3/3), and a bottom layer with a red (10YR 4/6) matrix chroma. The soil profiles revealed at the eight test plots did not meet any of the hydric soil indicators because of high matrix chromas.

## **HYDROLOGY**

---

Hydrology was not present during the field visit and there was no evidence of wetland hydrology. Therefore, the wetland hydrology criterion was not met for any location of the study area. In addition, no water flow or flow indicators were observed within the depressional east-west troughs where observed in the study area. Therefore, streams are not present on the North Grand Forest or within the study area.

## **NATIONAL WETLAND INVENTORY**

---

The U.S. Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) map does not indicate the presence of wetlands on or within 300 feet of the property (Figure 4) NWI maps are to be used with discretion because they are intended to gather general wetland information about a regional area and therefore are limited in accuracy for smaller areas due to their large scale. Wetlands were not identified within the study area or the North Grand Forest during the reconnaissance field visit.

## **BAINBRIDGE ISLAND CRITICAL AREAS INVENTORY**

---

The Bainbridge Island Critical Areas Web Application (BI 2019) maps a small wetland near the middle of the west half of the study area (Figure 5). The wetland was not observed during the field reconnaissance as verified at Test Plot 4, which is located near the northern tip of the mapped wetland (Figure 2). The test plot data revealed that there were no positive indicators for any of the three wetland parameters and no wetlands in this area as mapped. Critical area maps are to be used

with discretion because they are intended to gather general wetland information about a regional area and therefore are limited in accuracy for smaller areas due to their large scale.

### **WASHINGTON DEPARTMENT OF FISH AND WILDLIFE PRIORITY HABITAT AND SPECIES**

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) website (WDFW 2019) identifies and maps priority habitat and species areas in the state of Washington. The PHS map shows no priority habitats or species on or near the North Grand Forest (Figure 6).

### **WASHINGTON DEPARTMENT OF NATURAL RESOURCES FPARS**

The Washington State Department of Natural Resources (WDNR) Forest Practices Application Review System (FPARS) water type mapping website does not indicate the presence of streams on or within 200 feet of the study area (Figure 6). Streams were not identified in the depressional troughs that extend down the moderate slopes because there were no indicators of water flow observed.

### **CONCLUSIONS**

#### **CRITICAL AREAS RECONNAISSANCE**

The field reconnaissance revealed that there were no critical areas on the North Grand Forest property including the study area, which supports the background research collected on the mapping websites. The City of Bainbridge Island maps a small wetland near the middle of the study area, but this area was not observed during the field reconnaissance. One of the eight test plots was conducted near the mapped wetland and no wetland indicators or potential indicators were observed. The reconnaissance included collection of data at eight test plots to determine whether wetlands or other critical areas were present. The data was collected in low areas including depressional troughs that form through the sloping terrain. The test plot data indicates that there are no wetlands or streams present within the study area including in the area shown on the city map. The remainder of the park is composed of upland forest and no other potential critical areas were identified.

### **LIMITATIONS**

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

## REFERENCES

---

- City of Bainbridge Island. 2018. *Bainbridge Island Municipal Code, Title 16.20 Critical Areas, 2018* Bainbridge Island, Washington.
- City of Bainbridge Island. 2019. Bainbridge Island Geographical Information System. Online document Website accessed June 2019.  
<https://cityofbi.maps.arcgis.com/apps/webappviewer/index.html?id=69e8fb8e73ea44029468811910a28fd4>.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1. U.S. Army Corps of Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-13. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center.
- U.S. Fish & Wildlife Service (USFWS). 2019. *National Wetlands Inventory*. Online document <https://www.fws.gov/wetlands/Data/Mapper.html>. Website accessed June 2019.
- U.S.D.A. Natural Resource Conservation Service (NRCS). *Web Soil Survey*. 2019. WA635 Kitsap County Area. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Website accessed June 2019.
- U.S.D.A. Natural Resource Conservation Service (NRCS). 2015. *Washington Hydric Soils List*. <<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>>.
- Washington State Department of Natural Resources (WDNR). 2019. *Forest Practices Application Review System (FPARS) Water Type Mapping Tool* website. <https://fpamt.dnr.wa.gov/default.aspx>. Website accessed June 2019.
- Washington State Department of Fish and Wildlife (WDFW). 2019. *Priority Habitats and Species* website. <http://apps.wdfw.wa.gov/phsontheweb/>. Website accessed June 2019.



## **FIGURES AND PHOTOPLATES**

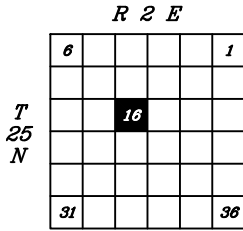
---

**WASHINGTON**

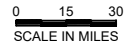
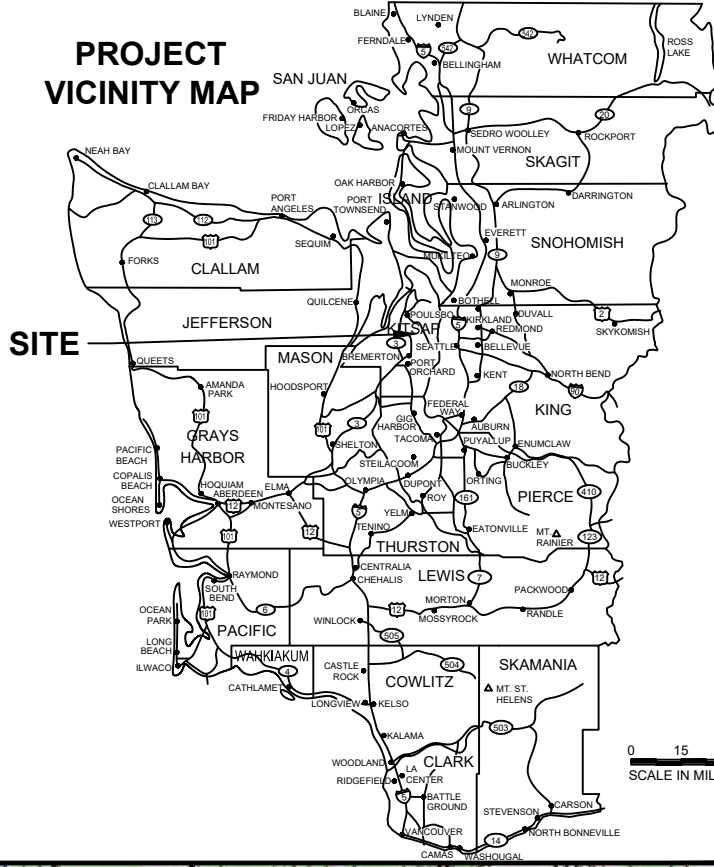


