

Sewall Wetland Consulting, Inc.

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Phone: 253-859-0515

September 14, 2023

East Peak Development LLC
3621 Stone Way N, Suite E
Seattle, WA 98103

RE: *Revised* Critical Area Report – Tract B of Parcel #961450
Kittitas County, Washington
SWC Job #21-149

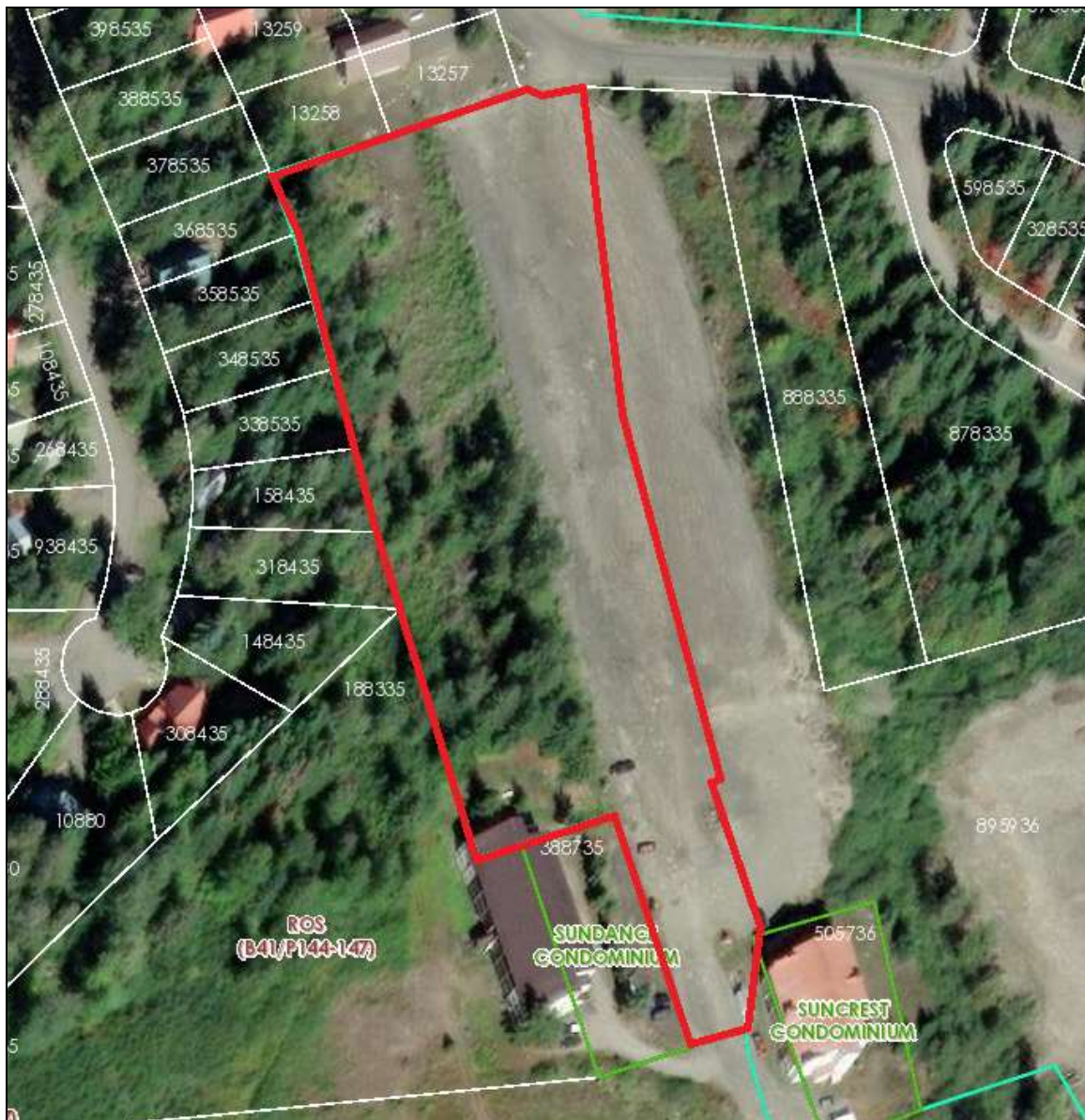
This report describes our observations of any jurisdictional wetlands, streams and buffers on the area referred to as Tract B of Parcel #961450, located off Hyak Drive in the Snoqualmie Pass area of unincorporated Kittitas County, Washington.



Above: Vicinity Map of the site.

The site is an irregular shaped parcel 3.9 acres in size and located within SE ¼ of Section 15, Township 22 North, Range 11 East of the W.M.

The site consists of a shrub and forested bench on the west located above an existing gravel parking lot area on the east used by the Summit East Ski Area.



Above: Kittitas Taxsifter aerial photograph of study area.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site on June 18, 2021.

The site was reviewed using methodology described in the ***Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*** (USACOE September 2008) as required by the US Army Corps of Engineers starting in June of 2009. This is the methodology currently recognized by Kittitas County for wetland determinations and delineations. The site was also reviewed using methodology described in Soil colors were identified using the 1990 Edited and Revised Edition of the ***Munsell Soil Color Charts*** (Kollmorgen Instruments Corp. 1990).

Wetlands in Kittitas County are rated using the 2014 Washington State Department of Ecology Washington State *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018.

The ordinary high water mark (OHWM) of any streams was located based upon the criteria described in the *Washington Department of Ecology publication Determining The Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (WADOE Publication 16-06-029, March 2010 revised October 2016).

OBSERVATIONS

Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the Kittitas County Taxsifter website, National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data.

Kittitas County Taxsifter website

The Kittitas County Taxsifter website with wetland and DNR water types listed depicts no wetlands or streams on the site (see aerial photograph page 2 of this report).

National Wetlands Inventory (NWI)

The NWI map depicts no wetlands or streams on or near the site.



Above: NWI map of the area of the site

Soil Survey

According to the NRCS Soil Mapper website, the site is mapped as Chinkmin ashy sandy loams 5%-30% slopes. This soil series is well drained and formed in lateral moraines in volcanic ash and pumice over basal till. Pacific silver fir is the main vegetative cover. This soil series is not considered a "hydric" soils according to the publication *Hydric Soils of the United States* (USDA NTCHS Pub No.1491, 1991).



Above: NRCS soil map of the site.

