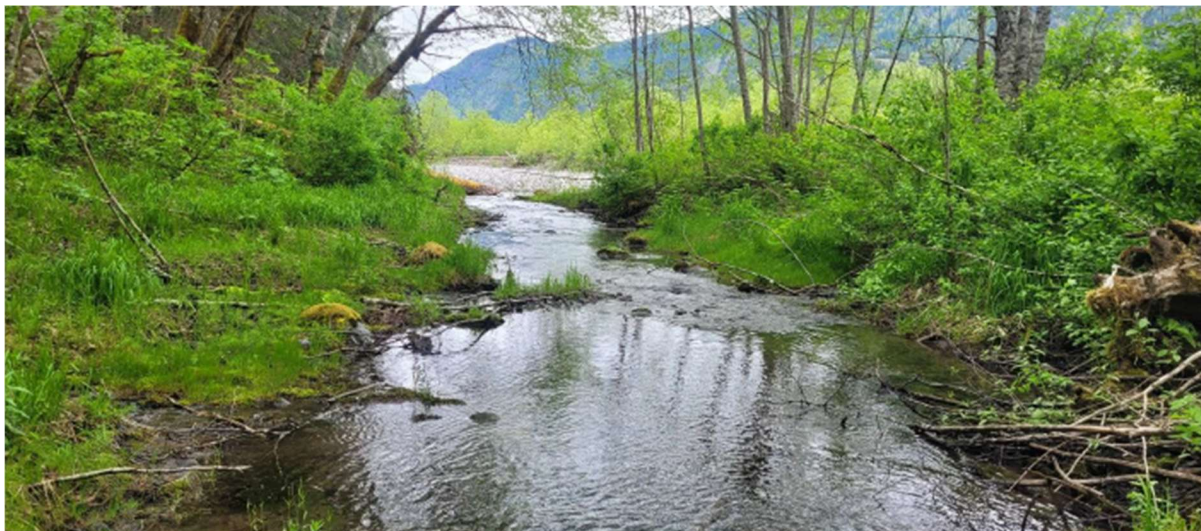


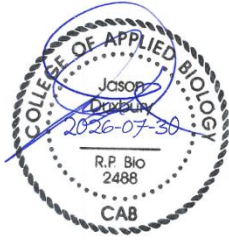
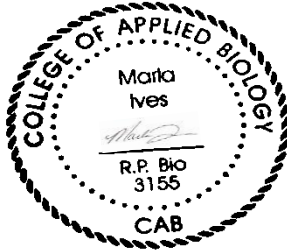


Swan Creek Protected Area Environmental Impact Assessment

NORTH COAST TRANSMISSION LINE (NCTL) – PHASE 2
July 31, 2026



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This report is based on facts and opinions contained within the referenced documents, including the results of any data collection programs carried out in relation to this report. We have attempted to identify and consider facts and documents relevant to the scope of work, accurate as of the time period during which we conducted this analysis. However, the results, our opinions, or recommendations may change if new information becomes available or if information we have relied on is altered.

We applied accepted professional practices and standards in developing and interpreting data. While we used accepted professional practices in interpreting data provided by BC Hydro or third-party sources, we did not verify the accuracy of any such data.

This report must be considered as a whole; selecting only portions of this report may result in a misleading view of the results, our opinions, or recommendations.

EXECUTIVE SUMMARY

This Environmental Impact Assessment evaluates BC Hydro's proposal to adjust the boundary of the 266.2 ha Swan Creek Protected Area (SCPA) to accommodate approximately 1.1 km of the North Coast Transmission Line (NCTL) Phase 2 Project. The preferred transmission line alignment was selected through a structured decision-making process involving participating First Nations and was determined to be the most favoured route when considering environmental, cultural, technical, access, safety, and cost factors.

The proposed boundary adjustment would remove approximately 12.4 ha from the northern portion of the SCPA, reducing the protected area to approximately 253.8 ha. The Stage 1 application to BC Parks indicated the proposed boundary adjustment area is 8.9 ha, however, changes associated with the 35% design increased the proposed boundary adjustment area to 12.4 ha. The affected area includes a mix of mid-seral forest, a small portion of old-growth forest, wetlands, and riparian habitat. Field assessments and desktop reviews identified important ecological features including old-growth forest attributes, moose winter habitat functions, wetland complexes, fish-bearing tributaries connected to the Zymoetz River, and habitat suitable for several species of conservation concern.

The assessment identified potential effects related to vegetation clearing, habitat alteration, wildlife disturbance, changes to riparian areas, and localized impacts to wetlands and aquatic resources. Key quantified impacts include the removal of approximately 2.9 ha of old-growth forest, 6.1 ha of mid-seral conifer forest, a very small direct wetland footprint (0.002 ha), and clearing within approximately 6.4 ha of riparian habitat associated with wetlands and streams.

The Project design incorporates avoidance measures and environmental mitigation focused on minimizing habitat disturbance, protecting fish and wildlife resources, maintaining natural drainage patterns, controlling erosion and sedimentation, preventing invasive species introduction, and avoiding sensitive timing windows. Additionally, the project design, associated avoidance measures and environmental mitigations includes feedback from First Nations and incorporates their input.

The assessment concludes that while the boundary adjustment will result in localized habitat loss within the SCPA, the affected area represents a small proportion of comparable habitat available in the broader Zymoetz (Copper) River watershed. Following implementation of mitigation measures and regulatory requirements, significant residual effects on vegetation, wildlife, fish habitat, wetlands, riparian areas, and hydrology are not anticipated at the watershed scale. The proposed boundary adjustment is therefore considered environmentally supportable for accommodating the NCTL Phase 2 alignment.

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- Appendix 2** – Archaeological Impact Assessment
- Appendix 3** – Figures and Maps
- Appendix 4** – Desktop Analysis Results
- Appendix 5** – Field Assessment

List of Acronyms and Abbreviations

Acronym / Abbreviation	Meaning
AIA	Archaeological Impact Assessment
BCER	BC Energy Regulator
BC Hydro	BC Hydro and Power Authority
BEC	Biogeoclimatic Ecosystem Classification
CEMP	Construction Environmental Management Plan
CDC	Conservation Data Centre
CMT	Culturally Modified Tree
Copper FSR	Copper River Forest Service Road
COSEWIC	Committee on the Status of Endangered Species in Canada
CWH	Coastal Western Hemlock
E	Endangered
ERAA	<i>Energy Resource Activities Act</i>
EX	Extirpated
FLP	Forest Landscape Plan
FSR	Forest Service Road
GAR	Government Action Regulation
GBPU	Grizzly Bear Population Unit
GTTT	Glenannan to Terrace
ha	hectare
IA	Impact Assessment
km	kilometer
kV	kilovolt
LRMP	Land and Resource Management Plan
LSA	Local Study Area
MBCA	<i>Migratory Birds Convention Act</i>
NCTL	North Coast Transmission Line
OGDA	Old Growth Deferral Area
OGMA	Old Growth Management Area
OHWM	Ordinary High-Water Mark
PNG	Pacific Natural Gas
QEP	Qualified Environmental Professional
REPA	<i>Renewable Energy Projects Act</i>
ROW	Right-of-Way
RSA	Regional Study Area
RVMA	Riparian Vegetation Management Area
SC	Special Concern
SCPA	Swan Creek Protected Area
SEE	Species and Ecosystem Explorer
SARA	<i>Species at Risk Act</i>
T	Threatened
UWR	Ungulate Winter Range
VRI	Vegetation Resource Index
WHA	Wildlife Habitat Area

Acronym / Abbreviation	Meaning
WHF	Wildlife Habitat Features
WSA	Water Sustainability Act
WSC	Watercourse
ws1	Very Submaritime Submontane
YLP	Yinka Dene Economic Development Limited Partnership
5L063	Existing Transmission Line 5L063

1.0 INTRODUCTION

1.1 Purpose of the Report

Triton Environmental Consultants Ltd. (Triton), in joint venture with Yinka Dene Economic Development Limited Partnership (YLP) as the YLP-Triton CGL Joint Venture (YLP-Triton), was retained by BC Hydro and Power Authority (BC Hydro) to provide environmental consultant services on the North Coast Transmission Line (NCTL) Glenannan to Terrace (GTTT) Phase 2 Project (the Project).

This report describes BC Hydro's proposed adjustment to the boundary of the Swan Creek Protected Area (SCPA) to accommodate the construction and operation of approximately 1.1 km of the NCTL Project. This report provides background information on the NCTL, the location and need for the Swan Creek Protected Area boundary adjustment, potential environmental, heritage and cultural impacts resulting from the boundary adjustment, assessment of alternatives to the adjustment, and First Nations, local government, and community group engagement to date regarding the adjustment. The report provides a preliminary assessment of the potential effects on the biophysical and cultural environment by summarizing the environmental, cultural and archaeological resources present within the Project footprint, characterizing the features present, and identifying Project considerations through a desktop review and field survey information collected.

1.2 Project Overview (North Coast Transmission Line)

BC Hydro currently supplies electricity to the North Coast of British Columbia through 450 km of 500 kilovolt (kV) radial transmission lines that run from Williston Substation near Prince George to Skeena Substation in Terrace. Glenannan and Telkwa substations are located along the route. To meet the growing electricity demand in northwest BC, BC Hydro plans to construct the NCTL. The Project location is shown in Figure 1.

The Project will involve building new 500 kV transmission lines and associated infrastructure in three phases: Phase 1 will run from Williston Substation to Glenannan Substation near Endako (~164 km). Phase 2 will run from Glenannan Substation to Telkwa Substation (~131 km), and then from Telkwa Substation to Skeena Substation in Terrace (~145 km).

The Project is being developed in close collaboration with Phase 2 Nations.

1.3 Regulatory and Policy Context

The Project is being undertaken under the *Renewable Energy Projects Act* (REPA), which provides a streamlined regulatory framework for the development and operation of renewable energy initiatives in British Columbia. Under REPA, Section 14 states that the *Environmental Assessment Act* does not apply to the Project. The Project is also exempt from a BC Utilities Commission Certificate of Public Convenience and Necessity.

BC Hydro has obtained, or will obtain, all required approvals, authorizations and permits required prior to construction of the NCTL. A list of all the anticipated permits to be obtained is available in the Construction Environmental Management Plan.

A portion of the preferred route through the Zymoetz River¹ Valley overlaps with the Swan Creek Protected Area, managed by BC Parks. BC Parks has advised BC Hydro that this the activity is not compatible with acceptable activities within the SCPA. BC Hydro is therefore seeking Park Boundary adjustment from BC Parks to accommodate the construction and operation of the NCTL in this area. The Stage 1 application to BC Parks indicated the proposed boundary adjustment area is 8.9 ha, however, changes associated with the 35% design increased the proposed boundary adjustment area to 12.4 ha.

BC has a Provincial Protected Area Boundary Adjustment Policy, Process and Guidelines (2010) that provide the guidance and process to request a boundary adjustment. BC Parks also has a Guidance for Proponents to Complete the BC Parks Impact Assessment (IA) Process (n.d.). This report has been prepared to provide the information required by BC Parks for the Detailed Proposal to request a park boundary adjustment aligned with the 35% design.

¹ Also referred to as Copper River



BC Hydro

North Coast Transmission Line

Glenannan to Terrace Transmission

Figure 1.

Project Location

Project No.	Date	Revision
15385	Jun 09, 2026	00
Prepared By	Reviewed By	Page Size
TK	AC	11" x 17"

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Project Location

▣

Substation

—

Proposed Circuit Centerline

0255075

km

Scale: 1:1,500,000

Projection: NAD 1983 BC Environment Albers

Base map Source: ESRI Base maps

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BC Hydro

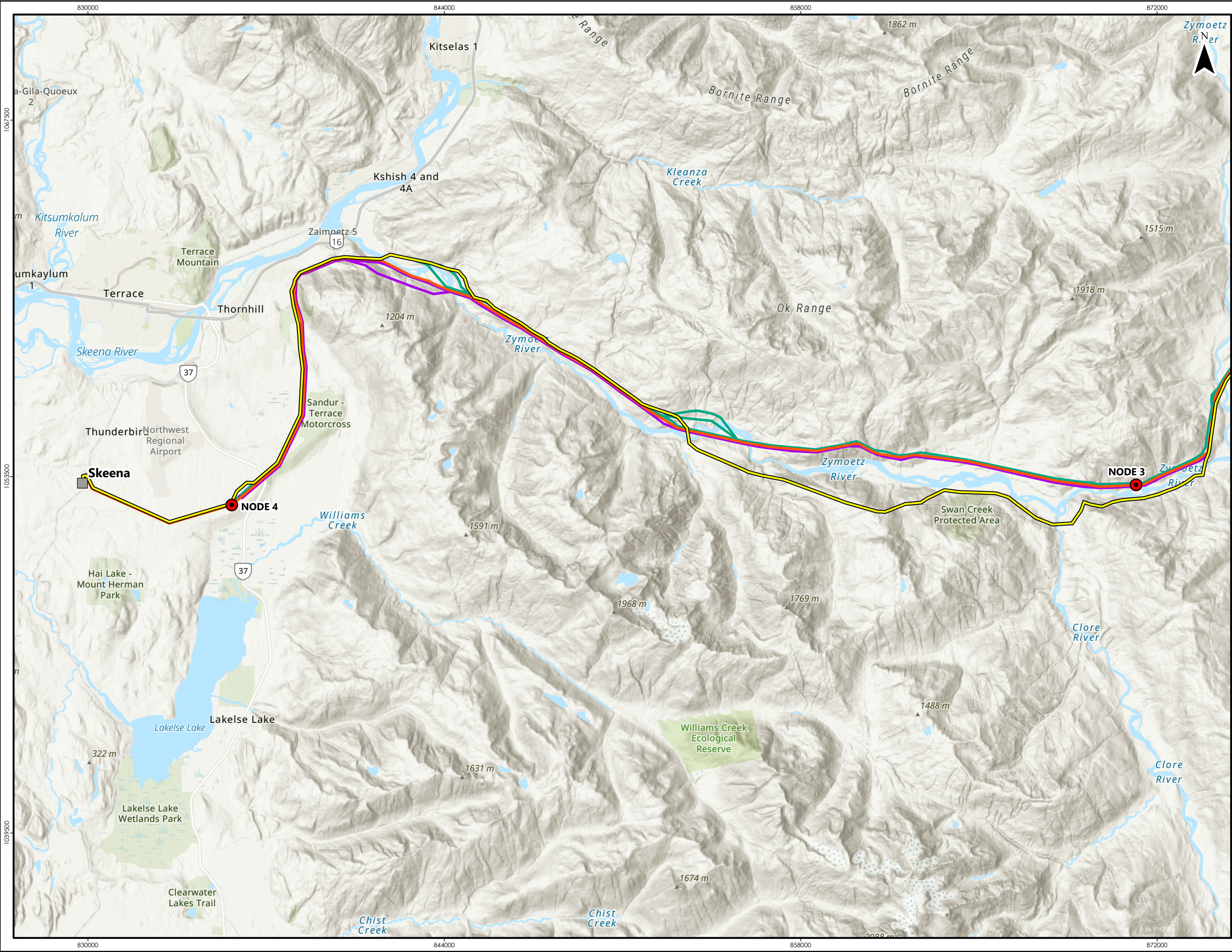
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2.0 PROJECT BACKGROUND

2.1 *Rationale for Boundary Adjustment to Swan Creek Protected Area*

For most of its length, the Phase 2 transmission line runs parallel to and within the same right-of-way (ROW) as the existing 500kV transmission line. At “Node 3” the proposed route departs from the existing transmission line and heads southwest, running through the Zymoetz River Valley. At this location, the preferred route runs along the south side of the Zymoetz River and through a northern portion of the Swan Creek Protected Area (Figures 2 and 3). This route was selected through a collaborative review and assessment of route options referred to as “structured decision making” with Kitselas First Nation, Kitsumkalum First Nation, Lax Kw’alaams First Nation, Metlakatla First Nation, and Wet’suwet’en First Nation.

The preferred route will require the proposed boundary adjustment to Swan Creek Protected Area. The Swan Creek Protected Area is 266.2 ha in size. The proposed boundary adjustment would remove approximately 12.4 ha of land (the proposed exclusion area) from the Protected Area.



BC Hydro
North Coast Transmission Line
Glenannan to Terrace Transmission

Figure 2.
Western Portion of
NCTL Phase 2

Project No.	Date	Revision
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Prepared By	Reviewed By	Page Size
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- Existing Substation
- Node
- Existing Circuit
- Proposed Circuit Centerline
- North Option
- South Option

0246

km

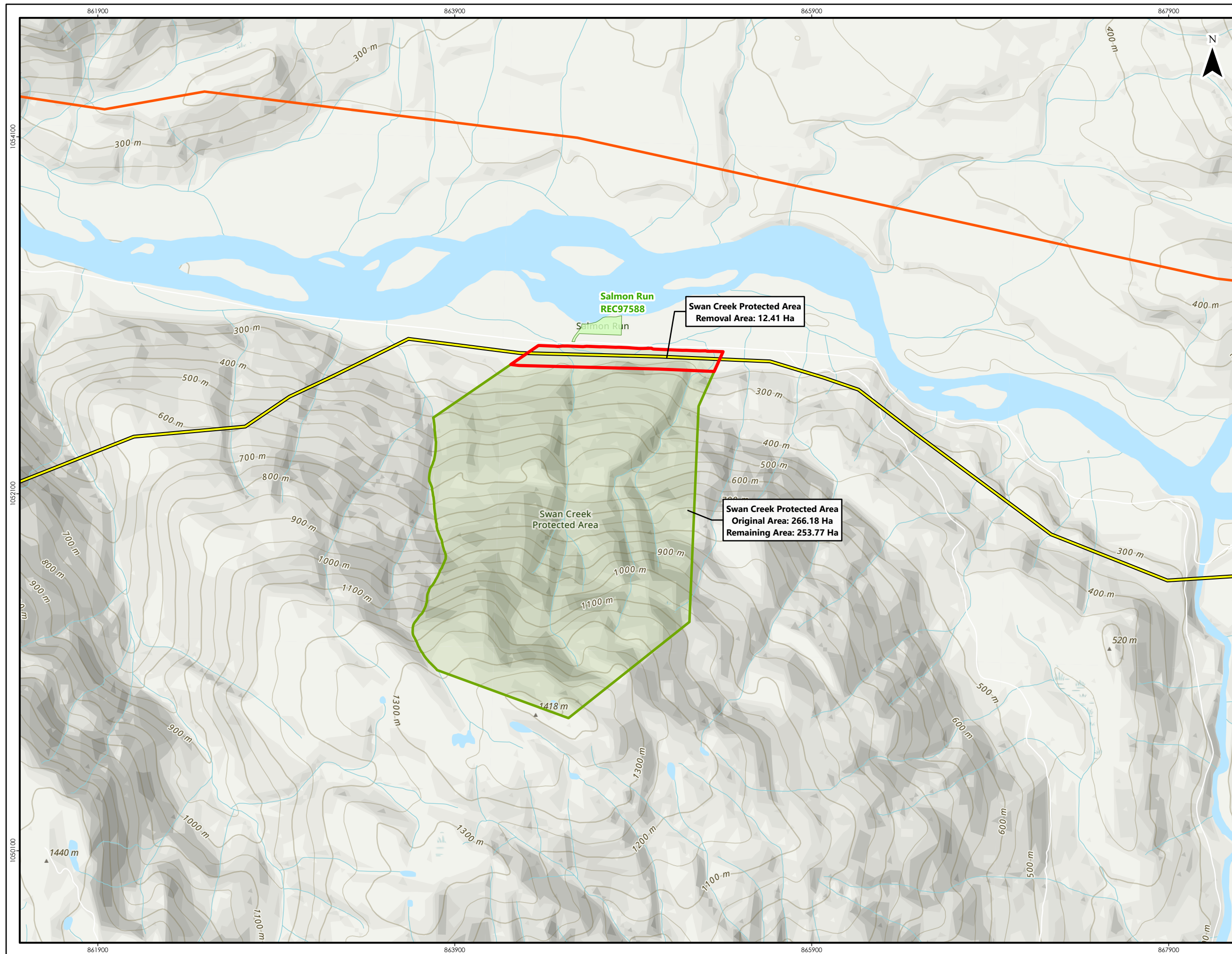
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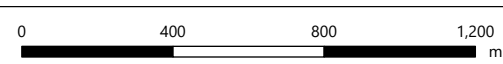
BC Hydro
North Coast Transmission Line
Glenannan to Terrace Transmission

Figure 3.
Preferred Route through
Northern Boundary of
Swan Creek Protected Area

Project No. 15385	Date Jun 23, 2026	Revision 01
Prepared By TK	Reviewed By AC	Page Size 11" x 17"



-  Existing Circuit
-  Proposed Circuit Centerline
-  Forest Recreational Site
-  Swan Creek Protected Area
-  Swan Creek Protected Area - Removal Area



Scale: 1:20,000

Projection: NAD 1983 BC Environment Albers

Base map Source: ESRI Base maps

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2.2 Protected Area Overview

The Swan Creek² Protected Area was designated on March 22, 2005, as part of the Kalum Land and Resource Management Plan (LRMP). The LRMP identified the area as having scenic waterfall and tourism values and recommended that it be managed for recreation. The SCPA protects a small, steep, unlogged watershed containing old growth trees, including western hemlock, mountain hemlock (*Tsuga heterophylla*), western red cedar (*Thuja pilicata*) and subalpine fir (*Abies lasiocarpa*). The Kalum LRMP also maps the area as Grizzly Bear Identified Watersheds (BC CDC 2026b; Province of British Columbia 2026d).

The Kalum LRMP outlines several management objectives and strategies for protected areas, including:

- maintaining ecosystem representation and integrity;
- protecting resource values and special natural and cultural features;
- protecting key species and their habitats;
- providing recreation opportunities, planning and managing parks in a manner that reflects the cultural heritage of those areas;
- maintaining ecosystem representation, and conservation, recreation and cultural heritage values within the new protected areas;
- recognizing legal rights of existing tenure holders and landowners within newly established parks;
- increasing cooperation between resource users adjacent to parks and park managers; and
- maintaining, where possible, opportunities for recreation and traditional hunting within protected areas (Province of British Columbia 2026d).

The SCPA is 266.2 ha and is located 38 km east of Terrace in the traditional territories of the following First Nations:

- Kitselas First Nation;
- Lax Kw'alaams Band; and
- Metlakatla First Nation.

Access to its northern boundary is via the Copper River Forest Service Road (Copper FSR). The protected area itself has no developed trails, facilities or designated campsites. Wilderness camping is permitted, and hunting occurs within the park during the open season.

The nearest provincial recreation site is the Salmon Run Forest Recreation Site, located immediately north of the SCPA on the north side of the Copper FSR at the 30 km marker. The recreation site includes three campsites, picnic tables, fire rings and a pit toilet.

² Also known as Beaver Pond Creek (BC Ministry of Water, Land and Air Protection Planning Section 2005)

2.2.1 Establishment and Management Intent

The protected area attributes for the SCPA include conservation, recreation, commercial recreation and cultural heritage (BC Ministry of Water, Land and Air Protection Planning Section 2005). Recreationally, the Zymoetz River contains a steelhead (*Oncorhynchus mykiss*) fishery, and chinook (*O. tshawytscha*) spawning area. Traditional fishing, hunting, and gathering activities have occurred throughout the area for thousands of years (BC Ministry of Water, Land and Air Protection Planning Section 2005).

2.2.2 Ecological, Archaeological and Cultural Resource Values

SCPA provides regionally important winter habitat for moose (immediately adjacent to provincial Ungulate Winter Range u-6-009), regionally important old-growth Mountain and Western Hemlock, Subalpine fir, and Western red cedar stands (up to 2.0 m in diameter), an unlogged watershed with a waterfall, provides habitat for furbearers and waterfowl, and the streams support Dolly Varden and may contain Coho spawning areas (BC Ministry of Water, Land and Air Protection Planning Section 2005). The SCPA also has an absence of physical infrastructure.

Desktop surveys indicated pre-AD 1846 Culturally Modified Tree (CMT) potential and the presence of nearby recorded archaeological sites to the north-east of SCPA across the Copper FSR. An Archaeological Impact Assessment was performed in the exclusion area by AiM Lands. Results of the assessment are outlined in Section 8.2 and Appendix 2.

As outlined in section 4.1, some Phase 2 First Nations whose territories are affected by the proposed SCPA boundary adjustment have provided information regarding cultural use areas that lie within the NCTL corridor. Consistent with confidentiality commitments, specific locations, activities, and culturally sensitive information are not reported in this assessment. However, if and where cultural use areas were identified within the SCPA boundary amendment area, BC Hydro will work with First Nations to develop site specific management plans.

3.0 PROJECT DESCRIPTION

3.1 Project Components in Swan Creek Protected Area

3.1.1 Transmission Line Right-of-Way

BC Hydro will register the transmission line ROW through the Land Title and Survey Authority of BC to allow access to construct and maintain the transmission line infrastructure. The engineering design of the transmission line is in progress. For the purposes of this Environmental Impact Assessment, it is assumed to be a maximum of 20 meters by 20 meters for transmission tower footprint and 8 meters wide for required access roads.

In addition to the transmission line ROW, to facilitate construction of the transmission line, an additional area within the SCPA is required to be cleared.

During construction, access to the site will be along Copper FSR. The initial work will include vegetation clearing. Construction will include the erection of three new towers, with the subsequent stringing of new 500 kV transmission lines and fibre optic cable.

3.2 Proposed Boundary Adjustment Description

Based on the 35% design for the NCTL in the SCPA, the proposed boundary adjustment for the SCPA will shift southward by approximately 115 metres. Table 1 provides an overview of the proposed boundary adjustment area to SCPA.

Table 1. Overview of Proposed Boundary Adjustment Area

Category	Area
Total Area of Swan Creek Protected Area	266.2 ha
Total Area Seeking Removal	12.4 ha
Remaining Area of Protected Area after Removal	253.8 ha

3.3 Alternatives Considered

3.3.1 Route Options

Figure 3 shows the route options that were assessed for the NCTL through the Zymoetz River Valley. These route options were assessed with First Nations considering system reliability, impacts to the environment, Indigenous values, impacts to stakeholders, as well as safety risks and cost.

Options 2 and 3 are located immediately north and south of the existing transmission line (5L063) on the north side of the Zymoetz River Valley. Option 3 was assessed as having significant terrain stability and erosion risks and was removed as a viable alternative early in the structured decision-making process. The assessment of Option 2 included various access considerations – helicopter access (2A), temporary access structures (2B), permanent bridges and roads with controls (2C) and permanent bridges and roads without controls (2D). While locating the line north of the existing transmission line reduced overall habitat fragmentation, increasing access to this part of the Zymoetz

River Valley was assessed as increasing potential impacts to fish and aquatic habitat, and disturbance to moose and goat populations.

Option 1 on the south side of the Zymoetz River was selected as the preferred route primarily because it does not require new access development to the north of the Zymoetz River Valley. While this option realigns away from the existing transmission line corridor, it was still assessed as having a lower overall environmental impact as it follows an existing major Forest Service Road corridor and the Pacific Natural Gas (PNG) pipeline corridor for the majority of its length. The proposed option also reduces new access and was most favoured by Nations. In addition, while this route is close to five archaeological sites, this risk was assessed as manageable through avoidance and compliance with the *Heritage Conservation Act*.

3.3.2 Rationale for Preferred Alignment

BC Hydro has determined that the preferred alignment on the south side of the Zymoetz River is the necessary and least-impactful option, to avoid higher valued habitat on the north side of the river. There are very few viable routing options available along the south bank of the Zymoetz River. BC Hydro evaluated the option of placing the centreline of the transmission line on the north side of the Copper FSR. However, this option was deemed not feasible due to the following three constraints:

- PNG pipeline exists on the north side of the road;
- A First Nation cultural site present; and
- To avoid the river and river floodplain, including tree clearing along the riverbank.

3.4 **Potential Project Interactions**

Table 2 provides the potential project interactions with the identified environmental components based on the anticipated project activities onsite.

Table 2. Potential Project Interactions with Environmental, Archaeology and Cultural Components

Component	Potential Interactions	Project Activities
Vegetation and Old Growth	Old Growth Deferral Area	• Site preparation and clearing • Changes to adjacent mature forest
Plant, Lichen and Ecological Communities at Risk	Rare plants, lichen and ecological communities at risk located within the Project Footprint	• Site preparation and clearing • Construction of temporary and permanent infrastructure
	Spread of invasive plant species during construction and operation	• Site preparation and clearing • Construction of temporary and permanent infrastructure
Wildlife and Wildlife Habitat / Species of Conservation Concern	Mortality of wildlife during construction	• Site preparation and clearing • Construction of temporary and permanent infrastructure

Component	Potential Interactions	Project Activities
		• Operating vehicles • Illegal hunting • Waste management
	Mortality of wildlife during operations	• Maintenance activities • Additional maintenance-related vehicle traffic on Copper FSR
	Reduction in the suitability and/or availability of capable habitat	• Vegetation clearing • Infilling • Transmission line operation and continued maintenance activities clearing vegetation underneath
Fish and Fish Habitat / Species of Conservation Concern	Mortality of fish during construction	• Site preparation and clearing • Construction of temporary and permanent infrastructure • Waste management
	Reduction in the suitability and/or availability of capable habitat	• Infilling • Transmission line operation and continued maintenance activities clearing vegetation in riparian areas
Wetlands and Riparian Areas	Reduction in the suitability and/or availability of vegetation and habitat	• Site preparation and clearing • Infilling • Transmission line operation and continued maintenance activities clearing vegetation in riparian areas
Hydrology	Reduction in the availability of wetlands and/or alteration of drainage patterns	• Site preparation and clearing
Archaeology	Alteration or destruction of cultural heritage resources	• Site preparation and clearing
Cultural Resource Values	Alteration in cultural use areas, including reduction in species of cultural value	• Site preparation and clearing • Transmission line operation and continued maintenance activities clearing vegetation in riparian areas

4.0 INDIGENOUS ENGAGEMENT

4.1 *Engagement Approach*

BC Hydro's consultation and engagement with Phase 2 First Nations on the Project overall has been ongoing since Fall 2022 through collective tables, including an Environmental Protection Technical Working Group and a Phase 2 Permitting Forum, and bilateral discussions. BC Hydro's approach to consultation and engagement has included the following:

- Information sharing;
- Collaborative development of the Environmental Protection Plan (the Phase 2 environmental assessment), where Phase 2 Nations assessed the impacts of the Project on Indigenous pillars;
- Site visits and helicopter flyovers;
- A permitting process that includes pre-application engagement;
- Collaborative development of project mitigation and enhancement measures; and
- Collaboration on routing and project design.

Information on routing and permitting regarding the transmission line crossing the Zymoetz River Valley has been shared with Phase 2 Nations at the Environmental Protection Technical Working Group and the Phase 2 Permitting Forum to keep all Phase 2 Nations informed.

BC Hydro has had more direct and deep consultation with Nations where their territories are impacted by a specific decision or project component. For the Western route option decision, BC Hydro consulted with:

- Kitselas First Nation
- Kitsumkalum First Nation
- Lax Kw'alaams First Nation
- Metlakatla First Nation
- Wet'suwet'en First Nation

BC Hydro is consulting with the following First Nations with respect to the SCPA proposed boundary adjustment:

- Kitselas First Nation
- Lax Kw'alaams First Nation
- Metlakatla First Nation

4.2 *Summary of Engagement Activities on Western Route*

Between October 21, 2024, and February 21, 2025, BC Hydro undertook a collaborative route selection process with Kitselas First Nation, Kitsumkalum First Nation, Metlakatla First Nation, Lax

Kw'alaams Band and Wet'suwet'en First Nation to identify a leading route for the Western section of the line. During this time, BC Hydro met with First Nations, shared Project mapping and information including an environmental constraints analysis and information related to the objectives being assessed for each route option (i.e., system reliability, impacts to the environment, impacts to stakeholders, safety risks and cost). BC Hydro also offered aerial project tours by helicopter (accepted by Kitselas, Kitsumkalum, Metlakatla, and Wet'suwet'en First Nations) and site visits to view the route options. Nations shared perspectives and information about key priorities, interests, and values for consideration when assessing the route options, including access management, protecting wildlife habitat, protecting archaeological and cultural values, assessing new and existing clearing and roads, and construction and operation costs.

Based on the collaborative assessment, Option 1 was selected as the leading route. Kitselas First Nation indicated that Option 1 would be more favourable in terms of Kitselas values and Kitsumkalum supported route Option 1. Wet'suwet'en First Nation noted that route Option 1 does not intersect with their territory. Lax Kw'alaams and Metlakatla did not indicate a preference at the time. An overview of the routing decision was shared with all Phase 2 Nations at a forum on February 6, 2025, noting that the preferred route would be validated and refined following further collaborative assessments.

On February 9, 2026, BC Hydro sent letters to Kitselas, Kitsumkalum, Metlakatla, Lax Kw'alaams, and Wet'suwet'en First Nations confirming that, based on further collaborative assessment, Option 1 would be advancing as the preferred route. BC Hydro advised that they would consider any additional input on this selection but have not received comments from Nations as of the date this document was completed. BC Hydro continues to work closely with Nations to design the Project such as to avoid, where possible, and minimize impacts to First Nations interests.

4.3 Summary of Engagement Activities on Proposed Park Boundary Adjustment

Between February and July 2026, BC Hydro engaged with Phase 2 First Nations regarding the proposed Swan Creek Protected Area boundary adjustment required for the NCTL Phase 2 project through Permitting Forums, bilateral correspondence, and review of draft application materials. Key consultation and engagement activities included:

- **February 9, 2026** – BC Hydro shared the Stage 1 Park Boundary Adjustment Application with the following First Nations (whose traditional territories overlap with Swan Creek Protected Area: Kitselas, Lax Kw'alaams, and Metlakatla for review and feedback.
- **February 18, 2026** – BC Hydro met with Phase 2 First Nations during a Permitting Forum and discussed the proposed Swan Creek Protected Area boundary adjustment Stage 1 Application.
- **April 7, 2026** – BC Hydro shared the updated Stage 1 Park Boundary Adjustment Application that was submitted to BC Parks
- **April 22, 2026** – BC Parks attended an Environmental Protection Technical Working Group meeting to discuss the protected area boundary adjustment process.

- **July 8, 2026** – BC Hydro notified Phase 2 First Nations during an Environmental Protection Technical Working Group meeting that a draft application for Stage 2 of the BC Parks boundary adjustment process for Swan Creek would be shared in middle July 2026.

Throughout the consultation process, BC Hydro provided information regarding the rationale for the preferred route, the provincial park boundary adjustment process, anticipated environmental effects, and proposed timelines. During this period, comments and feedback were received from Kitselas First Nation, Kitsumkalum First Nation, and Metlakatla First Nations as described below.

4.4 Key Issues and Concerns Raised by First Nations

During consultation on the Stage 1 draft Application, First Nations whose territories overlap the SCPA boundary adjustment area raised the following key issues and concerns:

- Impacts to wetlands that provide rearing habitat for salmonids and other species
- Impacts to old-growth values, archaeological, cultural and heritage resources;
- Impacts on Indigenous rights, title and governance authority;
- Highlight trade offs between route options and proposed exclusion area;
- Restoration and compensation requirements for impacted Parks area;
- Development of appropriate mitigation measures, including opportunities for Indigenous participation in environmental monitoring and stewardship (i.e. implementation of Guardian Program);
- Appropriate framing of consultation and engagement activities; and
- Timing of field work of Swan Creek Protected Area Boundary.

BC Hydro sought to address First Nations concerns by updating the SCPA Stage 1 parks boundary adjustment application to reflect Nation feedback, including clarifying the route selection rationale and the park boundary adjustment process. BC Hydro has also committed to ongoing consultation and engagement throughout the permitting process, including bilateral discussions with interested Nations, opportunities for participation in environmental and cultural monitoring, and continued dialogue regarding cultural heritage, stewardship, rights and governance considerations, and mitigation measures as project planning advances.

5.0 PUBLIC ENGAGEMENT

5.1 Engagement Approach

The Swan Creek Protected Area lies within the Regional District of Kitimat-Stikine and is approximately 38 km east of Terrace, via Highway 16 and the Copper FSR. BC Hydro is engaging with the City of Terrace and Regional District of Kitimat Stikine and is working to identify any local community groups who may have an interest in the proposed boundary adjustment. This included members of the team who initiated the Protected Area status designation within the Kalum Land and Resource Management Plan. To date no responses have been received from any of the stakeholders engaged.

Per BC Parks' permitting process, this application will be posted online on BC Hydro's NCTL website for 30 days for public comment, and any feedback received will be considered.

6.0 ASSESSMENT FRAMEWORK

6.1 Scope of Assessment

Based on the review of existing information, the Environmental Impact Assessment for the SCPA focused on species of conservation concern, reported incidental occurrence data and field observations.

A Land Use and Socio-Economic Effects Assessment and an Archaeological Impact Assessment were also completed and are available in Appendices 1 and 2, respectively.

BC Hydro reviewed First Nations cultural heritage resource information, where provided, including confidential information related to ceremonial, harvesting, fishing, and hunting activities. Information reviewed included reports, maps, and GIS shapefiles. Due to the confidential nature of this information, it has not been included in this application.

6.2 Spatial Boundaries

6.2.1 Project Footprint

As described in Section 3.2, the proposed boundary adjustment is 12.4 ha, by shifting the current boundary approximately 115 meters southward. The Project footprint includes the transmission line towers and fibre optic cable infrastructure, new access roads, the direct area of disturbance required to construct the Project (i.e., clearing area) and other ancillary works (i.e., removal of dangerous trees within 100 m of the clearing area) (Appendix 3, Figure 5).

6.2.2 Local Study Area

The Local Study Area (LSA) is the SCPA.

6.2.3 Regional Study Area

The Regional Study Area (RSA) is the Zymoetz Watershed.

6.3 Temporal Boundaries

The assessment considered all Project activities related to construction, as well as operations and maintenance of the transmission line. As the Project is intended to be permanent, decommissioning was not assessed.

7.0 ASSESSMENT METHODS

7.1 *Desktop Review and Spatial Analysis*

A desktop review was completed for the Project footprint. Data and literature for the Project footprint were obtained from a variety of sources and reviewed for:

- Species of conservation concern;
- Aquatic and terrestrial information; and
- Environmental setting.

7.1.1 iMapBC

iMapBC (Province of BC 2026a) is a provincial interactive map, compiling various publicly available data sources.

The iMapBC tool was used to view various spatial data that could serve as constraints or serve as management considerations. Data within the Project footprint, LSA and RSA were analyzed. The layers considered during the desktop review were:

- Ungulate Winter Range (UWR) – Approved;
- Wildlife Habitat Area (WHA) – Approved;
- Wildlife Habitat Features (WHF) – All;
- Grizzly Bear Population Units (GBPU) - All;
- Old Growth Management Areas (OGMA) – Legal;
- Species and Ecosystems at Risk – Publicly Available Occurrences – CDC – All;
- Critical Habitat for Federally Listed Species at Risk;
- Provincial Parks, Eco Reserves;
- Wildlife Incidental Observations;
- Invasive Plant Observations;
- Obstacles to Fish Passage;
- Biogeoclimatic Units: Zone, Subzone, Variant; and
- Ecoregion classifications: Ecosection.

7.1.2 British Columbia Conservation Data Centre

BC Conservation Data Centre (BC CDC) information was accessed through the online BC Species and Ecosystem Explorer (BC SEE) database (BC CDC 2026a). BC SEE was used to identify provincial species and ecological communities (subjects) of interest in relation to the Project footprints, by considering current conservation status, legal designation, and spatial distributions. The BC CDC compiles information on the status and occurrence of species considered to be of conservation concern provincially and federally. The CDC establishes the provincial Conservation Status Rank for species

and ecological communities in BC, with those ranks used to place species and ecological communities within the categories on the BC Lists. For extant species, the BC Lists are:

- Red List – at risk of being lost (extirpated, endangered, or threatened);
- Blue List – being of special concern; and
- Yellow List – secure and least risk of being lost.