47.6633° Latitude  
-122.5551° Longitude

**LOCATION MAP**

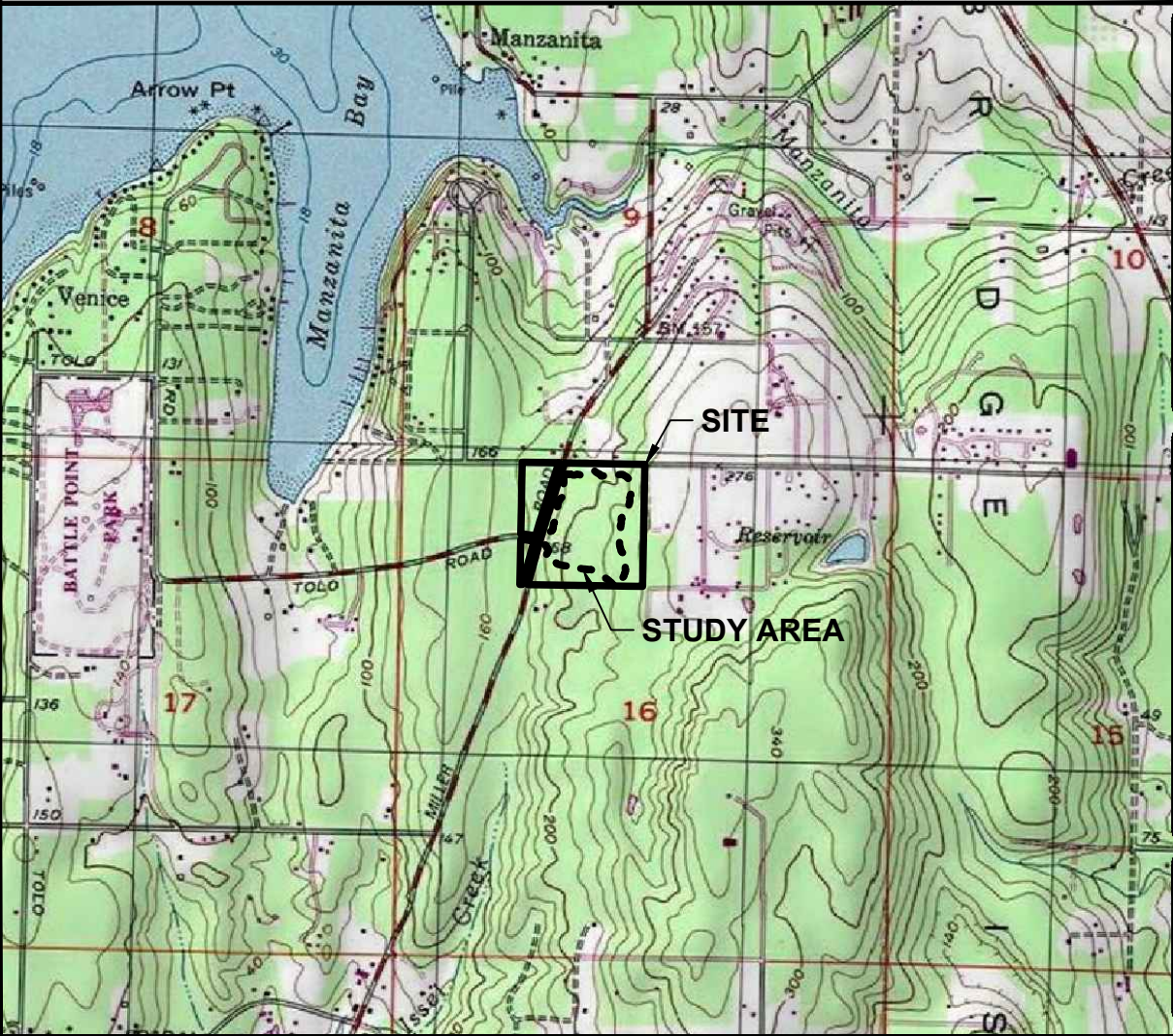


**PROJECT VICINITY MAP**

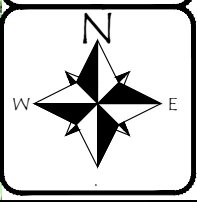
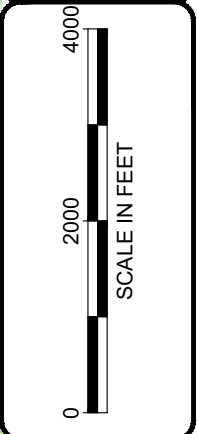


**Figure 1**  
**VICINITY MAP**  
North Grand Forest  
Bainbridge Metro Parks and Recreation District  
City of Bainbridge Island, Kitsap County, WA  
Section 16, Township 25N, Range 2E, W.M.

