BLUE LAKE HYDROELECTRIC PROJECT EXPANSION

Preliminary Wetlands Delineation

November 2011

DOWL HKM

PRELIMINARY WETLANDS DELINEATION

BLUE LAKE HYDROELECTRIC PROJECT EXPANSION

SITKA, ALASKA

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LIST OF ACRONYMS

CBS ..... City and Borough of Sitka
CWA ..... Clean Water Act
GIS ..... Geographic Information System
Project, the ..... Blue Lake Hydroelectric Project Expansion
U.S. ..... United States
USACE ..... United States Army Corps of Engineers
USDOI ..... United States Department of the Interior
USEPA ..... United States Environmental Protection Agency
USGS ..... United States Geological Survey

EXECUTIVE SUMMARY

The City of Sitka proposes an expansion of the Blue Lake Hydroelectric Project. The project is located around the periphery of Blue Lake in Sitka, Alaska. The 362-acre study area is defined by the projected inundation area that will extend 83 vertical feet above the ordinary high water line (elevation 342 feet), resulting from the proposed project expansion. An additional 4 acres were included in the study area for the proposed intake area, surge chamber, and power-house facilities associated with the project expansion. The approximately 1,300-acre area upstream of the current spillway elevation contains the existing Blue Lake Reservoir and shoreline. Although these areas are not technically included in the extent of the delineation, they are central to the project area and are incorporated in this report.

Wetlands and Waters of the United States comprise approximately 48 acres (13%) of the study area, and jurisdictional uplands comprise 318 acres (87%) of the study area. Forested and scrub-shrub wetland habitats occur in close concert and interspersion with forested upland habitats across the study area. The wetland acreage calculations account for the percentage of wetlands occurring within the mosaic habitats, as described in the United States Army *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987).

1.0 INTRODUCTION

DOWL HKM has been contracted by the City and Borough of Sitka (CBS) to perform a Preliminary Wetlands Delineation of the Blue Lake Hydroelectric Project Expansion (the Project). In addition to a Preliminary Wetlands Delineation, this report describes the classification and mapping of wetland habitats encountered in the project area.

Wetlands are defined by the United States Army Corps of Engineers (USACE) 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 (USACE, 1987)."

This Preliminary Wetlands Delineation serves to support a jurisdictional determination by the USACE under authority granted by the Clean Water Act (CWA) Section 404.

1.1 Project Description

The CBS proposes an expansion of the Blue Lake Hydroelectric Project. The proposal is to raise the spillway elevation 83 feet, which will result in a 362-acre expansion of the existing reservoir. The additional inundation area contains wetlands and waters of the United States (U.S.), which are protected by the Section 404 of the CWA. This report delineates potentially USACE jurisdictional areas based on CWA 404 authority within the proposed Project boundaries.

1.2 Project Location

The Project is located around the periphery of Blue Lake in Sitka, Alaska. Blue Lake is situated at the eastern terminus of National Forest Development Road 7577, also referred to as Blue Lake Road (Figure 1, Appendix A). The project is centered at approximately 57.0732ºN latitude and -135.1615ºW longitude.

1.3 Study Area

The 362-acre study area is defined by the projected inundation area that will extend 83 vertical feet above the ordinary high water line of 342 feet to a future ordinary high water elevation of 425 feet resulting from the proposed project expansion. The study area is fully contained within the Tongass National Forest, extending eastward up the Blue Lake Creek drainage to Glacier

Creek, as well as around the entire perimeter of the existing reservoir. Surface flows within the study area are toward Blue Lake Creek and/or the Blue Lake reservoir.

An additional 4 acres were included in the study area for the proposed intake area, surge chamber, and power-house facilities associated with the project expansion. The intake area parcel is located immediately adjacent to and contiguous with the Blue Lake Reservoir. The proposed surge chamber and power house are to be situated on parcels adjacent to the existing power house near the discharge of Sawmill Creek into Sawmill Cove.

2.0 METHODS

DOWL HKM conducted a Preliminary Wetlands Delineation in accordance with Part IV, Section D, Subsection 3, of the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region* (Version 2.0) (USACE, 2007). This effort included preliminary data gathering and analysis, a field investigation, post-field data review, and mapping utilizing Geographic Information System (GIS) tools. This Preliminary Wetlands Delineation was completed by DOWL HKM personnel who have completed USACE wetlands delineation training course(s).

2.1 Existing Data for Project Area

Preliminary data gathering referenced the following data sources as potential information sources and provided a basis for synthesizing of data for this project.

- Aerial Photography: High-resolution color aerial photographs of the project area; 1-meter pixel resolution, 2009
- Light Detection and Ranging (LIDAR) togopraphy of the project area as provided by the CBS, 2011.
- Timber cruise report of the project area as provided by the CBS, 2011.
- U.S. Fish and Wildlife Service National Wetlands Inventory Maps: 1970s 1:80k Infrared Color Imagery
- U.S. Geological Survey (USGS) Quadrangle Maps: Sitka A-4

There is no existing Natural Resources Conservation Service soil survey for this location.

2.2 Wetlands Delineation Procedure

2.2.1 Preliminary Mapping and Classification

Information gathered during a reconnaissance site visit in April 2011, combined with a preliminary review of available data, was used to develop an initial sampling plan for the field investigation. A 2009 aerial photograph contact print was studied to classify and map potential habitat types within the study area and establish proposed sample points and transects. A copy of the proposed sampling plan was submitted to both the CBS and the USACE for general

consultation. After review and comment by the USACE, the sampling plan was expanded to include additional transects and data points.

2.2.2 Field Methods

A team of two wetland scientists from DOWL HKM conducted a field investigation of the study area between June 15 and June 26, 2011. As proposed in the preliminary sampling plan, sixteen pedestrian transects were surveyed in a generally north-south direction across the eastern portion of the study area within the Blue Lake Creek Drainage. Additional data points were collected along the perimeter of the Blue Lake reservoir.

Sampling was performed according to a Level III routine delineation as described in Part IV, Section D, Subsection 3, in the 1987 manual. The sampling combines methodologies for routine wetlands determination in areas larger than five acres with the observation point protocol used for areas less than or equal to 5 acres in size. The pedestrian survey was completed with sampling occurring at least once per community type. The study area was divided into sampling areas based on the vegetation communities observed on aerial photographs and ground-truthing of the study area. For each vegetation community observed, sample points were chosen based on the total area of that community in relation to other communities. Larger tracts of a particular plant community received more data points than smaller communities, ensuring accurate mapping information. Photographs were taken at each sampling point to document the vegetation and general sampling point characteristics (Appendix B).

Field delineation of wetlands was performed according to the three-parameter approach using vegetative, pedologic, and hydrologic characteristics, as described in the USACE wetlands delineation manuals (USACE, 1987; USACE, 2007). A USACE routine wetlands delineation data sheet was completed to document observed vegetation, soil, and hydrology characteristics at each sample site (Appendix B).

Vegetation species, stratum (tree, shrub, and herbaceous layers) and the percent aerial coverage was recorded. Taxonomic nomenclature follows Hultén (1968) and the indicator status of each species is as listed in the *National List of Plant Species That Occur in Wetlands: Alaska (Region A;* Reed, 1988). The following references were used to assist with the field identification of dominant plant species:

- *Flora of Alaska and Neighboring Territories: A Manual of the Vascular Plants* (Hultén, 1968)
- *Plants of the Pacific Northwest Coast* (Pojar and MacKinnon, 1994)
- *Wetland Sedges of Alaska* (Tande and Lipkin, 2003)

The Dominance Test and Prevalence Index are the basic hydrophytic vegetation indicators in Alaska, as defined by the 2007 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0)* (USACE, 2007). Vegetation is hydrophytic if either test is satisfied. The Prevalence Index was applied in communities with either moderate aerial coverage of several species, or where one stratum contains much less plant cover than another stratum. If the Prevalence Index was not satisfied but the soil and hydrologic parameters for wetland conditions were met, then the Dominance Test was completed. The Dominance Test was applied most often in habitats where a few plant species are relatively more abundant.

At each sampling site where standing water or complete saturation of the ground was not observed, a soil pit was excavated to a depth of 20 inches or to a restrictive layer. Observed soil and hydrological characteristics including texture, color, saturation, and depth to water table were recorded. Soil color was determined using *Munsell Soil Color Charts* (2000).

Photograph points were completed where vegetation, hydrology, and general characteristics were observed to be similar to a habitat previously documented with a full sample point and routine wetland delineation data sheet. Photograph points were utilized to extrapolate site characteristics from full sample points, allowing the use of best professional judgment to project data from sample points into similar habitats across the large study area.

The unique nature of southeast Alaska's forest ecology creates a complex micro-topography resulting in boundaries between wetland and non-wetland areas that are too small and/or too closely associated to easily delineate. These areas present a Difficult Wetland Situation (Wetland/Non-Wetland Mosaic) as defined by the USACE Alaska Supplement (USACE, 2007). Where encountered, mosaic areas were documented by a combination of sample points and linear coverage measurements. Mosaic areas were traversed while using a hip chain to measure the extent of each occurrence of wetland and upland systems along a transect. A minimum of

two data points (wetland and upland) were sampled to document the represented habitat types within each mosaic habitat area. Sample points were not completed within each wetland and non-wetland observation segment of the mosaic transects. The area of wetlands coverage within a mosaic habitat was determined based on the percentage of linear footage of wetland habitats along transects. Where multiple transects were traversed within a contiguous mosaic, the linear coverage of wetlands was averaged (Appendix C).

The degree of survey intensity was varied based on the localized complexity of habitats across the study area. To accurately determine the boundaries and extent of wetland habitats in transitional mosaic areas (as depicted on Figure 10), specific mosaic transects (TM1-TM4) were traversed. Transects commenced at points that were clearly identifiable on aerial photographs and were extended and measured until distinct habitat boundaries were encountered. In other locations, such as Transect 15 (Figure 11), where the aerial signature of the vegetative coverage (canopy closure) was very distinct between upland and mosaic habitats, the perimeter of the proposed wetland boundary was ground-truthed against the aerial signature without extensive data collection.

At the end of each field day, the data sheets were reviewed for completeness, collected plant samples were identified and noted, and boundaries were preliminarily mapped.

2.2.3 Wetlands Classification

Wetland areas were identified to the class level, according to the system guidelines outlined in the *Classification of Wetlands and Deepwater Habitats of the U.S.* (Cowardin et al., 1979). Hydrologic modifiers were added to each wetlands class.

Wetland habitats were determined by evaluating landscape position, (e.g., upland, lowland, riparian), plant community structure cohesion, and characteristics that form habitat functional units. All other Waters of the U.S. (flowing water, seeps) were classified according to the same guidelines.

2.2.4 Preliminary Jurisdictional Determination

Wetlands and Waters of the U.S. were analyzed to determine if they are subject to the CWA jurisdiction under the USACE/U.S. Environmental Protection Agency (USEPA) 2007 CWA

Guidance. Wetlands and other Waters of the U.S. were analyzed under the USACE/USEPA June 2007 CWA Guidance to evaluate the hydrological connection to a traditionally navigable waterway.

2.3 Final Mapping

Using ArcMap GIS, a geo-referenced aerial photograph from 2009 was used as a base map to digitally map wetlands, vegetation community boundaries, and to calculate areas.

Final mapping was performed at DOWL HKM's Anchorage office based on field data, aerial photograph interpretation, and published USGS topographic data. The resulting map shows wetlands and other Waters of the U.S. by Cowardin classification (Figures 2 through 13).

3.0 RESULTS

3.1 Study Area Results

Plant species identified during field sampling, their common names, and wetland indicator status (Reed, 1988) are listed below:

Table 1: Vegetation in the Study Area

Scientific Name	Common	Indicator
Achillea milledolium	Yarrow	FACU
Alnus sinuate	Alder, Sitka	FAC
Andromeda polifolia	Rosemary, Bog	OBL
Athyrium filix-femina	Fern, Subarctic Lady	FAC
Blechnum spicant	Fern, Deer	FAC
Carex lenticularis	Sedge, Shore	OBL
Calamagrostis canadensis	Reedgrass, Bluejoint	FAC
Chamaedaphne calyculata	Leatherleaf	FACW
Chamaecyparis nootkatensis	Cedar, Alaska	FAC
Claytonia sibirica	Springbeauty, Siberian	FACW
Coptis aspleniifolia	Goldthread, Spleenwort-Leaved	FAC
Cornus Canadensis	Dogwood, Bunchberry	FACU
Cornus suecica	Dogwood, Swedish Dwarf	FAC
Drosera longifolia	Sundew, Narrowleaf	OBL
Dryopteris dilatata	Woodfern, Mountain	FACU
Eleocharis palustris	Spikerush, Creeping	OBL
Empetrum nigrum	Crowberry, Black	FAC
Epilobium angustifolium	Fireweed	FACU
Equisetum arvense	Horsetail, Field	FACU
Eriophorum alpinum	Cottongrass, Alpine	OBL
Fauria crista-galli	Deer Cabbage	FACW
Gymnocarpium dryopteris	Fern, Oak	FACU
Ledum groenlandicum	Labrador Tea, Greenland	FACW
Listera caurina	Twayblade, Western	FACU
Listera cordata	Twayblade, Heartleaved	FACU
Lysichiton americanum	Skunkcabbage, Yellow	OBL
Menziesia ferruginea	Mock Azalea	NI
Moneses uniflora	Single Delight	FAC
Oplopanax horridus	Devilsclub	FACU
Picea sitchensis	Spruce, Sitka	FACU
Pinus contorta	Pine, Lodgepole	FAC
Rubus pedatus	Raspberry, Strawberryleaf	FAC
Rubus spectabilis	Berry, Salmon	FACU
Sambucus racemosa	Elder, European Red	FACU
Sphagnum	Moss	NI
Streptopus amplexifolius	Twistedstalk, Claspleaf	FAC
Tiarella trifoliate	Foamflower	FAC
Trientalis arctica	Starflower, Northern	FAC
Tsuga heterophylla	Hemlock, Western	FAC
Vaccinium microcarpus	Blueberry	OBL
Vaccinium oxycoccos	Cranberry, Small	OBL
Vaccinium parvifolium	Huckleberry, Red	NI
Vaccinium uliginosum	Blueberry, Bog	FAC
Viola epipsila	Marsh Violet	NI

FAC	Facultative; species equally likely to occur in wetlands and non-wetlands
FACU	Facultative Upland; species usually occurs in non-wetlands
FACW	Facultative Wetland; species usually occurs in wetlands
OBL	Obligate; species almost always occurs in wetlands
NI	No Indicator; species not listed in National List of Plant Species that Occur in Wetlands

The routine wetland delineation data forms, accompanying photographs, and photograph sample points are included in Appendix B.

The study area, defined by the area between the existing and proposed spillway elevations, encompasses approximately 362 acres. An additional 4 acres for proposed support facilities are also included in the study area. The approximately 1,300-acre area below the ordinary high water mark elevation contains the existing Blue Lake Reservoir and shoreline. Although these areas are not technically included in the extent of the delineation they are central to the project area and are incorporated in this report. Wetlands and Waters of the United States comprise approximately 48 acres (13%) of the study area, and uplands comprise 318 acres (87%) of the study area. The wetlands acreage calculation accounts for the percentage of wetlands occurring within the wetland/upland in the mosaic habitats. The extent of upper perennial streams within the study area was mapped to the greatest extent practicable. Short, narrow, entrenched sections of intermittent streams were encountered periodically during the field survey. Constraints associated with the size of the study area precluded the mapping of the full extent of these features. Most often the intermittent streams occurred in mosaic habitats and were therefore addressed and included in the wetland component of the mosaics. Table 2 shows habitat types, associated sampling and photograph points, and the area delineated within the study area.

Table 2: Wetlands, Waters of the United States, and Uplands by Acreage

	Acres	Associated Sample Points	Associated Photograph Points
Wetlands			
Forested Mosaic (PFO4B)	15.7 Total (4.0 Wetland/11.7 Upland)	T3A, T3B, T11E, T15A, T15B	T2G, T2H, T9B, T9C, T10G, T10H, T10K, T10L T15C, T15D
Forested/Scrub-Shrub Mosaic (PFO4/SS1B)	15.7 Total (7.5 Wetland/8.2 Upland)	T1G, T1H, T1O, T4D, T4E, T5A	T3D, T3E, T5B
Scrub Shrub/Emergent (PSS1/EM1B)	3.7	T2I, T2J	
Waters of the U.S.			
Reservoir (L1UBHh)	1,259		
Lake Shore (L2USCh)	35.6	T1A, T1D	T1C, T1I
Upper Perennial***** (R3UB1)	25.1	BLN5	BLS12, BLS13, BLS14, T1B, T3C, T4B, T6B, T7C, T8C, T9E, T10B, T15E, T16A, T17A
Upper Perennial (R3RB1)	5		BLN7, BLN12, BLS4
Upper Perennial (R3US1)	1.4	T16B	BLN4, T11B, T13A, T14B
Intermittent (R4SB6)	1.2******		
Uplands			
Closed Needleleaved Forest	222.3	BLN1, BLN2, BLN6, BLS2, BLS5, BLS8, BLS11, BLS16, T1E, T1F, T1K, T2A, T2D, T3D2, T4A, T4C, T5E, T6E, T6F, T6G, T6H, T8A, T11D, T14C, T16C, T17B	BLN8, BLN11, BLS3, BLS9, BLS15, BLS17, BLS18, T1M, T1N, T2B, T2C, T2E, T2F, T3E2, T3F, T3G, T5C, T7A, T7B, T8B, T8D, T9A, T9F, T10D, T10E, T10F, T11A, T14A
Closed Tall Shrub	75.9	BLN3, BLS7, T1L, T6A, T6C, T10C, T11C, T13B	BLN9, BLN10, BLS6, BLS10, T6D, T9D, T10A, T12A, T12B

*****Within Blue Lake Creek Drainage: 21.1 acres of Upper Perennial Stream upstream of Lower Barrier Falls
1.1 acres of Upper Perennial Stream downstream of Lower Barrier Falls

******Area of Intermittent Streams based on an assumed average 6-foot width across a mapped 8,879 linear feet

3.2 Habitat Types

3.2.1 Wetlands

Three distinct wetland habitats, representing three Cowardin classifications were documented in the study area. Wetlands were most commonly encountered in mosaic habitats with forested uplands. The extent of wetland and upland habitats are depicted in Figures 2 through 13 of Appendix A.

3.2.1.1 *Forested Wetland Mosaic*

Forested wetland habitats occur throughout the eastern half of the study area, associated with the Blue Lake Creek drainage. These wetlands occur in a mosaic habitat with closed-canopy needleleaved forested uplands as described below. The wetland component of the forested wetland mosaic habitat is characterized by Alaska cedar (*Chamaecyparis nootkatensis*), western hemlock (*Tsuga heterophylla*), and Sitka spruce (*Picea sitchensis*) canopies, similar to the upland component. The understory of the wetland component is characterized by a predominance of yellow skunkcabbage (*Lysichiton americanum*) and saturated surface soils. The wetland component of the mosaic is further distinguished from the upland component by the presence of concretions of reduced iron in the mineral soil, histic epipedons, and occasional sulfur odors upon excavation of the soil.

Forested wetland mosaics occur in different wetland/upland distributions across the study area. The upland and wetland habitats present in each mosaic polygon are similar to each other; however, the percentage of wetlands coverage varies. As such, three different mosaic percentages were calculated to accurately depict the extent of wetlands coverage (Appendix C). These three different forested wetland mosaics are mapped individually on Figures 10 and 11.

The Cowardin type of the forested wetland mosaic is PFO4B; closed-canopy needleleaved evergreen forest cover with saturated soils.

Forested wetland mosaic habitat with 12% wetlands covers 5.7 acres of the study area, contributing 0.7 acres of wetlands.

Forested wetland mosaic habitat with 27% wetlands covers 4.2 acres of the study area, contributing 1.1 acres of wetlands.

Forested wetland mosaic habitat with 38% wetlands covers 5.8 acres of the study area, contributing 2.2 acres of wetlands.

3.2.1.2 *Forested/Scrub-Shrub Wetland Mosaic*

Mosaic habitats containing a combination of forested and scrub-shrub wetlands in concert with forested uplands are present within the study area. The upland component of these mosaics is a closed-canopy needleleaved forest with mineral soils overlain by sphagnum. The forested wetland habitats are identified by an understory dominated by yellow skunkcabbage and often saturated surface soils. The scrub-shrub wetland component of the mosaic is characterized by a diversity of hydrophytic plant species including blueberry (*Vaccinium microcarpus*), bog rosemary (*Andromeda polifolia*), and deer cabbage (*Fauria crista-galli*). Pockets of standing water and thick saturated peat layers are common throughout the scrub-shrub wetland component of the mosaic.

Forested/scrub-shrub wetland mosaics occur with different wetland/upland distributions across the study area. The upland and wetland habitats present in each mosaic polygon are similar to each other; however, the percentage of wetlands coverage varies. As such, three different mosaic percentages were calculated to accurately depict the extent of wetlands coverage (Appendix C).

The Cowardin type of the forested scrub-shrub wetland mosaic is PFO4/SS1B, closed-canopy needleleaved evergreen forest/broadleaved deciduous scrub shrub cover with saturated soils.

Forested/scrub-shrub wetland mosaic habitat with 38% wetlands covers 8.5 acres of the study area, contributing 3.2 acres of wetlands.

Forested/scrub-shrub wetland mosaic habitat with 49% wetlands covers 3.8 acres of the study area, contributing 1.8 acres of wetlands.

Forested/scrub-shrub wetland mosaic habitat with 72% wetlands covers 3.5 acres of the study area, contributing 2.5 acres of wetlands.

3.2.1.3 *Scrub-Shrub/Emergent Wetlands*

A 3.66-acre muskeg wetland with emergent and scrub-shrub characteristics is present on the south side of Blue Lake Creek, just east of its confluence with the reservoir. This entirely wetland habitat is characterized by thick saturated peat to a depth of 20 inches, ponded bogs with standing water, stunted lodge pole pine (*Pinus contorta*), and an abundance of diverse hydrophytic vegetation dominated by creeping spikerush (*Eleocharis palustris*), small cranberry (*Vaccinium oxycocccos*), Labrador tea (*Ledum groenlandicum*), and alpine cottongrass (*Eriophorum alpinum*).

