Triple Point Resources
Existing Freshwater Environment

Fischells Salt Dome Energy Project

March 2026

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Triple Point Resources Limited

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March 2026

Prepared for

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Triple Point Resources

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Table of Contents

List of Tables

List of Figures

Executive Summary

Triple Point Resources Ltd. is proposing to develop the Fischells Salt Dome Energy Project on the west coast of Newfoundland. WSP Canada Inc. (WSP) has completed a desktop study to describe the existing freshwater environment within and near the proposed Project Area. Both regional and watershed-specific information on fish species and habitats likely present has been summarized. The Study area for fish and fish habitat included the two key watersheds associated with the Project Area: Fischells Brook and Barry Brook. The Fischells Brook watershed spans an area of approximately 370.8 km^2 and is listed as a scheduled Atlantic salmon river through Fisheries and Oceans Canada, and available literature and air photo interpretation confirms the presence of aquatic habitat suitable for various life stages of key fish species: Atlantic salmon, brook trout, American eel, and banded killifish. Barry Brook is approximately 10% the watershed size of Fischells Brook, estimated at 30.5 km^2 and is not a provincially scheduled Atlantic salmon river. Given its small overall size and heavy vegetation, air photo interpretation of habitat types present was not possible; however, it has been noted in previous reports to have Atlantic salmon present. Therefore, it is assumed that it contains suitable habitat for the same species included in Fischells Brook. However, the overall drainage size would suggest that most suitable habitat would be contained in the lower reaches of the main stem as estimated low flow conditions in winter and summer may limit habitat suitability in the upper head waters and tributaries.

Of the species in the region, American eel and banded killifish have species at risk designations. American eel is not listed under the federal Species at Risk Act (SARA) but is listed as vulnerable under the NL Endangered Species Act (NL ESA). Banded killifish are listed as a species of special concern under the federal SARA and as a vulnerable species under the NL ESA.

Wetland characterization and quantification within the Project Area was completed using existing databases and mapping. Wetland areas are very abundant and widely distributed within the Study area and the overall wetlands within the general Project Area was estimated at 4.4 % of that characterized.

1. Introduction

Triple Point Resources (TPR) is proposing to construct and operate the Fischells Salt Dome Energy Project, an underground energy storage and generation facility located in the Bay St. George area of Western Newfoundland.

WSP Canada Inc. (WSP) has provided this desktop study that describes the freshwater environment within and near the Project Area, in support of the environmental assessment (EA) registration for the proposed Project, the primary components of which include (**Figure** 1-1):

1. Associated infrastructure, to be located just north of the Trans-Canada Highway;
2. Facility on the opposite side of the Trans-Canada Highway;
3. Transport of seawater from St. George's Bay for use in the solution mining process, and possibly for the eventual disposal of produced brine; and
4. Bottom Brook terminal station.

LEGEND

- MAIN FACILITY
- TRANSMISSION LINE
- WIND FARM

0 2,000 4,000 8,000

1:225,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS DATA PROVIDED BY CLIENT {TRIPLE POINT RESOURCES}
2. BASE MAP: SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
3. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
TRIPLE POINT RESOURCES FISCHELLS SALT DOME ENERGY PROJECT

TITLE
OVERALL PROJECT LAYOUT

CONSULTANT

wsp

YYYY-MM-DD	2026-04-01
DESIGNED	----
PREPARED	RRD
REVIEWED	SG
APPROVED	----

PROJECT NO.	CONTROL	REV.	FIGURE
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2. Study Area

The study area for the freshwater desktop study included all waterbodies and drainages within and near the proposed Project Area. As shown in **Figure** 1-1, this included Fischells Brook located to the south of the project as well as a smaller stream to the north named Barry Brook.

The study area for wetlands includes the Fischells and Barry Brook watersheds in which the majority of Project facilities are located, plus the transmission line to Bottom Brook Converter Station within a 1 km buffer.

The habitat and species characterizations and distributions that follow are based on the overall Project Area, which is an area that encompasses the planned (and alternative) Project components and activities as defined in the current stage of Project planning and design (**Figure** 1-1). Note that these are overall and somewhat conservative “polygons” that fully encompass the planned elements of the Project as currently defined. The actual on-the-ground “footprints” covered by each component will be determined once final siting and design work is complete – and will therefore be less than these larger overall study areas.

3. Methods

Fish and fish habitat characteristics, including wetlands, were estimated in the study area using a variety of methods. Since field surveys were not conducted, these methods included consolidation of information in existing literature from the region as well as specific watersheds, when available. It also included GIS analysis using available databases and imagery to define watershed and river-specific habitat characterizations to the extent possible.

3.1 Existing Data Review and Incorporation

A detailed literature review was completed through the Memorial University of Newfoundland (MUN) and University of New Brunswick (UNB) online library services. Queries related to existing documents included searches for data on fish and fish habitat within the larger western Newfoundland ecoregion, with more specific searches then completed on relevant nearby areas (e.g, Bay St. George area, Fischells Brook, Barry Brook, etc). Local contacts that were known to conduct both habitat and fish assessments in the area were also contacted to request any additional unpublished data or reports that might not be readily available in the published literature. These included reports from Dr. Rex Porter (retired DFO) and the Data Hub for the Federation for the Conservation of Atlantic Salmon (FCAS).

3.2 Geographic Information System (GIS) Analysis

Existing digital elevation model (DEM) data and the associated topographic data was extracted from Natural Resources Canada's open-source digital data geodatabase to create a mosaic of the general Fischells Brook and Barry Brook habitat composition, surrounding ecosystems and surrounding habitat layout. The watersheds were digitally delineated within GIS using the ArcGIS map package, along with compatible GeoHMS Hydrology tools, which compare elevations among adjacent pixels to determine the upper boundary of a watershed elevation. The completed watershed boundary was used for subsequent measures of habitat, hydrology, activities within the watershed, and access.

3.3 Stream Hydrology

To get an understanding of the potential flow conditions within Fischells and Barry Brooks and how they might define aquatic habitat conditions such as typical high flows and low-flow periods, an estimate of the mean annual hydrology was completed. Both Fischells Brook and Barry Brook are ungauged drainages within the Island of Newfoundland, therefore, no site-specific historic or real-time measurements of streamflow are available. However, the Highlands River (Station # 02ZA002) has been recording discharge since 1982 (Water Survey of Canada 2022). The Highlands River station is located an estimated 22 km from the Project Area and has an upriver watershed drainage of 72.0 km^2. Using this available data and the watershed delineation based on GIS, a pro-rated general estimate of mean, minimum and maximum monthly flows have been generated for Fischells and Barry Brooks. For this pro-

rating method, it is assumed that precipitation and other watershed characteristics are similar enough to provide a general indication of hydrology within Fischells and Barry Brook.

3.4 Aquatic Habitat Delineation and Characterization

Development throughout the Fischells and Barry Brook watersheds have been relatively limited, with only a few crossings along the Trans-Canada Highway and limited land development outside the confluence of Fischells Brook with Bay St. George where the community of Fischells is located. As a result, little literature is available regarding habitat within the river systems, and much of the habitat characterization has been completed using various methods of remote sensing, including DEM analysis and aerial photograph interpretation. The overall goal is to characterize the general aquatic habitat within the watersheds in the general area of the proposed project.

3.4.1 Habitat Delineation

An estimate of the aquatic habitat within both Fischells Brook and Barry Brook was completed using satellite and air photo analysis. Analysis was conducted using classification methods successfully used on previous habitat assessments where linear corridors and crossings were completed to characterize habitat types representative of the respective rivers. Relevant GIS applications and software such as the Spatial Analyst extension in ArcMap were applied to derive additional information, including the gradient of the stream and the watershed area. The stream gradient provided morphological information that assisted in the classification of stream habitat types. Using the GIS database, air photo interpretation was completed on the visible river section within both Fischells Brook and Barry Brook to characterize potential fish habitat types. Characterization of each river section followed the DFO riverine methodology prescribed for coarse level assessments as outlined in McCarthy et al. (2007). The delineation used flow morphology to differentiate the various stream reaches. The main stem of Fischells Brook characterization was limited to the habitat below an identified complete obstruction approximately 34 km upriver from the mouth because the Project footprint is entirely located below this location. It is therefore assumed that all habitats upstream would not be within any zone of potential interaction.

3.4.1.1 Flow Morphology

Flow morphology was classified using slope, dominant visible substrate and surface water conditions as well as the imaging itself. Morphology classifications include rapids, riffle/run, flat/steady or discontinuous (**Table** 3-1).

For example, calm water, such as that associated with a flat/steady, is typically dark in colour and smooth in appearance. As water velocity and/or the gradient increases, the surface of the water appears dark with white “spots” where larger substrate or standing waves are present, suggesting a riffle/run. Progressively increasing water velocity and gradient causes the water surface to appear textured with increasingly larger amounts of white on the image, suggesting rapids.

Table 3-1: Flow morphology descriptions

Category	Code	Name	Description
Flow Morphology	RA	rapid	Large amount of white water
	RI	riffle/run	Some white water visible – little areas of white mixed with black (calmer water)
	FL	flat/steady	No white water – black and calm
	FA	falls	Large amount of white water and bedrock
	DS	discontinuous	Discontinuous stream – unable to follow entire stream, disappears within vegetation

3.4.2 Habitat Characterization

Once each river section was delineated based on coarse assessment, a subset of each identified habitat type was measured for specific habitat attributes related to stream wetted width, channel width, and adjacent riparian vegetation to further understand the features and characteristics. These habitat characteristics provide information on the various habitat types which can be utilized during various life stages of fish. ArcGIS applications and software such as the Spatial Analyst extension in ArcMap were applied to derive additional information, including the gradient of the stream and the watershed area. The stream gradient provided morphological information that assisted in the classification of stream habitat types. A subset of at least ten (10) stream reaches of each habitat type delineated were further characterized.

Descriptions of the parameters (flow morphology, dominant substrate, wetted width, channel width and riparian vegetation) and the classifications included in the interpretation and database for each crossing were measured and summarized.

3.4.2.1 Dominant Stream Substrate

Dominant stream substrate was characterized using the available air photos/imagery. A total of three classifications were utilized: 1) course 2) medium and 3) fine, all within the nearshore zone (depth of water penetrable by light) (**Table** 2).

Table 3 Dominant substrate classifications

Category	Code	Name	Description
Dominant Substrate Type	LC	coarse	>50 percent boulder
	LM	medium	>50 percent rubble/cobble
	LF	fine	>50 percent gravel/sand/silt/mud

The classification of each stream reach was based on the substrate size class that constituted greater than 50 percent of the total visible substrate coverage. Coarse consisted of substrate greater than rubble in size (boulder and bedrock). This substrate type was distinguishable/visible on imagery as broken water that moves around boulders and breaks the surface. White water may also be visible around the substrate, which provides a method of measuring the width of the substrate. Medium substrate consists of rubble and cobble size classes. This class can also generally be distinguished on imaging but will have limited white/visible water (unless the slopes are quite large). Generally, it is difficult to distinguish between the finer substrate classes (e.g., gravels, sand, silt etc.) since these finer substrates often appear uniform. Typically, finer substrates will not break the water's surface; therefore white water is not present.

3.4.2.2 Wetted Width

The wetted width of a representative subset of habitat locations were measured using the measuring tool within the software and was defined as the perpendicular distance (m) between the shoreline at each selected area. These values were used to provide a general description of stream width by habitat type and to estimate the quantity of fish habitat by type.

3.4.2.3 Channel Width

The channel width of a representative subset of habitat locations were measured, as the perpendicular distance (m) between the visible riparian vegetation (again, by means of the measuring tool within the software) at each area selected.

3.4.2.4 Riparian Vegetation

The riparian area is the area of land adjacent to the stream. It is a transition zone between the aquatic and upland areas and is typically comprised of distinct vegetation types such as smaller and thicker deciduous shrubs and trees.

3.5 Fish Species and Abundance

The fish species, both confirmed and believed to be likely present within the watersheds, have been determined from both regional and site-specific literature as well as a review of the existing aquatic habitat types characterized. Each species, including potential presence of Species-at-Risk (SAR) are described by those life stages requiring freshwater habitat. The confirmation or likelihood of each species utilizing the aquatic habitat within the study area is provided in each species description.

3.6 Wetland Habitat Characterization

Wetland mapping has been developed for the Project Area using the existing national wetland inventory which was produced by computer modelling of satelite data. The Canadian Wetland Inventory Map (3rd Generation) presents wetland classes (bog, fen, swamp, marsh, open water) at a resolution of 10 m blocks with a 90.5% accuracy (Madianpari, et. al., 2021). This is considered adequate detail to characterize the nature of wetlands in the Project Area. The digital wetland mapping is available from the Canadian Open Government website.

The wetland characterization methodology used by Madianpari, et. al. (2021) included computer analysis of multiple satelite data sets (remote sensing), followed by ground truthing to ”train” the data analysis model and to establish level of accuracy. The Project Area is within the Canadian EcoZone ”Boreal Shield East”, which has good accuracy of wetland delineation.

