

# **HABITAT TECHNOLOGIES**

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## **WILDLIFE SPECIES UTILIZATION AND AVAILABLE HABITATS ASSESSMENT**

### **ENUMCLAW RECYCLE FACILITY**

**Parcels 3621069004, 3621069013, and 3621069014  
Krain Corner Area of King County, Washington**

prepared for

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prepared by

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**APRIL 5, 2018**

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## INTRODUCTION

This document presents the culmination of activities and onsite evaluations undertaken to complete an analysis and characterization of wildlife species utilization and available habitats within three independent parcels (Parcel 3621069004, 3621069013, and 3621069014 - project site) that comprise the property associated with the proposed Enumclaw Recycle Facility. The project site was located generally to the east of the Enumclaw Black Diamond Road (SR 169) in the Krain Corner Area of King County between the City of Enumclaw to the south and the Town of Black Diamond to the north. The project site was vacant and presently dominated by a reproduction Douglas fir (*Pseudotsuga menziesii*) plant communities. The project site was located within the southeastern quarter of Section 36 within Township 21 North and Range 6 East (Figure 1).

The assessment of wildlife species utilization and available habitats was completed consistent with the provisions of King County 21A.24.382 - Wildlife Habitat Conservation Areas. This document was designed to accommodate continued site planning and potential regulatory actions. This document has been prepared for submittal to King County and potentially other resource permitting agencies for verification and permitting actions.

## PROJECT SITE DESCRIPTION

The project site was composed of three existing parcels totaling approximately 103-acres. The project site was vacant and located within a rural area that included a number of parcels developed into single-family homesites. The entire project site, along with the majority of adjacent parcels had undergone prior forest harvest actions dating back several decades. More recently, the northern and western portions of the project site underwent second-growth forest harvest actions prior to 1998 and the central and southern portions of the project site underwent second-growth forest harvest actions prior to 2003. These more recent forest harvest actions had retained a scattering of mature second-growth coniferous trees – primarily Douglas fir trees along with a scattering of mature big leaf maple (*Acer macrophyllum*) trees. Following these more recent forest harvest actions the project site was re-planted with seedling Douglas fir.

A paved, public roadway (Enumclaw Franklin Road SE) crossed generally from the southwest to the northeast through the project site. A well maintained regional powerline corridor was present along the northern boundary of the project site. A variety of prior recreational vehicle and prior internal logging roads were present throughout the project site.

**Directions to Project Site:** From the Town of Black Diamond continue south towards the City of Enumclaw on Enumclaw Black Diamond Road SE (SR 169). After crossing over the Green River turn easterly onto Enumclaw Franklin Road SE. Continue generally northeasterly on Enumclaw Franklin Road SE to the project site.

## **BACKGROUND INFORMATION**

### **NATIONAL WETLAND INVENTORY**

The *National Wetland Inventory (NWI) Mapping* completed by the U.S. Fish and Wildlife Service was reviewed as a part of this assessment (Figure 2). This mapping resource did not identify any wetlands or drainage corridors within the project site. This mapping resource did identify a wetland offsite to the east of the northeastern corner of the project site.

### **STATE OF WASHINGTON PRIORITY HABITATS AND SPECIES**

The State of Washington *Priority Habitats and Species (PHS) Mapping* was reviewed as a part of this assessment (Figure 3). This mapping resource identify that the entire project site and the majority of the adjacent properties were utilized by regular concentration of elk (*Cervus elaphus*).

### **STATE OF WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**

The State of Washington Department of Fish and Wildlife (WDFW) Mapping was reviewed as a part of this assessment (Figure 4). This mapping resource did not identify any drainage corridors within or immediately adjacent to the project site.

### **STATE OF WASHINGTON DEPARTMENT OF NATURAL RESOURCES**

The State of Washington Department of Natural Resources (WDNR) *Water Type Mapping* was reviewed as a part of this assessment (Figure 5). This mapping resource did not identify any drainage corridors within the project site. This mapping resource did identify a wetland offsite to the east of the northeastern corner of the project site.

### **KING COUNTY MAPPING**

The King County Mapping was reviewed as a part of this assessment (Figure 6). This mapping resource identified a coal mine hazard area within the very northeastern corner of the project site and a wetland area offsite to the east of the northeastern corner of the project site. This mapping resource also identified the Bass Lake Complex Nature Area to the northwest of the project site.

### **SOILS MAPPING**

The soil mapping inventory completed by the Natural Resources Conservation Service (NRCS) was reviewed as a part of this assessment (Figure 7). This mapping resource identified the soil throughout the project site as either Alderwood gravelly sandy loam, Alderwood and Kitsap very steep soils, Beausite gravelly sandy loam, and Everett very gravelly sandy loam. These soils were not listed as “hydric” soil.

## KING COUNTY WETLAND REVIEW

As discussed with King County Environmental Staff, a wetland assessment report submitted for County review and verification as a part of the presently proposed site development action for this project site did not identify any wetlands or surface water drainage corridors within the project site. This assessment did identify a wetland area offsite to the east of the north eastern corner of the project site. The standard buffer for this offsite wetland was not identified to extend onto the northeastern corner of the project site (Ms. Laura Casey, per.comm. 2018).

## ONSITE ANALYSIS

### CRITERIA FOR CRITICAL AREAS IDENTIFICATION

For the purpose of the assessment the wildlife habitats and other critical areas (surface water drainage corridors, wetlands) which may be located within or immediately adjacent to the project site. This assessment did not include an assessment of potential steep slope, stormwater, erosion hazardous, or geotechnically hazardous critical areas.

**Fish and Wildlife:** A “fish and wildlife conservation area” is defined by King County as an area for a species whose habitat the King County Comprehensive Plan requires the County to protect that includes an active breeding site and the area surrounding the breeding site that is necessary to protect the breeding activity (21A.06.1423).