The muskeg wetland occurs largely on a terraced section above Blue Lake Creek on a north facing slope and is surrounded by scrub-shrub and forested wetlands as well as forested uplands. Indications of bear use are abundant.

The Cowardin type of the scrub-shrub/emergent wetlands is PSS1/EM1B, broadleaved deciduous scrub shrub/persistent emergent cover with saturated soils.

3.2.2 Waters of the United States

Although the CWA's definition of "Waters of the U.S." includes jurisdictional wetlands, the habitats identified in this report as Waters of the U.S. are flowing water bodies per Code of Federal Regulations 33 CFR Part 328 Definition of Waters of the U.S.

3.2.2.1 *Blue Lake Reservoir*

Blue Lake is an impounded reservoir with a surface area of approximately 1,300 acres at spill elevation (342 feet). Based on aerial photograph interpretation during the mapping effort, the surface area was approximately 1,260 acres. It is a deep-water habitat (up to 500 feet) with gradual to steep banks and is fed by several drainages surrounding the reservoir, the largest being Blue Lake Creek, Becky Creek, and Brad Creek. The reservoir provides fish habitat but is void of vegetation.

The Cowardin classification of Blue Lake is L1UBHh: flooded, impounded lacustrine, limnetic unconsolidated bottom.

3.2.2.2 *Lake Shore*

The littoral shore of Blue Lake is defined as the area between the current water level and the ordinary high water line. Based on aerial photograph interpretation, the exposed shoreline encompasses approximately 35 acres. Because water level fluctuates, the area of lake shore is variable. The lakeshore is characterized by deep sandy soils, and minimal vegetation, limited to shore sedge (*Carex lenticularis*). Hydrologic indicators are abundant and include deposition of debris and driftwood, seasonal inundation, and surface flow patterns.

The Cowardin classification of the littoral lake shore is L2USCh: seasonally flooded, impounded lacustrine, littoral unconsolidated shore.

3.2.2.3 *Upper Perennial Streams*

Upper perennial streams occupy approximately 30 acres of the study area and include Blue Lake Creek, Glacier Creek, Becky Creek, Brad Creek, South Creek, North Falls, and other unnamed water courses flowing into Blue Lake. These streams are characterized by persistent flow over substrates ranging from unconsolidated bottoms (R2UB1) of gravel and cobble to bedrock (R3RB1). The width of the streams varies seasonally creating temporary gravel bars and shorelines (R3US1), which have been mapped largely based on aerial photograph interpretation. Upper perennial streams within the study area are high-energy systems with swift flow and scoured channels and shoreline. The result is minimal vegetative cover, though the banks are stabilized.

The Cowardin classifications for perennial streams are R3UB1, R3US1, R3RB1: upper perennial stream with unconsolidated bottom, unconsolidated shore, and rock bottom.

3.2.2.4 *Intermittent Streams*

Short narrow sections of intermittent streams occur throughout the study area. Substrates of the intermittent drainage features are primarily organic soils with some cobble and gravel. Some of the streams are slightly channelized and though species diversity is low, vigor of occurring species is adequate to prevent erosion during peak flows. The intermittent segments are widely distributed throughout the project area and are, in some cases, only several meters in length. As such, the mapping only included limited segments encountered during the pedestrian transect

survey or apparent on available topographic data. The width of intermittent streams varied substantially across the study area, from 1 foot in portions of the Blue Lake Creek drainage to 12 feet along the south side of the Blue Lake Reservoir. An assumed average width of 6 feet was used to calculate the area of intermittent stream coverage.

The Cowardin classification of intermittent streams on site is R4SB6 intermittent with organic or bedrock stream bed.

3.2.3 Uplands

Upland areas comprise the majority (87%) of the study area. Documented upland habitats were divided into two different types within the study area, based on the type of canopy, closed needleleaved forest is the most common upland type, comprising 70% of the uplands in the study area.

3.2.3.1 *Closed Needleleaved Forest*

The majority of the project area is composed of forested uplands with nearly closed canopies consisting of western hemlock, Alaska cedar, and Sitka spruce. Species distribution within the forested canopy varies across the project area but is always dominated by one of these species. Forested upland habitats occur on nearly level to very steep (60%) slopes and the understory ranges from open to thick shrub. Where the understory is open, the predominant ground cover is bunchberry dogwood (*Cornus canadensis*), subarctic ladyfern (*Athyrium filix-femina*), wood fern (*Dryopteris dilatata*), deer fern (*Gymnocarpium dryopteris*), and moss (*Sphagnum sp.*). Denser shrub layers, dominated by devilsclub (*Oplopanax horridus*), are most frequently encountered on the toe slopes beneath partially closed canopies.

3.2.3.2 *Closed Tall Shrub*

Where a coniferous tree stratum is absent, a large portion of the study area is characterized by a dense scrub-shrub layer. In the eastern Blue Lake Creek portion of the study area, this habitat is nearly a monoculture of salmonberry (*Rubus spectabilis*). Further west, along the reservoir perimeter, this habitat has slightly more red elder (*Sambucus racemosa*). These tall shrub habitats have varying degrees of dense closed-canopy alder (*Alnus sinuata*) thickets. Alder canopies are most commonly encountered along the banks of Blue Lake Creek as well as in

patches along the perimeter of the Blue Lake reservoir, between the ordinary high water mark and the closed-canopy evergreen forest.

3.3 Preliminary Jurisdictional Determination

Wetlands and other Waters of the U.S. were analyzed under the USACE/USEPA June 2007 CWA Guidance to evaluate the hydrological connection to a traditionally navigable waterway. Because all wetlands have a connection to Blue Lake Reservoir that discharges into Sawmill Creek, which is directly connected to Sitka Sound, a traditionally navigable waterway, all wetlands are presumed jurisdictional to the USACE.

4.0 DISCUSSION

4.1 Comparisons with Previous Mapping

DOWL HKM compared field data and preliminary maps from this delineation to a 2009 aerial photograph, USGS quadrangle map (Sitka A-4), and National Wetlands Inventory mapping to compare observations and assist in final mapping. Surface features depicted on the 2009 aerial photograph and the topographic relief depicted on the USGS quadrangle map closely reflects what was recorded in the field. Thus, final maps were created using these maps as an aid to define habitat boundaries. Final maps depict a larger extent of wetlands within the study area than is suggested by the National Wetlands Inventory maps.

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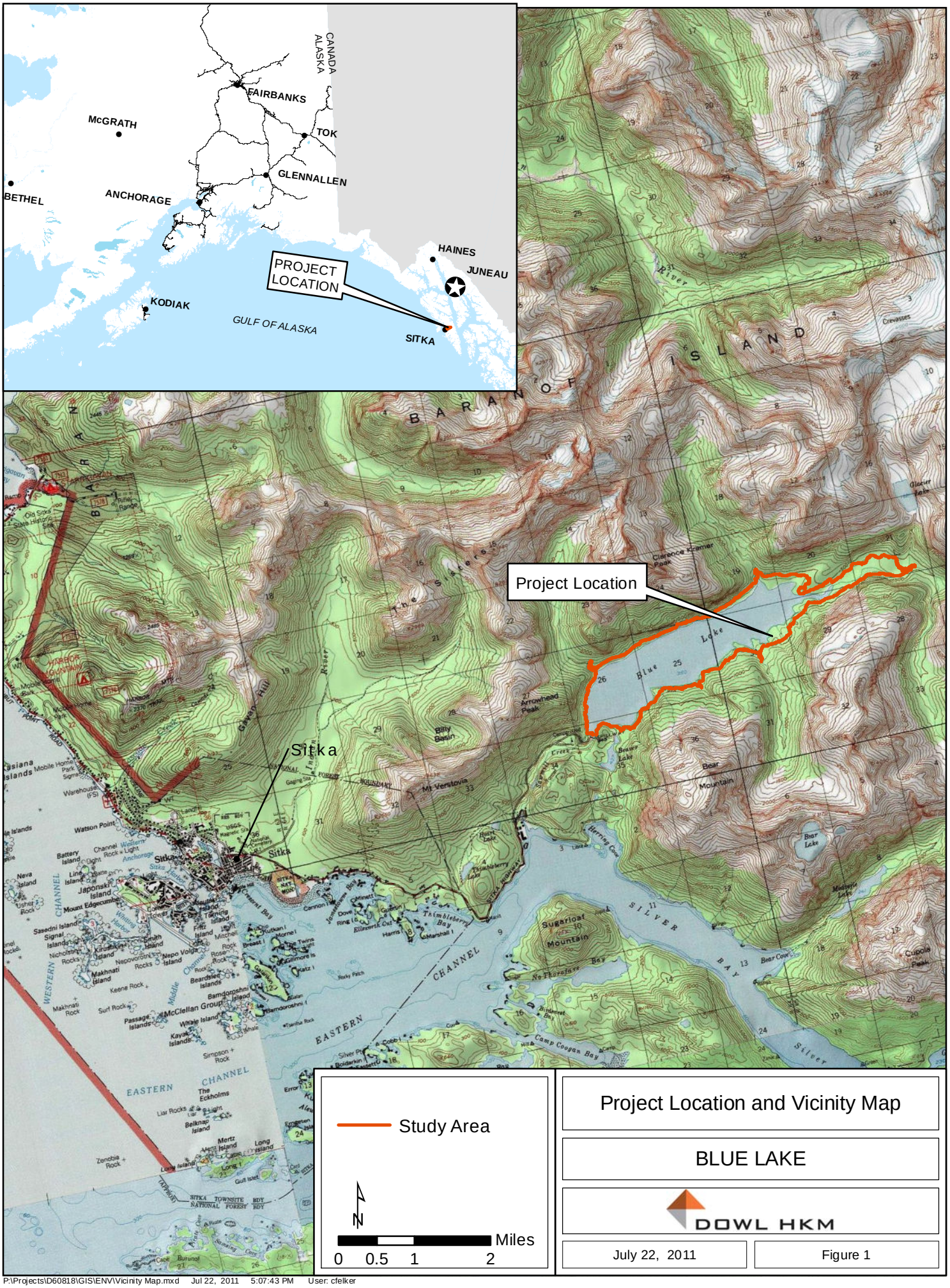
APPENDIX A

Figures



Project Location and Vicinity Map

BLUE LAKE

DOWL HKM

July 22, 2011

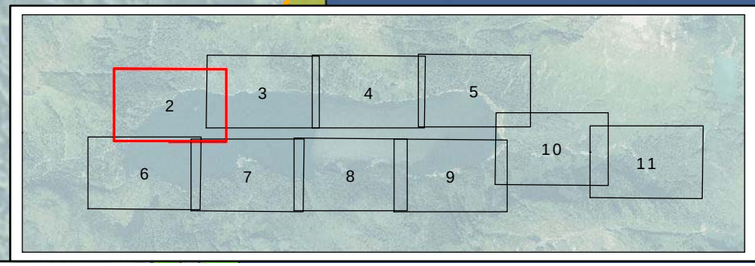
Figure 1

P:\Projects\D60818\GIS\ENV\Vicinity Map.mxd Jul 22, 2011 5:07:43 PM User: cfelker

BL-N11

BL-N12

BRAD CREEK



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
R3UBI
R3USI

Uplands
Closed Needleleaf Forest
Closed Tall Shrub

Mosaic
Forested Mosaic: 12% Wetland/88% Upland
Forested Mosaic: 27% Wetland/73% Upland
Forested Mosaic: 38% Wetland/62% Upland
Forested/Shrub Mosaic: 38% Wetland/62% Upland
Forested/Shrub Mosaic: 49% Wetland/51% Upland
Forested/Shrub Mosaic: 72% Wetland/28% Upland

Feet
0 150 300

Wetlands Classification Map

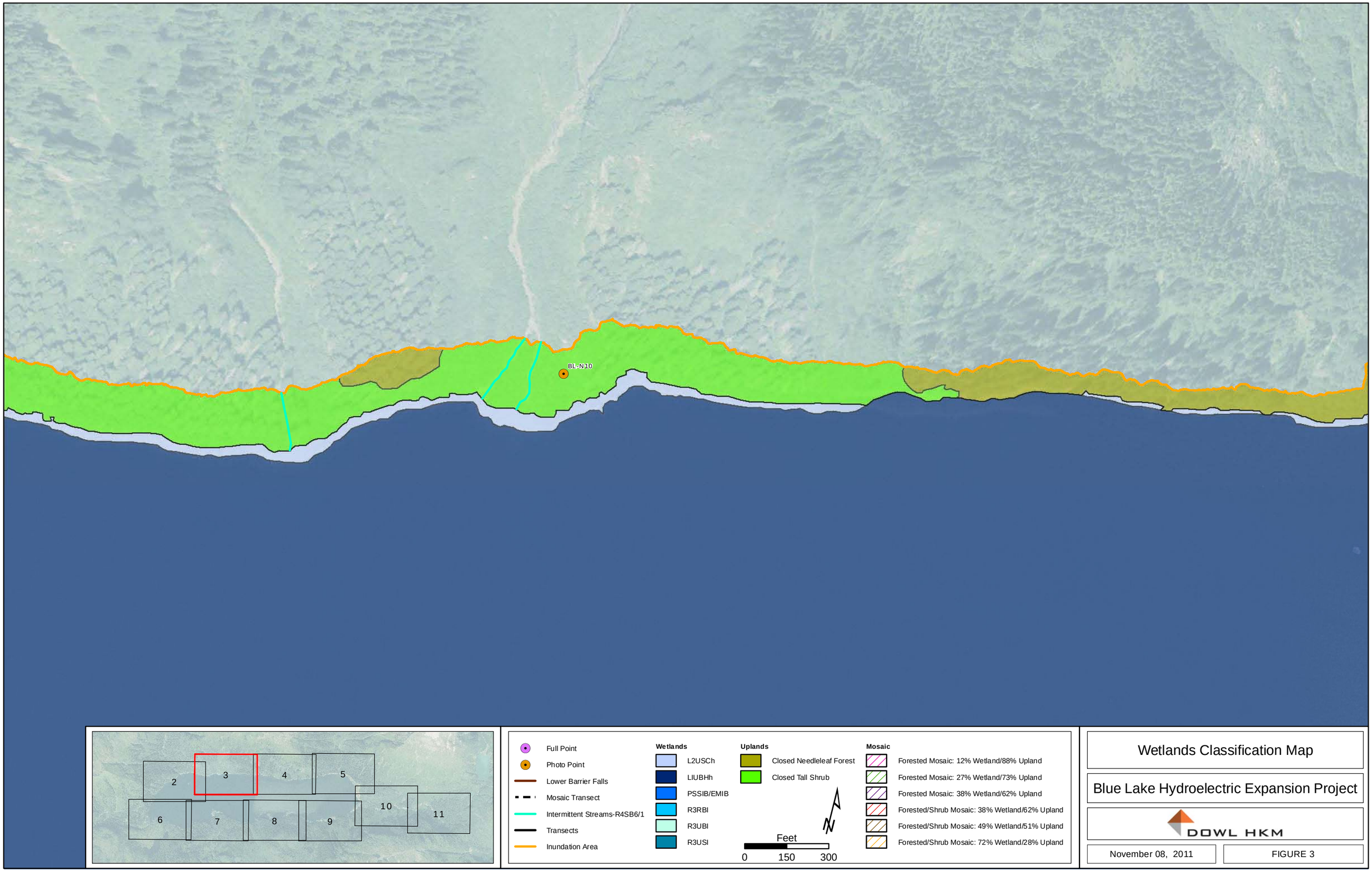
Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011

FIGURE 2

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:10 AM User: cfelker



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
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Feet
0 150 300

Wetlands Classification Map

Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011

FIGURE 3

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:15 AM User: cfelker

BL-N7

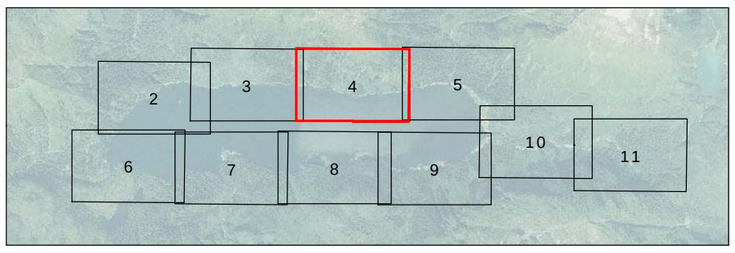
BL-N9

NORTH FALLS

BL-N8

BL-N2

BL-N3



Full Point

Photo Point

Lower Barrier Falls

Mosaic Transect

Intermittent Streams-R4SB6/1

Transects

Inundation Area

Wetlands

L2USCh

LIUBHh

PSSIB/EMIB

R3RBI

R3UBI

R3USI

Uplands

Closed Needleleaf Forest

Closed Tall Shrub

Feet

0 150 300

Mosaic

Forested Mosaic: 12% Wetland/88% Upland

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Forested/Shrub Mosaic: 72% Wetland/28% Upland

Wetlands Classification Map

Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011

FIGURE 4

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:20 AM User: cfelker

BL-N4

BL-N5

BL-N1

BECKY CREEK

BL-N6

T1

T1K

T2

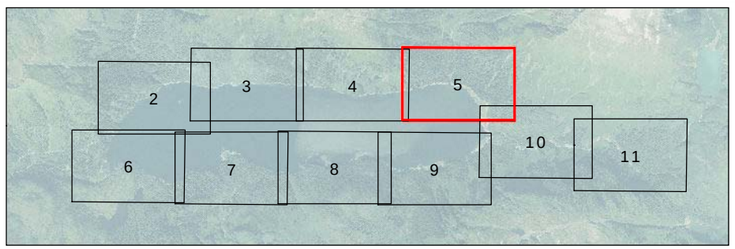
T2F

T1L

T3

T3D2

T2E



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
R3UBI
R3USI

Uplands
Closed Needleleaf Forest
Closed Tall Shrub

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Forested/Shrub Mosaic: 72% Wetland/28% Upland

Feet
0 150 300

Wetlands Classification Map

Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011

FIGURE 5

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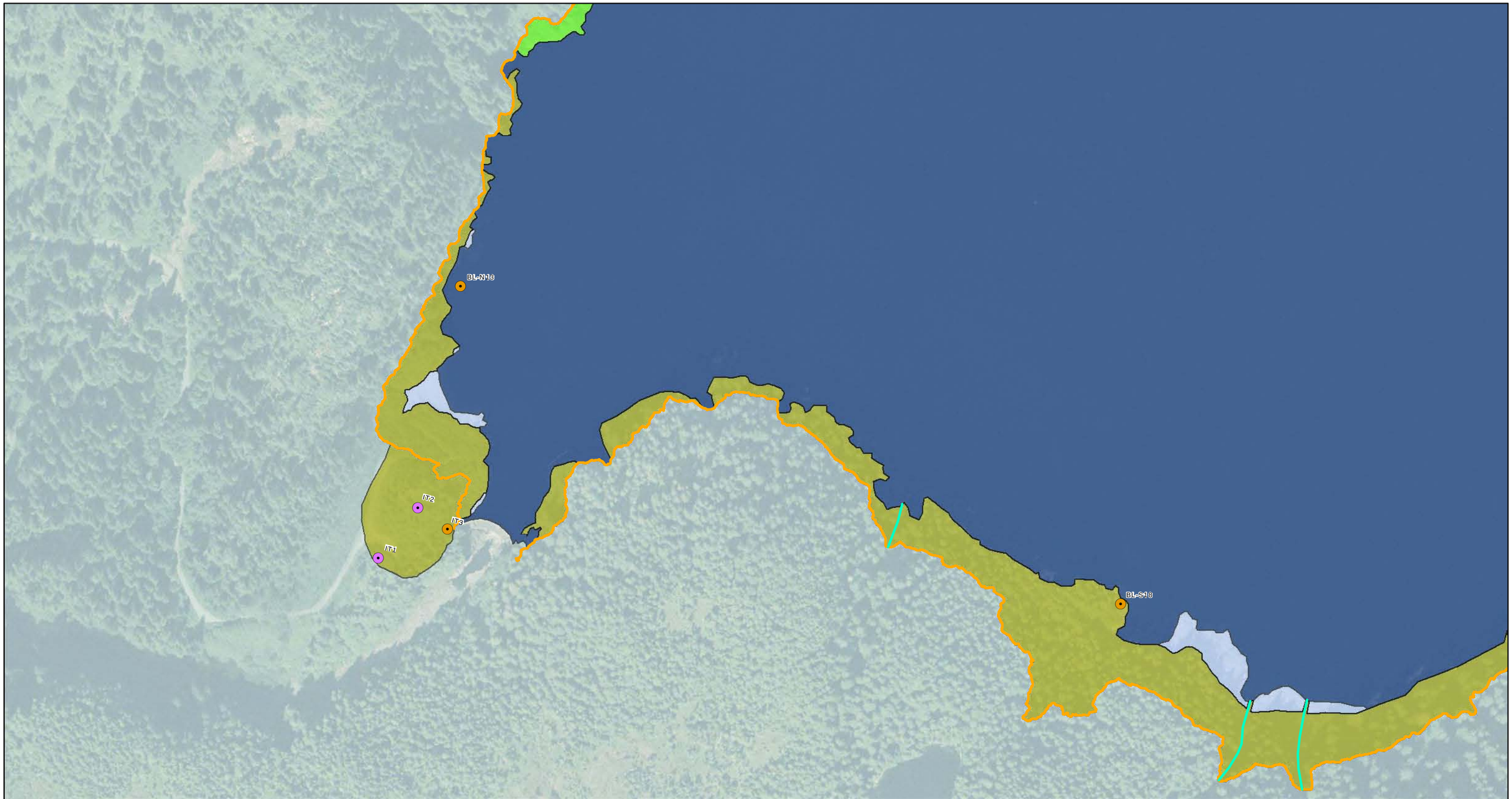