WADNR Fpars Stream Mapping

The Washington Department of Natural Resources Fpars stream type mapping website depicts no streams on or near the site.

WDFW Priority Habitats

According to the WDFW Priority Habitats mapping website, site contains wetlands (pink shading) and the entire site is located within the Township where the Northern Spotted Owl and gray wolf are thought to be present. These species are Federally listed as endangered species.



Above: WDNR Fpars stream mapping for the area of the site.



Occurrence Name	Gray wolf
Scientific Name	<i>Canis lupus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	Endangered
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP

Occurrence Name	Northern Spotted Owl
Scientific Name	<i>Strix occidentalis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
Management Recommendations	Click for more info.

Above: WDFW Priority Habitats mapping of site.

Field observations

As previously described, the site contains a forested and shrub covered bench on the west sitting 8'-12' higher than the gravel parking lot portion on the east. A large portion of the bench on the west has a layer of gravel and debris that has been sprayed by ski area snow blowers clearing the ski area lots in winter. Most of this area has a sparse coverage of immature cottonwood saplings. The western edge grades up into less disturbed forest area of silver fir, mountain hemlock, douglas fir and black cottonwood. Understory species include vine maple, huckleberry, and slide alder.

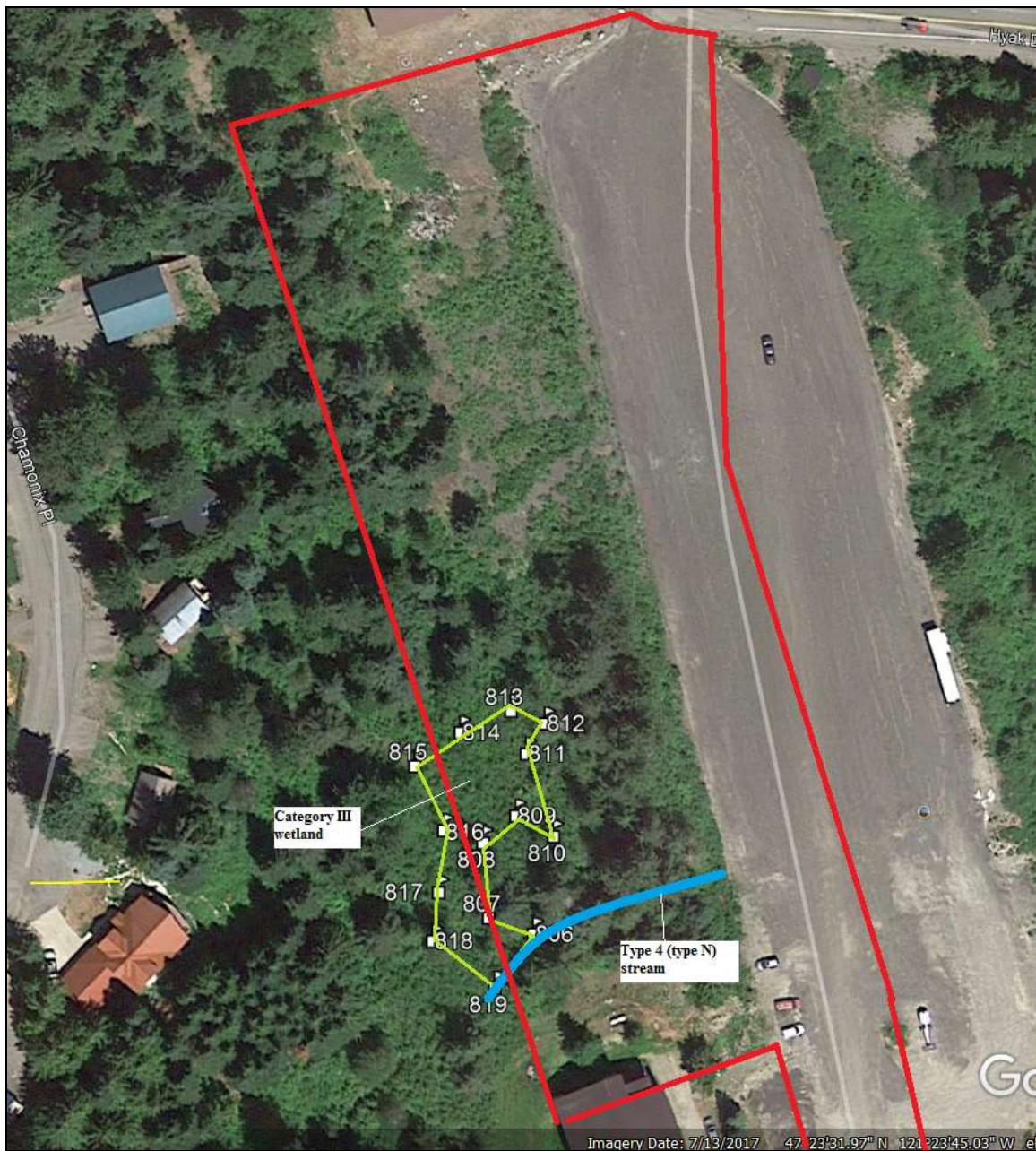
Soil pits excavated within the upland areas throughout the site include dry, gravelly high chroma soils with colors of 10YR 3/3 & 3/4.

Wetlands and Streams

The south end of the site contains a small stream channel as well as an abutting wetland. Below is a description of these features;

Stream A

A small, steeply sloping stream (>16% slope) drains from west to east along the south side of the site. The OHWM of the channel was flagged with blue flags labeled S1-S7 and N1-N7. This channel is a mix of cobble and gravel bottom, and is somewhat ditched, and carries snow melt in the spring as well as some residual drainage in the summer. The stream passes through the site and then steeply slopes in a series of cascades down to a ditch in the parking lot. At this point it passes approximately 350' under the upper parking lot of the Summit East Ski area to a discharge point within a ditch along the west side of the lower parking lot. The channel width varies but is generally around 4' in width between OHWM.



Above: GPS mapping of wetland flag locations

This stream appears to meet the criteria of a Type Ns due to lack of fish use and seasonal flow. According to Kittitas County Municipal Code 17.A.04.030-4, Type Ns streams in the Cascade Ecoregion have a 50' buffer measured from the OHWM of the stream. In addition, a 15' Building Setback line is required from the edge of the buffer.