For the Project, BC SEE was used to assemble a list of species and ecological communities of interest by selecting for the following search criteria:

- Groups – one of the following per search: amphibians or reptiles, birds, mammals, invertebrates, or plants or lichen or macrofungi, and ecological communities;
- Native species;
- Conservation Status: BC List – Red or Blue; or *Species at Risk Act* (SARA) Schedule 1 Status: True;
- Ecoregion: Nass Mountains (Province of BC 2026a); and
- Biogeoclimatic Units: Coastal Western Hemlock (CWH) Very Submaritime Submontane (ws1) (Province of BC 2026a).

Several species in BC SEE are missing one or both of the Ecoregion and/or BEC zone search criteria; these species were also included as they can not be excluded from occurring within the Project area.

The CDC also compiles federal Committee on the Status of Endangered Species in Canada (COSEWIC) information and rankings (extinct, extirpated, endangered, threatened, special concern, not at risk, data deficient) for species. This allows BC SEE to be utilized for both BC List and SARA conservation statuses for species of interest.

7.1.3 CDC iMap

CDC iMap (BC CDC 2026b) is an interactive map and provincial resource used to spatially view known occurrences of red- and blue-listed species and ecosystems. The Project footprint, LSA and RSA were viewed to determine anticipated red- and blue-listed species and ecological communities.

No masked secured occurrence data were obtained.

7.1.4 Species at Risk Public Registry

The Species at Risk Public Registry (Government of Canada 2026a) is an online source for querying information relating to species at risk in Canada, designated by COSEWIC, that are protected under the federal Species at Risk Act (SARA). SARA describes the Schedule 1 wildlife species for Canada. Schedule 1 protects species that are extirpated (EX), endangered (E), threatened (T), and species of special concern (SC). It also provides an overview of the SARA and strategies to protect endangered and threatened species, including critical habitat for protection.

This registry was used to verify the data provided by the BC SEE searches, and additionally screen and search for habitat preferences for species and locations of their critical habitat listed under the SARA that may occur in the Project footprint using the following search criteria:

- Range: British Columbia; and
- Schedule 1 status: Extirpated, Endangered, Threatened, Special Concern

7.1.5 Aquatic Species at Risk Map

The Aquatic Species at Risk mapping tool (Government of Canada 2026b) is an interactive map and Fisheries and Oceans Canada resource used to spatially view critical habitat and distribution data for aquatic species listed under the SARA with the Project footprint, LSA and RSA.

7.1.6 HabitatWizard

HabitatWizard (Province of BC 2026b) is an interactive map used to spatially view detailed fish and fish habitat, wildlife and wildlife habitat, and ecosystem information in BC. The Project footprint, LSA and RSA were viewed to determine aquatic features, fish and fish habitat information, and wildlife and wildlife habitat information. The layers considered during the desktop review were:

- Base Map: Landform (cutline, slide, cliff), water (falls, dams, river, canal, wetlands, lake, reservoir), landmark (tower, well) wetlands;
- Fisheries: All fisheries layers, and All fish points, obstacles to fish passage, BC aquatic invasive species, EcoCat, stream crossings, rare and endangered fish;
- Wildlife: All wildlife and wildlife habitat features layers;
- Plants: Old Growth Management Areas, invasive plant, invasive alien plant program;
- Endangered Species and Ecosystems;
- Legal and Proposed GAR Designations; and
- Sensitive Ecosystem Inventory Map.

7.1.7 InvasivesBC Database and Map Display

The InvasivesBC (Province of BC 2026c) database and map display allow for information sharing and reporting of occurrences of known invasive plant species occurrences, including plant survey records, applied treatments, and monitoring results throughout BC. The Project footprint, LSA and RSA were searched on the InvasivesBC map for occurrences of invasive plant species.

7.1.8 iNaturalist

iNaturalist is an online social network of people sharing biodiversity information and provides a crowdsourced species identification system and an organism occurrence recording tool. It helps users identify the plants and animals in their area while generating data for science and conservation. This resource was used to determine presence of species. "Research Grade" data was used to ensure quality of species reporting data.

7.1.9 Great Blue Heron Nesting Atlas

The Great Blue Heron Nesting Atlas (Community Mapping Network 2018a) stores and tracks Great Blue Heron colonies and nest locations, and associated productivity data. This resource was used to determine presence of nearby Great Blue Heron colonies and nests.

7.1.10 Wildlife Tree Stewardship

The Wildlife Tree Atlas (Community Mapping Network 2018b) collects Bald Eagle and Osprey nest records provided by government, industry, conservation/naturalist groups, and the public. This resource was used to determine presence of historic and active Bald Eagle and Osprey nests nearby.

7.1.11 ESRI ArcGIS Online

ArcGIS Online Map Viewer (Esri 2026) is an interactive web-based geographic information system used to view, explore, and analyse spatial datasets through configurable web maps. Individual features and imagery can be selected to view associated attribute information.

For this assessment, ArcGIS Online Map Viewer was used as a desktop geospatial data source to review available provincial and third-party environmental datasets relevant to the Project footprint, LSA, and RSA. The platform was used to visually assess mapped features, support spatial interpretation of environmental constraints, and identify relevant wildlife and habitat records where available.

7.1.12 Archaeology

AiM Land Services completed a desktop review as part of their Archaeological Impact Assessment (AIA) under the *Heritage Conservation Act*. Their desktop review included identifying the nearest archaeological sites and past archaeological studies.

7.1.13 Cultural Resources Values

In addition to listed species at risk and species with protected habitat, Indigenous Nations identified the following additional species or species group having cultural value:

- Black-tailed Deer (*Odocoileus hemionus sitkensis*)
- Canada Goose (*Branta canadensis*)
- Grouse
- Raptors
- Long-toed Salamander (*Ambystoma macrodactylum*)
- Wood Frog (*Lithobates sylvaticus*)
- Columbia Spotted Frog (*Rana luteiventris*)

The habitat of these species were considered during the desktop review for cultural heritage resources.

7.2 **Field Surveys**

7.2.1 Environmental Assessment

Wai Wah-McTavish was retained to complete the field assessment of the proposed exclusion area. Field crews surveyed the area the week of May 18, 2026. Opportunities to attend the surveys were extended to Lax Kw'alaams, Metlakatla and Kitselas First Nations, and Metlaktla attended. Field assessment was completed using visual reconnaissance-level procedures consistent with applicable provincial guidance. Assessment components included stream and drainage classification, wetland identification and functional interpretation, ecological classification, old-forest verification, and wildlife habitat suitability assessment (Appendix 5).

The field assessment and interpretation of results were informed by standard provincial guidance for stream classification (Province of BC 2025a), wetland identification and delineation (Province of BC 2025b), terrestrial ecosystem description (BC Ministry of Forests and Range and BC Ministry of Environment 2010; Province of BC 1998), old-forest verification, and wildlife habitat suitability assessment (Ministry of Forests 2022; Province of BC 1999; BC Ministry of Forests and Range and BC Ministry of Environment 2010).

7.2.2 Archaeological Impact Assessment

AiM Lands conducted an Archaeological Impact Assessment (AIA) under a *Heritage Conservation Act* Section 12.2 Heritage Inspection Permit no. 2025-0187. Fieldwork was carried out in early June 2026 following the methods outlined in Permit 2025-0187, including pedestrian survey, detailed inspection of old-growth pockets, and systematic shovel testing of the single landform assessed as having elevated archaeological potential. Kitselas, Lax Kw'alaams, and Metlakatla were notified and were invited to participate in the AIA, and Metlakatla participated.

7.3 **Professional Judgment**

Once the species lists were assembled from the British Columbia Conservation Data Centre and Species at Risk Public Registry, professional judgement and knowledge of the species were used to assess the likelihood of presence within the study area. Each species potential presence was identified as:

- **Unlikely:** Unlikely to be found within the Project footprint and local study area due to the species habitat and/or environmental requirements;
- **Possible:** Low likelihood of occurrence within the Project footprint and local study area due to species habitat and/or environmental condition requirements; may have incidental occurrence data nearby; or
- **Likely:** Moderate to high likelihood of occurrence with the Project footprint and local study area due to species habitat and/or environmental condition requirements.

8.0 BASELINE CONDITIONS

8.1 Environmental Setting

The Project is located in the traditional territories of the Kitselas First Nation, Lax Kw'alaams First Nation, and Metlakatla First Nation.

The Project is situated within the Kitimat-Stikine Regional District and the Skeena Natural Resource Region and is within the Nass Ranges Ecoregion and Nass Mountain Ecosection (Table 3) (Province of BC 2026a). The Project lies within the CWHws1 BEC zone and subzone. The CWHws1 occurs in the northwest, west of the Bulkley Ranges at low elevations in the Zymoetz, Nass, Skeena, Kitsumkalum, Lakelse and North Coast rivers watersheds. The zone is characterized by cool summers and mild winters, with a mean annual temperature about 8°C (Meidinger and Pojar 1991).

The primary tree species for this area are Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), Western redcedar (*Thuja plicata*), and Amabilis fir (*Abies amabilis*) (Meidinger and Pojar 1991). Common shrub and herb species include Alaska blueberry (*Vaccinium alaskaense*), oval-leaved blueberry (*Vaccinium ovalifolium*), false azalea (*Menziesia ferruginea*), queen's cup (*Clintonia uniflora*), one-sided wintergreen (*Orthilia secunda*), bunchberry (*Cornus canadensis*), twinflower (*Linnaea borealis*), and rattlesnake-plantain (*Goodyera oblongifolia*) (Meidinger and Pojar 1991). The well-developed moss layer contains red-stemmed feathermoss (*Pleurozium schreberi*), lanky moss (*Rhytidiadelphus loreus*), electrified cat's-tail moss (*Rhytidiadelphus triquetrus*) and pipecleaner moss (*Rhytidiopsis robusta*) (Meidinger and Pojar 1991).

Table 3. Project footprint administrative and physiographic setting

Description	Setting
Administrative Boundaries	
Regional District	Kitimat-Stikine
Natural Resource District	Coast Mountains
Natural Resource Area	North Natural
Natural Resource Region	Skeena
General Location	
1:10,000 Mapsheet	103I.050.4
Geophysical Setting	
Major Watershed	Zymoetz River
Elevation	218-229 m
Ecosystem Classification	
Ecodomain	Humid Temperate
Ecodivision	Cool Hypermaritime and Highlands
Ecoprovince	Coast and Mountains
Ecoregion	Nass Ranges
Ecosection	Nass Mountains
Biogeoclimatic Zone	Coastal Western Hemlock (CWH)
Subzone	Wet Submaritime (ws1)
Variant	Submontane

During the desktop review (Appendix 4; BC CDC 2026a; Government of Canada 2026a), there were 113 species of conservation concern identified that are associated with the Nass Mountains Ecosection and Coastal Western Hemlock (CWS) biogeoclimatic zone and ws1 subzone. Of these species, 17 have a low likelihood of presence in the Project Footprint (“possible”), and 12 have a moderate to high potential of being present (“likely”). The summary of the species of conservation concern desktop review is provided in Table 4.

Table 4. Summary of species of conservation concern desktop review (associated with Nass Mountains Ecosection and CWHws1)

	Total Number	Unlikely	Possible	Likely
Ecological Communities	9	3	6	0
Plants	4	3	1	0
Lichen	5	3	1	1
Macrofungi	0	0	0	0
Slime Molds	0	0	0	0
Mammals	13	9	1	2
Birds	51	41	4	5
Amphibians	4	2	0	2
Reptiles	1	1	0	0
Fish	8	6	0	2
Invertebrate and Insect	18	17	1	0

8.1.1 Vegetation and Old Growth

One Old Growth Deferral Area (OGDA; polygon ID 13748) intersects with the proposed exclusion area on the west side of the Project footprint. The OGDA is classified as “ancient,” defined as forest stands greater than 400 years old. There are no Old Growth Management Areas in the SCPA.

A spatial query of the Vegetation Resource Index (VRI) layer identified four VRI polygons within the Protected Area that intersect the Project Footprint (Appendix 3 Figure 5):

- **Mid-seral Conifer stands:**

- Polygon ID 93599288 represents a Spruce–Balsam Poplar/Cottonwood stand with trace Western Hemlock. The estimated stand age is 41 to 60 years, with an estimated height of 10.5 to 19.4 m and 36–45% canopy closure. The site index is 13, with an estimated site index of 15.
- Polygon ID 85789323 represents a Spruce–Western Hemlock stand with trace Balsam Poplar/Cottonwood. The estimated stand age is 41 to 60 years, with an estimated height of 10.5 to 19.4 m and 36–45% canopy closure. The site index is 13, with an estimated site index of 15.
- Polygon ID 81189277 represents a Western Hemlock stand with Spruce-Amabilis Fir/Cottonwood. The estimated stand age is 41 to 60 years, with a projected height of 19.7 m. The site index is 21.

- Polygon ID 83469219 represents a Western Hemlock-Amabilis Fir stand. The estimated stand age is 41 to 60 years, with a projected height of 18 m. The site index is 18.
- **Early-seral Conifer stand:** Polygon ID 95318910 is classified as a Western Hemlock-Amabilis Fir stand. The estimated stand age is 21 to 40 years, with a projected height of 16.5 m. The site index is 24.8.
- **Older Hemlock-Amabilis Fir stand:** Finally, polygon ID 86449138 represents a Hemlock–Amabilis Fir stand with an estimated stand age of 251+ years. Estimated stand height ranges from 19.5 to 28.4 m, with 76–85% canopy closure. The site index is 9, with an estimated site index of 0.
- **Non-treed Wetland:** Polygon ID 90009357 is classified as a non-treed open wetland dominated by herbaceous vegetation.
- **Non-treed Rock:** Polygon ID 86349211 is classified as a non-treed rock and bedrock, barren of vegetation.

The field assessment confirmed that the forest ecosystems are primarily Western Hemlock (*Tsuga heterophylla*) with varying proportions of Amabilis Fir (*Abies amabilis*) and Western Redcedar (*Thuja plicata*) (Appendix 5). The Sitka Spruce (*Picea sitchensis*) is present intermittently in mature to old growth stage around the swamp wetland. The wetland complex supports willow-dominated communities and shallow open water habitat (Appendix 5). The field verification of the mapped old growth deferral area found dominant tree species were Western Hemlock with minor Amabilis Fir and Western Redcedar, with estimated ages of approximately 263 to 303 years (Appendix 5).

During the desktop review associated with the CWHws1 BEC zone/subzone (Appendix 4; BC CDC 2026a; Government of Canada 2026a), nine ecological communities of conservation concern were identified, six of which are possibly present in the Project Footprint. There were three plants of conservation concern identified, one of which is possibly present in the Project Footprint. Finally, there were also three lichens of conservation concern identified, one that is likely present and one possibly present in the Project Footprint.

Alaska holly fern (*Polystichum setigerum*) is a plant species of conservation concern that is blue-listed in BC. It grows in wet conifer forests and riparian areas in lowland coastal forests. The species range includes coastal northwest BC, but as there are no documented occurrences nearby, this plant possibly occurs in the Project footprint.

Smoker's Lung (*Lobaria retigera*) is a lichen species of conservation concern identified as having a potential of occurring in the Project Footprint based on the desktop review (Appendix 4; BC CDC 2026a; Government of Canada 2026a). It is listed as threatened under SARA and is blue-listed in BC. Smoker's Lung's core range is the Coastal Western Hemlock (CWH) biogeoclimatic zone, and the northwest population inhabits the Nass River watershed, and therefore, this lichen is likely to occur in the Project footprint.

Northwest waterfan (*Peltigera hydrothyria* var. *gowardii*) is a lichen species of conservation concern that is red-listed in BC. It is found in streams in open subalpine and alpine meadows, and lower and upper montane conifer and riparian forests. It is associated with older forests, and most frequently found on large rocks or bedrock. There is a documented occurrence approximately 4 km southwest of the Project Footprint and it is possibly present in the Project Footprint.

Table 5 provides additional onsite plant observations in the Project Footprint that were recorded by Terrace Parks in 2020. In addition, just north of the Copper FSR in the vicinity of the Project Footprint is an observation for Red Huckleberry (*Vaccinium parvifolium*), recorded in August 2025.

Table 5. iNaturalist Plant Observations in Project Footprint³

Scientific Name	Common Name	Observation Date
<i>Aquilegia formosa</i>	Western columbine	June 8, 2020
<i>Carex aquatilis dives</i>	Sitka sedge	June 8, 2020
<i>Lonicera involucrate</i>	Twinberry honeysuckle	June 8, 2020
<i>Maianthemum racemosum amplexicaule</i>	Western Solomon's plume	June 8, 2020
<i>Picea sitchensis</i>	Sitka spruce	June 8, 2020
<i>Ribes lacustre</i>	Swamp current	June 8, 2020
<i>Rubus parviflorus</i>	Thimbleberry	June 8, 2020
<i>Salix sitchensis</i>	Sitka willow	June 8, 2020
<i>Sambucus racemosa</i>	Red-berried elder	June 8, 2020
<i>Viola glabella</i>	Stream violet	June 8, 2020

During the May 2026 field assessment (Appendix 5), there were no occurrences of rare plants identified. The vegetation assessment for the proposed exclusion area was characterized by a mosaic of forested and wetland-associated ecosystems within the Coastal Western Hemlock wet submarine variant, including:

- HwPL – feather moss;
- HwBA – blueberry – step moss;
- HwBA – oak fern – wood fern;
- HwBa – blueberry – queen's cup;
- CwHw – devil's club – enchanter's-nightshade;
- Sitka willow – Pacific willow / skunk cabbage; and
- Shallow Open water.

There were no documented occurrences of invasive plants in the Project Footprint or LSA. Table 6 provides the invasive plant species that have been recorded in the RSA. The primary invasive plant species near the SCPA is Common Tansy (*Tanacetum vulgare*), and there are several nearby mechanical and chemical treatment records available (Province of British Columbia 2026c). BC Parks has also described the following invasive species of concern for the SCPA: hawkweeds (*Hieracium*

³ Observations recorded by Terrace Parks

spp.), spotted knapweed (*Centaurea maculosa*) and Marsh thistle (*Cirsium palustre*) (BC Ministry of Water, Land and Air Protection Planning Section 2005).

Table 6. Invasive plant species in RSA

Scientific Name	Common Name
<i>Centaurea stoebe / biebersteinii</i>	Spotted knapweed
<i>Hieracium maculatum</i>	Spotted / mottled hawkweed
<i>Hypericum perforatum</i>	St. John's-wort
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Tanacetum vulgare</i>	Common Tansy

8.1.2 Wildlife and Wildlife Habitat

Several Wildlife species of conservation concern are associated with the CWHws1 BEC zone/subzone identified during the desktop review (Appendix 4 Figure 6; BC CDC 2026a; Government of Canada 2026a).

The proposed exclusion area does not overlap with any known sensitive wildlife areas such as nesting buffers. Within the Project Footprint, there is no overlap with Wildlife Habitat Areas, Species at Risk (SAR) Critical Habitat, or Ungulate Winter Range (UWR) polygons. A moose winter range polygon UWR M-ALAL (u-6-009) follows the northern edge of the protected area but does not overlap with the proposed exclusion area. Order UWR #6-009 pertains to the Ungulate Winter Range polygon, not adjacent habitats.

8.1.2.1 **Mammals**

During the desktop review for mammal species of conservation concern associated with the CWHws1 BEC zone/subzone (Appendix 4; BC CDC 2026a; Government of Canada 2026a), three mammal species of conservation concern were identified that are possibly or likely present in the Project Footprint.

Little Brown Myotis (*Myotis lucifugus*) is listed under SARA as endangered and is blue-listed in BC. This species of bat utilizes a wide range of habitats, including arid grasslands, humid coastal forests, and northern boreal forests. They are generally associated with forest stands more than 100 years old and will occupy wet coniferous forest. They are known to roost in tree cavities, rock crevices, man-made structures, and under tree bark (Klinkenberg 2021). They are likely to be found near open water bodies and wetlands, and in mature and old-growth forests that provide suitable day roosts and maternity roosting habitat. As there is a moderate habitat suitability within the Project Footprint and surrounding Old-Growth Forest, it is possible to encounter the species' potential roosting and foraging habitat.

Yuma Myotis (*Myotis yumanensis*) is blue-listed in BC. This species roosts in snags, rock crevices, mines, bridges, buildings and cavities in large live trees near water. They forage over water or in open spaces over land. There is a moderate habitat suitability within the Project Footprint and surrounding Old-Growth Forest, and there are observations within the Skeena Region, for potential roosting and foraging habitat. Yuma Myotis are likely to occur in mature and old growth forests adjacent to suitable foraging habitat, including open water bodies and wetlands.

Grizzly Bear (*Ursus arctos*) is listed under SARA as a species of special concern and blue-listed in BC. Grizzly Bears have large home ranges that can occur over hundreds of square kilometers with habitat selection and movements being reflective of food availability (Hamilton 1987). Within their home ranges, Grizzly Bears occupy many habitat types; therefore, it is possible they could be encountered in the Project footprint. The Project falls within the Bulkley Lakes Grizzly Bear Population Unit (GBPU) (Province of BC 2026a). The population unit is described to have a very low conservation concern as the population is viable. There is also a Grizzly Bear Wildlife Habitat Area (WHA) with two areas in the RSA. WHA 6-287 is approximately 2.5 km east, and approximately 3 km southeast of the SCPA. Important foraging habitat that is present low elevation wetlands and the Zymoetz River floodplains. Therefore, there is a moderate likelihood that Grizzly Bears will be encountered during Project construction.

While the Project Footprint does not overlap with Ungulate Winter Range polygons, the UWR M-ALAL (u-6-009), designated for Moose (*Alces alces*), runs along the northern boundary of the SCPA. High value habitat features for moose that is present in the proposed exclusion area include wetlands, waterbodies, and riparian corridors.

A North American beaver (*Castor canadensis*) dam is recorded on the unnamed watercourse (FWA WSC 400-221484) that is a tributary to the Zymoetz River. The location is recorded as north of the Copper FSR, outside of the Project Footprint (BC CDC 2026b). North American Beaver habitat, which includes stable water sources such as ponds, lakes and streams, is present in the proposed exclusion area.

Finally, approximately 1.6 km east of the Project Footprint is the western extent of the Telkwa Caribou (*Rangifer tarandus*) herd distribution area. The Telkwa herd primarily utilizes high-elevation subalpine and alpine habitat areas year-round. The Project Footprint and LSA is outside this anticipated range, and Caribou are not expected to be encountered or impacted.

During the reconnaissance-level wildlife habitat assessment of the proposed exclusion area, field crews observed a River Otter (*Lontra canadensis*), bear and moose scat, and significantly browsed shrubs (Appendix 5). The Wildlife Habitat Suitability field assessment for mammals are in Table 7.

Table 7. Wildlife Habitat Suitability Field Assessment Results - Mammals

Scientific Name	Common Name	Habitat Suitability	Sign / Observation	Field Comments
<i>Alces alces</i>	Moose	High	Browse, pellets and trails observed	Adjacent to ungulate winter range and functioning as such
<i>Ursus arctos</i>	Grizzly Bear	Moderate	Bear scat, digs and claw marks observed	Reduced suitability because of Copper Forest Service Road
<i>Castor canadensis</i>	Beaver	High	Numerous lodges and dams	Active dams and ponding indicate ongoing habitat use and wetland influence
<i>Myotis spp.</i>	Bats	Moderate	None observed	Potential roost habitat

Scientific Name	Common Name	Habitat Suitability	Sign / Observation	Field Comments
<i>Ovis canadensis</i>	Mountain Goat	Nil	Not expected	Limited potential as forested cool slope
<i>Rangifer tarandus</i>	Caribou	Nil	Protected area is outside of the Telkwa herd boundary	No evidence of mapped caribou habitat overlap or site-specific use was identified

8.1.2.2 Birds

The *Migratory Birds Convention Act* (MBCA) prohibits incidental take, which is the killing or harming of birds, or the disruption/disturbance of nests and eggs. Likewise, the *BC Wildlife Act* prohibits the disturbances or destruction of a bird, nests, or eggs and protect additional species that are not protected under the MBCA. The updated Migratory Birds Regulations prohibit damage, destruction, disturbance or removal of a migratory bird nest only if it contains a live bird or a viable egg. Exceptions were made for 18 species listed in Schedule 1 of the Migratory Bird Regulation, such as Pileated Woodpecker, whose nests are protected year-round for one to three years after last use (MBCA 2022).

The Birds Canada online Nesting Calendar Query Tool (Birds Canada 2026) was used to determine nesting periods for bird species that may be expected to utilize forested and wetland habitats within and adjacent to the Project area (Figure 4). Based on this query, the nesting period for the majority of bird species that could occur in the Oscar Peak Ecodistrict is anticipated to be between April 15 to end of August; however, the potential species of birds that may nest in the area can be refined based on habitat preferences and available habitat types. May through July represents the core nesting period that encapsulates most species' temporal range.

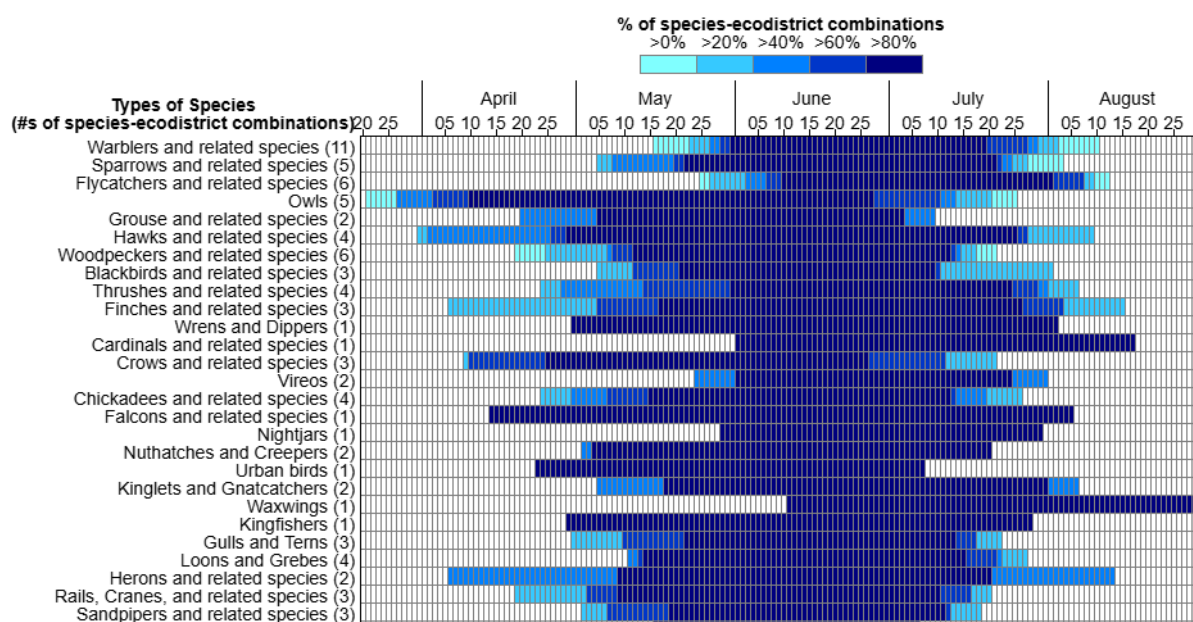


Figure 4. Breeding date ranges of bird families that may nest in the Oscar Peak Ecodistrict (Birds Canada 2026)

During the desktop review for bird species of conservation concern associated with the CWHws1 BEC zone/subzone (Appendix 4; BC CDC 2026a; Government of Canada 2026a), nine bird species of conservation concern were identified that are likely present in the Project Footprint, and seven bird species of conservation concern that are possibly present.

American Goshawk, laingi subspecies (*Astur atricapillus laingi*) is threatened under SARA and red-listed in BC. This species nests in mature forest, foraging in forested areas with a dense canopy and an open understory. They do not typically utilize forest edges. It is possible for this species to occur with moderate potential to nest in the forested and riparian area surrounding the Project Footprint.

Common Nighthawk (*Chordeiles minor*) is listed as a species of special concern by SARA and is blue-listed in BC. They are known to utilize a variety of open area habitats from anthropogenic areas, cut blocks and ROWs. Nesting occurs in open areas on bare ground, which can include grasslands, rocky outcrops, burns, recently logged areas, gravel roads and sand dunes (Boyd 2015). Foraging occurs over many habitat types, and often over open water. Potential breeding and foraging habitat are possibly located within the Project Footprint.

Evening Grosbeak (*Coccothraustes vespertinus*) is listed as a species of special concern by SARA. This species is found within coniferous, deciduous, and mixed-wood forests but prefers coniferous and mixed-wood forest as breeding habitat (Martell 2015). It is possible for the species to occur within the Project area.

Olive-sided Flycatcher (*Contopus cooperi*) is listed as a species of special concern by SARA. This species prefers cool, mesic or moist conifer forests with tall trees (Weber 2008). The edges of mature coniferous and mixed forests are preferred, especially when adjacent to water and if dead standing snags are present (Weber 2008). It is possible for the species to occur within the Project area due to the presence of available habitat.

Black Swift (*Cypseloides niger*) is an endangered species by SARA and is blue-listed in BC. They are known to breed in wet cliffs and waterfalls near forested areas, and forage over many habitat types including forests. It is possible for the species to occur within the Project area due to the waterfall in the LSA.

Rusty Blackbird (*Euphagus carolinus*) is listed as a species of special concern by SARA and is blue-listed in BC. They breed in moist coniferous woodlands, bogs and fens, and riparian areas. They forage in ground and shallow water. It is possible for the species to occur within the Project area due to the presence of available habitat.

Gyr Falcon (*Falco rusticolus*) is blue-listed in BC. This species usually nests on cliff ledges. This species forages in open areas, including over marine and freshwater, breeding in northern BC (Chutter 2015). While it may be possible for a Gyr Falcon to occur within the Project area during migration, the species is unlikely to occur during the breeding season with known breeding occurrences approximately 200 km north (BC CDC 2026a).

Northern Pygmy-Owl, swarthi subspecies (*Glaucidium gnoma swarthi*) is blue-listed in BC. This species breeds in mature forests and nests in cavities of large-diameter trees and snags, and forages

in mature forest habitat. It is possible for Northern Pygmy-Owls to occur within the Project area as it is within the species year-round range and habitat features are likely present.

Western Screech-Owl *kennicottii* subspecies (*Megascops kennicottii kennicottii*) is threatened under SARA and is blue-listed in BC. They breed in mature lowland coniferous and mixed forests below 600 metres elevation, in lowland riparian habitats and deciduous trees. They are found in the Coastal Western Hemlock biogeoclimatic zone, favour riparian woodlands, and are strongly tied to stream courses with Bigleaf Maple (*Acer macrophyllum*) and riparian woodlands dominated by Black Cottonwood (*Populus trichocarpa*), Water Birch (*Betula occidentalis*) and Trembling Aspen (*Populus tremuloides*) (Cannings 2015b). It is possible for Western Screech-Owls to occur within the Project area as habitat features are likely present.

Surf Scoter (*Melanitta perspicillata*) is blue-listed in BC. They breed in the boreal forest and forage along marine and freshwater shorelines, beaches and mudflats. Their breeding range is north of the Project Footprint. While it may be possible for Surf Scoters to be encountered during migration, so they are unlikely to occur in the Project area during the breeding season.

Horned Grebe (*Podiceps auritus*) is a species of special concern under SARA. They breed in marshes, ponds and lakes, sluggish streams, bays and seacoasts. They forage in shallow water near emergent vegetation. They are likely to occur in the Project Footprint as suitable habitat occurs and they are known to occur in the RSA.

Bank Swallow (*Riparia riparia*) is listed under SARA as threatened. This species inhabits open and partly open areas, frequently near flowing water. Bank Swallows are colony nesters, excavating nest burrows in steep sand, dirt, or gravel banks (Howie 2015). Nest cavities are located near the top of the bank, along the edge of inland water, along the coast, or in gravel pits, road embankments, etc. (Howie 2015). It is possible for Bank Swallows to occur within the Project area due to the potential presence of habitat along the banks of the watercourses.

Under the Migratory Birds Regulations (2022), nests of most migratory bird species are protected only while active; however, Schedule 1 species that reuse nests receive year-round nest protection until deemed abandoned. Species with potential to occur in the RSA that are subject to Schedule 1 nest protections include Great Blue Heron and Pileated Woodpecker (*Dryocopus pileatus*). Although Bald Eagle and Osprey are not protected under the MBCA, their nests and eggs are protected year-round under Section 34 of the *BC Wildlife Act*, regardless of occupancy status. There is one Bald Eagle (*Haliaeetus leucocephalus*) nest (nest ID BAEA-609-001) recorded in the Wildlife Tree Stewardship Atlas from 2014 in the RSA, but none are recorded in the LSA or Project Footprint (Community Mapping Network 2018b). There are no known reported Osprey (*Pandion haliaetus*) and Great Blue Heron (*Ardea herodias fannini*) nests in the Project Footprint. The Project Footprint does not overlap with core breeding or summer foraging areas of American Goshawks (Government of British Columbia 2024). Considering suitable habitat for American Goshawks is available in the LSA, call playback surveys will be conducted in SCPA prior to vegetation clearing. The nearest mapped critical habitat for Marbled Murrelet is approximately 20 km to the west of Project Footprint (ESRI 2026). There were no species or nests of these protected bird species observed in the proposed exclusion area during the May 2026 field reconnaissance.

During the reconnaissance-level wildlife habitat assessment of the proposed exclusion area, field crews observed the following bird species: Ruffed Grouse (*Bonasa umbellus*), Song Sparrow (*Melospiza melodia*), Chestnut-backed Chickadee (*Poecile rufescens*), Red-breasted Nuthatch (*Sitta canadensis*), Western Tanager (*Piranga ludoviciana*), Western Warbling Vireo (*Vireo swainsoni*), Pine Siskin (*Spinus pinus*), and Dark-eyed Junco (*Junco hyemalis*) (Appendix 5). The waterfowl that were observed by the field crew included Bufflehead (*Bucephala albeola*) and Mallard Duck (*Anas platyrhynchos*) (Appendix 5).

The results of the Wildlife Habitat Suitability field assessment for birds is summarized in Table 8. The field data are provided in Appendix 5.

Table 8. Wildlife Habitat Suitability Field Assessment Results - Birds

Scientific Name	Common Name	Habitat Suitability	Sign / Observation	Field Comments
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Moderate	Audible detections	Old forest structure and riparian edge habitat provide foraging and nesting opportunities
<i>Contopus cooperi</i>	Olive-sided Flycatcher			
--	Other Forest Songbirds			
<i>Botaurus lentiginosus</i>	American Bittern	High	Audible detections and suitable nesting habitat observed	Beaver-influenced wetland complex provides suitable breeding and foraging habitat
<i>Euphagus carolinus</i>	Rusty Blackbird			
--	Other Wetland Birds			
<i>Branta canadensis</i>	Canada Goose	Moderate	Open water and pond margins provide suitable habitat	Open water wetland is suitable but small
--	Other Waterfowl			
<i>Canachites spp.</i>	Grouse	High	Grouse heard drumming	Dense forest cover and edge habitats support seasonal use
--	Other Upland game birds			
<i>Asturatricapillus laingi</i>	American Goshawk	Low	Not observed	Suitable mature-forest habitat is present, but no nests or other indicators were observed
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Low	Not expected	Suitable nesting habitat present but too far inland

8.1.2.3 Amphibians

During the desktop review for amphibian species of conservation concern associated with the CWHws1 BEC zone/subzone (Appendix 4; BC CDC 2026a; Government of Canada 2026a), two amphibian species of conservation concern were identified that are possibly present in the Project Footprint.

Western Toad (*Anaxyrus boreas*) is listed as special concern under the SARA. Western Toad resides and migrates seasonally between aquatic breeding and terrestrial non-breeding habitats. Their ideal breeding area is ponded surface water with fine substrates. They are likely present in the wetlands in the Project Footprint.

Coastal Tailed Frog (*Asaphus truei*) is listed as special concern under the SARA. Coastal Tailed Frog occupies fast flowing mountain (alpine/subalpine) streams with coarse substrates. There are documented occurrences of Coastal Tailed Frogs immediately adjacent to the LSA (ESRI 2026), and there is a trapline and harvest zone (WHA 6-059) south of the SCPA. They are likely to occur in the Project Footprint. There is no provincial reduced risk work window established for Coastal Tailed Frog in the Skeena Region (Ministry of Forests, Lands, Natural Resource Operations and Rural Development 2018).

During the reconnaissance-level wildlife habitat assessment of the proposed exclusion area, field crews observed the Long-toed Salamander (*Ambystoma macrodactylum*) (Appendix 5). The Wildlife Habitat Suitability field assessment for amphibians are listed in Table 9.

Table 9. Wildlife Habitat Suitability Field Assessment Results - Amphibians

Scientific Name	Common Name	Habitat Suitability	Sign / Observation	Field Comments
<i>Anaxyrus boreas</i>	Western Toad	High	Not detected	Potential breeding in shallow open water wetland and potential upland hibernacula
<i>Asaphus truei</i>	Tailed Frog	Moderate	Not detected	Limited basin size

8.1.2.4 Invertebrates and Insects

During the desktop review for invertebrate and insect species of conservation concern associated with the CWHws1 BEC zone/subzone (Appendix 4; BC CDC 2026a; Government of Canada 2026a), one insect species of conservation concern was identified that is possibly present in the Project Footprint.

Western Bumble Bee (*Bombus accidentalis*) is listed as threatened under the SARA. They use a diverse range of habitats, including mixed woodlands, farmlands, urban, montane meadows, and prairie grasslands. As their distribution range includes the Project Footprint, there is a low potential they could be present in the Project Footprint.

8.1.3 Aquatic Resources

8.1.3.1 Fish and Fish Habitat

The SCPA is located within the Zymoetz River Watershed, a tributary system that flows into the Skeena River near Terrace, BC.

Three unnamed watercourses mapped in the BC Freshwater Atlas (FWA) intersect the proposed exclusion area (Appendix 3 Figure 7). Field observations confirmed that two of these watercourses

(FWA Watershed Codes [WSC] 400-221484-222673 and 400-221484-217231) are tributaries to a third watercourse (FWA WSC 400-221484), which flows into the Zymoetz River (WSC 400) (BC CDC 2026b). Some mapped channel locations did not precisely match on ground drainage positions observed in the field. South of the Project footprint, two mapped rock obstacles on WSC 400-221484-217231 function as upstream migration barriers to all fish species (MOE 2026). On the east side of the SCPA, a mapped culvert conveys WSC 400-221484-222673 beneath the Copper FSR.

Field assessments confirmed that the three mapped watercourses met the criteria for S3 stream classification. WSC 400-221484 exhibited an average channel width of 3.73 m and was influenced by beaver ponding. WSC 400-221484-217231 had an average channel width of 2.27 m and displayed a cascade-pool morphology with cobble and woody substrate. WSC 400-221484-222673 averaged 3.61 m in channel width and contained a waterfall feature that may act as an upstream fish barrier.

In addition to the mapped streams, one unmapped S3 watercourse was identified. This channel averaged 2.98 m in width and was dry at the time of the assessment but exhibited morphology consistent with an ephemeral or seasonal S3 stream.