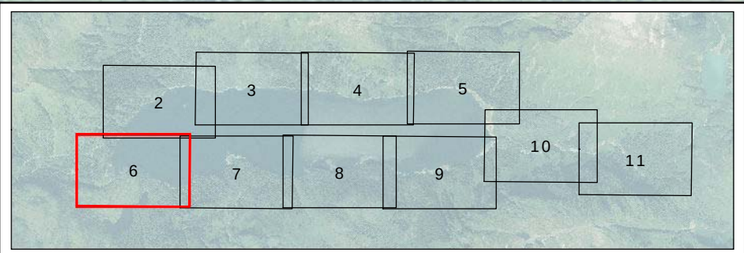

Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
- L2USCh
- LIUBHh
- PSSIB/EMIB
- R3RBI
- R3UBI
- R3USI

Uplands
- Closed Needleleaf Forest
- Closed Tall Shrub

Mosaic
- Forested Mosaic: 12% Wetland/88% Upland
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- Forested Mosaic: 38% Wetland/62% Upland
- Forested/Shrub Mosaic: 38% Wetland/62% Upland
- Forested/Shrub Mosaic: 49% Wetland/51% Upland
- Forested/Shrub Mosaic: 72% Wetland/28% Upland

Feet
0 150 300

Wetlands Classification Map

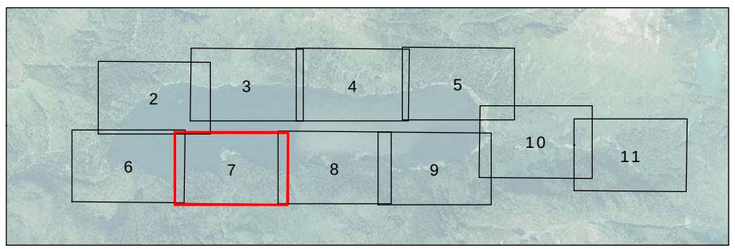
Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011 | FIGURE 6

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:30 AM User: cfelker

BL-S16
BL-S15
BL-S14
BL-S17
BL-S13



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
R3UBI
R3USI

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Forested/Shrub Mosaic: 72% Wetland/28% Upland

Feet
0 150 300

Wetlands Classification Map

Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011 | FIGURE 7

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:35 AM User: cfelker

SOUTH CREEK

BL-S10

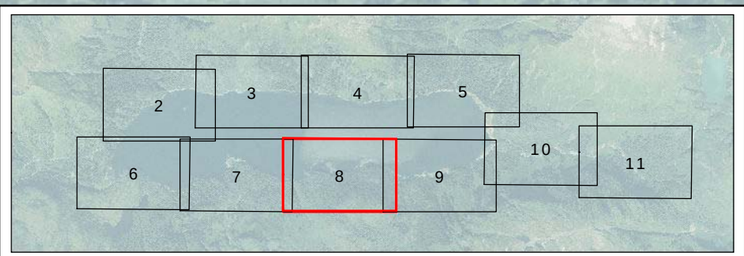
BL-S9

BL-S6

BL-S5

BL-S11

BL-S12



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
R3UBI
R3USI

Uplands
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Forested/Shrub Mosaic: 72% Wetland/28% Upland

Feet
0 150 300

Wetlands Classification Map

Blue Lake Hydroelectric Expansion Project

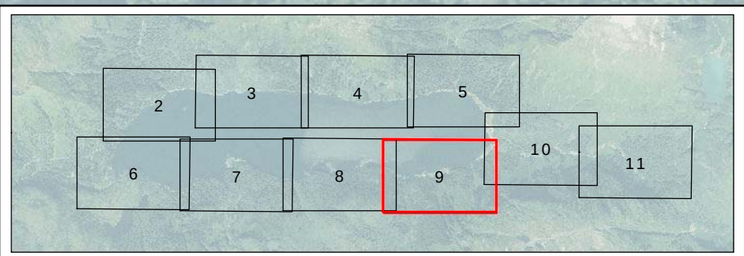
DOWL HKM

November 08, 2011

FIGURE 8

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:40 AM User: cfelker

T1A
T1C
T1D
T1E
T1F
BL-S1
BL-S2
BL-S6
SHELDON CREEK
BL-S4
BL-S3
BL-S7
BL-S8



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
R3UBI
R3USI

Uplands
Closed Needleleaf Forest
Closed Tall Shrub

Feet
0 150 300

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Forested/Shrub Mosaic: 72% Wetland/28% Upland

Wetlands Classification Map

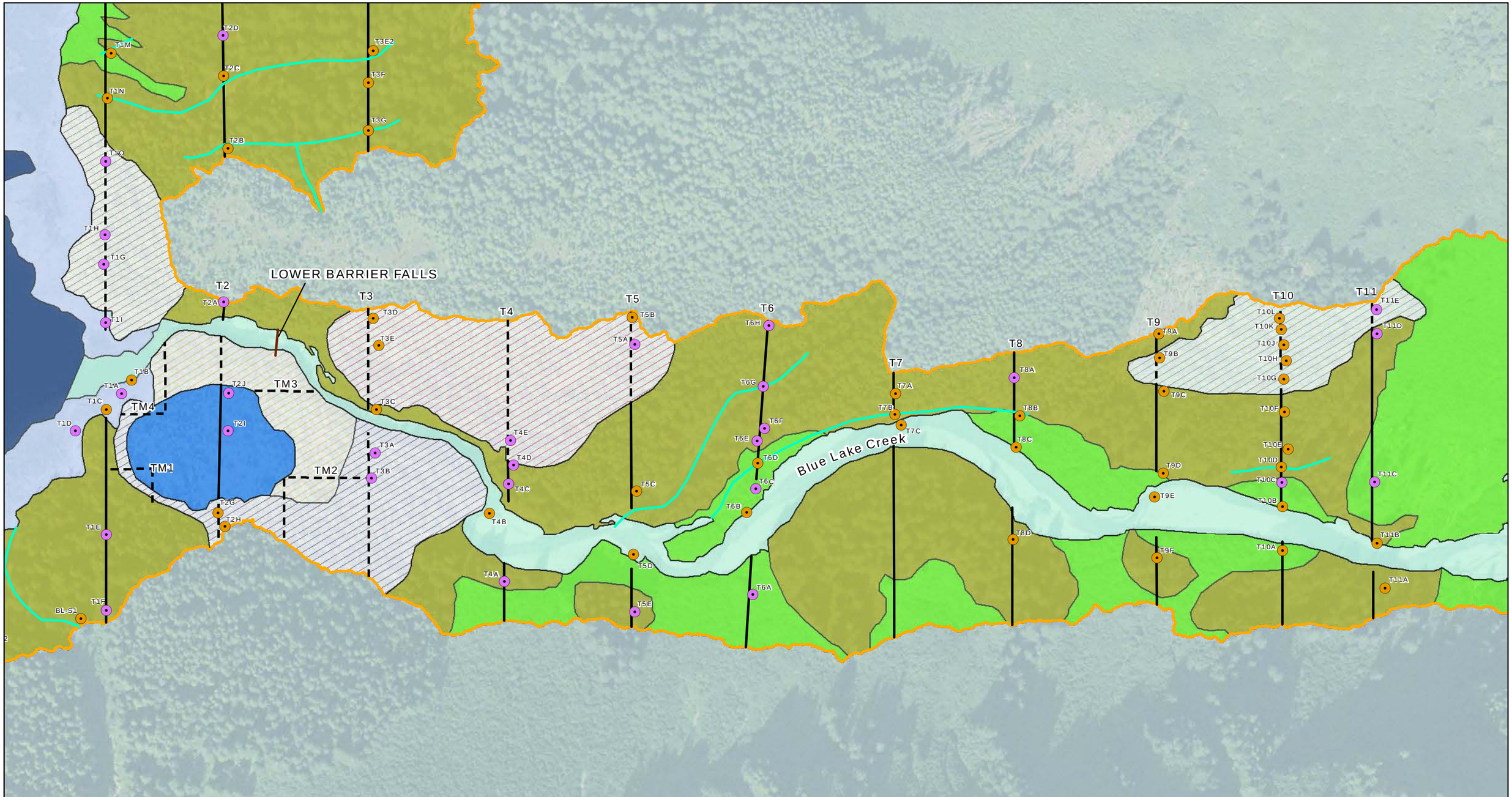
Blue Lake Hydroelectric Expansion Project

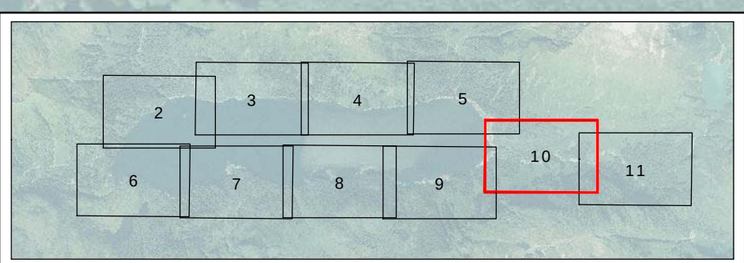
DOWL HKM

November 08, 2011

FIGURE 9

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:45 AM User: cfelker





Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
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R3USI

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Feet
0 150 300

Wetlands Classification Map

Blue Lake Hydroelectric Expansion Project

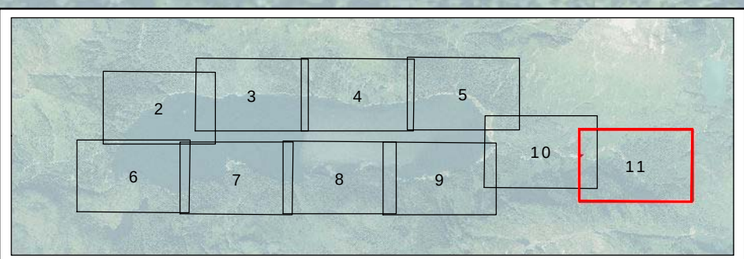
DOWL HKM

November 08, 2011

FIGURE 10

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:51 AM User: cfelker

T11
T11E
T11D
T11C
T11B
T11A
T12
T12B
T12A
T13
T13B
T13A
T13D
Blue Lake Creek
T14
T14C
T14B
T14A
T15A
T15B
T15C
T15D
T15E
T15
T16C
T16B
T16A
T16
T17B
T17A



Full Point
Photo Point
Lower Barrier Falls
Mosaic Transect
Intermittent Streams-R4SB6/1
Transects
Inundation Area

Wetlands
L2USCh
LIUBHh
PSSIB/EMIB
R3RBI
R3UBI
R3USI

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Feet
0 150 300

Wetlands Classification Map

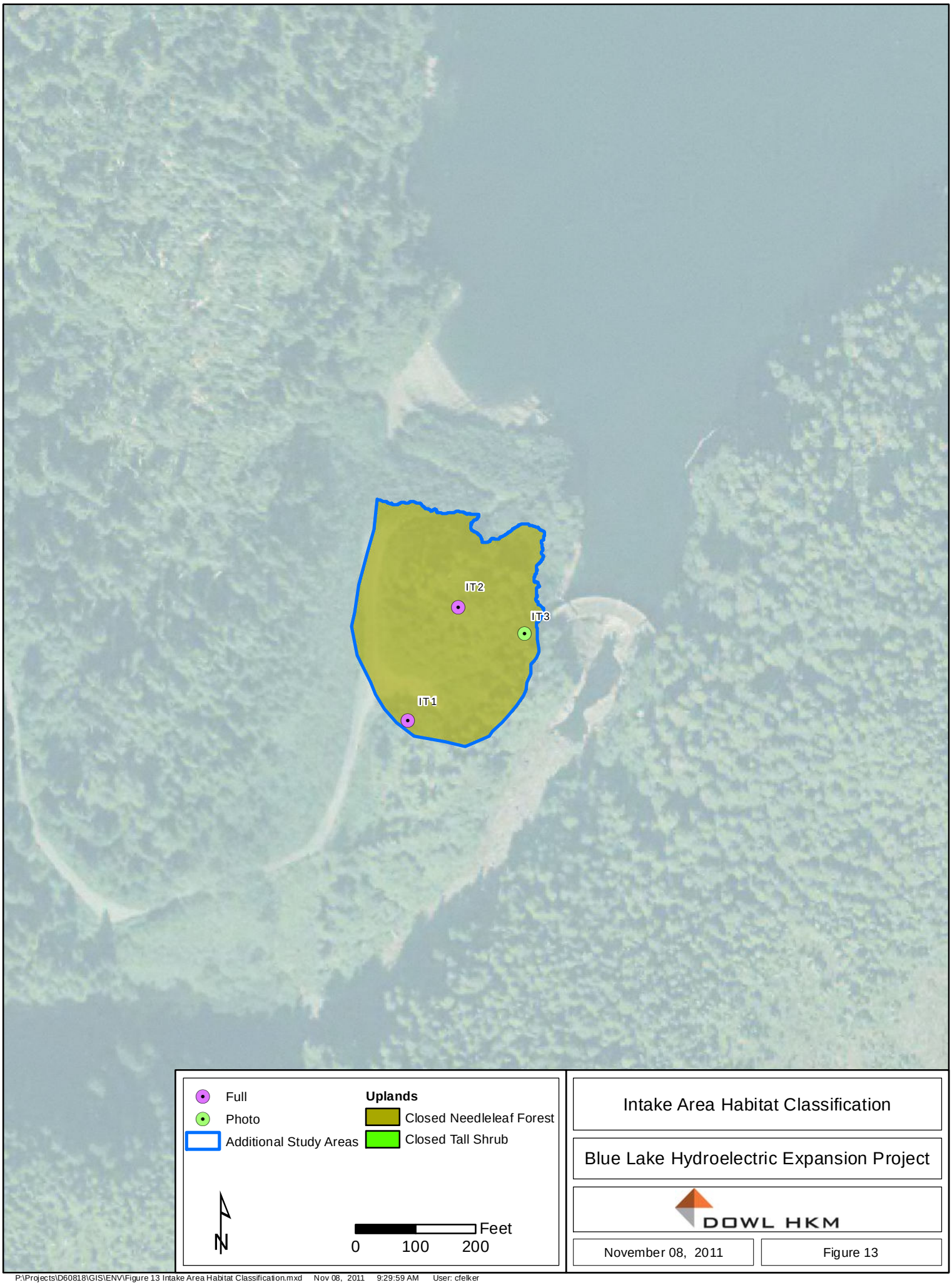
Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011

FIGURE 11

P:\Projects\D60818\GIS\ENV\Figure 2 Proposed Sample Points and Transects.mxd Nov 08, 2011 9:34:57 AM User: cfelker



Intake Area Habitat Classification

Blue Lake Hydroelectric Expansion Project

DOWL HKM

November 08, 2011

Figure 13

P:\Projects\D60818\GIS\ENV\Figure 13 Intake Area Habitat Classification.mxd Nov 08, 2011 9:29:59 AM User: cfelker

APPENDIX B

Sample Points

B1 ..... Full Points

B2 ..... Photograph Points

B1

Full Points

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/23/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: BLN1

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): convex Slope (%): 5

Subregion: Southeast Alaska Lat: 57.0835706 Long: 135.1341514 Datum: NAD83

Soil Map Unit Name: NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:

Forested upland with dense shrubby understory.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	45	Yes	FAC
2.	pisi	Picea sitchensis	40	Yes	FACU
3.					
4.					
		Total Cover:	85		
		50% of total cover: 42.5	20% of total cover: 17		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	50	Yes	NI
2.	rusp	Rubus spectabilis	30	Yes	FACU
3.	mefe	Menziesia ferruginea	10	No	UPL
4.					
5.					
6.					
		Total Cover:	90		
		50% of total cover: 45	20% of total cover: 18		
Herb Stratum					
1.	rupe	Rubus pedatus	15	Yes	FAC
2.	stam	Streptopus amplexifolius	10	No	FAC
3.	blsp	Blechnum spicant	5	No	FAC
4.	coas	Coptis aspleniifolia	10	No	FAC
5.	coca	Cornus canadensis	20	Yes	FACU
6.					
7.					
8.					
9.					
10.					
		Total Cover:	60		
		50% of total cover: 30	20% of total cover: 12		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____

% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	90	x 4 =	360
UPL species	10	x 5 =	50
Column Totals:	185 (A)		665 (B)

Prevalence Index = B/A = 3.59

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

forested upland with dense thicket understory

SOIL

Sampling Point: BLN1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 3/3						OM	damp, fibric

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 6

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/23/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLN2
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 30
Subregion: Southeast Alaska Lat: 57.08100365 Long: 135.1437612 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Sample point representative of recurring closed canopy forest with relatively clear understory along north shore of Blue Lake.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	pisi	Picea sitchensis	80	Yes	FACU
2.	tshe	Tsuga heterophylla	30	Yes	FAC
3.					
4.					
		Total Cover:	110		
		50% of total cover: 55	20% of total cover: 22		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	15	Yes	UPL
2.	opho	Oplopanax horridus	10	Yes	FACU
3.	vapa	Vaccinium parvifolium	5	No	NI
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15	20% of total cover: 6		
Herb Stratum					
1.	stam	Streptopus amplexifolius	5	Yes	FAC
2.	gydr	Gymnocarpium dryopteris	5	Yes	FACU
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	10		
		50% of total cover: 5	20% of total cover: 2		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	95	x 4 =	380
UPL species	15	x 5 =	75
Column Totals:	145 (A)		560 (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: BLN2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	5 YR 3/2						OM	coarse, woody

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 10

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/23/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLN3
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 30
Subregion: Southeast Alaska Lat: 57.08157034 Long: 135.1422222 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Dense Alnus sinuata thicket on steep slope just above existing high water mark. Point is representative of the shrub habitat that separates the existing

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	95	Yes	FAC
2.					
3.					
4.					
		Total Cover:	95		
		50% of total cover: 47.5	20% of total cover:	19	
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	30	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15	20% of total cover:	6	
Herb Stratum					
1.	vasi	Valeriana sitchensis	50	Yes	FAC
2.	smra	Smilacina racemosa	30	No	FAC
3.	lica	Listera caurina	15	No	FACU
4.	atfi	Athyrium filix-femina	10	No	FAC
5.	spha	Sphagnum	60	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	165		
		50% of total cover: 82.5	20% of total cover:	33	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	185	x 3 =	555
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	230 (A)		735 (B)

Prevalence Index = B/A = 3.20

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: BLN3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2						loam	gravel

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 10

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/23/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLN6
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 20
Subregion: Southeast Alaska Lat: 57.08427815 Long: -135.1271316 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Closed canopy, Tsuga heterophylla forested upland with an inter-mixed open and shrubby understory.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	95	Yes	FAC
2.	pisi	Picea sitchensis	10	No	FACU
3.					
4.					
		Total Cover:	105		
		50% of total cover: 52.5	20% of total cover: 21		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	15	Yes	UPL
2.	vapa	Vaccinium parvifolium	15	Yes	NI
3.	opho	Oplopanax horridus	10	Yes	FACU
4.	rusp	Rubus spectabilis	10	Yes	FACU
5.					
6.					
		Total Cover:	50		
		50% of total cover: 25	20% of total cover: 10		
Herb Stratum					
1.	coas	Coptis aspleniifolia	5	No	FAC
2.	coca	Cornus canadensis	15	No	FACU
3.	spha	Sphagnum	65	Yes	NI
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	85		
		50% of total cover: 42.5	20% of total cover: 17		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	45	x 4 =	180
UPL species	15	x 5 =	75
Column Totals:	160 (A)		555 (B)

Prevalence Index = B/A = 3.47

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
closed canopy forest with intermixed open and shrubby understory

SOIL

Sampling Point: BLN6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5 YR 3/3						OM	damp, fibric
3-13	10 YR 4/6						sandy clay	gravel

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 13

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLS2
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.07620674 Long: 135.1215354 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Forested canopy with an open understory with patches of Rubus spectabilis dominated thickets. Point is representative of transitional forested habitats

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	pisi	Picea sitchensis	80	Yes	FACU
2.	tshe	Tsuga heterophylla	10	No	FAC
3.					
4.					
		Total Cover:	90		
		50% of total cover: 45	20% of total cover: 18		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	50	Yes	FACU
2.	opho	Oplopanax horridus	5	No	FACU
3.	sara	Sambucus racemosa	3	No	FACU
4.					
5.					
6.					
		Total Cover:	58		
		50% of total cover: 29	20% of total cover: 11.6		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	20	No	FACU
2.	stam	Streptopus amplexifolius	15	No	FAC
3.	viep	Viola epipsila	8	No	NI
4.	rupe	Rubus pedatus	5	No	FAC
5.	titr	Tiarella trifoliata	2	No	FAC
6.	spha	Sphagnum	80	Yes	NI
7.					
8.					
9.					
10.					
		Total Cover:	130		
		50% of total cover: 65	20% of total cover: 26		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	32	x 3 =	96
FACU species	158	x 4 =	632
UPL species	0	x 5 =	0
Column Totals:	190 (A)		728 (B)

Prevalence Index = B/A = 3.83

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: Forested canopy with an open understory with patches of Rubus spectabilis dominated thickets.