Table 17A.04.030-4 Standard RMZ Widths
Kittitas County Nonshoreline Rivers, Streams, Lakes and Ponds
(does not include building setback [KCC 17A.01.090.5])

Stream Type	Riparian Management Zone Widths ^{1,2}	
	Cascade Ecoregion (feet)	Columbia Plateau Ecoregion (feet)
Type S (Shoreline)	See the SMP	See the SMP
Type F	150	100
Type Np	100	65
Type Ns	50	40

Wetland A

Wetland A is a scrub-shrub, depressional wetland that was flagged with pink flagging labeled A1-A14 (gps points 806-819). This wetland drains off to the south into the abutting Type 4 stream to the south. The stream does not appear to be flooded by the stream but is a depression that overflows to the stream.

This wetland is vegetated with a mix of sitka willow, slide alder, vine maple, twinberry, skunk cabbage, hedge nettle, and an unidentified sedge.

Soil pits excavated within the wetland revealed a mucky gravelly loam in the wetter areas and a gravelly loam on the drier with redox features and soils saturated to the surface and evidence of shallow standing water in the early spring.

Wetland A was rated using the *WADOE Washington State Wetland Rating System for Eastern Washington* 2014 update (Publ No. 14-06-030). This wetland was rated as a depressional wetland and scored a total of 18 points with 5 points for habitat indicating a Category III wetland.

According to Kittitas County Municipal Code Chapter 17A.07.030, Category III wetlands have a buffer range of 75'-150' depending upon land use intensity. Assuming a high intensity land use (>1 unit per acre) for the site would result in a 150' buffer from the wetland edge. In addition, a 15' Building Setback line is required from the edge of the buffer.

Table 17A.07.030: Standard Buffer Widths

Category of Wetland	Land Use with Low Impact ¹	Land Use with Moderate Impact ²	Land Use with High Impact ³
I	125 ft	190 ft	250 ft
II	100 ft	150 ft	200 ft
III	75 ft	110 ft	150 ft
IV	25 ft	40 ft	50 ft

Proposed Project

The proposed project is the construction of a single condominium structure on the north, and 5 “rowhomes” on the south, as well as associated paved driveway, parking areas and infrastructure.

The stream, wetland and the associated 150' buffer of the Category III wetland encompass more than 50% of the parcel.

Per KCC 17A.07.030.11, buffer averaging is allowed but this would allow a maximum reduction to the buffer of 25%, or to a width of 112.5'. This still leaves a large amount of area which although buffer, is non-functional. The buffer north of Wetland A is a highly degraded area of non-functional buffer as it has been historically filled, graded, and is yearly covered with gravel from the parking lot snow clearing operations for Summit East. The buffer area contains scattered cottonwood saplings growing in a gravel/dirt substrate with little functional value to the wetland itself. In addition, the small area of trees within the buffer is also degraded from past grading and gravel deposition as well.



Above: Aerial photograph showing the large area of existing non-functional buffer and upland. This area has a thick layer of gravel that is deposited yearly on the site from the ski area parking lot snow clearing operations. The only vegetation is weedy species and scattered cottonwood saplings.

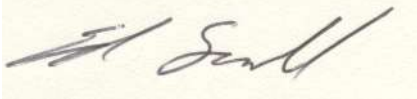
Proposed Reduced and enhanced buffer

As depicted on the Sewall Wetland Consulting, Inc. “Wetland Buffer Enhancement Plan – Hyak PUD Parcel B” dated 3-8-22”, a total of 19,117sf of the existing degraded buffer will be enhanced through removal of trash and gravel, and replanting with a mix of native vegetation. This area is covered by native species, (primarily cottonwood seedlings/saplings), but is a monotypic buffer condition which enhancement will greatly improve. Although this is a reduced buffer, the improvements in the function of the buffer through the removal of

the gravel debris and restoration of a mixed native forested buffer plant community will provide greater protection to the wetland and the associated Type N stream to the east, than is currently provided by the 150' buffer that is undeveloped.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.

A handwritten signature in black ink on a light yellow background. The signature appears to be 'Ed Sewall' written in a cursive, flowing style.

Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets
Rating Form & exhibits

REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

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Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hugh Tract B City/County: K. Hills Sampling Date: 6-18-21
 Applicant/Owner: _____ State: WA Sampling Point: DATE 1
 Investigator(s): Ed Smith Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____) 1. <u>Populus balsamifera</u> <u>30</u> <u>FAC</u>				
2. _____				
3. _____				
4. _____				
= Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: _____) 1. <u>Centaurea sp</u> <u>10</u> <u>NI</u>				
2. _____				
3. _____				
4. _____				
= Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: DP#

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

[illegible]

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

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

Indicators for Problematic Hydric Soils³:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ 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)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches):

Hydric Soil Present? Yes No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (2 or more required)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)

- | | |
|--------------------------|---|
| ☐ | Salt Crust (B11) |
| ☐ | Biotic Crust (B12) |
| ☐ | 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) |
| ☐ | Thin Muck Surface (C7) |
| ☐ | Other (Explain in Remarks) |

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes ☐ No ☒ Depth (inches): 12

(includes capillary fringe)

Wetland Hydrology Present? **Yes** **No**

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

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hyak Tract B City/County: Yuma Sampling Date: 6-18-21
 Applicant/Owner: _____ State: WA Sampling Point: DPT2
 Investigator(s): Ed Saml Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Tsuga mertensiana</u>	<u>30</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
4. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. <u>Rubus spectabilis</u>	<u>30</u>		<u>FAC</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Acer glabrum</u>	<u>40</u>		<u>FAC</u>	OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____				☒ Dominance Test is >50%
2. _____				☐ Prevalence Index is ≤3.0 ¹
3. _____				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				☐ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes ☒ No _____
Remarks:				

SOIL

Sampling Point: D172

[illegible]