A total of five non-classified drainages (NCDs) were also identified within the assessment area (Appendix 3, Figure 7; Appendix 5). Two of the five NCDs exhibited hydrologic connectivity to WSC 400-221484 and are therefore included in Table 10.

Table 10. Summary of Field Assessed Watercourses

Watershed Code	Average Width (m) Channel	Average Wetted Width (m)	Stream Classification	Field Comments
400-221484	3.73	3.19	S3	Ponding due to beavers
400-221484-217231	2.27	1.41	S3	Cascade-pool channel with cobble and woody substrate
400-221484-22673	3.61	2.04	S3	Waterfall feature may act as an upstream fish barrier
Unmapped channel	2.98	Dry	S3	Dry during assessment but morphologically consistent with an ephemeral or seasonal channel
Non-classified drainages*			NCD	Two drainages showed hydrologic connectivity to channel 400-221484

Note: *NCDs do not have channel measurements as they lack continuous defined beds and banks

The Zymoetz River supports several fish species, including Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*O. kisutch*), Coastal Cutthroat Trout (*O. clarkii clarkii*), Steelhead / Rainbow Trout (*O. mykiss*), Chum Salmon (*O. keta*), Pink Salmon (*O. gorbuscha*), and Dolly Varden (*Salvelinus malma*) (BC CDC 2026b; Province of British Columbia 2026a; Province of British Columbia 2026b). Chinook Salmon have been historically documented spawning in the Zymoetz River near the campsite north of the Project Footprint (BC Ministry of Water, Land and Air Protection Planning Section 2005).

A desktop review identified two fish species of conservation concern with potential to occur in the broader Zymoetz River watershed: Coastal Cutthroat Trout and Bull Trout (Appendix 4; BC CDC 2026a; Government of Canada 2026a). Both species are blue-listed in BC and have documented occurrences in the Zymoetz River, which is hydrologically connected to tributaries intersecting the Project Footprint.

Coastal Cutthroat Trout use small, cool tributary streams with clean gravel substrates for spawning and juvenile rearing (McPhail 2007; Moyle et al. 1989). While these habitat types occur regionally, the presence of suitable habitat within the Project Footprint has not been confirmed. If accessible habitat is present, the species could potentially utilize connected reaches.

Bull Trout (*Salvelinus confluentus*) require cold, well-oxygenated tributaries for spawning and early rearing and are highly sensitive to temperature increases and sediment inputs (McPhail 2007). Documented occurrences in the Zymoetz River indicate potential for the species to use connected tributaries; however, suitable spawning or rearing habitat has not been identified within the Project Footprint.

There are also fish observation data reported in the unnamed watercourse WSC400-221484-217231 within the Project Footprint for Chinook salmon, Coho salmon, Steelhead / Rainbow Trout, and Dolly Varden (Appendix 3 Figure 7; BC CDC 2026b), and they are anticipated to be encountered in the Project Footprint.

Table 11 outlines the reduced risk windows for fish species that are known or expected to occur within the Project footprint (shown in bold), identifying the periods when instream activities pose the least risk to sensitive life stages.

Table 11. Skeena Region Reduced Risk Work Windows for the Kalum and Nass Timber Supply Areas of the Kalum Forest District (Ministry of Forests, Lands, Natural Resource Operations and Rural Development 2018)

Species	Reduced Risk Work Window	
	Start date	Finish date
Chum	June 1	July 25
Coho	June 15	September 10
Pink	May 1	August 10
Chinook	May 15	July 25
Sockeye	May 15	July 25
Kokanee	June 15	July 15
Steelhead	September 15	November 15
Rainbow trout	September 15	November 15
Coastal Cutthroat trout	September 1	September 30
Dolly Varden	July 1	August 15
Whitefish	June 1	August 31
Bull trout	July 1	August 1
Arctic grayling	January 1	February 28
Burbot	September 1	December 31

Note: Bolded species are anticipated to be present in the unnamed watercourses

8.1.4 Wetlands and Riparian Areas

A beaver-influenced wetland complex associated with FWA watercourse 400-221484 was identified in the field within the exclusion area (Appendix 5; Appendix 3 Figure 8). The wetland includes open-water and willow-dominated vegetation components adjacent to the channel corridor. The wetland overlap is located within the proposed exclusion area. The wetland has a total area of 4.9 ha, of which 3.4 ha is inside the proposed exclusion area. The wetland and streams in the proposed exclusion area have a total associated Riparian Vegetation Management Area (RVMA) of 6.4 ha.

The wetland was assessed in the field for functional values and assigned a preliminary functional score of 65% and interpreted as moderate to high function (Appendix 5). Key functions identified in the field include attenuation of peak flows, retention of sediment, provision of amphibian and bird habitat, and support for riparian vegetation structure (Appendix 5). Functional limitations appear to be associated with existing road disturbance and a relatively limited graminoid component.

8.1.5 Hydrology

The Project Footprint is in the Coastal Western Hemlock biogeoclimatic zone, which is one of the wettest climates and most productive forests areas in the Province. The SCPA is situated within an intact watershed with no development in the LSA and little to no development in the RSA. The watershed is highly productive, with portions of complex old-growth and mature forest ecosystems that drive hydrological stability and water quality. As such, the soils are generally able to absorb substantial precipitation that falls in the area, and the vegetation assists in reducing peak flows and minimizing erosion through water storage and filtration. As described in section 8.1.3, the watercourses in the Project Footprint are all tributaries to the Zymoetz River.

8.2 **Archaeology**

The AIA study area lies within the traditional territories of the Kitselas First Nation (Kitselas), Lax Kw'alaams Band, and Metlakatla First Nation (Metlakatla). The Zymoetz River and its valley have been inhabited and used by these First Nations since time immemorial. Archaeological desktop surveys identified heritage sites outside the boundary of the proposed exclusion zone, but this does not exclude the risk of finding Indigenous heritage features within the boundary adjustment parcel.

Desktop surveys indicated pre-AD 1846 Culturally Modified Tree (CMT) potential and the presence of nearby recorded archaeological sites to the north-east of SCPA across the Copper FSR. The desktop archaeological potential (Appendix 2) was described as:

- Low for the potential for surface/subsurface archaeological sites (e.g., cache pits, trails, naturally buried lithic scatters, campsites, etc.) due to the presence of water-saturated terrain or moderately sloping mountainsides.
- High for potential for pre-AD 1846 Culturally Modified Trees (CMTs) within select portions of the study area due to presence of old growth tree stands with recorded species of western redcedar and western hemlock.
- Low for potential for pre-AD 1846 CMTs within the remainder of the study area due to an absence of old growth tree stands.

As such, an Archaeological Impact Assessment was undertaken by archaeologists at AiM Lands (Appendix 2). Forty-eight shovel tests were excavated, all of which were negative for archaeological materials. No CMTs or other cultural heritage features were identified, and most of the surveyed area consisted of poorly drained terrain, regenerated second-growth forest, or steep slopes—conditions associated with low archaeological potential.

8.3 **Cultural Resource Values**

BC Hydro reviewed, where provided, confidential First Nations cultural heritage resource information, including for ceremonial, harvesting, fishing and hunting activities. Material reviewed included reports, maps and GIS shapefiles. Where there is an overlap, BC Hydro is working bilaterally with First Nations to address.

The additional species that have cultural value that were observed during the environmental field surveys included Grouse and Long-toed Salamander.

9.0 EFFECTS ASSESSMENT

An overview of potential Project effects based on the potential interactions and project activities shown in Table 2, is provided in Table 12. The anticipated schedule for clearing activities is the third quarter of 2027.

Table 12. Potential Project Effects

Environmental Component	Potential Effects
Vegetation and Old Growth	• Reduction in vegetation and old growth due to clearing activities. • Increase in potential edge effects of new boundary on established vegetation.
Plant, Lichen and Ecological Communities at Risk	• Change in occurrence, abundance and distribution due to clearing, construction activities and change in water quality along the unnamed watercourses. • Potential to affect forest and wetland plants through clearing and site preparation. • Potential to affect vegetation community by the introduction and/or spread of invasive plant species.
Wildlife and Wildlife Habitat / Species of Conservation Concern	• Direct mortality of wildlife due to clearing of habitat, and human activity from vehicle-wildlife collisions or illegal hunting. • Disturbance and indirect mortality due to nest/den abandonment, parental mortality associated with construction noise and activity. • Direct mortality or reduced health of wildlife due to accidental release of toxic materials. • Direct mortality of wildlife due to collisions with maintenance vehicles. • Direct mortality of wildlife due to vegetation maintenance. • Direct mortality or reduced health of wildlife due to accidental release of toxic materials during maintenance activities. • Reduction in habitat suitability and availability due to permanent vegetation clearing, presence of infrastructure and noise associated with maintenance activities. • A temporary or permanent change in habitat quality or characteristics affecting habitat suitability and/or wildlife health. • Increase in habitat fragmentation leading to changes to reduction in core breeding areas, edge effects, restrictions/changes to movement corridors. • Increase in invasive plant species.

Environmental Component	Potential Effects
Fish and Fish Habitat / Species of Conservation Concern	• Direct mortality of fish due to clearing of stream and wetland habitat. • Direct mortality or reduced health of fish due to accidental release of toxic materials. • Change in aquatic communities and species due to clearing of riparian area. • Change to wetland. • Change to riparian area. • Change in invertebrate populations. • Change in water quality (e.g., sediment, pH). • Change in water quality from increase in temperature due to less shading of watercourses. • Release of contaminants and deleterious substances into wetlands and watercourses. • Construction activity and movement of equipment in watercourses. • Use of contaminated equipment or construction materials. • Increase in invasive plant species.
Wetlands and Riparian Areas	• Changes to wetlands. • Changes to riparian zone including loss of shading and food sources for fish. • Localized change to more drought tolerant conifers and shrubs. • Changes in hydrology. • Release of contaminants, sediment-laden water, and deleterious substances into watercourses and wetlands. • Habitat fragmentation. • Loss of biodiversity. • Reduced capacity for carbon sequestration. • Increase in invasive plant species.
Hydrology	• Loss of nutrient filtration leading to increased sedimentation of watercourses. • Reduced groundwater recharge and storage capacity. • Reduced water quality. • Increased flooding. • Alteration of unnamed watercourses and wetland drainage patterns. • Felled vegetation into unnamed watercourses altering drainage.
Archaeology	• Alteration or destruction of archaeological resources.
Cultural Resource Values	• Reduction in culturally important species associated with reduction in old growth, forest, riparian and wetland habitat due to clearing activities.

9.1 Potential Environmental Effects

9.1.1 Vegetation and Old Growth

As outlined in the Potential Project Interactions Table (Table 12), the broad interactions between the Project and vegetation, including rare ecological communities, plants and lichen, due to the Project Footprint is the direct reduction of species occurrence and distribution from initial site preparation and clearing, and the spread of invasive species during construction and operations. The potential adverse environmental effects include:

- Removal of Old Growth Forest;
- Changes in occurrence, abundance and distribution of plant communities and species;
- Loss of wetland plants; and
- Introduction and/or spread invasive plant species.

Under the *Weed Control Act* and associated regulations, the introduction and spread of invasive plants identified as noxious must be prevented. Schedule A to the Weed Control Regulations provide the list of provincial weeds and regional weeds.

9.1.1.1 Quantification of Clearing Activity Impacts to Vegetation and Old Growth

The SCPA clearing and construction footprint does not overlap mapped forest habitat polygons within the Coast Mountain Forest District that are designated as Old Growth or Old Forest by either a legal order or in a published Forest Landscape Plan. Approximately 121.5 ha, or 47% of the SCPA is mapped as priority big-treed old growth and Ancient Forest within Old Growth Technical Advisory Panel (TAP) priority deferral mapping. Ancient Forest, as defined in the TAP priority deferral mapping, refers to forest older than 400 years in ecosystems with rare stand-replacing disturbance, or older than 250 years in ecosystems with more frequent stand-replacing disturbance (Government of British Columbia 2023). Within SCPA, these mapped old growth values are associated with mature forest characterizations that may include other coniferous stands such as western hemlock, mountain hemlock, western red cedar, and subalpine fir (BC Parks n.d.) (Aim Land Services 2026).

Old growth deferral areas (OGDA) are established as a temporary, short-term protection for old forest. OGDAs do not represent permanent protection and may be altered in management decisions.

Table 13, Table 14 and Table 15 provide the summary of effects on vegetation, old growth and at-risk plant, lichen and ecological communities.

Table 13. Quantification of Potential Effects on Old Growth

Category	Area
Total area of priority big-treed old growth and Ancient Forest in SCPA	121.5 ha
Percentage of SCPA with priority big-treed old growth and Ancient Forest	47 %
Total area of Old Growth Deferral Area which extends into the SCPA	203.03 ha
Total area of the Old Growth Deferral Area located within the Proposed Boundary Adjustment Footprint	2.9 ha

Category	Area
Percentage of Old Growth Deferral Area within the Proposed Boundary Adjustment Area (includes OGDA outside of SCPA)	1.4 %
Percentage of Old Growth Deferral Area in Proposed Boundary Adjustment Area in SCPA	2.4 %
Remaining Old Growth Deferral Area (polygon ID 86449138) after Proposed Boundary Adjustment (includes OGDA outside of SCPA)	200.13 ha

Table 14. Quantification of Potential Effects on Vegetation

Proposed Exclusion Area Footprint	Area	Percentage (Proposed Exclusion Area)
OGDA; Older Hemlock-Amabilis Fir stand (polygon ID 86449138)	2.9 ha	23.4 %
Mid-seral Conifer (Spruce–Western Hemlock stand with trace Balsam Poplar/Cottonwood) stand (Polygon ID 85789323)	5.9 ha	47.6 %
Non-treed wetland	3.3 ha	26.4 %
Mid-seral Conifer (Western Hemlock-Amabilis Fir) stand (Polygon ID 83469219)	0.1 ha	1.2 %
Mid-seral Conifer (Spruce-Balsam Poplar/Cottonwood) stand (Polygon ID 93599288)	0.1 ha	0.6 %
Non-treed rock	0.1 ha	0.6 %
Mid-seral Conifer (Western Hemlock stand with Spruce-Amabilis Fir/Cottonwood) stand (Polygon ID 81189277)	0.0 ha	0.3 %
Early-seral Conifer stand (Polygon ID 95318910)	0.0 ha	0.1 %

Table 15. Quantification of Potential Effects on Plant, Lichen and Ecological Communities at Risk

Environmental Component	Quantification of potential changes	Description of Habitat Change
Alaska holly fern*	Between 0 and 9.1 ha	Removal of forest may remove suitable habitat, should it exist.
Smoker's Lung*	Between 0 and 2.9 ha	Removal of mature, old forest may remove suitable habitat, should it exist.
Northwest waterfan*	0 ha	Vegetation clearing may remove suitable conifer and riparian forest, but frequently found on large rocks or bedrock that are not anticipated to change.

* **Note:** Unknown presence in Project Footprint; not detected during field work.

9.1.2 Wildlife and Wildlife Habitat

As outlined in the Potential Project Interactions Table (Table 12), the broad interactions between the Project and wildlife and wildlife habitat include mortality (direct and indirect) during construction,

and a reduction in the suitability and/or availability of capable habitat during operations. The potential adverse environmental effects of the Project include:

- A reduction in habitat suitability and availability due to permanent vegetation clearing, presence of infrastructure and noise associated with maintenance activities;
- Contributing to an increase in cumulative habitat fragmentation (breeding areas, edge effects, restrictions/changes to movement corridors);
- A temporary or permanent change in habitat quality or characteristics affecting habitat suitability and/or wildlife health;
- Direct mortality of wildlife due to clearing of habitat, accidental contamination and release of deleterious substances, and human activity during construction;
- Indirect mortality of wildlife due to nest abandonment associated with construction noise; and
- Direct mortality of wildlife due to accidental contamination and release of deleterious substances, and maintenance vehicle traffic during operations.

The removal and disturbance of vegetation for the construction of the Project may lead to a direct loss of suitable habitat for wildlife. For the quantification of potential changes to vegetation, refer to Section 9.1.1.1. For quantification of potential changes to wetlands and riparian areas, refer to Section 9.1.4.

A reduction in habitat not only affects direct availability of habitat but can also lead to fragmentation effects (Andrén 1994; Robinson et al. 1995; Fahrig 2013; Ewers and Didham 2006). Many species of wildlife are associated with large areas of core habitat (Andrén 1994; Robison et al. 1995; Fahrig 2013; Winter et al. 2006). A linear project corridor, such as a transmission line, has the potential to introduce unsuitable habitat across a patch of suitable habitat, bisecting the single patch and creating smaller patches. Remnant habitat patches may become separated by a distance that makes them effectively disconnected to wildlife with small home ranges. Fragmentation of habitat can introduce adverse effects and lead to a reduction in habitat quality. Edge effects such as increased predator pressures and nest parasitism, creation of habitat islands, or degradation of pure habitat types along newly created edges can become prevalent.

The development of linear projects can not only fragment habitat but also create barriers to the movement of terrestrial wildlife species. During operations, gaps in forest and presence of infrastructure have the potential to hinder dispersal and home range movements of wildlife. During construction, temporary fencing and temporary construction activities like trenching and soil stockpiles, can also disrupt the movements of some species. For example, coastal tailed frog movements could be hindered if pathways between wetlands and upland habitats become obstructed by construction equipment or mounds of soil. Long sections of exclusion fencing also have the potential to prevent the movement of some species of wildlife.

The suitability and availability of habitat for wildlife during construction activities can be reduced indirectly through disturbance. An increase in the presence of noise, light, construction activity and

traffic can lead to the deterrence of wildlife from the habitat normally used. Most of the wildlife in the RSA would not normally be exposed to constant, noisy activities that will be present at a construction site. Such disturbance may temporarily displace some wildlife species from normally useable habitat and indirectly reduce habitat availability. Potential for adverse effects on Moose UWR are disturbance from helicopter passes during their wintering period (November 1 to May 1).

Direct mortality to wildlife can result when construction or operation activities directly lead to the death of animals. During construction, the clearance of habitat can lead to an increased risk of wildlife mortality by removing habitat that is occupied by breeding, roosting or foraging wildlife. Concealed wildlife may also be at risk, as their defense strategy may be to remain hidden as habitat is removed. Habitat that may be affected includes sub-surface burrows.

Direct mortality could also result from any in-water activity by physical disturbance of substrates and release of deleterious substances into water that could cause mortality to stream-dwelling or wetland species such as amphibians.

Direct mortality can also be linked to human activity. Unregulated hunting at construction sites or along Copper FSR can lead to wildlife mortality. Exposure of wildlife to accidental releases of toxic substances can also lead to the unintended death of wildlife. The increase prevalence of traffic during construction may lead to an increase in vehicle-wildlife collisions. The occurrence of collisions would be expected to increase in frequency during hours of darkness.

When the immediate effect of the Project is not directly linked to wildlife mortality, it can still have an effect that leads to circumstances where wildlife perishes, which is indirect wildlife mortality. Sensory disturbances have the potential to cause nest or den abandonment and reduce mating success immediately adjacent to continuously noisy features or activity (Bayne et al. 2008). Ultimately, if breeding wildlife do not return to nests or dens in time, young may perish due to exposure to weather or changes in temperature, susceptibility to predation, or starvation.

In addition to noise and activity disturbances, artificial light may also cause indirect mortality. Nocturnally active wildlife species may be drawn to artificial lighting sources and be exposed to increased predator pressures. Foraging areas by bats, owls, nocturnal rodents and other nocturnal mammals may be temporarily reduced during construction.

A reduction in foraging habitat can also cause a reduction in local food availability and subsequent mortality of wildlife, particularly young, through reduced energy intake. This effect could occur where areas of critical foraging habitat is removed from an area where that type of habitat is limited within the home range of the breeding wildlife.

Finally, the construction activities may also provide attractants for wildlife (e.g., food scraps) which can increase the potential for negative human-wildlife interactions leading to direct or indirect mortality.

9.1.2.1 Mammals

As described in Section 8.1.2.1, based on the desktop review, there are three mammal species of conservation concern that may be present in the Project Footprint: Little Brown Myotis, Yuma Myotis and Grizzly Bear.

A desktop assessment of bat habitat was completed, and highly suitable bat roosting habitat has been identified throughout the NCTL Project. The primary criteria for highly suitable habitat included 120+ old deciduous or mixed wood forest intersected with 50 m of the edge habitat of a wetland or lake. There is approximately 4.3 ha of highly suitable roosting habitat identified in the SCPA.

Table 16 provides the quantification of potential wildlife habitat effects for the mammal species of conservation concern.

Table 16. Quantification of Potential effects on Mammal Habitat

<i>Mammal Species</i>	<i>Main Habitat Type Used</i>	<i>Quantification of potential changes to their habitat</i>	<i>Description of Habitat Change</i>
Little Brown Myotis	Old growth and mid-seral conifers, and rocks	9.1 ha	Removal of old growth forest and mid-seral conifers to maintained shrub and managed transmission RoW may remove potential roosting habitat. Foraging habitat may locally increase with an increase in edge habitat foraging opportunities.
Yuma Myotis			
Grizzly Bear	Forest, wetlands, streams	9.1 ha	Grizzly bears inhabit forested areas and use wetlands and watercourses for foraging. it is unlikely for construction to result in negative impacts to critical denning or foraging habitat as the Bulkley Lakes GBPU has a very low conservation concern.

In addition to the mammal species of conservation concern, the desktop review identified three other mammal species that may be encountered during the Project due to available mapped occurrence information for the RSA. These species are Moose, Northern American Beaver, and Caribou. The field assessment identified a fourth species, River Otter.

- **Moose:** The u-6-009 Ungulate Winter Range polygon for moose does not overlap with the Project Footprint as it runs along the northern boundary of the SCPA. However, the general winter habitat for moose is available in the Project Footprint, as moose use wetlands in all seasons for foraging, they use a mix of forest age classes, and their key habitat features include wetlands, major riparian corridors and valley bottoms (BC Timber Sales Skeena 2014). There is a moderate potential to encounter moose during construction activities. Transmission line development can be a positive effect for Moose, particularly where suitable thermal, security, and snow interception cover is abundant, and the introduction of a maintained shrub community improves forage availability.

- Caribou: The western extent of the Telkwa Caribou herd distribution area is approximately 1.6 km east of the Project Footprint. No Caribou or Caribou habitat are expected to be encountered or impacted during construction or operations.
- North American Beaver: There is a record of a beaver dam on the unnamed watercourse that is in the Project Footprint. The recorded location of the dam is outside the Project Footprint. As beavers are typically fairly loyal to sites and frequently return and reoccupy the same dam sites, there is a moderate potential to encounter the beaver during construction activities.
- River Otter: There was a river otter observed during field reconnaissance, and there is a moderate potential to encounter the river otter during construction activities.

As there is no anticipated overlap with Ungulate Winter Range (i.e., Moose or Caribou), they are not considered further. Furbearers (i.e., Beaver and River Otter) may be encountered during the project activities in the wetland.

9.1.2.2 Birds

As described in Section 8.1.2.2, based on the desktop review, there are nine bird species of conservation concern that may be present in the Project Footprint.

Table 17 provides the quantification of potential changes to bird habitat. While the proposed boundary adjustment will change wildlife habitat type for several species by converting existing habitat from old growth habitat to shrubby habitat, it is anticipated to increase overall bird diversity adjacent to the proposed boundary adjustment area as the shrub habitat will provide a new habitat not currently present.

Table 17. Quantification of Potential effects on Bird Habitat

Bird Species	Main Habitat Type Used	Quantification of potential changes to their habitat	Description of Habitat Change
American Goshawk, <i>laingi</i> subspecies	Old Growth Forest	2.9 ha	Reduction of old growth forest to maintained shrub and managed transmission line RoW
Evening Grosbeak	Old Growth Forest		
Northern Pygmy-Owl	Old Growth Forest		
Western Screech-Owl	Old Growth Forest		
Common Nighthawk	Cleared Forest	9.1 ha	Increase in preferred cleared forest habitat
Olive-sided Flycatcher	Forest Edge	0 ha	While the current riparian edge may shift, it is not anticipated to have a net change to available habitat
Rusty Blackbird	Wetland Riparian	3.1 ha	Transmission line placement and access into the wetland and clearing will remove preferred riparian habitat

<i>Bird Species</i>	<i>Main Habitat Type Used</i>	<i>Quantification of potential changes to their habitat</i>	<i>Description of Habitat Change</i>
Horned Grebe	Wetland	0.002 ha	Transmission line placement and access into the wetland will remove preferred habitat
Black Swift	Waterfall	0 ha	No change anticipated as the waterfall is approximately 145 meters beyond the clearing area

There are no known Goshawk Nests, Osprey, Great Blue Heron or Bald Eagle nests in the Project Footprint.

Depending on the timing of clearing, there is a moderate to high likelihood of encountering nesting birds.

9.1.2.3 Amphibians

As described in Section 8.1.2.3, based on the desktop review, there are two amphibian species of conservation concern that may be present in the Project Footprint: Western Toad and Coastal Tailed Frog. They are likely present in the Project Footprint in the wetland and unnamed watercourses. Direct in-stream works are not anticipated for construction of the Project, but there is likely to be incidental encounters and impacts on their habitat. Table 18 provides the quantification of potential changes to amphibian habitat.

The Western Toads summer foraging habitat, potential breeding habitat and their winter hibernation habitat will be reduced during construction activities in the Project Footprint. Erosion and sedimentation, and water quality impacts to the wetlands may also impact their breeding areas. In addition, the operation of construction equipment adjacent to the soil may directly harm Western Toads or compaction the soils, having a negative impact on potential winter hibernacula.

The removal of the riparian forest may also adversely impact Coastal Tailed Frog adults while they forage and disperse from the unnamed watercourses. Where mature and old growth riparian forest is cleared adjacent to tailed frog rearing streams, stream temperatures may increase. Removal of riparian vegetation may destabilize stream beds, resulting in increased sedimentation and reducing available interstitial spaces between cobbles and gravels where tadpoles reside. In addition, Coastal Tailed Frog tadpoles are vulnerable to substrate movements in their creeks and may experience impacts due to construction-related erosion and sedimentation into the unnamed watercourses.

During operations, use of herbicides and pesticides to control vegetation and invasive plant species near power lines may negatively impact Western Toad and Coastal Tailed Frogs.

Table 18. Quantification of Potential effects on Amphibian Habitat

<i>Amphibian Species</i>	<i>Main Habitat Type Used</i>	<i>Quantification of potential changes to their habitat</i>	<i>Description of Habitat Change</i>
Western Toad	Wetland	0.002 ha	Summer foraging habitat and potential breeding habitat will be reduced
	Forest	9.1 ha	Soil compaction and change in forest cover habitat may have a negative impact on potential winter hibernacula
Coastal Tailed Frogs	Stream	0 ha	No direct habitat changes to the S3 watercourses are anticipated

9.1.2.4 Invertebrates and Insects

As described in Section 8.1.2.4, based on the desktop review, there is one insect species of conservation concern that may be present in the Project Footprint: Western Bumble Bee. As Western Bumble Bee occupies a diverse range of habitats, it is unlikely that the Project will cause significant adverse environmental impacts on their population from the removal of vegetation in the Project Footprint. Table 19 provides the quantification of potential changes to invertebrate and insect habitat.

Table 19. Quantification of Potential effects on Invertebrate and Insect Habitat

<i>Invertebrate and Insect Species</i>	<i>Main Habitat Type Used</i>	<i>Quantification of potential changes to their habitat</i>	<i>Description of Habitat Change</i>
Western Bumble Bee	wide variety of open habitats, including meadows within coniferous, deciduous, and mixed-wood forests and woodlands, riparian	0 ha	No net change to available habitat types anticipated as they can occupy a diverse range of habitats Loss of old growth forest may impact the solitary Queen Bee's overwintering in hibernacula in decaying trees

9.1.3 Aquatic Resources

As outlined in the Potential Project Interactions Table (Table 12), the broad interactions between the Project and aquatic habitat include mortality (direct and indirect) during construction, and a

reduction in the suitability and/or availability of capable habitat during operations. The potential adverse environmental effects of the Project include:

- Change in occurrence, abundance and distribution of aquatic species due to construction and operations;
- A temporary or permanent reduction in habitat quality or characteristics affecting habitat suitability and/or fish health due to change in riparian areas and surrounding wetlands;
- A temporary or permanent change in rearing and spawning habitat;
- Direct mortality of fish due to changes in stream, wetland and riparian habitats, and accidental contamination and release of deleterious substances during construction;
- Changes in sediment concentrations as erosion of banks or substrates could be transported from water or wind into the streams;
- Changes to fish populations due to changes in invertebrate populations;
- Change to fish habitat due to changes in water temperature from removal of riparian habitat; and
- Change to fish habitat due to changes in water quality (e.g., pH) during construction.

The removal of riparian habitat from construction and operations has potential to cause permanent reduction in fish and fish habitat. The quantification of the removal of riparian and wetland habitats is provided in Section 9.1.4.

The Project has the potential to increase erosion and sedimentation. Erosion and sedimentation can directly affect fish populations in several ways, including (Government of Canada 2026c):

- Suspended sediment decreasing penetration of light into water, affecting fish feeding and schooling practices and can lead to reduced survival;
- Suspended sediment in high concentrations irritates gills of fish and can cause death;
- Sediment can destroy the protective mucous covering the eyes and scales of fish, making them more susceptible to infection and disease;
- Increases in sediment particles in a watercourse can absorb warmth from the sun and can cause increases in water temperatures, which can stress some of the colder water fish species (salmonids);
- Suspended sediment in high concentrations can dislodge plants, invertebrates and insects in stream beds, which can affect food availability for fish species present and can cause smaller fish and/or fewer fish;
- Settling sediment can bury and suffocate fish eggs; and
- Sediment particles mobilized from construction or operation can have deleterious substances in them, and if released into fish habitat, they can cause abnormalities or death in fish.

Direct mortality could result should there be any in-stream work to install Project infrastructure. It is anticipated that the towers will be installed outside the stream to minimize adverse environmental impacts, and the transmission line will span these features with no direct placement within them. It is also anticipated that construction equipment will enter the Project Footprint from the existing Copper FSR, and that the Project is not expected to require installation of new access roads necessitating the installation of new culverts in the unnamed watercourses.

Direct mortality could also result from release of deleterious substances into the water, and construction-related suspended sediment releases or changes to water quality.

The suitability and availability of fish species can be reduced indirectly through disturbance. An increase in the presence of noise, light, construction activity and traffic can lead to the deterrence of fish species from habitat normally used under baseline conditions. Such disturbance may temporarily display some fish species from normally useable habitats, thus indirectly reducing habitat availability.

During operations, use of herbicides and pesticides to control vegetation and invasive plant species near power lines may lead to a release of deleterious substances into the surrounding streams and wetlands.

The footprint of any potentially required culvert replacements or repair are currently unknown based on the 35% design. Quantification of potential effects on fish and fish habitat was completed based on an assumption there will be one repair or culvert upgrade required on each watercourse, with a 20-meter work area upstream and downstream of the culvert location. Table 20 provides the assumed quantification of potential in-stream works that may affect fish and fish habitat. The project will maintain natural drainage patterns and potential changes in NCD features are not anticipated to result in quantifiable effects to fish and fish habitat.

Table 20. Quantification of Potential effects on Fish and Fish Habitat

Watercourse Reference	Stream Width (m)	Approximate Working Area (m²)
400-221484	3.73	149.2
400-221484-217231	2.27	90.8
400-221484-22673	3.61	144.4
Unmapped channel	2.98	119.2

9.1.4 Wetlands and Riparian Areas

The wetland inside the proposed exclusion area is 3.4 ha, which is 69% of the total wetland area as the wetland extends beyond the proposed boundary adjustment footprint. The wetland and two S3 streams have a total associated RVMA of 6.4 ha within the proposed exclusion area. Table 21 provides the quantification of potential effects on wetlands and riparian areas.

Removal of riparian vegetation has the potential to change water temperatures within the unnamed tributaries during operations. A change increasing water temperatures can affect fish populations in several ways, including shifts in distribution of fish species, altering reproductive timing, reducing availability of spawning habitats (Choudary et al. 2024). An increase in water temperature can also

affect individual fish by increasing their metabolic rate, and affecting their respiration, feeding and digestive habits (Choudary et al. 2024).

Table 21. Quantification of Potential Effects on Wetlands and Riparian Areas

<i>Environmental Component</i>	<i>Quantification of potential changes</i>	<i>Description of Habitat Change</i>
Wetland	0.002 ha	Placement of one transmission line tower and access in wetland
Riparian	6.4 ha	Clearing around wetland and streams in Project Footprint

9.1.5 Hydrology

Clearing of mature forest and old growth forest may have a localized effect on the hydrology in the LSA. Site clearing can lead to the loss of nutrient filtration capacity, resulting in increased sedimentation to nearby watercourses. There may be reduced groundwater recharge and storage capacity, and reduced water quality. Felled vegetation into the unnamed watercourses may alter drainage patterns and increase flooding risk.

9.1.6 Archaeology

The Archaeological Impact Assessment (Appendix 2) concluded that archaeological potential within the study area is low and that the proposed development is unlikely to result in direct or indirect impacts to archaeological resources. No further archaeological work is recommended beyond implementing a Chance Find Procedure during construction.

9.1.7 Cultural Resource Values

BC Hydro's review of provided materials indicated an overlap with some cultural resource areas. Consistent with confidentiality commitments, specific locations, activities, and culturally sensitive information are not reported in this assessment. However, where cultural use areas are identified within the SCPA boundary amendment area, BC Hydro will work with First Nations to develop site specific management plans.

Table 22 provides the quantification of potential effects on additional species with cultural value that were identified by Indigenous Nations.

Table 22. Quantification of Potential Effects on Additional Species with Cultural Value

<i>Additional Cultural Species of Interest</i>	<i>Main Habitat Type Used</i>	<i>Quantification of potential changes to their habitat</i>	<i>Description of Habitat Change</i>
Black-tailed Deer	Old growth, mid-seral and early-seral conifers, and rocks	9.1 ha	Removal of old growth forest, mid-seral and early-seral conifers to maintained shrub and managed transmission RoW may reduce potential habitat.

<i>Additional Cultural Species of Interest</i>	<i>Main Habitat Type Used</i>	<i>Quantification of potential changes to their habitat</i>	<i>Description of Habitat Change</i>
Canada Goose	Wetland	0.002 ha	Transmission line placement and access into the wetland may reduce preferred habitat
Grouse	Undergrowth of forested areas	0 ha	Removal of undergrowth in forested areas will temporarily change 9.1 ha of their nesting habitat. No long-term net change to available habitat anticipated, as the cleared RoW is anticipated to provide suitable nesting habitat in approximately 10 years once shrubs re-establish.
Raptors	Old Growth Forest	2.9 ha	Reduction of old growth forest to maintained shrub and managed transmission line RoW may reduce potential habitat
Long-toed Salamander	Wetland and Wetland Riparian	3.1 ha	Transmission line placement and access into the wetland and clearing may reduce preferred habitat
Wood Frog	Wetland and Wetland Riparian	3.1 ha	Transmission line placement and access into the wetland and clearing may reduce preferred habitat
Columbia Spotted Frog	Wetland	0.002 ha	Transmission line placement and access into the wetland may reduce preferred habitat

10.0 MITIGATION

10.1 Design Process

For the NCTL Project, the design will be influenced by environmental constraints and existing environmental conditions where possible.

10.2 Construction Environmental Management Plan

BC Hydro is currently engaging with Phase 2 First Nations on the development of the CEMP. The current version of the CEMP is Revision 2.0. This revision will be updated based on on-going discussions with First Nations.

The purpose of the CEMP is to identify potential environmental aspects of construction work and BC Hydro's minimum requirements for their avoidance and mitigation. The CEMP identifies activities and conditions where environmental protection measures will be, or are likely to be, required as construction advances and contracts are developed and awarded to build the Project.

Revision 2.0 of the CEMP sets out mitigation measures and environmental specifications for:

- Access Management;
- Air Quality and Dust Control;
- Noise Management;
- Erosion and Sediment Control;
- Vegetation Management, including noxious weed and invasive plant management;
- Wildlife Management;
- Fish and Fish Habitat Management;
- Concrete Management;
- Contaminated Sites Management;
- Paleontology, Heritage and Cultural Resources Management;
- Waste Management, including soil handling and disposal and hazardous waste management;
- Spill Prevention and Emergency Response, including fuel handling and storage and woody debris burning and fire suppression;
- Site Restoration;
- Acid Rock Drainage and Metal Leachate Management;
- Surface and Groundwater Management; and
- Environmental Management, including monitoring, incidents and reporting.

Table 23 provides an overview of mitigation measures from Revision 2.0 of the CEMP that mitigate the potential effects of the Project in the SCPA.

Table 23. Overview of Mitigations from CEMP that Mitigate Potential Effects

Environmental Component	Potential Effects	Example of Applicable Mitigations from CEMP
Vegetation and Old Growth	• Removal due to clearing activities. • Increase in potential edge effects of new boundary on established vegetation.	• Stake and flag no-disturbance zones and boundaries. • Targeted vegetation removal: remove only tall growing vegetation that is incompatible with overhead protection.
Plant, Lichen and Ecological Communities at Risk	• Change in occurrence, abundance and distribution due to clearing, construction activities and change in water regime along the unnamed watercourses. • Potential to affect forest and wetland plants through clearing and site preparation. • Potential to affect vegetation community by the introduction and/or spread of invasive plant species.	• Flag and delineate rare plant communities. • Avoid removal and impacts upon low-growing shrubs or grasses within riparian machine-free zone. • Protect root structure and stability of vegetation located on bank of water body. • Do not allow felled trees to span across water body or be left below the high-water mark unless prescribed. • Conduct weed control to prevent introduction and spread of weed materials. Procedures shall include weed material removal, cleaning of vehicles and heavy equipment, and demarcating weed control areas. • Conduct weekly inspections during active growing season for weeds. • Fill material sources will be inspected to ensure they are free of weeds.
Wildlife and Wildlife Habitat / Species of Conservation Concern	• Direct mortality of wildlife due to clearing of habitat. • Direct mortality of wildlife due to human activity. • Indirect mortality due to nest/den abandonment, parental mortality associated with construction noise and activity. • Direct mortality or reduced health of wildlife due to accidental release of toxic materials.	• Use timing windows to avoid or reduce construction during sensitive periods for wildlife (e.g., migratory bird nesting period, raptor nesting period, bat roosting period). • Complete nest surveys if clearing and debris pile burning is proposed within the bird breeding period and establish no-work buffers per the CEMP around identified nests. • Pre-construction nest surveys shall follow BC Hydro's established Bird Nest Survey. • Conduct clearing and debris pile burning outside migratory bird breeding period. • Complete pre-clearing amphibian breeding and migration surveys in high-quality amphibian habitat alongside active construction roads or ground disturbance areas. • Incorporate site-specific noise mitigation measures as needed.