SOIL

Sampling Point: BLS2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/2						clay loam	w/organics
4-19	10 YR 4/4						clay loam	

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots
Depth (inches): 19

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/22/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLS5
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 35
Subregion: Southeast Alaska Lat: 57.07214245 Long: 135.1426454 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Steep hillside, closed canopy forested upland with dense shrub layer.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	pisi	Picea sitchensis	40	Yes	FACU
2.	tshe	Tsuga heterophylla	30	Yes	FAC
3.	chno	Chamaecyparis nootkatensis	10	No	FAC
4.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	30	Yes	UPL
2.	rusp	Rubus spectabilis	20	Yes	FACU
3.	vapa	Vaccinium parvifolium	15	Yes	NI
4.	opho	Oplopanax horridus	10	No	FACU
5.					
6.					
		Total Cover:	75		
		50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum					
1.	stam	Streptopus amplexifolius	20	No	FAC
2.	lico	Listera cordata	5	No	FACU
3.	coas	Coptis aspleniifolia	10	No	FAC
4.	coca	Cornus canadensis	5	No	FACU
5.	lyam	Lysichiton americanum	5	No	OBL
6.	facr	Fauria crista-galli	5	No	FACW
7.	spha	Sphagnum	95	Yes	NI
8.					
9.					
10.					
		Total Cover:	145		
		50% of total cover: 72.5	20% of total cover: 29		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	5	x 2 =	10
FAC species	70	x 3 =	210
FACU species	80	x 4 =	320
UPL species	30	x 5 =	150
Column Totals:	190 (A)		695 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: BLS5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10 YR 3/2						OM	fibric, unsaturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: bedrock
Depth (inches): 9

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/22/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLS7
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): terrace Slope (%): 2
Subregion: Southeast Alaska Lat: 57.07305375 Long: 135.1301552 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Rubus spectabilis dominated thicket between present inundation limit and closed canopy forest.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	alsi	Alnus sinuata	20	Yes	FAC
2.					
3.					
4.					
Total Cover:			20		
50% of total cover:	10	20% of total cover:	4		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	100	Yes	FACU
2.					
3.					
4.					
5.					
6.					
Total Cover:			100		
50% of total cover:	50	20% of total cover:	20		
Herb Stratum					
1.	atfi	Athyrium filix-femina	3	Yes	FAC
2.	viep	Viola epipsila	2	Yes	NI
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Cover:			5		
50% of total cover:	2.5	20% of total cover:	1		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	23	x 3 =	69
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	123 (A)		469 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: BLS7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 3/2						loam	with organics

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/22/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLS8
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.0730928 Long: 135.1290669 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Closed canopy, Picea sitchensis dominated upland forest with relatively open understory.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	pisi	Picea sitchensis	100	Yes	FACU
2.	tshe	Tsuga heterophylla	10	No	FAC
3.					
4.					
		Total Cover:	110		
		50% of total cover: 55		20% of total cover: 22	
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	10	Yes	FACU
2.	opho	Oplopanax horridus	5	Yes	FACU
3.					
4.					
5.					
6.					
		Total Cover:	15		
		50% of total cover: 7.5		20% of total cover: 3	
Herb Stratum					
1.	drdi	Dryopteris dilatata	3	Yes	FACU
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	3		
		50% of total cover: 1.5		20% of total cover: 0.6	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	118	x 4 =	472
UPL species	0	x 5 =	0
Column Totals:	128 (A)		502 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
open understory, close canopy forest

SOIL

Sampling Point: BLS8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	5 YR 4/4						OM	coarse woody fragments

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots
Depth (inches): 7

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/22/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLS11
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 30
Subregion: Southeast Alaska Lat: 57.06800247 Long: 135.1597988 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Steep hillside with mixture of closed canopy forest and shrubby thicket understory.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	50	Yes	FAC
2.	pisi	Picea sitchensis	50	Yes	FACU
3.	alsi	Alnus sinuata	20	No	FAC
4.	chno	Chamaecyparis nootkatensis	5	No	FAC
		Total Cover:	125		
		50% of total cover: 62.5	20% of total cover: 25		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	30	Yes	FACU
2.	opho	Oplopanax horridus	20	Yes	FACU
3.	mefe	Menziesia ferruginea	10	No	UPL
4.	vapa	Vaccinium parvifolium	5	No	NI
5.					
6.					
		Total Cover:	65		
		50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum					
1.	atfi	Athyrium filix-femina	30	No	FAC
2.	gydr	Gymnocarpium dryopteris	20	No	FACU
3.	titr	Tiarella trifoliata	10	No	FAC
4.	viep	Viola epipsila	15	No	NI
5.	coca	Cornus canadensis	5	No	FACU
6.	stam	Streptopus amplexifolius	5	No	FAC
7.	spha	Sphagnum	85	Yes	NI
8.					
9.					
10.					
		Total Cover:	170		
		50% of total cover: 85	20% of total cover: 34		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	120	x 3 =	360
FACU species	125	x 4 =	500
UPL species	10	x 5 =	50
Column Totals:	255 (A)		910 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: BLS11

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5 YR 3/3						OM	dry, fibric

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/22/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: BLS16
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 35
Subregion: Southeast Alaska Lat: 57.06787628 Long: 135.1744601 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Forested canopy of small trees on steep slope and dense understory.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	pisi	Picea sitchensis	30	Yes	FACU
2.	tshe	Tsuga heterophylla	50	Yes	FAC
3.					
4.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	40	Yes	NI
2.	mefe	Menziesia ferruginea	30	Yes	UPL
3.	rusp	Rubus spectabilis	15	No	FACU
4.					
5.					
6.					
		Total Cover:	85		
		50% of total cover: 42.5	20% of total cover: 17		
Herb Stratum					
1.	coca	Cornus canadensis	10	No	FACU
2.	rupe	Rubus pedatus	5	No	FAC
3.	spha	Sphagnum	100	Yes	NI
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	115		
		50% of total cover: 57.5	20% of total cover: 23		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	55	x 4 =	220
UPL species	30	x 5 =	150
Column Totals:	140 (A)		535 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
open canopy forested upland with thick shrubby understory

SOIL

Sampling Point: BLS16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
N/A								vegetation rooted in sphagnum

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots
Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/15/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: T1A

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): sandy bare area

Local relief (concave, convex, none): convex Slope (%): 3

Subregion: Southeast Alaska Lat: 57.07870581 Long: 135.1204608 Datum: NAD83

Soil Map Unit Name: NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 X No
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes x	No	

Remarks:

Lakeshore area below existing spillway elevation, subject to seasonal flooding.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			

Total Cover: 0

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
6.			

Total Cover: 0

50% of total cover: 0 20% of total cover: 0

Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Total Cover: 0

50% of total cover: 0 20% of total cover: 0

Plot size (radius, or length x width) 15 foot radius % Bare Ground

% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	0	x 3 = 0
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column Totals:	0 (A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks:

SOIL

Sampling Point: T1A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5 Y 3/2						loamy sand	
4-18	10 YR 2/2						sand	no structure, loose fine sand

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: boulders
Depth (inches): 18

Hydric Soil Present? Yes _____ No X

Remarks:
No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
X Sediment Deposits (B2)
X Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
X Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
X Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:
Driftwood is present, indicating periodic innundation. This point lies at an elevataion below the existing spillway.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/15/11

Applicant/Owner: City and Borough of Sitka Sampling Point: T1D

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): sandy bare area

Local relief (concave, convex, none): Convex Slope (%): 5

Subregion: Southeast Alaska Lat: 57.07828529 Long: 135.1210377 Datum: NAD83

Soil Map Unit Name: NWI classification:

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes x	No	

Remarks:

Lakeshore area below existing spillway elevation, subject to seasonal flooding.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.					
2.					
3.					
4.					
		Total Cover:	0		
		50% of total cover: 0		20% of total cover: 0	
Sapling/Shrub Stratum					
1.					
2.					
3.					
4.					
5.					
6.					
		Total Cover:	0		
		50% of total cover: 0		20% of total cover: 0	
Herb Stratum					
1.	eqar	Equisetum arvense	25	Yes	FACU
2.	cale	Carex lenticularis	2	No	OBL
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	27		
		50% of total cover: 13.5		20% of total cover: 5.4	

Plot size (radius, or length x width) 15 foot radius % Bare Ground

% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	2	x 1 = 2
FACW species	0	x 2 = 0
FAC species	0	x 3 = 0
FACU species	25	x 4 = 100
UPL species	0	x 5 = 0
Column Totals:	27 (A)	102 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T1D

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	2.5 Y 3/2	100					loamy sand	gravel, woody debris

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots
Depth (inches): 16

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
X Sediment Deposits (B2)
X Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
X Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
X Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Driftwood is present, indicating periodic innundation. This point lies at an elevataion below the existing spillway.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/15/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: T1E

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): concave Slope (%): 5

Subregion: Southeast Alaska Lat: 57.07746678 Long: 135.1201079 Datum: NAD83

Soil Map Unit Name: NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
forested upland

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	30	Yes	FAC
2.	tshe	Tsuga heterophylla	100	Yes	FAC
3.					
4.					
		Total Cover:	130		
		50% of total cover: 65	20% of total cover: 26		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	10	Yes	FACU
2.	rusp	Rubus spectabilis	20	Yes	FACU
3.					
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15	20% of total cover: 6		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	2	No	FACU
2.	spha	Sphagnum	90	Yes	NI
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	92		
		50% of total cover: 46	20% of total cover: 18.4		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____

% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	32	x 4 =	128
UPL species	0	x 5 =	0
Column Totals:	162 (A)		518 (B)

Prevalence Index = B/A = 3.20

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T1E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2						sandy loam	mixed with organic matter
5-18	7.5YR 3/2						gravely loam	gravel present

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 18

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks: No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/15/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T1F
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): _____ Slope (%): 5
Subregion: Southeast Alaska Lat: 57.07681519 Long: 135.1197814 Datum: NAD83
Soil Map Unit Name: _____ NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes _____	No x
Wetland Hydrology Present?	Yes _____	No x

Is the Sampled Area within a Wetland? Yes _____ No x

Remarks:
forested upland

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	70	Yes	FAC
2.	pisi	Picea sitchensis	20	Yes	FACU
3.					
4.					
		Total Cover:	90		
		50% of total cover: 45	20% of total cover: 18		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	50	Yes	FACU
2.	rusp	Rubus spectabilis	20	No	FACU
3.	vapa	Vaccinium parvifolium	30	Yes	NI
4.	mefe	Menziesia ferruginea	40	Yes	UPL
5.					
6.					
		Total Cover:	140		
		50% of total cover: 70	20% of total cover: 28		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	50	Yes	FACU
2.	spha	Sphagnum	95	Yes	NI
3.	stam	Streptopus amplexifolius	10	No	FAC
4.	coas	Coptis aspleniifolia	3	No	FAC
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	158		
		50% of total cover: 79	20% of total cover: 31.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground _____
% Cover of Wetland Bryophytes _____ (Where applicable) Total Cover of Bryophytes _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	83	x 3 =	249
FACU species	140	x 4 =	560
UPL species	40	x 5 =	200
Column Totals:	263 (A)		1009 (B)

Prevalence Index = B/A = 3.84

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No x

Remarks:
dense shrubby vegetation with some downed trees

SOIL

Sampling Point: T1F

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 3/2						organic matt	dense root mass
6-18	10YR 3/2						gravely clay	gravel present

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: root and gravel
Depth (inches): 18

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T1G
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 3
Subregion: Southeast Alaska Lat: 57.07976909 Long: 135.1212949 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	**Is the Sampled Area within a Wetland?** Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Point representative of wetland component of Transect 1 mosaic.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	30	Yes	FAC
2.	pisi	Picea sitchensis	10	Yes	FACU
3.	tshe	Tsuga heterophylla	10	Yes	FAC
4.					
		Total Cover:	50		
		50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum					
1.	vaov	Vaccinium ovalifolium	20	Yes	FAC
2.	mefe	Menziesia ferruginea	5	Yes	UPL
3.					
4.					
5.					
6.					
		Total Cover:	25		
		50% of total cover: 12.5	20% of total cover: 5		
Herb Stratum					
1.	facr	Fauria crista-galli	80	Yes	FACW
2.	lyam	Lysichiton americanum	30	No	OBL
3.	coas	Coptis aspleniifolia	40	No	FAC
4.	rupe	Rubus pedatus	20	No	FAC
5.	vasi	Valeriana sitchensis	10	No	FAC
6.	coca	Cornus canadensis	40	No	FACU
7.	cosu	Cornus suecica	10	No	FAC
8.	elpa	Eleocharis palustris	20	No	OBL
9.	spha	Sphagnum	90	Yes	NI
10.					
		Total Cover:	340		
		50% of total cover: 170	20% of total cover: 68		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	80	x 2 =	160
FAC species	140	x 3 =	420
FACU species	50	x 4 =	200
UPL species	5	x 5 =	25
Column Totals:	325 (A)		855 (B)

Prevalence Index = B/A = 2.63

Hydrophytic Vegetation Indicators:
Y Dominance Test is >50%
Y Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:

SOIL

Sampling Point: T1G

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	5YR 3/3						organics	saturated
8-30	7.45YR 3/3						silty clay	with organics

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
_X_ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _X_ No _____

Remarks:

Thick layers of organic material observed at sample point

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
_X_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _X_ Depth (inches): _____
Water Table Present? Yes _X_ No _____ Depth (inches): 15
Saturation Present? (includes capillary fringe) Yes _X_ No _____ Depth (inches): 12

Wetland Hydrology Present? Yes _X_ No _____

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

Remarks:

Saturation observed at sample point. Wetland hydrology observed at sample point.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T1H
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 3
Subregion: Southeast Alaska Lat: 57.08002772 Long: 135.1214073 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	
Hydric Soil Present?	Yes	No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes	No x	

Remarks:
Point is representative of upland component along Transect 1 mosaic.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	80	Yes	FAC
2.	tshe	Tsuga heterophylla	25	Yes	FAC
3.	pisi	Picea sitchensis	5	No	FACU
4.					
		Total Cover:	110		
		50% of total cover: 55	20% of total cover: 22		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	80	Yes	NI
2.					
3.					
4.					
5.					
6.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		
Herb Stratum					
1.	coca	Cornus canadensis	40	Yes	FACU
2.	coas	Coptis aspleniifolia	20	Yes	FAC
3.	lica	Listera caurina	10	No	FACU
4.	lico	Listera cordata	5	No	FACU
5.	cosu	Cornus suecica	5	No	FAC
6.					
7.					
8.					
9.					
10.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	190 (A)		630 (B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:
Y ___ Dominance Test is >50%
No ___ Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:

SOIL

Sampling Point: T1H

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1						Organics	coarse, identifiable, and dry

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: bedrock
Depth (inches): 16

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/19/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T1K
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 12
Subregion: Southeast Alaska Lat: 57.08373018 Long: 135.123236 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Northern edge of proposed inundation line.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	99	Yes	FAC
2.					
3.					
4.					
		Total Cover:	99		
		50% of total cover: 49.5	20% of total cover: 19.8		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	10	Yes	UPL
2.	opho	Oplopanax horridus	10	Yes	FACU
3.	vapa	Vaccinium parvifolium	10	Yes	NI
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15	20% of total cover: 6		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	10	No	FACU
2.	atfi	Athyrium filix-femina	10	No	FAC
3.	drdi	Dryopteris dilatata	10	No	FACU
4.	coas	Coptis aspleniifolia	10	No	FAC
5.	rupe	Rubus pedatus	5	No	FAC
6.	stam	Streptopus amplexifolius	5	No	FAC
7.	spha	Sphagnum	90	Yes	NI
8.					
9.					
10.					
		Total Cover:	140		
		50% of total cover: 70	20% of total cover: 28		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	129	x 3 =	387
FACU species	30	x 4 =	120
UPL species	10	x 5 =	50
Column Totals:	169 (A)		557 (B)

Prevalence Index = B/A = 3.30

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Forested upland with a semi-open understory

SOIL

Sampling Point: T1K

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 3/3						OM	coarse, partially decomposed, partially identifiable, unsaturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 12

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/19/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T1L
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): none Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08290062 Long: 135.1227261 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Thicket of Rubus spectabilis and Alnus sinuata in transitional area between open lake shore and forested upland.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	30	Yes	FAC
2.	pisi	Picea sitchensis	10	Yes	FACU
3.					
4.					
		Total Cover:	40		
		50% of total cover: 20		20% of total cover: 8	
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	100	Yes	FACU
2.	opho	Oplopanax horridus	30	Yes	FACU
3.					
4.					
5.					
6.					
		Total Cover:	130		
		50% of total cover: 65		20% of total cover: 26	
Herb Stratum					
1.	atfi	Athyrium filix-femina	10	No	FAC
2.	drdi	Dryopteris dilatata	10	No	FACU
3.	vasi	Valeriana sitchensis	5	No	FAC
4.	viep	Viola epipsila	5	No	NI
5.	spha	Sphagnum	50	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	80		
		50% of total cover: 40		20% of total cover: 16	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	150	x 4 =	600
UPL species	0	x 5 =	0
Column Totals:	195 (A)		735 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: Thicket of *Rubus spectabilis* and *Alnus sinuata* in transitional area between open lake shore and

SOIL

Sampling Point: T1L

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/3						loam	dry, loose

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: cobbles
Depth (inches): 10

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/19/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T1O
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.08065491 Long: 135.1217124 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks: Shrubby thicket of Menziesia ferruginea and Vaccinium parvifolium on terrace at drop-off just above Blue Lake. Substrate consists of a sphagnum layer over bedrock

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	20	Yes	FAC
2.	pisi	Picea sitchensis	20	Yes	FACU
3.	tshe	Tsuga heterophylla	20	Yes	FAC
4.					
		Total Cover:	60		
		50% of total cover: 30	20% of total cover: 12		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	80	Yes	UPL
2.	vapa	Vaccinium parvifolium	80	Yes	NI
3.					
4.					
5.					
6.					
		Total Cover:	160		
		50% of total cover: 80	20% of total cover: 32		
Herb Stratum					
1.	lyam	Lysichiton americanum	15	No	OBL
2.	stam	Streptopus amplexifolius	15	No	FAC
3.	blsp	Blechnum spicant	5	No	FAC
4.	rupe	Rubus pedatus	5	No	FAC
5.	coas	Coptis aspleniifolia	5	No	FAC
6.	coca	Cornus canadensis	5	No	FACU
7.	spha	Sphagnum	100	Yes	NI
8.					
9.					
10.					
		Total Cover:	150		
		50% of total cover: 75	20% of total cover: 30		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	25	x 4 =	100
UPL species	80	x 5 =	400
Column Totals:	190 (A)		725 (B)

Prevalence Index = B/A = 3.82

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: Shrubby thicket of *Menziesia ferruginea* and *Vaccinium parvifolium* on terrace at dropoff just above Blue Lake.

SOIL

Sampling Point: T1O

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
n/a								shagnum layer over roots and rock
								no soil profile

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T2A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): cliffside
Local relief (concave, convex, none): concave Slope (%): 60
Subregion: Southeast Alaska Lat: 57.0797254 Long: 135.1192556 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks:
Nearly vertical terrain defined by a 2" mat of sphagnum over bedrock, supporting rooted vegetation.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	50	Yes	FAC
2.	chno	Chamaecyparis nootkatensis	50	Yes	FAC
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	80	Yes	NI
2.					
3.					
4.					
5.					
6.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		
Herb Stratum					
1.	coas	Coptis aspleniifolia	15	No	FAC
2.	stam	Streptopus amplexifolius	15	No	FAC
3.	lica	Listera caurina	8	No	FACU
4.	rupe	Rubus pedatus	5	No	FAC
5.	facr	Fauria crista-galli	5	No	FACW
6.	spha	Sphagnum	100	Yes	NI
7.					
8.					
9.					
10.					
		Total Cover:	148		
		50% of total cover: 74	20% of total cover: 29.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	135	x 3 =	405
FACU species	8	x 4 =	32
UPL species	0	x 5 =	0
Column Totals:	148 (A)		447 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T2A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								bedrock with sphagnum

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: bedrock
Depth (inches): 1

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/19/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: T2D

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): convex Slope (%): 2

Subregion: Southeast Alaska Lat: 57.08200603 Long: 135.1204078 Datum: NAD83

Soil Map Unit Name: NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:

Transition zone between intermittent stream bed and forested upland.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	90	Yes	FAC
2.	pisi	Picea sitchensis	5	No	FACU
3.					
4.					
		Total Cover:	95		
		50% of total cover: 47.5	20% of total cover: 19		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	90	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	90		
		50% of total cover: 45	20% of total cover: 18		
Herb Stratum					
1.	stam	Streptopus amplexifolius	5	No	FAC
2.	vasi	Valeriana sitchensis	3	No	FAC
3.	gydr	Gymnocarpium dryopteris	2	No	FACU
4.	atfi	Athyrium filix-femina	5	No	FAC
5.	smra	Smilacina racemosa	1	No	FAC
6.	spha	Sphagnum	70	Yes	NI
7.					
8.					
9.					
10.					
		Total Cover:	86		
		50% of total cover: 43	20% of total cover: 17.2		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____

% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	104	x 3 =	312
FACU species	97	x 4 =	388
UPL species	0	x 5 =	0
Column Totals:	201 (A)		700 (B)

Prevalence Index = B/A = 3.48

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

Vegetation recruiting on spagnum layer covering rocks. Soil layer absent.