HYDROLOGY

Wetland Hydrology Indicators		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☐ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)		
Wetland Hydrology Present? Yes ☐ No ☒		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

wet A

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hyak Tract B City/County: Kittitas Sampling Date: 6-18-21
Applicant/Owner: _____ State: WA Sampling Point: DP#3
Investigator(s): Ed Smith Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. <u>Salix sitchensis</u>	<u>60</u>	<u>FACW</u>		Total % Cover of: _____ Multiply by: _____
2. <u>Alnus sinuata</u>	<u>20</u>	<u>FAC</u>		OBL species _____ x 1 = _____
3. _____	_____	_____		FACW species _____ x 2 = _____
4. _____	_____	_____		FAC species _____ x 3 = _____
5. _____	_____	_____		FACU species _____ x 4 = _____
= Total Cover				UPL species _____ x 5 = _____
Herb Stratum (Plot size: _____)				Column Totals: _____ (A) _____ (B)
1. <u>Lysichiton americanus</u>	<u>10</u>	<u>OBL</u>		Prevalence Index = B/A = _____
2. _____	_____	_____		
3. _____	_____	_____		Hydrophytic Vegetation Indicators:
4. _____	_____	_____		☒ Dominance Test is >50%
5. _____	_____	_____		☒ Prevalence Index is ≤3.0 ¹
6. _____	_____	_____		☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. _____	_____	_____		☐ Problematic Hydrophytic Vegetation ¹ (Explain)
8. _____	_____	_____		
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____		
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes ☒ No _____
Remarks:				

SOIL

Sampling Point: DP#3

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
☐ Surface Water (A1)	☐ Salt Crust (B11)	☐ Water Marks (B1) (Riverine)
☐ High Water Table (A2)	☐ Biotic Crust (B12)	☐ Sediment Deposits (B2) (Riverine)
☒ Saturation (A3)	☐ Aquatic Invertebrates (B13)	☐ Drift Deposits (B3) (Riverine)
☐ Water Marks (B1) (Nonriverine)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Sediment Deposits (B2) (Nonriverine)	☐ Oxidized Rhizospheres along Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3) (Nonriverine)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Surface Soil Cracks (B6)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Thin Muck Surface (C7)	☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)	☐ Other (Explain in Remarks)	☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): _____ Saturation Present? Yes ☐ No ☐ Depth (inches): <u>0"</u> (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Wetland Hydrology Present? Yes ☒ No ☐		
Remarks:		

Wetland name or number A

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Hyak Tract B Date of site visit: 6-18-21
 Rated by Ed Smith Trained by Ecology? Yes ☒ No ☐ Date of training Sept 2018
 HGM Class Used for Rating Deposited Unit has multiple HGM classes? Y ☒ N

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

Source of base aerial photo/map google earth + Kittitas tax assessor website

OVERALL WETLAND CATEGORY III

1. Category of wetland based on FUNCTIONS

- Category I - Total score = 22 - 27
 Category II - Total score = 19 - 21
✓ Category III - Total score = 16 - 18
 Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat
	Circle the appropriate ratings		
Site Potential	H <u>M</u> L	H M <u>L</u>	H M <u>L</u>
Landscape Potential	H <u>M</u> L	<u>H</u> M L	H <u>M</u> L
Value	<u>H</u> M L	H <u>M</u> L	H <u>M</u> L
Score Based on Ratings	<u>7</u>	<u>6</u>	<u>5</u>

18 total

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category
Vernal Pools	II III
Alkali	I
Wetland with high conservation value	I
Bog	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	☒

Wetland name or number A

Maps and figures required to answer questions correctly (Eastern Washington)

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D1.4	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water (<i>can be added to map of hydroperiods</i>)	H1.3.1	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake-fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	L 2.2	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire wetland unit **meet both** of the following criteria?

- ☐ The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size
- ☐ At least 30% of the open water area is deeper than 10 ft (3 m)

NO - go to 2

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

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

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

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

NO - go to 3

YES - The wetland class is **Slope**

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

- ☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river
- ☐ The overbank flooding occurs at least once every ten years.

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

NO - go to 4

YES - The wetland class is **Riverine**

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

NO - go to 5

YES - The wetland class is **Depressional**

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

Wetland name or number A

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

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

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

Wetland name or number A

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Water Quality Functions - Indicators that the site functions to improve water quality.		
D 1.0 Does the wetland unit have the <u>potential</u> to improve water quality?		
D 1.1 Characteristics of surface water flows out of the wetland unit:		
Wetland has no surface water outlet -	points = 5	3
Wetland has an intermittently flowing outlet	points = 3	
Wetland has a highly constricted permanently flowing outlet	points = 3	
Wetland has a permanently flowing surface outlet	points = 1	
D 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (use NRCS definitions of soils)		
YES points = 3	NO points = 0	0
D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)		
Wetland has persistent, ungrazed, vegetation for > 2/3 of area	points = 5	5
Wetland has persistent, ungrazed, vegetation from 1/3 to 2/3 of area	points = 3	
Wetland has persistent, ungrazed vegetation from 1/10 to < 1/3 of area	points = 1	
Wetland has persistent, ungrazed vegetation < 1/10 of area	points = 0	
D 1.4 Characteristics of seasonal ponding or inundation.)		
<i>This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.</i>		
Area seasonally ponded is > 1/2 total area of wetland	points = 3	0
Area seasonally ponded is 1/4 - 1/2 total area of wetland	points = 1	
Area seasonally ponded is < 1/4 total area of wetland	points = 0	
Total for D 1	Add the points in the boxes above	8

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

D 2.0 Does the landscape have the potential to support the water quality function at the site?		
D2.1 Does the Wetland unit receive stormwater discharges?	Yes = 1 No = 0	1
D 2.2 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	Yes = 1 No = 0	1
D2.3 Are there are septic systems within 250 ft of the wetland unit?	Yes = 1 No = 0	0
D2.4 Are there are other sources of pollutants coming into the wetland that are not listed in questions D2.1 - D2.3? Source _____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	2

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

D 3.0 Is the water quality improvement provided by the site valuable to society?		
D3.1 Does the unit discharge directly (within 1 mile) to a stream, river, or lake that is on the 303d list?		
	Yes = 1 No = 0	0
D 3.2 Is the unit in a basin or sub-basin where water quality is an issue in some aquatic resource (303d list, eutrophic lakes, problems with nuisance and toxic algae)?		
	Yes = 1 No = 0	1
D 3.3 Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage or basin in which unit is found)		
	Yes = 2 No = 0	2
Total for D 3	Add the points in the boxes above	3