Environmental Component	Potential Effects	Example of Applicable Mitigations from CEMP
	• Direct mortality of wildlife due to collisions with maintenance vehicles. • Direct mortality of wildlife due to vegetation maintenance. • Direct mortality or reduced health of wildlife due to accidental release of toxic materials during maintenance activities.	• Implement a wildlife awareness program. • Enforce speed limits for construction and transport vehicles to reduce risk of vehicle-wildlife collision. • Develop and apply measures and reporting procedure for conflict wildlife encounters. • Store all food waste in metal, purpose-built, wildlife-proof containers or inside offices of secured vehicles. • Remove (under permit) or ask Conservation Officer Service to remove large road-killed wildlife during construction to avoid attracting bears.
	• Reduction in habitat suitability and availability due to permanent vegetation clearing, presence of infrastructure and noise associated with maintenance activities. • A temporary or permanent change in habitat quality or characteristics affecting habitat suitability and/or wildlife health. • Increase in habitat fragmentation leading to changes to reduction in core breeding areas, edge effects, restrictions/changes to movement corridors. • Increase in invasive plant species.	• Direct light on work areas to reduce sensory disturbance to wildlife. • Maintain and muffle equipment according to manufacturer requirements to reduce unnecessary noise. • Incorporate site-specific noise mitigation measures as needed. • Conduct weed control to prevent introduction and spread of weed materials. Procedures shall include weed material removal, cleaning of vehicles and heavy equipment, and demarcating weed control areas. • Conduct weekly inspections during active growing season for weeds. • Fill material sources will be inspected to ensure they are free of weeds.
Fish and Fish Habitat / Species of Conservation Concern	• Direct mortality of fish due to clearing of stream and wetland habitat. • Direct mortality or reduced health of fish due to accidental release of toxic materials.	• Implement a 15 m machine-free zone from top of bank in riparian areas adjacent to classified waterbodies and wetlands, and a 5 m machine-free zone in NCDs. • Do not allow felled trees to span across water body or be left below the high-water mark unless prescribed.

Environmental Component	Potential Effects	Example of Applicable Mitigations from CEMP
	• Change in aquatic communities and species due to clearing of riparian area. • Change to wetland. • Change to riparian area. • Change in invertebrate populations. • Change in water quality (e.g., sediment, pH). • Change in water quality from increase in temperature due to less shading of watercourses. • Release of contaminants and deleterious substances into wetlands and watercourses. • Construction activity and movement of equipment in watercourses. • Use of contaminated equipment or construction materials. • Increase in invasive plant species.	• Avoid instream works where possible. Approvals and notifications for works in and about a stream under the WSA will be completed prior to work. • Avoid instream and nearshore work during sensitive fish or amphibian stages, where practicable. • Avoid removal and impacts upon low-growing shrubs or grasses within riparian machine-free zone. • No grubbing shall occur in riparian areas unless as part of a waterbody crossing installation. • Maintain natural drainage and infiltration within riparian zone by avoiding unnecessary grubbing, compaction and grading. • Protect root structure and stability of vegetation located on bank of water body. • Cleared areas shall be reduced to the minimum required for construction. • Clearing shall be staged to limit soil exposure. • Disturbed sites shall be seeded with approved seed mixes to allow adequate vegetative growth prior to end of growing season and/or prior to onset of forecasted freezing weather. • Herbicides will not be used to manage invasive weeds. • Vehicles and machinery shall be operated to limit disturbance to watercourse beds and banks and prevent deleterious substances from entering waters. • Monitor pH and turbidity downstream of isolated worksite that involve concrete works. • Storage, handling and equipment and vehicle maintenance and repair sites shall be at least 30 m from top of bank of water bodies. • Store hydrocarbon products in impermeable containment with 110% spill containment. • Implement Spill Response guidelines.
Wetlands and Riparian Areas	• Changes to wetlands. • Changes to riparian zone including loss of shading and food sources for fish.	• Contractor to develop and implement an Erosion and Sediment Control Plan. • Where needed, install sediment traps or ponds at toe of fill slopes near wetlands to capture mobilized sediments.

Environmental Component	Potential Effects	Example of Applicable Mitigations from CEMP
	- Localized change to more drought tolerant conifers and shrubs. - Changes in hydrology. - Release of contaminants, sediment-laden water, and deleterious substances into watercourses and wetlands. - Habitat fragmentation. - Loss of biodiversity. - Reduced capacity for carbon sequestration. - Increase in invasive plant species.	- Cleared areas shall be reduced to the minimum required for construction. - Clearing shall be staged to limit soil exposure. - Avoid removal and impacts on low-growing shrubs or grasses within riparian machine-free zone. - Wherever practicable, avoid heavy machinery in moisture-sensitive terrain and restrict heavy-equipment traffic to designated, stabilized routes including existing trails and access points to reduce soil compaction, rutting and slope destabilization risks. - Use portable ground protection matting under heavy equipment if its required, in soft soil areas. - Do not allow felled trees to span across water body or be left below high-water mark unless prescribed.
Hydrology	- Loss of nutrient filtration leading to increased sedimentation of watercourses. - Reduced groundwater recharge and storage capacity. - Reduced water quality. - Increased flooding. - Alteration of unnamed watercourses and wetland drainage patterns. - Felled vegetation into unnamed watercourses altering drainage.	- Contractor to develop and implement an Erosion and Sediment Control Plan. - Complete instream and nearshore works in a manner to avoid altering watercourse flow patterns, where practicable. - Maintain wetland hydrology by preventing redirection or concentration of surface runoff and managing construction-related drainage so that clean water is routed around wetlands while sediment-laden flows are directed into vegetated buffers or settling facilities. - Wherever practicable, avoid heavy machinery in moisture-sensitive terrain and restrict heavy-equipment traffic to designated, stabilized routes including existing trails and access points to reduce soil compaction, rutting and slope destabilization risks. - Use portable ground protection matting under heavy equipment if its required, in soft soil areas. - Do not allow felled trees to span across water body or be left below high-water mark unless prescribed.
Archaeology	Alteration or destruction of archaeological artefacts	- Chance Find Procedure - Before construction, BC Hydro will develop an Access Plan for the Project. BC Hydro will work

Environmental Component	Potential Effects	Example of Applicable Mitigations from CEMP
		with provincial regulators and interested and affected First Nations to develop and implement feasible and site-specific access control and management strategies in accordance with applicable legislation, permits, approvals, and ROW agreements.
Cultural Resource Values	Change in cultural heritage resources and use	Herbicides will not be used during clearing and construction to manage invasive weeds

10.3 Summary of Environmental Effects after Mitigation

The mature and mid-seral forest will be converted to a maintained right-of-way and shrubs. With the implementation of mitigation measures, the effects will be reduced. The following habitat removals are anticipated:

- 2.9 ha old growth forest;
- 6.1 ha mid-seral conifer stands;
- 0.002 ha wetland; and
- 6.4 ha of riparian around the wetland and two S3 watercourses.

Table 24 provides a summary of the residual effects anticipated after the implementation of the mitigation measures described in section 10.0.

Table 24. Residual Effects After Implementation of Mitigation Measures

Environmental Component	Species / Category Assessed	Residual Effect After Mitigation Measures
Vegetation and Old Growth	OGDA; Older Hemlock-Amabilis Fir stand	Removal of old growth deferral area will have a residual effect in the footprint, but considering amount available in the RSA, no residual effect in watershed anticipated.
	Mid-seral Conifer stands	Removal of mid-seral conifer will have a residual effect in the footprint, but considering amount available in the RSA, no residual effect in watershed anticipated.
	Early-seral Conifer stand	Removal of early-seral conifer will have a residual effect in the footprint, but considering amount available in the RSA, no residual effect in watershed anticipated.
	Non-treed wetland	Not anticipated. Compliance with permitting requirements is expected.
	Non-treed rock	Not anticipated.

Environmental Component	Species / Category Assessed	Residual Effect After Mitigation Measures
Plant, Lichen and Ecological Communities at Risk	Alaska holly fern	Not anticipated, following implementation of CEMP.
	Smoker's Lung	
	Northwest waterfan	
Wildlife and Wildlife Habitat / Species of Conservation Concern	Little Brown Myotis	Not anticipated, following the implementation of CEMP.
	Yuma Myotis	Not anticipated, following implementation of CEMP.
	Grizzly Bear	
	Furbearers: Beaver and River Otter	Not anticipated. Compliance with permitting requirements is expected.
	American Goshawk, <i>laingi</i> subspecies	Removal of old growth deferral area will have a residual effect in the footprint, but considering amount available in the RSA, no residual effect in watershed anticipated.
	Common Nighthawk	
	Evening Grosbeak	
	Northern Pygmy-Owl	
	Western Screech-Owl	
	Olive-sided Flycatcher	
	Rusty Blackbird	
	Horned Grebe	
	Black Swift	
	Common Nighthawk	Not anticipated, following implementation of CEMP.
	Western Toad	Not anticipated, following implementation of CEMP.
	Coastal Tailed Frogs	
	Western Bumble Bee	Not anticipated, following implementation of CEMP.
Fish and Fish Habitat / Species of Conservation Concern	Coastal Cutthroat Trout	Not anticipated, following implementation of CEMP. Compliance with permitting requirements is expected.
	Bull Trout	
	Chinook Salmon	
	Coho Salmon	
	Steelhead / Rainbow Trout	
	Chum Salmon	
	Pink Salmon	
	Dolly Varden	
Wetlands and Riparian Areas	Wetland	Permanent loss of wetland area. The detailed engineering design is recommended to avoid the wetland if possible.
	Riparian	Not anticipated, following implementation of CEMP.
Hydrology	Hydrology	Not anticipated, following implementation of CEMP.
Archaeology	Archaeology	Not anticipated, following implementation of site-specific management plans.
Cultural Resource Values	Cultural Use	Not anticipated, following implementation of site-specific management plans.

11.0 CONCLUSION

To support the proposed 12.4 ha boundary adjustment to the SCPA to accommodate the construction and operation of approximately 1.1 km of the NCTL Project, this environmental impact assessment described Environmental resources present within the Project footprint. Based on a desktop analysis and field assessment, an effects assessment was conducted. The mature and mid-seral forest will be converted to a maintained right-of-way and shrubs. The following habitat removals are anticipated:

- 2.9 ha old growth forest;
- 6.1 ha mid-seral conifer stands;
- 0.002 ha wetland; and
- 6.4 ha of riparian around the wetland and two S3 watercourses.

Reductions in old-growth forest, riparian habitat, and wetlands within the SCPA may result in localized effects on vegetation and wildlife, including the loss of bat roosting habitat, bird habitat, and western toad summer foraging and overwintering habitat. However, given the limited extent of habitat loss relative to the watershed as a whole, residual effects on vegetation and wildlife are not expected at the watershed scale. With the implementation of mitigation measures, residual effects on wildlife are not anticipated.

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APPENDIX 1

NON-TRADITIONAL LAND AND SOCIO-ECONOMIC EFFECTS ASSESSMENT

NON-TRADITIONAL LAND USE AND SOCIO-ECONOMIC EFFECTS ASSESSMENT

SWAN CREEK PROTECTED AREA BOUNDARY ADJUSTMENT

May 29, 2026

Revision History			
Project Name		B.C Hydro North Coast Transmission Line (NCTL): Phase 2 - Glenannan to Terrace Transmission Project (GTTT)	
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Report Author(s)		Shellie Clerk, MSc, P.Ag. Colby Mooney, BSc., P.Biol Erik Thornborough	
Date	Version	Review Type	Description/Notes
May 29, 2026	Rev0	Draft	Initial report submission sent to Triton for feedback.

Executive Summary

This report provides a non-traditional land use effects assessment for the proposed boundary adjustment to the Swan Creek Protected Area associated with the BC Hydro North Coast Transmission Line (NCTL) Phase 2 – Glennan to Terrace Transmission Project (the Project).

The boundary adjustment is being proposed to accommodate the preferred Project routing option through the Zymoetz (Copper) River corridor. The preferred alignment was selected through stakeholder consultation and comparative assessment of Project-related disturbance and associated environmental and land use effects.

Routing along the southern side of the Zymoetz River is preferred over routing along the northern side because existing access is already available via the Copper River Forest Service Road (Copper River FSR). In comparison, development of transmission infrastructure along the existing corridor north of the river would require construction of new permanent access, additional watercourse crossings, and a greater overall disturbance footprint.

The proposed boundary adjustment would remove 12.41 ha of lands within the 266.18 ha from the northernmost portion of the Swan Creek Protected Area adjacent to the existing Copper River FSR in order to accommodate construction of the proposed Project. The remaining 253.77 ha of Swan Creek Protected Area would remain undeveloped.

The non-traditional land use assessment serves to evaluate potential effects of the proposed boundary adjustment on recreational, visual, and socio-economic values associated with Swan Creek Protected Area and the surrounding Zymoetz River corridor. The assessment was completed using a desktop review methodology which incorporated available information relating to current recreational use within the corridor, regional socio-economic conditions, infrastructure planning, Protected Area values, and existing land use conditions.

Recreational and visual values associated with Swan Creek Protected Area are primarily related to the presence of undeveloped, forested watershed which contributes to the visual landscape of the Zymoetz River corridor. The Protected Area also supports informal backcountry recreation opportunities. Although the Protected Area does not contain formal recreation infrastructure, nearby recreation features include the Salmon Run Recreation Site, the Copper River FSR, and recreational use associated with the Zymoetz River corridor.

The proposed boundary adjustment and associated transmission infrastructure would result in changes to the recreational and visual setting of the northern portion of Swan Creek Protected Area and adjacent Zymoetz River corridor. These changes would include the conversion of forested land within the proposed removal area to a maintained transmission line corridor, temporary construction-related noise and activity, and longer-term visual changes where the transmission corridor is visible from nearby roads, recreation areas, river-based viewpoints, or tenure-based use areas. The assessment considers these changes in the context of the existing Copper River FSR, nearby recreation use, existing utility infrastructure, and other land use activity within the Zymoetz River corridor.

The assessment also considered Project-related socio-economic and infrastructure benefits. The Project is intended to increase transmission capacity and support growing electricity demand across northwestern British Columbia associated with population growth, industrial development, and electrification initiatives. The Project is also expected to contribute employment opportunities, regional business activity, municipal and Indigenous revenues, and long-term infrastructure benefits associated with increased electrical reliability and transmission capacity.

In summary, the proposed boundary adjustment would result in a permanent reduction in the extent of Swan Creek Protected Area to accommodate infrastructure development associated with the Project. The adjustment would alter the natural landscape character of lands currently included within the Protected Area, while supporting a transmission alignment intended to use existing access along the Copper River FSR and avoid the need for new permanent access development north of the Zymoetz River.

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1.0 RECREATIONAL ASSESSMENT

1.1 *Baseline Conditions*

Swan Creek Protected Area was established in 2005 through the Kalum Land and Resource Management Plan (LRMP) to protect the small, steep, largely unlogged Copper River watershed. The Protected Area encompasses approximately 266 ha and is located approximately 39 km southeast of Terrace, BC. It is characterized by its forested and undeveloped condition in proximity to the Zymoetz River corridor to provide informal backcountry recreation opportunities and scenic landscape values.

1.2 *The Remote, Undeveloped Nature of the Protected Area*

Swan Creek Protected Area is located adjacent to the Copper River FSR, along the south side of the road between kilometre markers 30 and 31. The Zymoetz River runs parallel to the Copper River FSR and is located approximately 130 m north of the Protected Area's northern boundary. The east, west, and south boundaries of the Protected Area are surrounded by primarily undisturbed forested land.

Swan Creek Protected Area is a small but ecologically valuable Protected Area. It was established to help preserve the ecosystem and the surrounding old-growth and mature forest stands from potential development and resource extraction pressures. Although modest in size, the area plays an important role in supporting regional biodiversity and contributing to watershed health within the broader Copper River system. It also helps maintain ecological connectivity by acting as a corridor between larger areas of wilderness in the region.

Although Swan Creek Protected Area does not overlap mapped legal or non-legal Old Growth Management Areas, approximately 121.5 ha, or 45.7% of the Protected Area, is mapped as priority big-treed old growth and Ancient Forest within Old Growth Technical Advisory Panel (TAP) priority deferral mapping. Ancient Forest, as defined in the TAP priority deferral mapping, refers to forest older than 400 years in ecosystems with rare stand-replacing disturbance, or older than 250 years in ecosystems with more frequent stand-replacing disturbance (GOBC, 2023). Within Swan Creek Protected Area, these mapped old growth values are associated with mature forest characteristics that may include older coniferous stands such as western hemlock, mountain hemlock, western red cedar, and subalpine fir (BC Parks, n.d.). Figure 1.6-1 displays the Priority Deferral Areas within the Protected Area boundaries.

1.3 *The Absence of Formal Infrastructure*

There is no formal infrastructure within the Protected Area (BC Hydro and Power Authority, 2026). While the area supports low-intensity informal recreational activities such as hiking, wildlife viewing, hunting, fishing, and backcountry exploration, it does not contain established trail systems, designated campsites, parking areas, day-use facilities, or other developed recreational amenities.

The formal infrastructure adjacent to the Protected Area consists of the Copper River FSR, a limited winter road system, a buried pipeline, and the Salmon Run Recreation Site. The Salmon Run Recreation Site is located along the Zymoetz River, across from the northern boundary of the Protected Area. The site is comprised of a 1.96 ha, maintained camping and day-use area. The site contains several established campsites, an outhouse, log picnic tables, fire rings, and day-use parking for angling and other recreational activities. The recreation site would be used in conjunction with and to support informal recreation activities (i.e., backcountry use) within the Protected Area and the surrounding forests.

1.4 *Potential Use by Backcountry Users*

The Protected Area has the potential to support limited backcountry recreational use. The area's appeal to users is primarily associated with its accessibility from the adjacent Copper River FSR, its proximity to the

nearby day-use area, and the opportunity to experience relatively undisturbed natural habitat and wilderness values. Recreational activities may include informal hiking, wildlife viewing, hunting, nature appreciation, and backcountry exploration.

However, recreational use within the Protected Area is expected to remain low-intensity and dispersed in nature due to the steep and rugged terrain, absence of formal infrastructure, and lack of established access routes or recreational facilities. As a result, public use is anticipated to be primarily self-directed and limited to experienced backcountry users capable of navigating undeveloped terrain, such as experienced hikers, hunters, and backcountry campers.

Hunting, guide outfitting, and trapping also form part of the broader recreational and land use within the Protected Area. Swan Creek Protected Area is located within Wildlife Management Unit 6-9, where regulated hunting opportunities may contribute to seasonal backcountry use (GOBC, n.d.-i). Species associated with hunting opportunities in Wildlife Management Unit 6-9 include black bear, moose, mountain goat, and white-tailed deer.

Two registered traplines and one registered guide outfitter tenure intersect the Project Area. Guide Certificate No. 610025 encompasses the entirety of the Protected Area; however, the Protected Area represents less than 0.0004% of the overall guide outfitter tenure, which is approximately 660,966 hectares in size.

Of the intersected traplines, Trapline TR0609T035 overlaps approximately 266.05 hectares of the Protected Area, while Trapline TR0609T034 overlaps approximately 0.13 hectares. Collectively, these overlaps account for approximately 0.005% of the two intersected trapline tenures.

Hunting, trapping, and guide outfitting activities associated with these tenures are expected to primarily occur outside the Protected Area boundaries and away from the adjacent day-use area.

1.5 Zymoetz River Corridor

The Zymoetz River is a major tributary of the Skeena River and is recognized for its high-value fish habitat, including important salmon and steelhead populations, as well as its recreational importance. The river corridor supports a range of recreational activities, including angling, kayaking, rafting, camping, wildlife viewing, and backcountry recreation, and is valued for its scenic wilderness setting and perceived remoteness.

The Swan Creek Protected Area is located adjacent to the Zymoetz River corridor, approximately 130 m north of the river and parallel to the Copper River FSR. The Protected Area contributes to the undeveloped and forested character of the corridor and forms part of the natural visual backdrop experienced by river users and individuals travelling along the Copper River FSR. BC Parks identifies the area as contributing to the scenic quality of the corridor, including views experienced by anglers using the river. The absence of industrial development within the Protected Area contributes to the perception of an intact and undeveloped landscape and supports the wilderness-oriented recreational setting of the area.

The portion of the corridor adjacent to the Swan Creek Protected Area supports recreational and commercial recreation activities, including camping, angling, rafting, kayaking, and guided recreation opportunities. Access is facilitated by the Copper River FSR and the Salmon Run Recreation Site. The undeveloped nature of the Protected Area, including the forested landscape and views of the waterfall flowing into Swan Creek, contributes to the visual quality, scenic character, and overall recreational experience associated with the Zymoetz River corridor.

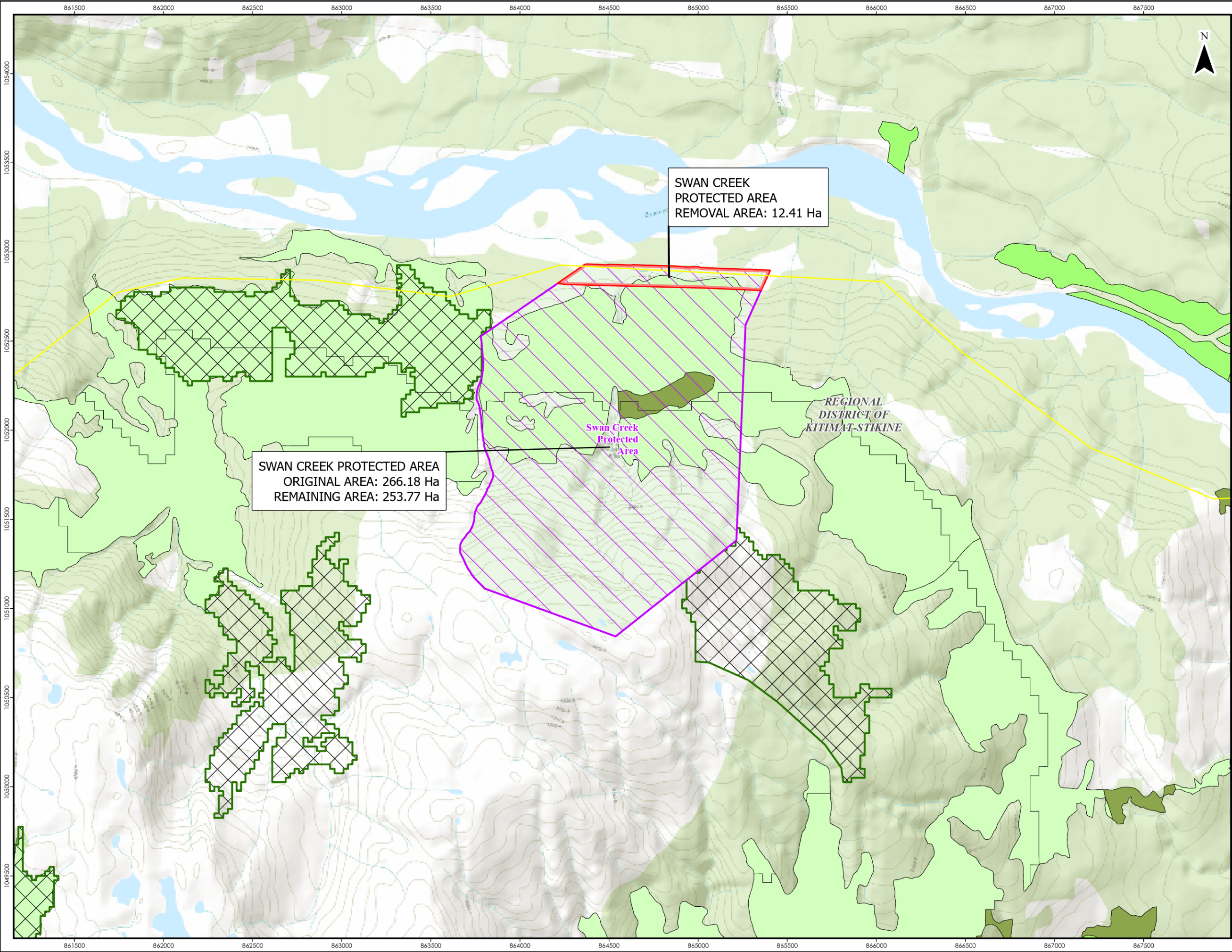
1.6 Contribution of the Area to the Perception of Wilderness and Intactness

Swan Creek Protected Area contributes to the perception of wilderness and intactness primarily through its protected status, forested condition, and role as part of the natural landscape surrounding the Zymoetz River corridor. Although the northern portion of the Protected Area is adjacent to the Copper River FSR and nearby

recreation and utility infrastructure, the Protected Area itself remains undeveloped and does not contain formal recreation facilities, maintained trails, or designated campsites.

The forested slopes and undeveloped interior contribute to the perception of a natural landscape for users travelling along the Copper River FSR, recreating at Salmon Run Recreation Site, or angling and travelling within the Zymoetz River corridor. At the same time, the recreational setting should be understood within the context of the broader surrounding landscape, which already includes existing road access, oil and gas infrastructure, recreation use, cut blocks, and tenure interests. As a result, the area is not considered an isolated or untouched wilderness setting. The location of the existing infrastructure and disturbances are displayed of Figure 1.6-2.

The Protected Area contributes to broader perceptions of naturalness and landscape continuity due to its undeveloped interior, continuous forest cover, and association with largely unlogged watershed conditions. These characteristics contribute to the natural visual setting experienced from nearby roads, campsites, and river-based viewpoints, including locations outside the Protected Area boundary.



SWAN CREEK
PROTECTED AREA
REMOVAL AREA: 12.41 Ha

SWAN CREEK PROTECTED AREA
ORIGINAL AREA: 266.18 Ha
REMAINING AREA: 253.77 Ha

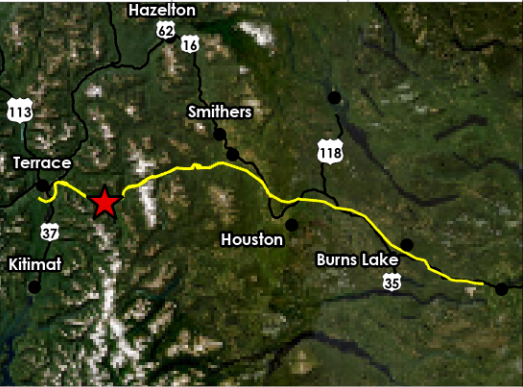
Swan Creek
Protected
Area

REGIONAL
DISTRICT OF
KITIMAT-STIKINE

BC Hydro
North Coast Transmission Line
Glenannan to Terrace Transmission

Figure 1.6-1
Swan Creek Protected Area
Boundary Adjustment

Project No.	Date	Revision
2025-654	May 29, 2026	00
Prepared By	Reviewed By	Page Size
WT	CL	11" x 17"



- Proposed Leading Route
- Swan Creek Protected Area
- Removal - Swan Creek Protected Area
- Old Growth Management Areas (Legal)
- Old Growth Technical Advisory Panel - Priority Deferral Areas**
 - ANCIENT FOREST
 - PRIORITY BIG TREED
 - ANCIENT FOREST / PRIORITY BIG TREED

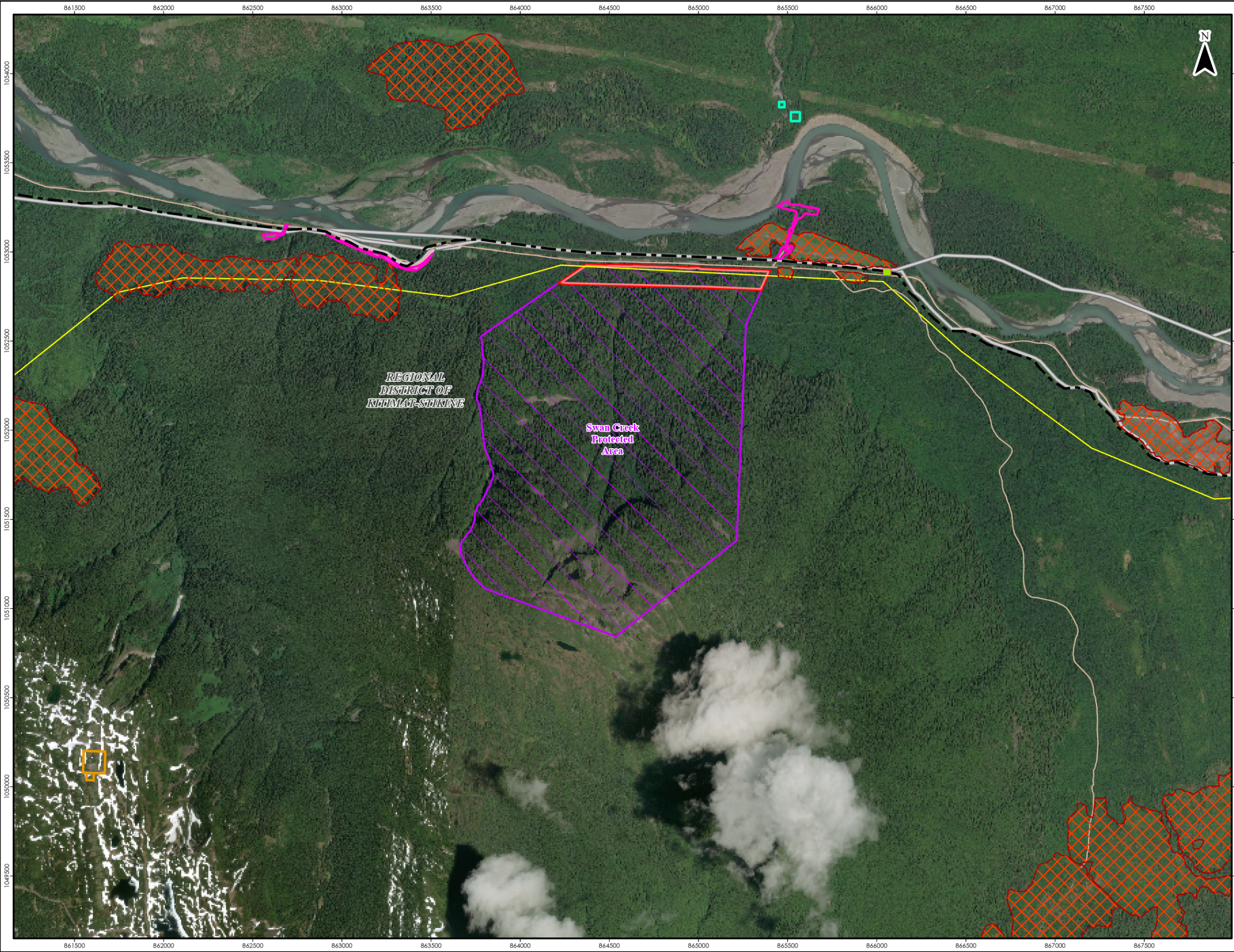
0 200 400 600 metres

Scale: 1:20,000

Projection: NAD 1983 BC Environment Albers

Base map Source: ESRI Base maps

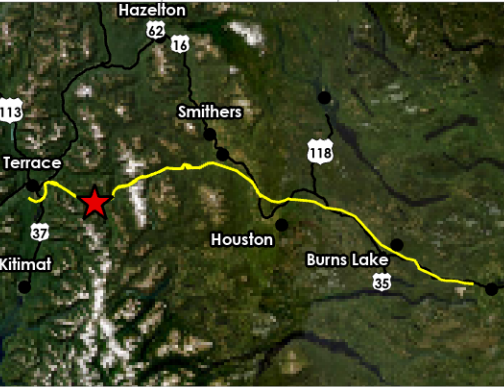
Disclaimer: This map is a visual aid to be used together with the accompanying report, including and incorporating any disclaimer contained therein. This map illustrates the results of Triton Environmental Consultants Ltd. work, and is not to be used for navigation. Information shown on this map is based, in whole or in part, on geographic information that may have been provided by third parties, including government data. Triton Environmental Consultants Ltd. disclaims (without limiting the generality of the foregoing) all responsibility for the accuracy of any such third party information, regardless of the source.



BC Hydro
North Coast Transmission Line
Glenannan to Terrace Transmission

Figure 1.6-2
Existing Disturbances Adjacent to
Swan Creek Protected Area

Project No.	Date	Revision
2025-654	May 29, 2026	00
Prepared By	Reviewed By	Page Size
WT	CL	11" x 17"



- Proposed Leading Route
- Swan Creek Protected Area
- Removal - Swan Creek Protected Area
- Pipeline Installation
- Forest Tenure Road
- Pipeline
- Crown Tenure**
 - Communication Sites
 - Gas and Oil Pipeline
 - Trapline Cabin
- Cutblock
- Oil & Gas Ancillary Area

0 200 400 600 metres

Scale: 1:20,000

Projection: NAD 1983 BC Environment Albers

Base map Source: ESRI Base maps

Disclaimer: This map is a visual aid to be used together with the accompanying report, including and incorporating any disclaimer contained therein. This map illustrates the results of Triton Environmental Consultants Ltd. work, and is not to be used for navigation. Information shown on this map is based, in whole or in part, on geographic information that may have been provided by third parties, including government data. Triton Environmental Consultants Ltd. disclaims (without limiting the generality of the foregoing) all responsibility for the accuracy of any such third party information, regardless of the source.

1.7 Effects Assessment

To accommodate development of the Project, BC Hydro is proposing an adjustment to the northern boundary of the Swan Creek Protected Area. The proposed boundary adjustment would remove approximately 12.41 ha from the Protected Area to allow the Project right-of-way to parallel the Copper River FSR.

This adjustment would introduce industrial infrastructure into an area that is currently protected and undeveloped, with the potential to alter perceptions of remoteness and affect the recreational and wilderness experience of users within the Zymoetz River corridor. The assessment considers potential effects in the context of the existing recreational opportunities, scenic values, and natural setting associated with the Swan Creek Protected Area. The existing condition of the Protected Area and the potential alterations associated with the proposed boundary adjustment are displayed on Table 1.7-1.

Table 1.7-1. Swan Creek Protected Area Conditions

Parameter	Result
Swan Creek Protected Area - current total area	266.18 ha
Swan Creek Protected Area - Boundary Adjustment Area	12.41 ha
Swan Creek Protected Area – Excluding the Boundary Adjustment Area	253.77 ha
Area Included in the Boundary Adjustment Area	4.66%
Wildlife Management Unit	WMU 6-9
Traplines Intersected by the Swan Creek Protected Area	2 (1 within the removal area)
Percent of trapline area within the Boundary Adjustment Area	0.024%
Guide outfitter areas intersected the Swan Creek Protected Area	1
Percent of guide outfitter area within the Boundary Adjustment Area	0.002%
Ancient Forest/TAP Old Growth Technical Advisory Panel - priority deferral area impacted the Boundary Adjustment Area	2.91 ha
Percent of Total Old Growth Deferral Area, in the Swan Creek Protected Area, impacted by the Boundary Adjustment Area	2.39%

Note: Metrics are based on non-published Project-specific analysis completed for the Swan Creek Protected Area boundary adjustment using the proposed removal area and publicly available provincial datasets, including Protected Area, recreation, visual landscape, wildlife management unit, trapline, guide outfitter, forest vegetation, and old growth datasets.

1.7.1 Changes to Perceived Remoteness and Naturalness

The boundary adjustment area is located along the northern portion of Swan Creek Protected Area, adjacent to the Copper River FSR. The location of the boundary adjustment area is important for understanding potential changes to perceived remoteness.

Construction and operation of the Project along the north boundary of the Swan Creek Protected Area could alter perceptions of remoteness and naturalness within the Salmon Run Recreation Site and the Zymoetz River corridor. During construction, vegetation clearing, active equipment, temporary workspaces, increased vehicle traffic, and the presence of workers and machinery could temporarily reduce the perceived backcountry character of the area. Recreational users, including anglers, hunters, guide outfitters, campers, and backcountry travelers, may experience the area as more developed and less isolated during peak construction periods.

During operations, the continued presence of the right-of-way and associated infrastructure could contribute to a long-term reduction in perceived naturalness in areas where the Project is visible from recreation sites, access

routes, or portions of the river corridor. However, the Project would generally parallel existing linear disturbance associated with the Copper River FSR and adjacent forestry development. As a result, the Project would represent an incremental increase in visible disturbance within an already managed multi-use landscape rather than introducing industrial activity into a previously undisturbed wilderness setting.

Additionally, the proposed boundary adjustment area contains forested land and overlaps approximately 2.91 ha of land identified as a priority deferral area by the Old Growth Technical Advisory Panel. This overlap represents approximately 2.39% of the mapped priority deferral area within the Swan Creek Protected Area (Table 1.7-1). While limited in extent, the affected area contributes to the mature forest composition, perceived ecological intactness, and visual quality associated with the protected landscape. Construction and operation of the Project within the proposed boundary adjustment area would result in a localized alteration of the existing forested and protected character of the area. However, the substantial majority of the area identified as priority deferral area within the Protected Area (greater than 97%) would remain intact and would continue to support the overall ecological integrity and visual character of the Protected Area.

Accordingly, the Project is not anticipated to substantially alter perceptions of remoteness within the remaining areas of the Swan Creek Protected Area, as the proposed boundary adjustment area is already influenced by existing road access and adjacent recreational day-use activities. However, construction and operation of the Project may alter the perceived naturalness of the Protected Area in locations where the Project is visible to users travelling along the Copper River FSR, visitors to the Salmon Run Recreation Site, recreational users informally accessing the Protected Area and surrounding forested landscape.

1.7.2 Introduction of Industrial Features Within a Protected Landscape

Construction of the Project within the proposed boundary adjustment area would introduce industrial features into the existing protected landscape associated with the Swan Creek Protected Area. Temporary construction activities, including vegetation clearing, grading, equipment operation, and material storage, would increase the visibility of industrial development from portions of the Salmon Run Recreation Site, the Copper River FSR, and sections of the Zymoetz River corridor.

During operations, the maintained right-of-way and associated transmission infrastructure would remain visible from certain viewpoints and may locally alter scenic quality and the visual character of the area. However, the landscape is already influenced by existing industrial and transportation features, including the Copper River FSR, the existing pipeline corridor paralleling the south side of the river, and the visibility of the existing transmission line north of the river. Consequently, the Project would represent an incremental addition to an existing pattern of linear disturbance within the broader valley corridor.

In addition, locating the Project adjacent to the existing roadway and at the base of the mountain slope would reduce the visibility of the infrastructure from surrounding mountain viewpoints and would consolidate disturbance within an existing transportation corridor. This approach would reduce the potential for additional fragmentation of the Protected Area and would visually connect the Project to existing disturbance patterns, rather than introducing a new isolated industrial feature within an otherwise intact landscape.

1.7.3 Potential Changes to User Experience Associated with Noise, Activity, or Visual Disturbance

Potential changes to user experience would be most pronounced during Project construction. Construction activities would temporarily increase noise, lighting, equipment operation, vegetation clearing, vehicle traffic, and worker presence near the northern boundary of the Swan Creek Protected Area. These activities may be experienced by users travelling along the Copper River FSR, campers and day users at the Salmon Run Recreation Site, anglers and other recreational users of the Zymoetz River corridor, individuals associated with nearby trapline cabins, guide outfitting operations, heliskiing operators and clients using the broader tenure area, and informal users accessing the surrounding forested landscape.

For users of the Zymoetz River corridor, potential effects would primarily relate to temporary sensory disturbance and changes to the visual setting during construction. BC Parks identifies the Swan Creek watershed as contributing to views experienced by anglers on the Zymoetz River, and the proposed transmission corridor may alter portions of this visual backdrop where vegetation clearing, transmission structures, conductors, or construction activity are visible. These effects are expected to be mitigated by the proposed boundary adjustment area being situated adjacent to the existing Copper River FSR within a landscape that is already influenced by transportation and utility infrastructure.

Campers and day users at the Salmon Run Recreation Site may experience temporary changes to the recreational setting during construction, including increased noise, traffic, visible clearing, equipment activity, and worker presence. During operations, effects on recreational users would be primarily visual in nature and associated with the maintained right-of-way and visible transmission infrastructure. Although these changes may be perceptible to users who value the adjacent forested landscape, effects are expected to remain localized due to the existing road-accessible and developed character of the surrounding corridor.

The proposed boundary adjustment area overlaps one guide outfitter territory and a small portion of one trapline that intersects the Protected Area. The overlap represents approximately 0.024% of the affected trapline area and approximately 0.002% of the affected guide outfitter area (Table 1.7-1). Potential effects on trapline and guide outfitter tenure areas would be associated primarily with construction and operation of the transmission line corridor.