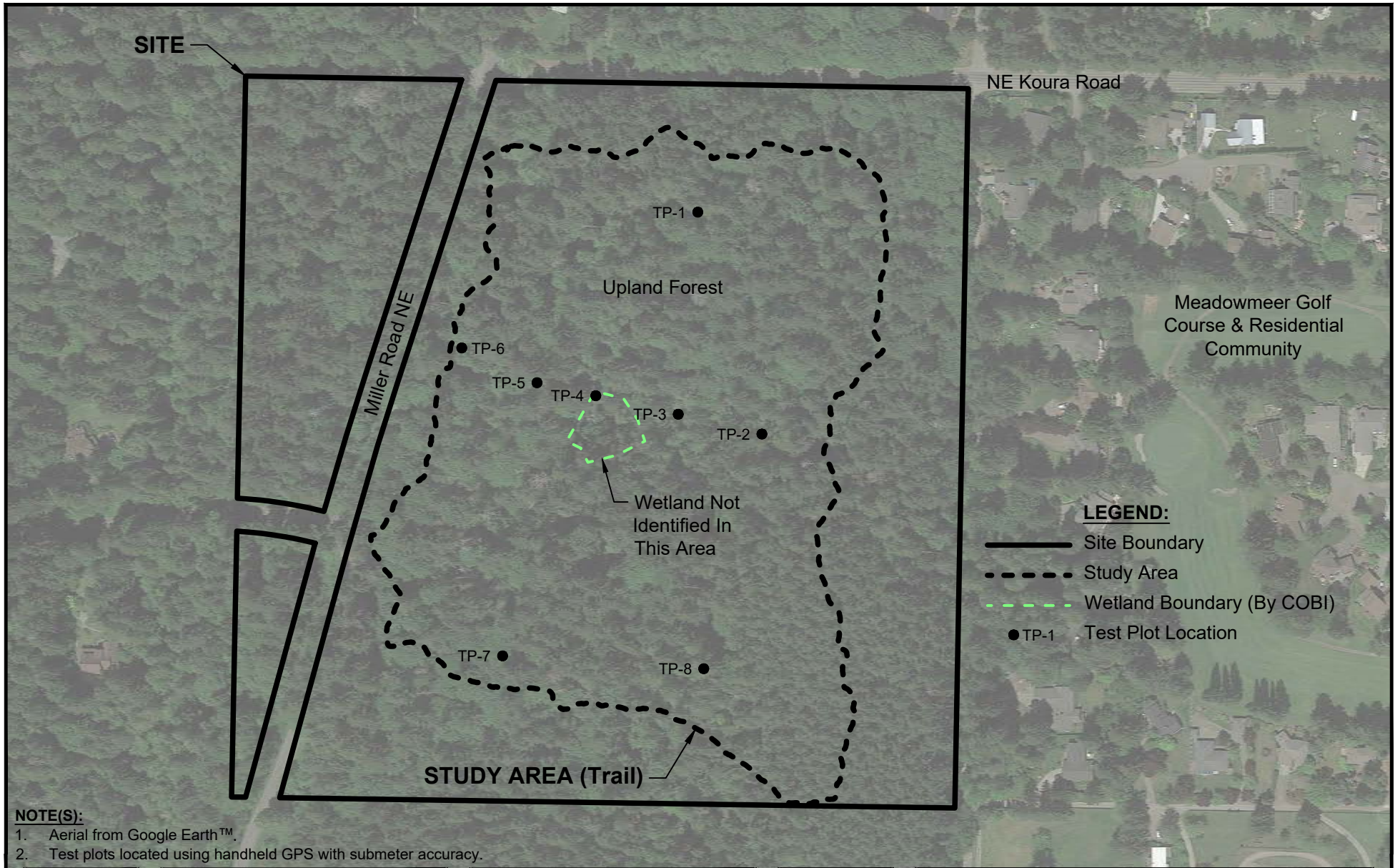
DATE: 7/2/19  
DWN: JLL  
REQ. BY:  
PRJ. MGR: JB  
CHK:  
PROJECT NO:  
2248.07



1157 3rd Ave., Suite 220A  
Longview, WA 98632  
Phone: (360) 578-1371  
Fax: (360) 414-9305  
[www.eco-land.com](http://www.eco-land.com)

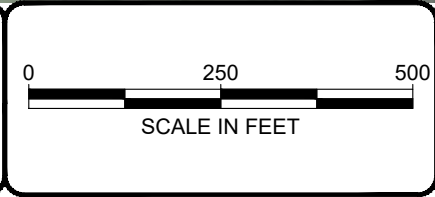






**NOTE(S):**

1. Aerial from Google Earth™.
2. Test plots located using handheld GPS with submeter accuracy.



1157 3rd Ave., Suite 220A  
 Longview, WA 98632  
 Phone: (360) 578-1371  
 Fax: (360) 414-9305  
 www.eco-land.com

DATE: 7/2/19  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
 PROJECT NO:  
 2248.07

Figure 2  
 SITE MAP  
 North Grand Forest  
 Bainbridge Metro Parks and Recreation District  
 City of Bainbridge Island, Kitsap County, WA  
 Section 16, Township 25N, Range 2E, W.M.





**LEGEND:**

- 14** Harstine gravelly ashy sandy loam, 0 to 6 percent slopes. Not hydric.
- 16** Harstine gravelly ashy sandy loam, 15 to 30 percent slopes. Not hydric.
- 22** Kapowsin gravelly ashy loam, 0 to 6 percent slopes. Not hydric.
- 23** Kapowsin gravelly ashy loam, 6 to 15 percent slopes. Not hydric.