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

Wetland name or number A

DEPRESSIONAL WETLANDS		Points (only 1 score per box)
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream erosion.		
D 4.0 Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		
D 4.1 Characteristics of surface water flows out of the wetland unit: Wetland has no surface water outlet points = 8 Wetland has an intermittently flowing outlet <u>points = 4</u> Wetland has a highly constricted permanently flowing outlet points = 4 Wetland has a permanently flowing surface outlet points = 0 <i>(If outlet is a ditch and not permanently flowing treat unit as "intermittently flowing")</i>		4
D 4.2 Depth of storage during wet periods <i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i> Seasonal ponding: => 3 ft above the lowest point in unit or the surface of permanent ponding points = 8 Seasonal ponding: 2 ft - < 3 ft above the lowest point in unit or the surface of permanent ponding points = 6 The wetland is a "headwater" wetland points = 4 Seasonal ponding: 1 ft - < 2 ft points = 4 Seasonal ponding: 6 in - < 1 ft points = 2 Seasonal ponding: < 6 in or unit has only saturated soils <u>points = 0</u>		
Total for D 4		Add the points in the boxes above 4

Rating of Site Potential If score is: 12 - 16 = H 6 - 11 = M 0 - 5 = L

Record the rating on the first page

D 5.0 Does the landscape have the potential to support hydrologic functions at the site?		
D5.1 Does the unit receive any stormwater discharges?	<u>Yes = 1</u> No = 0	1
D5. Is >10% of the land use within 150 ft of the wetland in a land uses that generates runoff?	<u>Yes = 1</u> No = 0	1
D 5.3 Is more than 25% of the contributing basin of the wetland unit covered with intensive human land uses?	<u>Yes = 1</u> No = 0	1
Total for D 5		Add the points in the boxes above 3

Rating of Landscape Potential If score is: 3 = H 1,2 = M 0 = L

Record the rating on the first page

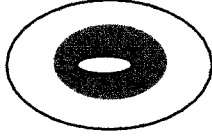
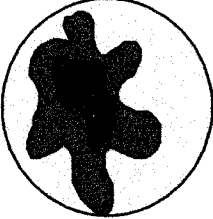
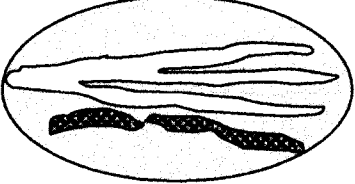
D 6.0 Are the hydrologic functions provided by the site valuable to society?		
D 6.1 Is the unit is in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. <i>Do not add points. Choose the highest score if more than one condition is met.</i>		
☐ The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g. salmon redds), AND o Damage occurs in sub-basin that is immediately downgradient of unit points=2 o Damage occurs in a sub-basin further down-gradient <u>points = 1</u> ☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____ points = 0 ☐ There are no problems with flooding downstream of the unit. points = 0		1
D 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 <u>No = 0</u>		
Total for D 6		Add the points in the boxes above 1

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

Record the rating on the first page

Wetland name or number

A

These questions apply to wetlands of all HGM classes.		(only 1 score per box)
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?		
H 1.1 Categories of vegetation structure Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres ____ Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ____ Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ____ Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover ☒ Scrub/shrub (areas where shrubs have >30% cover) ____ Forested (areas where trees have >30% cover) 4-6 checks points = 3 3 checks points = 2 2 checks points = 1 1 check points = 0		
H 1.2. Is one of the vegetation types “aquatic bed?” YES = 1 point NO = 0 points		
H 1.3. Surface Water H 1.3.1 Does the unit have areas of “open” water (without herbaceous or shrub plants) over at least ¼ acre OR 10% of its area during the March to early June OR in August to the end of September? <i>Note: answer YES for Lake-fringe wetlands</i> YES = 3 points & go to H 1.4 NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, (answer yes only if H 1.3.1 is NO)? YES = 3 points NO = 0 points		
H 1.4. Richness of Plant Species Count the number of plant species in the wetland that cover at least 10 ft². (different patches of the same species can be combined to meet the size threshold) You do not have to name the species. Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk) # of species _____ Scoring: > 9 species = 2 points 4-9 species = 1 point < 4 species = 0 points		
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersions between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3       		Figure__

Wetland name or number A

H 1.6. Special Habitat Features: <i>Check the habitat features that are present in the wetland unit. The number of checks is the score.</i> ☐ Loose rocks larger than 4" <u>or</u> large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ☒ Cattails or bulrushes are present within the unit. ☒ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ☐ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ☐ Invasive species cover less than 20% in each stratum of vegetation (<i>canopy, sub-canopy, shrubs, herbaceous, moss/ground cover</i>) Maximum score possible = 6		1
H 1. TOTAL Score - Add the check marks in the box above		5

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

H 2.0 . Does the landscape have the potential to support habitat at the site?		
H 2.1 Accessible habitat (only area of habitat abutting wetland unit). Calculate: % undisturbed habitat <u>12</u> + [(% moderate and low intensity land uses)/2] <u>0</u> = <u>1</u> % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) points = 3 20 - 33% of 1km circle points = 2 10- 19% of 1km circle points = 1 <10% of 1km circle <u>points = 0</u>		0
H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches <u>points = 1</u> Undisturbed habitat < 10% of circle points = 0		1
H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use points = (- 2) Does not meet criterion above <u>points = 0</u>		0
The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. (<i>Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs</i>) points = 3		1
Total for H 2 Add the points in the boxes above		

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

H 3.0 Is the Habitat provided by the site valuable to society?		
H3.1 Does the site provides habitat for species valued in laws, regulations or policies? (choose the highest score) Site meets ANY of the following criteria: points = 2 ☐ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ☐ It is a "priority area" for an individual WDFW species ☐ It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources ☐ It has 3 or more priority habitats within 100m (see Appendix B) ☐ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100m (see Appendix B) <u>points = 1</u> Site does not meet any of the criteria above points = 0		1

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

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category.
NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. **NOTE: All units should also be characterized based on their functions.**

Wetland Type <i>Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.</i>	Category
SC 1.0 Vernal pools Is the wetland unit less than 4000 ft² , and does it meet at least two of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. <i>NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool</i> — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - not a vernal pool	
SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – not a vernal pool with special characteristics	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	Cat. II Cat. III
SC 2.0 Alkali wetlands Does the wetland unit meets one of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. OR does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 4 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. YES = Category I NO – not an alkali wetland	Cat. I