To provide context, wetland areas were also inventoried within the associated watersheds where the major project works are located. This information may be used to understand the relative value of individual wetlands which are intrinsically part of the hydrology of their watersheds in terms of wetland functions.

4. Results

The proposed Project Area is located within the St. Georges Bay subregion of the Western Newfoundland Forest Ecoregion which covers 1521 km^2 to both the north and south of Stephenville. The St. Georges Bay subregion of the the Western Newfoundland Forest is generally marked by terrain that is flat to rolling and contains forested lower slopes of the long range mountains, which lead to large plateau bogs. Forests in the subregion are diverse in terms of vegetation, wildife and avifauna. Forests in the area are primarily composed of balsam fir and wood ferns; wildlife in the region includes moose, mink, showshow hare, lynx, black bear, red fox, beaver, muskrat and otter. Avifauna includes several species of raptors, songbirds and shorebirds and marine species typical to the province such as osprey, finches, American widgeon, scoters, black ducks, green winged teal and common terns (PAA 2008).

The for the entire Western Newfoundland Forest Ecoregion, the includes warm summers and cold winters with variable rainfall, depending on proximity to the mountainous terrain within the Ecoregion. Annual rainfall is approximately 1,200 mm with annual snowfall between 2-4 m. Mean daily temperatures are between -5 and -8 ^{o}C in February and between 14 and 16 ^{o}C in July (PAA 2008).

4.1 Regional Geology

A summary of the regional and Project Area geology is provided by Gemtec (see GEMTEC 2026). A general summary is provided below from that Prelimianry Baseline Hydrogeology and Hydrology Study.

Regionally the Project Area is located within a low-lying physiographic region referred to as the Stephenville Lowlands (this unit includes the Port au Port Peninsula, Stephenville area, St. George's Bay Lowlands and Codroy Lowlands). This physiographic region is characterized by a low-lying coastal plain that is bounded by various upland regions, including the Lewis Hills and Serpentine Range in the north, the Long-Range Mountains in the east, and the Anguille Mountains in the south.

The Project Area sits at an elevation of approximately 125 m above sea level (masl) and regionally slopes generally gently west to the coast at St. George's Bay in the Gulf of St. Lawrence. Locally, the Project Area straddles the drainage divide between Barry Brook to the northwest towards, and Fischells Brook to the southwest. Higher elevations are present in upland regions southeast of the Project Area and southern side of Fischells Brook, with elevations quickly reaching 200 masl less than 5 km from the Project Area and just 2.5 km south of Fischells Brook. To the southeast maximum elevations of up to 600 masl are observed in the Long-Range Mountains, located approximately 25 km to the southeast.

Surface drainage from the Project Area is expected to follow topography and drain predominantly to the west towards St. George's Bay via Barry Brook and Fischells Brook.

Based on the desktop review completed by GEMTEC (2026), the direction of shallow groundwater flow in the Project Area is assumed to follow topography and surface water flow, which would be to the

northwest predominantly toward Barry Brook to the north and Fischells Brook to the south; however, overall groundwater flows are only inferred at this time.

4.2 Fish Species Within the Region

Using provincial fish resouces such as the *Fishes Occurring in the Fresh Waters of Insular Newfoundland* (Scott and Crossman 1964) and recent research doucments, a list of fish species present in the western Newfoundland region has been identified. Rivers, ponds and lakes in the general area are known to contain brook trout (*Salvelinus fontinalis*), American eel (*Anguilla rostrata*), banded killifish (*Fundulus diaphanus*), Mummichog (*Fundulus heteroclitus*), and Atlantic salmon (*Salmo salar*) (Scott and Crossman 1964; COSEWIC, 2014; COSEWIC 2012). General species descriptions and habitat requirements are provided for each below. Specific information on each specific to the waterbodies within the study area is provided in Sections 4.2.2 and 4.4.3.

4.2.1 Brook Trout

Brook trout are native to eastern North America and widely distributed throughout Newfoundland and Labrador (Scott and Crossman 1964; 1988). They are thought to exist within all Newfoundland freshwater ecosystems (Scott and Crossman 1964). Some brook trout populations may spend their entire life cycle in freshwater, while others are anadromous, spending one or two months feeding at sea in relatively shallow coastal waters within the vicinity of their natal stream (Scott and Crossman 1964; Morrow 1980; Power 1980; Ryan 1988; Scott and Scott 1988). At sea, brook trout often form small schools and have been observed moving within 8 km of their natal river (Scott and Scott 1988).

Within Newfoundland and Labrador, lakes and ponds are utilized for spawning, overwintering, and feeding (Dempson and Green 1985; Cowan and Baggs 1988; McCarthy 1996). Although movements between fresh and salt water can occur throughout the year (O'Connell 1982), peak seaward migration typically occurs in May or June in Newfoundland (O'Connell 1982) and June or July in Labrador (Scruton et al. 1997). Apart from migration to and from the sea, the life histories of both the anadromous and non-anadromous (resident) forms are similar (Scott and Crossman 1964), so for the purposes of this report they are combined.

Raleigh (1982) characterized optimal brook trout riverine habitat as clear, cold spring-fed water; a silt-free rocky substrate in riffle-run areas; an approximate 1:1 pool-riffle ratio with areas of slow, deep water; well vegetated stream banks; abundant instream cover; and relatively stable water flow, temperature regimes and stream banks.

4.2.2 American Eel

American eel is not listed as a federal species at risk but is listed as vulnerable under the NL Endangered Species Act (NL ESA), and threatened by COSEWIC in 2012 due to habitat alteration, hydroelectric development and commercial fisheries (COSEWIC, 2012).

The historical Canadian range for American eel includes accessible freshwater, estuaries and coastal waters connected to the Atlantic Ocean as far north as the English River (near Postville, Labrador). The continental shelves are utilized by juveniles and silver eels during migrating to and from their spawning grounds in the Sargasso Sea. Preferred freshwater habitat can be found in lacustrine and riverine waters extending down to at least 10 m depth. Eels generally do not demonstrate consistent preferences for habitat type, cover, substrate, or water temperature in riverine environments. They are primarily benthic, using substrates, woody debris and submerged vegetation for protection and cover and commonly overwinter in areas with muddy bottoms (COSEWIC, 2012).

The main threats to this species are largely in freshwater systems including habitat degradation and fragmentation, food web changes, fisheries and chemical and biological contamination (COSEWIC, 2012)

4.2.3 Banded Killifish

Banded killifish are listed as a species of special concern under the federal Species at Risk Act (SARA) and as a vulnerable species under the NL ESA. Factors threatening the banded killifish include road construction and maintenance and other industrial activity that results in altered flow regimes and obstructed fish passage (COSEWIC, 2014).

Banded killifish occur along the eastern seaboard from South Carolina to the Maritimes and west through southern Canada to the Red River, Manitoba, and the Yellowstone River in Montana (Scott and Crossman 1998; Scott and Scott 1988). Although widely distributed in the Atlantic provinces, banded killifish have only been reported from a few localities in Newfoundland; in the vicinity of Stephenville Crossing, St. Georges, Freshwater Pond on the Burin Peninsula (Scott and Crossman 1964; Gibson et al. 1984; Scott and Scott 1988; Houston 1990; Scott and Crossman 1998, COSEWIC 2014), and Indian Bay Brook (van Zyll de Jong et al. 1999) and there are no reports of the species occurring in Labrador (**Figure** 4-1). Sargent et al. (2021) conducted additional sampling specific to banded killifish and mummichog and confirmed population of killifish north and south of the Project Area, as shown in **Figure** 4-2. Although thought to be abundant at these locations, suitable habitat along the coast is limited, and the steep gradient of the rivers may constitute barriers to immigration to inland sites (Gibson et al. 1984). Temperatures of 21-23°C appear to be necessary for killifish reproduction (Carlander 1969; Houston 1990). It has been suggested that the cooler waters of Newfoundland may limit their distribution and further immigration to the island is unlikely due to either a lack of suitable habitat or thermal barriers to dispersion (Houston 1990). Due to river gradient, it is likely the only potential for occurrence within the project vicinity upriver of coastal areas would be due to historical presence.

The banded killifish, although euryhaline and salinity tolerant, is considered a freshwater resident (Houston 1990; Scott and Scott 1998). They are most abundant in shallow waters of clear glacial lakes with sluggish currents, sand, gravel, or detritus covered bottoms, and abundant vegetation (Smith 1979; Trautman 1981; Cooper 1983; Scott and Crossman 1998).

The preferred spawning areas are riverine habitats, selected by the males include quiet shallows of weedy pools (Scott and Crossman 1998). Other riverine habitat includes shallow areas, in depths of 0-1 m that include gravel, cobble and sand substrates (Scott and Crossman, 1998).

Figure 4-1: Distribution of Banded Killifish in insular Newfoundland. Dots represent sites where the species has been observed. Copied from info in COSEWIC 2014.

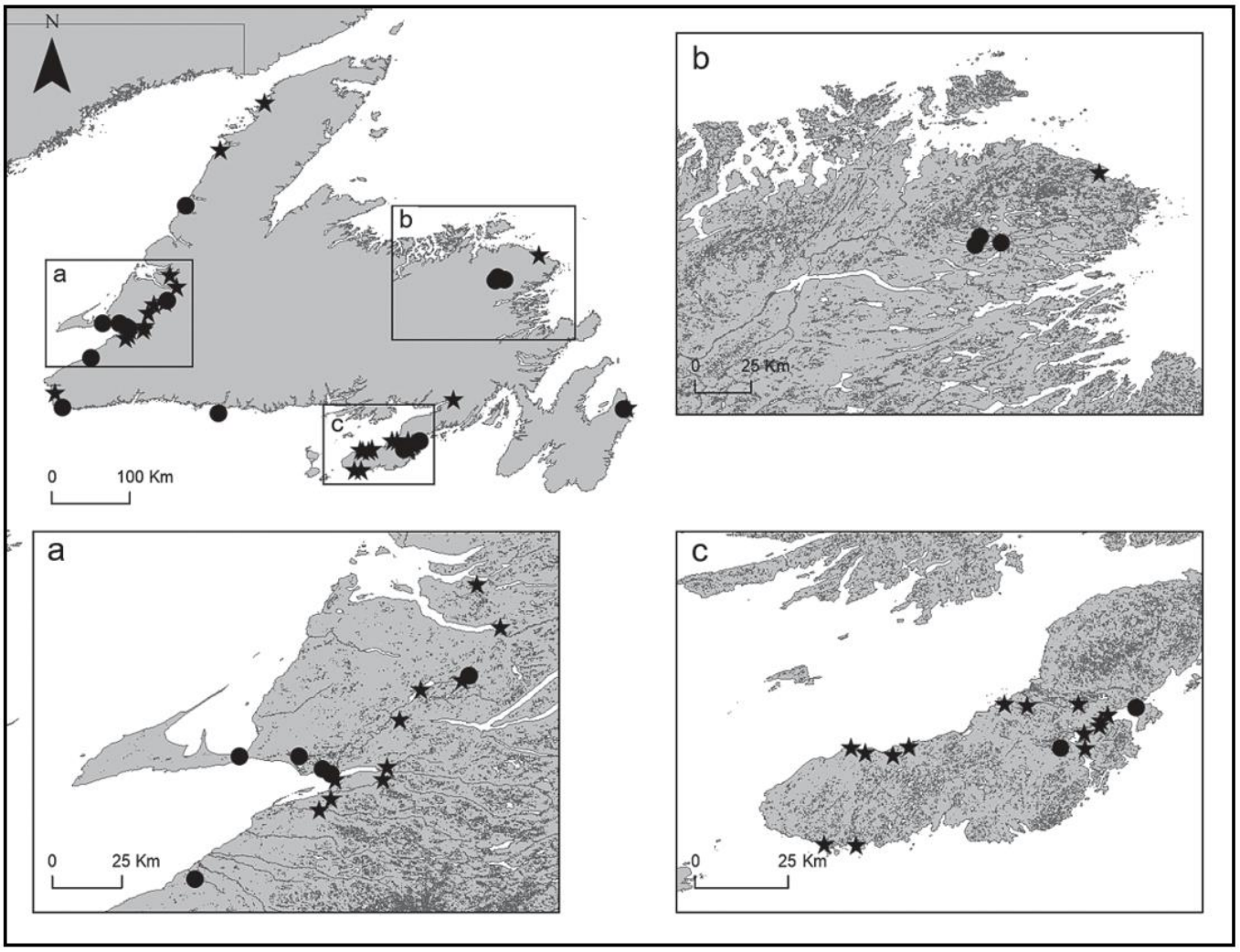

Figure 4-2: Confirmed locations of banded killifish in insular Newfoundland. Stars are locations confirmed through direct sample collection or samples provided by residents during study. Circles indicate locations confirmed by museum and literature records (Sargent et al. 2021)

4.2.4 Mummichog

Mummichog are a small, relatively sedentary fundulid fish that occur in Atlantic coastal and brackish waters from south western Newfoundland (Leim and Scott 1966) to north eastern Florida (Scott and Crossman 1998), including the shore waters of the Maritime provinces to Port au Port Bay (Scott and Crossman 1998) and the Bay of Islands in south western Newfoundland (Dickinson 1974). They are considered a brackish water species with only a few documented freshwater populations with distribution generally restricted to southwester Newfoundland (Scott and Scott 1988). Therefore, they typically occupy saltwater flats, estuaries and tidal areas, particularly around submerged vegetation. Although they can tolerate short exposures to fresh water, prolonged exposures can be lethal (Nead and Buttner

1987). Sargent et al. (2020) completed a focused sampling program for both banded killifish and mummichog and documented populations along the west coast of the Island and in the Bay St. George area (**Figure** 4-3). Populations in the Bay St. George area are located to the north of the proposed project location.