**Streams:** A stream (aquatic area) is generally defined as a location where surface waters produce a defined channel or bed. A defined channel or bed is typically an area which demonstrates clear evidence of the passage of water and includes, but not limited to, bedrock channels, gravel beds, sand and silt beds, and defined channel swales. A stream need not contain water year-round. A stream typically does not include irrigation ditches, canals, storm or surface water run-off devices, or other artificial watercourses unless the constructed watercourse conveys a stream which naturally occurred prior to the construction of such watercourse.

**Wetlands:** Wetlands are transitional areas between aquatic and upland habitats. In general terms, wetlands are lands where the extent and duration of saturation with water is the primary factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin, et al., 1979). Wetlands are generally defined within land use regulations as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (United States Army Corps of Engineers, 1987).

Wetlands exhibit three essential characteristics, all of which must be present for an area to meet the established criteria (United States Army Corps of Engineers, 1987 and United States Army Corps of Engineers, 2010). These essential characteristics are:

1. **Hydrophytic Vegetation:** The assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence. Hydrophytic vegetation is present when the plant community is dominated by species that require or can tolerate prolonged inundation or soil saturation during the growing season.
2. **Hydric Soil:** A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper parts. Most hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation. These processes result in distinctive characteristics that persist in the soil during both wet and dry periods.
3. **Wetland Hydrology:** Permanent or periodic inundation, or surface soil saturation, at least seasonally. Wetland hydrology indicators are used in combination with indicators of hydric soil and hydrophytic vegetation to define the area. Wetland hydrology indications provide evidence that the site has a continuing wetland hydrology regime. Where hydrology has not been altered vegetation and soils provide strong evidence that wetland hydrology is present.

## STUDY METHODS

Habitat Technologies completed a series of onsite assessments and species utilization observations between February and early April 2018. Habitat Technologies had also completed similar assessments for a variety of parcels within the local area of the project site over the past few decades. The spring 2018 onsite assessment included a mixture of meandering walks along with scattered stationary observation points. In addition, this onsite assessment was completed during the first part of the breeding and nesting season.

- **Soils and Hydrology**

As observed throughout the project site the soil exhibited a texture and coloration somewhat typical of the NRCS listed soil series. Surface soil texture was dominated by gravelly sandy loam and very gravelly loam. This soil throughout the project site was identified as non-hydric in character. Onsite hydrology appeared to be the result of seasonal stormwater. The project site was identified to drain moderately well to well, and no portion of the project site was identified to exhibit field evidence typically associated with a defined surface water channel (stream).

- **Vegetation**

The project site was dominated by a pre-commercial thin (younger than 25 years) upland forest plant community. This plant community was composed generally of re-production Douglas fir trees planted following the most recent forest harvest. This plant community also included a scattering mature second-growth Douglas fir, mature big leaf maple (*Acer macrophyllum*), mature black cottonwood (*Populus trichocarpa*), and Western red cedar (*Thuja plicata*) that appeared to have been retained as a part of the most recent forest harvest.

The onsite forest plant community was dominated by sapling and young trees – primarily Douglas fir. Additional tree species included Western cedar, Western hemlock (*Tsuga heterophylla*), red alder (*Alnus rubra*), big leaf maple, Western hawthorn (*Crataegus douglasii*), crabapple (*Pyrus fusca*), and bitter cherry (*Prunus emarginata*). The understory included a variety of seedling trees, shrubs, and herbs. Observed understory species included the trees noted above along with Scots broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus procera*), evergreen blackberry (*Rubus laciniatus*), trailing blackberry (*Rubus ursinus*), Indian plum (*Oemleria cerasiformis*), vine maple (*Acer circinatum*), Pacific red elderberry (*Sambucus racemosa*), hazelnut (*Corylus cornuta*), Oregon grape (*Berberis nervosa* and *Berberis aquifolium*), salal (*Gaultheria shallon*), salmonberry (*Rubus spectabilis*), snowberry (*Symphoricarpus albus*), holly (*Ilex aquifolium*), Oceanspray (*Holodiscus discolor*), sword fern (*Polystichum munitum*), nettle (*Urtica dioica*), bracken fern (*Pteridium aquilium*), bleeding heart (*Dicentra formosa*), geranium (*Geranium spp.*), bluegrass (*Poa spp.*), bentgrass (*Agrostis tenuis*), bedstraw (*Galium aparine*), cats ear (*Hypochaeris glabra*), Western trillium (*Trillium repens*), foamflower (*Tiarella trifoliata*), and vanilla leaf (*Achlys triphylla*). This plant community was identified as non-hydrophytic in character (i.e. typical of non-wetlands).

The plant communities within the areas offsite to the east, south, and west exhibited a plant community similar to the onsite plant community with much of the area modified by rural residential land uses. The plant community within the area offsite to the north of the project site was dominated by an upland forest plant community that had been retained within the Bass Lake Complex Nature Area.

- **Wildlife Species**

Wildlife species observed directly or indirectly, observed within the general area of the project site during prior assessments, and those species that may potentially utilize the habitats provided by project site included black tailed deer (*Odocoileus hemionus*), elk, coyote (*Canis latrans*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), porcupine (*Erethizon dorsatum*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginianus*), longtail weasel (*Mustela frenata*), Douglas squirrel (*Tamiasciurus douglasii*), deer mouse (*Peromyscus maniculatus*), shrew (*Sorex spp.*), black bear (*Ursus americanus*), mountain lion (*Felis concolor*), Townsend Chipmunk (*Eutamias townsendi*), voles (*Microtus spp.*), eastern cottontail (*Sylvilagus floridanus*), bats (*Myotis spp.*), great blue heron (*Ardea*