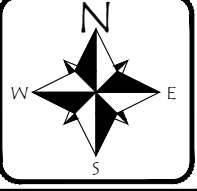
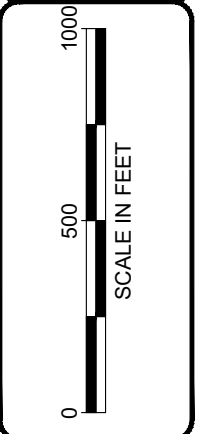
**NOTE(S):**

1. Map provided on-line by NRCS at web address:  
<http://websoilsurvey.nrcs.usda.gov/app/>

Figure 3  
**SOIL SURVEY MAP**  
 North Grand Forest  
 Bainbridge Metro Parks and Recreation District  
 City of Bainbridge Island, Kitsap County, WA  
 Section 16, Township 25N, Range 2E, W.M.

DATE: 7/2/19  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
 PROJECT NO:  
 2248.07

1157 3rd Ave., Suite 220A  
 Longview, WA 98632  
 Phone: (360) 578-1371  
 Fax: (360) 414-9305  
[www.eco-land.com](http://www.eco-land.com)







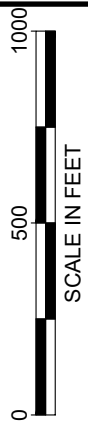
No mapped wetlands indicated onsite by US Fish & Wildlife Service.

**LEGEND:**

 Freshwater Forested/Shrub Wetland

**NOTE(S):**

1. Map provided on-line by US Fish & Wildlife Service at web address: <http://www.fws.gov/wetlands/data/index.html>



1157 3rd Ave., Suite 220A  
 Longview, WA 98632  
 Phone: (360) 578-1371  
 Fax: (360) 414-9305  
[www.eco-land.com](http://www.eco-land.com)

DATE: 7/2/19  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
 PROJECT NO:  
 2248.07

Figure 4  
**NATIONAL WETLANDS INVENTORY MAP**  
 North Grand Forest  
 Bainbridge Metro Parks and Recreation District  
 City of Bainbridge Island, Kitsap County, WA  
 Section 16, Township 25N, Range 2E, W.M.

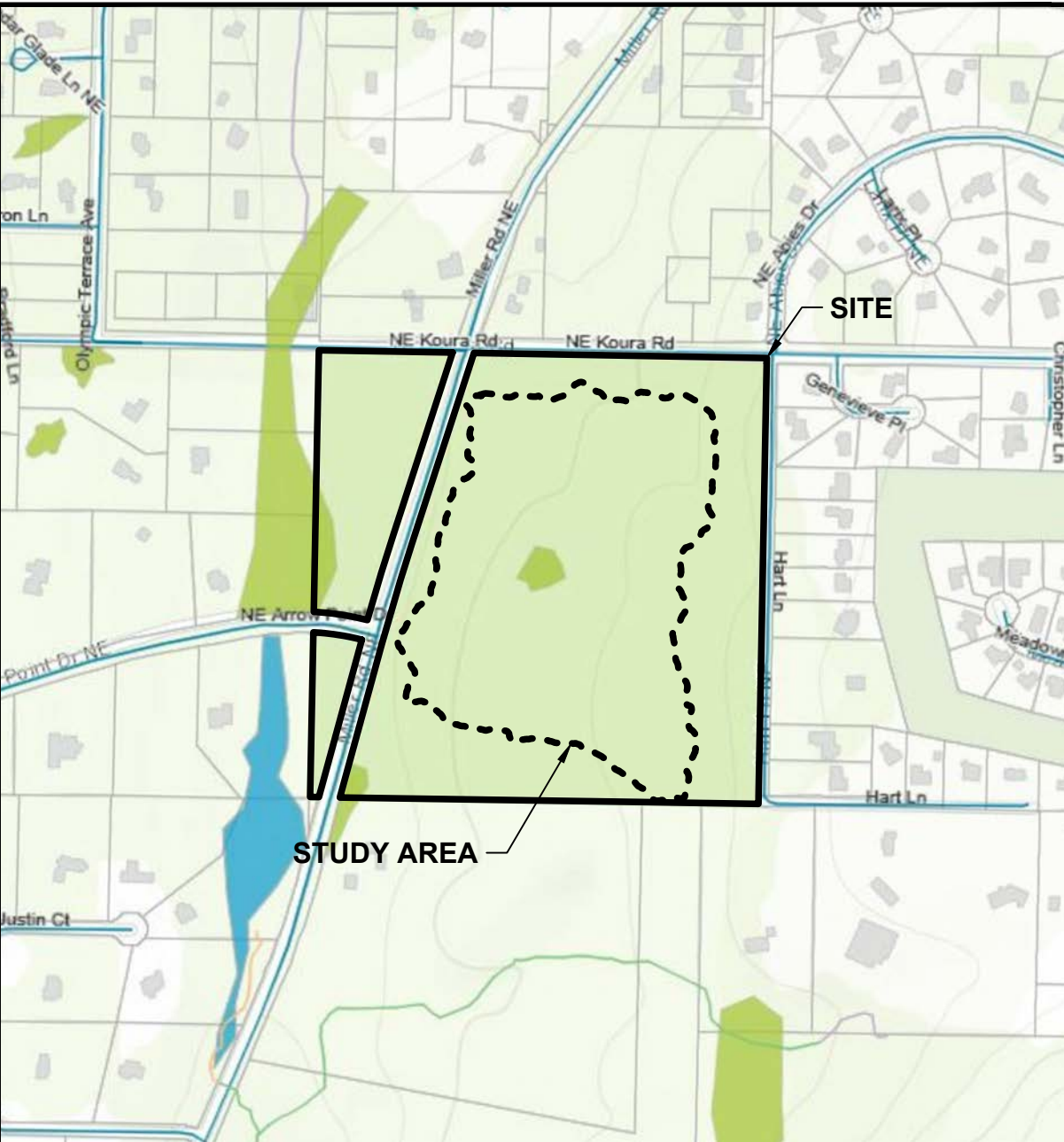


Figure 5  
**BAINBRIDGE ISLAND CRITICAL AREAS MAP**  
 North Grand Forest  
 Bainbridge Metro Parks and Recreation District  
 City of Bainbridge Island, Kitsap County, WA  
 Section 16, Township 25N, Range 2E, W.M.