Users associated with nearby trapline cabins, guide outfitting areas, heliskiing tenures, and other tenure-based recreational activities may experience temporary sensory disturbance during construction, together with longer-term visual changes associated with the maintained transmission corridor. However, measurable displacement or loss of recreational use within these tenure areas is not anticipated because the areas of overlap are very small relative to the overall extent of the affected tenures, and because the proposed alignment would parallel existing infrastructure rather than introduce a new linear disturbance into the interior of the Protected Area.

Operational effects would be longer term but generally lower in intensity than construction-related effects. During operations, user experience may be influenced by the permanent presence of the transmission line corridor, maintained vegetation clearing, and visible transmission structures. Periodic inspection and maintenance activities may also result in intermittent noise, vehicle use, or helicopter activity; however, these activities are expected to occur infrequently relative to the construction phase. Overall, effects on user experience are expected to be primarily visual, localized to the northern boundary of the Protected Area and adjacent Zymoetz River corridor, and moderated by the presence of existing road access, utility infrastructure, and ongoing land use activities within the area.

1.8 Summary of Recreational Effects

Construction of the Project may temporarily alter the recreational setting through increased noise, equipment activity, vegetation clearing, vehicle traffic, and worker presence. These changes may be noticeable to users travelling along the Copper River FSR, campers and day users at the Salmon Run Recreation Site, anglers and other recreational users of the Zymoetz River corridor, individuals associated with nearby trapline cabins, guide outfitting operations, heliskiing operators and clients, and informal users accessing the surrounding forested landscape.

During operations, the primary change to recreational values would be visual and perceptual. The maintained right-of-way and transmission infrastructure would result in a permanent alteration to the natural character of the northern edge of the Protected Area where visible from nearby roads, recreation areas, river-based viewpoints, or tenure-based use areas. These changes would occur in a setting that is already influenced by the Copper River FSR, existing utility infrastructure, recreation use, and other land use activity within the Zymoetz River corridor.

The proposed removal area overlaps one guide outfitter territory and a small portion of one registered trapline. The overlap represents a very small proportion of the broader tenure areas. Based on the limited spatial overlap, the broad extent of the affected tenure areas, the existing disturbed character of the surrounding Zymoetz River corridor, and the proximity of the proposed alignment to existing transportation and utility infrastructure, the boundary adjustment is not expected to change the overall availability of lands used for trapping, guiding, or other tenure-based recreational activities. Potential interactions with these activities would be associated primarily with localized construction disturbance and longer-term visual changes near the proposed transmission corridor.

The majority of Swan Creek Protected Area would remain outside the boundary adjustment area and would continue to retain its undeveloped interior, forest cover, and contribution to the broader natural setting of the Zymoetz River corridor. The proposed adjustment remains relevant to the boundary adjustment decision because it would result in a permanent modification to the Protected Area boundary and a localized alteration of the natural landscape character of lands currently included within the Swan Creek Protected Area.

2.0 Socio-economic Considerations

2.1 *Methods*

Description of Sources for Desktop Data Collection

The report was completed as a desktop review using available information relevant to Employment and Economy and Infrastructure Services. The data sources used to support this report are summarized Table 2.1-1.

Table 2.1-1. Datasets Used and Application in Assessment

Valued Component	Subcomponent	Data Sources	Rationale
Employment and Economy	Local and Regional Employment	Statistics Canada (2016 & 2021 Census) NCTL Accommodation Study (February 2025) BC Chamber of Commerce	The Project will provide employment and procurement opportunities for local workers and businesses.
	Economy	Statistics Canada (2016 & 2021 Census) Government of BC Municipal General and Financial Statistics BC Statistics Local Area Economic Profiles NCTL Accommodation Study (February 2025)	The Project will provide local and regional benefits to the economy through tax revenues and job creation.
Infrastructure and Services	Infrastructure	Municipal Websites Regional District Websites Government of BC Infrastructure Data Municipal Public Works Data	Project-related activities may impact or increase demand for existing or planned infrastructure including transportation infrastructure, power infrastructure, water infrastructure, and waste management infrastructure

2.2 *Baseline Conditions*

This section evaluates socio-economic considerations associated with the proposed Swan Creek Protected Area boundary adjustment and The Project. The assessment considers regional employment and economic conditions, infrastructure and transmission system benefits, and the relationship between Project-related infrastructure development and the environmental, recreational, and land use values associated with Swan Creek Protected Area. The baseline assessment considers conditions within the regional study area relevant to understanding existing economic activity, infrastructure, employment conditions, Protected Area functions, and environmental, cultural, and recreational values. Consideration is given to the role of Terrace and the Regional District of Kitimat–Stikine (“RDKS”) as the surrounding socio-economic context and to the contribution of Swan Creek Protected Area within the broader regional landscape. Information presented in this section is intended to characterize existing conditions prior to Project implementation and support assessment of potential interactions between infrastructure development and Protected Area values.

2.2.1 Transmission Infrastructure and Energy Systems

Transmission infrastructure supports reliable electricity delivery across British Columbia and enables the province to accommodate future demand associated with population growth, industrial activity, and electrification. BC Hydro’s current Integrated Resource Plan identifies transmission expansion as a critical requirement to support long-term electricity reliability and future development throughout the province.

BC Hydro's 2025 Integrated Resource Plan identifies northwestern British Columbia as an area requiring additional transmission capacity to accommodate projected regional demand growth. Planned investments include development of a second 500-kV transmission corridor between Prince George and Terrace together with upgrades to the existing northwest transmission network. These upgrades are intended to increase transmission capacity into the North Coast region and support existing and projected electricity demand across communities, industrial users, and regional infrastructure. Expanded transfer capability also improves operational flexibility and supports long-term electricity requirements associated with regional growth and future system planning.

The strategic importance of transmission projects is reinforced by British Columbia's existing electricity demand profile and forecasted growth. The Canada Energy Regulator reports that B.C.'s industrial sector is the largest electricity-consuming sector, using 23.3 TWh in 2020, compared with 20.2 TWh for residential customers and 14.5 TWh for commercial customers. BC Hydro's current long-term planning forecasts provincial electricity consumption to increase by approximately 15% by 2030, driven by population growth, electrification initiatives, and expanding industrial activities.

The Province's October 2025 energy legislation announcement reinforces the scale of emerging electricity demand. Stating that BC Hydro had received requests for industrial project electricity connection totalling almost 6,800 MW, more than six times the capacity of Site C's 1,100 MW. Primarily stemming from mining, upstream natural gas, LNG, and emerging energy-intensive industries. As such, the proposed NCTL serves as a key project for expanding grid capacity, regional economy diversification, and accommodating future development.

2.2.2 Regional Economic Activities

Regional economic activities for this assessment are characterised using the City of Terrace and the RDKS Electoral Area C. The city of Terrace is located 40km from the Swan Creek Protected Area and serves as the prominent centre for services, employment, public infrastructure, and support for surrounding industrial activities. Although Swan Creek Protected Area itself is undeveloped and supports limited direct economic activity, the surrounding landscape remains economically connected through shared transportation networks, labour markets, commercial services, public infrastructure, and regional resource and industrial activity. The RDKS is included in the report as the applicable regional economic zone for the surrounding rural and unincorporated lands, including the entirety of the footprint of the Swan Creek Protected Area, the majority of the proposed NCTL route, and subsequent Project footprint for assessment of revenues and associated economic activity. Together, these areas represent the most applicable regional economic baseline for evaluating existing socio-economic conditions and understanding how changes in employment, economic activity, infrastructure demand, and regional spending may interact with the broader area surrounding the Swan Creek Protected Area.

2.2.2.1 Regional Economic Activities in the Terrace Area

Terrace functions as the primary economic, administrative, transportation, and service centre for Northwestern British Columbia and supports economic activity extending across surround smaller municipalities, rural areas, and Indigenous communities. Acting as a regional hub for commercial and social services as well as government administration. Located along highway 16 with transportation and utility infrastructure, Terrace provides access to commercial services, transportation connections, and supporting infrastructure that facilitate regional economic activity and development.

Terrace recorded a population of approximately 12,017 residents in 2021, increasing from approximately 11,486 residents in 2016 (4.6%). The labour force increased from approximately 6,175 workers in 2016 to 6,405 workers in 2021 (3.7%), while participation remained relatively stable at approximately 67% and unemployment declined from approximately 8.6% to 6.2% over the same period. Employment composition remained concentrated in service and institutional sectors. Health care and social assistance represented the largest employment sector at approximately 18% of employment (1,170 workers), followed by retail trade (13%; 810

workers), construction (10%; 645 workers), educational services (9%; 605 workers), and accommodation and food services (6%; 410 workers). Combined, these sectors represented approximately 56% of local employment. Income conditions within Terrace generally exceeded broader regional averages. Mean household income was recorded at approximately \$102,000, with 20% of households earning between \$127,000 and \$188,000 annually, and an additional 11% earning greater than \$188,000. Household income distribution was concentrated within middle- and upper-income brackets relative to surrounding regional districts.

Economic activity within Terrace is supported through regional transportation and infrastructure networks including Highway 16, airport access, rail connectivity, utilities, and supporting commercial services. These networks support workforce accommodation, contractor services, procurement, public administration, and regional logistics associated with surrounding industrial and resource activity.

Municipal financial conditions further reflect Terrace's role as a regional service centre. In 2023, the city reported approximately \$53.9 million in revenues (\$4,550 per resident) and \$40.6 million in expenditures (\$3,430 per resident). Revenue sources consisted primarily of taxation (39%), provincial transfers (29%), service revenues (17%), and developer contributions (7%), while expenditures were concentrated in protective services (19%), development services (16%), recreation and culture (14%), and transportation (13%). Property tax rates in 2025 were reported at approximately 4.7% for residential properties and 22.8% for business properties, supported by an assessed municipal tax base of approximately \$2.56 billion.

Current economic conditions within Terrace continue to be influenced by regional infrastructure, utility, transportation, and industrial activity occurring throughout northwestern British Columbia. Major development activity within the broader region contributes to demand for labour, accommodations, commercial services, and supporting supply chains that reinforce Terrace's role as a regional service and economic centre.

2.2.2.2 Economic Activities in the RDKS

The RDKS provides the broader regional economic setting surrounding Swan Creek Protected Area and encompasses the surrounding municipalities, rural communities, and Indigenous communities across Northwestern British Columbia. While Terrace functions as the core urban centre for the region, economic activity throughout the regional district is associated with transportation and utility infrastructure, resource development, and construction. Electoral Area C captures the rural and unincorporated areas surrounding Terrace and represents the portion of the Regional District most directly associated with the regional setting surrounding Swan Creek Protected Area.

RDKS recorded a population of approximately 37,790 residents in 2021, increasing modestly from approximately 37,367 residents in 2016 (1.1%). During the same period, the labour force declined from approximately 18,690 workers in 2016 to 18,350 workers in 2021 (-1.8%), while participation decreased from 64.4% to 61.8%. Employment rates remained comparatively stable at approximately 55.4%, while unemployment improved from 13.8% to 10.3% over the same period. Health care and social assistance represented the largest employment sector at approximately 14% of employment (2,625 workers), followed by construction (12%; 2,130 workers), retail trade (11%; 1,985 workers), public administration (9%; 1,570 workers), and educational services (8%; 1,525 workers). Combined, these sectors represented approximately 54% of total employment within the Regional District. Major employers and economic contributors throughout the broader region include public-sector institutions, regional school districts, industrial operations, transportation activity, utilities, and major infrastructure projects.

Income conditions across the RDKS reflect a comparatively diverse regional economy with household income distributed across a broad range of income categories. Approximately 20% of households earned between \$127,000 and \$188,000 annually, while approximately 10% of households reported annual incomes greater than \$188,000. The most common household income ranges remained concentrated within middle and upper middle-income brackets, although lower-income households remained more prevalent than in Terrace. Mean

household income across the RDKS remained below Terrace but exceeded many surrounding rural communities.

Economic activity throughout RDKS is supported through extensive transportation and utility infrastructure including Highway 16, regional road networks, transmission infrastructure, airports, marine access, public services, and supporting commercial industries. Regional economic activity also supports contractor services, accommodations, procurement activity, logistics, and workforce movement across northwestern British Columbia.

Municipal and regional financial conditions reflect continued investment in infrastructure and service delivery across the RDKS. In 2023, RDKS reported approximately \$31.0 million in revenues (\$832 per resident) and \$23.8 million in expenditures (\$638 per resident). Revenue sources consisted primarily of requisitions (34%), service sales (29%), and provincial transfers (19%), while expenditures were concentrated in solid waste management (33%), recreation and culture (15%), and general government (12%).

Current economic conditions within RDKS continue to reflect ongoing transportation, utility, industrial, and infrastructure investment occurring throughout northwestern British Columbia. Major regional development activity contributes to demand for labour, accommodations, contractor services, transportation, and supporting regional supply chains. Regional projects include Ksi Lisims LNG, Prince Rupert Gas Transmission, LNG Canada Phase 2, Cedar LNG, and associated port and utility developments.

Table 2.2-1. Distribution of the Labour Force within Kitimat-Stikine and Terrace

Kitimat-Stikine			Terrace		
Industry	Labour Force	% of Labour Force	Industry	Labour Force	% of Labour Force
Health care and social assistance	2625	14%	Health care and social assistance	1170	18%
Construction	2130	12%	Retail trade	810	13%
Retail trade	1985	11%	Construction	645	10%
Public administration	1570	9%	Educational services	605	9%
Educational services	1525	8%	Accommodation and food services	410	6%
Source: Statistics Canada, 2023a					

2.2.2.3 Protected Area Values

Protected Areas contribute environmental, cultural, and recreational value through long term conservation of natural landscapes and ecological conditions that may not be maintained under alternative land uses. Within British Columbia, Protected Areas are intended to conserve natural landscapes and maintain environmental, cultural, and recreational values through long term protection and stewardship.

Environmental values associated with Protected Areas include protection of watershed conditions, maintenance of habitat and biodiversity, retention of ecological processes, and preservation of natural landscape character. Protection of these features contributes to ecological representation and supports conservation objectives across broader regional landscapes.

Cultural values are supported through recognition of long-standing relationships between Indigenous Peoples and the landscape and through continued protection of places that support cultural connection, traditional use, and broader regional identity. BC Parks identifies reconciliation and collaboration with Indigenous Peoples as

an ongoing component of Protected Area management and acknowledges the importance of Indigenous teachings, traditions, and relationships with protected landscapes.

Recreational values associated with Protected Areas include preservation of scenic landscapes and continued opportunities for passive recreation, nature appreciation, and enjoyment of natural environments where compatible with conservation objectives. Recreational value may exist independently of formal infrastructure and can include scenic, visual, and passive use associated with maintaining landscapes in their natural state.

Swan Creek Protected Area contributes environmental and recreational value through protection of a largely unlogged watershed and retention of natural landscape conditions associated with the Zymoetz (Copper) River corridor. The Protected Area also contributes scenic value through preservation of natural viewsapes and maintenance of an undeveloped landscape setting. Recreational use of the area is limited and informal in nature, with no formal recreation infrastructure, campsites, or designated trail systems identified within the Protected Area.

2.3 *Effects Assessment*

The Project and proposed boundary adjustment are assessed in relation to potential socio-economic benefits associated with improved electrical transmission infrastructure, as well as the trade-off associated with the removal of approximately 12.41 ha from Swan Creek Protected Area. The assessment considers provincial economic benefits, regional infrastructure benefits, and potential implications for Protected Area values.

The potential effects of the Project socio-economic factors are evaluated in relation to existing conditions along the preferred route. This assessment considers the construction and operation phases, recognizing that socio-economic interactions may vary over time and by activity type. To address these potential effects, a suite of mitigation measures has been developed. These measures are designed to avoid, reduce, or offset adverse effects and consist of strategies, procedures, and controls measures. While each measure is considered specifically from the perspective of socio-economic impacts, applicability may differ across areas, scopes of work, or phases of the Project.

The Project forms part of BC Hydro's broader North Coast electrification program intended to increase electrical transmission capacity and support growing electricity demand across northwestern British Columbia. Existing North Coast supply is currently provided through approximately 450 km of existing 500 kV transmission infrastructure extending from Williston Substation near Prince George to Skeena Substation near Terrace, which BC Hydro has identified as approaching practical capacity limits.

To address projected regional demand growth, the Project includes approximately 275 km of new 500 kV transmission infrastructure, upgrades and expansion of Glenannan, Telkwa, and Skeena substations, expansion of capacitor facilities at Palling and Walcott, installation of supporting fibre optic infrastructure, and associated improvements to existing transmission infrastructure. These additions are intended to increase transmission transfer capability into the North Coast region while supporting future industrial, commercial, institutional, and community electricity demand.

2.3.1 Employment and Economy Assumptions

For the following employment and economy effects assessment, information was used from the BC Hydro Accommodation Study report which outlines the projected workforce as having an estimated range between 700 - 1,400 workers during the peak construction period, which is expected to occur between Fall 2026 and Winter 2028. BC Hydro intends to hire from the local workforce to maximize local employment opportunities. It is estimated that 200 - 400 workers will require temporary accommodation at any given worksite location along the Project construction corridor (Stantec, 2025).

Additionally, this assessment draws on BC Stats' Local Area Economic Profile (LAEP), a province-wide, IO-based economic profiling framework that divides BC into 103 local economic areas, covering all municipalities

and regions. LAEP combines Census data with the provincial input–output tables to produce local multipliers (e.g., employment impact ratios) and detailed profiles of labour force, income and earnings, industry structure/specialization, and economic dependencies. It supports the identification of strengths and gaps, community-level policy and planning, and scenario evaluation across communities.

- Employment Impact Ratio (EIR) - LAEP's multiplier estimates the total jobs (indirect - and when included, induced) supported per one direct job in a sector; useful because it converts project headcounts into community-wide employment impacts with area-specific precision for scenario comparisons.
- Location Quotient (LQ) - The ratio of an industry's local employment share to its share in the larger economy (>1 = local specialization); useful because it reveals base/driver sectors and vulnerabilities, guiding supply-chain targeting, workforce planning, and interpretation of multiplier effects.

Using these metrics in line with baseline employment and economic data previously outlined within the report, and the estimates provided through the accommodation study, both Regional and Local Employment and Economic Opportunities contain predicted outcomes of the Project.

2.3.2 Economic Contributions

The Project is expected to generate provincial economic benefits through a combination of expanded electrical transmission capacity, construction expenditures, labour income generation, business participation, recurring fiscal contributions, and long-term economic development enabled through improved infrastructure. While direct economic effects occur primarily during construction, the infrastructure itself is intended to support broader provincial economic activity throughout the operational life of the Project.

Expansion of transmission infrastructure provides economic value beyond electricity delivery itself by reducing infrastructure constraints that may limit industrial investment and future development opportunities. Improved transfer capability increases the ability of the provincial electrical system to support industrial, commercial, institutional, and community growth dependent on reliable access to electricity. Federal project materials identify the NCTL as infrastructure intended to more than double clean electricity availability along Canada's West Coast and support opportunities associated with industrial electrification, LNG development, critical minerals activity, and broader provincial growth objectives.

Economic development enabled through improved infrastructure is also expected to occur through direct construction activity and associated regional spending. Employment effects were evaluated using assumptions developed through BC Hydro's Accommodation Study together with BC Stats' LAEP framework and baseline labour and economic conditions previously presented within this assessment. The assessment considered both construction and operations phases and evaluated the extent to which employment opportunities may be realized and sustained throughout the Project lifecycle.

Project-related employment opportunities are anticipated across a range of occupations and durations throughout construction, operational support, and eventual site closure activities. Construction activity is expected to generate short- to medium-term demand across labour positions, skilled trades, equipment operation, supervision, logistics, transportation, accommodations, environmental services, procurement, contractor services, and supporting industries. These opportunities may be accessible to local and Indigenous workers where early engagement, workforce coordination, and targeted recruitment measures are implemented. Employment continuity is expected to vary across Project scopes due to the temporary and sequential nature of construction activities, while specialized scopes requiring advanced technical qualifications may create barriers to broader participation. Where targeted hiring, apprenticeship opportunities, training programs, and re-engagement of experienced crews are implemented, the Project may support regional labour participation and contribute to long-term workforce capacity throughout northwestern British Columbia.

Construction workforce requirements were estimated to range between approximately 700 and 1,400 workers during peak construction activity, anticipated between Fall 2026 and Winter 2028. BC Hydro identified an

intention to maximize local employment opportunities through regional workforce participation where practical. Accommodation modelling estimated approximately 200-400 workers requiring temporary accommodation at active work locations throughout the corridor at any given time. Direct construction employment estimates were allocated using active labour force, participation rates, and local industry specialization measured through LQ. These estimates were converted to total supported employment using EIR, which estimate additional employment generated through supplier expenditures and household-facing services retained within local economies.

Under the Mid scenario, this approach estimated approximately 2,368 total jobs supported at peak construction activity across the project corridor, consisting of approximately 1,050 direct jobs and 1,318 indirect jobs. Regional allocation indicated the greatest concentration of employment effects occurring within Kitimat–Stikine, reflecting stronger labour availability and greater retention of economic activity within regional supply chains. Within Kitimat–Stikine, approximately 1,559 total jobs were estimated, including approximately 612 direct jobs and 947 indirect jobs. Additional Low and High scenarios were developed to represent a reasonable range of workforce outcomes and account for uncertainty associated with labour availability, contractor mobilization, and construction sequencing.

Economic effects generated through construction are also expected to extend into labour income, household spending, and regional business activity. Labour income estimates were developed using 2024 provincial wage assumptions annualized at 2,080 hours per year. Direct construction employment applied average wages of approximately \$37.58 per hour (~\$78,166 annually) while indirect employment applied average provincial employment income of approximately \$37.53 per hour (~\$78,060 annually). Employment assumptions incorporated provincial labour composition with approximately 80% full-time employment and 20% part-time employment, while regional economic retention assumptions were used to estimate local spending effects.

Under the Mid scenario, Project activity was estimated to generate approximately \$59 million in direct labour income together with approximately \$74.3 million in indirect labour income, resulting in approximately \$133 million in total labour income across the project corridor during peak construction. Regional allocation estimated approximately \$88.0 million occurring within Kitimat–Stikine, reflecting stronger supplier retention and broader indirect spending effects within the regional economy. Construction expenditures are also expected to generate demand across accommodations, logistics, transportation, material supply, environmental services, contractor support, and broader commercial activity.

Long-term provincial economic benefits are also expected through recurring taxation and sustained infrastructure investment. Utility infrastructure associated with the Project was evaluated using British Columbia assessment methodologies for Class 10 transmission assets and Class 2 utility improvements. Based on estimated infrastructure valuation assumptions and capital allocation methods, Phase 2 infrastructure was estimated to generate an assessed value of approximately \$458 million.

Application of utility taxation frameworks across the study area estimated recurring annual tax contributions of approximately \$16.4 million per year distributed across affected jurisdictions. Estimated annual contributions include approximately \$7.24 million to Terrace and approximately \$2.79 million to RDKS Electoral Area C, with additional contributions distributed across adjacent regional areas where infrastructure is located. These recurring contributions represent ongoing fiscal benefits extending beyond construction and continuing throughout Project operations.

Collectively, provincial economic benefits associated with the Project are expected to include increased transmission capacity, expanded access to clean electricity, employment generation, labour income growth, increased business participation, recurring municipal and regional revenues, and strengthened infrastructure supporting long-term economic activity and economic development objectives across northwestern British Columbia.

2.3.3 Infrastructure Benefits

Infrastructure benefits associated with the Project are expected to occur through expansion of transmission capacity, improved electrical reliability, increased operational flexibility, and support for long-term infrastructure planning objectives across northwestern British Columbia.

Regional infrastructure benefits are expected through increased transmission capacity and improved ability to serve existing and future electrical demand throughout the North Coast. Supporting infrastructure improvements, including substations, capacitor facilities, and associated transmission upgrades, improve operational flexibility and reduce dependence on constrained infrastructure segment, while the additional thermal upgrades outlined by BC Hydro allow existing infrastructure to transmit more electricity through the same channels. These benefits are directly relevant to Terrace and the RDKS, where regional economic activity is supported by transportation, utilities, industrial activity, public services, and commercial supply chains.

Infrastructure expansion is also expected to improve regional electrical reliability and support continuity of service under future load growth conditions. Increased transmission capacity supports operation of industrial facilities, public services, municipal infrastructure, utilities, transportation systems, and community growth dependent on electrical availability. Improved reliability may also reduce operational constraints associated with maintenance requirements, outages, and increasing regional demand.

The Project contributes to broader system resilience and long-term infrastructure planning through expansion of critical transmission infrastructure serving northwestern British Columbia. BC Hydro's North Coast electrification and economic development plan identifies the NCTL as infrastructure necessary to support future electrification and maintain capacity for regional growth. Expansion of supporting transmission infrastructure increases flexibility for future system operation and improves the ability to respond to changing regional demand conditions.

Beyond local and regional outcomes, expanded transmission infrastructure is expected to support broader provincial objectives associated with electrification, industrial development, and long-term infrastructure availability. BC Hydro and the Province forecast increasing electricity demand associated with industrial development, population growth, and electrification initiatives throughout northwestern British Columbia. Expanded transmission capacity supports infrastructure availability necessary to service regional centres and enables investment associated with mining, LNG, port activity, and other strategic sectors identified for growth within the North Coast region.

Overall, infrastructure benefits associated with the Project are expected to include increased transmission capacity, improved electrical reliability, greater operational flexibility, strengthened regional resilience, and expanded infrastructure supporting long-term economic development and electrification objectives throughout northwestern British Columbia.

2.3.4 Trade-offs with Protected Area Values

The proposed boundary adjustment would result in the permanent removal of approximately 12.41 ha of land from Swan Creek Protected Area. Swan Creek Protected Area was designated to protect a largely unlogged watershed and contributes environmental value through protection of watershed function and retention of natural landscape character. The Protected Area also contributes recreational and visual values through preservation of scenic landscapes associated with the Zymoetz (Copper) River corridor, including the Swan Creek waterfall feature. The area remains largely undeveloped and contains no formal recreation infrastructure, campsites, or designated trail systems.

The primary trade-off associated with the Project is the permanent conversion of protected land for infrastructure purposes within an area originally designated for conservation and ecological representation. Unlike temporary construction effects that may recover over time, removal of Protected Area land represents a long-term change in land designation and available conservation area. Assessment of this effect therefore

includes consideration of whether removal changes the ability of Swan Creek Protected Area to maintain the values for which it was established. The implications of the proposed adjustment are influenced by the contribution of the affected lands to the environmental, cultural, and recreational values associated with Swan Creek Protected Area and the extent to which those values continue to be maintained following implementation of the boundary adjustment.

The proposed adjustment also occurs within the context of broader regional and provincial outcomes associated with implementation of the NCTL. As described in Sections 3.2 and 3.3, the Project is intended to expand transmission capacity within northwestern British Columbia, improve electrical reliability, strengthen long-term infrastructure availability, and support increasing electricity demand associated with population growth, industrial activity, and electrification. Expanded transmission capacity is expected to support continued industrial development and regional infrastructure investment by improving access to electrical capacity required to accommodate projected growth. Construction and operation of the Project are also expected to contribute employment generation, labour income, procurement activity, municipal and Indigenous revenues, and broader regional economic activity extending beyond the immediate Project footprint.

Within this context, the proposed adjustment represents a permanent and localized reduction in protected land area associated with infrastructure intended to support expanded transmission capacity, long-term infrastructure availability, and broader regional and provincial development objectives. The Project is expected to generate infrastructure and economic outcomes extending beyond direct electricity delivery, including support for long-term regional development, increased infrastructure resilience, expanded electricity availability, and continued economic activity throughout northwestern British Columbia. The acceptability of the adjustment therefore depends on whether the affected lands represent the minimum area necessary to achieve Project objectives while maintaining the overall values and intent of Swan Creek Protected Area.

2.4 *Summary of Socio-economic Considerations*

The report identifies a proposed adjustment of approximately 12.41 hectares from the Swan Creek Protected Area. Protected Areas provide environmental, cultural, and recreational value through the conservation of ecological features, maintenance of watershed and habitat functions, provision of recreational and scenic opportunities, and recognition of Indigenous connection to the land.

The proposed boundary adjustment represents a permanent change to the Swan Creek Protected Area boundary and therefore requires consideration of the relationship between Protected Area values and the broader regional and provincial outcomes enabled through implementation of the NCTL. This includes consideration of the contribution of the affected lands, and the extent to which the adjustment changes the ability of the Swan Creek Protected Area to maintain its values.

As described throughout this assessment, the NCTL is intended to expand transmission capacity within northwestern British Columbia and support increasing electricity demand associated with population growth, industrial activity, and electrification. Expanded transmission infrastructure is expected to improve electrical reliability, increase transfer capability, and strengthen the ability of the provincial electrical system to support communities, industrial users, and regional infrastructure under future demand conditions. Additional transmission capacity also supports long-term infrastructure requirements and increases the ability of the electrical system to accommodate continued regional and provincial growth. Beyond direct infrastructure outcomes, the Project is expected to contribute broader regional and provincial benefits through employment generation, labour income, procurement activity, municipal and Indigenous revenues, and economic activity associated with construction and long-term infrastructure investment. Expanded transmission capacity is intended to support forecast industrial expansion and regional infrastructure development throughout northwestern British Columbia by increasing access to electrical capacity required to meet projected demand. Collectively, these outcomes extend beyond the immediate Project footprint and contribute to regional economic

activity, infrastructure resilience, long-term electricity availability, and broader provincial objectives related to electrification, economic development, and regional investment.

Overall, the proposed adjustment of approximately 12.41 hectares, representing approximately 4.66% of Swan Creek Protected Area, would result in a permanent reduction in protected land area and a corresponding change to Protected Area designation. As described throughout this assessment, the adjustment affects a limited portion of the Protected Area and is considered alongside the broader regional and provincial outcomes associated with implementation of the NCTL. Including expanded transmission capacity, improved electrical reliability, increased infrastructure availability, and support for projected growth in electricity demand. The Project is also expected to contribute sustained economic and community benefits through employment, procurement activity, municipal and Indigenous revenues, and support for long-term regional and provincial development. Collectively, the anticipated Project outcomes extend beyond the immediate footprint and contribute to broader infrastructure, economic, and community objectives across British Columbia.

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APPENDIX 2

ARCHAEOLOGICAL IMPACT ASSESSMENT



Archaeological Impact Assessment – Interim Report

Heritage Conservation Act

Heritage Inspection Permit 2025-0187 –

**BC Hydro's Proposed Glenannan to Terrace Transmission
Project (GTTT) Western Section – 5L066 35P Alignment –
Swan Creek Protected Area (REV 0)**

North Coast Transmission Line Project

Date: 15 June 2026

AiM Project Number: 25.200137

Prepared for:



BC Hydro and Power Authority
Contact: Michael McArthur MSc, RPBio
333 Dunsmuir Street
Vancouver BC, V6B 5R3

Prepared by:



AiM Land Services
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Revision
0

Date
15 June 2026

Revision Comment
First Version



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1.0 ADMINISTRATIVE INFORMATION

- 1) **Permit Number:** 2025-0187
- 2) **Interim Report Number:** 25.200137-2026-01
- 3) **Descriptive Interim Report Title:** Proposed 5L066 35P Alignment - Swan Creek Protected Area (REV 0)
- 4) **List of Archaeological Sites Relevant to the Development:** N/A
- 5) **Additional Administrative Tracking Numbers:** N/A
- 6) a) **Permit Holder:** Stephan Girard (stephan.girard@aimlandandenviro.ca ; 250-635-6973)
b) **Proponent:** BC Hydro, Michael McArthur (michael.mcarthur2@bcbhydro.com; 604-928-3055)
- 7) **British Columbia Energy Regulator (BCER) Project Officer¹:** Megan Charters (megan.charters@bc-er.ca; 250-794-5319)
- 8) a) **Development Type:** Transmission Line Right-of-Way
b) **Development Description:**

Component Name and Size (Rev 0)	Associated Roads and Size	Centroid UTM (9N)	BCGS Map Sheet	NTS Map Sheet	Development Schedule
Swan Creek Protected Area 7.95 ha.	N/A	E:558985, N:6035017	103I050	103-I-08	TBD

- 9) **Distribution List:**
 - a. **Client:** BC Hydro
 - b. **Regulator:** BCER
 - c. **First Nations:** Kitselas First Nation, Lax Kw'alaams Band, Metlakatla First Nation

2.0 MANAGEMENT SUMMARY AND RECOMMENDATIONS

At the request of BC Hydro, Aim Land Services (AiM) completed an Archaeological Impact Assessment (AIA) under *Heritage Conservation Act* (HCA) Section 12.2 Inspection Permit 2025-0187 of the Proposed Glenannan to Terrace Transmission Project (GTTT) Western Section – 5L066 35P Alignment – Swan Creek Protected Area (REV 0; the Proposed Development). The Proposed Development is located 33.1 km east of Terrace and 57.9 km northeast of Kitimat, along the south side of the Zymoetz (Copper) River valley (Figure 1).

The Proposed Development is comprised of the 5L066 35% Transmission Line Centerline and a clearing corridor measuring 35 m out from this centerline (70 m wide corridor). A Study Area (the Study Area) was created around the Proposed Development and spans an area 7.95 hectares in size. The Study Area was the subject of the AIA. The need for an AIA was triggered by the presence of pre-AD 1846 Culturally Modified Tree (CMT) potential identified during a desktop review. As a result of the AIA, areas identified as having pre-AD 1846 CMT potential were re-assessed as containing low potential. No CMTs were identified

¹ HCA Permit 2025-0187 was transferred to the BC Energy Regulator (BCER) from the Archaeology Branch, Ministry of Forests, BC on October 17, 2025.



during the field assessment, and it was noted there were very few old growth trees within the Study Area. In addition, western redcedars observed often had low branches making them unsuitable for bark stripping.

The Study Area was subject to pedestrian survey involving visual inspection and shovel testing of one high potential landform (Test Location [TL] 250137-TL-01). Inspection and testing proved negative for archaeological materials and other cultural heritage resources². Archaeological potential within the Study Area was evaluated as low.

An untested portion of the 250137-TL-01 landform lies outside of the Study Area and is known as 250137-AOP01. The AOP lies 6 m south of the Study Area and has been flagged with 26 m of 'No Work Zone' flagging to facilitate avoidance.

No further archaeological work is recommended for the Proposed Development other than the implementation of a Chance Find Procedure (CFP) during development. This procedure should be reviewed and followed by all personnel working on the development.

Should the Proposed Development not occur for more than one year from the date of this report, the AOP should be revisited by a professional archaeologist prior to disturbance to refresh the 'No Work Zone' flagging to facilitate avoidance.

Lax Kw'alaams Band and Metlakatla Stewardship Society have their own cultural heritage policies, including CFPs. These policies and procedures should be obtained, reviewed, and followed by BC Hydro and their subcontractors during Development works.

Affected First Nations and the BC Energy Regulator (BCER) should be notified in the event of unanticipated archaeological discoveries during development activities.

3.0 DEVELOPMENT HISTORY

This report speaks to Revision 0 (Rev 0) of the Proposed Development, which represents the first version of the development. The Proposed Development is comprised of the 5L066 35% Transmission Line Centerline and a clearing corridor measuring 35 m out from this centerline (70 m wide corridor).

A Study Area (the Study Area) was created around the Swan Creek Protected Area segment of the GTTT project and spans an area 7.95 hectare in size. The Study Area was the subject of the AIA (Figure 2).

Project activities will be conducted in a phased approach starting with site preparation including vegetation clearing, grubbing, surface tilling and grading, as well as various practices for erosion and sediment control.

Transmission structures will require excavation for footing slabs and, depending on local conditions, this may require additional drilling and blasting, and installation. There are three structures proposed for the Study Area. Subsequent phases will involve maintenance of the structures (Figure 3).

² Other cultural heritage resources include those resources not automatically protected under the Heritage Conservation Act by virtue of their age. Examples include traditional use sites, such as post AD 1846 CMTs, and historical sites, such as cabins, trap boxes, and trails.



4.0 PRE-FIELD RESEARCH AND FIRST NATIONS ENGAGEMENT

4.1 Desktop Review Results

The Study Area was subject to a desktop review by AiM prior to fieldwork. The results of this desktop review were provided to affected First Nations in the form of a Notification Memo and are outlined below in Table 1 and on Figure 2.

Table 1: Desktop Review Results

Nearest Archaeological Sites ³	Past Archaeological Studies	Surface/ Subsurface Potential Evaluation	Pre-AD 1846 Culturally Modified Tree (CMT) Potential Evaluation
Archaeological CMT Site GcTa-5 is the nearest Site, 315 m northeast of the Study Area. GcTa-5 consists of 2 western redcedar CMTs with tapered scars; the CMTs were logged and remain as stumps, with thick healing lobes evident. Archaeological Site GcTa-4, a subsurface lithic site, is 360 north northeast of the Study Area. GcTa-4 consists of one complete quartzite secondary flake located on a terrace, 5 m south of a backchannel of the Zymoetz River.	The Kalum Forest District Model⁴ indicates the Study Area is within an area of moderate archaeological potential, due to proximity to the Zymoetz River. However, archaeological studies have indicated this model is often inaccurate. AiM's 2025 AOA⁵ for the GTTT Project indicates the presence of low surface/ subsurface potential within the Study Area and high pre-AD 1846 CMT potential in the central and eastern portions of the Study Area. The nearest past archaeological field study is an AIA undertaken by Roy Northern in 2020⁶, 30 m northeast of the Study Area, identified 4 Areas of Potential (AOPs) and Archaeological Site GcTa-4.	Terrain consists of low potential marsh lands or there is moderately sloping mountainside, indicating low potential.	Vegetative Resource Inventory (VRI)⁷ data indicates non-old growth tree stands (Class 7 or younger; 1-140 years of age) exist throughout most of the Study Area. Small pockets of old growth tree stands (Class 8-9; 141+ years of age) exist in the central and eastern portion of the Study Area. High potential exists in the areas of old growth tree stands.

4.2 ARCHAEOLOGICAL POTENTIAL EVALUATION AND RECOMMENDATION

The potential for surface/subsurface archaeological sites (e.g., cache pits, trails, naturally buried lithic scatters, campsites, etc.) is low throughout the Study Area due to the presence of water-saturated terrain or moderately sloping mountainside (Figure 2).

The potential for pre-AD 1846 CMTs is high within select portions of the Study Area due to the presence of old growth tree stands with recorded species of western redcedar and western hemlock (Figure 2). **The potential for pre-AD 1846 CMTs is low within the remainder of the Study Area** due to an absence of old growth tree stands.

Based on the results of AiM's desktop review, an AIA was recommended for the Study Area prior to the development proceeding.

³ According to the RAAD database of the Archaeology Branch of BC, accessed 01 May 2026.

⁴ Millennia Research Ltd. 1995. Summary Report of the Overview Mapping of Archaeological Resource Potential in the Kalum Forest District. Prepared for the Ministry of Forest, Kalum Forest District. Report on file with the Archaeology Branch.

⁵ AiM. 2025. Heritage Conservation Act Heritage Inspection Permit 2025-0187, Supplemental Archaeological Overview Assessment for BC Hydro's Proposed Glenannan to Terrace Transmission Project, Western Section – South Copper Route Option, Northwest BC. Report on file with the Archaeology Branch and AiM Land Services Ltd.

⁶ Roy Northern 2020. Archaeological Impact Assessment, Heritage Conservation Act Section 12.2 Permit 2018-0353, Pacific Northern Gas Ltd., MP250 Habitat Offsetting Project. Report on file with the Archaeology Branch.

⁷ Forest Cover is described as represented by the VRI dataset on the RAAD.