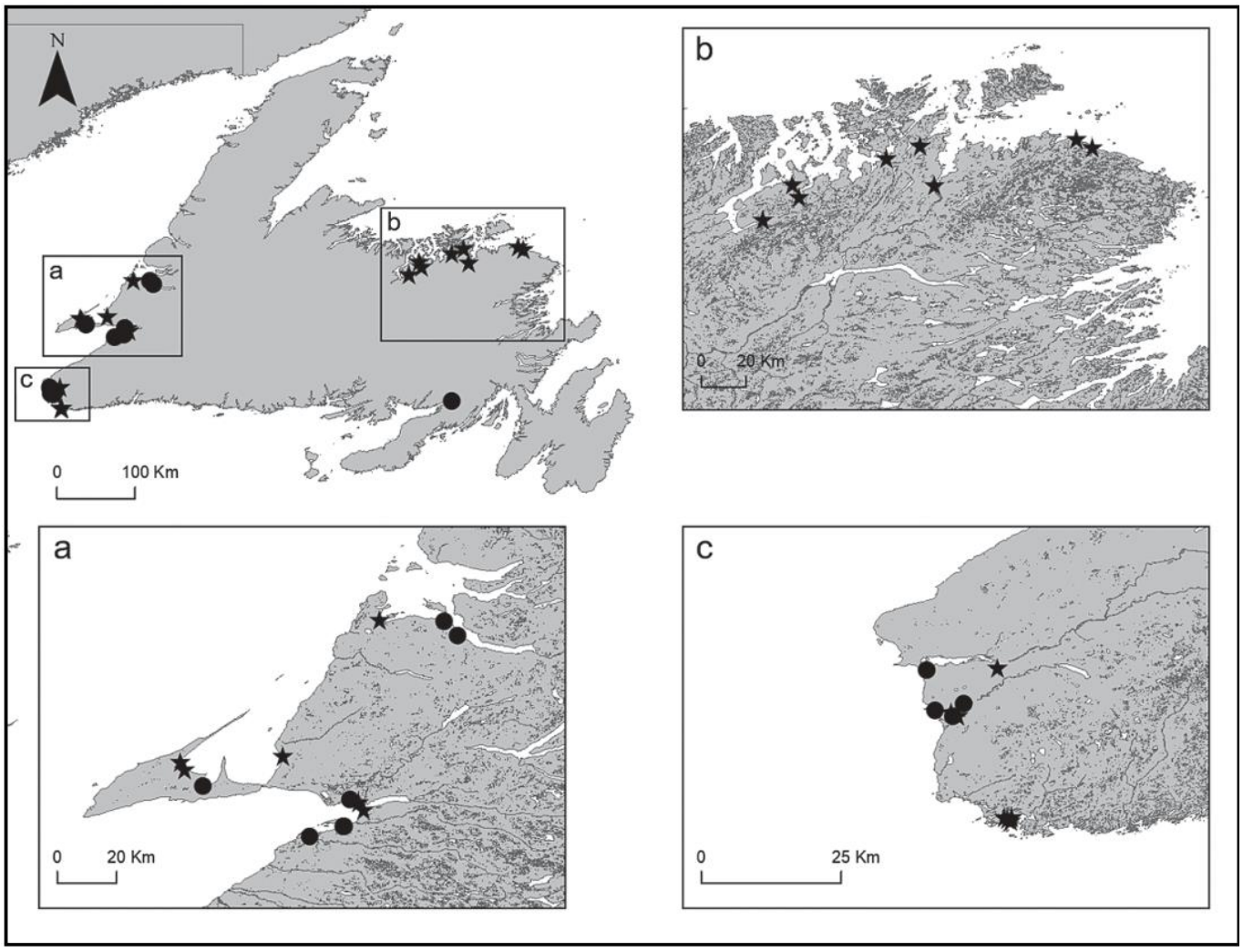

Figure 4-3: Confirmed locations of mummichog in insular Newfoundland. Stars are locations confirmed through direct sample collection or samples provided by residents during study. Circles indicate locations confirmed by museum and literature records (Sargent et al. 2020)

4.2.5 Atlantic Salmon

Atlantic salmon occupy freshwater, estuarine and marine environments and occur in approximately 2,500 rivers flowing into the North Atlantic Ocean. Atlantic Salmon are common throughout eastern Canada, with 394 known Atlantic Salmon rivers located throughout the province of Newfoundland and Labrador (DFO, 2025).

Atlantic Salmon habitat use changes throughout its various life stages. Spawning and initial growth as parr occurs in the freshwater environment and prior to smolting, they may occupy both freshwater and estuary environments (Cunjak, 1992). Once juvenile salmon become smolt, they migrate to the marine environment where they will inhabit coastal areas and feed before migrating to the open ocean (Scott & Scott, 1988). Diet for Atlantic Salmon will very throughout different life stages, changing from invertebrates in early freshwater stages to plankton such as euphausiids, amphipods and decapods in the estuary and marine stages. When larger in the marine environment, they will feed on herring, alewives, smelts, capelin, small mackerel, sand lance and small cod species (Scott & Scott, 1988) . The lifespan of a typical Atlantic Salmon rages from 4-8 years and maximum ranges of 12-14 years (COSEWIC, 2010). Adult Atlantic salmon will return from the marine environment to their natal river to spawn.

Fischells Brook is a provincially scheduled Atlantic salmon river where Atlantic salmon spawn and grow in the accessible river environments, migrate to the marine environment to grow and mature, and return to spawn. While specific information on the population size and health of Atlantic salmon in Fischells Brook has been completed in the past, recent information is lacking. However, monitoring of salmon populations occurs at various reference rivers to provide indications of overall regional health of salmon stocks.

It is known that historically, the Bay St. George rivers have had high production of multi-year salmon; however, overall numbers have been low since at least the early 1990s (Reddin & Mullins, 1994). A status update of Atlantic salmon stocks in specific rivers within the Bay St. George area completed in 1992-94 indicated that stocks had declined from the high numbers in the 1960s and 70s and that most did not meet their target egg deposition targets, including Fischells Brook. The estimated egg deposition target for Fischells Brook is 3.6 million eggs calculated as fluvial area x 2.4 eggs/m^2 and lacustrine area x 368 eggs/ha (DFO, 2009). Returns to the river between 1998 and 2008 ranged from 277 adults in 1998 to 2,276 adults in 2000. Egg deposition targets were achieved in 1999, 2000, and again in 2005; however, both 2004 and 2008 also had 99% of the target met (DFO, 2009; (Porter & Clarke, 2000). Since this time, the Bay St. George stocks have been monitored using representative rivers with counting fences.

The status of Atlantic salmon stocks for the province have been monitored by DFO for many years using representative rivers within most of the 15 Atlantic salmon management areas, known as SFAs 1–14B, in NL (**Figure** 4-4). Within these areas there are 407 rivers known to contain wild Atlantic Salmon populations that are characterized by differences in life history traits, including freshwater residence time, timing of return migration, age at first spawning, and the extent of ocean migration (DFO 2025). The Bay St. George Rivers, which include Fischells Brook and Barry Brook are within SFA 13. Harry's River is

monitored for returning Atlantic salmon and would therefore be the river most representative of the populations in the Bay St. George SFA.

The latest DFO (2025) stock assessments for 2024 uses two reference points for managing fisheries stocks: Limit Reference Point (LRP) and Upper Stock Reference (USR). The statuses of NL Atlantic Salmon populations are assessed relative to these two reference points, defined by estimated egg depositions (DFO 2015). Conservation egg requirements for Atlantic Salmon were previously established for individual rivers in Newfoundland (SFAs 3–13) based on 2.4 eggs per m^2 of river rearing habitat and 368 eggs per hectare of lake habitat (O'Connell and Dempson 1995; O'Connell et al. 1997; Reddin et al. 2006). The LRP and USR for Atlantic Salmon in the NL region are set at 100% and 150% of the previously defined, river-specific conservation egg deposition rate, respectively (DFO 2024).

Estimates of egg depositions by small and large salmon spawners on monitored rivers in 2024 were derived and compared to each river-specific LRP and USR to designate a stock status zone. Populations with estimated egg depositions below the river-specific LRP are in the Critical Zone, populations with estimated egg depositions above the USR are in the Healthy Zone, and those between the LRP and USR are in the Cautious Zone.

Adult salmon returns to Harry's River in 2024 were down relative to the average returns during the previous generation and previous three generations (a generation is equivalent to six years in Newfoundland). In 2024, the number of small salmon (<63 cm) returning was 1,395 and showed an overall decrease of 27 and 47 % for one and three generations, respectively. Large salmon (>63 cm) numbers were counted at 258 in 2024 which was an overall decrease of 30 and 40 % from the last one and three generations, respectively. These numbers of returning salmon were estimated to equate to just 49 % of the LRP for egg deposition, indicating that stock status zone in 2024 was Critical.

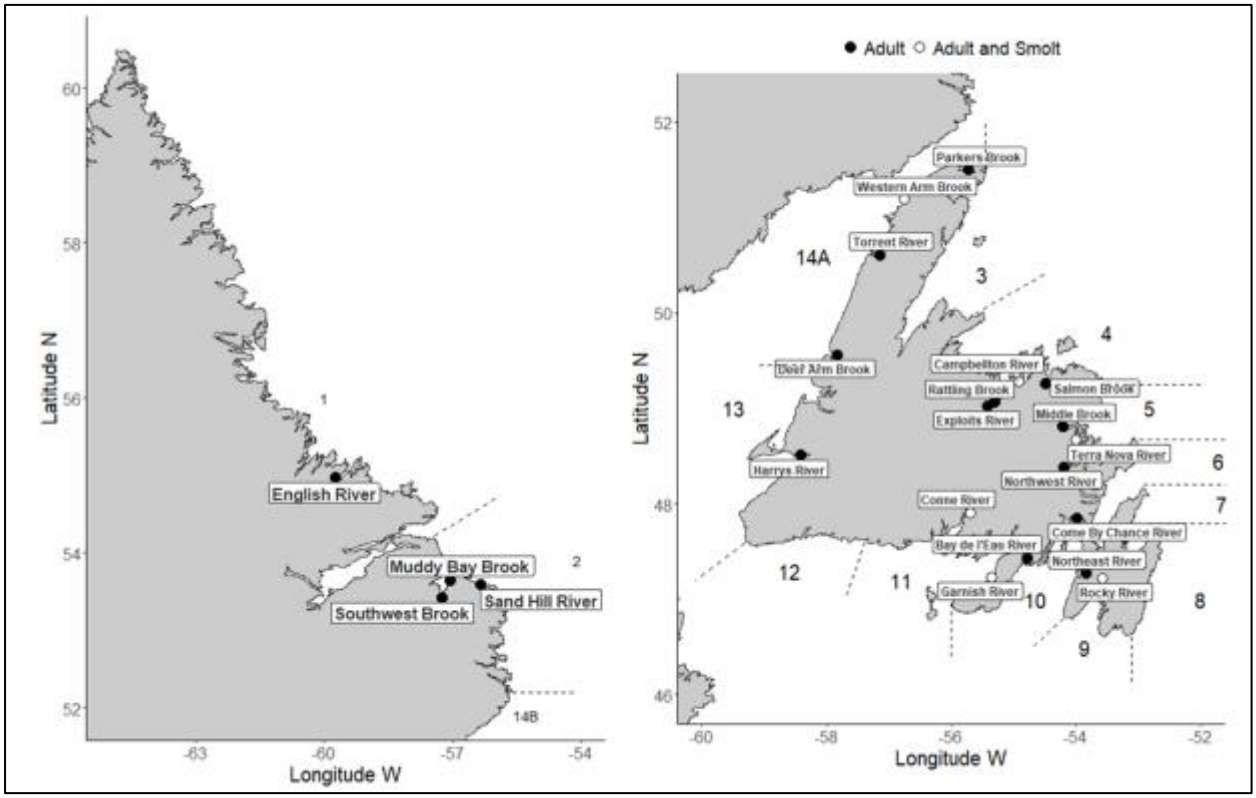

Figure 4-4: Map of the NL Region showing Salmon Fishing Areas (SFA) 1-14B and rivers where the number of out-migrating salmon smolts and/or returning adults were counted in 2024. Dashed lines indicate approximate SFA boundaries (CSAS 2025)

The 2010 COSEWIC Assessment and Status Report on Atlantic salmon outlines a total of 16 Atlantic salmon populations (COSEWIC 2010a). Each of these populations has been delineated in terms of natal river destination within Designatable Units (DU) (**Figure** 4-5). The general criteria used by COSEWIC to recognize DUs, and therefore populations, is groups of individuals likely exhibiting unique adaptations that are a component of the species' biodiversity (COSEWIC 2010). Summary information regarding the Atlantic salmon population within each DU and associated conservation status is provided primarily from COSEWIC (2010) with updates since the COSEWIC assessment.