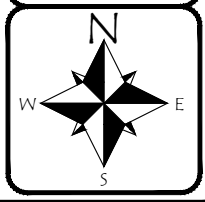
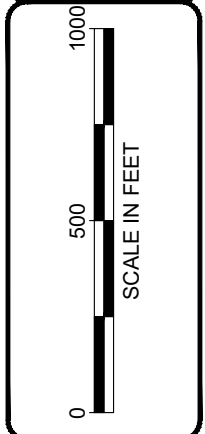
DATE: 7/2/19  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
 PROJECT NO:  
 2248.07

1157 3rd Ave., Suite 220A  
 Longview, WA 98632  
 Phone: (360) 578-1371  
 Fax: (360) 414-9305  
 www.eco-land.com

**Ecological  
 Land Services**

**LEGEND:**

- |                  |                    |                          |
|------------------|--------------------|--------------------------|
| <u>Wetlands</u>  | <u>Streams</u>     | <u>FEMA Flood Hazard</u> |
| Delineated       | Fish               | AE = High Flood Risk     |
| No Delineation   | Non-Fish           | VE = High Flood Risk     |
| Not a Wetland    | Non-Fish Perennial | Kitsap County Parcels    |
| <u>Shoreline</u> | Non-Fish Seasonal  |                          |




**NOTE(S):**

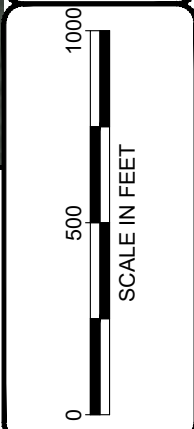
- Map provided on-line by the City of Bainbridge Island at web address:  
<https://cityofbi.maps.arcgis.com/home/index.html>





**LEGEND:**

 Freshwater Forested/Shrub Wetland, Aquatic Habitat




**Ecological  
Land Services**

1157 3rd Ave., Suite 220A  
Longview, WA 98632  
Phone: (360) 578-1371  
Fax: (360) 414-9305  
[www.eco-land.com](http://www.eco-land.com)

DATE: 7/2/19  
DWN: JLL  
REQ. BY:  
PRJ. MGR: JB  
CHK:  
PROJECT NO:  
2248.07

**Figure 6**  
**PRIORITY HABITAT AND SPECIES MAP**  
North Grand Forest  
Bainbridge Metro Parks and Recreation District  
City of Bainbridge Island, Kitsap County, WA  
Section 16, Township 25N, Range 2E, W.M.

**NOTE:** Map provided on-line by Washington State  
Department of Fish & Wildlife at web address:  
<http://apps.wdfw.wa.gov/phsontheweb/>