4.3 First Nations Engagement and Involvement

Following the desktop review and prior to AIA fieldwork, First Nations with Consultative Areas overlap with the Study Area were notified and invited to participate in the AIA. Affected First Nations include:

- Kitselas First Nation (Kitselas)
- Lax Kw'alaams Band
- Metlakatla First Nation (Metlakatla)

A draft of this report was submitted to these First Nations for review and comment prior to finalization and submission to the BCER. Table 2 below summarizes First Nations engagement on the Project:

Table2: Summary of First Nations Engagement

Date of Notification of Intent	Comments Received	Field Participation	Comments Received	Date of Draft Report Submission	Comments Received
05 May 2026	08 May 2026: Lax Kw'alaams requested Guardianship form. 13 May 2026: AiM provided the requested form.	N/A	N/A	TBD	TBD
13 May 2026	13-May-2026: Metlakatla asked for fieldwork to be delayed as too short notice was given prior to the start of fieldwork. 13-May-2026: AiM indicated they would push back the start date to provide time for the Nation to organize field participation.	Cliff Ryan	N/A	TBD	TBD
05 May 2026	N/A	N/A	N/A	TBD	TBD

5.0 IN-FIELD ARCHAEOLOGICAL METHODS

5.1 General Information

The AIA was undertaken in alignment with methods outlined in *Heritage Conservation Act* (HCA) Permit # 2025-0187. The objectives of the AIA align with those outlined in the BC Archaeological Impact Assessment Guidelines⁸.

Assessment Date: 01, 03 June 2026

Field Crew: AiM Field Director: Andrew Radford, AiM Archaeologist: Jem Tari, Metlakatla Archaeological Assistant: Cliff Ryan

5.1.1 Data Recording

Digital notes were taken to record observations made in the field. Digital photographs were taken to document observations recorded in the notes. Survey coverage and points of interest were recorded as tracks and waypoints, respectively, using a handheld GPS and cellphone-based ArcGIS application.

⁸1998 Archaeology Branch, Ministry of Small Business, Tourism and Culture. BC Archaeological Impact Assessment Guidelines: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/archaeology/forms-publications/archaeological_impact_assessment_guidelines.pdf



5.1.2 Potential Assessment

The specific criteria used by the Field Director to identify field Areas of Potential (AOPs) included terrain features (such as terraces, favourable slope, favourable aspect, etc.) and environmental setting (elevation, forest cover). Further, the Field Director's expertise in the area, as outlined in Bulletin 17, contributed to the identification of AOPs.

Within areas identified as having potential during the desktop review, and during transects leading to/from identified AOPs, stands evaluated as Age Class 8 and over (141 years and older) were subject to traverses at a speed and spacing that allowed for a detailed inspection of all old growth trees. The old growth stand was fully assessed before moving into survey of younger stands. Stands evaluated as being dominated by Age Class 7 and under (140 years and younger) trees were also subject to visual inspection at a speed and spacing that allowed for the identification and detailed inspection of solitary old growth trees within younger stands.

Scars observed on trees, regardless of evaluated tree age, were carefully inspected to understand the cause of the scar.

5.1.3 Survey Coverage

The AIA was undertaken in snow-free, spring conditions with good ground visibility and forest visibility⁹ (30+ m). Pedestrian traverses by three crew members at 10-20 m spacing were used to inspect the Study Area. The crew conducted multiple traverses to maximize inspection coverage. Fortuitous exposures (i.e., tree throws, previous ground disturbance related to existing development, etc.) were inspected for artifacts and to understand the surficial geology of the area.

5.1.4 Subsurface Testing

In areas of identified archaeological potential within the Study Area, shovel tests were conducted to a minimum of 35 cm width x 35 cm length and until basal (culturally sterile) deposits were observed at approximately 20 cm depth below surface (DBS). Excavated soils and sub-soils were screened through ¼ inch mesh to locate archaeological materials. Shovel tests were placed systematically on a 5 m grid across TL 250137-TL-01. If artifacts had been recorded, additional subsurface investigation may have been conducted, to understand the nature and extent of the site.

5.1.5 'No Work Zone' Flagging

The boundary of AOP nearest to the Study Area were flagged with yellow and black Roy Northern 'No Work Zone' flagging to facilitate avoidance.

6.0 ASSESSMENT RESULTS

6.1 Areas of Low Archaeological Potential

Terrain consisted of mostly poorly drained, level to gently sloping (1-5°, north aspect) river valley lands. At the southern boundary, the terrain changes to 45° mountain side slope. A large wetland and beaver pond covers much of the northern part of Study Area. The steep slope of the south boundary slopes into the

⁹ "Forest Visibility" is used to discuss the average degree or amount of horizontal visibility each crew member had within a forested environment.



wetland except at 250137-TL01. Other than 250137-TL01 and 250137-AOP01, described in greater detail below in Section 6.1.1 and 6.2.1, surface/subsurface potential was evaluated as low throughout the Study Area due to the presence of poorly-drained or steeply-sloping terrain and an absence of defined landforms (Photos 1-3, Figure 3).

The forest cover was mainly mature second growth western hemlock, Sitka spruce, Douglas fir, western redcedar, birch and cottonwood. Within this regenerated stand were pockets of old growth trees. Old growth in the central part of the Study Area included western redcedars with numerous lower branches and uneven bark, unlikely candidates for bark stripping in the past. There were also pockets consisting of high amounts of older fir. The understory consisted of mosses, ferns, devil's club, Solomons seal, and berry bushes and vines (Photos 4, 5). On the steep slope of the southern boundary of the Study Area, the understory consisted of mosses and abundant hemlock seedlings. In the central section of the Study Area, wetlands were bordered by alders and other deciduous species, and sedges were observed in the wetlands (Photo 3). No CMTs were observed during the AIA. CMT potential was evaluated as low due to the presence of second growth stands and an absence of observed CMTs.

Historical logging was evident due to the presence of old saw-cut stumps and an even aged second growth stand (Photo 6).

6.1.1 250137-TL01

Size: 84 m (NW-SE) x 16 m (NE-SW)

Centroid UTM: 9U 558496 6034975

Location: Adjacent to the southwestern boundary of the Study Area.

Description: Level terrace overlooking a wetland to the north. Vegetation consists of a second growth stand of western hemlock, Sitka spruce, fir, western redcedar, and birch, with groves of old growth western hemlock and western redcedar. Understory vegetation includes mosses, devil's club, and ferns (Photo 7).

Boundary Definition: Natural and arbitrary; bound by breaks-in-slope to the north, east, and west (natural), and bound by the distance away from the Study Area to the south (arbitrary).

Methodology: Tests were placed in a grid pattern at 5 m intervals, 3 rows, 16 tests within each row.

Number of Shovel Tests: 48

Number of Positive Shovel Tests: 0

Stratigraphy (Photo 8):

0-7 cm dbs: Litter mat, no inclusions

7-20 cm dbs: Mid-brown silty sand with occasional roots

20-95 cm dbs: Mid-grey-brown clayey sand, very compact, no inclusions (basal sediments)

Results: Negative; no archaeological materials were identified.

6.2 Areas of High Archaeological Potential

Subsurface potential is evaluated as high in the untested portion of the 250137-TL01 landform which lies outside of the Study Area (250137-AOP01). This AOP is discussed in greater detail below.

6.2.1 240204-AOP01

Size: 46 m (NW-SE) x 15 m (NE-SW)

Centroid UTM: 9U 558553 E 6034948 N



Location: Adjacent to the southwestern boundary of the Study Area.

Description: Level terrace overlooking a wetland to the north (Photo 9, Figure 3). Vegetation consists of a second growth stand of western hemlock, Sitka spruce, fir, western redcedar, and birch, with groves of old growth western hemlock and western redcedar. The understory consisted of mosses, devil's club, and ferns.

Boundary Definition: Natural and arbitrary; bound by breaks-in-slope to the north, east, and south (natural), and bound by the extent of testing at 250137-TL01 to the west (arbitrary) (Photo 10, Figure 3).

6.3 Identified Archaeological Sites

No archaeological sites were identified during the AIA.

6.4 Identified Other Cultural Heritage Sites

No other cultural heritage sites were identified during the AIA.

7.0 IMPACT ASSESSMENT

No archaeological constraints were identified during the AIA; the archaeological potential within the Study Area is evaluated as low. As such, direct and indirect impact to the archaeological site from the Proposed Development are not anticipated.

8.0 EVALUATION OF RESEARCH

The Study Area was, where possible, stratified into one of two areas: (1) areas where the discovery of archaeological sites is considered likely (high potential); or (2) areas where the discovery of archaeological sites is considered unlikely (low potential). Given the level of in-field assessment, a reasonable degree of confidence can be placed on the results; that is, no archaeological sites were overlooked and the likelihood of archaeological site discovery within the Study Area is low.

The Kalum Forest District Archaeological Potential Model (1995¹⁰) indicated the Study Area contained moderate archaeological potential. The model was found to be inaccurate as one high potential landform (250137-TL01/250137-AOP01) was identified, though later found to be, at least in-part, negative/low potential, while the remainder of the Study Area was field verified as low potential.

AiM's desktop review suggested there was low surface/subsurface archaeological potential and this proven to be partially inaccurate as 250137-TL01/250137-AOP01 was identified though later found to be, at least in-part, negative/low potential. The remainder of the Study Area, outside of 250137-TL01/250137-AOP01, was confirmed to be low potential, as predicted during the desktop review. The partial inaccuracy in predicted potential reflects the limitations of relying solely on contour lines to predict the location of high potential landforms at a desktop level. Light Detection and Ranging Data, if it had been available, would have improved the accuracy of the desktop potential assessment and resulted in a high surface/subsurface potential evaluation in the vicinity of the 250137-TL01/250137-AOP01 landform.

¹⁰ Millenia Research Ltd. 1995 Summary Report of the Overview Mapping of Archaeological Resource Potential in the Kalum Forest District. Prepared for the Ministry of Forests, Kalum Forest District. Report on file with the Archaeology Branch, Victoria.



AiM's desktop review found that pre AD 1846 CMT potential was high within central and eastern pockets of the Study Area due to the presence of old growth tree stands. This proved to be somewhat inaccurate; while pockets of old growth trees were observed within second growth stands, these pockets did not always align with the desktop identified high potential. More old growth pockets were observed in the west than in the east. Furthermore, no pre-AD 1846 CMTs were observed within the old growth pockets that did exist within the Study Area. The inaccuracy in predicted potential reflects the limitations of relying solely on VRI information to predict the location of both old growth stands as well as pre-AD 1846 CMTs. The results of the AIA also highlight the fact that just because old growth western redcedar exists in proximity to major and minor hydrological features does not mean the trees were targeted for traditional harvesting as additional considerations, beyond just the presence or absence of a certain type of tree, factor into harvesting decisions such as the presence/absence of low branches, straightness of bark grains, etc.

As such, the objectives and results of the AIA align with those outlined in the Archaeological Impact Assessment Guidelines¹¹. Specifically, the AIA:

- provides the results of the identification and evaluation of archaeological resources within the specified portion of the Project,
- identifies and assesses all impacts on archaeological resources which might result from the Project, and
- provides recommendations for the management of the archaeological resources found within the Project.

The results meet the stated objectives of the study.

¹¹ Archaeology Branch, Ministry of Small Business, Tourism and Culture. 1998. *BC Archaeological Impact Assessment Guidelines*: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/archaeology/forms-publications/archaeological_impact_assessment_guidelines.pdf



9.0 CLOSURE

This report was prepared by AiM Land Services Ltd. on behalf of BC Hydro, solely for use by BC Hydro. Any use, reliance, or decisions made by third parties based on this report are the responsibility of such third parties. We trust the information in this interim report is sufficient for your present needs. If you have any questions regarding the archaeology program for the proposed development, please contact the undersigned.

Sincerely, **AIM LAND SERVICES LTD.**

Report prepared by:

A handwritten signature in blue ink, appearing to read 'Karen L. Church'.

Karen L. Church, MA
Archaeologist

Report reviewed by:

A handwritten signature in black ink, appearing to read 'Stephan Girard'.

Stephan Girard, MA, RPCA
Permit Holder

Attachments: Appendix A: Grant of Licence
 Appendix B: Figures 1 to 3
 Appendix C: Photographs



APPENDIX A

GRANT OF LICENCE

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Executed this 15th day of June 2026, by:

A handwritten signature in black ink, appearing to read "Stephan Girard", written over a horizontal line.

Signature of Copyright Owner

AiM Land Services Inc.

Affiliation

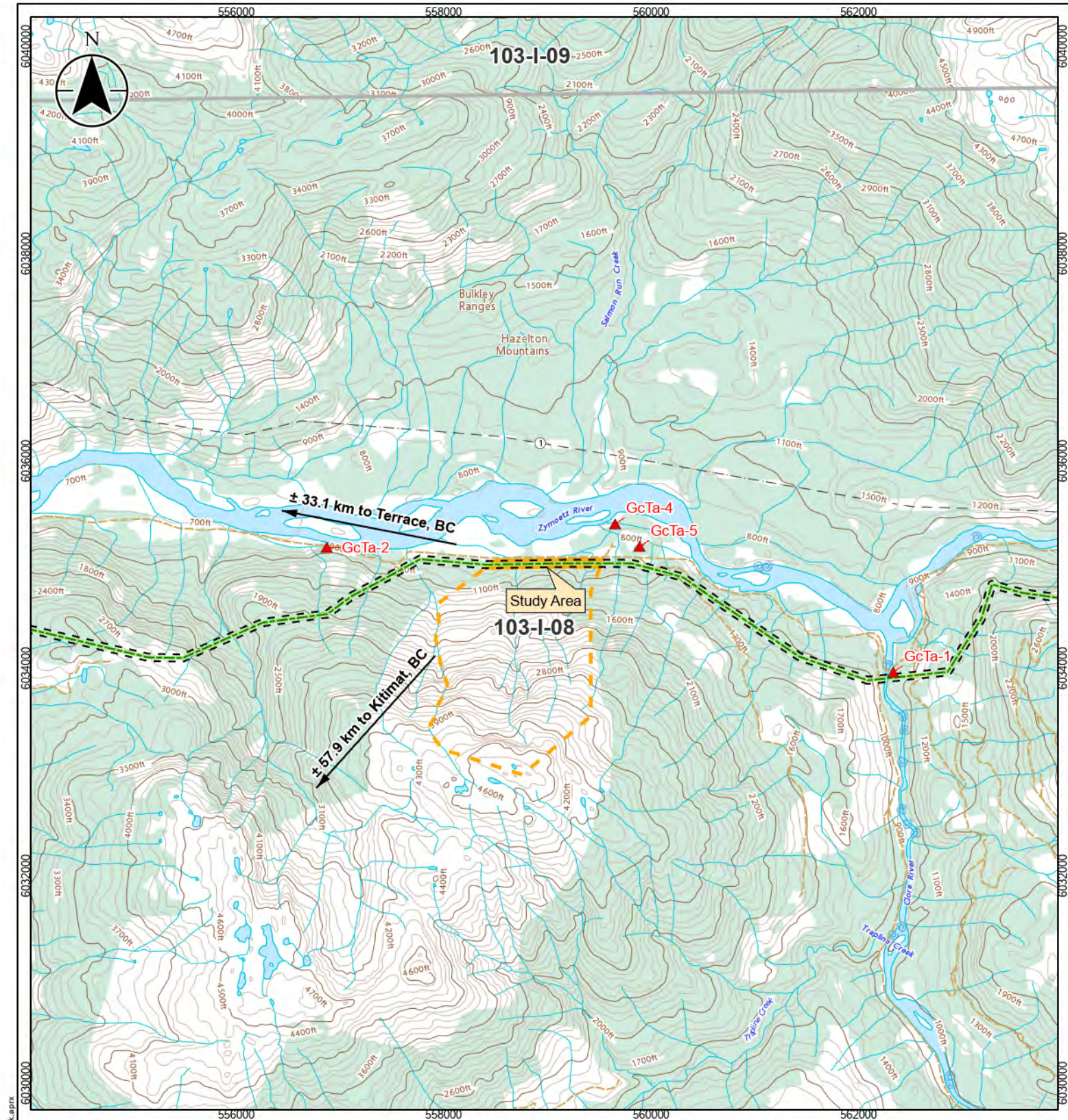
2025-0187

Permit Number



APPENDIX B

FIGURES



LEGEND

- ▲ Previously Recorded Archaeological Site
- Previously Recorded Archaeological Site Boundary
- 5L066 35P Centerline
- - - Clearing Corridor (70 m)
- Study Area
- Revised Swan Creek Protected Area
- Forestry Road

REFERENCES

Previously Recorded Archaeological Sites obtained from RAAD (2026/05/12).
 Inset Map Basemap: ESRI Online - National Geographic Mapping Service.
 Projection: NAD 1983 UTM Zone 9N



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BC HYDRO

Overview Map
**PROPOSED GLENANNAN TO TERRACE
 TRANSMISSION PROJECT (GTTT) WESTERN SECTION -
 5L066 35P ALIGNMENT - SWAN CREEK PROTECTED AREA**
 PERMIT NUMBER: 2025-0187

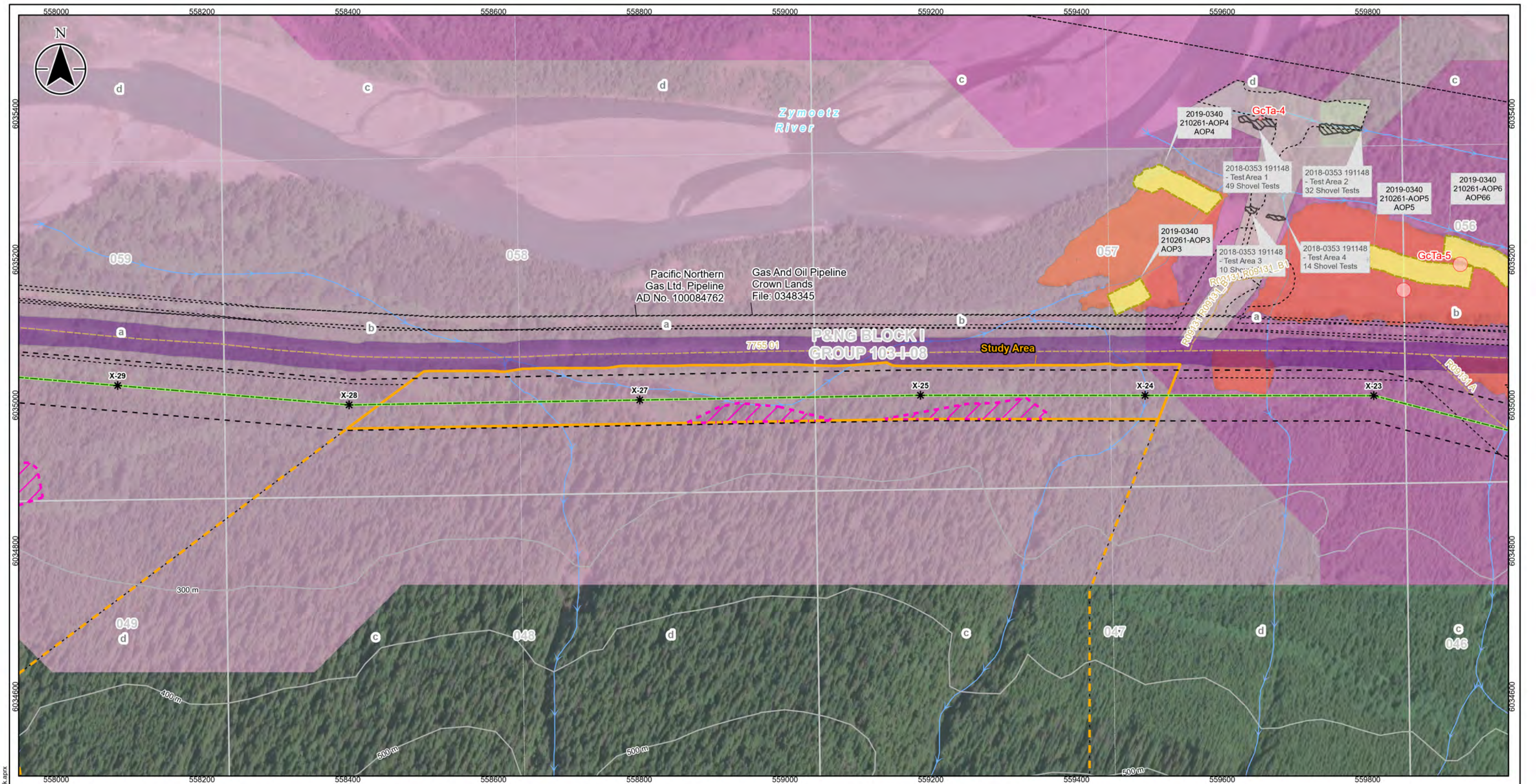
0 0.5 1 2 km
 Scale: 1:50,000

GIS: SA
 Date: Jun 11, 2026
 Map ID: 250137A14

FIGURE 1

AiM

207, 10139 100 St.
 Fort St. John, BC V1J 3Y6
 (250) 261-6644



LEGEND

- * 5L066 35% Structures
- 5L066 35% Centerline
- - - Clearing Corridor (70 m)
- Study Area
- Revised Swan Creek Protected Area
- Previously Recorded Archaeological Site Boundary
- - - Existing Oil and Gas Feature
- Watercourse
- Major Contour (100 m)
- Minor Contour (20 m)
- Forestry Road
- Roy Northern 2025 Project AOA**
- Pre-AD 1846 CMT Potential
- Surface/Subsurface Potential
- Area Previously Assessed**
- 2018-0353
- 2019-0340
- 2025-0187
- Previous Test Location
- Previous AOP's

REFERENCES
Previously recorded Archaeological Sites obtained from RAAD (2026/05/12).
Projection: NAD 1983 UTM Zone 9N

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BC HYDRO

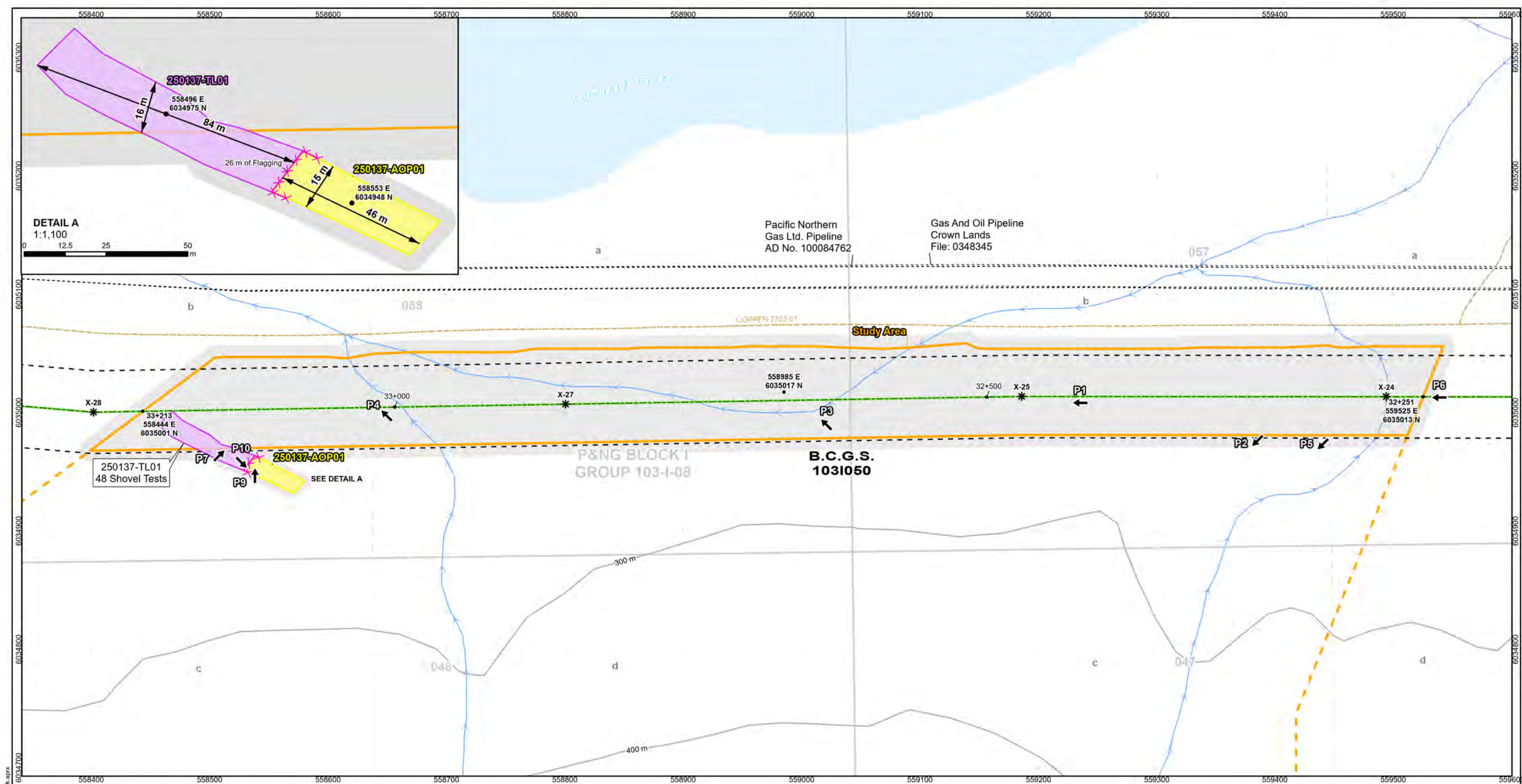
Mid Range Map
PROPOSED GLENANNAN TO TERRACE TRANSMISSION PROJECT (GTTT) WESTERN SECTION - 5L066 35P ALIGNMENT - SWAN CREEK PROTECTED AREA
PERMIT NUMBER: 2025-0187

0 50 100 200 m
Scale: 1:5,000

GIS: SA
Date: Jun 15, 2026
Map ID: 250137A14

FIGURE 2

AiM
207, 10139 100 St.
Fort St. John, BC V1J 3Y6
(250) 261-6644



LEGEND

* 5L066 35% Structures	Revised Swan Creek Protected Area	River
5L066 35% Centerline	Test Location	Watercourse
Proposed Flagging	Area of Potential (Field Verified)	Major Contour (100 m)
Clearing Corridor (70 m)	Transect Coverage	Forestry Road
Study Area	Existing Development	Photo Number and Direction

REFERENCES

Previously recorded Archaeological Sites obtained from RAAD (2026/04/08).
Projection: NAD 1983 UTM Zone 9N



BC HYDRO	
Detailed Results Map	
PROPOSED GLENANNAN TO TERRACE TRANSMISSION PROJECT (GTTT) WESTERN SECTION - 5L066 35P ALIGNMENT - SWAN CREEK PROTECTED AREA	
PERMIT NUMBER: 2025-0187	
Scale: 1:3,038	
GIS: SA	FIGURE 3
Date: Jun 12, 2026	
Map ID: 250137A14	
AiM	
207, 10139 100 St. Fort St. John, BC V1J 3Y6 (250) 261-6644	

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APPENDIX C PHOTOGRAPHS



Photo 1: View west of gently sloped terrain, with second growth and historic logging stumps.



Photo 2: View southwest of 45° slope at the southern boundary. .



Photo 3: View northwest of wetland in the centre of the Study Area.



Photo 4: View northwest of old growth western redcedars and devil's club in the west of the Study Area.



Photo 5: View southwest of a small stream in the southwest.



Photo 6: View west in the east. Historic logging stumps in a second growth stand.



Photo 7: View northeast of 250137-TL01, a level terrace in the southwest of the Study Area.



Photo 8: View northwest, oblique view, example soil profile for shovel tests within 230137-TL01.



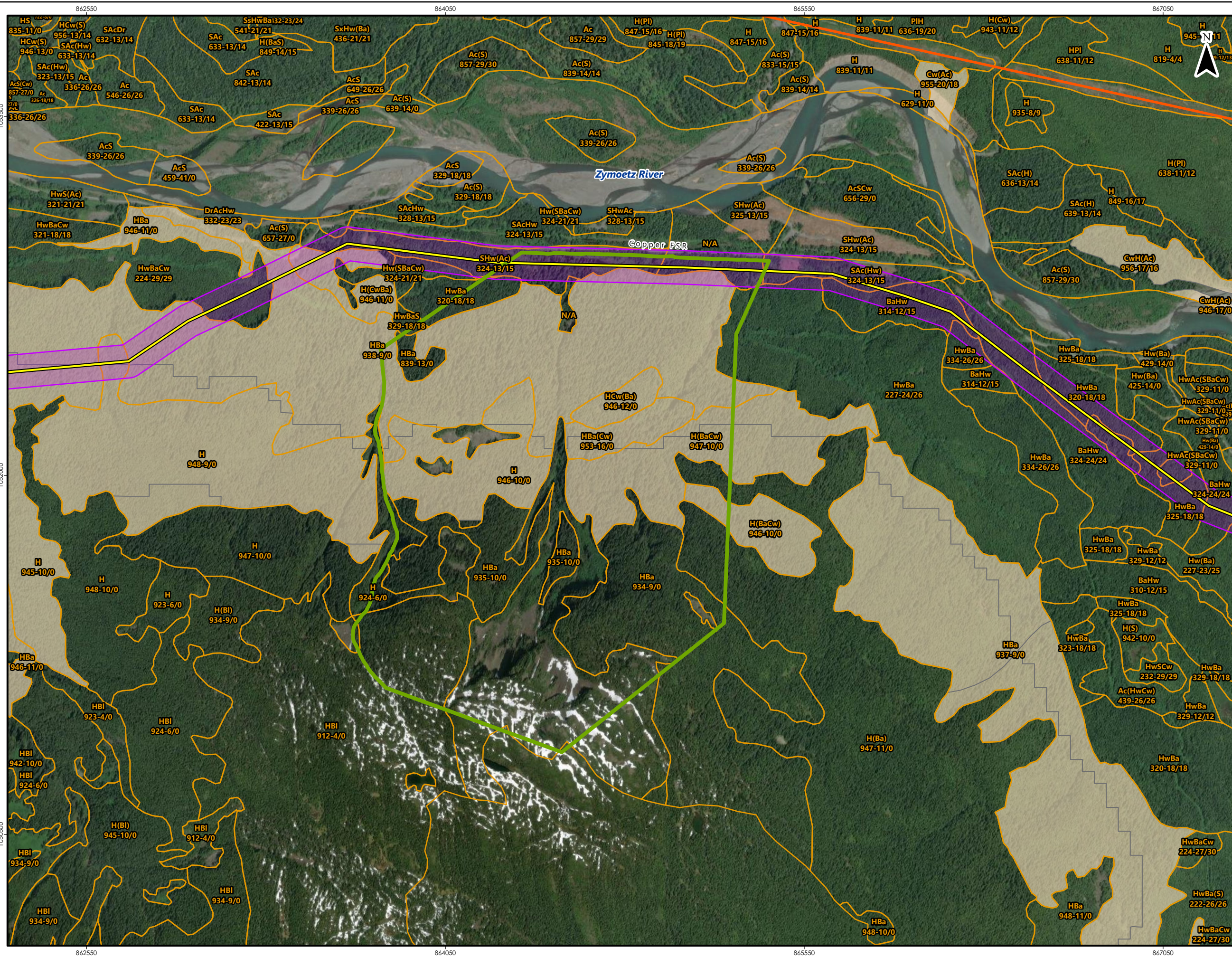
Photo 9: View north of 250137-AOP01.



Photo 10: View southeast of the north end of 250137-AOP01, outside of the Study Area.

APPENDIX 3

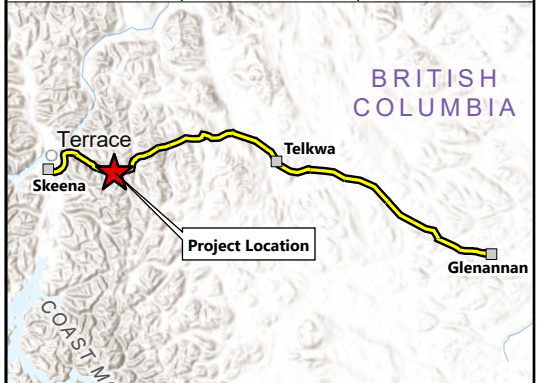
FIGURES AND MAPS



BC Hydro
North Coast Transmission Line
Glenannan to Terrace Transmission

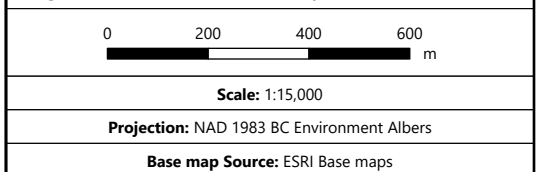
Figure 5.
Vegetation and Old Growth

Project No. 15385	Date Jun 09, 2026	Revision 00
Prepared By TK	Reviewed By AC	Page Size 11" x 17"

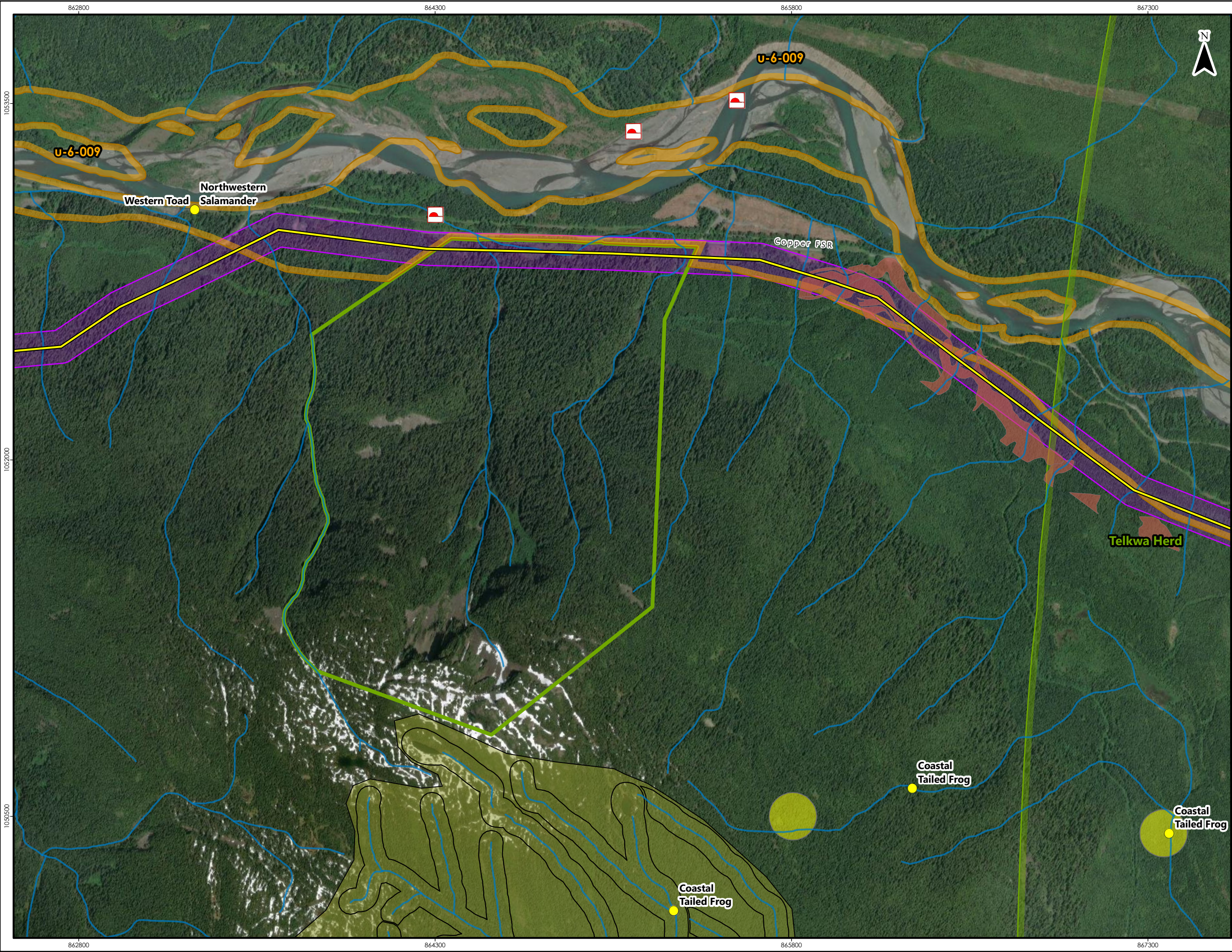


-  Existing Circuit
-  Proposed Circuit Centerline
-  Old Growth Deferral Area
-  Project Footprint
-  Swan Creek Protected Area
-  Vegetation Resource Index (VRI)

Note: N/A VRI labels are not classified within the Vegetation Resources Inventory



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BC Hydro

North Coast Transmission Line

Glenannan to Terrace Transmission

Figure 6.