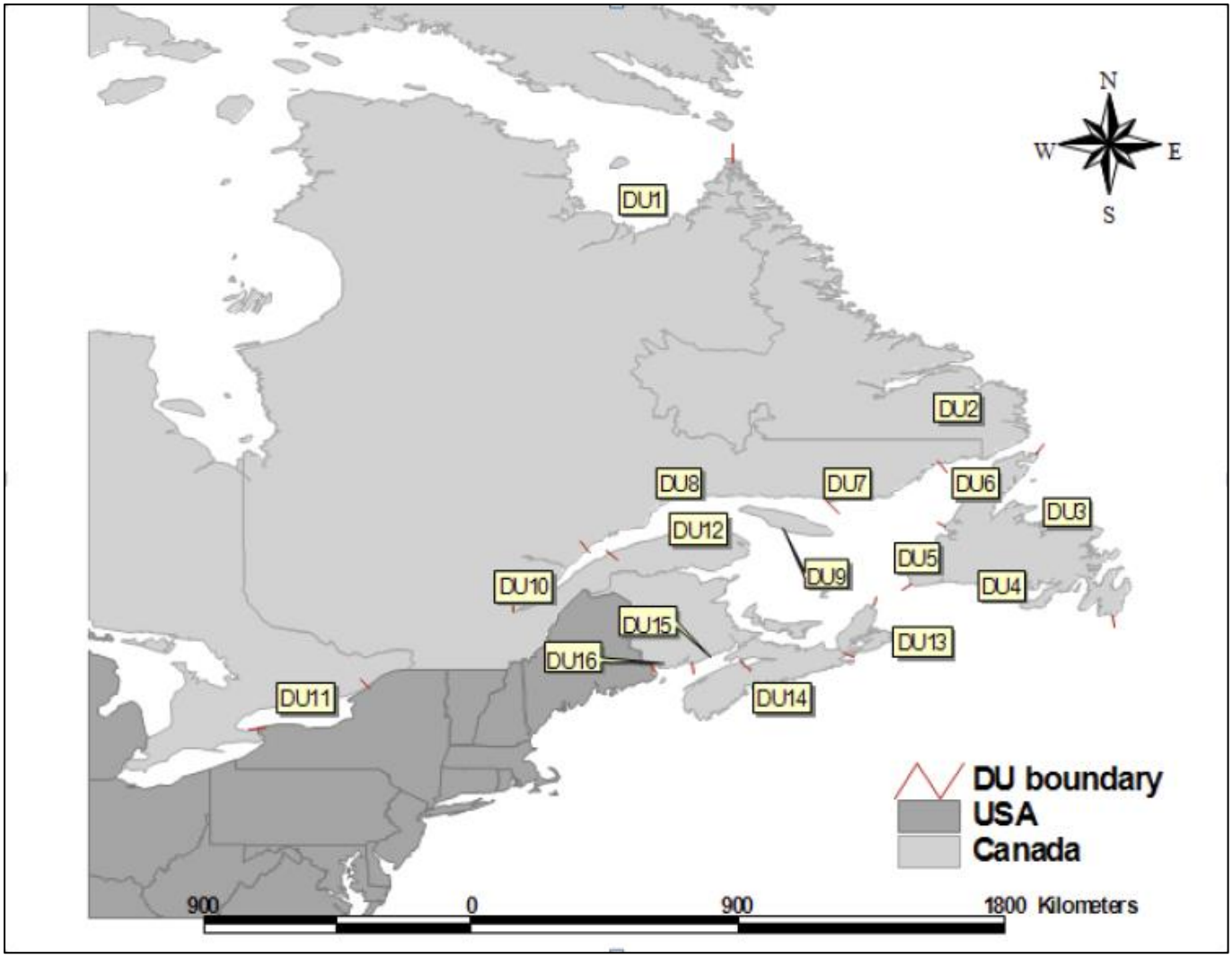

Figure 4-5: Designatable Units (DU) for Atlantic Salmon populations in eastern Canada (COSEWIC 2010)

The Bay St. George Rivers all fall within salmon population DU5 (Southwest Newfoundland – Bay St. George Region). The Southwest Newfoundland population is currently considered not at risk by COSEWIC (COSEWIC 2010) and is not listed under SARA (Species at Risk Public Registry 2018). The DU extends from Cape Ray northwards along the west coast of Newfoundland to approximately 40º 24'N, 58º 15' W. This DU is the only region in insular Newfoundland with large numbers of MSW salmon and minimal lacustrine (lake) habitat. Genetic comparisons of populations in this region with those in the rest of the Island suggest the populations here represent a distinct group, but that within the region gene flow appears to be higher than in DUs 3 and 4. DU5 also has the youngest mean smolt ages (3 years) on insular Newfoundland and the lowest proportion of female grilse (COSEWIC 2010). DU5 is separated from mainland DUs by the Gulf of St. Lawrence and genetic data suggest low levels of gene flow between insular populations and the mainland (COSEWIC 2010).

4.3 Fischells Brook

As stated previously, Fischells Brook is a scheduled salmon river (#142) in the DFO listings of provincial Salmon Fishing Area (SFA13). It's river mouth flows into Bay St. George at 373538.05E 5353475.1N (Zone 21), near the community of Fischells. Based on GIS analysis, the watershed drainage is estimated at 370.8 km^2. Meanbasin width is estimated at 5.8 km and maximum basin relief in elevation of 594 m (Porter et al. 1974).

The general geology of the area is approximatly half Mississipian sedimentary with the remainder consiting of gneiss, basic intrusive rocks and acidic intrusive rocks (Porter et al. 1974). The overall estimated length of the main stem of the river is 48.3 km with water depths in the upper reaches between 0.2-0.6 m and all substrates, except bedrock, well distributed throughout the system.

Porter et al. (1974) identifies a complete obstruction approximately 21 km upriver from the mouth consisting of a falls 5.8 m in height; however, based on image analysis, there is a small falls approximately 31.1 km and a large falls approximately 34 km upriver from the mouth. It is assumed that the obstruction to upstream Atlantic Salmon migration identified by Porter et al. (1974) is the second falls and that the distance reported was straight linear distance from the river mouth and not "river distance". While the available spawning and rearing habitat below the obstruction was not quantified by Porter et al. (1974), the quantity of habitat unavailable upstream of the falls was estimated to contain 597,656.4 m^2 (5,976.6 habitat units) of rearing habitat and 19,395.2 m^2 (194.0 habitat units) of spawnign habitat. This upriver area would be used by any brook trout or landlocked Atlantic salmon (ouananiche) in the system.

Water quality information is limited; however, Porter et al. (1974) had the following data from October 1972:

- pH 6.10
- Total Alkalinity 4.0 ppm
- Total Hardness 12.0 ppm
- Turbidity 3.5 JTU
- Conductivity at 25 ^oC 35.0 µmhos/cm
- Calcium 2.0 ppm

4.3.1 Pro-Rated Hydrology

Based on the estimated watershed drainage area from GIS (370.8 km^2) (**Figure** 4-6) and the measured flows from the gauge on Highlands River a pro-rated mean annual hydrograph can be generated. **Figure** 4-7 shows the mean daily flow for Fischells Brook based on mean daily flows between 1982 and 2024. As shown, the peak flows would be encountered during the spring freshet when snow pack and ice is melting. A second, smaller peak is observed in the late fall, prior to freeze up. The lowest flows are generally in mid-summer (August) and some lower periods throughout the winter as preciptiation is typically in the form of snow.

LEGEND

- FISCHELL BROOK WATERSHED
- PLANNED PROJECT LAYOUT

0 2,500 5,000 10,000

1:280,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. BASE MAP: EARTHSTAR GEOGRAPHICS, SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
FISCHELLS SALT DOME ENERGY PROJECT

TITLE
FISCHELLS BROOK WATERSHED DELINEATION

CONSULTANT
wsp

YYYY-MM-DD	2026-03-31
DESIGNED	----
PREPARED	RRD
REVIEWED	GB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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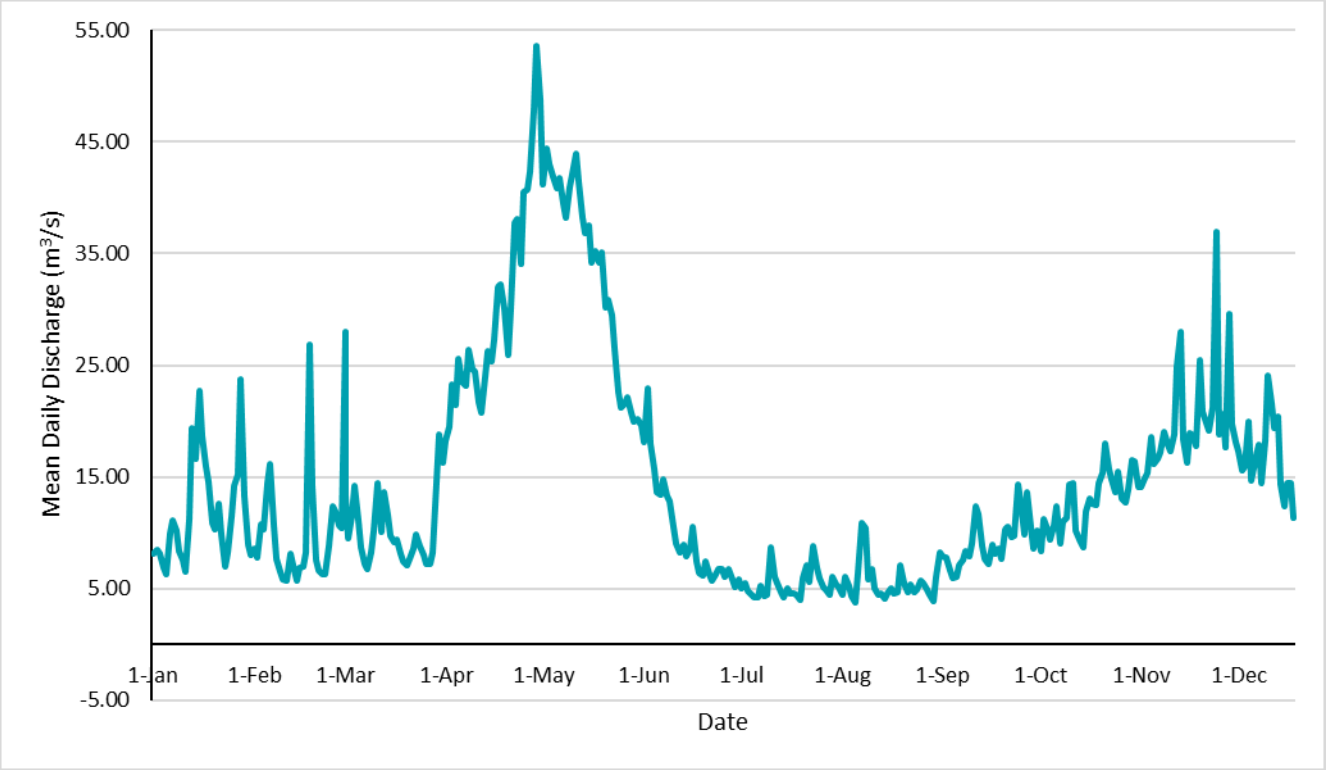

Figure 4-7: Estimated Mean Annual Flow (MAF) based on pro-rated flows from Highlands River station (Station # 02ZA002)

4.3.2 Fish Habitat Quantity and Characterization

Air photo interpertation was used to classify habitat throughout Fischells Brook main stem, as far inland as the identified obstruction 34 km upriverl. Imagery used for interpretation was cross referenced with hydrology monitoring stations throughout the region, and flows within the imagery was determined to be consistent with moderate water levels, near the mean annual flow.

A total of 30 separate habitat reaches were identified witin the 34 km surveyed; all consisting of either flats/steady, riffle/run, falls, or rapid habitat types. A total of 22 transects were selected to obtain addtional representative measurements of habitat characteristics (**Figure** 4-8; **Table** 4-1).