SOIL

Sampling Point: T2D

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
N/A								rock at surface

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T2I
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 5
Subregion: Southeast Alaska Lat: 57.07863801 Long: 135.1186347 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	Is the Sampled Area within a Wetland? Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks: Forested wetland point on north edge of open muskeg. Point is representative of much of the perimeter of the open muskeg.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	pico	Pinus contorta	40	Yes	FAC
2.	chno	Chamaecyparis nootkatensis	30	Yes	FAC
3.	tshe	Tsuga heterophylla	15	No	FAC
4.					
		Total Cover:	85		
		50% of total cover: 42.5	20% of total cover: 17		
Sapling/Shrub Stratum					
1.	vaul	Vaccinium uliginosum	10	Yes	FAC
2.	legr	Ledum groenlandicum	3	No	FACW
3.	mefe	Menziesia ferruginea	20	Yes	UPL
4.	vaox	Vaccinium oxycoccos	5	No	OBL
5.	emni	Empetrum nigrum	3	No	FAC
6.					
		Total Cover:	41		
		50% of total cover: 20.5	20% of total cover: 8.2		
Herb Stratum					
1.	facr	Fauria crista-galli	80	Yes	FACW
2.	coca	Cornus canadensis	50	Yes	FACU
3.	cosu	Cornus suecica	30	No	FAC
4.	coas	Coptis aspleniifolia	5	No	FAC
5.	trar	Trientalis arctica	5	No	FAC
6.					
7.					
8.					
9.					
10.					
		Total Cover:	170		
		50% of total cover: 85	20% of total cover: 34		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	83	x 2 =	166
FAC species	138	x 3 =	414
FACU species	50	x 4 =	200
UPL species	20	x 5 =	100
Column Totals:	296 (A)		885 (B)

Prevalence Index = B/A = 2.99

Hydrophytic Vegetation Indicators:
Y Dominance Test is >50%
Y Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:
Tree species are stunted but growing much larger than in open muskeg

SOIL

Sampling Point: T2I

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	5 YR 3/3						loamy peat	saturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 8

Hydric Soil Present? Yes x No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
x Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No x Depth (inches): ____
Water Table Present? Yes ____ No x Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes x No ____ Depth (inches): 0

Wetland Hydrology Present? Yes x No ____

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

Remarks: Saturation observed at sample point. Wetland hydrology observed at sample point.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T2J
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): muskeg
Local relief (concave, convex, none): concave Slope (%): 2
Subregion: Southeast Alaska Lat: 57.07896389 Long: 135.1187863 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	Is the Sampled Area within a Wetland? Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Open muskeg with depressions of ponded water

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	pico	Pinus contorta	10	Yes	FAC
2.	tshe	Tsuga heterophylla	10	Yes	FAC
3.					
4.					
		Total Cover:	20		
		50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum					
1.	vaul	Vaccinium uliginosum	15	Yes	FAC
2.					
3.					
4.					
5.					
6.					
		Total Cover:	15		
		50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum					
1.	legr	Ledum groenlandicum	8	No	FACW
2.	anpo	Andromeda polifolia	3	No	OBL
3.	emni	Empetrum nigrum	5	No	FAC
4.	elpa	Eleocharis palustris	90	Yes	OBL
5.	eran	Eriophorum angustifolium	1	No	OBL
6.	cosu	Cornus suecica	40	Yes	FAC
7.	drro	Drosera rotundifolia	5	No	OBL
8.	facr	Fauria crista-galli	5	No	FACW
9.	trar	Trientalis arctica	5	No	FAC
10.					
		Total Cover:	162		
		50% of total cover: 81	20% of total cover: 32.4		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	99	x 1 =	99
FACW species	13	x 2 =	26
FAC species	85	x 3 =	255
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	197 (A)		380 (B)

Prevalence Index = B/A = 1.93

Hydrophytic Vegetation Indicators:
Y Dominance Test is >50%
Y Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:
Pinus contorta and *Tsuga heterophylla* are significantly stunted due to saturated conditions

SOIL

Sampling Point: T2J

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	5YR 3/3						Peat	saturated

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

Hydric Soil Indicators:

- [X] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [ ] Alaska Redox (A14)
- [ ] Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- [ ] Alaska Color Change (TA4)[4]
- [ ] Alaska Alpine Swales (TA5)
- [ ] Alaska Redox With 2.5Y Hue
- [ ] Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- [ ] Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes [X] No [ ]

Remarks:

Thick layers of organic material observed at sample point

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [X] Surface Water (A1)
- [X] High Water Table (A2)
- [X] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Dry-Season Water Table (C2)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water-stained Leaves (B9)
- [ ] Drainage Patterns (B10)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Salt Deposits (C5)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes [X]	No [ ]	Depth (inches): 0
Water Table Present?	Yes [X]	No [ ]	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes [X]	No [ ]	Depth (inches): 0

Wetland Hydrology Present? Yes [X] No [ ]

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

Remarks:

Wetland hydrology observed at sample point.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T3A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 3
Subregion: Southeast Alaska Lat: 57.07879187 Long: 135.1162341 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Sample point is representative of wetland component of the Transect 3 wetland/upland mosaic.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	60	Yes	FAC
2.	tshe	Tsuga heterophylla	40	Yes	FAC
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	5	Yes	UPL
2.	rusp	Rubus spectabilis	5	Yes	FACU
3.	vapa	Vaccinium parvifolium	5	Yes	NI
4.					
5.					
6.					
		Total Cover:	15		
		50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum					
1.	stam	Streptopus amplexifolius	30	Yes	FAC
2.	lyam	Lysichiton americanum	15	No	OBL
3.	gydr	Gymnocarpium dryopteris	15	No	FACU
4.	coca	Cornus canadensis	10	No	FACU
5.	rupe	Rubus pedatus	5	No	FAC
6.	coas	Coptis aspleniifolia	5	No	FAC
7.	clsi	Claytonia sibirica	5	No	FACW
8.					
9.					
10.					
		Total Cover:	85		
		50% of total cover: 42.5	20% of total cover: 17		

Plot size (radius, or length x width) 15 foot radius % Bare Ground
% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	5	x 2 =	10
FAC species	140	x 3 =	420
FACU species	30	x 4 =	120
UPL species	5	x 5 =	25
Column Totals:	195 (A)		590 (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No x

Remarks:

SOIL

Sampling Point: T3A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1						sandy loam	moist
4-16	10YR 3/3						sandy clay	reduced iron concretions
16-20	10YR 3/1						sandy clay	reduced iron concretions

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
_X_ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _X_ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
_X_ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
_X_ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
_X_ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _X_ Depth (inches): _____
Water Table Present? Yes _____ No _X_ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _X_ No _____ Depth (inches): 8

Wetland Hydrology Present? Yes _X_ No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T3B
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.07856567 Long: 135.116179 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes ____ No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
Forested upland with shrubby understory, representative of upland component of mosaic along Transect 3.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	60	Yes	FAC
2.	tshe	Tsuga heterophylla	40	Yes	FAC
3.	pisi	Picea sitchensis	10	No	FACU
4.					
		Total Cover:	110		
		50% of total cover: 55	20% of total cover: 22		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	50	Yes	UPL
2.	vapa	Vaccinium parvifolium	40	Yes	NI
3.	rusp	Rubus spectabilis	10	No	FACU
4.					
5.					
6.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Herb Stratum					
1.	lica	Listera caurina	20	No	FACU
2.	stam	Streptopus amplexifolius	15	No	FAC
3.	coas	Coptis aspleniifolia	10	No	FAC
4.	rupe	Rubus pedatus	5	No	FAC
5.	spha	Sphagnum	85	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	135		
		50% of total cover: 67.5	20% of total cover: 27		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	40	x 4 =	160
UPL species	50	x 5 =	250
Column Totals:	220 (A)		800 (B)

Prevalence Index = B/A = 3.64

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Dense shrubby understory of *Menziesia ferruginea* and *Vaccinium parvifolium* .

SOIL

Sampling Point: T3B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 2/2						sandy loam	with organics
11-20	10YR 2/1						sandy clay	dry

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/19/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T3D2
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): lower hillside
Local relief (concave, convex, none): convex Slope (%): 8
Subregion: Southeast Alaska Lat: 57.08320271 Long: 135.1184854 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
Forested upland and northern end of inundation line of Transect 3.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	80	Yes	FAC
2.	pisi	Picea sitchensis	30	Yes	FACU
3.					
4.					
		Total Cover:	110		
		50% of total cover: 55	20% of total cover: 22		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	40	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	40		
		50% of total cover: 20	20% of total cover: 8		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	40	No	FACU
2.	drdi	Dryopteris dilatata	30	No	FACU
3.	viep	Viola epipsila	50	No	NI
4.	vasi	Valeriana sitchensis	60	Yes	FAC
5.	titr	Tiarella trifoliata	20	No	FAC
6.	stam	Streptopus amplexifolius	5	No	FAC
7.	rupe	Rubus pedatus	5	No	FAC
8.	spha	Sphagnum	90	Yes	NI
9.					
10.					
		Total Cover:	300		
		50% of total cover: 150	20% of total cover: 60		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	170	x 3 =	510
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals:	310 (A)		1070 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:
No ___ Dominance Test is >50%
No ___ Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Semi-open understory of forested upland - understory shrub layer dominated by Oplopanax horridus.

SOIL

Sampling Point: T3D2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3						loam	dry with organics

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: cobbles
Depth (inches): 12

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T4A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 15
Subregion: Southeast Alaksa Lat: 57.07799089 Long: 135.1136584 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Forested uplands on the steep, north-facing slopes on the south side of Blue Lake Creek.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	5	No	FAC
2.	tshe	Tsuga heterophylla	95	Yes	FAC
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	50	Yes	UPL
2.	vapa	Vaccinium parvifolium	50	Yes	NI
3.					
4.					
5.					
6.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Herb Stratum					
1.	coca	Cornus canadensis	20	No	FACU
2.	lica	Listera caurina	10	No	FACU
3.	lico	Listera cordata	10	No	FACU
4.	rupe	Rubus pedatus	10	No	FAC
5.	stam	Streptopus amplexifolius	10	No	FAC
6.	coas	Coptis aspleniifolia	5	No	FAC
7.	gydr	Gymnocarpium dryopteris	5	No	FACU
8.	spha	Sphagnum	75	Yes	NI
9.					
10.					
		Total Cover:	145		
		50% of total cover: 72.5	20% of total cover: 29		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	125	x 3 = 375
FACU species	45	x 4 = 180
UPL species	50	x 5 = 250
Column Totals:	220 (A)	805 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Tsuga heterophylla dominated canopy with semi-open understory.

SOIL

Sampling Point: T4A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	5YR 3/2						OM	partially decomposed
								coars, unsaturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots, woody debris
Depth (inches): 10

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: T4C

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): concave Slope (%): 2

Subregion: Southeast Alaska Lat: 57.07883937 Long: 135.1140046 Datum: NAD83

Soil Map Unit Name: NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:

Edge of transition zone from *Alnus sinuata* lined creek bank to forested upland

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	pisi	Picea sitchensis	100	Yes	FACU
2.	tshe	Tsuga heterophylla	100	Yes	FAC
3.	alsi	Alnus sinuata	30	No	FAC
4.					

Total Cover: 230

50% of total cover: 115 20% of total cover: 46

Sapling/Shrub Stratum					
1.	coca	Cornus canadensis	15	Yes	FACU
2.	vapa	Vaccinium parvifolium	5	Yes	NI
3.					
4.					
5.					
6.					

Total Cover: 20

50% of total cover: 10 20% of total cover: 4

Herb Stratum					
1.	rupe	Rubus pedatus	20	No	FAC
2.	coas	Coptis aspleniifolia	20	No	FAC
3.	stam	Streptopus amplexifolius	20	No	FAC
4.	gydr	Gymnocarpium dryopteris	20	No	FACU
5.	clsi	Claytonia sibirica	10	No	FACW
6.	spha	Sphagnum	65	Yes	NI
7.					
8.					
9.					
10.					

Total Cover: 155

50% of total cover: 77.5 20% of total cover: 31

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____

% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____

(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	190	x 3 =	570
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals:	335 (A)		1130 (B)

Prevalence Index = B/A = 3.37

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T4C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR3/3						fine sand	loose, very dry

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: T4D

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): concave Slope (%): 2

Subregion: Southeast Alaska Lat: 57.07900639 Long: 135.1140111 Datum: NAD83

Soil Map Unit Name: NWI classification:

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

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	**Is the Sampled Area within a Wetland?** Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:

Representative wetland habitat contributing to the wetland/upland mosaic along Transect 4.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.					
2.					
3.					
4.					
Total Cover: 0					
50% of total cover: 0		20% of total cover: 0			
Sapling/Shrub Stratum					
1.					
2.					
3.					
4.					
5.					
6.					
Total Cover: 0					
50% of total cover: 0		20% of total cover: 0			
Herb Stratum					
1.	lyam	Lysichiton americanum	80	Yes	OBL
2.	stam	Streptopus amplexifolius	5	No	FAC
3.	spha	Sphagnum	60	Yes	NI
4.					
5.					
6.					
7.					
8.					
9.					
10.					
Total Cover: 145					
50% of total cover: 72.5		20% of total cover: 29			

Plot size (radius, or length x width) 15 foot radius % Bare Ground

% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		95 (B)

Prevalence Index = B/A = 1.12

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

Y Prevalence Index is ≤3.0

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:

SOIL

Sampling Point: T4D

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1						organics	
5-25	10YR 3/1						silty clay	saturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes X No _____ Depth (inches): 17
Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 12

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: T4E

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): convex Slope (%): 2

Subregion: Southeast Alaska Lat: 57.07920896 Long: 135.1141554 Datum: NAD83

Soil Map Unit Name: NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:

Representative upland habitat contributing to the wetland/upland mosaic along Transect 4.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	100	Yes	FAC
2.	chno	Chamaecyparis nootkatensis	30	Yes	FAC
3.					
4.					
		Total Cover:	130		
		50% of total cover: 65	20% of total cover: 26		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	20	Yes	NI
2.	mefe	Menziesia ferruginea	10	Yes	UPL
3.					
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15	20% of total cover: 6		
Herb Stratum					
1.	coca	Cornus canadensis	15	No	FACU
2.	rupe	Rubus pedatus	15	No	FAC
3.	coas	Coptis aspleniifolia	5	No	FAC
4.	stam	Streptopus amplexifolius	3	No	FAC
5.	spha	Sphagnum	100	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	138		
		50% of total cover: 69	20% of total cover: 27.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____

% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	153	x 3 =	459
FACU species	15	x 4 =	60
UPL species	10	x 5 =	50
Column Totals:	178 (A)		569 (B)

Prevalence Index = B/A = 3.20

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T4E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	5YR 3/3						organic	coarse woody debris
9-20	10YR 3/1						silty clay	

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T5A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): braided drainage
Local relief (concave, convex, none): concave Slope (%): 5
Subregion: Southeast Alaska Lat: 57.0803249 Long: 135.1126265 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	**Is the Sampled Area within a Wetland?** Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Small, 3' wide braided drainage extends throughout Transect 5

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.					
2.					
3.					
4.					
		Total Cover:	0		
		50% of total cover: 0		20% of total cover: 0	
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	20	Yes	UPL
2.	vapa	Vaccinium parvifolium	10	Yes	NI
3.					
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15		20% of total cover: 6	
Herb Stratum					
1.	lyam	Lysichiton americanum	30	Yes	OBL
2.	stam	Streptopus amplexifolius	5	No	FAC
3.	moun	Moneses uniflora	1	No	FAC
4.	coca	Cornus canadensis	2	No	FACU
5.	spha	Sphagnum	80	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	118		
		50% of total cover: 59		20% of total cover: 23.6	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	6	x 3 =	18
FACU species	2	x 4 =	8
UPL species	20	x 5 =	100
Column Totals:	58 (A)		156 (B)

Prevalence Index = B/A = 2.69

Hydrophytic Vegetation Indicators:
No ___ Dominance Test is >50%
Y ___ Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:
Menziesia ferruginea, *Vaccinium parvifolium*, and *Cornus canadensis* growing in sphagnum on hummocks adjacent to drainage feature.

SOIL

Sampling Point: T5A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
								standing water
								organic substrate

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

X Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 3
Water Table Present? Yes X No _____ Depth (inches): 0
Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

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

Remarks: Surface water observed at sample location. Wetland hydrology observed at sample point.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T5E
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 35
Subregion: Southeast Alaska Lat: 57.07803735 Long: 135.1114801 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Very steep north facing hillside sloping toward Blue Lake Creek. Site indicative of forested uplands on south side of Blue Lake Creek.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	100	Yes	FAC
2.	pisi	Picea sitchensis	30	Yes	FACU
3.					
4.					
		Total Cover:	130		
		50% of total cover: 65	20% of total cover: 26		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	5	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	5		
		50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	0	No	FACU
2.	atfi	Athyrium filix-femina	30	Yes	FAC
3.	stam	Streptopus amplexifolius	20	Yes	FAC
4.	rupe	Rubus pedatus	3	No	FAC
5.	spha	Sphagnum	30	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	83		
		50% of total cover: 41.5	20% of total cover: 16.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	153	x 3 =	459
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	188 (A)		599 (B)

Prevalence Index = B/A = 3.19

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: Forested wetland with sparse understory.

SOIL

Sampling Point: T5E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	5YR 3/3						OM	partially decomposed
								coarse, unsaturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T6A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): steep hillside
Local relief (concave, convex, none): convex Slope (%): 30
Subregion: Southeast Alaska Lat: 57.07845708 Long: 135.1096974 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Steep hillside sloping to Blue Lake Creek. Soil is absent. Vegetation is rooted in sphagnum covering rocks.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	50	Yes	FAC
2.					
3.					
4.					
		Total Cover:	50		
		50% of total cover: 25		20% of total cover: 10	
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	100	Yes	FACU
2.	opho	Oplopanax horridus	10	No	FACU
3.					
4.					
5.					
6.					
		Total Cover:	110		
		50% of total cover: 55		20% of total cover: 22	
Herb Stratum					
1.	atfi	Athyrium filix-femina	20	No	FAC
2.	gydr	Gymnocarpium dryopteris	15	No	FACU
3.	vasi	Valeriana sitchensis	10	No	FAC
4.	stam	Streptopus amplexifolius	5	No	FAC
5.	titr	Tiarella trifoliata	5	No	FAC
6.	coco	Conocephalum conicum	1	No	OBL
7.	spha	Sphagnum	80	Yes	NI
8.					
9.					
10.					
		Total Cover:	136		
		50% of total cover: 68		20% of total cover: 27.2	

Plot size (radius, or length x width) 15 foot radius % Bare Ground
% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	216 (A)		771 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No x

Remarks:

SOIL

Sampling Point: T6A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: Rock
Depth (inches): <1

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T6C
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): river bar
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.07936929 Long: 135.1100989 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes x	No

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Sample point is river bar within the braids of Blue Lake Creek. Seasonal flooding occurs.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	pisi	Picea sitchensis	50	Yes	FACU
2.	tshe	Tsuga heterophylla	40	Yes	FAC
3.	alsi	Alnus sinuata	20	No	FAC
4.					
		Total Cover:	110		
		50% of total cover: 55		20% of total cover: 22	
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	40	Yes	FACU
2.	rusp	Rubus spectabilis	25	Yes	FACU
3.					
4.					
5.					
6.					
		Total Cover:	65		
		50% of total cover: 32.5		20% of total cover: 13	
Herb Stratum					
1.	viep	Viola epipsila	50	No	NI
2.	atfi	Athyrium filix-femina	35	No	FAC
3.	gydr	Gymnocarpium dryopteris	40	No	FACU
4.	titr	Tiarella trifoliata	20	No	FAC
5.	vasi	Valeriana sitchensis	10	No	FAC
6.	stam	Streptopus amplexifolius	4	No	FAC
7.	eqar	Equisetum arvense	3	No	FACU
8.	spha	Sphagnum	90	Yes	NI
9.					
10.					
		Total Cover:	252		
		50% of total cover: 126		20% of total cover: 50.4	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	129	x 3 =	387
FACU species	158	x 4 =	632
UPL species	0	x 5 =	0
Column Totals:	287 (A)		1019 (B)

Prevalence Index = B/A = 3.55

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T6C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: Rock
Depth (inches): <1

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
X Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
X Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T6E
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.07977636 Long: 135.1102867 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	**Is the Sampled Area within a Wetland?** Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	pisi	Picea sitchensis	80	Yes	FACU
2.	tshe	Tsuga heterophylla	50	Yes	FAC
3.					
4.					
		Total Cover:	130		
		50% of total cover: 65		20% of total cover: 26	
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	3	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	3		
		50% of total cover: 1.5		20% of total cover: 0.6	
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	40	Yes	FACU
2.	stam	Streptopus amplexifolius	10	No	FAC
3.	eqar	Equisetum arvense	2	No	FACU
4.	spha	Sphagnum	20	Yes	NI
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	72		
		50% of total cover: 36		20% of total cover: 14.4	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____ (Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	185 (A)		680 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T6E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	5YR 3/3						organics	partially decomposed, dry
3-38	10YR 3/3						sand	loose, fine, no structure

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T6F
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.07990705 Long: 135.1102236 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	**Is the Sampled Area within a Wetland?** Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	80	Yes	FAC
2.	pisi	Picea sitchensis	30	Yes	FACU
3.					
4.					
		Total Cover:	110		
		50% of total cover: 55		20% of total cover: 22	
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	80	Yes	FACU
2.	rusp	Rubus spectabilis	20	Yes	FACU
3.					
4.					
5.					
6.					
		Total Cover:	100		
		50% of total cover: 50		20% of total cover: 20	
Herb Stratum					
1.	atfi	Athyrium filix-femina	40	No	FAC
2.	stam	Streptopus amplexifolius	30	No	FAC
3.	vasi	Valeriana sitchensis	30	No	FAC
4.	gydr	Gymnocarpium dryopteris	20	No	FACU
5.	titr	Tiarella trifoliata	10	No	FAC
6.	lica	Listera caurina	10	No	FACU
7.	viep	Viola epipsila	5	No	NI
8.	smra	Smilacina racemosa	3	No	FAC
9.	spha	Sphagnum	70	Yes	NI
10.					
		Total Cover:	218		
		50% of total cover: 109		20% of total cover: 43.6	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	193	x 3 =	579
FACU species	160	x 4 =	640
UPL species	0	x 5 =	0
Column Totals:	353 (A)		1219 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T6F

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1						organics	partially decomposed
4-28	10YR 3/3						sand	loose, fine

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T6G
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): drainage feature
Local relief (concave, convex, none): concave Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08026075 Long: 135.1104254 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	Is the Sampled Area within a Wetland? Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Braided depressional drainage with intermittent surface water, dominated by Lysichiton americanum.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.					
2.					
3.					
4.					
		Total Cover:	0		
		50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	10	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	10		
		50% of total cover: 5	20% of total cover: 2		
Herb Stratum					
1.	lyam	Lysichiton americanum	90	Yes	OBL
2.	vasi	Valeriana sitchensis	50	Yes	FAC
3.	cila	Cinna latifolia	20	No	OBL
4.	viep	Viola epipsila	20	No	NI
5.	atfi	Athyrium filix-femina	20	No	FAC
6.	smra	Smilacina racemosa	15	No	FAC
7.	stam	Streptopus amplexifolius	5	No	FAC
8.	titr	Tiarella trifoliata	5	No	FAC
9.					
10.					
		Total Cover:	225		
		50% of total cover: 112.5	20% of total cover: 45		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	110	x 1 =	110
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	215 (A)		435 (B)