Wildlife and Wildlife Habitat

Project No.	Date	Revision
15385	Jun 23, 2026	01
Prepared By	Reviewed By	Page Size
TK	AC	11" x 17"

BRITISH COLUMBIA

Terrace, Skeena, Telkwa, Glenannan

Project Location

Beaver Dam

Wildlife Species Survey Observation

Proposed Circuit Centerline

FWA Watercourse

Bat Hibernacula High Risk

Caribou Herd

Coastal Tailed Frog

Project Footprint

Swan Creek Protected Area

Ungulate Winter Range

Wildlife Habitat Area - Coastal Tailed Frog

0300600900

m

Scale: 1:15,000

Projection: NAD 1983 BC Environment Albers

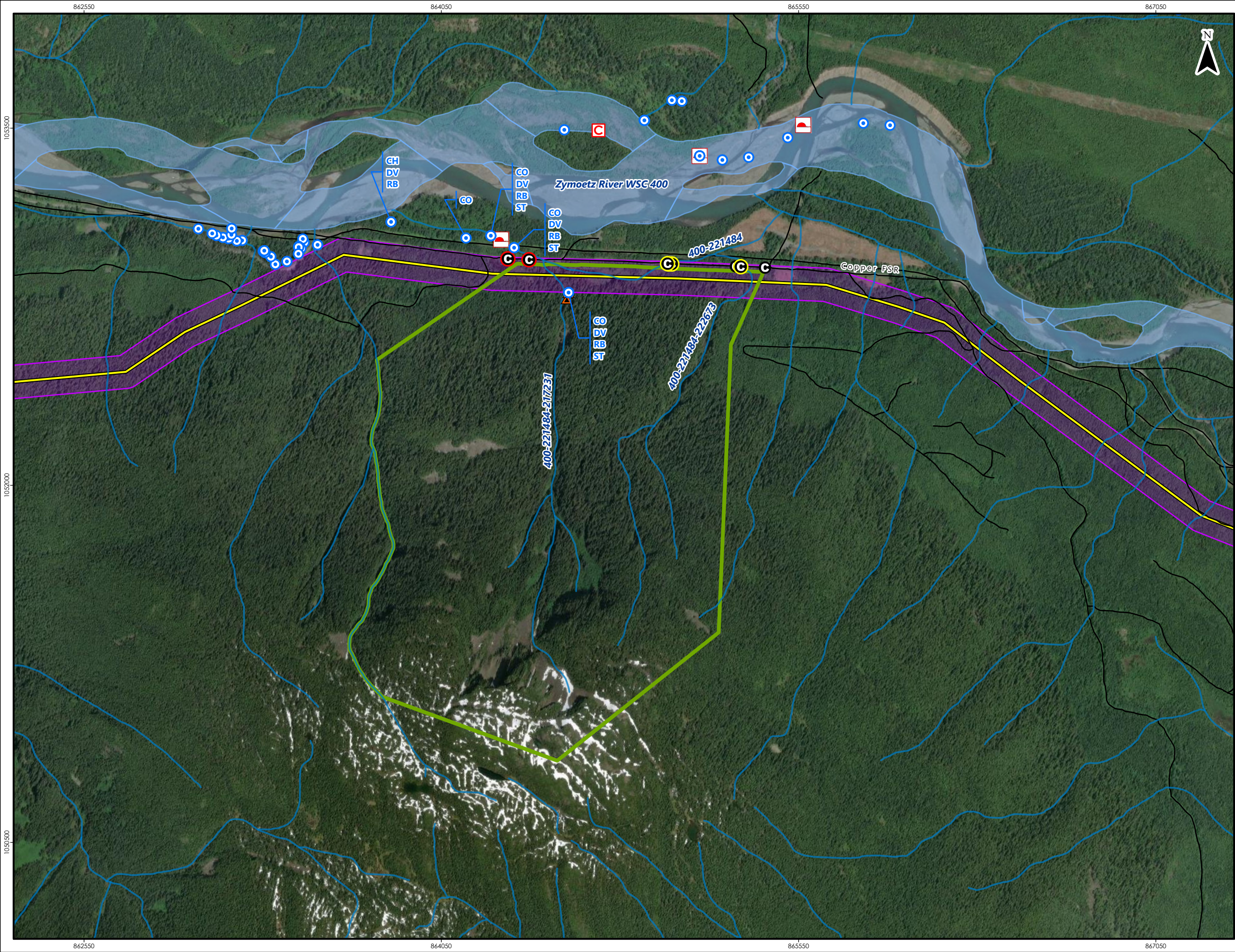
Base map Source: ESRI Base maps

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BC Hydro

Power smart

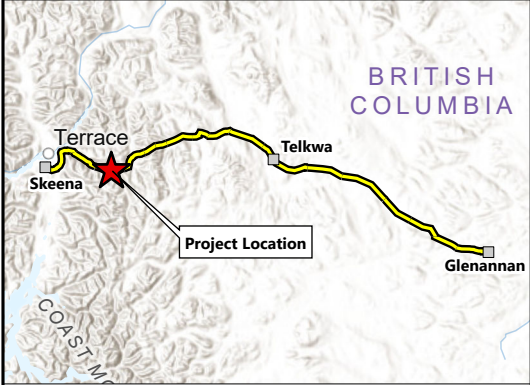
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BC Hydro
North Coast Transmission Line
Glenannan to Terrace Transmission

Figure 7.
Aquatic Resources

Project No.	Date	Revision
15385	Jun 09, 2026	00
Prepared By	Reviewed By	Page Size
TK	AC	11" x 17"



- FISS Observation
- Beaver Dam
- Cascade
- Rock
- Culvert - No Work Required
- Culvert - Repair
- Culvert - Replace; Remove
- Proposed Circuit Centerline
- FWA Watercourse
- Swan Creek Protected Area
- Project Footprint
- Waterbody

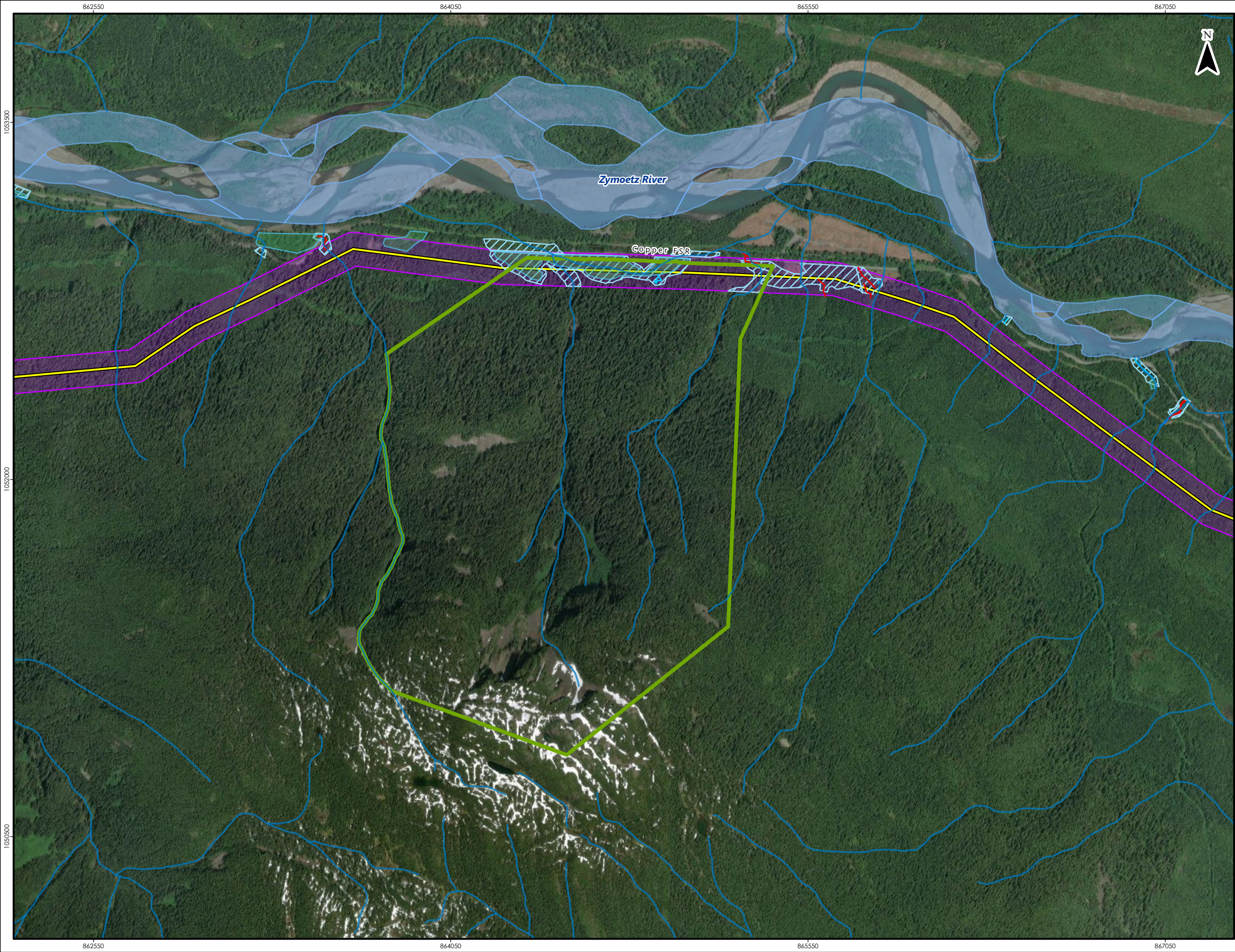
0 250 500 750 m

Scale: 1:15,000

Projection: NAD 1983 BC Environment Albers

Base map Source: ESRI Base maps

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BC Hydro

North Coast Transmission Line

Glenannan to Terrace Transmission

Figure 8.

Wetland and Riparian Areas

Project No.	Date	Revision
15385	Jun 09, 2026	00
Prepared By	Reviewed By	Page Size
TK	AC	11" x 17"

BRITISH COLUMBIA

Terrace

Skeena

Telkwa

Glenannan

Project Location

COAST

Proposed Circuit Centerline

FWA Watercourse

Field Verified - NCD

Field Verified - S1-S4

Field Verified - S5; S6

Project Footprint

Riparian Vegetation Management Area (RVMA)

Swan Creek Protected Area

Waterbody

Wetland

0200400600

m

Scale: 1:15,000

Projection: NAD 1983 BC Environment Albers

Base map Source: ESRI Base maps

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BC Hydro
Power smart

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APPENDIX 4

DESKTOP ANALYSIS RESULTS

BC Species and Ecosystem Explorer (BC SEE) List

Table 25. Ecological Communities of conservation concern (associated with CWHws1)

Scientific Name	Common Name	Relevant BEC Unit	BC List	General Habitat Requirements	Potential to be Present	Rationale
<i>Abies amabilis</i> - <i>Thuja plicata</i> / <i>Gymnocarpium dryopteris</i>	amabilis fir - western redcedar / oak fern	CWHms1/04; CWHms2/04; CWHws1/04; CWHws2/04	Blue	Terrestrial: mesic coniferous forest	Unlikely	Primarily occurs in the Coastal and Cascade mountain ranges
<i>Abies amabilis</i> - <i>Thuja plicata</i> / <i>Oplopanax horridus</i> Moist Submaritime	amabilis fir - western redcedar / devil's club Moist Submaritime	CWHms1/06; CWHms2/06; CWHws1/06	Blue	Terrestrial: wet coniferous forest	Possible	Occurs in moist, lower elevations at the northern inland extent of their range near Lakelse Lake
<i>Carex lasiocarpa</i> - <i>Menyanthes trifoliata</i>	slender sedge - buckbean	CDFmm/Wf06; CWHws1/Wf06; ESSFdc2/Wf06; ESSFdh1/Wf06; ICHwk1/Wf06; IDFdc/Wf06; IDFdk1/Wf06; IDFdk2/Wf06; MSdk/Wf06; MSdm2/Wf06; MSdw/Wf06; MSxk1/Wf06; MSxk2/Wf06; SBSdk/Wf06	Blue	Wetland: peatland - fen	Possible	Wetland in Project footprint
<i>Carex limosa</i> - <i>Menyanthes trifoliata</i> / <i>Sphagnum spp.</i>	shore sedge - buckbean / peat- mosses	CWHws1/Wb13; CWHws2/Wb13; ICHmc1/Wb13; ICHvc/Wb13; ICHwk2/Wb13; SBSmk1/Wb13	Blue	Wetland: peatland - bog	Unlikely	Range restricted to west central BC
<i>Picea sitchensis</i> / <i>Rubus spectabilis</i> Wet Submaritime 1	Sitka spruce / salmonberry Wet Submaritime 1	CWHws1/07	Red	Terrestrial: wet coniferous forest and high bench flood class	Unlikely	Occurs along coastal rivers in mature forests in Coast Mountains, Kitimat Ranges and Hazelton Mountains

Scientific Name	Common Name	Relevant BEC Unit	BC List	General Habitat Requirements	Potential to be Present	Rationale
<i>Pinus contorta</i> / <i>Arctostaphylos uva-ursi</i>	lodgepole pine / kinnikinnick	CWHws1/02; CWHws2/02	Red	Terrestrial: dry coniferous forest	Possible	May occur in drier, nutrient poor soils along forest road
<i>Populus trichocarpa</i> - <i>Alnus rubra</i> / <i>Rubus spectabilis</i>	black cottonwood - red alder / salmonberry	CDFmm/08; CDFmm/Fm50; CWHdm/09; CWHdm/Fm50; CWHds1/09; CWHds1/Fm50; CWHds2/09; CWHds2/Fm50; CWHmm1/09; CWHmm1/Fm50; CWHms1/08; CWHms1/Fm50; CWHms2/08; CWHms2/Fm50; CWHvm1/10; CWHvm1/Fm50; CWHwm/06; CWHwm/Fm50; CWHws1/08; CWHws1/Fm50; CWHws2/08; CWHws2/Fm50; CWHxm1/09; CWHxm1/Fm50; CWHxm2/09; CWHxm2/Fm50	Blue	Terrestrial: wet broadleaf forest and middle bench flood class	Possible	May occur in moist soils along streams
<i>Thuja plicata</i> - <i>Picea sitchensis</i> / <i>Lysichiton americanus</i>	western redcedar - Sitka spruce / skunk cabbage	CDFmm/Ws54; CWHdm/12; CWHdm/Ws54; CWHds1/12; CWHds1/Ws54; CWHds2/12; CWHds2/Ws54; CWHmm1/12; CWHmm1/Ws54; CWHms1/11; CWHms1/Ws54; CWHms2/11; CWHms2/Ws54; CWHvh1/13; CWHvh1/Ws54; CWHvh2/13; CWHvh2/Ws54; CWHvm1/14; CWHvm1/Ws54; CWHvm2/Ws54; CWHwh1/12; CWHwh1/Ws54; CWHwh2/06; CWHwh2/Ws54; CWHws1/11; CWHws1/Ws54; CWHws2/Ws54;	Blue	Terrestrial: wet coniferous forest Wetland: swamp mineral wetland	Possible	May occur in moist soils along streams

Scientific Name	Common Name	Relevant BEC Unit	BC List	General Habitat Requirements	Potential to be Present	Rationale
		CWHxm1/Ws54; CWHxm2/Ws54				
<i>Tsuga heterophylla</i> - <i>Pinus contorta</i> / <i>Pleurozium schreberi</i>	western hemlock - lodgepole pine / red-stemmed feathermoss	CWHws1/03; CWHws2/03	Blue	Terrestrial: dry coniferous forest	Possible	May occur in drier, nutrient poor soils along forest road

Table 26. Plant, lichen, macrofungi and slime species of conservation concern (associated with Nass Mountains Ecosection and CWHws1)⁴

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
Plants						
<i>Brotherella roellii</i>	Roell's brotherella	Blue	1-E (2018)	Rotten logs, stumps and bases of trees in cool to moist mixed deciduous and conifer forests, usually at low elevations along streams, swamps and ravines Preferred habitat is bigleaf maple and red alder	Unlikely	In BC, restricted to lower Howe Sound and lower mainland area of Fraser River
<i>Fissidens pauperculus</i>	Poor pocket moss	Red	1-E (2003)	Bare, moist soil banks in mature Douglas-fir/western hemlock forest	Unlikely	In BC, only known occurrence is in lower mainland
<i>Pinus albicaulis</i>	whitebark pine	Blue	1-E (2012)	Occurs within montane forests on thin, rocky, cold soils between 1,300 and 3,700 m	Unlikely	Not in elevation range and occurs in west central BC
<i>Polystichum setigerum</i>	Alaska holly fern	Blue	-	Occurs in wet conifer forests and riparian areas in lowland coastal forests	Possible	Range is in coastal northwest BC; no documented occurrences nearby
Lichen						
<i>Acroscyphus sphaerophoroides</i>	mountain crab-eye	Red	1-SC (2019)	Rocky outcrops and conifer stumps and snags in mid to high-elevation forests, bogs and alpine areas Occurs primarily on mountain hemlock, and occasionally on yellow-cedar and Sitka spruce	Unlikely	Closest documented occurrence is ~10 km away in Williams Creek Ecological Reserve and along Williams Creek Forest Service Road

⁴ Habitat and distribution information for vegetation found in E-flora BC (Klinkenberg 2023) and BC Species and Ecosystem Explorer (BC CDC 2026a).

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Lobaria retigera</i>	smoker's lung	Blue	1-T (2023)	Mature wet coniferous forests. Species grows on living or dead tree branches in old-growth forests with high humidity and nutrient rich soils.	Likely	Northwest population inhabits Nass River watershed, and core range for species is in Coastal Western Hemlock biogeoclimatic zone
<i>Peltigera gowardii</i>	western waterfan	-	1-SC (2018)	Spring-fed streams in open subalpine and alpine meadows, above 1200 m elevation	Unlikely	Project site is outside elevation range for species
<i>Peltigera hydrothyria</i> var. <i>gowardii</i>	northwest waterfan	Red	-	Found in streams in open subalpine and alpine meadows, and lower and upper montane conifer and riparian forests. It is associated with older forests	Possible	Documented occurrence about ~4 km southwest
<i>Sclerophora peronella</i>	frosted glass-whiskers	Red	-	Occurs on bark of deciduous trees, especially cottonwood	Unlikely	Occurs in in intermontane forests at lower elevations; only one known location in BC
Macrofungi						
-	-	-	-	-	-	-
Slime Molds						
-	-	-	-	-	-	-

Table 27. Wildlife species of conservation concern (associated with Nass Mountains Ecosection and CWHws1)⁵

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
Mammals						
<i>Cervus canadensis roosevelti</i>	Roosevelt Elk	Blue	-	Use open areas, coniferous forests, wetlands, vegetated slides, and rock outcrops	Unlikely	Occur primarily on Vancouver Island and southwestern BC
<i>Eschrichtius robustus</i>	Grey Whale	No Status	1-SC (2005)	Ocean	Unlikely	No marine water in Project area
<i>Eumetopias jubatus</i>	Steller Sea Lion	Blue	1-SC (2005)	Ocean	Unlikely	No marine water in Project area
<i>Gulo gulo</i>	Wolverine	Blue	1-SC (2018)	Large home range in mountainous regions. Upland alpine, conifer forests, woodlands, and shrublands are preferred. Require fallen woody debris and locations that allow for digging dens in the ground. Prefer northern and upland habitats with snow.	Unlikely	Habitat features overlap but lacks consistently sufficient cold temperatures and snow
<i>Lasiurus cinereus</i>	Hoary Bat	Blue	-	Foraging habitat includes various open areas, including spaces over water and along riparian corridors. Roost sites are usually in foliage of large deciduous or coniferous trees.	Unlikely	Project location is outside documented range
<i>Microtus townsendii cowani</i>	Townsend's Vole, cowani subspecies	Red	-	Wet herbaceous vegetation in coastal areas	Unlikely	Population isolated to Triangle Island
<i>Mustela richardsonii anguinae</i>	Ermine, anguinae subspecies	Blue	-	Prefers coarse woody debris and thick understories near water	Unlikely	Restricted to Vancouver Island and Saltsping Island

⁵ Habitat and distribution information for wildlife found in E-fauna BC (Klinkenberg 2021) and BC Species and Ecosystem Explorer (BC CDC 2026a).

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Myotis lucifugus</i>	Little Brown Myotis	Blue	1-E (2014)	Roosts in buildings, tree cavities, rock crevices and caves. Hibernacula include caves or abandoned mines. Generally associated with forest stands >100 years old and will frequently occupy wet coniferous forest. Nursery areas require stable, hot (>30°C) temperatures.	Possible	Habitat features likely within Project footprint
<i>Myotis yumanensis</i>	Yuma Myotis	Blue	-	Foraging occurs over water or in open spaces over land. Roost in snags, rock crevices, mines, bridges, buildings, and cavities in large live trees near water.	Likely	Observations in Skeena Region
<i>Oreamnos americanus</i>	Mountain Goat	Blue	-	Alpine and subalpine habitat; steep grassy talus slopes, grassy ledges of cliffs, or alpine meadows. Usually at timberline or above.	Unlikely	Habitat features not within the Project footprint
<i>Ovis dalli stonei</i>	Stone's Sheep	Blue	-	The Yukon and northcentral and northeastern mountainous areas of BC.	Unlikely	Project is outside of species range
<i>Sorex navigator brooksi</i>	Western Water Shrew, brooksi subspecies	Blue	-	Riparian forest along watercourses and wetlands	Unlikely	Project is outside of species range
<i>Ursus arctos</i>	Grizzly Bear	Blue	1-SC (2018)	Large home range and may be found from low elevation to mountainous regions with alpine habitat. In BC, associated with salmon producing coastal and interior streams.	Possible	Habitat features within the Project footprint. Grizzly Bear WHA (WHA 6-287) within 3 km of Swan Creek Protected Area.

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
Birds⁶						
<i>Astur atricapillus laingi</i>	American Goshawk, laingi subspecies	Red	1-T (2003)	Breeding: Mature forest. Foraging: Forested areas with dense canopy and open understory.	Likely	May forage/nest in forested/ riparian areas in Project footprint
<i>Aechmophorus occidentalis</i>	Western Grebe	Red	1-SC (2017)	Breeding: Low elevation lakes in the southern interior of BC. Foraging: Lakes and winters along the Pacific Coast.	Unlikely	Project is outside breeding and migration area
<i>Ardea herodias fannini</i>	Great Blue Heron, fannini subspecies	Blue	1-SC (2010)	Breeding: Nests colonially in tall trees in swamp and forested areas. Foraging: Forage habitat typically includes shallow aquatic and marine areas.	Unlikely	Riparian of the wetland complex may provide suitable habitat features, but proximity to existing road makes it unlikely. No reported nests, so not likely to be within the Project footprint
<i>Asio flammeus</i>	Short-eared Owl	Blue	1-SC (2012)	Breeding: Nest on the ground in open habitat, including ROWs pastures, wetlands, and meadows. Foraging: Same as breeding.	Unlikely	Suitable habitat is not present in Project area. The existing pipeline right of way north of the Copper FSR is grown in, and proximity to road degrades habitat suitability.
<i>Bartramia longicauda</i>	Upland Sandpiper	Red	-	Breeding: Extensive open tracts of short grassland and dry meadows. Foraging: Waterbodies and pastures during migration.	Unlikely	Does not breed in BC. May occur sporadically during migration
<i>Botaurus lentiginosus</i>	American Bittern	Blue	-	Breeding: Freshwater wetlands with tall, emergent vegetation. Foraging: Same as breeding.	Unlikely	Beyond western extent of breeding range

⁶ Breeding, foraging, and range information for birds founds in Cornell Birds of the World (Cornell 2026).

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Blue	1-T (2003)	Breeding: mature and old-growth coniferous coastal forests and sea-facing talus slopes or cliffs Foraging: marine waters	Unlikely	Closest mapped critical habitat is 20 km away.
<i>Branta bernicla</i>	Brant	Blue	-	Breeding: Arctic tundra or wet coastal salt marshes and meadows near coast (<10 km inland) Foraging: salt marshes and graminoid meadows and intertidal mudflats	Unlikely	Project is outside of breeding and non-breeding area
<i>Branta canadensis occidentalis</i>	Canada Goose, occidentalis subspecies	Red	-	Breeding: Alaska; freshwater marshes with tall shrub vegetation cover. Foraging: wetlands	Unlikely	Breeds north of Project area, very low likelihood of encountering during migration
<i>Buteo lagopus</i>	Rough-legged Hawk	Blue	-	Breeding: Not known to breed in BC. Foraging: Variety of open habitat including grasslands and agricultural fields.	Unlikely	Habitat features likely not within the Project footprint
<i>Calcarius pictus</i>	Smith's Longspur	Blue	-	Breeding: dry, grassy tundra or wet forest meadows. Foraging: open, short-vegetation	Unlikely	Project is outside migration and breeding areas. Historical records in area are prior to 1920s.
<i>Calidris canutus</i>	Red Knot	Blue	1-T (2010)	Breeding: seacoast tidal flats and beaches, occasionally marshes Foraging: Same as breeding.	Unlikely	Habitat features not within the Project footprint
<i>Chondestes grammacus</i>	Lark Sparrow	Blue	-	Breeding: open grass, orchards, parklike woodlands and grasslands, fallow fields	Unlikely	Project is outside breeding and migration areas
<i>Chordeiles minor</i>	Common Nighthawk	Blue	1-SC (2023)	Breeding: Variety of open areas, including cut blocks and ROWs. Foraging: Aerial foraging over many habitat types, but often over open water	Possible	Habitat features may be within the Project footprint. The existing pipeline right-of-way north of Copper FSR is grown in.

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Yellow	1-SC (2019)	Breeding: Mixed coniferous forest. Foraging: Mixed and deciduous forest	Likely	Habitat features likely within the Project footprint
<i>Contopus cooperi</i>	Olive-sided Flycatcher	Yellow	1-SC (2023)	Breeding: Snags in coniferous forest edges or riparian areas Foraging: Forest edges and riparian areas	Likely	Habitat features likely within the Project footprint
<i>Cypseloides niger</i>	Black Swift	Blue	1-E (2019)	Breeding: Wet cliffs and waterfalls near forested areas Foraging: Aerial foraging over many habitat types including forests	Possible	Breeding habitat features likely not in the area surrounding the Project footprint but there is a waterfall in the LSA; may have foraging habitat in Project footprint
<i>Euphagus carolinus</i>	Rusty Blackbird	Blue	1-SC (2009)	Breeding: moist coniferous woodland, bogs and fens, and riparian areas Foraging: ground and in shallow water	Possible	Habitat features likely within the Project footprint
<i>Falco peregrinus pealei</i>	Peregrine Falcon, pealei subspecies	Blue	1-SC (2003)	Breeding: coastal beaches, tidal flats, marshes and estuaries, and rocky bluffs	Unlikely	Habitat features not within the Project footprint and found primarily on Haida Gwaii and Vancouver Island
<i>Falco rusticolus</i>	Gyr Falcon	Blue	-	Breeding: Mountainous cliffs and bluffs, and open coniferous forests Foraging: Open areas, including over marine and freshwater	Unlikely	Project is not within known, Arctic breeding range. Overwintering occurrence may be possible, though most sightings are during the migratory periods of the year.
<i>Fratercula cirrhata</i>	Tufted Puffin	Blue	-	Breeding: rocky cliffs and offshore islands Foraging: ocean and deep water	Unlikely	Habitat features not within the Project footprint

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Fratercula corniculata</i>	Horned Puffin	Red	-	Breeding: rocky cliffs and offshore islands Foraging: ocean water	Unlikely	Habitat features not within the Project footprint
<i>Fulmarus glacialis</i>	Northern Fulmar	Red	-	Breeding: sea cliffs and flat rocky islands Foraging: ocean water	Unlikely	Habitat features not within the Project footprint
<i>Glaucidium gnoma swarthi</i>	Northern Pygmy-Owl, swarthi subspecies	Blue	-	Breeding: mature forests; nests in cavities of large-diameter trees and snags Foraging: mature forest habitat	Possible	Within the year-round range and habitat features within Project footprint
<i>Hirundo rustica</i>	Barn Swallow	Yellow	1-T (2017) ⁷	Breeding: Cliffs, steep embankments, caves and manmade structures (e.g., buildings, bridges); breeds in lowlands, valleys and on lower-elevation plateaus, and occurs in agricultural land, lowland foreshores, floodplains and alpine meadows Foraging: Aerial foraging over a variety of open areas near waterbodies	Unlikely	Given the habitat availability within the Project Footprint, it is unlikely to occur within the Project area
<i>Hydroprogne caspia</i>	Caspian Tern	Blue	-	Breeding: wide range of locales including ocean coasts and barrier islands as well as interior lakes and rivers Foraging: Same as breeding	Unlikely	Species not known to occur near the Project footprint
<i>Larus californicus</i>	California Gull	Red	-	Breeding: Sparsely vegetated islands and levees in inland lakes and rivers Foraging: Variety of open habitat areas	Unlikely	Species is only known to migrate within the Project footprint and does not forage in densely vegetated areas

⁷ Under consideration for status change to Special Concern

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Limnodromus griseus</i>	Short-billed Dowitcher	Red	-	Breeding: Tundra and sub-alpine meadows and muskeg Foraging: Tundra, as well as coastal estuaries, mudflats, and wetlands during migration	Unlikely	Habitat features likely not within the Project footprint
<i>Limosa haemastica</i>	Hudsonian Godwit	Red	-	Breeding: nests on grassy tundra near water, bogs and marshes. Foraging: marine	Unlikely	Outside species range and habitat features likely not within the Project footprint
<i>Megascops kennicottii kennicottii</i>	Western Screech-Owl, kennicottii subspecies	Blue	1-T (2005)	Breeding: mature lowland coniferous and mixed forests below 600 m elevation, lowland riparian habitats and deciduous trees Foraging: same as breeding	Likely	Habitat features within the Project footprint
<i>Melanerpes lewis</i>	Lewis's Woodpecker	Blue	1-T (2012)	Breeding: Open forest and woodland, often in oak and ponderosa pine. Cavities in snags Foraging: Ponderosa pine and Douglas-fir woodlands	Unlikely	Only known to occur in the southern interior of BC
<i>Melanitta americana</i>	Black Scoter	Blue	-	Breeding: coastal waters and freshwater lakes Foraging: primarily coastal marine	Unlikely	Habitat features not within the Project footprint; Project is outside breeding range
<i>Melanitta perspicillata</i>	Surf Scoter	Blue	-	Breeding: boreal forest Foraging: Marine and freshwater shorelines, beaches, and mudflats	Unlikely	Outside breeding range north of the Project; however, there is the potential for species to be encountered during migration
<i>Nannopterum auritum</i>	Double-crested Cormorant	Blue	-	Breeding: Bare, rocky islands or mature black cottonwood Foraging: Primarily marine, but also freshwater rivers and lakes	Unlikely	Breeding not known to occur near Project footprint

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Numenius americanus</i>	Long-billed Curlew	Yellow	1-SC (2005) ⁸	Breeding: Grasslands and pastures Foraging: Same as breeding, as well as wetlands, mudflats, and estuaries	Unlikely	Project area is outside known species range
<i>Oreoscoptes montanus</i>	Sage Thrasher	Red	1-E (2003)	Breeding: sagebrush plains in arid situations Foraging: Same as breeding	Unlikely	Project area is outside known species range
<i>Patagioenas fasciata</i>	Band-tailed Pigeon	Blue	1-SC (2011)	Breeding: Coniferous and mixed forest Foraging: Mixed-forest, edge habitats, suburban areas	Unlikely	Known to breed only on the south coast in BC; Project area is outside known species range
<i>Pelecanus erythrorhynchos</i>	American White Pelican	Red		Breeding: On isolated islands in freshwater lakes or, in the northern Great Plains, on ephemeral islands in shallow wetlands Foraging: In shallow water on inland marshes, along lake or river edges, and in wetlands	Unlikely	Project area is outside known species range
<i>Phalaropus lobatus</i>	Red-necked Phalarope	Blue	1-SC (2019)	Breeding: Lakes, bogs, and marshes in three Arctic tundra or tundra-forest boundary Foraging: Same as breeding	Unlikely	Project is outside of known species breeding range; however, may migrate through the Project footprint. Stopover habitat is absent in the Project Footprint.
<i>Pinicola enucleator carlottae</i>	Pine Grosbeak, carlottae subspecies	Blue	-	Breeding: wet conifer forest Foraging: Same as breeding	Unlikely	Species endemic to Haida Gwaii
<i>Pluvialis dominica</i>	American Golden-Plover	Blue	-	Breeding: Tundra Foraging: Open areas, including mudflats, beaches, and pastures	Unlikely	Project is outside of known species breeding range; however, may migrate through the Project

⁸ Under consideration for status change to Threatened

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
						footprint. Stopover habitat is absent in the Project Footprint.
<i>Podiceps auritus</i>	Horned Grebe	Yellow	1-SC (2017)	Breeding: Marshes, ponds and lakes, sluggish streams, bays and seacoasts Foraging: shallow water near emergent vegetation	Likely	Project footprint contains suitable habitat.
<i>Podiceps nigricollis</i>	Eared Grebe	Blue	-	Breeding: Lakes and ponds Foraging: Same as breeding	Unlikely	Species not known to occur near the Project footprint
<i>Progne subis</i>	Purple Martin	Blue	-	Breeding: forest edge and riparian areas near water, ponds and beaver marshes, urban environments Foraging: rivers, lakes, ponds, agricultural fields, parks or cleared woodlands	Unlikely	Project is outside of known species range
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet	Red	1-SC (2019)	Breeding: pelagic ocean and marine islands and areas with low vegetation Foraging: marine waters	Unlikely	Habitat features not within the Project footprint
<i>Riparia riparia</i>	Bank Swallow	Yellow	1-T (2017)	Nests are in steep sand, dirt, or gravel banks along the edge of inland water, or along the coast, or in gravel pits, road embankments	Unlikely	Project footprint in wetland not anticipated to provide suitable nesting habitat; suitable habitat type may be present along rivers
<i>Setophaga castanea</i>	Bay-breasted Warbler	Red	1-SC (2019)	Breeding: Boreal spruce-fir forests and mixed-woods, occasionally in bogs and swamps Foraging: Same as breeding	Unlikely	Project is outside of known species range
<i>Synthliboramphus antiquus</i>	Ancient Murrelet	Blue	1-SC (2006)	Breeding: islands, pelagic and marine ocean, and wet conifer forest Foraging: marine waters	Unlikely	Habitat features not within the Project footprint
<i>Tringa incana</i>	Wandering Tattler	Blue	1-SC (2006)	Breeding: marine island and ocean reefs, rocky or scrubby vegetated	Unlikely	Habitat features not within the Project footprint

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
				edges of streams and lakes in alpine zone Foraging: Same as breeding		
<i>Uria aalge</i>	Common Murre	Red	-	Breeding: pelagic and along rocky seacoasts, cliffs and caves Foraging: marine waters	Unlikely	Habitat features not within the Project footprint
<i>Uria lomvia</i>	Thick-billed Murre	Red	-	Breeding: marine island and ocean, on cliffs, ledges, in crevices and caves Foraging: marine waters	Unlikely	Habitat features not within the Project footprint
Amphibians						
<i>Anaxyrus boreas</i>	Western Toad	Yellow	1-SC (2018)	Resides and migrates seasonally between aquatic breeding and terrestrial non-breeding habitats; Ponded surface water with fine substrates is ideal for breeding	Likely	May occur in forested/ riparian areas; Documented occurrences nearby
<i>Aneides vagrans</i>	Wandering Salamander	Blue	1-SC (2018)	Resides under bark, in rotten logs or in rock crevices of moist coniferous forests	Unlikely	Only found on Vancouver Island and Sunshine Coast
<i>Ascaphus truei</i>	Coastal Tailed Frog	Yellow	1-SC (2003)	Occupies and is adapted to life in fast flowing mountain (alpine/ subalpine) streams having coarse substrates	Likely	Documented occurrences immediately adjacent to the Project Footprint; Coastal tailed frog trapline and harvest zone (WHA 6-059) south of Swan Creek Protected Area
<i>Rana aurora</i>	Northern Red-legged Frog	Blue	1-SC (2005)	Use stream pools and wetlands in proximity to forests	Unlikely	Occur primarily in southwestern part of BC

Table 28. Fish species of conservation concern (associated with Nass Mountains Ecosection and CWHws1)⁹

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Acipenser medirostris</i>	Green Sturgeon	Blue	1-SC (2006)	Anadromous – Coastal marine waters, estuaries and lower reaches of large rivers	Unlikely	Habitat features not within the Project footprint
<i>Entosphenus macrostoma</i>	Cowichan Lake Lamprey	Red	1-T (2003)	Freshwater – in Cowichan Lake on Vancouver Island and nearby creeks	Unlikely	Outside species range
<i>Gasterosteus sp. 18</i>	Misty Lake "Lake" Stickleback	Red	1-E (2010)	Freshwater – in Misty Lake and nearby streams on Vancouver Island	Unlikely	Outside species range
<i>Gasterosteus sp. 19</i>	Misty Lake "Stream" Stickleback	Red	1-E (2010)	Freshwater – in Misty Lake and nearby streams on Vancouver Island	Unlikely	Outside species range
<i>Oncorhynchus clarkii clarkii</i>	Cutthroat Trout, clarkii subspecies	Blue	-	Anadromous / Freshwater – spawns in streams on clean, small gravel substrates with temperatures below 18°C	Likely	Known occurrences within the Zymoetz River, connected to streams within the Project footprint
<i>Salvelinus confluentus</i>	Bull Trout	Blue	-	Freshwater – cold rivers and large tributary streams, often in moderate to fast currents with temperatures of 7 to 10°C	Likely	Known occurrences within the Zymoetz River, connected to streams within the Project footprint
<i>Stenodus leucichthys</i>	Inconnu	Blue	-	Anadromous / Freshwater – spawns in clear, swift streams over gravel and sand with temperatures of 1.4 to 4.4°C	Unlikely	No documented occurrences in watershed
<i>Thaleichthys pacificus</i>	Eulachon	Blue	-	Anadromous – nearshore ocean bottom and spawns in coastal freshwater streams over silt, sand, gravel, cobble or detritus	Unlikely	No documented occurrences in watershed; rarely more than a few miles inland

⁹ Habitat and distribution information for fish found in E-fauna BC (Klinkenberg 2021) and BC Species and Ecosystem Explorer (BC CDC 2026a).

Table 29. Invertebrate and insect species of conservation concern (associated with Nass Mountains Ecosection and CWHws1)¹⁰

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
<i>Arctiostrotus perrieri</i>	Perrier's Earthworm	Blue	-	Mixed coniferous forests in BC's south coastal mainland, Haida Gwaii and Vancouver Island	Unlikely	General habitat features present within Project footprint, but no documented occurrences in the Skeena Region
<i>Argynnis zerene bremnerii</i>	Zerene Fritillary, bremnerii subspecies	Red	-	Broadleaf forests and grassland meadows	Unlikely	Habitat features not within the Project footprint.
<i>Boloria astarte distincta</i>	Astarte Fritillary, distincta subspecies	Blue	-	Alpine/subalpine tundra or grassland	Unlikely	Habitat features not within the Project footprint
<i>Bombus occidentalis</i>	Western bumble bee	Yellow	1-T (2023)	Mixed woodlands, farmlands, urban, montane meadows, and prairie grasslands	Possible	Uses diverse range of habitats and range includes Project site
<i>Carychium occidentale</i>	Western Thorn	Blue	-	Low elevation forests, usually dominated by Bigleaf maple	Unlikely	Documented occurrences are in Lower Mainland, Fraser Valley and Gulf Islands
<i>Cicindela hirticollis</i>	Hairy-necked Tiger Beetle	Blue	-	Sandy edges adjacent to rivers, lakes and ocean; Larval burrows are restricted to sandy soils near surface water	Unlikely	Range restricted to central to southwestern BC
<i>Coccinella transversoguttata</i>	Traverse Lady Beetle	-	1-SC (2021)	Agricultural areas, gardens, parks, coniferous and deciduous forests, grasslands, meadows and riparian areas	Unlikely	Documented occurrences in Skeena Region were prior to 1975
<i>Erynnis afranius</i>	Afranius Duskywing	Red	-	Agriculture, grassland, or shrubland	Unlikely	Habitat features not within the Project footprint; only BC

¹⁰ Habitat and distribution information for invertebrates and insects found in E-fauna BC (Klinkenberg 2021) and BC Species and Ecosystem Explorer (BC CDC 2026a).

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
						occurrence is in New Aiyansh (~70 km northwest of site)
<i>Haliotis kamtschatkana</i>	Northern Abalone	Red	1-E	Ocean	Unlikely	Species is associated with marine environments
<i>Ostrea lurida</i>	Olympia Oyster	Blue	1-SC (2003)	Ocean, intertidal marine	Unlikely	Species is associated with marine environments
<i>Parnassius clodius claudianus</i>	Clodius Parnassian, claudianus subspecies	Blue	-	Riparian habitats along low-elevation streams	Unlikely	Project is outside northern limit of species range (Bella Coola)
<i>Parnassius phoebus</i>	Phoebus Parnassian	Red	-	Alpine mountains and tundra	Unlikely	Habitat features not within the Project footprint
<i>Physella virginea</i>	Sunset Physa	Blue	-	Broad habitat types (lakes, rivers, creeks and sloughs)	Unlikely	Documented occurrences are in southern BC
<i>Pieris marginalis guppyi</i>	Margined White, guppyi subspecies	Blue	-	Avalanche chutes, and wet shrubby willow-alder habitats	Unlikely	Habitat features not within the Project footprint; Documented occurrences are in Tatshenshini-Alsek Provincial Park north of Project site
<i>Pristiloma johnsoni</i>	Broadwhorl Tightcoil	Blue	-	Leaf litter of deciduous, coniferous and mixed-wood forests from 0 to 1300 m elevation	Unlikely	Documented occurrences are on Vancouver Island and Lower Mainland
<i>Staala gwaii</i>	Haida Gwaii Slug	Red	1-SC (2018)	Lowland coniferous forest dominated by Sitka spruce, western redcedar and western hemlock, to subalpine tundra	Unlikely	Endemic to Haida Gwaii and Vancouver Island
<i>Stygobromus quatsinensis</i>	Quatsino Cave Amphipod	Blue	-	Limestone caves or karst formations	Unlikely	Habitat features not within the Project footprint
<i>Tanypteryx hageni</i>	Black Petaltail	Blue	-	Seepage areas and bogs associated with streams and usually not under	Unlikely	Documented occurrences are in southwestern BC

Scientific Name	Common Name	BC List	SARA	General Habitat Requirements	Potential to be Present	Rationale
				forest canopy in wet mountain ranges		

APPENDIX 5

FIELD ASSESSMENT

Technical Memorandum

Date: 2026-05-29

To: Kevin Doddridge c/o Triton Environmental Consultants Ltd.