A total of 16.0 km (6,700.68 habitat units) of riffle/run, 16.8 km (14,339.16 habitat units) of steady/flatt, 1.0 km (307.69 habitat units) of rapid, and 0.2km (21.6 habitat units) of falls habitat was delineated and quanitified below the complete obstruction at km 34. Most of the habitat contained course substrate material of cobble, rubble, and boulders.

LEGEND

- TRANSECT LOCATION
- FISCHELL BROOK WATERSHED
- PLANNED PROJECT LAYOUT

0 2,500 5,000 10,000

1:280,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. BASE MAP: VANTOR, EARTHSTAR GEOGRAPHICS, SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
FISCHELLS SALT DOME ENERGY PROJECT

TITLE
AIR PHOTO INTERPRETATION HABITAT TRANSECT LOCATIONS, FISCHELLS BROOK

CONSULTANT

wsp

YYYY-MM-DD	2026-03-31
DESIGNED	----
PREPARED	RRD
REVIEWED	GB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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Table 4-1: Survey Information from Air Photo Interpretation at Select Transects

River Reach ID	Observation Altitude	Zone	Northing	Easting	River Section (m)	Length (m)	Channel Width (m)	Stream Width (m)	Dominant Substrate	Flow Morphology
FB01	596	21 U	5352980.00 m N	373486.00 m E	0-205	205	174.0	162.6	Moderate	Steady/Flat
FB02	596	21 U	5352915.00 m N	373561.00 m E	205-300	95	136.2	135.9	Moderate	Riffle/Run
FB03	596	21 U	5352860.57 m N	373649.21 m E	300-420	120	102.8	94.0	Moderate	Steady/Flat
FB04	596	21 U	5352834.91 m N	373962.74 m E	420-770	350	38.0	38.0	Coarse	Riffle/Run
FB05	596	21 U	5352799.48 m N	374185.94 m E	770-850	80	54.0	45.0	Moderate	Steady/Flat
FB06	596	21 U	5352518.30 m N	374353.34 m E	850-1350	500	77.0	32.0	Coarse	Riffle/Run
FB07	596	21 U	5352269.26 m N	374303.81 m E	1350-1510	160	62.0	43.0	Coarse	Steady/Flat
FB08	596	21 U	5352245.86 m N	374520.21 m E	1510-2010	500	41.0	22.0	Coarse	Riffle/Run
FB09	596	21 U	5352310.40 m N	374742.20 m E	2010-2145	135	67.0	47.0	Coarse	Steady/Flat
FB10	596	21 U	5352249.87 m N	374842.18 m E	2145-2245	100	60.0	50.0	Coarse	Riffle/Run
FB11	596	21 U	5352162.17 m N	374935.31 m E	2245-2400	155	40.0	25.0	Coarse	Steady/Flat
FB12	596	21 U	5352109.19 m N	375083.97 m E	2400-2560	160	58.0	30.0	Coarse	Riffle/Run
FB13	596	21 U	5352118.81 m N	375214.76 m E	2560-2670	110	50.0	23.0	Coarse	Steady/Flat
FB14	596	21 U	5352105.22 m N	375395.68 m E	2670-2900	230	50.0	44.0	Coarse	Riffle/Run
FB15	596	21 U	5351963.22 m N	375438.61 m E	2900-2980	80	53.0	37.0	Coarse	Steady/Flat
FB23	596	21 U	5350578.00 m N	385845.00 m E	10720-15014	4294	36.0	37.0	Coarse	Riffle/Run
FB28	596	21 U	5348463.97 m N	394741.02 m E	31400-33131	1761	290.0	290.0	Moderate	Steady/Flat
FB27	596	21 U	5345457.00 m N	395108.00 m E	31370-31400	30	30.0	10.0	Coarse	Falls
FB29	596	21 U	5343611.00 m N	396297.00 m E	33131-33783	652	22.0	20.0	Coarse	Riffle/Run
FB29	596	21 U	5343560.00 m N	396336.00 m E	33131-33783	652	14.0	11.0	Coarse	Riffle/Run
FB17	587	21 U	5351166.15 m N	376046.66 m E	4011-4315	304	70.7	41.2	Coarse	Rapids
FB20	587	21 U	5350934.20 m N	377590.33 m E	5690-6385	695	63.6	20.4	Coarse	Rapids

Some sections of steady/fall habitat has finer material suitable for salmonid spawning. Rapid habitat was delineated from riffle/run habitat with greater white water present, indicating greater river slope. General habitat summaries are provided in **Appendix** A.

River banks consisted of a combination of coarse unvegetated gravels and balsom fir forests.

Tributaries are relatively narrow (generally less than 2 m in width) and covered by canopy and shadows; therefore, air photo interpretation was not reliable (discontinuous). However, Porter et al. (1974) identified a total of eight tributaries with obstructions in the form of falls and dry riverbeds. All falls were located very close to the confluence with the main stem (i.e., within 05-1.6 km), therefore most of the tributary habitat would not be accessible to anadromous life stages of salmonids. It would; however, be available and likely utilized by resident fish species such as brook trout and American eel.

Tributaries are relatively narrow (generally less than 2 m in width) and covered by canopy and shadows; therefore, air photo interpretation was not reliable (discontinuous). However, Porter et al. (1974) identified a total of eight tributaries with obstructions in the form of falls and dry riverbeds. All falls were located very close to the confluence with the main stem (i.e., within 05-1.6 km), therefore most of the tributary habitat would not be accessible to anadromous life stages of salmonids. It would; however, be available and likely utilized by resident fish species such as brook trout and American eel.

4.3.3 Fish Species Likely Present

Based on historic and available research and survey documents, and the habitat characterization available of Fischells River and Barry Brook, likely fish species within the study area are described below. The description includes whether each is confirmed within the study area or the likelihood of species being within the study area that are not confirmed yet known to be in the region.

4.3.3.1 Atlantic Salmon

Atlantic Salmon are present in the area and utilize Fischells Brook for freshwater portions of their life history. The riverine habitat within the main stem as well as any accessible tributaries would be suitable for anadromous (those that migrate to the ocean to mature) and habitat above obstructions could also be utilized by ouananiche; however, it has not been confirmed that landlocked salmon are within the system.

4.3.3.2 American Eel

Fischells Brook is within known American eel habitat and contains suitable habitat in both lentic and lotic waters within the system for all freshwater life stages, including juvenile rearing and maturing prior to returning to the marine environment to spawn. Given the known ability of juvenile American eels to climb natural obstructions for other fish species, it would be assumed that they can occupy and utilize all habitats within the watershed.

4.3.3.3 Brook Trout

Brook trout are believed to be present in all newfoundland watersheds; therefore, Fischells Brook would provide access to tidal waters, as well as ability to migrate inland for spawning purposes. Both pool and riffle habitat within the Fischells Brook system provides adequate habitat for the species throughout all life stages. It is assumed that any anadromous brook trout would not be able to bypass the natural obstructions within the watershed, but resident brook trout would be throughout the system and could utilize all habitats within the watershed.

4.3.3.4 Banded Killifish

Banded killifish have been documented within St. Georges Bay region and the Fishells brook watershed contains suitable habitat for banded killifish. However, it cannot be confirmed whether they utilize Fischells Brook using the information available.

4.3.3.5 Mummichog

Given the fact that these are a brackish water species with limited ability or tolerance for freshwater conditions, it is highly unlikely that they would occur beyond the river confluence with Bay St. George.

4.4 Barry Brook

Given the small watershed size of Barry Brook, little site-specific information is available. However, with its close proximity to Fischells Brook, it would be assumed that the general geology and water quality would be similar to Fischells Brook (see beginning of section 4.3).

4.4.1 Pro-Rated Hydrology

Based on the estimated watershed drainage area from GIS (30.6 km^2) (**Figure** 4-9) and the measured flows from the gauge on Highlands River a pro-rated mean annual hydrograph can be generated. **Figure** 4-10 shows the mean daily flow for Barry Brook based on mean daily flows between 1982 and 2024. The discharge scale of the graph is the same as that in **Figure** 4-8 (Fischells Brook) to indicate the relative flow differencs betwene the two watersheds. While the pattern of flows would be simialr to Fischells, the volume would be much reduced given the watershed drainage is approximately 10 % of Fischells. As shown, the peak flows would be encountered during the spring freshet when snow pack and ice is melting. Given the watershed size, it would not be unexpected to have minimal flows through the mid-summer and mid-winter periods.

LEGEND

- BARRY BROOK WATERSHED
- PLANNED PROJECT LAYOUT

0 750 1,500 3,000

1:90,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. BASE MAP: SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
FISCHELLS SALT DOME ENERGY PROJECT

TITLE
BARRY BROOK WATERSHED DELINEATION

CONSULTANT
wsp

YYYY-MM-DD	2026-03-31
DESIGNED	----
PREPARED	RRD
REVIEWED	GB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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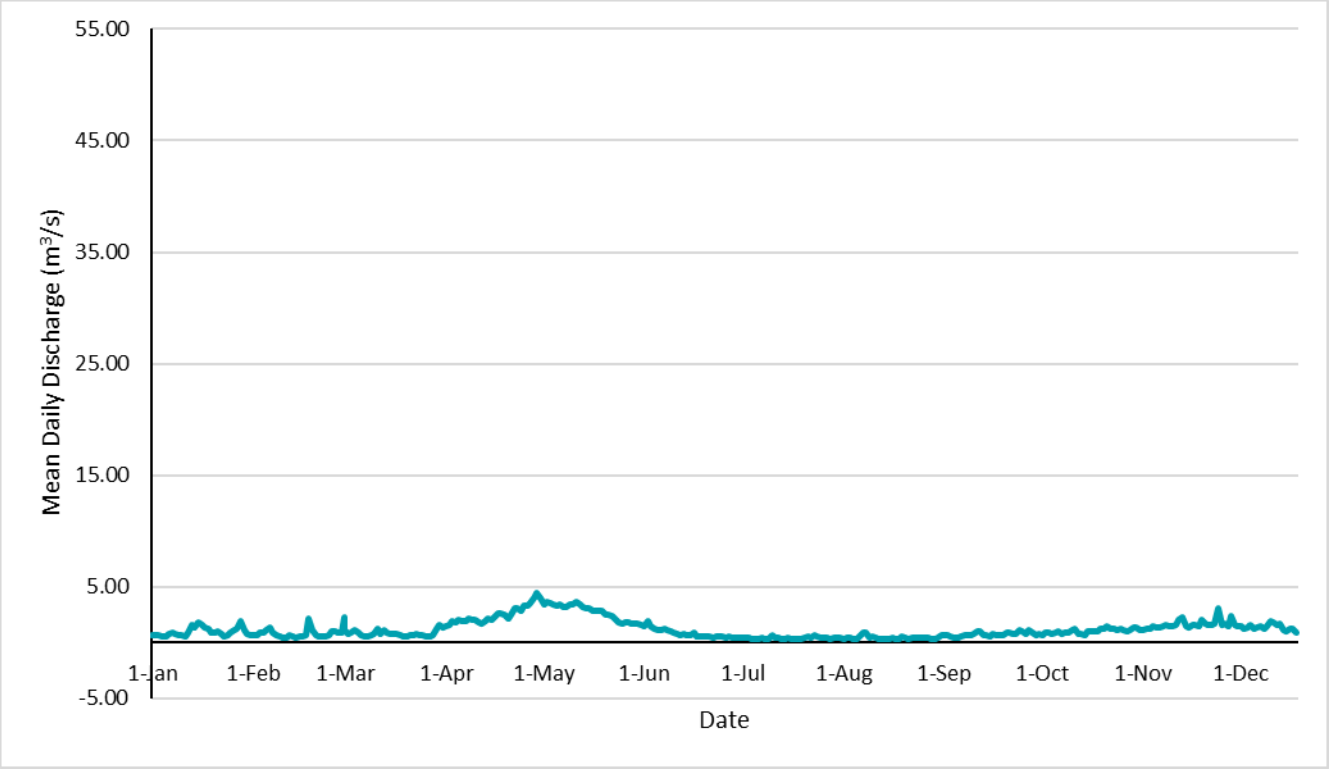

Figure 4-10: Estimated Mean Annual Flow (MAF) based on pro-rated flows from Highlands River station (Station # 02ZA002)

4.4.2 Fish Habitat Quantity and Characterization

Arial photo intpretation of Barry Brook was unavailable due to obstructions including canopy growth and shadows in the imagery available (all discontinuous).

4.4.3 Fish Species Likely Present

Using the same approach used for Fischells Brook, likely fish species within the study area are described below. The description includes whether each is confirmed within the study area or the likelihood of species being within the study area that are not confirmed yet known to be in the region.

4.4.3.1 Atlantic Salmon

Atlantic Salmon are present in the lower portion of Barry Brook as confirmed by Porter et al. (1974); however, it is an unscheduled salmon river within the province. The riverine habitat within the lower main stem would be suitable. Tributaries or reaches further upriver within the main stema are not likely suitable because the lack of large waterbodies would likely limit habitat avaialbility during low flow periods.