Wetland name or number A

SC 3.0 Wetlands with High Conservation Value (WHCV) SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value? YES - Go to SC 2.2 NO - Go to SC 2.3 SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwwetlands.pdf YES - contact WNHP/DNR and go to SC 2.4 NO = not a WHCV SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site? YES = Category I NO - not an WHCV	Cat. I
SC 4.0 Bogs and Calcareous Fens Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. <i>Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.</i> SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)? Yes - go to SC 4.3 No - go to SC 4.2 SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?? Yes - go to SC 4.3 No - Is not a bog for rating SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes - Category I bog No - go to SC 4.4 <i>NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.</i> SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy Yes - Category I bog NO - go to question SC 4.5 5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes - Is a Calcareous Fen for purpose of rating No - go to Question 6 6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met: • Marl deposits (calcium carbonate (CaCO₃) precipitate) occur on the soil surface or plant stems • The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland Yes - Is a Category I calcareous fen No - Is not a calcareous fen	Cat. I Cat. I

Wetland name or number A

SC 5.0 Forested Wetlands Does the wetland unit have an area of forest rooted within its boundary that meets at least one of the following three criteria? (<i>Continue only if you have identified a forested class is present in question H 1.1</i>) • The wetland is within the "100 year" floodplain of a river or stream • aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (<i>see definitions in question H3.1</i>) YES = go to SC 5.1 NO — <i>not a forested wetland with special characteristics</i>	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (<i>see Table 7</i>) YES = Category I NO = go to SC 5.2 SC 5.2 Does the unit have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3 SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. (<i>see Table 7</i>) YES = Category II NO = go to SC 5.5 SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	Cat. I Cat. I Cat. II Cat. II
Category of wetland based on Special Characteristics <i>Choose the "highest" rating if wetland falls into several categories.</i> <i>If you answered NO for all types enter "Not Applicable" on p.1</i>	NA

Wetland name or number A

Appendix B: WDFW Priority Habitats in Eastern Washington

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

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

___ **Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

___ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).

___ **Old-growth/Mature forests:** Old-growth east of Cascade crest: Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 – 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.

___ **Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

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

___ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

___ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

___ **Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

___ **Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

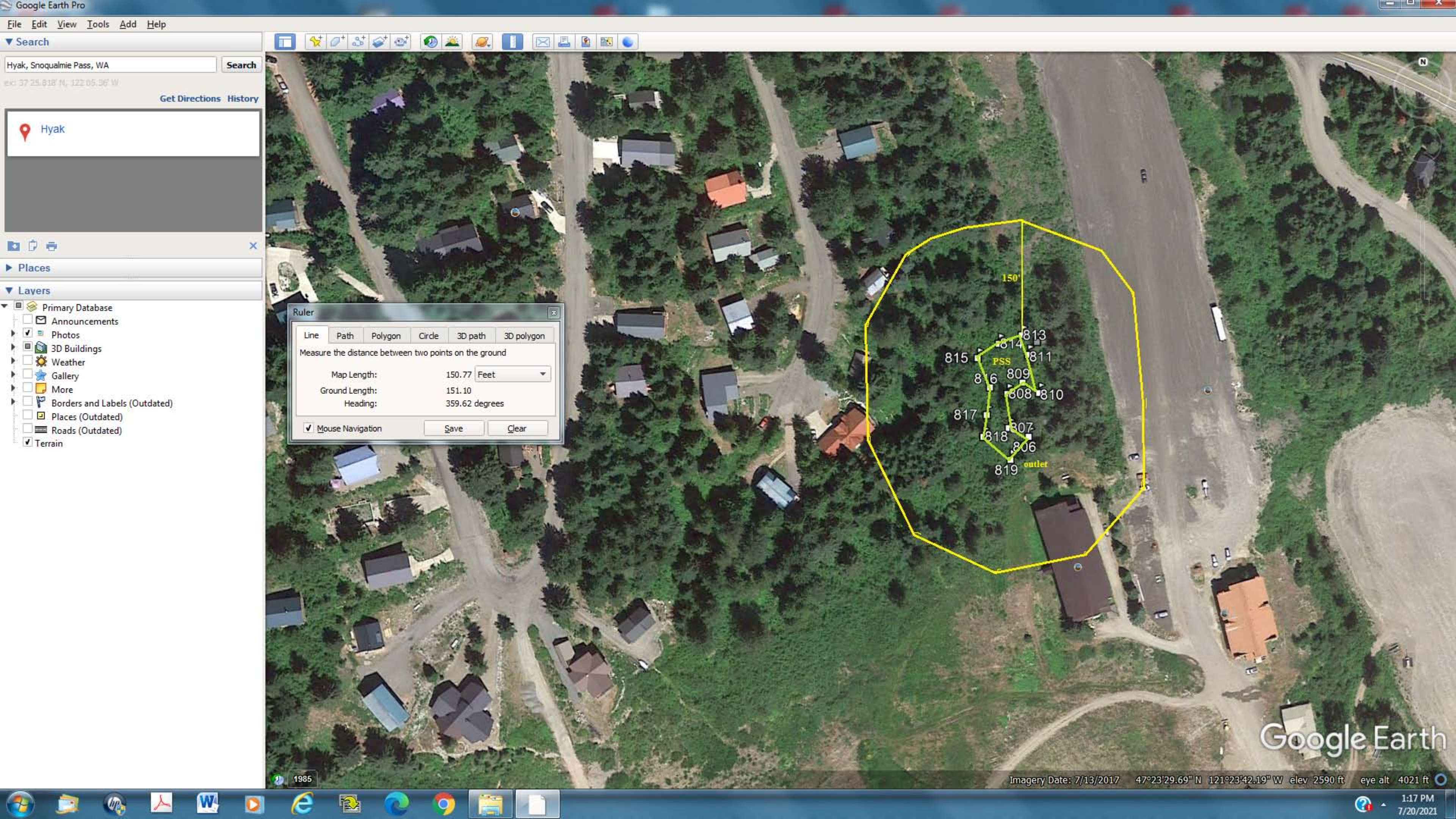
___ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

___ **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

___ **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho Fescue (*Festuca idahoensis*), Sandberg Bluegrass (*Poa secunda*), Rough Fescue (*F. campestris*), or needlegrass (*Achnatherum* spp.).