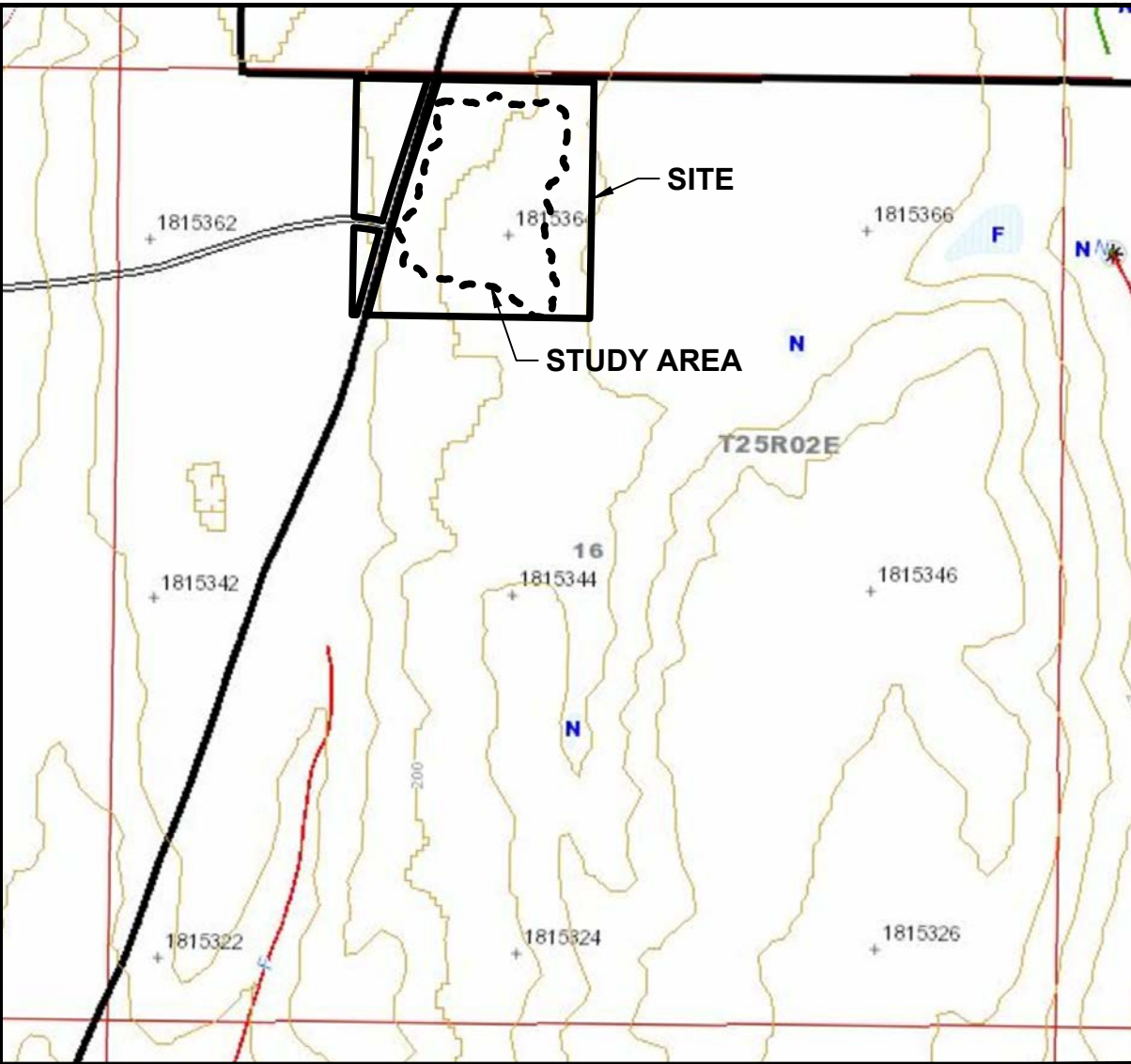


Figure 7  
 DNR FPARS MAP  
 North Grand Forest  
 Bainbridge Metro Parks and Recreation District  
 City of Bainbridge Island, Kitsap County, WA  
 Section 16, Township 25N, Range 2E, W.M.

DATE: 7/2/19  
 DWN: JLL  
 REQ. BY:  
 PRJ. MGR: JB  
 CHK:  
 PROJECT NO:  
 2248.07

1157 3rd Ave., Suite 220A  
 Longview, WA 98632  
 Phone: (360) 578-1371  
 Fax: (360) 414-9305  
 www.eco-land.com



No mapped streams indicated onsite by the Washington State Department of Natural Resources (DNR).

County Boundary

County Boundary

Tribal Cultural Resources Contacts

Tribal Cultural Resources Contacts

Contours - 40ft. Interval

Contours - 40ft. Interval

Fire Shutdown Zones

Fire Shutdown Zones

Water Bodies

- Water Bodies
- Flats/Gravel Bars
- Ice
- Man Made Features
- Open Water
- Wet Area

Streams

- Streams
- Type S
- Type F
- Type N, Np, Ns
- U, unknown
- X, non-typed per WAC 222-16

WRIA

WRIA

WAU

WAU

Trails and Railroads

- Trails and Railroads
- Trail
- Railroad
- Railroad Grade

Roads

- Roads
- Unpaved Road/Surface Unknown
- Paved Road

Water Type Break

Water Type Break

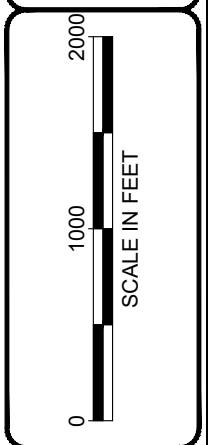
Section Survey Lines

Section Survey Lines

Townships

Townships

**NOTE:** Map provided on-line by Washington State Department of Natural Resources at web address:  
<http://fortress.wa.gov/dnr/app1/Fpars/viewer.htm>







**Photo 1** was taken from the northwest corner of North Grand Forest. It looks east along the northern section of the perimeter trail. This photo shows an area of dense salmonberry that does not meet the wetland criteria.



**Photo 2** was taken from the same location as Photo 1. It looks southeasterly into the forested study area from the trail.



**Photo 3** was taken from the same location as Photos 1 and 2. It looks into the forested study area along the north side of the park.



1157 3<sup>rd</sup> Ave., Suite 220A  
Longview, WA 98632  
(360) 578-1371  
Fax: (360) 414-9305

DATE: 6/24/19  
DWN: JB  
PRJ. MGR JB  
PROJ. #: 2248.07

Photoplate 1  
Project Name: North Grand  
Forest  
Client: Bainbridge Island Metro  
Parks and Recreation  
Bainbridge Island, Washington



**Photo 4** was taken from near the southwest corner of the North Grand Forest and it looks north along the western portion of the perimeter trail. The conditions in this photo are indicative of the views of the forested study area from the trail.



**Photo 5** was taken from the southern portion of the perimeter trail and shows an area of the forest that lacks dense shrub cover.



**Photo 6** was taken along a section of the perimeter trail on the North Grand Forest. In this photo, bigleaf maple is present in the canopy with sword fern dominating the understory.



1157 3<sup>rd</sup> Ave., Suite 220A  
Longview, WA 98632  
(360) 578-1371  
Fax: (360) 414-9305

DATE: 6/24/19  
DWN: JB  
PRJ. MGR JB  
PROJ. #: 2248.07

Photoplate 2  
Project Name: North Grand  
Forest  
Client: Bainbridge Island Metro  
Parks and Recreation  
Bainbridge Island, Washington





**Photo 7** provides a view of the forest that lies within the interior of the park as viewed from the perimeter trail. Many areas are dominated by conifer trees with sword fern dominating the understory, so this photo is typical of the forested conditions within the study area.



**Photo 8** shows the soil at one of the eight test plots conducted across the North Grand Forest. The soil was composed of gravelly sandy loam with dark brown to reddish brown chromas that met none of the hydric soil indicators.



**Photo 9** shows an area of the forest where salmonberry dominates the shrub layer. Test plots were completed in some of these areas and no wetland conditions were observed. This photo is indicative of areas where the canopy is more open, and a high shrub layer has developed.