4.4.3.2 American Eel

Barry Brook is within known American eel habitat and contains suitable habitat in the lower reaches of the main stem for all freshwater life stages, including juvenile rearing and maturing prior to returning to the marine environment to spawn.

4.4.3.3 Brook Trout

Brook trout are confirmed to be present in all Barry Brook (Porter et al. 1974) and it is assumed that suitable habitat in the lower reaches of the main stem for all freshwater life stages.

4.4.3.4 Banded Killifish

As with Fischells Brook, banded killifish have been documented within the St. Georges Bay region, as stated above, four of ten known populations in the province are located on the west coast of Newfoundland. The Barry Brook watershed meets habitat requirements for banded killifish. However, it cannot be confirmed whether they utilize Barry Brook using the information available.

4.4.3.5 Mummichog

Similar to Fischells Brook, it is highly unlikely that mummichog would occur beyond the river confluence with Bay St. George.

4.5 Species At Risk (SAR)

American eel and banded killifish are designated species at risk within either the provincial and/or federal legislation. Both American eel and banded killifish have not been confirmed but may likely be present in the local watersheds based on habitat availability and known presence elsewhere in the region. Given the Mummichogs relatively low tolerance for freshwater, it is not likely present within the freshwater environment. Table 4-2 provides an overview of the provincial and federal designations of each species likely present within the freshwater environment.

Table 4-2 Fish Species at Risk That May Be Present within St. George's Bay, NL

Species	Location Found	Federal Status – SARA Schedule 1	Provincial Status - NLESA	Source
American Eel (*Anguilla rostrata*)	Newfoundland and Labrador	No Status	Vulnerable	Gov of NL 2006
Banded Killifish (*Fundulus diaphanous*)	Goose Pond, Gravels Pond, Little River, Seal Cove Brook, St. George's River	Special Concern	Vulnerable	DFO 2026; Sargent et al 2020; Gov of NL 2003

4.5.1.1 Legislative and Management Context

The Canadian *Species at Risk Act* (SARA) provides for the protection of species at the national level to prevent extinction and extirpation, facilitate the recovery of endangered and threatened species, and to promote the management of other species to prevent them from becoming at risk in the future. Designations under the Act follow the recommendations and advice provided by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Schedule 1 of SARA is the official federal list of species at risk in Canada. Once a species is listed, measures to protect and recover a listed species are established and implemented, including the development of a Recovery Strategy. Action Plans summarize the activities required to meet recovery strategy objectives and goals, and Management Plans set goals and objectives for maintaining sustainable population levels of one or more species that are particularly sensitive to environmental factors.

Species listed on Schedule 1 are assigned a status from the designations below:

- *Extirpated*: A species that no longer exists in the wild in Canada, but exists elsewhere;
- *Endangered*: A species that is facing imminent extirpation or extinction;
- *Threatened*: A species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction; and
- *Special Concern*: A species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

At the provincial level, the Newfoundland and Labrador *Endangered Species Act* (NL ESA) provides protection for indigenous species, sub-species and populations considered to be endangered, threatened, or vulnerable within the province. These potential designations are defined as follows:

- *Endangered*: A species that is facing imminent extirpation or extinction;
- *Threatened*: A species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction; and

- *Vulnerable*: A species that has characteristics which make it particularly sensitive to human activities or natural events.

4.6 Wetlands

Wetlands are a dominant and ecologically significant feature of the Western Newfoundland landscape, constituting a substantial portion of the region's land cover. These ecosystems, which include bogs, fens, marshes, swamps, and open water wetlands are highly productive, serving as critical habitat for wildlife, including endangered species, and functioning as natural water filters.

Wetlands are protected by leglisation and proposed construction activities in or within 15 m of a wetland will require a Sectioin 48 permit (*Water Resources Act*) for alteration of a body of water (from NLECCC). Permit reviews are guided by the *Policy for Development in Wetlands* (https://www.gov.nl.ca/mca/wetlands/) with the objective to minimize adverse affects on water quantity, quality, and hydrologic characterisitics or functions, and terrestrial and aquactic habitats of the wetlands. Where effects on wetlands are unavoidable, restoration may be expected and would be specified in the permit conditions of approval.

The quantities of wetlands within the Project Area and the associated watersheds are presented in **Table** 4-3. The distribution of wetlands in the western Newfoundland region includes large wetland complexes concentrated in the coastal plain along the eastern shore of Bay St. George and interior areas, east of the Project Area, where higher relief and better drainage produces smaller and fewer wetlands.

Table 4-3: Summary of Wetland (WL) Classes, by area, within and near the proposed Project Area

Wetland Classes	WL within Project Area (ha)	WL within Associated Watersheds (ha)	Percent of Wetland within the Project Area (%)
Bog	98.03	2233.89	4.39
Fen	60.78	1281.82	4.74
Swamp	19.81	513.37	3.86
Marsh	2.12	100.78	2.10
Open Water	2.59	17.64	14.67
Total:	**183.33**	**4147.50**	**4.42**

The analysis that follows is based on the general Project Area described previously in Section 1.1, which is conservative in nature, including posible alternative Project components and activities as defined at the current stage of Project development. The actual “footprint” of Project components after final siting and design work is complete will be smaller. Areas of potential wetland within the Project Area should be treated as indicative only.

Approximately 183.33 hectares of wetland are within the Project Area. The most abundant wetland classess are bog, fen, and swamp, that make up the majority of wetland types.

From **Table** 4-3, the wetlands in the Project Area are a relatively small proportion, 4.42%, of the total wetland areas present within the associated watersheds. All wetland classes are well represented within

the watershed areas. The wetlands near the Project Area are located in the mid- to lower elevations within their respective watersheds, thus having a generally lower value to watershed hydrology with fewer downstream receptors. All wetlands provide unique habitat for some species, however, since Marsh and Open Water wetlands are much fewer in the overall landscape, they may represent a relatively higher habitat value to regional wildlife populations, especially wetland adapted species at risk.

An overview of the regional wetland mapping and the key Project components is presented below in **Figures** 4-11. Greater detail nearer the Planned Project Layout are provided in **Appendix** B.

LEGEND

- BOG
- FEN
- SWAMP
- MARSH
- WATER
- PROJECT FOOTPRINT

0 1,500 3,000 6,000

1:200,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. BASE MAP: EARTHSTAR GEOGRAPHICS
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
FISCHELLS SALT DOME ENERGY PROJECT

TITLE
REGIONAL WETLAND MAPPING AND GENERAL PLANNED PROJECT LAYOUT

CONSULTANT

wsp

YYYY-MM-DD	2026-04-01
DESIGNED	----
PREPARED	RRD
REVIEWED	GB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	FIGURE
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5. Summary

This freshwater aquatic baseline report includes a desktop study and GIS analysis of freshwater fish and fish habitat within and near the proposed Project to describe the existing freshwater and wetland environment within and near the proposed Project Area. The fish and fish habitat Study area included the two key watersheds adjacent to the Project Area; Fischells Brook and Barry Brook. The Fischells Brook watershed spans an area of approximately 370.8 km^2 and is a provincially scheduled Atlantic salmon river and contains aquatic habitats suitable for various life stages of key fish species: Atlantic salmon, brook trout, American eel, and banded killifish. Barry Brook is approximately 10% the watershed size of Fischells Brook, estimated at 30.5 km^2 and is not a provincially scheduled Atlantic salmon river. Given its small overall size and heavy vegetation, air photo interpretation of habitat types present was not possible; however, it has been noted in previous reports to have Atlantic salmon present. Therefore, it is assumed that it contains suitable habitat for the same species included in Fischells Brook. However, the overall drainage size would suggest that most suitable habitat would be contained in the lower reaches of the main stem as estimated low flow conditions in winter and summer may limit habitat suitability further into the upper head waters and tributaries.

Of the species in the region, American eel and banded killifish have species at risk designations. American eel is not listed under the federal Species at Risk Act (SARA) but is listed as vulnerable under the NL Endangered Species Act (NL ESA). Banded killifish are listed as a species of special concern under the federal SARA and as a vulnerable species under the NL ESA.

Wetland characterization and quantification within the Project Area was completed using existing databases and mapping. Wetland areas are very abundant and widely distributed within the Study area and the overall wetlands within the general Project Area was estimated at 4.4 % of that characterized.

6. Limitations statement

WSP Canada Inc. (WSP) prepared this report solely for the use of the intended recipient, Triple Point Resources Limited, in accordance with the professional services agreement between the parties. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship, which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional, and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

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Benchmark and elevations used in this report are primarily to establish relative elevation differences between the specific testing and/or sampling locations and should not be used for other purposes, such as grading, excavating, construction, planning, development, etc.

Overall conditions can only be extrapolated to an undefined limited area around these testing and sampling locations. The conditions that WSP interprets to exist between testing and sampling points may differ from those that actually exist. The accuracy of any extrapolation and interpretation beyond the sampling locations will depend on natural conditions, the history of Site development and changes through construction and other activities. In addition, analysis has been carried out for the identified chemical and physical parameters only, and it should not be inferred that other chemical species or physical conditions are not present. WSP cannot warrant against undiscovered environmental liabilities or adverse impacts off-Site.

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This limitations statement is considered an integral part of this report.

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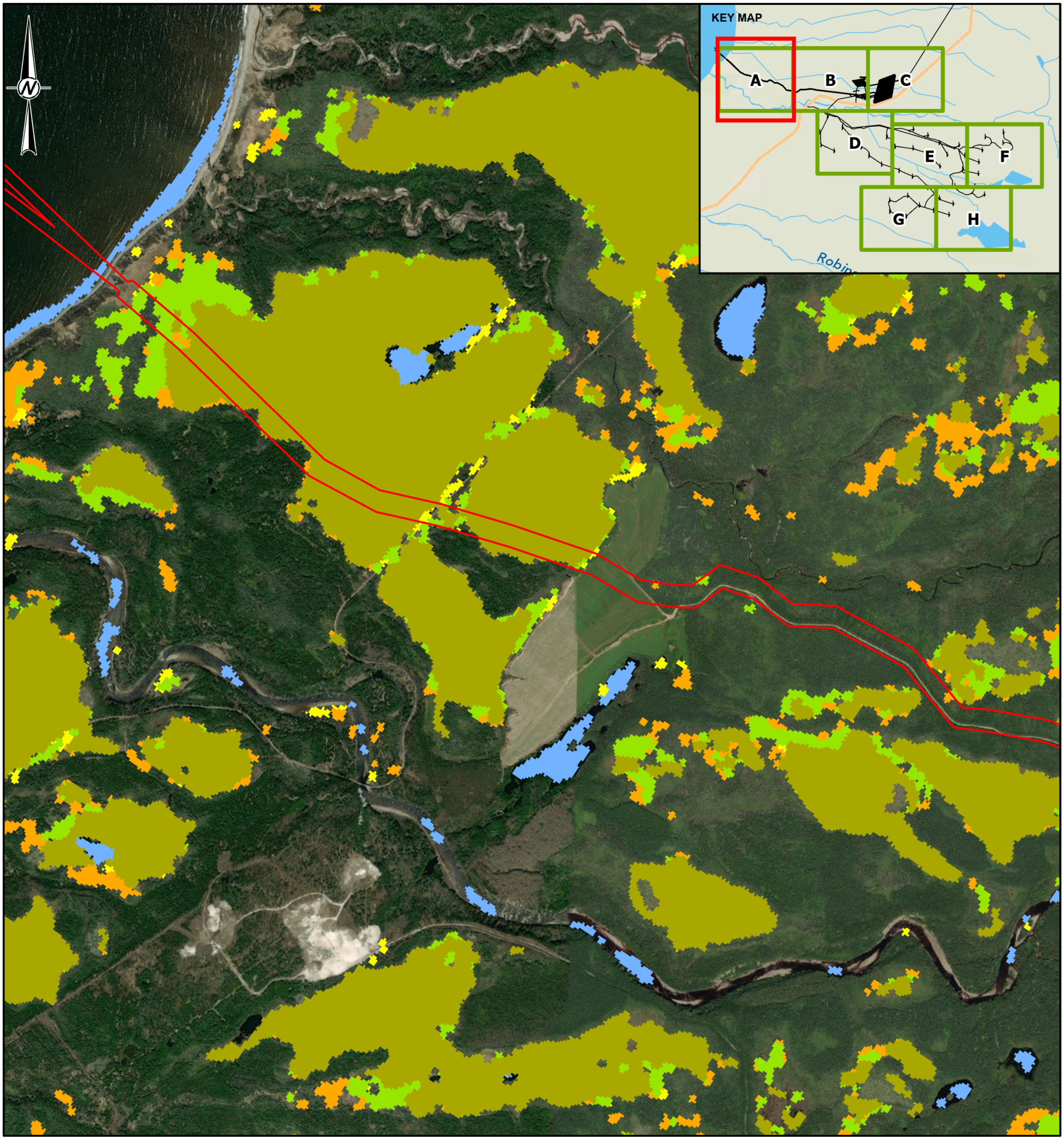
Appendix A – Fischells Brook Habitat – Air Photo Interpretation