*herodias*), red tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), sharp-shinned hawk (*Accipiter striatus*), great horned owl (*Bubo virginianus*), merlin (*Falco columbarius*), bald eagle (*Haliaeetus leucocephalus*), Western screech owl (*Otus kennicotti*), barred owl (*Strix varia*), American robin (*Turdus migratorius*), violet green swallow (*Tachycineta thalassina*), tree swallow (*Tachycineta bicolor*), song sparrow (*Melospiza melodia*), house sparrow (*Passer domesticus*), white crowned sparrow (*Zonotrichia leucophrys*), golden crowned kinglet (*Regulus satrapa*), ruby crowned kinglet (*Regulus calendula*), black capped chickadee (*Parus atricapillus*), chestnut backed chickadee (*Parus rufescens*), common bushtit (*Psaltirparus minimus*), red breasted nuthatch (*Sitta canadensis*), American goldfinch (*Carduelis tristis*), purple finch (*Carpodacus purpureus*), brown creeper (*Certhia familiaris*), evening grosbeak (*Coccothraustes vespertina*), golden crowned sparrow (*Zonotrichia atricapilla*), rufous hummingbird (*Selasphorus rufus*), band tailed pigeon (*Columbia fasciata*), rock dove (*Columbia livia*), ruffed grouse (*Bonasa umbellus*), Northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), pileated woodpecker (*Dryocopus pileatus*), rufous-sided towhee (*Pipilo erythrophthalmus*), Steller's jay (*Cyanocitta stelleri*), dark eyed junco (*Junco hyemalis*), common garter snake (*Thamnophis sirtalis*), and Pacific treefrog (*Hyla regilla*).

The project site was not observed to provide spawning habitats for amphibians and has not been identified or documented to provide habitats for fish species.

A scattering of moderately sized nests suitable for American crows were observed generally offsite to the southeast. No large nests suitable for large raptors (i.e. bald eagle, osprey (*Pandion haliaetus*), red-tailed hawk) or great-blue heron were observed within or immediately adjacent to the project site.

**Wildlife Movement Corridors:** The project site was within an area of existing and increasing rural residential development. As identified by onsite wildlife trials, small, medium, and large mammals are moving throughout the project site. The project site was also within the general area associated with the migratory movement of passerine birds and raptors.

**King County Listed Species:** King County has identified a few species where potential habitat alteration may be permitted by the County provided specific protections are implemented. These species include bald eagle, great blue heron, marbled murrelet (*Brachyramphus marmoratus*), northern goshawk (*Accipiter gentilis*), osprey, peregrine falcon (*Falco peregrinus*), Townsend's big eared bat (*Corynorhinus townsendii*), and Vaux's swift (*Chaetura vauxi*).

As noted above, the project site was dominated by a young, reproduction coniferous forest plant community "HABITAT TYPE." As observed onsite during the late winter and early spring of 2018 the project site was not identified and has not been documented to provide critical habitats for these King County listed species.

**State Listed Priority Species:** Several species identified by the State of Washington as “Priority Species” were observed onsite or potentially may utilize the project site. Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance.

**Game Species:** “Game species” are regulated by the State of Washington through recreational hunting bag limits, harvest seasons, and harvest area restrictions. Observed or documented “game species” within and adjacent to the project site included black-tailed deer, elk, ruffed grouse, black bear, mountain lion, and band-tailed pigeon.

**State Candidate:** State Candidate species are presently under review by the State of Washington Department of Fish and Wildlife (WDFW) for possible listing as endangered, threatened, or sensitive. One State Candidate species - pileated woodpecker – was identified to use a scattering of the snags and downed logs retained following prior forest harvest actions.

**State Sensitive:** State Sensitive species are native to Washington and is vulnerable to declining and is likely to become endangered or threatened throughout a significant portion of its range without cooperative management or removal of threats. No State Sensitive species were observed as a part of this assessment or have been documented to use the project site.

**State Threatened:** State Threatened species means any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats. The project site did not appear and has not been documented to provide direct critical habitats for State Threatened species.

**State Endangered:** State endangered species means any species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state. The project site did not appear and has not been documented to provide direct critical habitats for State Endangered species.

**Federally Listed Species:** No federally listed endangered, threatened, or candidate species were observed or have been documented to use the habitats provided within the project site. A single, federally listed “species of concern” – bald eagle – has been documented to utilize the habitats provided by the Green River Corridor, area lakes, and ponds within the general area of the project site.



## **KING COUNTY FISH AND WILDLIFE CONSERVATION AREAS**

The project site was approximately 103-acres in size, presently vacant and managed as a young reproduction forest, and located within a rural area that included a number of parcels developed into single-family homesites. A managed regional powerline corridor was present along the northern boundary and Enumclaw Black Diamond Road SE dominated the western boundary of the project site. As defined within prior site assessment documents, as verified by King County Environmental Staff, and as noted above during the late winter and early spring of 2018 the project site did not exhibit areas that meet either the established “wetland” or “stream” criteria. One wetland area was noted offsite to the east of the northeastern corner of the project site and the Green River Corridor was identified well offsite to the north of the project site.

The project site, along with adjacent parcels, was identified to provide habitats for a wide variety of wildlife generally common to the local area either as “resident” or “seasonally migratory.” However, none of these observed or documented species are presently identified as King County Listed Species; as Washington State Listed endangered, threatened, or sensitive species; or as federally listed endangered, threatened, or sensitive species. The offsite Green River Corridor and the offsite wetland to the east of the northeastern corner of the project site have either been documented or exhibit the potential to provide habitats for a few of the King County Listed Species (bald eagle, great blue heron, osprey, northern goshawk, or Townsend’s big eared bat).

## **SELECTED DEVELOPMENT ACTION**

As presently outlined, the *Selected Development Action* focuses on the creation, operation, and management of a recycle facility within the very southeastern portion of the project site. This proposed recycle facility would encompass approximately 25% of the entire project area and would be accessed via the existing Enumclaw Franklin Road SE. As presently defined, the remainder of the project site would continue to be managed as forest land.