1157 3<sup>rd</sup> Ave., Suite 220A  
Longview, WA 98632  
(360) 578-1371  
Fax: (360) 414-9305

DATE: 6/24/19  
DWN: JB  
PRJ. MGR JB  
PROJ. #: 2248.07

Photoplate 3  
Project Name: North Grand  
Forest  
Client: Bainbridge Island Metro  
Parks and Recreation  
Bainbridge Island, Washington

## **APPENDIX A**

---

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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 1  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6642150629864 Long: -122.55523451398 Datum: NAD83  
 Soil Map Unit Name: 16 Harstine gravelly ashy sandy loam, 15-30% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 1 is located in a low area at the north end where there was a dominance by FAC plant species.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>				
1. <u>Rubus spectabilis</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = <u>10</u> , 20% = <u>4</u>	<u>20</u>	= Total Cover		
<u>Herb Stratum (Plot size: 10' diameter)</u>				
1. <u>Urtica dioica</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Polystichum munitum</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
3. <u>Tellima grandiflora</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	
4. <u>Geranium robertianum</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	
5. <u>Galium aparine</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
6. <u>Dryopteris expansa</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>40</u> , 20% = <u>16</u>	<u>80</u>	= Total Cover		
<u>Woody Vine Stratum (Plot size: _____)</u>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>20</u>				

Remarks: The hydrophytic vegetation criterion is met because there is greater than 50% dominance by FAC plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/2	100					gr sa lo	
7-16	10YR 4/3	90	10YR 4/6	10	C	M	gr sa lo	
								gr - gravelly
								sa - sandy
								lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.

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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 2  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6631147627373 Long: -122.55472372856 Datum: NAD83  
 Soil Map Unit Name: 16 Harstine gravelly ashy sandy loam, 15-30% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 2 is located near the top of a westerly sloping trough. This trough was examined for presence of wetland or stream conditions from this location down to the bottom, which can be observed from the western portion of the perimeter trail.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. <u><i>Thuja plicata</i></u>	15	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <span style="float: right;">1 (A)</span>  Total Number of Dominant Species Across All Strata: <span style="float: right;">3 (B)</span>  Percent of Dominant Species That Are OBL, FACW, or FAC: <span style="float: right;">33 (A/B)</span>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	15	= Total Cover																		
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>																				
1. <u><i>Vaccinium ovatum</i></u>	15	yes	FACU	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>7.5</u> , 20% = <u>3</u>	15	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u><i>Polystichum munitum</i></u>	35	yes	FACU																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>17.5</u> , 20% = <u>7</u>	35	= Total Cover																		
<u>Woody Vine Stratum (Plot size: _____)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>65</u>																				
<table style="width: 100%; border: none;"> <tr> <td style="width: 35%;"><b>Hydrophytic Vegetation Present?</b></td> <td style="width: 10%;">Yes <input type="checkbox"/></td> <td style="width: 10%;">No <input checked="" type="checkbox"/></td> <td colspan="2"></td> </tr> </table>					<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>													
<b>Hydrophytic Vegetation Present?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>																		

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance by FAC plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
2-16	10YR 4/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.



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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 3  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6632041746173 Long: -122.55534573261 Datum: NAD83  
 Soil Map Unit Name: 16 Harstine gravelly ashy sandy loam, 15-30% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 3 is located about midway down the westerly sloping trough and below Test Plot 2. This area contains dominance by FAC plant species so was examined for presence of wetland or stream conditions.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x4 = <u>260</u></td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>395</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.6</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species <u>45</u>	x3 = <u>135</u>	FACU species <u>65</u>	x4 = <u>260</u>	UPL species _____	x5 = _____	Column Totals: <u>110</u> (A)	<u>395</u> (B)	Prevalence Index = B/A = <u>3.6</u>	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species <u>45</u>	x3 = <u>135</u>																			
FACU species <u>65</u>	x4 = <u>260</u>																			
UPL species _____	x5 = _____																			
Column Totals: <u>110</u> (A)	<u>395</u> (B)																			
Prevalence Index = B/A = <u>3.6</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: 20' diameter)																				
1. <u>Rubus spectabilis</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>																	
2. <u>Vaccinium parvifolium</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>20</u> , 20% = <u>8</u>	<u>40</u>	= Total Cover																		
<u>Herb Stratum</u> (Plot size: 10' diameter)																				
1. <u>Polystichum munitum</u>	<u>50</u>	<u>yes</u>	<u>FACU</u>																	
2. <u>Rubus spectabilis</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>35</u> , 20% = <u>14</u>	<u>70</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>30</u>																				
<b>Hydrophytic Vegetation Indicators:</b>																				
<input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is not met because the dominance by FAC species is not greater than 50% and the prevalence index is greater than 3.0.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
2-16	10YR 4/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.

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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 4  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6632870753412 Long: -122.55595780541 Datum: NAD83  
 Soil Map Unit Name: 14 Harstine gravelly ashy sandy loam, 0-6% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 4 is located near the lower end of the westerly sloping trough, which is where it curves to the south. This area was dominated by ferns with salmonberry dominant in the shrub layer.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>																				
1. <u>Rubus spectabilis</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u>Polystichum munitum</u>	<u>35</u>	<u>yes</u>	<u>FACU</u>																	
2. <u>Pteridium aquilinum</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>32.5</u> , 20% = <u>13</u>	<u>65</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: _____)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>35</u>																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance by FAC plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
4-16	10YR 3/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.

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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 5  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.663345569966 Long: -122.55639480136 Datum: NAD83  
 Soil Map Unit Name: 14 Harstine gravelly ashy sandy loam,0-6% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 5 is located near the start of the north to south running trough. This area is dominated by herbaceous plants and sword ferns.			