Prevalence Index = B/A = 2.02

Hydrophytic Vegetation Indicators:
Y Dominance Test is >50%
Y Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:

SOIL

Sampling Point: T6G

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/1						organics	moist
1-5	10YR 2/2						sand	fine, damp
5-15	10YR 3/1		5YR 3/3	20	C	PL, M	sandy clay	abundant redox

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
X Oxidized Rhizospheres along Living Roots (C3)
X Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes X No _____ Depth (inches): 12
Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 10

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/18/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T6H
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 10
Subregion: Southeast Alaska Lat: 57.08079392 Long: 135.1105991 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	80	Yes	FAC
2.	chno	Chamaecyparis nootkatensis	80	Yes	FAC
3.	pisi	Picea sitchensis	10	No	FACU
4.					
		Total Cover:	170		
		50% of total cover: 85	20% of total cover: 34		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	40	Yes	NI
2.	mefe	Menziesia ferruginea	40	Yes	UPL
3.					
4.					
5.					
6.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		
Herb Stratum					
1.	coca	Cornus canadensis	20	No	FACU
2.	lica	Listera caurina	10	No	FACU
3.	stam	Streptopus amplexifolius	5	No	FAC
4.	rupe	Rubus pedatus	5	No	FAC
5.	spha	Sphagnum	80	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	120		
		50% of total cover: 60	20% of total cover: 24		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	170	x 3 =	510
FACU species	40	x 4 =	160
UPL species	40	x 5 =	200
Column Totals:	250 (A)		870 (B)

Prevalence Index = B/A = 3.48

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T6H

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 3/3						organics	partially decomposed

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots
Depth (inches): 12

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/17/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T8A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 8
Subregion: Southeast Alaska Lat: 57.08091968 Long: 135.1065244 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Forested upland along the north edge of the proposed inundation area with a mixed canopy of Tsuga heterophylla and Picea sitchensis

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	70	Yes	FAC
2.	pisi	Picea sitchensis	60	Yes	FACU
3.	chno	Chamaecyparis nootkatensis	30	No	FAC
4.					
		Total Cover:	160		
		50% of total cover: 80	20% of total cover: 32		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	40	Yes	NI
2.	coca	Cornus canadensis	3	No	FACU
3.					
4.					
5.					
6.					
		Total Cover:	43		
		50% of total cover: 21.5	20% of total cover: 8.6		
Herb Stratum					
1.	spha	Sphagnum	90	Yes	NI
2.	rupe	Rubus pedatus	5	No	FAC
3.	lica	Listera caurina	3	No	FACU
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	98		
		50% of total cover: 49	20% of total cover: 19.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	66	x 4 =	264
UPL species	0	x 5 =	0
Column Totals:	171 (A)		579 (B)

Prevalence Index = B/A = 3.39

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: T8A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2						OM	coarse organic matter

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: woody debris, root mass
Depth (inches): 4

Hydric Soil Present? Yes _____ No X

Remarks:

Density of coarse woody debris and root biomass prevented penetration with either spade or auger.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/17/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T10D
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08064445 Long: 135.1018755 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
Dense shrubby thicket dominate by Alnus sinuata with loose, sandy soil, adjacent to Blue Lake Creek.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	50	Yes	FAC
2.	pisi	Picea sitchensis	20	Yes	FACU
3.					
4.					
		Total Cover:	70		
		50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	40	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	40		
		50% of total cover: 20	20% of total cover: 8		
Herb Stratum					
1.	titr	Tiarella trifoliata	5	No	FAC
2.	vasi	Valeriana sitchensis	90	Yes	FAC
3.	viep	Viola epipsila	40	Yes	NI
4.	atfi	Athyrium filix-femina	10	No	FAC
5.	hela	Heracleum lanatum	10	No	FACU
6.	smra	Smilacina racemosa	2	No	FAC
7.	cila	Cinna latifolia	15	No	OBL
8.	clsi	Claytonia sibirica	10	No	FACW
9.	eqar	Equisetum arvense	3	No	FACU
10.					
		Total Cover:	185		
		50% of total cover: 92.5	20% of total cover: 37		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	10	x 2 =	20
FAC species	157	x 3 =	471
FACU species	73	x 4 =	292
UPL species	0	x 5 =	0
Column Totals:	255 (A)		798 (B)

Prevalence Index = B/A = 3.13

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Thicket adjacent to Blue Lake Creek with 2" thick sphagnum organic layer.

SOIL

Sampling Point: T10D

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR3/3						sand	loose, fine sand - no structure

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/17/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T11C
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): streamside depression
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08086539 Long: 135.1004179 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Dense shrubby growth in forested canopy

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	30	Yes	FAC
2.	pico	Pinus contorta	20	Yes	FAC
3.	pisi	Picea sitchensis	20	Yes	FACU
4.					
		Total Cover:	70		
		50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	80	Yes	FACU
2.	mefe	Menziesia ferruginea	2	No	UPL
3.					
4.					
5.					
6.					
		Total Cover:	82		
		50% of total cover: 41	20% of total cover: 16.4		
Herb Stratum					
1.	viep	Viola epipsila	80	Yes	NI
2.	gydr	Gymnocarpium dryopteris	50	No	FACU
3.	drdi	Dryopteris dilatata	10	No	FACU
4.	atfi	Athyrium filix-femina	20	No	FAC
5.	vasi	Valeriana sitchensis	70	Yes	FAC
6.	smra	Smilacina racemosa	2	No	FAC
7.	lyam	Lysichiton americanum	1	No	OBL
8.	titr	Tiarella trifoliata	5	No	FAC
9.	spha	Sphagnum	80	Yes	NI
10.					
		Total Cover:	318		
		50% of total cover: 159	20% of total cover: 63.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground
% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	1	x 1 = 1
FACW species	0	x 2 = 0
FAC species	147	x 3 = 441
FACU species	160	x 4 = 640
UPL species	2	x 5 = 10
Column Totals:	310 (A)	1092 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No x

Remarks:
Dense *Oplopanax horridus* thicket with few patches of *Lysichiton americanum* .

SOIL

Sampling Point: T11C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR2/2						organics	
5-20	10YR3/2	85	5yr3/3	15	C	M	silty clay	

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
X Oxidized Rhizospheres along Living Roots (C3)
X Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/17/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T11D
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08213967 Long: 135.1010127 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
Clear understory, closed canopy forested upland.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	50	Yes	FAC
2.	pisi	Picea sitchensis	50	Yes	FACU
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	5	Yes	NI
2.					
3.					
4.					
5.					
6.					
		Total Cover:	5		
		50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	20	No	FACU
2.	stam	Streptopus amplexifolius	10	No	FAC
3.	atfi	Athyrium filix-femina	5	No	FAC
4.	titr	Tiarella trifoliata	2	No	FAC
5.	spha	Sphagnum	70	Yes	NI
6.					
7.					
8.					
9.					
10.					
		Total Cover:	107		
		50% of total cover: 53.5	20% of total cover: 21.4		

Plot size (radius, or length x width) 15 foot radius % Bare Ground
% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	67	x 3 =	201
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	137 (A)		481 (B)

Prevalence Index = B/A = 3.51

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No x

Remarks:
Very open understory and groundcover

SOIL

Sampling Point: T11D

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	5 YR 3/3						OM	coarse, woody, dry
8-16	10 YR 3/2						sandy clay	very dry

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots
Depth (inches): 16

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/17/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T11E
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): bottom of toeslope
Local relief (concave, convex, none): concave Slope (%): 1
Subregion: Southeast Alaska Lat: 57.08234263 Long: 135.1011228 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes x No
Hydric Soil Present?	Yes x	No	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Small 20' wide wetland area at base of rise where proposed inundation line lies.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	50	Yes	FAC
2.	pisi	Picea sitchensis	50	Yes	FACU
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	2	Yes	FACU
2.					
3.					
4.					
5.					
6.					
		Total Cover:	2		
		50% of total cover: 1	20% of total cover: 0.4		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	50	No	FACU
2.	atfi	Athyrium filix-femina	40	No	FAC
3.	lyam	Lysichiton americanum	30	No	OBL
4.	smra	Smilacina racemosa	30	No	FAC
5.	titr	Tiarella trifoliata	5	No	FAC
6.	viep	Viola epipsila	5	No	NI
7.	stam	Streptopus amplexifolius	2	No	FAC
8.	spha		90	Yes	NI
9.					
10.					
		Total Cover:	252		
		50% of total cover: 126	20% of total cover: 50.4		

Plot size (radius, or length x width) 15 foot radius % Bare Ground
% Cover of Wetland Bryophytes (Where applicable) Total Cover of Bryophytes

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	127	x 3 =	381
FACU species	102	x 4 =	408
UPL species	0	x 5 =	0
Column Totals:	259 (A)		819 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No x

Remarks:

SOIL

Sampling Point: T11E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 2/2						OM	
3-10	10 YR 3/2						sandy clay	redox features
10-22	10 YR 2/2						sandy clay	loose dry

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
X Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
X Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T13B
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08269751 Long: 135.0960717 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Dense shrubby growth in forested canopy

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	100	Yes	FAC
2.					
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50		20% of total cover: 20	
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	80	Yes	FACU
2.	mefe	Menziesia ferruginea	15	No	UPL
3.					
4.					
5.					
6.					
		Total Cover:	95		
		50% of total cover: 47.5		20% of total cover: 19	
Herb Stratum					
1.	atfi	Athyrium filix-femina	5	Yes	FAC
2.	viep	Viola epipsila	5	Yes	NI
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	10		
		50% of total cover: 5		20% of total cover: 2	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	80	x 4 =	320
UPL species	15	x 5 =	75
Column Totals:	200 (A)		710 (B)

Prevalence Index = B/A = 3.55

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Densely vegetated thicket of *Alnus sinuata* and *Rubus spectabili*s.

SOIL

Sampling Point: T13B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2						organic matt	damp
3-25	10YR3/2						sand	dry

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: gravel
Depth (inches): 25

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/20/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T13D
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): Hisslide
Local relief (concave, convex, none): concave Slope (%): 8
Subregion: Southeast Alaska Lat: 57.0819898 Long: 135.0956849 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Rubus spectabilis thicket on steep north-facing slope, sloping toward Blue Lake Creek. Habitat is representative of thickets on south side of Blue Lake Creek.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	alsi	Alnus sinuata	80	Yes	FAC
2.					
3.					
4.					
Total Cover:			80		
50% of total cover: 40			20% of total cover: 16		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	100	Yes	FACU
2.	opho	Oplopanax horridus	10	No	FACU
3.					
4.					
5.					
6.					
Total Cover:			110		
50% of total cover: 55			20% of total cover: 22		
Herb Stratum					
1.	gydr	Gymnocarpium dryopteris	60	Yes	FACU
2.	atfi	Athyrium filix-femina	10	No	FAC
3.	coas	Coptis aspleniifolia	5	No	FAC
4.	spha	Sphagnum	20	Yes	NI
5.					
6.					
7.					
8.					
9.					
10.					
Total Cover:			95		
50% of total cover: 47.5			20% of total cover: 19		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	170	x 4 =	680
UPL species	0	x 5 =	0
Column Totals:	265 (A)		965 (B)

Prevalence Index = B/A = 3.64

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: *Rubus spectabilis* thicket.

SOIL

Sampling Point: T13D

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3						OM	coarse, fibric, unsaturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):
Type: bedrock, roots
Depth (inches): 8

Hydric Soil Present? Yes _____ No X

Remarks:
No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:
No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T14C
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08148192 Long: 135.0910199 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
Dense shrubby growth in forested canopy

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	pisi	Picea sitchensis	60	Yes	FACU
2.	tshe	Tsuga heterophylla	60	Yes	FAC
3.					
4.					
		Total Cover:	120		
		50% of total cover: 60	20% of total cover: 24		
Sapling/Shrub Stratum					
1.	opho	Oplopanax horridus	50	Yes	FACU
2.	vapa	Vaccinium parvifolium	40	Yes	NI
3.	mefe	Menziesia ferruginea	30	Yes	UPL
4.					
5.					
6.					
		Total Cover:	120		
		50% of total cover: 60	20% of total cover: 24		
Herb Stratum					
1.	spha	Sphagnum	90	Yes	NI
2.	coas	Coptis aspleniifolia	50	Yes	FAC
3.	drdi	Dryopteris dilatata	35	No	FACU
4.	gydr	Gymnocarpium dryopteris	15	No	FACU
5.	coca	Cornus canadensis	15	No	FACU
6.					
7.					
8.					
9.					
10.					
		Total Cover:	205		
		50% of total cover: 102.5	20% of total cover: 41		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 29% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	110	x 3 =	330
FACU species	175	x 4 =	700
UPL species	30	x 5 =	150
Column Totals:	315 (A)		1180 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Cornus canadensis growing on downed trees covered in sphagnum.

SOIL

Sampling Point: T14C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2						clay with OM	damp
5-12	10TR3/2						sandy clay	damp

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: cobbles and tree roots
Depth (inches): 12

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T15A
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside with hummocks
Local relief (concave, convex, none): convex Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08287855 Long: 135.0873757 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Sample point is and open understory, forested canopy at near the north edge of the project area and is representative of the upland habitats along the Transect 15 mosaic line.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	70	Yes	FAC
2.					
3.					
4.					
		Total Cover:	70		
		50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	50	Yes	NI
2.	opho	Oplopanax horridus	10	No	FACU
3.					
4.					
5.					
6.					
		Total Cover:	60		
		50% of total cover: 30	20% of total cover: 12		
Herb Stratum					
1.	spha	Sphagnum	80	Yes	NI
2.	coas	Coptis aspleniifolia	70	Yes	FAC
3.	stam	Streptopus amplexifolius	10	No	FAC
4.	lica	Listera caurina	5	No	FACU
5.	atfi	Athyrium filix-femina	5	No	FAC
6.					
7.					
8.					
9.					
10.					
		Total Cover:	170		
		50% of total cover: 85	20% of total cover: 34		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	155	x 3 =	465
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	170 (A)		525 (B)

Prevalence Index = B/A = 3.09

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: downed trees create hummocks

SOIL

Sampling Point: T15A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2							partially decomposed OM
5-15	10YR 4/3						sandy clay	
15-25	10YR 3/2						sandy loam	some gravel

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T15B
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): concave Slope (%): 2
Subregion: Southeast Alaska Lat: 57.0827494 Long: 135.0873179 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	No	
Hydric Soil Present?	Yes	No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes x	No	

Remarks:
Sample point is representative of wetland habitat occurring along Transect 15 mosaic line.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.					
2.					
3.					
4.					
		Total Cover:	0		
		50% of total cover:	0	20% of total cover:	0
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	20	Yes	NI
2.					
3.					
4.					
5.					
6.					
		Total Cover:	20		
		50% of total cover:	10	20% of total cover:	4
Herb Stratum					
1.	lyam	Lysichiton americanum	30	No	OBL
2.	gydr	Gymnocarpium dryopteris	10	No	FACU
3.	clsi	Claytonia sibirica	10	No	FACW
4.	coas	Coptis aspleniifolia	10	No	FAC
5.	stam	Streptopus amplexifolius	5	No	FAC
6.	spha	Sphagnum	90	Yes	NI
7.					
8.					
9.					
10.					
		Total Cover:	155		
		50% of total cover:	77.5	20% of total cover:	31

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	65 (A)		135 (B)

Prevalence Index = B/A = 2.08

Hydrophytic Vegetation Indicators:
No ___ Dominance Test is >50%
Y ___ Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks:
Gymnocarpium dryopteris growing primarily on elevated hummocks of downed trees covered in

SOIL

Sampling Point: T15B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1						peat	
6-20	10YR3/2						sandy clay	gravel present

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes X No _____ Depth (inches): 17
Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 8

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Saturation observed at sample point. Wetland hydrology observed at sample point.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T16B
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): riverbank
Local relief (concave, convex, none): none Slope (%): 0
Subregion: Southeast Alaska Lat: 57.07952838 Long: 135.0843235 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Raised stream bank that is seasonally inundated by Blue Lake Creek. Substrate is cobble covered in sphagnum.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	pisi	Picea sitchensis	10	Yes	FACU
2.	alsi	Alnus sinuata	5	Yes	FAC
3.					
4.					

Total Cover: 15
50% of total cover: 7.5 20% of total cover: 3

Sapling/Shrub Stratum					
1.					
2.					
3.					
4.					
5.					
6.					

Total Cover: 0
50% of total cover: 0 20% of total cover: 0

Herb Stratum					
1.	spha	Sphagnum	90	Yes	NI
2.	caca	Calamagrostis canadensis	5	No	FAC
3.	hela	Heracleum lanatum	5	No	FACU
4.	epan	Epilobium angustifolium	5	No	FAC
5.					
6.					
7.					
8.					
9.					
10.					

Total Cover: 105
50% of total cover: 52.5 20% of total cover: 21

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	30 (A)		105 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Tree species are all saplings, less than 2'.

SOIL

Sampling Point: T16B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: 0
Depth (inches): rocks

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T16C
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hummocks
Local relief (concave, convex, none): convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.08049179 Long: 135.0847342 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks: Sample point is representative of transect area between Point T16B and the proposed inundation line to the north.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	80	Yes	FAC
2.	pisi	Picea sitchensis	20	Yes	FACU
3.					
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	30	Yes	NI
2.					
3.					
4.					
5.					
6.					
		Total Cover:	30		
		50% of total cover: 15	20% of total cover: 6		
Herb Stratum					
1.	coas	Coptis aspleniifolia	95	Yes	FAC
2.	spha	Sphagnum	90	Yes	NI
3.	stam	Streptopus amplexifolius	80	Yes	FAC
4.	gydr	Gymnocarpium dryopteris	60	No	FACU
5.	coca	Cornus canadensis	15	No	FACU
6.	clsi	Claytonia sibirica	3	No	FACW
7.					
8.					
9.					
10.					
		Total Cover:	343		
		50% of total cover: 171.5	20% of total cover: 68.6		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	255	x 3 =	765
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	353 (A)		1151 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: Cornus canadensis growing primarily on hummocks.

SOIL

Sampling Point: T16C

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/2						loam	damp with coarse OM
7-16	10YR 4/3						silty clay	
16-30	10YR 3/2						loamy sand	

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: 0
Depth (inches): rocks

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/16/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: T17B
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): Riverbank
Local relief (concave, convex, none): concave Slope (%): 2
Subregion: Southeast Alaska Lat: 57.08040468 Long: 135.080571 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes	No x	

Remarks:
Sample point is in a depressional area along the river bank. Downed trees covered in spagnum are abundant.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	chno	Chamaecyparis nootkatensis	20	Yes	FAC
2.	tshe	Tsuga heterophylla	30	Yes	FAC
3.	pisi	Picea sitchensis	50	Yes	FACU
4.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	30	Yes	NI
2.	rusp	Rubus spectabilis	25	Yes	FACU
3.	mefe	Menziesia ferruginea	10	No	UPL
4.					
5.					
6.					
		Total Cover:	65		
		50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum					
1.	spha	Sphagnum	100	Yes	NI
2.	titr	Tiarella trifoliata	15	No	FAC
3.	stam	Streptopus amplexifolius	15	No	FAC
4.	gydr	Gymnocarpium dryopteris	10	No	FACU
5.	hela	Heracleum lanatum	15	No	FACU
6.	viep	Viola epipsila	5	No	NI
7.					
8.					
9.					
10.					
		Total Cover:	160		
		50% of total cover: 80	20% of total cover: 32		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	100	x 4 =	400
UPL species	10	x 5 =	50
Column Totals:	190 (A)		690 (B)

Prevalence Index = B/A = 3.63

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
most trees composing the canopy are rooted outside the sample area

SOIL

Sampling Point: T17B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2						loam	damp soil mixed with OM

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: roots/logs
Depth (inches): 5

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/25/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: IT1
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): terrace
Local relief (concave, convex, none): Convex Slope (%): 3
Subregion: Southeast Alaska Lat: 57.06186151 Long: 135.2018564 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Closed canopy forested upland with mixed open and shrub understory atop rocky hill slope.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	40	Yes	FAC
2.	alsi	Alnus sinuata	20	Yes	FAC
3.	pisi	Picea sitchensis	15	Yes	FACU
4.					
		Total Cover:	75		
		50% of total cover: 37.5	20% of total cover: 15		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	50	Yes	NI
2.	rusp	Rubus spectabilis	10	No	FACU
3.	mefe	Menziesia ferruginea	10	No	UPL
4.					
5.					
6.					
		Total Cover:	70		
		50% of total cover: 35	20% of total cover: 14		
Herb Stratum					
1.	lyam	Lysichiton americanum	10	Yes	OBL
2.	drdi	Dryopteris dilatata	10	Yes	FACU
3.	stam	Streptopus amplexifolius	1	No	FAC
4.	spha	Sphagnum	10	Yes	NI
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	31		
		50% of total cover: 15.5	20% of total cover: 6.2		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	61	x 3 =	183
FACU species	35	x 4 =	140
UPL species	10	x 5 =	50
Column Totals:	116 (A)		383 (B)

Prevalence Index = B/A = 3.30

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:
Closed canopy forested upland with a mixed open/shrubby understory.