## **CONCLUSION**

The *Selected Development Action* would not adversely impact habitats identified as King County *Fish and Wildlife Conservation Areas* or King County Listed Species; would not adversely impact habitats associated with Washington State Listed endangered, threatened, or sensitive species; and would not adversely impact habitats associated with federally listed endangered, threatened, or sensitive species.

## STANDARD OF CARE

This document has been completed by Habitat Technologies for use by **Mr. Ronald Shear – BRC Incorporated**. Prior to extensive site planning the defined critical habitats should be reviewed and verified by King County Department of Permitting and Environmental Review personnel and potentially other resource and permitting agencies. Habitat Technologies has provided professional services that are in accordance with the degree of care and skill generally accepted in the nature of the work accomplished. No other warranties are expressed or implied. Habitat Technologies is not responsible for design costs incurred before this document is approved by the appropriate resource and permitting agencies.

*Bryan W. Peck*

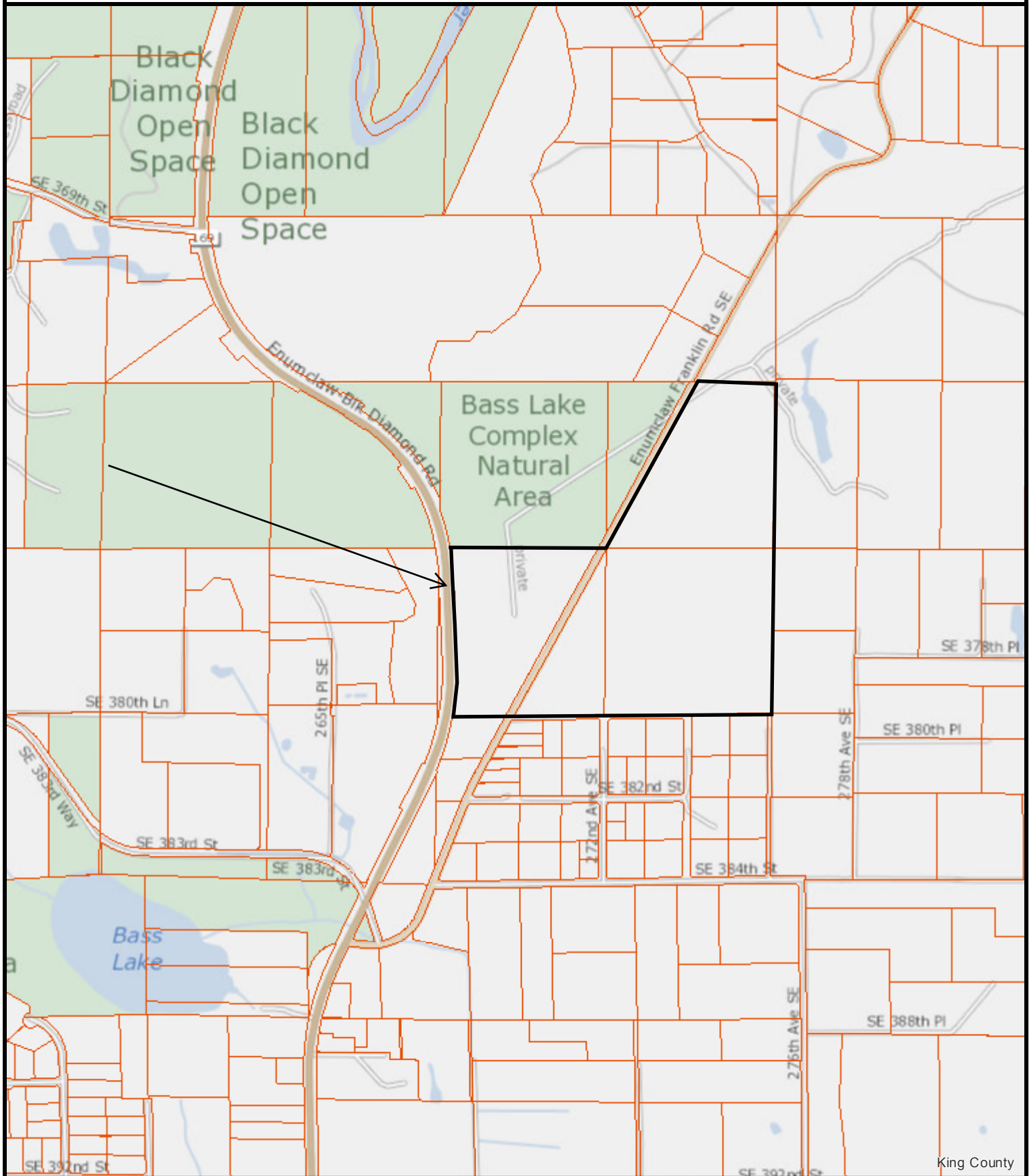
Bryan W. Peck  
Wetland Biologist

*Thomas D. Deming*

Thomas D. Deming, PWS  
Habitat Technologies

## FIGURES

# Figure 1 Site Vicinity



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Date: 4/3/2018

Notes:



**King County**  
**GIS CENTER**

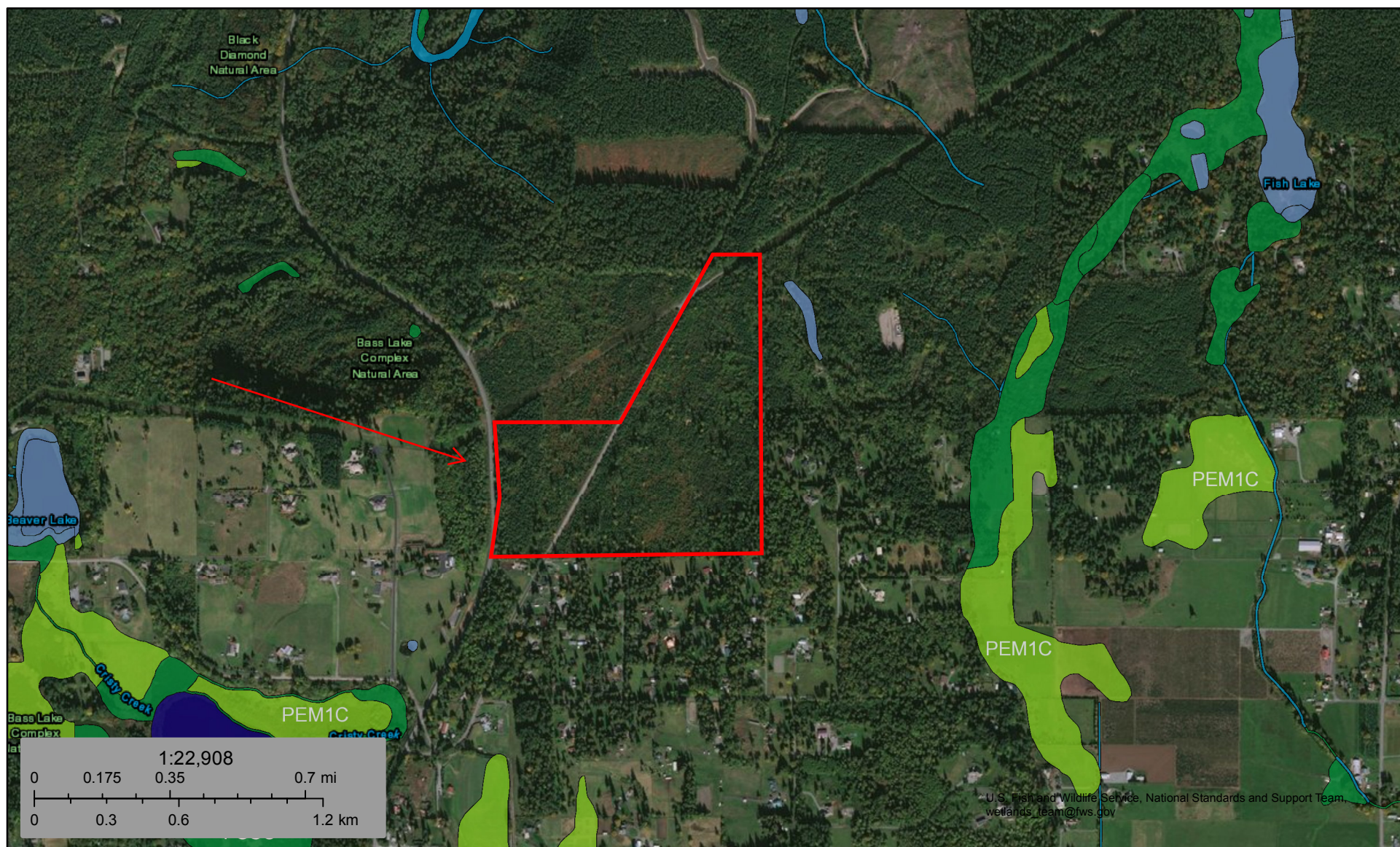




U.S. Fish and Wildlife Service

## National Wetlands Inventory

Figure 2 NWI Mapping



April 3, 2018

### Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

## PRIORITY HABITATS AND SPECIES REPORT








SOURCE DATASET: PHSPublic  
REPORT DATE: 04/03/2018 1.54

Query ID: P180403135354

Common Name	Site Name	Priority Area	Accuracy	Federal Status	Sensitive Data	Source Entity
Scientific Name	Source Dataset	Occurrence Type		State Status	Resolution	Geometry Type
Notes	Source Record	More Information (URL)		PHS Listing Status		
	Source Date	Mgmt Recommendations				
Caves Or Cave-rich Areas	PHSPTS	Habitat Feature	1/4 mile (Quarter	N/A	Y	WA Dept. of Fish and Wildlife
	902275	Habitat Feature		N/A	TOWNSHIP	Points
		N/A		PHS LISTED		
Elk	GREEN/CEDAR RIVER	Regular Concentration	General locality	N/A	N	WA Dept. of Fish and Wildlife
Cervus elaphus	PHSREGION	Regular concentration		N/A	AS MAPPED	Polygons
	918540					
		<a href="http://wdfw.wa.gov/publications/pub.php?">http://wdfw.wa.gov/publications/pub.php?</a>		PHS LISTED		