From: Kyle Simpson, RPBio, McTavish Resource & Management Consultants Ltd.

Subject: Swan Creek Protected Area EIA Field Assessment

1 INTRODUCTION

Wai Wah-McTavish was retained by Triton on behalf of BC Hydro to complete a field assessment for the proposed exclusion of approximately 12.4 hectares (ha) from the northern portion of Swan Creek Protected Area, approximately 40 km southeast of Terrace, British Columbia (Attachment 1). Park area exclusion is intended to accommodate the preferred North Coast Transmission Line (NCTL) Phase 2: Glenannan to Terrace Transmission. Field observations focused on aquatic features, wetlands, vegetation communities, old forests, and wildlife habitat values within the proposed exclusion area and immediately adjacent protected area lands.

The purpose of this memorandum is to describe the environmental values identified during field assessment, evaluate key sensitivities relevant to the proposed boundary adjustment, and support development of avoidance, mitigation, and restoration measures. Stream assessment results pertaining to the assessed area are provided in Attachment 2.

2 STUDY AREA

Swan Creek Protected Area was designated on March 22, 2005 through the Kalum Land and Resource Management Plan and protects a steep, largely unlogged watershed approximately 266 ha in size within the Nass Mountain Range Ecoregion (Province of BC 2002). The protected area is located south of the Zymoetz (Copper) River near Terrace, BC, and is accessed from the Copper River Forest Service Road (FSR). A waterfall within the protected area contributes to the viewscape from the road and river corridor, and the area supports old-growth forest characteristics and wildlife habitat values associated with an intact headwater drainage.

The proposed exclusion area is located at the northern end of Swan Creek Protected Area and represents a small but ecologically distinct portion of the protected area. In contrast to the predominantly steep, cool north-aspect old forest that characterizes much of the protected area, the exclusion area includes level lower-slope forest, active drainage features, a beaver-influenced wetland complex, and habitat conditions associated with the protected area edge. The proposed boundary adjustment would remove approximately 4.7% (12.4 ha) of the 266 ha protected area.

3 METHODS

Field assessment methods were tailored to the main values present within the proposed exclusion area and were completed using visual reconnaissance-level procedures consistent with applicable provincial guidance. Assessment components included stream and drainage classification, wetland identification and functional interpretation, ecosystem and site series classification, old-forest verification, and wildlife habitat suitability assessment.

The field assessment and interpretation of results were informed by standard provincial guidance for stream classification (Province of BC, 2025), wetland identification and delineation (RISC, 2025), terrestrial ecosystem description (MOFR & MOE, 2010; RIC, 1998), old-forest verification (MOF, 2022), and wildlife habitat suitability assessment (RISC, 1999; MOFR & MOE, 2010).

4 FIELD RESULTS

4.1 AQUATICS

Three unnamed watercourses mapped in the BC Freshwater Atlas (Province of BC, 2026) intersect or border the proposed exclusion area (Attachment 1; Table 1). Two of these watercourses (FWA watershed codes 400-221484-222673 and 400-221484-217231) appear to be tributaries to a third watercourse (FWA watershed code 400-221484), which ultimately drains to the Zymoetz River. Field observations indicated that some mapped channel locations did not align precisely with on-the-ground drainage positions, and additional unmapped drainages were also identified during the assessment. Three additional watercourses identified during field assessment are also present within the exclusion area, including one S3 channel with apparent connectivity to FWA watershed code 400-221484-222673 and two non-classified drainages that appear connected to FWA watershed code 400-221484.

Table 1 | Summary of Assessed Watercourses

Watershed Code	Average Width (m) Channel, Wetted	Stream Classification	Comments
400-221484	3.73, 3.19	S3	Ponding due to beavers
400-221484-217231	2.27, 1.41	S3	Cascade-pool channel with cobble and woody substrate
400-221484-222673	3.61, 2.04	S3	Waterfall feature may act as an upstream fish barrier
Unmapped channel	Dry	S3	Dry during assessment but morphologically consistent with an ephemeral or seasonal channel
Non-classified drainages	Not measured	NCD	Two drainages showed hydrologic connectivity to channel 400-

No fish sampling or fish capture activities were completed as part of this assessment. Fish habitat potential was therefore based on previous reports, observed channel characteristics, hydrologic connectivity, flow conditions, and habitat morphology observed during field investigations.

A detailed description of assessed watercourses and representative photos are provided in Attachment 2.

4.2 WETLANDS

The field assessment identified a beaver-influenced wetland complex associated with FWA watercourse 400-221484 within the exclusion area. Beaver activity has resulted in local ponding and created wetland habitat that contributes to surface water storage, riparian function, and wildlife habitat. The wetland includes open-water and willow-dominated vegetation components adjacent to the channel corridor and provides habitat for amphibians, and bird species associated with wetland- and riparian habitats.

The wetland was assessed using the NCTL Phase 2 wetland assessment methods including assessment of functional values (McTavish, 2026) and assigned a preliminary functional score of 65% and interpreted as moderate to high function. Key functions include attenuation of peak flows, retention of sediment, provision of amphibian and bird habitat, and support for riparian vegetation structure. Functional limitations appear to be associated with existing road disturbance and a relatively limited graminoid component; however, the wetland remains an important local feature within the exclusion area.

4.3 VEGETATION

The vegetation assessment included ecosystem and site series classification to support mapping of plant communities within the exclusion area and to identify listed or sensitive ecosystems that may be affected by the proposed transmission line. The exclusion area is characterized by a mosaic of forested and wetland-associated ecosystems within the Coastal Western Hemlock wet submarine variant (CWHws1) (Table 2).

Table 2 | CWHws1 Ecosystems within the Exclusion Area

Ecosystem	Name	Listing
103	HwPI - feather moss	Blue
101	HwBa - blueberry - step moss	Yellow
110	HwBa - oak fern - wood fern	Blue
111	HwBa - blueberry - queen's cup	Yellow
112	CwHw - devil's club - enchanter's-nightshade	Red
Ws51	Sitka willow - Pacific willow / skunk cabbage	Blue

Forest ecosystems in this variant are composed primarily of western hemlock (*Tsuga heterophylla*) with varying proportions of amabilis fir (*Abies amabilis*) and western redcedar (*Thuja plicata*), while the wetland complex supports willow-dominated communities and shallow open water habitat. Listed ecosystems are present within the exclusion area, including provincially red- and blue-listed units, indicating that vegetation values are regionally important despite the small footprint. The sitka spruce (*Picea sitchensis*) dominated CWHws1/112 is present intermittently in mature to old growth stage around the swamp wetland and should be avoided where possible. Project-related clearing would result in direct vegetation loss and increased edge effects; these effects should be minimized through footprint reduction, retention of non-hazard vegetation where feasible, invasive plant prevention, and revegetation with native species.

4.4 OLD FOREST

Field verification of the mapped old growth deferral area (OGDA) which overlaps with the proposed exclusion area indicated that the lower-slope stand within the exclusion area exhibited old-forest characteristics, including relatively large-diameter conifers, a structurally complex canopy, scattered standing dead trees, and abundant coarse woody debris (CWD). Dominant tree species were western hemlock with minor amabilis fir and western redcedar. Although the stand expressed clear old-forest attributes, field observations indicated that trees within the overlapped area were generally old rather than ancient, with estimated ages of approximately 263 to 303 years, rather than greater than 400 years. Several trees were cored and field counted providing the estimate above. The overlapped OGDA area is small (2.9 ha or 1.4% of the 203 ha OGDA) remains a sensitive old-forest feature and should be avoided or minimized through tower micro-siting and restricted clearing limits, wherever feasible. The overlapping OGDA accounts for 23.4% of the proposed exclusion area.

4.5 WILDLIFE AND WILDLIFE HABITAT

BC Parks identifies furbearers and waterfowl within Swan Creek Protected Area, and the intact watershed likely also supports additional forest birds, amphibians, and small mammals typical of old-growth and riparian environments. A wildlife habitat assessment was completed at a reconnaissance-level field review of habitat suitability within the proposed exclusion area and immediately adjacent to protected area lands (Table 3). The assessment considered vegetation structure, wetland and riparian features, CWD, wildlife trees, edge conditions, evidence of use such as tracks, browse, scat, nests, and amphibian habitat features, where present. Habitat suitability ratings were assigned based on observed habitat conditions, landscape context, and professional judgement; no species-specific inventory, call surveys, or capture-based methods were completed.

Of note during the field verification, crews observed a river otter (*Lontra canadensis*) with a fish in its mouth, long-toed salamander (*Ambystoma macrodactylum*), bear (*Ursus americanus*) and moose (*Alces alces*) scat, significantly browsed shrubs, and beaver (*Castor canadensis*) activity.

Table 3 | Wildlife Habitat Suitability Assessment Results

Species	Habitat Suitability	Sign/Observation	Comments
Moose (<i>Alces alces</i>)	High	Browse, pellets and trails observed.	Adjacent to ungulate winter range and functioning as such
Grizzly Bear (<i>Ursus arctos</i>)	Moderate	Bear scat, digs and claw marks observed.	Reduced suitability because of Copper FSR
Beaver (<i>Castor canadensis</i>)	High	Numerous lodges and dams	Active dams and ponding indicate ongoing habitat use and wetland influence
Bats (<i>Myotis</i> spp)	Moderate	None observed	Potential roost habitat
Forest songbirds ^a	Moderate	Common songbirds heard	Old forest structure and riparian edge habitat provide foraging and nesting opportunities
Wetland birds ^b	High	Wetland bird calls and suitable nesting habitat observed	Beaver-influenced wetland complex provides suitable breeding and foraging habitat
Waterfowl Canada Goose (<i>Branta canadensis</i>)	Moderate	Open water and pond margins provide suitable habitat; no waterfowl observed during the assessment	Open water wetland is suitable but small
Upland game birds Grouse (<i>Canachites</i> spp)	High	Grouse heard drumming	Dense forest cover and edge habitats support seasonal use
American Goshawk (<i>Accipiter atricapillus laingi</i>)	Low	Not observed	Suitable mature-forest habitat is present, but no nests or other indicators were



			observed
Western Toad (<i>Anaxyrus boreas</i>)	High	Not detected	Potential breeding in shallow open water wetland
Tailed Frog (<i>Ascaphus truei</i>)	Moderate	Not detected	Limited basin size
Mountain Goat (<i>Ovis canadensis</i>)	Nil	Not expected	Limited potential as forested cool slope
Caribou (<i>Rangifer tarandus</i>)	Nil	Protected area is outside of the Telkwa herd boundary	No evidence of mapped caribou habitat overlap or site-specific use was identified
Marbled Murrelet (<i>Brachyramphus marmoratus</i>)	Low	Not expected	Suitable nesting habitat present but too far inland
^a Sensitive Forest Songbirds include; Evening Grosbeak (<i>Coccothraustes vespertinus</i>) and Olive-sided Flycatcher (<i>Contopus cooperi</i>)			
^b Sensitive Wetland Birds include American Bittern (<i>Botaurus lentiginosus</i>) and Rusty Blackbird (<i>Euphagus carolinus</i>)			



No targeted bird surveys were completed during field visit. Incidental bird observations included ruffed grouse (*Bonasa umbellus*), song sparrow (*Melospiza melodia*), chestnut-backed chickadee (*Poecile rufescens*), red-breasted nuthatch (*Sitta canadensis*), western tanager (*Piranga ludoviciana*), warbling vireo (*Vireo gilvus*), pine siskin (*Spinus pinus*), and dark-eyed junco (*Junco hyemalis*). Waterfowl observed included bufflehead (*Bucephala albeola*) and mallard duck (*Anas platyrhynchos*).

5 CONCLUSION

The Swan Creek Protected Area was established to protect an intact, steep, unlogged watershed that includes waterfall, old-growth forest, and wildlife habitat values. Based on the field assessment, exclusion of approximately 12.4 ha from the northern portion of the protected area may be supportable if alternatives have been carefully evaluated, the final footprint is the minimum necessary, and disturbance to high-value features is limited to the extent practicable. Wetlands and rare ecosystems are present in the surrounding landscape, although these features are not exclusively confined to protected lands. This memorandum should therefore be read as a field-based, reconnaissance-level impact assessment to support boundary adjustment review, to guide additional detailed assessments, and inform avoidance, mitigation, and restoration measures within the proposed exclusion area.

Sincerely,

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Built on Trust. Backed by Boots.

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Attachments

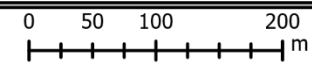
1. Figure 1. Location of Swan Creek Protected Area and Proposed Exclusion Area
2. Stream Assessment Memo

6 REFERENCES

- B.C. Ministry of Forests and Range and B.C. Ministry of Environment. 2010. Field Manual for Describing Terrestrial Ecosystems. 2nd Edition. Land Management Handbook 25.
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<https://www2.gov.bc.ca/assets/download/B10BA3F9B0084146BBD15BD3E4D4854F>

LEGEND

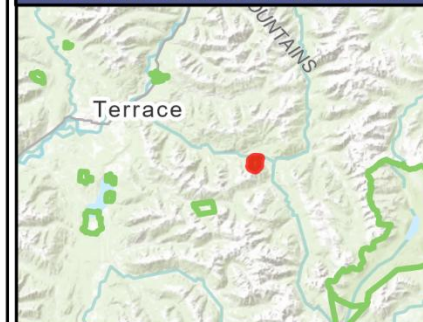
- ▭ Area of Exclusion
- ▭ Protected Areas
- FWA Streams
- NCD
- S1-S4
- OGDA
- ⬮ TEM Polygons
- Wetland Assessment Point
- OG OGDA Assessment Plot
- ☑ Stream and Watercourse Assessment Form
- Proposed Circuit C/L



Scale: 1:6,000

Spatial Reference: NAD 1983 BC
Environment Albers

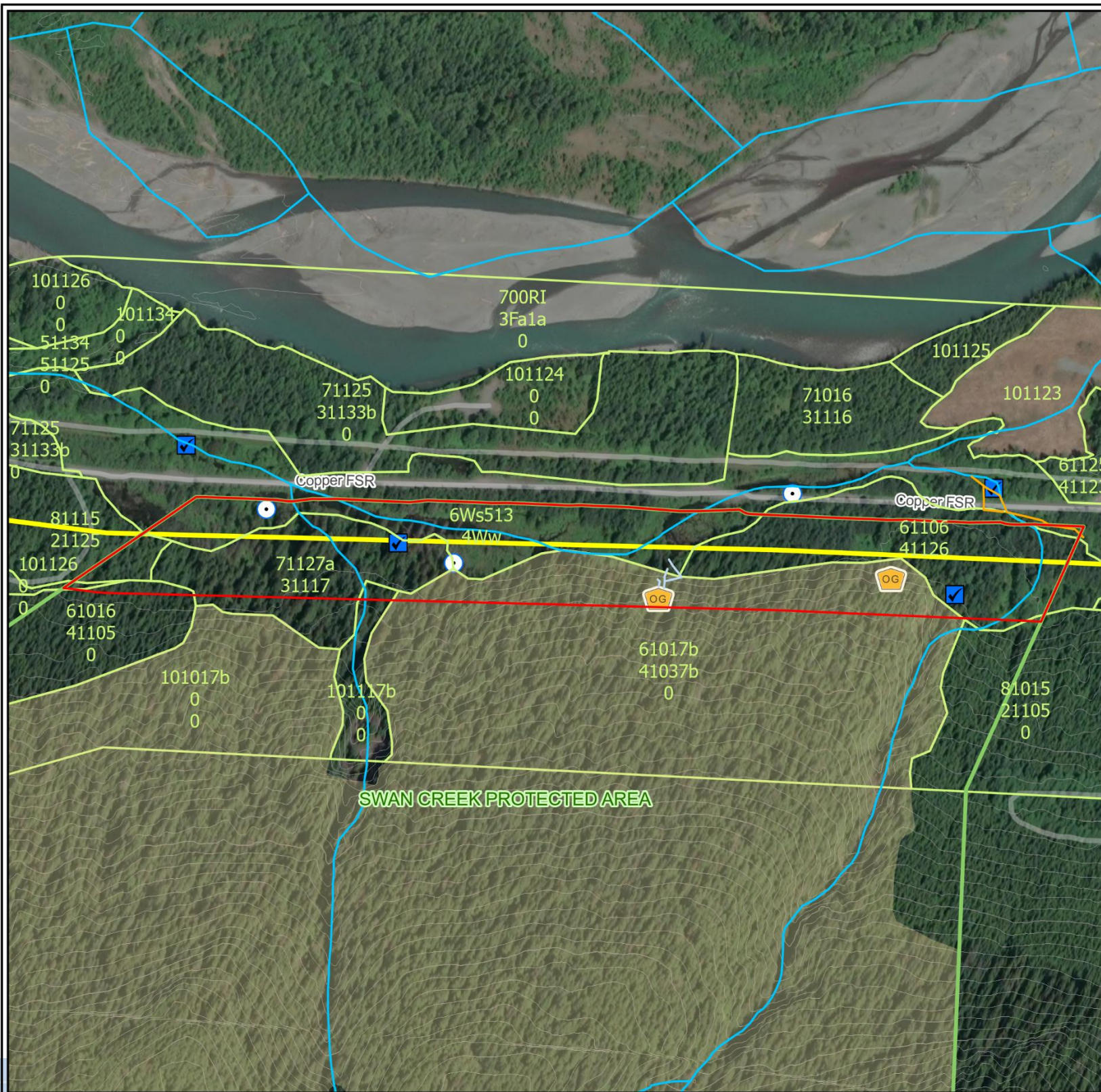
LOCATION OVERVIEW



Project: 2026-ENV-070 Swan Cr
Client: Triton
Created By: K Simpson
Date Exported: 6/1/2026



**Figure 1: Swan Creek
Protected Area Exclusion
Area**





Swan Creek Exclusion Area Stream Classification

Avison Management Services Ltd.
P.O. Box 774
220 East Stewart St.
Vanderhoof, B.C. V0J 3A0
(250) 567-2111

Project	Swan Creek Stream Classification
For:	BC Hydro
From:	Dudley Phillips, RPBio ASCT
Email:	Dudley.Phillips@avison.ca
cc.	Trinda.Elwert@avison .ca

Introduction

Dudley Phillips, RPBio, ASCT, completed a stream classification assessment within the proposed 12.4 hectare exclusion area in the northern portion of Swan Creek Protected Area, (approximately 39 km east of Terrace, BC). The exclusion is intended to accommodate the preferred route for the North Coast Transmission Line (NCTL) Glenannan to Terrace Transmission Project (Map 1 - Swan Creek Location Overview).

Three mapped channels identified within the Freshwater Atlas (FWA)¹ were assessed within or adjacent to the removal area. In addition, one unmapped ephemeral/seasonal channel and five non-classified drainages (NCDs) were identified during field investigations.

Methods

Field assessments were completed on May 20 and 21, 2026 by Dudley Phillips, RPBio, ASCT. Stream classifications were completed using field observations of channel morphology, wetted width, channel width, flow characteristics, substrate composition, and hydrologic connectivity in accordance with the Fish-Stream Identification Handbook².

Assessments considered channel accessibility, stream morphology, evidence of seasonal or perennial flow, and connectivity to downstream fish-bearing habitat, consistent with guidance provided within the Fish-Stream Identification Handbook.

Several assessed areas were influenced by active beaver complexes which resulted in ponding and backwatering of channels. Within these areas, the original channel alignment remained visible; however, direct measurements could not safely or accurately be completed due to water depth and impounded conditions. To support stream classification, measurements and morphological assessments were completed within unaffected upstream and downstream reaches where natural

¹ Province of British Columbia. Freshwater Atlas. BC Geographic Warehouse, Ministry of Water, Land and Resource Stewardship. Accessed May 12, 2026. BC Data Catalogue – Freshwater Atlas Streams

² BC Ministry of Water, Land and Resource Stewardship (WLRS). 2025. Stream and Fish Habitat Classification Guidebook



channel characteristics remained observable. These unaffected reaches were used to infer the likely pre-impoundment stream classification through the beaver-affected areas.

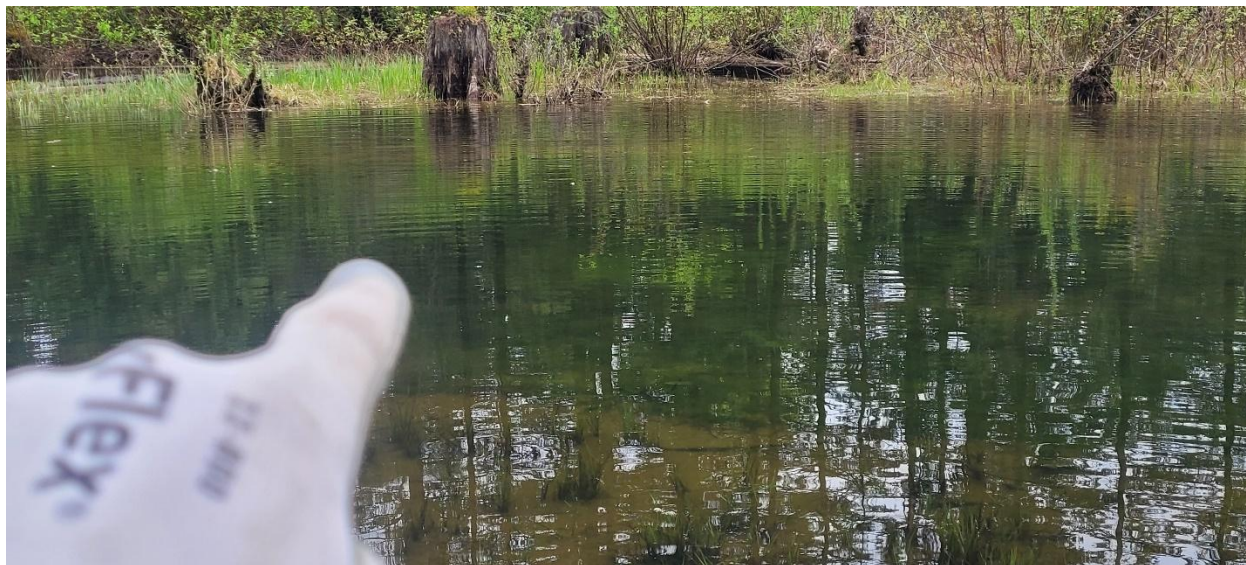
No fish sampling or fish capture activities were completed as part of this assessment. Stream classifications and fisheries potential were therefore based on previous reports, observed channel characteristics, hydrologic connectivity, flow conditions, and habitat morphology observed during field investigations. With the exception of the localized waterfall feature identified upstream of the final measurement on Channel 400-221484-217231, no identifiable permanent barriers to fish passage were observed within the assessed reaches that would prevent fish movement from the Zymoetz River into the connected channel systems.

Channel 400-221484

Channel 400-221484 was classified as an S3 stream (Photographs 1 through 4; Table 1). The channel contained multiple beaver dams within the removal area, resulting in extensive ponding and backwatering. A visible channel remained present through the ponded area; however, direct measurements within the affected reach could not be safely completed due to water depth.



Photograph 1: Backwatering in Channel 400-221484.

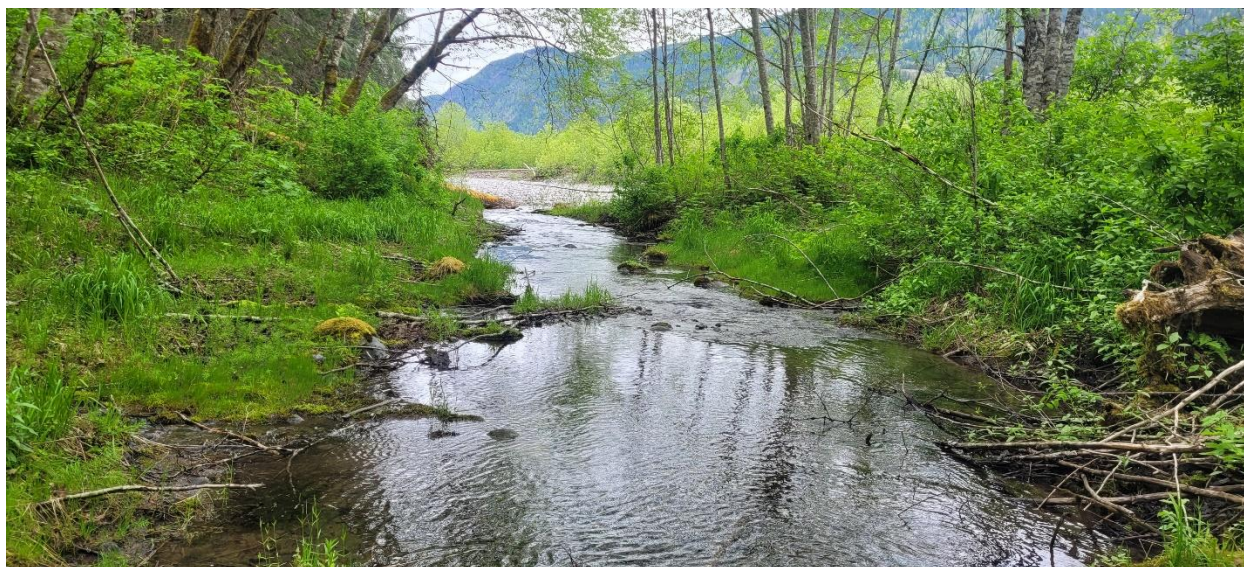


Photograph 2: Channel 400-221484 in beaver affected area within proposed exclusion area.

The stream flows into the Zymoetz River along the northeastern side of the assessment area. On the northwestern side, the channel appeared disconnected from the Zymoetz River; however, a defined channel remained from the logged road back to the wetted channel and connected back into the beaver affected area.



Photograph 3: Channel 400-221484 on northwestern side.



Photograph 4: Channel 400-221484 on northeastern side.

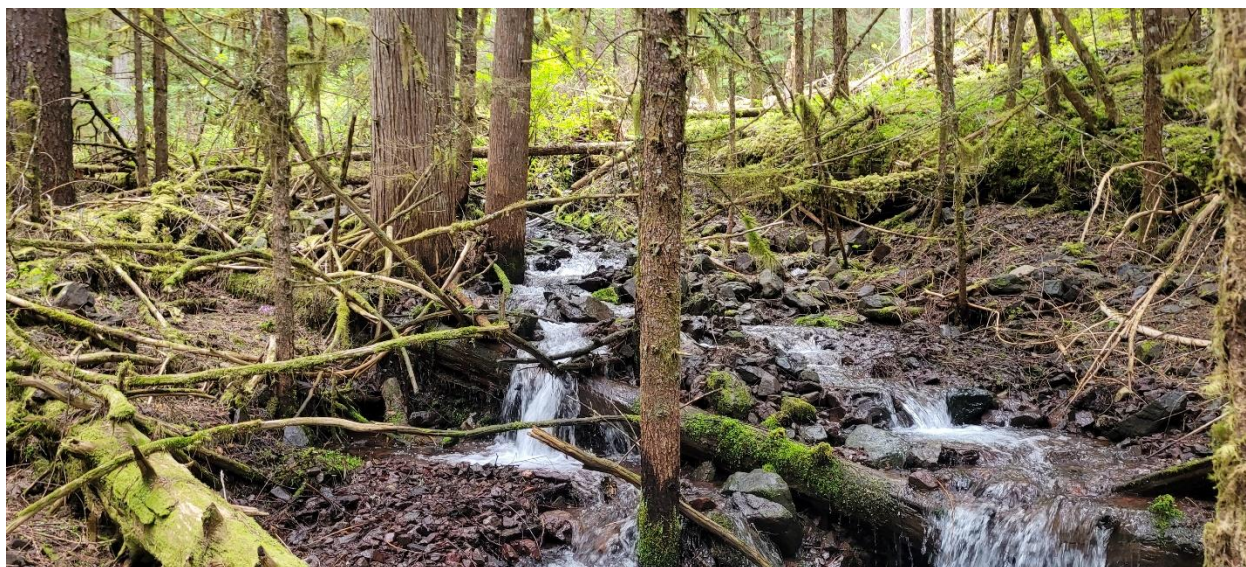
To determine stream classification, assessments were completed on both the western and eastern sides of the beaver-influenced reach where channel morphology could still be observed. Measurements collected downstream of the affected area indicated characteristics consistent with an S3 stream classification.

Table 4: Measurements of 400-221484 D/S of exclusion zone.

	1	2	3	Average
Channel Width	2.60	4.00	4.60	3.73
Wetted Width	1.80	4.00	3.78	3.19

Channel 400-221484-217231

Channel 400-221484-217231 was classified as an S3 stream and is a tributary to Channel 400-221484 (Photograph 5 through 6; Table 2). The stream exhibited a well-defined channel with cascade-pool morphology and substrates consisting primarily of cobble and woody material.



Photograph 5: Channel 400-221484-217231 facing upstream.

The channel is located within the western portion of the removal area and appeared to exhibit year-round flow conditions at the time of assessment. Small woody debris (SWD) was more prevalent than large woody debris (LWD) throughout the assessed reach.



Photograph 6: Channel 400-221484-217231 facing downstream.

Table 5: Measurements taken along 400-221484-217231.

1	2	3	4	5	Average
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Channel Width	1.76	1.73	2.95	2.63	2.30	2.27
Wetted Width	1.21	1.62	1.65	1.30	1.25	1.41

Channel 400-221484-222673

Channel 400-221484-222673 was classified as an S3 stream and is a tributary to Channel 400-221484 (Photograph 7 and 8; Table 3). The channel exhibited cascade-pool morphology with substrates consisting primarily of cobble and woody material.



Photograph 7: Channel 400-221484-222673 facing upstream.

The stream is located within the eastern portion of the removal area and appeared to exhibit year-round flow conditions during the assessment period.

A potential upstream fish barrier was identified upstream of the final measurement location at UTM 09U 560110 6035574, where a waterfall feature was observed. The feature may limit or prevent upstream fish passage beyond this location.



Photograph 8: Fish barrier waterfall located upstream of final measurement location.

Table 6: Measurements taken along 400-221484-222673

	1	2	3	4	5	Average
Channel Width	2.55	6.50	1.84	3.29	3.86	3.61
Wetted Width	1.12	4.20	1.29	1.89	1.70	2.04

Unnamed Channel (Unmapped)

One unmapped channel exhibiting hydrologic connectivity to Channel 400-221484-222673 was identified during field assessments. The channel was observed approximately between UTM locations 09U 559428 6034974 and 09U 559471 6035055.

The channel was dry at the time of assessment; however, a distinct and continuous channel feature was observed for approximately 100 m. Based on observed channel morphology, connectivity, and potential seasonal flow conveyance, the feature is considered to represent an ephemeral or seasonal S3 stream (Table 4; Map 2 – Identified Features).

Table 7: Measurement taken along Unnamed S3

	1	2	Average
Channel Width	3.11	2.84	2.98
Wetted Width	Dry		

Non-Classified Drainages (NCDs)

Five non-classified drainages (NCDs) were identified within the assessment area (Photograph 9 and 10; Map 2 – Identified Features). Two of the identified NCDs exhibited apparent hydrologic connectivity to Channel 400-221484.



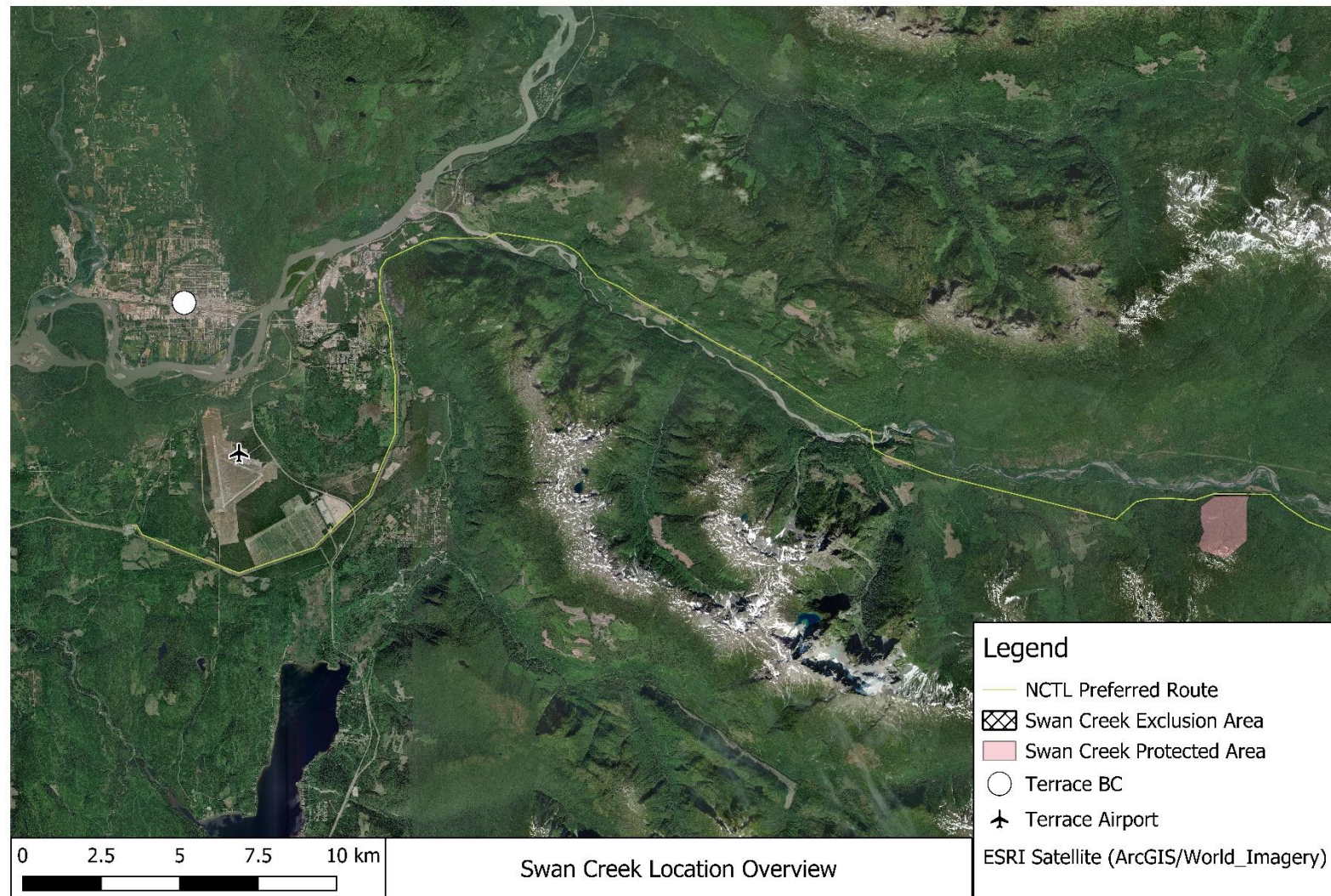
Photograph 9 and 10: Two of the Five identified NCDs (NCD 4 and NCD 5, Map 2 – Identified Features) that have connectivity to 400-221484.



Conclusions

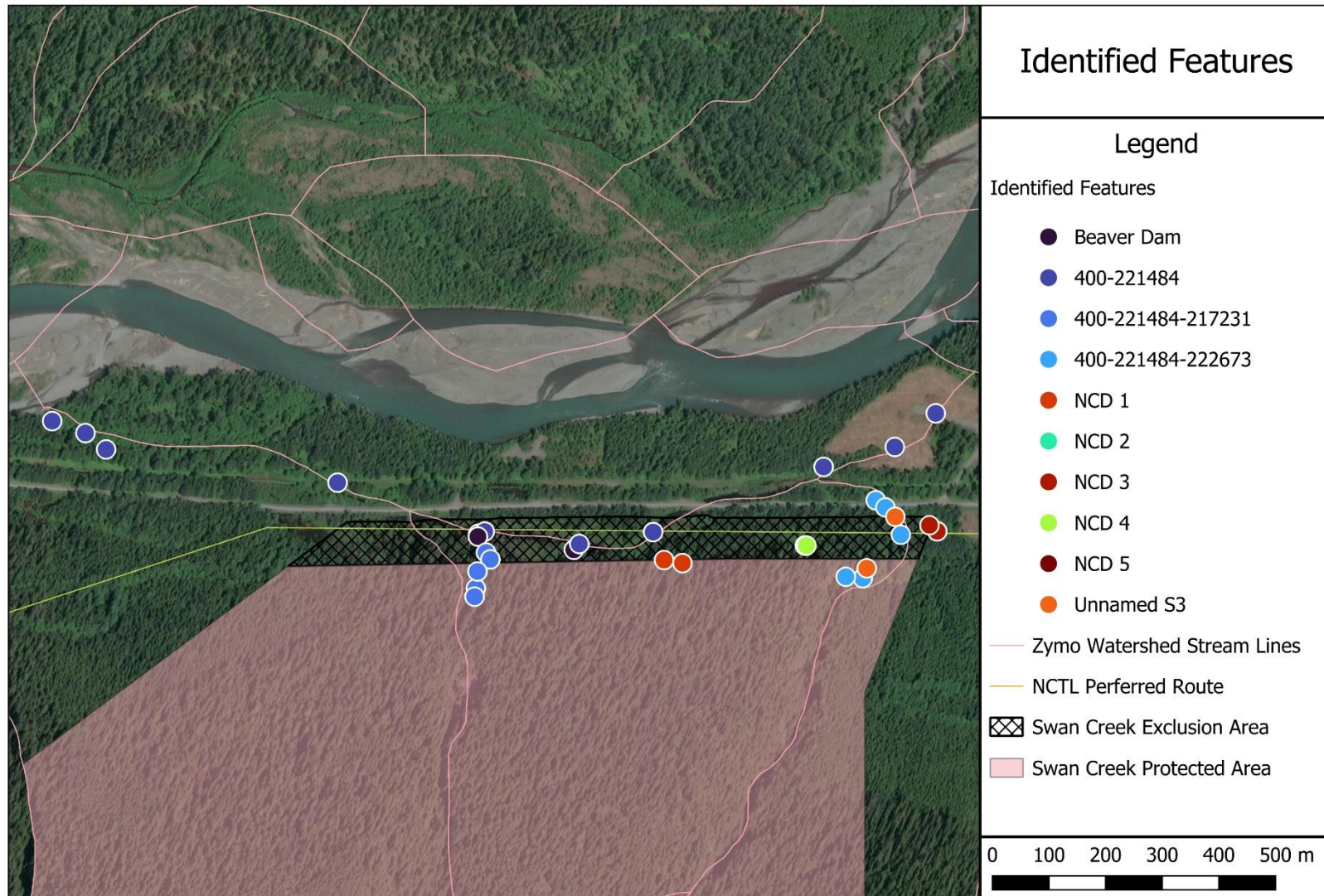
Field assessments identified three mapped S3 streams, one unmapped ephemeral/seasonal S3 channel, and five associated NCDs within the proposed removal area. Beaver activity has significantly altered portions of the local hydrology through ponding and channel backwatering; however, visible channel continuity and unaffected upstream and downstream reaches provided sufficient evidence to support stream classification determinations through the beaver-influenced areas.

The assessed channels generally exhibited well-defined morphology, evidence of seasonal or perennial flow, and direct or indirect connectivity to downstream fish-bearing habitat.





Map 1: Location of Swan Creek Protection area and exclusion zone in relation to Terrace, BC.





Map 2: Locations of identified features found during the stream class assessment.