River Reach ID	Observation Altitude	Zone	Northing	Easting	River Section (m)	Length (m)	Mean Channel Width (m)	Mean Wetted Width (m)	Dominant Substrate	Flow Morphology	Estimated Habitat Area (m2)	Estimated Habitat Area (units)	Observations
FB01	596	21 U	5352980.00 m N	373486.00 m E	0-205	205	99.2	85.2	Moderate	Steady/Flat	17466	174.66	
FB02	596	21 U	5352915.00 m N	373561.00 m E	205-300	95	53.2	42.0	Moderate	Riffle/Run	3990	39.90	
FB03	596	21 U	5352860.57 m N	373649.21 m E	300-420	120	99.2	85.2	Moderate	Steady/Flat	10224	102.24	
FB04	596	21 U	5352834.91 m N	373962.74 m E	420-770	350	53.2	42.0	Coarse	Riffle/Run	14700	147.00	
FB05	596	21 U	5352799.48 m N	374185.94 m E	770-850	80	99.2	85.2	Moderate	Steady/Flat	6816	68.16	
FB06	596	21 U	5352518.30 m N	374353.34 m E	850-1350	500	53.2	42.0	Coarse	Riffle/Run	21000	210.00	
FB07	596	21 U	5352269.26 m N	374303.81 m E	1350-1510	160	99.2	85.2	Coarse	Steady/Flat	13632	136.32	
FB08	596	21 U	5352245.86 m N	374520.21 m E	1510-2010	500	53.2	42.0	Coarse	Riffle/Run	21000	210.00	
FB09	596	21 U	5352310.40 m N	374742.20 m E	2010-2145	135	99.2	85.2	Coarse	Steady/Flat	11502	115.02	
FB10	596	21 U	5352249.87 m N	374842.18 m E	2145-2245	100	53.2	42.0	Coarse	Riffle/Run	4200	42.00	
FB11	596	21 U	5352162.17 m N	374935.31 m E	2245-2400	155	99.2	85.2	Coarse	Steady/Flat	13206	132.06	
FB12	596	21 U	5352109.19 m N	375083.97 m E	2400-2560	160	53.2	42.0	Coarse	Riffle/Run	6720	67.20	
FB13	596	21 U	5352118.81 m N	375214.76 m E	2560-2670	110	99.2	85.2	Coarse	Steady/Flat	9372	93.72	
FB14	596	21 U	5352105.22 m N	375395.68 m E	2670-2900	230	53.2	42.0	Coarse	Riffle/Run	9660	96.60	
FB15	596	21 U	5351963.22 m N	375438.61 m E	2900-2980	80	99.2	85.2	Coarse	Steady/Flat	6816	68.16	
FB16	587	21 U	5351937.86 m N	375438.52 m E	2980-4011	1031	53.2	42.0	Coarse	Riffle/Run	43302	433.02	Trailway bridge ~180 m upriver from start of Run
FB17	587	21 U	5351166.15 m N	376046.66 m E	4011-4315	304	67.2	30.8	Coarse	Rapids	9363.2	93.63	Esposed bedrock visible and fast water
FB18	587	21 U	5351130.33 m N	376355.11 m E	4315-5510	1195	53.2	42.0	Coarse	Riffle/Run	50190	501.90	
FB19	587	21 U	5350935.70 m N	377412.88 m E	5510-5690	180	99.2	85.2	Coarse	Steady/Flat	15336	153.36	Cobbs Pool
FB20	587	21 U	5350934.20 m N	377590.33 m E	5690-6385	695	67.2	30.8	Coarse	Rapids	21406	214.06	Bedrock ledges visible
FB21	587	21 U	5350809.25 m N	378084.93 m E	6385-10539	4154	53.2	42.0	Coarse	Riffle/Run	174468	1744.68	TCH at 2,215 m upriver from start of Run. Some braiding.
FB22	587	21 U	5350733.48 m N	381344.92 m E	10539-10720	181	99.2	85.2	Coarse	Steady/Flat	15421.2	154.21	
FB23	587	21 U	5350728.34 m N	381527.95 m E	10720-15014	4294	53.2	42.0	Coarse	Riffle/Run	180348	1803.48	Trib (east) 1,945 m upriver from start of Run. Second trib (east) 3,306 m upriver from start of Run
FB24	587	21 U	5350491.87 m N	385232.51 m E	15014-18749	3735	99.2	85.2	Coarse	Steady/Flat	318222	3182.22	Boulders present by no white water
FB25	587	21 U	5350178.09 m N	388636.80 m E	18749-28677	9928	99.2	85.2	Coarse	Steady/Flat	845865.6	8458.66	Trib (north) 5,420 m upriver from start of Flat. Heavy braiding toward upper portion of reach
FB26	587	21 U	5347789.82 m N	394834.26 m E	28677-31370	2693	53.2	42.0	Coarse	Riffle/Run	113106	1131.06	larger material but no white water
FB27	587	21 U	5345446.41 m N	395105.21 m E	31370-31400	30	30.0	10.0	Coarse	Falls	300	3.00	Small Falls (obstruction?)
FB28	587	21 U	5345414.60 m N	395111.96 m E	31400-33131	1761	99.2	85.2	Moderate	Steady/Flat	150037.2	1500.37	
FB29	587	21 U	5344232.16 m N	396013.99 m E	33131-33783	652	53.2	42.0	Coarse	Riffle/Run	27384	273.84	
FB30	587	21 U	5343635.09 m N	396257.01 m E	33783-33969	186	30.0	10.0	Coarse	Falls	1860	18.60	Large Falls (obstruction)

Appendix B – Wetland Mapping Near Planned Project Layout Areas



LEGEND

BOG	PLANNED PROJECT LAYOUT
FEN	
SWAMP	
MARSH	
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1:25,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. BASE MAP: VANTOR, SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
FISCHELLS SALT DOME ENERGY PROJECT

TITLE
KEY PLAN

CONSULTANT

wsp

YYYY-MM-DD	2026-04-01
DESIGNED	----
PREPARED	RRD
REVIEWED	GB
APPROVED	JM

PROJECT NO.	CONTROL	REV.	APPENDIX B
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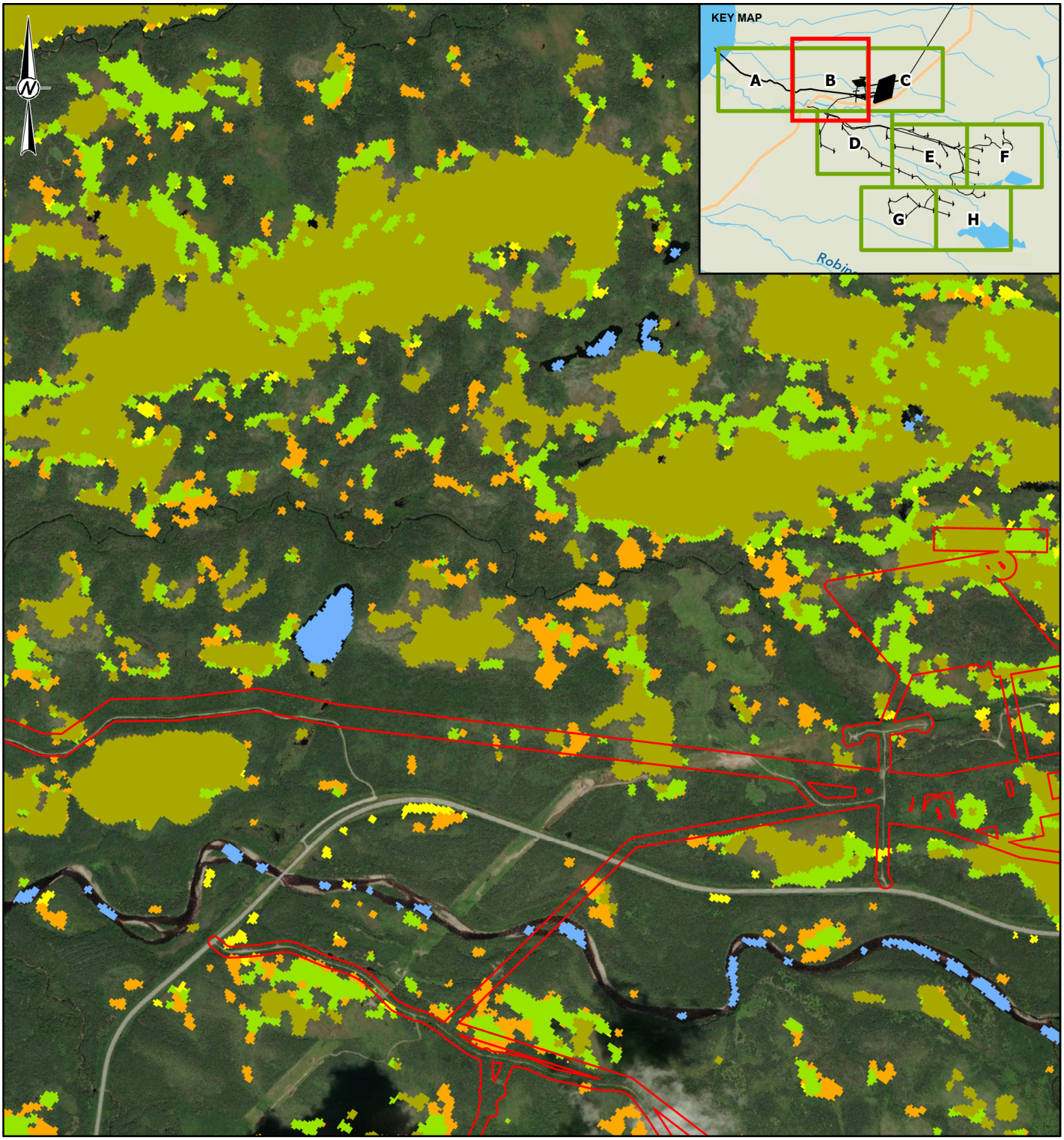

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REFERENCE(S)

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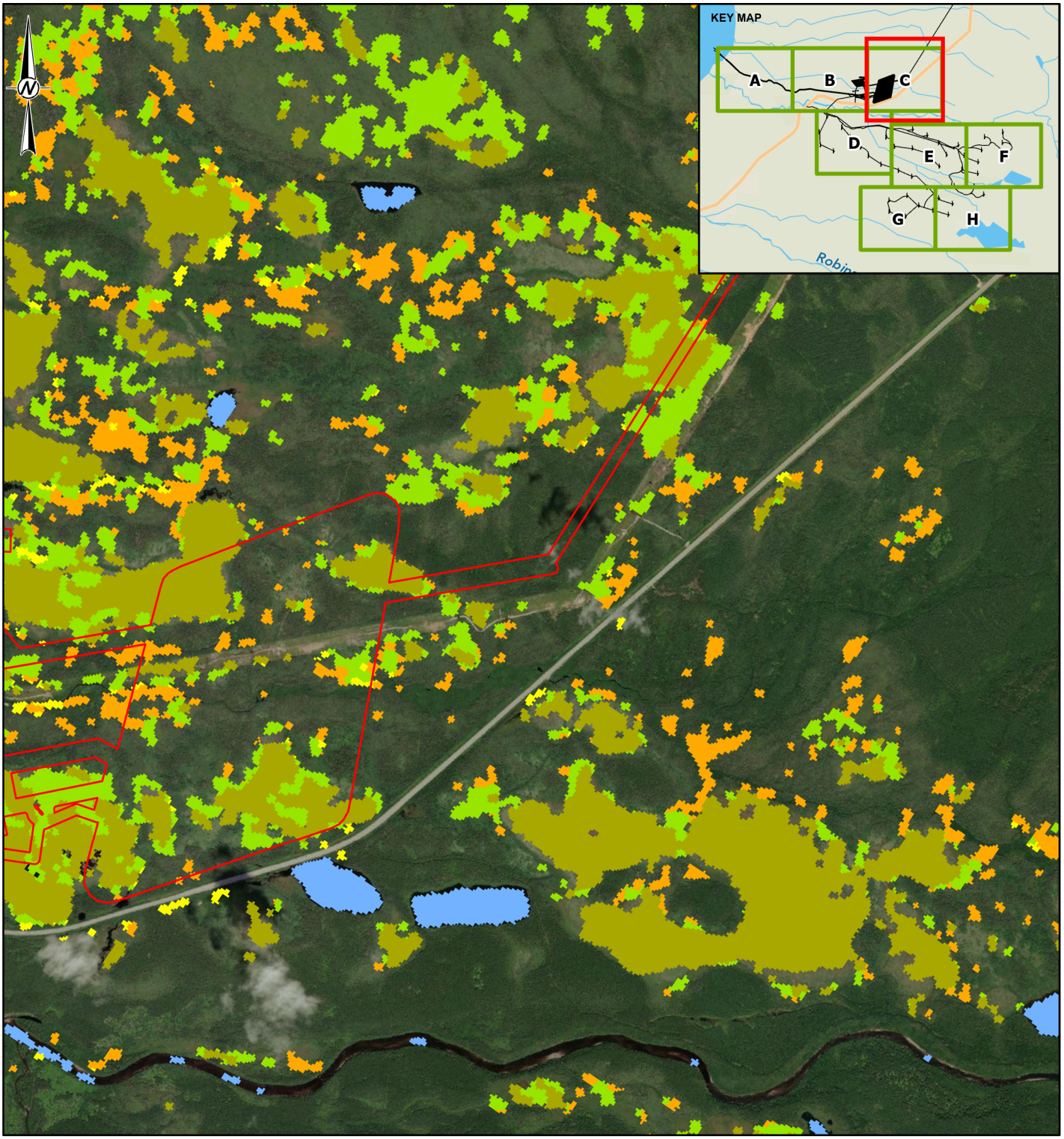