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

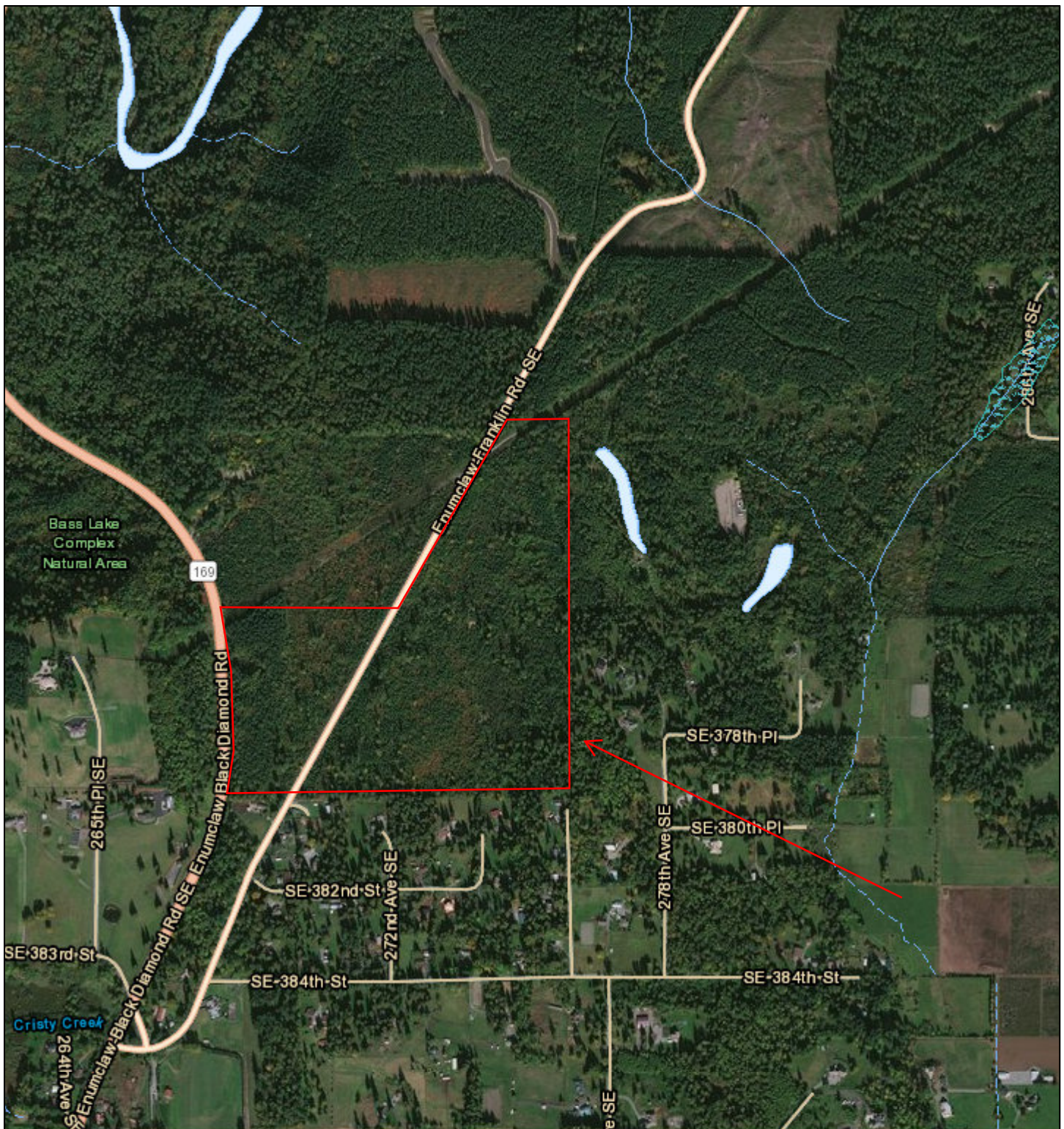


 PHS Report Clip Area **POLY**
 PT
  LN
  AS MAPPED
  SECTION
  QTR-TWP
  TOWNSHIP

Washington Fish and Wildlife  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus



## Figure 4 WDFW Mapping



April 3, 2018

1:18,056

### Spring Chinook Streams

— Documented Historic Presence

— Documented Presence

 Transported Presence

— Documented Spawning

— Transported Spawning

— Documented Rearing

— Transported Rearing

— Modeled Presence

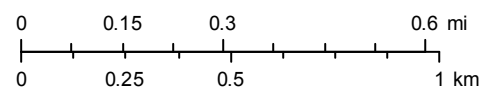
Documented-Artificial, Presence

— Presumed Presence

Documented-Artificial, Spawning

— Potential: Blocked

Documented-Artificial, Rearing



USGS/NHD  
Esri, HERE, Garmin, © OpenStreetMap contributors  
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user  
community  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