___ **Juniper Savannah:** All juniper woodlands.

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



- Primary Database
- ☐ Announcements
- ☒ Photos
- ☐ 3D Buildings
- ☐ Weather
- ☐ Gallery
- ☐ More
- ☐ Borders and Labels (Outdated)
- ☐ Places (Outdated)
- ☐ Roads (Outdated)
- ☒ Terrain

Ruler

Line Path Polygon Circle 3D path 3D polygon

Measure the distance between two points on the ground

Map Length: 150.77 Feet

Ground Length: 151.10

Heading: 359.62 degrees

☒ Mouse Navigation Save Clear

Basic

Drawing

Other

Keyboard Identify

Measure Distance

Measure Area

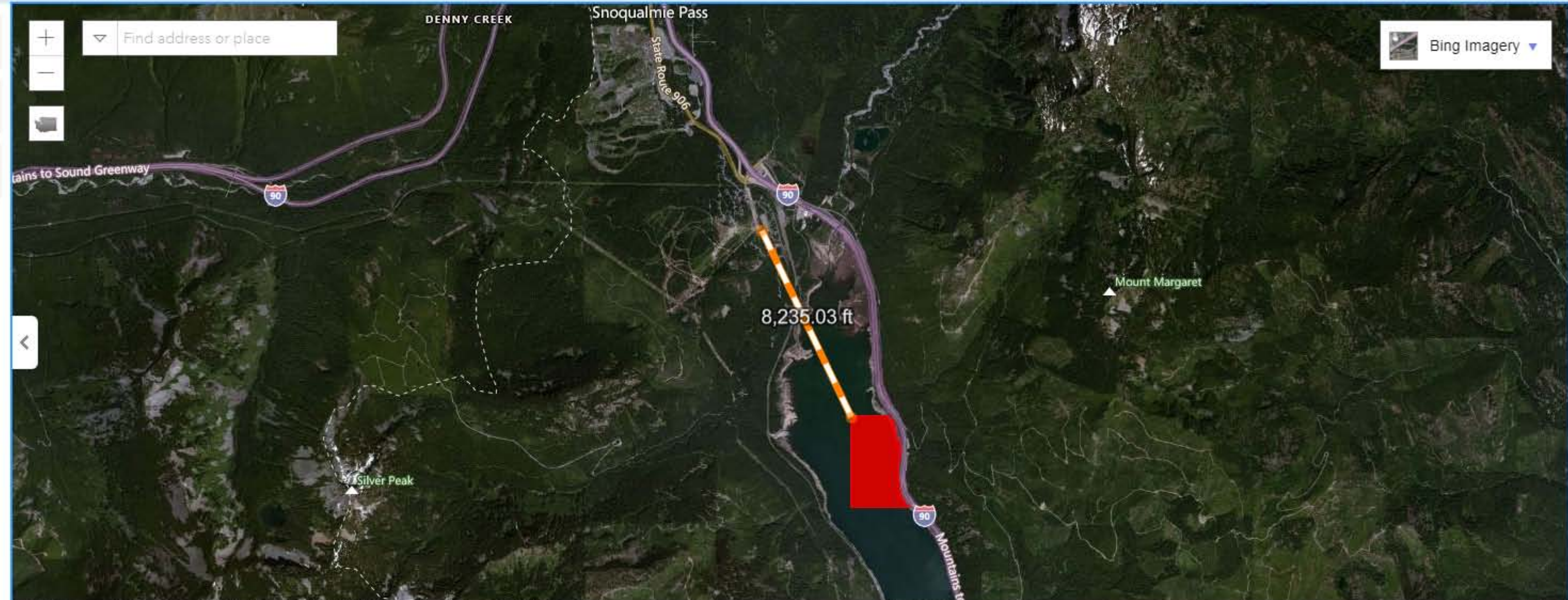
Image Service

Usage:
Click on map to add measure points. Double-click to finish.

Unit
Feet

Distance
8,235.03 ft

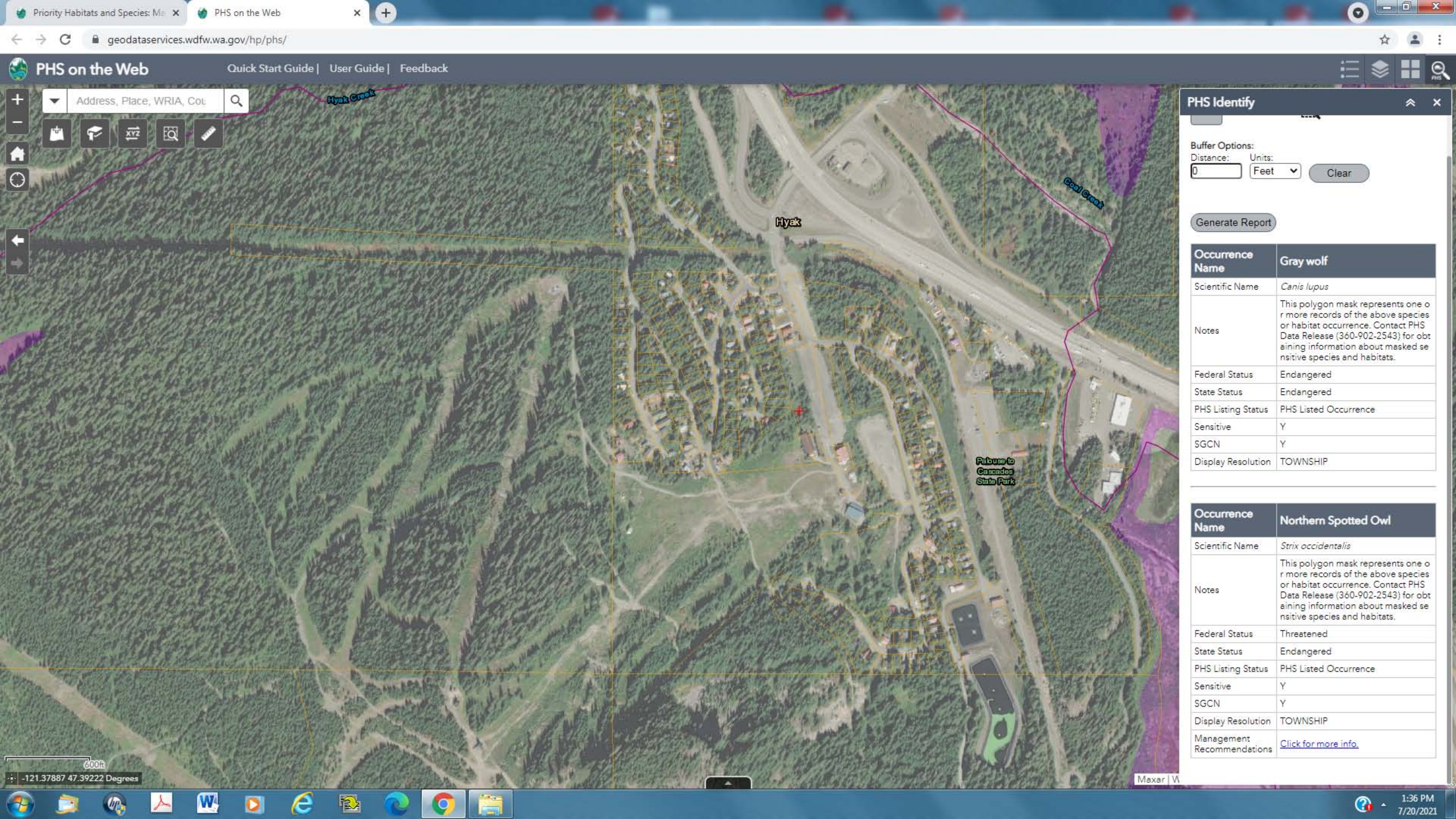
New measurement



Assessed Water/Sediment Filter Applied Clear filters Zoom to selection Table to CSV