SOIL

Sampling Point: IT1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1						OM	coarse
4-14	10YR 3/3						clay	with organics

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 14

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/25/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: IT2
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 15
Subregion: Southeast Alaska Lat: 57.0623796 Long: 135.2014568 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Sample point on east side of access road atop steep rocky hill slope. Habitat similar to IT1 with a closed canopy and understory with varying degrees of density.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	80	Yes	FAC
2.	pisi	Picea sitchensis	15	No	FACU
3.	chno	Chamaecyparis nootkatensis	10	No	FAC
4.					
		Total Cover:	105		
		50% of total cover: 52.5	20% of total cover: 21		
Sapling/Shrub Stratum					
1.	vapa	Vaccinium parvifolium	50	Yes	NI
2.	mefe	Menziesia ferruginea	15	Yes	UPL
3.					
4.					
5.					
6.					
		Total Cover:	65		
		50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum					
1.	coas	Coptis aspleniifolia	3	No	FAC
2.	rupe	Rubus pedatus	1	No	FAC
3.	blsp	Blechnum spicant	1	No	FAC
4.	spha	Sphagnum	40	Yes	NI
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	45		
		50% of total cover: 22.5	20% of total cover: 9		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	15	x 4 =	60
UPL species	15	x 5 =	75
Column Totals:	125 (A)		420 (B)

Prevalence Index = B/A = 3.36

Hydrophytic Vegetation Indicators:

No ___ Dominance Test is >50%
No ___ Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: IT2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10 YR 2/2						OM	coarse, fibric, unsaturated
5-20	n/a							void space created by roots
								and woody debris

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/25/2011

Applicant/Owner: City and Borough of Sitka Sampling Point: PH1

Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): convex Slope (%): 15

Subregion: Southeast Alaska Lat: 57.04901142 Long: 135.2421249 Datum: NAD83

Soil Map Unit Name: NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Site is adjacent to and uphill from Sawmill Creek and is composed of a dense Rubus spectabilis thicket rooted in a sphagnum over bedrock substrate on an abrupt, steep, hill slope.

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum			Absolute % Cover	Dominant Species?	Indicator Status
1.	alsi	Alnus sinuata	90	Yes	FAC
2.	pisi	Picea sitchensis	15	No	FACU
3.					
4.					
		Total Cover:	105		
		50% of total cover: 52.5		20% of total cover: 21	
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	95	Yes	FACU
2.	sara	Sambucus racemosa	25	Yes	FACU
3.					
4.					
5.					
6.					
		Total Cover:	120		
		50% of total cover: 60		20% of total cover: 24	
Herb Stratum					
1.	atfi	Athyrium filix-femina	5	No	FAC
2.	spha	Sphagnum	30	Yes	NI
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	35		
		50% of total cover: 17.5		20% of total cover: 7	

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____

% Cover of Wetland Bryophytes (Where applicable) ____ Total Cover of Bryophytes ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals:	230 (A)		825 (B)

Prevalence Index = B/A = 3.59

Hydrophytic Vegetation Indicators:

No Dominance Test is >50%

No Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks: Thick understory vegetation rooted in sphagnum covered boulders and bedrock

SOIL

Sampling Point: PH1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
N/A								rock exposure

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/25/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: PH2
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside
Local relief (concave, convex, none): convex Slope (%): 15
Subregion: Southeast Alaska Lat: 57.05010204 Long: 135.2346298 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x
Hydric Soil Present?	Yes	No x
Wetland Hydrology Present?	Yes	No x

Is the Sampled Area within a Wetland? Yes No x

Remarks:
Dense shrubby understory adjacent to existing access road.

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	alsi	Alnus sinuata	50	Yes	FAC
2.	pisi	Picea sitchensis	20	Yes	FACU
3.					
4.					
		Total Cover:	70		
		50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum					
1.	rusp	Rubus spectabilis	95	Yes	FACU
2.	sara	Sambucus racemosa	10	No	FACU
3.	epan	Epilobium anagallidifolium	5	No	FAC
4.					
5.					
6.					
		Total Cover:	110		
		50% of total cover: 55	20% of total cover: 22		
Herb Stratum					
1.	eqar	Equisetum arvense	1	No	FACU
2.	spha	Sphagnum	10	Yes	NI
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	11		
		50% of total cover: 5.5	20% of total cover: 2.2		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	55	x 3 = 165
FACU species	126	x 4 = 504
UPL species	0	x 5 = 0
Column Totals:	181 (A)	669 (B)

Prevalence Index = B/A = 3.70

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: PH2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
n/a								bedrock

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rock
Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No field indication of hydrology.

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Blue Lake Hydroelectric Project Expansion Borough/City: Sitka, Alaska Sampling Date: 6/242/2011
Applicant/Owner: City and Borough of Sitka Sampling Point: SC1
Investigator(s): KDH & JC Landform (hillside, terrace, hummocks, etc.): hillside terrace
Local relief (concave, convex, none): convex Slope (%): 7
Subregion: Southeast Alaska Lat: 57.05176745 Long: 135.231929 Datum: NAD83
Soil Map Unit Name: NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x 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 x	Is the Sampled Area within a Wetland? Yes No x
Hydric Soil Present?	Yes	No x	
Wetland Hydrology Present?	Yes x	No	

Remarks:
Relatively level, previously cleared area on very steep hillside

VEGETATION – Use scientific names of plants. List all species in the plot.

			Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum					
1.	tshe	Tsuga heterophylla	30	Yes	FAC
2.	chno	Chamaecyparis nootkatensis	30	Yes	FAC
3.	pisi	Picea sitchensis	20	Yes	FACU
4.					
		Total Cover:	80		
		50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum					
1.	mefe	Menziesia ferruginea	30	Yes	UPL
2.	vapa	Vaccinium parvifolium	20	Yes	NI
3.	opho	Oplopanax horridus	10	No	FACU
4.	coca	Cornus canadensis	15	Yes	FACU
5.					
6.					
		Total Cover:	75		
		50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum					
1.	rupe	Rubus pedatus	5	No	FAC
2.	stam	Streptopus amplexifolius	5	No	FAC
3.	spha	Sphagnum	90	Yes	NI
4.					
5.					
6.					
7.					
8.					
9.					
10.					
		Total Cover:	100		
		50% of total cover: 50	20% of total cover: 20		

Plot size (radius, or length x width) 15 foot radius % Bare Ground ____
% Cover of Wetland Bryophytes ____ (Where applicable) Total Cover of Bryophytes ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 29% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	45	x 4 =	180
UPL species	30	x 5 =	150
Column Totals:	145 (A)		540 (B)

Prevalence Index = B/A = 3.72

Hydrophytic Vegetation Indicators:
No Dominance Test is >50%
No Prevalence Index is ≤3.0
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No x

Remarks:

SOIL

Sampling Point: SC1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 2/1						OM	coarse, fibric
2-7	10 YR 3/2						silty clay	with organics
7-9	10 YR 2/2						loam	saturated
9-15	10 YR 3/1						silty clay	no organics, unsaturated

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

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

___ Alaska Color Change (TA4)[4]
___ Alaska Alpine Swales (TA5)
___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.
[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: rocks
Depth (inches): 15

Hydric Soil Present? Yes _____ No X

Remarks:

No indications of hydric soil observed at sample location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 9-Jul

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Saturation observed at sample point. Wetland hydrology observed at sample point.

B2

Photograph Points

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN1
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Forested upland with dense shrubby understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Sample point representative of recurring steeply sloped, closed canopy forested upland with relatively clear understory along north shore of Blue Lake.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN3
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Dense *Alnus sinuata* thicket on steep slope just above existing high water mark. Point is representative of the shrub habitat that separates the existing inundation area from forested habitats around the north perimeter of Blue Lake.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN4
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Intermittent drainage with waterfall flowing over bedrock exposure from western hillside into Becky Creek. Sheer rock faces on all sides with *Alnus sinuata* and *Picea sitchensis* rooted in sphagnum on rocky ledges.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN5
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Becky Creek. Unable to access limits of proposed inundation area due to high water. Creek appear to flow over bedrock in upper reaches. Upland forested habitat extend to edge of rock walls that define creek channel.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN6
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Closed canopy, *Tsuga heterophylla* forested upland with an inter-mixed open and shrubby understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN7
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: North Falls. Vertical bedrock exposure extending 250' above current high water line. Shrub habitat borders the edge of the drainage feature, giving way to a forested habitat similar to that documented at full sample point BLN6.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN8
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Closed canopy forested upland, dominated by *Tsuga heterophylla* on steep (30%) slope. Rock lodges and outcroppings covered with sphagnum that provides rooting substrate for vegetation. Habitat similar to that described at BLN2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN9
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Thicket dominated by *Alnus sinuata* on steep slope. Similar habitat to that documented at BLN3 with the addition of *Sambucus racemosa* .

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN10
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Sphagnum covered boulder substrate support thicket of vegetation dominated by *Rubus spectabilis* , *Alnus sinuata* , and *Sambucus racemosa* on steep hillside. Habitat is similar to that described at full sample point BLN3.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN11
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Closed canopy, open understory *Picea sitchensis* dominated forested upland on steep slope.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN12
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Brad Creek. Series of waterfalls and pools over bedrock exposures. Sheer rock faces surround the drainage with forested upland habitats extending to the rock ledges that define the channel.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLN13
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/23/2011

Notes: Vertical rock faces preclude access to forested habitats along northwest edge of Blue Lake. *Tsuga heterophylla* and *Picea sitchensis* compose closed forested canopy on steep rocky slopes.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS1
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: First drainage southwest of Blue Lake Creek, approximately 8' wide by 1' deep with cobble substrate and rocky banks. Dense thicket surrounding stream, similar habitat as described at T1F with the addition of *Sambucus racemosa.*

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Forested canopy with an open understory with patches of *Rubus spectabilis* dominated thickets. Point is representative of transitional forested habitats between existing spillway elevation and steep upper slopes.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS3
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Sheldon Creek entrenched 40' within a bedrock channel. Falls are near southern boundary of proposed inundation area.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS4
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Habitat surrounding Sheldon Creek is an *Oploponax horridus* understory with a *Alnus sinuata* canopy and some *Tsuga heterophylla* as elevation increases. Substrate is sphagnum over bedrock and slopes are steep.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS5
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Steep hillside, closed canopy forested upland with dense shrub layer.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS6
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: *Rubus spectabilis* dominated thicket on steep, rocky side slope above current spillway elevation line. Habitat is typical of perimeter thicket around Blue Lake that separates present inundation limit from forested areas.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS7
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: *Rubus spectabilis* dominated thicket between present inundation limit and closed canopy forest. Point is representative of perimeter habitat around and above existing spillway elevation

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS8
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Closed canopy, *Picea sitchensis* dominated upland forest with relatively open understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS9
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Average 12' wide intermittent drainage with downed trees on steep (35%) slope. Surrounding habitat is shrubby dense thicket with *Alnus sinuata*, *Oploponax horridus*, and *Menziesia ferruginea* beneath forested canopy.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS10
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2001

Notes: Sphagnum and matted organics provide rooting substrate for vegetation on steep bedrock face. *Alnus sinuata* and *Menziesia ferruginea* thicket between existing high water line and *Tsuga heterophylla* and *Picea sitchensis* forested area.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS11
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Steep hillside with mixture of closed canopy forest and shrubby thicket understory. Approximate elevation: 400 feet.

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Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS12
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

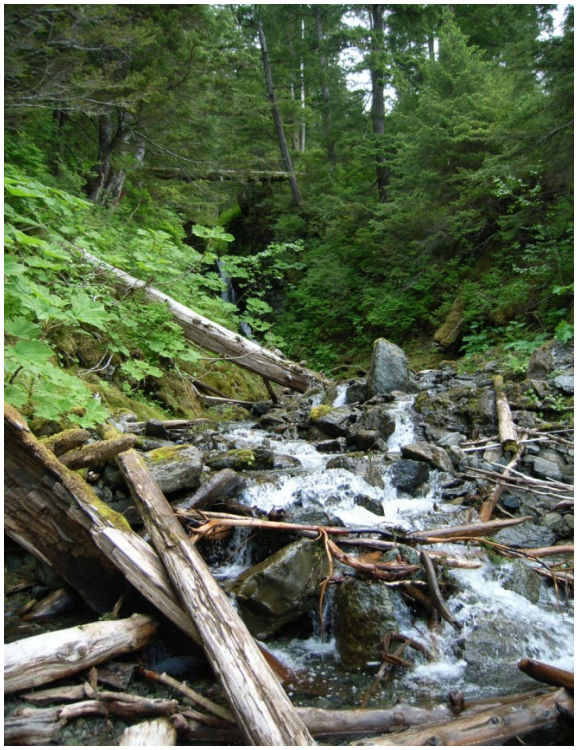
Notes: South Creek. Sheer rock sidewalled creek, averaging 8' flow width by 2' depth. Surrounding upland habitat is as documented at full sample point BLS11 and extends to edge of rock faces.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS13
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Braided steep drainage to the west of South Creek includes 20' falls over a sheer rock face onto loose cobble and gravel substrate. Vegetation adjacent to drainage is as documented at full sample point BLS11.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS14
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Thirty-foot falls from forested upland onto boulder strewn 13' wide, rapidly flowing channel with 40' sheer rock sidewalls. *Oploponax horridus* , *Rubus spectabilis* , and *Vaccinium parvifolium* are dominant on adjacent banks.



Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS15
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Steep slopes with shrubby understory, *Alnus sinuata* and *Tsuga heterophylla* canopy.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS16
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: Forested canopy of small trees on steep slope and dense understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS17
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/22/2011

Notes: One-hundred foot waterfall form forested upland over bedrock exposure with an width ranging from 6-30 feet. Alnus sinuata dominates canopy on top of rock face and adjacent to falls.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: BLS18
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 3/22/2011

Notes: Vertical rock faces prevent access to southwest edge of Blue Lake. *Alnus sinuata*, *Tsuga heterophylla*, and *Picea sitchensis* compose forested canopy. Habitat appears similar to that documented at full sample point BLS16.

0.05

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/15/2011

Notes: Exposed sandy area with no vegetation between Blue Lake Creek and the vegetation line. This point lies in an area below the existing spillway elevation and is periodically inundated.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/15/2011

Notes: Transect 1 crossing Blue Lake Creek. Fast flowing, 27 foot wide drainage with maximum 3 foot depth at crossing. Substrate is cobbles and boulder with sandy banks.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/15/2011

Notes: Transect 1 crosses small braided stream that flows into Blue Lake south of Blue Lake Creek. Each braid approximately 2' wide, 6" deep with cobble, sand and clay substrate. Stream fed from large waterfalls on steep north facing slope above lake.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/15/2011

Notes: This point is an transition zone between open, sandy, bare ground and forested habitat. Large stumps and woody debris are dominant.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/15/2011

Notes: Closed canopy forested habitat. Understory dominated by downed trees covered with sphagnum.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1F
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/15/2011

Notes: Closed canopy forested habitat with dense shrubby understory and downed trees covered in sphagnum.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1G
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Point representative of wetland component of Transect 1 mosaic. Water table present within 15 inches of a saturated organic soil surface. Dominant wetland vegetation includes: *Lysichiton americanum* , *Fauria crista-galli* , and *Eleocharis palustris* .

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1H
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Forested upland representative of upland component of Transect 1 upland/wetland mosaic.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1I
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: North shore of intersection of Transect 1 and Blue Lake Creek. Steep, sandy bedrock banks with sparse vegetation.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1K
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Forested upland with semi-open understory at the northern edge of the proposed inundation line. Habitat is very similar to T3D2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1L
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Thicket of *Rubus spectabilis* and *Alnus sinuata* in transitional area between open lake shore and forested upland.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1M
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Dry intermittent stream through forested upland, perpendicular to Transect 1. Entrenched 2' deep by 2' wide.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1N
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Dry intermittent stream with a cobble substrate, averaging 10' in width. Similar to and contiguous with T2C and T3E2. Forested upland habitat with semi-open understory surround the stream and extend to its banks.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T1O
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Shrubby thicket of *Menziesia ferruginea* and *Vaccinium parvifolium* on terrace at drop-off just above Blue Lake. Substrate consists of a sphagnum layer over roots and rock. Minimal to no soil profile.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Nearly vertical terrain defined by a 2" mat of sphagnum over bedrock, supporting rooted vegetation.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Intermittent drainage connecting to T3G, approximately 15' wide with fine substrate following base of steep slope. Banks dominated by *Lysichiton americanum* , surrounding habitat as described at T3D2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Dry intermittent stream bed with cobble substrate intersects Transect 2. Same feature as documented at point T3E.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Transition zone between intermittent stream bed and forested upland. Vegetation recruiting on sphagnum layer covering rocks. Soil layer absent.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Forested upland with *Oplopanax horridus* , *Dryopteris dilatata* , and *Gymnocarpium dryopteris* understory. Habitat is as documented at full sample point T3D2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2F
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Forested upland with *Oplopanax horridus* , *Dryopteris dilatata* , and *Gymnocarpium Dryopteris* understory. Habitat is as documented at full sample point T3D2 but with a more significant slope extending to the boundary of the proposed inundation area.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2G
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Wetland component of the mosaic habitat extending between Transects 2 and 3. Sample point is located on north-facing slope near the southern boundary of the proposed inundation area and is as described at point T3A.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2H
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Upland component of the mosaic habitat extending between Transects 2 and 3. Sample point is located on north-facing slope near the southern boundary of the proposed inundation area and is as described at point T3B.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2I
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Forested wetland point on north edge of open muskeg. Point is representative of much of the perimeter of the open muskeg.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T2J
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Open muskeg with histic epipedon and depressional ponded areas. Tree growth is stunted due to saturated conditions.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Sample point is representative of wetland component of the Transect 3 wetland/upland mosaic. Laterally, the mosaic begins halfway between Transects 4 and 3, and extends eastward to Transect 2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Sample point is representative of upland component of the Transect 3 wetland/upland mosaic. Laterally, the mosaic begins halfway between Transects 4 and 3, and extends eastward to Transect 2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Intersection of Transect 3 and Blue Lake Creek. Scoured bedrock and cobble substrate with course woody debris deposited along banks. Approximately 45' wide and 3' deep.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Northern edge of central section of Transect 3. Steeply sloped forested upland representative of upland habitats along central Transect 3 mosaic. Similar to habitat documented at full sample point T4E.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3D2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Forested upland and northern end of inundation line of Transect 3 with a semi-open understory shrub layer dominated by *Oplopanax horridus* .

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: *Lysichiton americanum* dominated wetland habitat similar to habitat documented at full sample point T4D. Point is characteristic of the wetland component of the Transect 3 wetland/upland mosaic.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3E2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Intermittent stream flowing perpendicular to Transect 3. Habitat documented in point T3D2 extends to banks of drainage feature. Average width is 8', depth ranges from 6-12". Substrate of drainage is sand, gravel, and cobble.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3F
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Forested upland with a semi-open understory shrub layer dominated by *Oplopanax horridus* . Similar habitat as documented in T3D2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T3G
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/19/2011

Notes: Intermittent drainage, 10 feet wide, at base of steep slope on which the proposed inundation boundary lies.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T4A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: *Tsuga heterophylla* dominated uplands on the steep, north-facing slopes on the south side of Blue Lake Creek.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T4B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Intersection of Blue Lake Creek and Transect 4. Cobble substrate with steep banks of exposed roots.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T4C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes:

Edge of transition zone from *Alnus sinuata* lined creek bank to forested upland

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T4D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Representative wetland habitat contributing to the wetland/upland mosaic along Transect 4.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T4E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Representative upland habitat contributing to the wetland/upland mosaic along Transect 4.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T5A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Small, 3' wide, braided drainage with standing water dominated by *Lysichiton americanum* . Upland vegetation including *Menziesia ferruginea* , *Vaccinium parvifolium* , and *Cornus canadensis* growing in sphagnum on hummocks adjacent to drainage feature.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T5A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Forested upland component of mosaic habitat extending from Transect 3 to 5 as documented at sample point T6H.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T5C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: *Oplopanax horridus* thicket with a partial canopy. This habitat is as documented in and contiguous with sample point T6F. This upland habitat represents the transitional zone between Blue Lake Creek and the open understoried forested uplands to the north.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T5D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Intersection of Transect 5 and Blue Lake Creek with densely vegetated rocky banks. Water width extends to 50' with pool depths to 4'.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T5E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: Very steep north facing hillside sloping toward Blue Lake Creek. Site indicative of forested uplands on south side of Blue Lake Creek. Deep layer of coarse, unsaturated, fibric organic matter.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: A *Rubus spectabilis* thicket on a steep hillside sloping to Blue Lake Creek. Soil is absent. Vegetation is rooted in sphagnum covering rocks. Sample point is indicative of other steep and inaccessible thickets along south edge of Blue Lake Creek.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Intersection of Transect 6 and Blue Lake Creek with views looking west and east from the north bank. Rapid flow over scoured rocky substrate.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

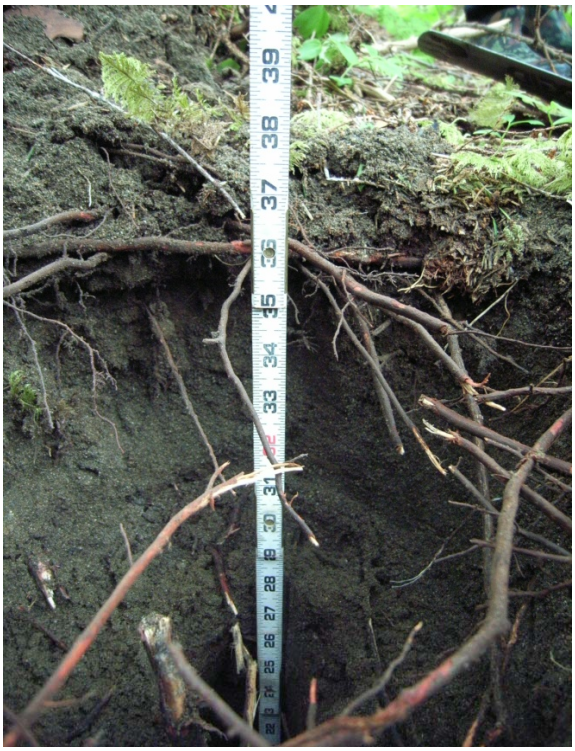
Notes: Densely vegetated river bar within the braids of Blue Lake Creek. Small *Tsuga heterophylla*, *Picea sitchensis* and *Alnus sinuata* dominate the canopy while *Rubus spectabilis* and *Oplopanax horridus* are dense in the understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: A 15' wide drainage, flowing 6 -12" deep parallel to Blue Lake Creek. Substrate is cobble and sand with some bank erosion and exposed roots.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Forested upland with *Picea sitchensis* and *Tsuga heterophylla* canopy, open understory and deep, sandy soils.