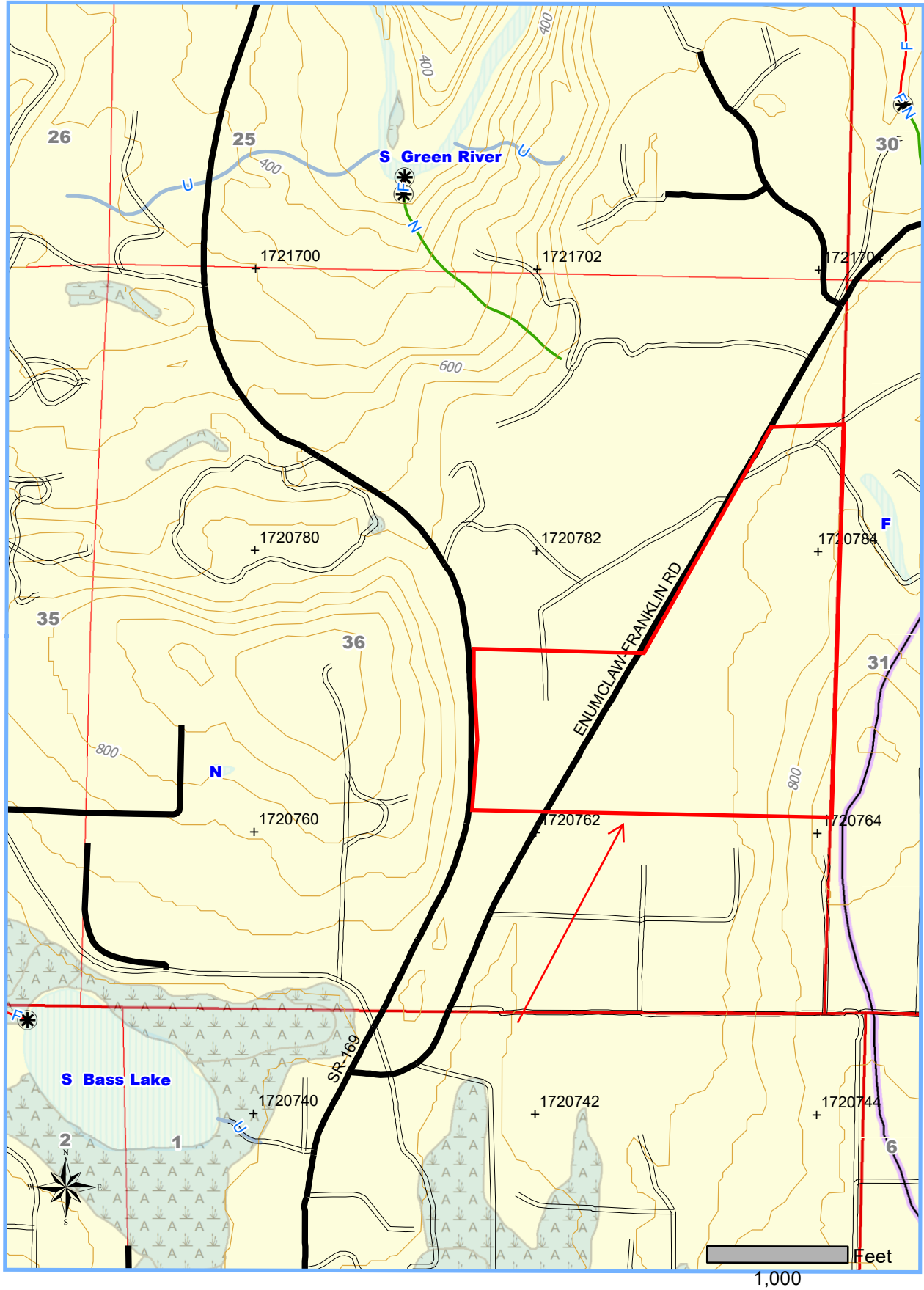


Figure 5

FOREST PRACTICE WATER TYPE MAP

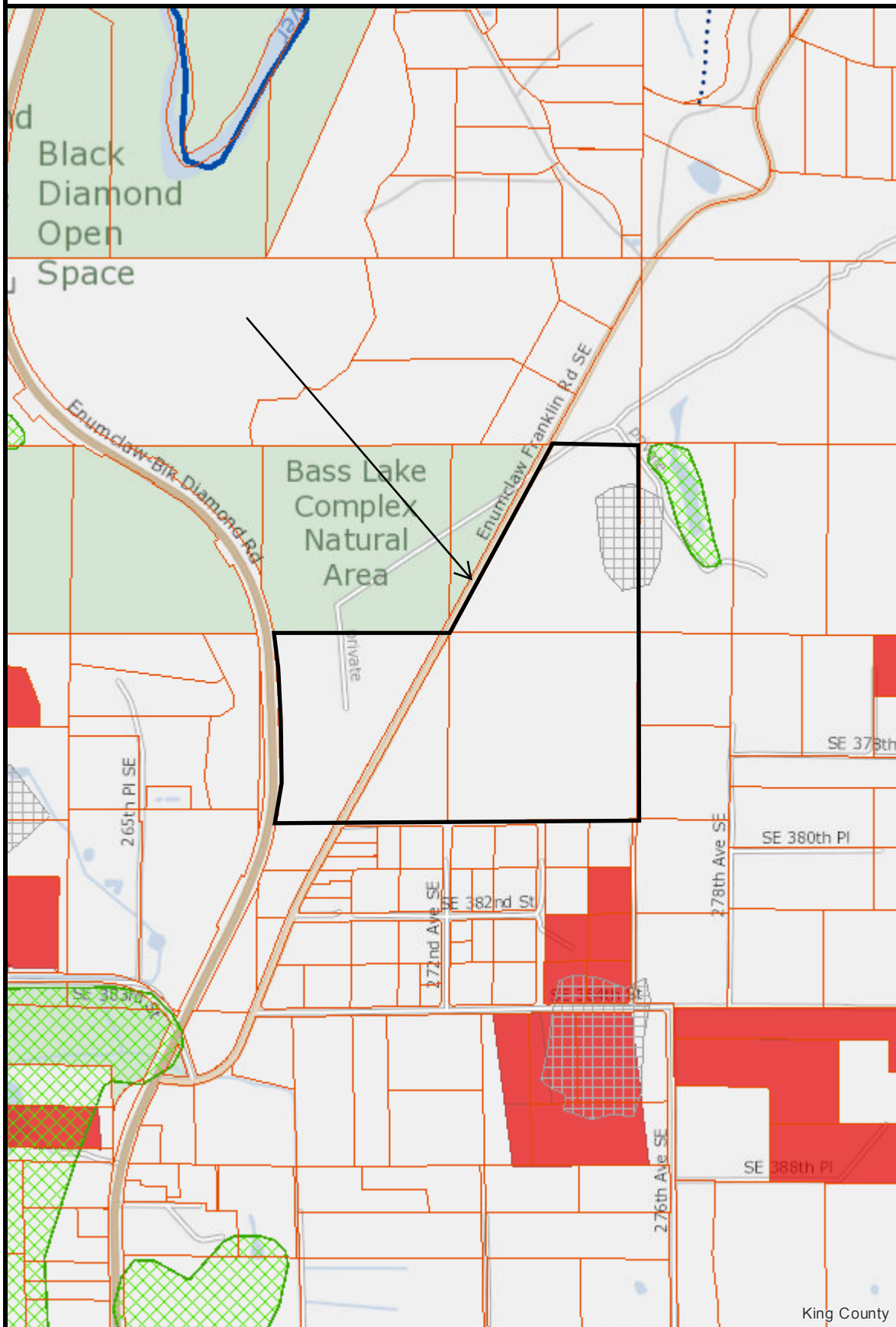
TOWNSHIP 21 NORTH HALF 0, RANGE 06 EAST (W.M.) HALF 0, SECTION 36