Find	Listing ID	Assessment Unit ID	Category	Medium	Parameter	Details
	66746	170200011202_01_01	5	Water	Dissolved Oxygen	View
	11253	170200050203_01_01	5	Water	Temperature	View
	42784	170200050203_01_01	5	Water	Dissolved Oxygen	View

Show 5 entries Showing 1 to 5 of 4,548 entries First Previous Next Last



Occurrence Name	Gray wolf
Scientific Name	<i>Canis lupus</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	Endangered
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP

Occurrence Name	Northern Spotted Owl
Scientific Name	<i>Strix occidentalis</i>
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	Threatened
State Status	Endangered
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
Management Recommendations	Click for more info.

▼ Search

Hyak, Snoqualmie Pass, WA

Search

lat: 37°25.818' N, 122°05.36' W

[Get Directions](#) [History](#)

Hyak



► Places

▼ Layers

- Primary Database
- ☐ Announcements
- ☒ Photos
- ☐ 3D Buildings
- ☐ Weather
- ☐ Gallery
- ☐ More
- ☐ Borders and Labels (Outdated)
- ☐ Places (Outdated)
- ☐ Roads (Outdated)
- ☒ Terrain

Ruler

Line Path Polygon Circle 3D path 3D polygon

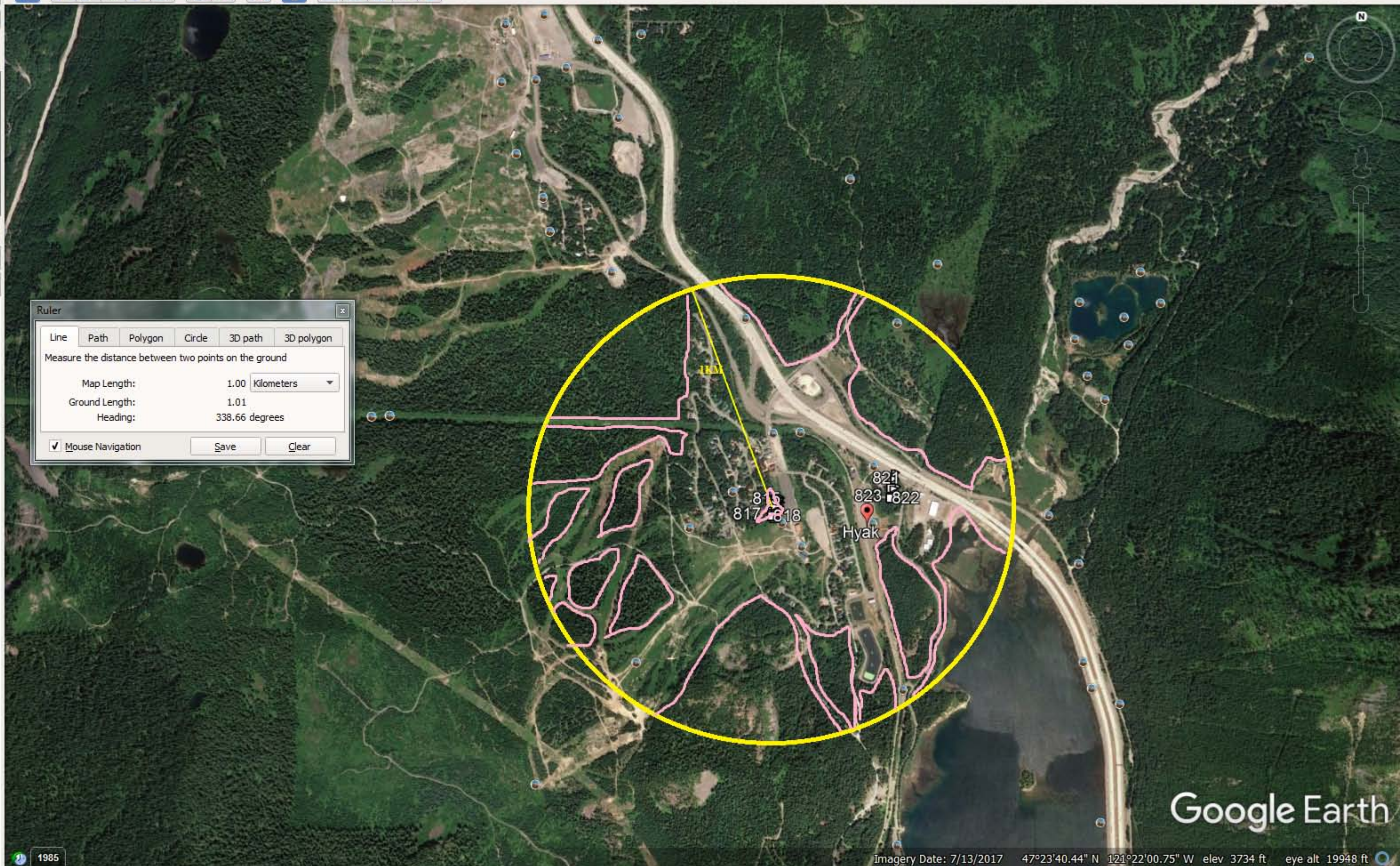
Measure the distance between two points on the ground

Map Length: 1.00 Kilometers

Ground Length: 1.01

Heading: 338.66 degrees

☒ Mouse Navigation



Google Earth

1985

Imagery Date: 7/13/2017 47°23'40.44" N 121°22'00.75" W elev 3734 ft eye alt 19948 ft