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
<u>Herb Stratum (Plot size: 10' diameter)</u>				
1. <u>Polystichum munitum</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Achlys triphylla</u>	<u>30</u>	<u>yes</u>	<u>NL (UPL)</u>	
3. <u>Dicentra formosa</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	
4. <u>Tiarella trifoliata</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
5. <u>Pteridium aquilinum</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>42.5</u> , 20% = <u>17</u>	<u>85</u>	= Total Cover		
<u>Woody Vine Stratum (Plot size: _____)</u>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>15</u>				

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance/coverage by FAC plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
2-16	10YR 3/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.

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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 6  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6635110249199 Long: -122.55695696315 Datum: NAD83  
 Soil Map Unit Name: 14 Harstine gravelly ashy sandy loam, 0-6% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 6 is located at the end of the trough in which Test Plots 2-5 were conducted. It is located just upslope of the western trail.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover	_____	
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Corylus cornuta</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Vaccinium ovatum</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% = <u>17.5</u> , 20% = <u>7</u>	<u>35</u>	= Total Cover	_____	
<u>Herb Stratum (Plot size: 10' diameter)</u>				
1. <u>Polystichum munitum</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Achlys triphylla</u>	<u>10</u>	<u>yes</u>	<u>NL (UPL)</u>	
3. <u>Rubus ursinus</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
4. <u>Dryopteris expansa</u>	<u>5</u>	<u>no</u>	<u>FACW</u>	
5. <u>Asarum caudatum</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>25</u> , 20% = <u>10</u>	<u>50</u>	= Total Cover	_____	
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>				
1. <u>Hedera helix</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover	_____	
% Bare Ground in Herb Stratum <u>50</u>				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance/coverage by FACW plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
4-16	10YR 4/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.



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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 7  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6619779264137 Long: -122.55660405285 Datum: NAD83  
 Soil Map Unit Name: 14 Harstine gravelly ashy sandy loam,0-6% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 7 is located near the southwest corner of the N Grand Forest. It is upslope of the trail and is generally low in elevation.					

**VEGETATION – Use scientific names of plants**

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. <u><i>Acer macrophyllum</i></u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = <u>7.5</u> , 20% = <u>3</u>	<u>15</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 20' diameter)				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u><i>Gaultheria shallon</i></u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
50% = <u>2.5</u> , 20% = <u>1</u>	<u>5</u>	= Total Cover		
Herb Stratum (Plot size: 10' diameter)				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u><i>Circaea alpina</i></u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	
2. <u><i>Polystichum munitum</i></u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
3. <u><i>Rubus ursinus</i></u>	<u>10</u>	<u>no</u>	<u>FACU</u>	
4. <u><i>Achyls triphylla</i></u>	<u>5</u>	<u>no</u>	<u>NL (UPL)</u>	
5. <u><i>Claytonia sibirica</i></u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% = <u>45</u> , 20% = <u>18</u>	<u>90</u>	= Total Cover		
Woody Vine Stratum (Plot size: 10' diameter)				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% = _____, 20% = _____	_____	= Total Cover		
% Bare Ground in Herb Stratum <u>10</u>				

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance/coverage by FAC plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
4-16	7.5YR 4/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.

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

Project Site: N Grand Forest City/County: Bainbridge Island/Kitsap Sampling Date: 6/17/19  
 Applicant/Owner: BI Metro Parks and Recreation State: WA Sampling Point: TP 8  
 Investigator(s): J. Bartlett, K. Lacey Section, Township, Range: S 16 T 25 N R 2 EWM  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5-10  
 Subregion (LRR): MLRA 2 Lat: 47.6619367317552 Long: -122.55511501705 Datum: NAD83  
 Soil Map Unit Name: 23 Kapowsin gravelly ashy loam, 6-15% slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks: The N Grand Forest is located in the southeast quadrant of Miller Road (to the west) and Koura Road (to the north). It is currently undeveloped and composed of upland forest with a trail around the perimeter. The property generally slopes down from east to west with topographic troughs carved into the west facing slope. Test Plot 8 is located near the southeast corner of the study area.					

## VEGETATION – Use scientific names of plants

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover		<b>Prevalence Index worksheet:</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
<u>Sapling/Shrub Stratum (Plot size: 20' diameter)</u>																				
1. <u>Gaultheria shallon</u>	<u>25</u>	<u>yes</u>	<u>FACU</u>																	
2. <u>Vaccinium ovatum</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
50% = <u>22.5</u> , 20% = <u>9</u>	<u>45</u>	= Total Cover																		
<u>Herb Stratum (Plot size: 10' diameter)</u>																				
1. <u>Polystichum munitum</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>																	
2. <u>Dryopteris expansa</u>	<u>5</u>	<u>no</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
50% = <u>12.5</u> , 20% = <u>5</u>	<u>25</u>	= Total Cover																		
<u>Woody Vine Stratum (Plot size: 10' diameter)</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
50% = _____, 20% = _____	_____	= Total Cover																		
% Bare Ground in Herb Stratum <u>75</u>																				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 – Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				

Remarks: The hydrophytic vegetation criterion is not met because there is less than 50% dominance/coverage by FACW plant species.

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 2/2	100	_____	_____	_____	_____	gr sa lo	_____
2-8	10YR 3/3	100	_____	_____	_____	_____	gr sa lo	_____
8-16	10YR 4/6	100	_____	_____	_____	_____	gr sa lo	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	gr - gravelly
_____	_____	_____	_____	_____	_____	_____	_____	sa - sandy
_____	_____	_____	_____	_____	_____	_____	_____	lo - loam

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

**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<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks: The soil profile meets none of the hydric soil indicators because of the high matrix chroma in the subsurface soil layer.

**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 Stresses 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: Hydrology was not present in this area and there was no evidence of wetland hydrology.