Application #: \_\_\_\_\_






Date: 4/3/2018 Time: 2:03:36 PM  
NAD 83  
Contour Interval: 40 Feet








# Figure 6 King County Mapping



## Legend

-  Parcels
-  Seismic hazard (1990 SAO)
-  Coal mine hazard (1990 SAO)

## Stream (1990 SAO)

-  class 1
-  class 2 perennial
-  class 2 salmonid
-  class 3
-  unclassified
-  Wetland (1990 SAO)
-  Sensitive area notice on title

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Date: 4/3/2018

Notes:





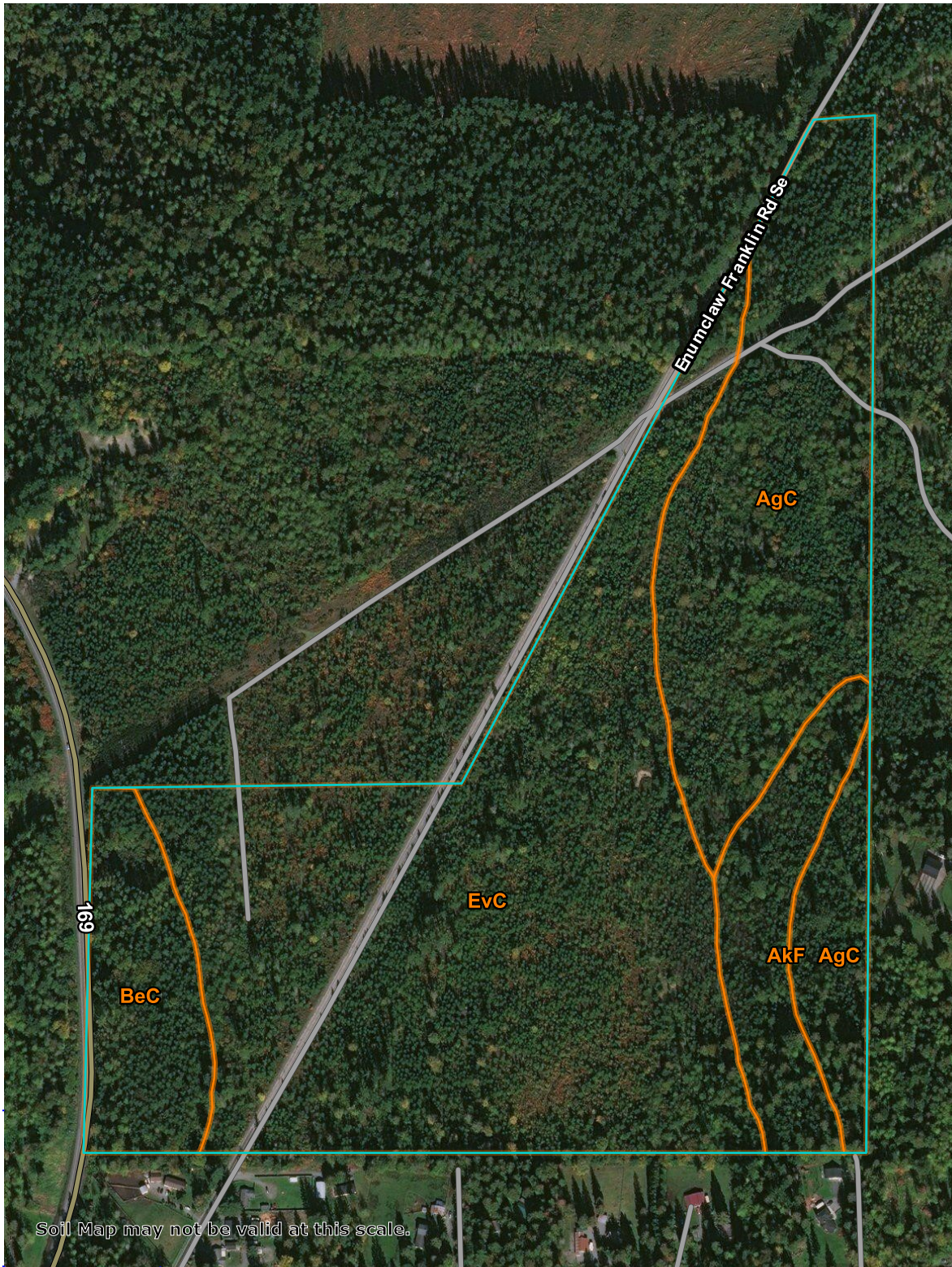
Soil Map—King County Area, Washington  
(Figure 7 Soils Mapping)

121° 59' 12" W

121° 58' 27" W

47° 16' 13" N

47° 16' 13" N



47° 15' 32" N

47° 15' 32" N

121° 59' 12" W

121° 58' 27" W



Map Scale: 1:6,080 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 250 500 1000 1500 Feet

Map projection: Web Mercator Corner coordinates: WGS84



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey


4/3/2018  
Page 1 of 3



Soil Map—King County Area, Washington  
(Figure 7 Soils Mapping)

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington

Survey Area Data: Version 13, Sep 7, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 29, 2016—Oct 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AgC	Alderwood gravelly sandy loam, 8 to 15 percent slopes	31.3	29.0%
AkF	Alderwood and Kitsap soils, very steep	8.4	7.8%
BeC	Beausite gravelly sandy loam, 6 to 15 percent slopes	9.0	8.4%
EvC	Everett very gravelly sandy loam, 8 to 15 percent slopes	58.9	54.7%
<b>Totals for Area of Interest</b>		<b>107.7</b>	<b>100.0%</b>

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## PHOTOS





The project site was dominated by a reproduction forest plant community.



Field evidence of prior logging actions were evident throughout the project site. This photo depicts a prior yarding area for the sorting and loading of cut timber.





Following prior forest harvest actions, the area was planted with seedling Douglas fir trees.



As a part of prior forest harvest actions, a scattering of second-growth Douglas fir trees were retained across the project site.