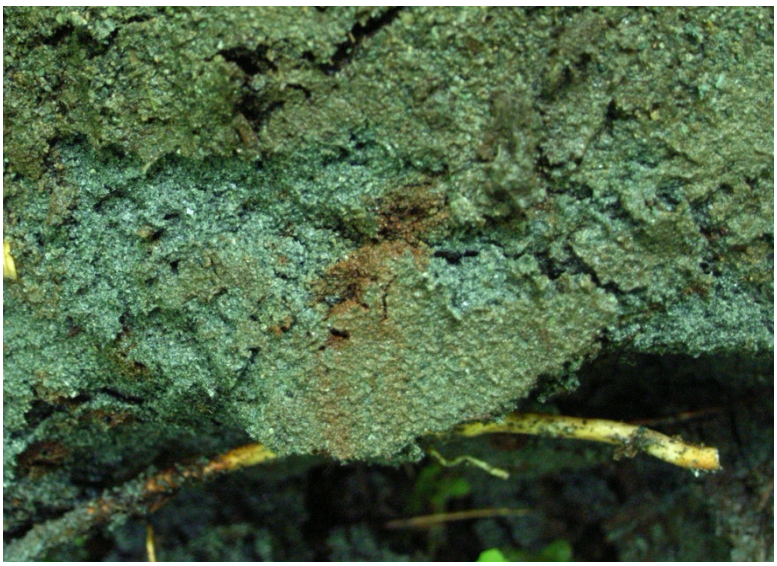


Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6F
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: *Oplopanax* horridus thicket with a partial canopy of *Picea sitchensis* and *Alnus sinuata* and sandy soils.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6G
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Braided depressional drainage with intermittent areas of standing water. Soil sample completed at a point with no standing water. Water table at 12" with abundant redox features.



Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6G
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Braided depressional drainage with intermittent standing water, dominated by *Lysichiton americanum* .

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T6H
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/18/2011

Notes: Forested upland representative of northern boundary of proposed inundation area. Canopy composed of *Tsuga heterophylla* and *Chamaecyparis nootkatensis*. Soils characterized by an unsaturated, coarse, fibric organic layer over woody debris.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T7A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Steeply sloped (20%) forested upland near the northern edge of the proposed inundation area. Similar vegetation, soil, and hydrologic characteristics to full sample point T8A.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T7B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Small, 3 - 5' wide, drainage intersecting Transect 7 and dominated by *Lysichiton americanum* . Characteristics are similar to full sample point T11E and connected to photo point T8B.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T7C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Intersection of Transect 7 and Blue Lake Creek. North bank is abrupt with upland vegetation extending to the edge. At point of intersection Blue Lake Creek flows 20' wide by 3' deep with depositional gravel lining both the north and south shore.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T8A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Forested upland along the north edge of the proposed inundation area with a mixed canopy of *Tsuga heterophylla* and *Picea sitchensis* with some *Chamaecyparis nootkatensis.*

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T8B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Small, 2' wide, drainage intersecting Transect 8 and dominated by *Lysichiton americanum* . Characteristics are similar to full sample point T11E and connected to photo point T7B.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T8C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Intersection of Transect 8 and Blue Lake Creek. North bank is abrupt with upland vegetation to its edge. South bank is characterized by gravel bar giving rise a thicket at the base of a vertical rock face.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T8D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Very steep forested upland on north facing hillside, sloping toward Blue Lake Creek. Site indicative of forested uplands on south side of Blue Lake Creek and as described at full sample point T5E.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T9A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Forested upland along steeply sloped north edge of proposed inundation area. Habitat is similar to that described at full sample point T11D and is representative of the upland component of the Transect 9 mosaic.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T9B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: *Lysichiton americanum* dominated small, depressional wetland area along steep slope. Habitat is representative of the wetland component of the Transect 9 mosaic and is similar to full sample point T11E.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T9C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Forested upland of *Tsuga heterophylla* and *Picea sitchensis* canopy. Habitat as documented at full sample point T11D and is representative of the upland component of the Transect 9 mosaic.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T9D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Dense *Oplopanax horridus* thicket in a depression adjacent to the banks of Blue Lake Creek. Habitat as described at full sample point T11C.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T9E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Intersection of Transect 9 and Blue Lake Creek, flowing approximately 65 feet wide with rocky substrate.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T9F
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Forested upland on south side of Blue Lake Creek at base of 70% sloping sheer rock face. A thicket of *Alnus sinuata* separates the creek bank from the forested habitat.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Thicket of *Alnus sinuata* and *Rubus spectabilis* on south side of Blue Lake Creek. Waterfalls above habitat on steep slopes but no discharge drainage was found- presumed to be subterranean.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Intersection of Transect 10 and Blue Lake Creek. Creek flows wide (>50ft) and deep (>3ft) at this point with deeper pools. North bank is gradual and rocky, south bank steeper with upland vegetation to water's edge.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Dense shrubby thicket dominate by *Alnus sinuata* with loose, sandy soil, adjacent to Blue Lake Creek.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Drainage intersecting Transect 10 and flowing parallel to Blue Lake Creek with an average 15' width and variable depth from 1" to 3'. Fine sand and cobble substrate with eroded side walls and exposed roots. Upland habitat extends to drainage banks.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Depressional thicket of dense *Oplopanax horridus*

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10F
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Forested upland dominated by *Tsuga heterophylla* and *Picea sitchensis* with a clear understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10G
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Entrenched drainage, approximately 2' wide and 0-8" deep with surrounding depressional wetland dominated by *Lysichiton americanum.* Wetland extends 25' along transect line.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T10H
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Forested upland along Transect 10 mosaic area.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T11A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: South side of Blue Lake Creek - Inaccessible steep, forested, north facing slope.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T11B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: South side of Blue Lake Creek - Inaccessible steep, forested, north facing slope.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T11C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Dense *Oplopanax horridus* thicket in a depression adjacent to the banks of Blue Lake Creek.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T11D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

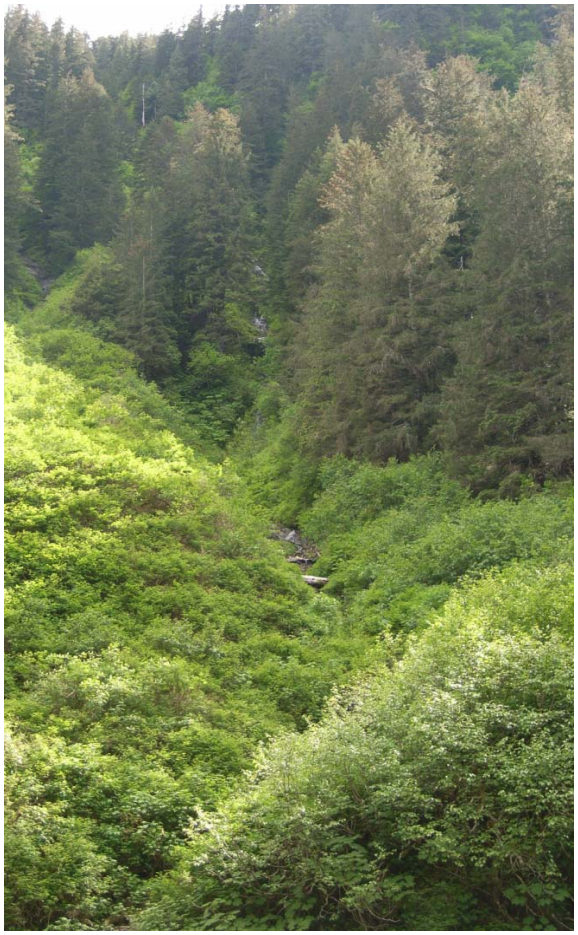
Notes: *Tsuga heterophylla* and *Picea sitchensis* canopy with a clear, open understory and ground cover.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T11E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/17/2011

Notes: Small 20' wide wetland area at base of rise where proposed inundation line lies. *Lysichiton americanum* dominates slightly depressed area.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T12A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Steep flowing drainage on south side of Blue Lake Creek.

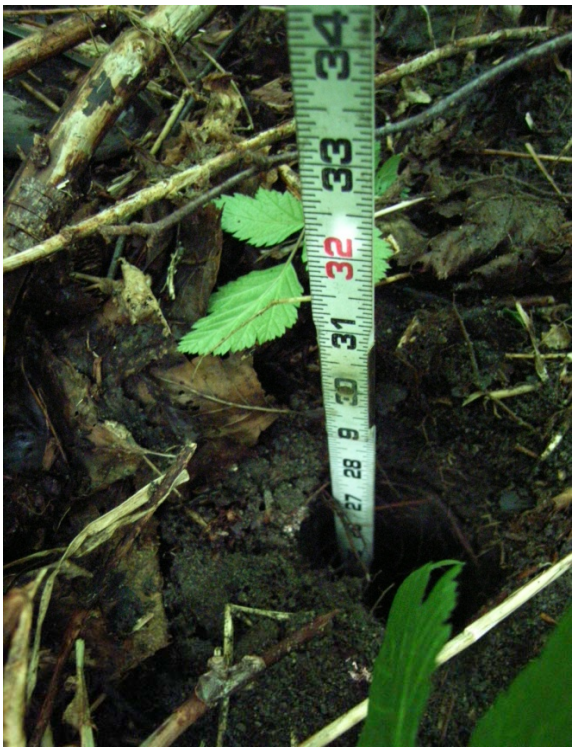


Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T13A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Intersection of Transect 13 and Blue Lake Creek. Creek flows in two channels around a gravel bar. Rocky substrate with rapid flow, approximately 20' wide and 3' deep.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T13B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Densely vegetated thicket of *Alnus sinuata* and *Rubus spectabilis*.



Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T13D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/20/2011

Notes: *Rubus spectabilis* thicket on steep north-facing slope, sloping toward Blue Lake Creek. Habitat is representative of thickets on south side of Blue Lake Creek. Very little soil development. Most vegetation rooted in sphagnum and coarse organic matter.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T14A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Photo point of inaccessible, steeply sloped south side of Blue Lake Creek. *Tsuga heterophylla* and *Picea sitchensis* canopy with *Oplopanax horridus* and *Dryopteris dilatata* understory. Sample point appears similar to T14C.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T14B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Transect 14 intersects Blue Lake Creek. North channel bank is depositional gravel and cobble. South bank is densely vegetated. Creek flows approximately 15' wide and 4' deep.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T14C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: *Tsuga heterophylla* and *Picea sitchensi* s canopy with shrubby understory. This upland habitat is representative of the extent of Transect 14.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T15A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Forested habitat with open understory and downed trees creating hummocks. Sample point is representative of upland habitat along the Transect 15 mosaic line.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T15B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Narrow depressional wetland area with saturated soils at 8'. This sample point is representative of wetland habitats along the Transect 15 mosaic line

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T15C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: *Tsuga heterophylla* canopy with open *Vaccinium parvifolium* dominated understory. Downed trees create hummocks across the transect. This sample point is similar to T15A and representative of the extensive upland habitat along the Transect 15 mosaic.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T15D
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Small 3' by 18' depressional wetland mosaic area along Transect 15. Sample point is representative of the few wetland pockets contributing to the Transect 15 mosaic and is similar to point T15B.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T15E
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Intersection of Transect 15 and Blue Lake Creek. Upland habitats extend to top of stream bank. Creek averages 50' width and 3' depth in the area of the sample point.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T16A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Point of Transect 16 intersection with Blue Lake Creek. Creek is approximately 20' wide, 4' deep with rapid flow and boulder/cobble substrate. South bank is steeper and more eroded. North bank is more gradual with cobble and fine substrates.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T16B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Sample point along the seasonally inundated north bank of Blue Lake Creek. Substrate is cobble covered in sphagnum. Spruce and alder regeneration along the banks with small specimens, less than 2' tall.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T16C
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

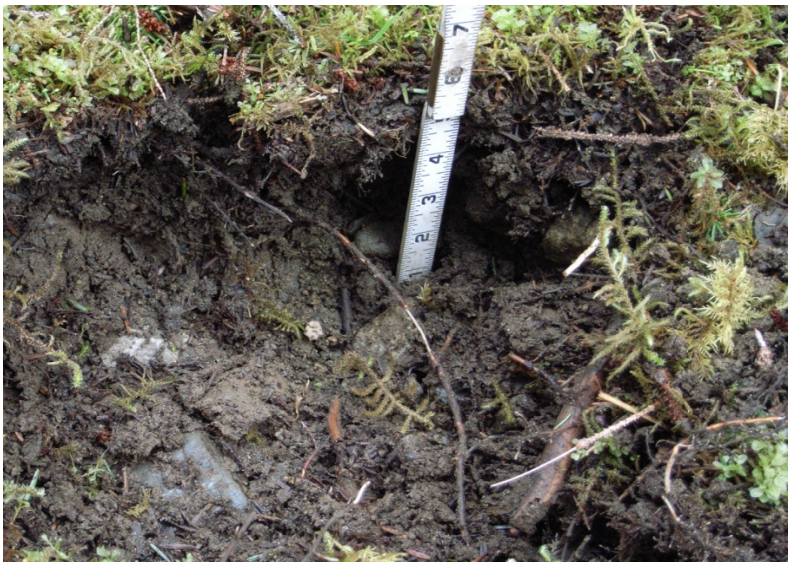
Notes: Forested upland habitat with clear understory that is representative of Transect 16 on the north side of Blue Lake Creek, between the stream bank and the proposed inundation line.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: T17A
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Eastern edge of property area where Glacier Creek converges with Blue Lake Creek. Fast flowing rapids over boulder and cobble substrate. Flow way is channelized with steep root and boulder lined banks

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: 17B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Sample point is in depressional area along the bank of Glacier Creek. Soils are shallow and dense with partially decomposed organic matter. Downed trees and large woody debris dominate the sample area.



Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: 17B
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/16/2011

Notes: Sample point is in depressional area along the bank of Glacier Creek. Soils are shallow and dense with partially decomposed organic matter. Downed trees and large woody debris dominate the sample area.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: IT1
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/25/2011

Notes: Closed canopy forested upland with mixed open and shrub understory atop rocky hill slope.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: IT2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/25/2011

Notes: Sample point on east side of access road atop steep rocky hill slope. Habitat similar to IT1 with a closed canopy and understory with varying degrees of density.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: IT3
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/25/2011

Notes: Sample point located above existing spill way atop steep rocky slope. Habitat similar that documented at IT1 and IT2 with patches of shrub understory.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: PH1
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/25/2011

Notes: Site is adjacent to and uphill from Sawmill Creek and is composed of a dense *Rubus spectabilis* thicket rooted in a sphagnum over bedrock substrate on an abrupt, steep, hill slope.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: PH2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/25/2011

Notes: Thicket of *Rubus spectabilis* rooted in sphagnum over bedrock adjacent to existing access road.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: PH3
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/25/2011

Notes: Dense *Rubus spectabilis* understory below partial *Alnus sinuata* and *Picea sitchensis* canopy on steep rocky slopes as documented at full sample point PH1 and PH2.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: SC1
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/24/2011

Notes: Previously cleared forested area on terrace of extremely steep hill slope.

Project/Site: Blue Lake Hydroelectric Project Expansion Site No.: SC2
Applicant/Owner: City and Borough of Sitka Investigator(s): KDH & JC
Date: 6/24/2011

Notes: Lower terrace of proposed surge chamber location. Previously cleared forested upland on extremely steep hillside.

APPENDIX C

Mosaic Calculations

PFO4B Forested Wetland Mosaic - 12%

Mosaic Transect T15

Mosaic Habitat Type	Length (feet)
Upland	23
Wetland	9
Upland	68
Wetland	3
Total Mosaic Transect Length	103
Wetland Length	12
Wetland Mosaic	12%

PFO4B Forested Wetland Mosaic - 27%

Mosaic Transect T9

Mosaic Habitat Type	Length (feet)
Upland	32
Wetland	49
Upland	86
Total Mosaic Transect Length	167
Wetland Length	49
Wetland Mosaic	29%

Mosaic Transect T10

Mosaic Habitat Type	Length (feet)
Wetland	25
Upland	55
Wetland	3
Upland	18
Wetland	24
Upland	83
Total Mosaic Transect Length	208
Wetland Length	52
Wetland Mosaic	25%

Mosaic Transect T11

Mosaic Habitat Type	Length (feet)
Wetland	26
Upland	109
Wetland	17
Total Mosaic Transect Length	152
Wetland Length	43
Wetland Mosaic	28%

Total Mosaic Length	527
Total Wetland Length	144
Average Wetland Percentage	**27%**

PFO4B Forested Wetland Mosaic - 38%

Mosaic Transect T3 (South)

Mosaic Habitat Type	Length (feet)
Upland	18
Wetland	6
Upland	19
Wetland	23
Upland	41
Wetland	22
Upland	54
Wetland	45
Upland	104
Wetland	18
Upland	5
Wetland	26
Upland	39
Wetland	47
Upland	31
Total Mosaic Transect Length	498
Wetland Length	187
Wetland Mosaic	38%

North to South

From Blue Lake Creek to southern inundation line

Mosaic Transect T2 (South)

Mosaic Habitat Type	Length (feet)
Upland	18
Wetland	16
Upland	15
Wetland	28
Upland	24
Wetland	5
Upland	27
Wetland	8
Upland	4
Wetland	7
Upland	16
Total Mosaic Transect Length	168
Wetland Length	64
Wetland Mosaic	38%

South to North

From southernmost inudation line of T2 to edge of muskeg

Mosaic Transect TM4

Mosaic Habitat Type	Length (feet)
Upland	26
Wetland	18
Upland	19
Wetland	14
Total Mosaic Transect Length	77
Wetland Length	32
Wetland Mosaic	42%

East to West

Mosaic Transect TM2

Mosaic Habitat Type	Length (feet)
Upland	23
Wetland	9
Upland	33
Wetland	7
Upland	11
Wetland	8
Upland	13
Wetland	12
Total Mosaic Transect Length	116
Wetland Length	36
Wetland Mosaic	31%

West to East

Mosaic Transect TM2

Mosaic Habitat Type	Length (feet)
Upland	18
Wetland	11
Upland	6
Wetland	14
Upland	23
Wetland	14
Upland	40
Wetland	22
Total Mosaic Transect Length	148
Wetland Length	61
Wetland Mosaic	41%

North to South

Mosaic Transect TM1

Mosaic Habitat Type	Length (feet)
Upland	16
Wetland	7
Upland	11
Wetland	6
Upland	12
Wetland	8
Total Mosaic Transect Length	60
Wetland Length	21
Wetland Mosaic	35%

North to South

Total Mosaic Length	1067
Total Wetland Length	401
Average Wetland Percentage	**38%**

PFO4/SS1B Forested/Scrub Shrub Mosaic 38%

Mosaic Transect T3

Mosaic Habitat Type	Length (feet)
Upland	26
Wetland	68
Upland	12
Wetland	18
Upland	23
Wetland	16
Upland	110
Total Mosaic Transect Length	273
Wetland Length	102
Wetland Mosaic	37%

North to South

From inundation line toward Blue Lake Creek

Mosaic Transect T4

Mosaic Habitat Type	Length (feet)
Wetland	23
Upland	43
Wetland	5
Upland	3
Wetland	3
Upland	7
Wetland	13
Upland	17
Wetland	8
Upland	5
Wetland	39
Upland	11
Wetland	22
Upland	75
Total Mosaic Transect Length	274
Wetland Length	113
Wetland Mosaic	41%

South to North

Mosaic Transect T5

Mosaic Habitat Type	Length (feet)
Wetland	8
Upland	11
Wetland	7
Upland	11
Wetland	9
Upland	4
Wetland	13
Upland	9
Wetland	6
Upland	16
Wetland	8
Upland	42
Total Mosaic Transect Length	144
Wetland Length	51
Wetland Mosaic	35%

South to North

Total Mosaic Length	691
Total Wetland Length	266
Average Wetland Percentage	38%

PFO4/SS1B Forested/Scrub Shrub Mosaic 49%

Mosaic Transect T1

Mosaic Habitat Type	Length (feet)
Upland	32
Wetland	34
Upland	114
Wetland	68
Upland	48
Wetland	16
Upland	24
Wetland	98
Upland	38
Wetland	6
Upland	20
Wetland	58
Upland	28
Wetland	14
Total Mosaic Transect Length	598
Wetland Length	294
Wetland Mosaic	49%

South to North

PFO4/SS1B Forested/Scrub Shrub Mosaic 72%

Mosaic Transect T2 (North Section)

Mosaic Habitat Type	Length (feet)
Upland	6
Wetland	21
Upland	17
Wetland	42
Upland	8
Wetland	26
Total Mosaic Transect Length	120
Wetland Length	89
Wetland Mosaic	74%

North to South

From Blue Lake Creek to edge of muskeg

Mosaic Transect TM2

Mosaic Habitat Type	Length (feet)
Upland	9
Wetland	28
Upland	17
Wetland	24
Upland	9
Wetland	23
Upland	8
Wetland	31
Total Mosaic Transect Length	149
Wetland Length	106
Wetland Mosaic	71%

West to East

Mosaic Transect TM4

Mosaic Habitat Type	Length (feet)
Upland	14
Wetland	41
Upland	7
Wetland	62
Upland	18
Wetland	38
Total Mosaic Transect Length	180
Wetland Length	141
Wetland Mosaic	78%

South to North

Mosaic Transect TM2

Mosaic Habitat Type	Length (feet)
Upland	8
Wetland	23
Upland	14
Wetland	36
Upland	9
Total Mosaic Transect Length	90
Wetland Length	59
Wetland Mosaic	66%

North to South

Mosaic Transect NE

Mosaic Habitat Type	Length (feet)
Upland	7
Wetland	23
Upland	17
Wetland	38
Upland	15
Wetland	12
Upland	4
Wetland	36
Upland	13
Total Mosaic Transect Length	165
Wetland Length	109
Wetland Mosaic	66%

West to East

Total Mosaic Length	704
Total Wetland Length	504
Average Wetland Percentage	**72%**

DOWL HKM