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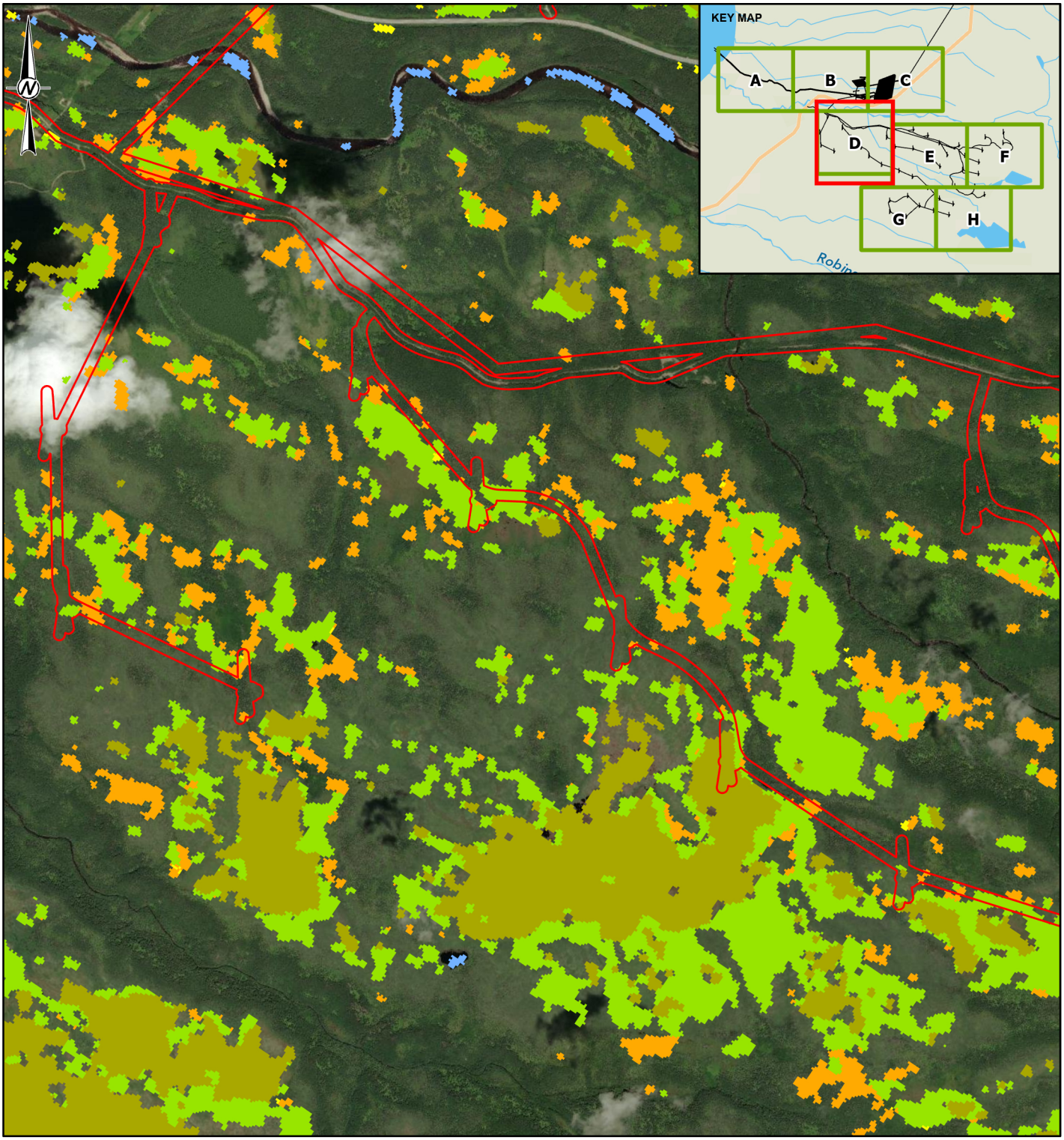

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NOTE(S)

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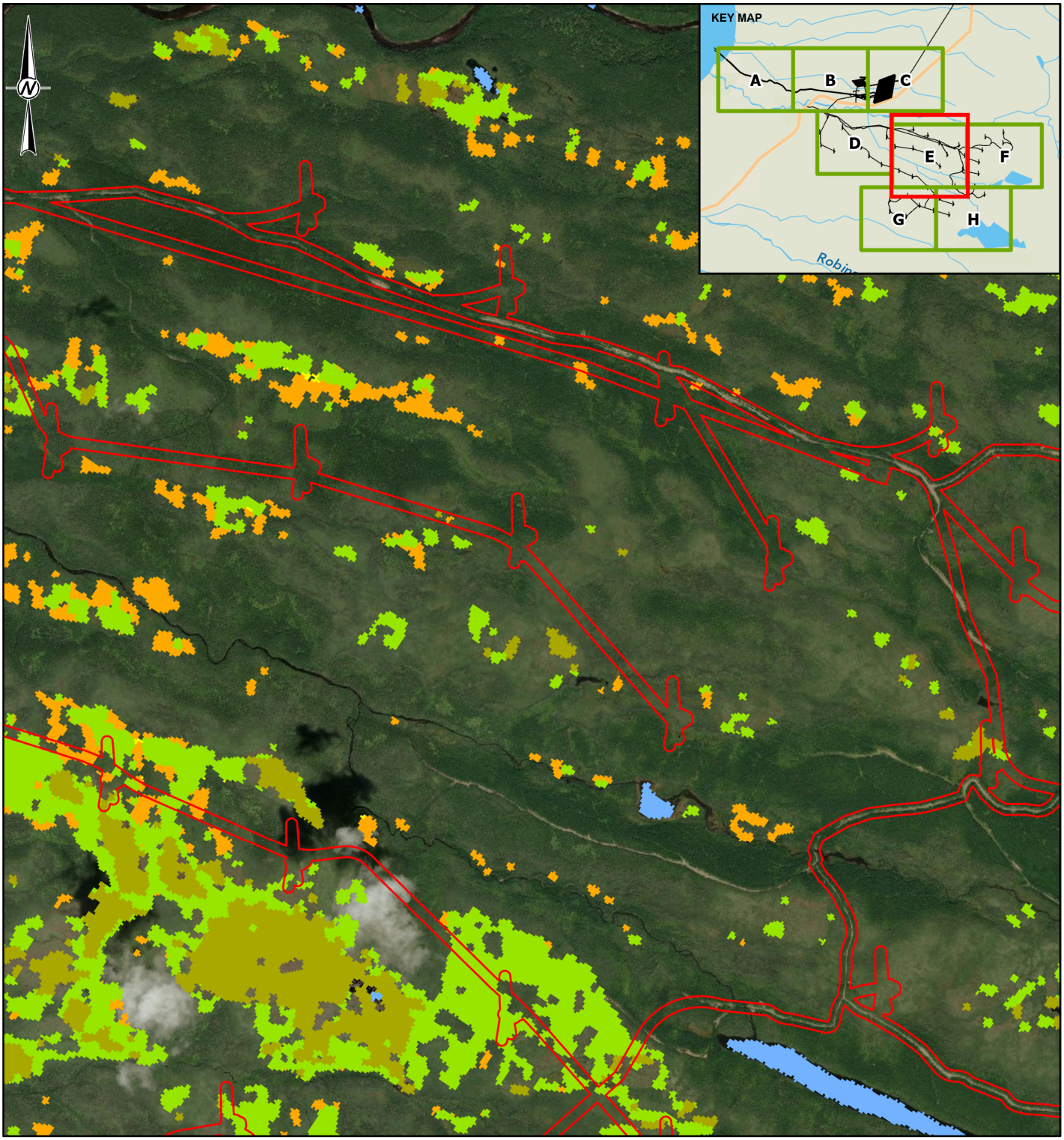

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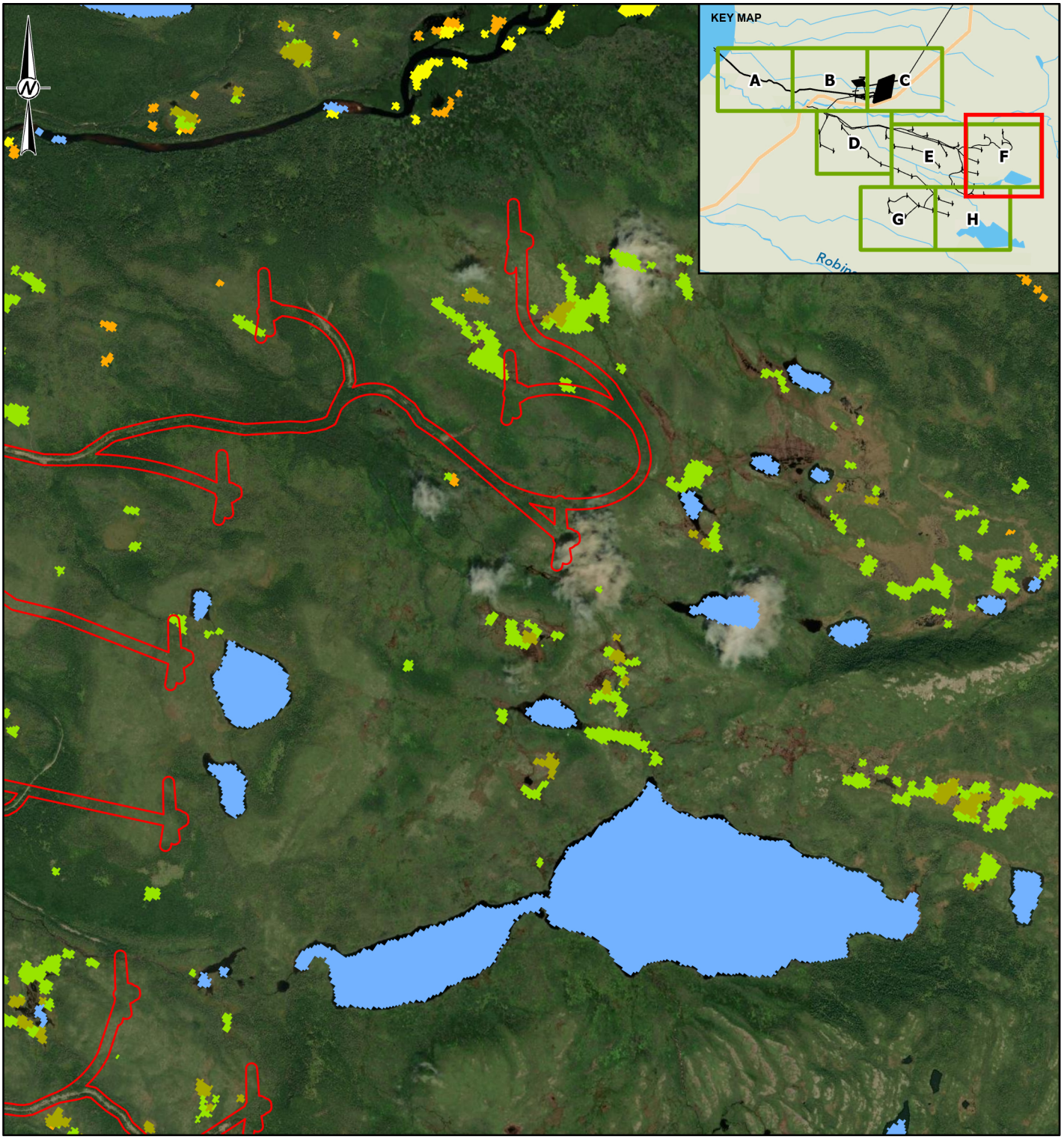

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REFERENCE(S)

1. BASE MAP: EARTHSTAR GEOGRAPHICS, SOURCES: ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 21N

CLIENT
TRIPLE POINT RESOURCES

PROJECT
FISCHELLS SALT DOME ENERGY PROJECT

TITLE
KEY PLAN

CONSULTANT
wsp

YYYY-MM-DD	2026-04-01
DESIGNED	----
PREPARED	RRD
REVIEWED	GB
APPROVED	JM

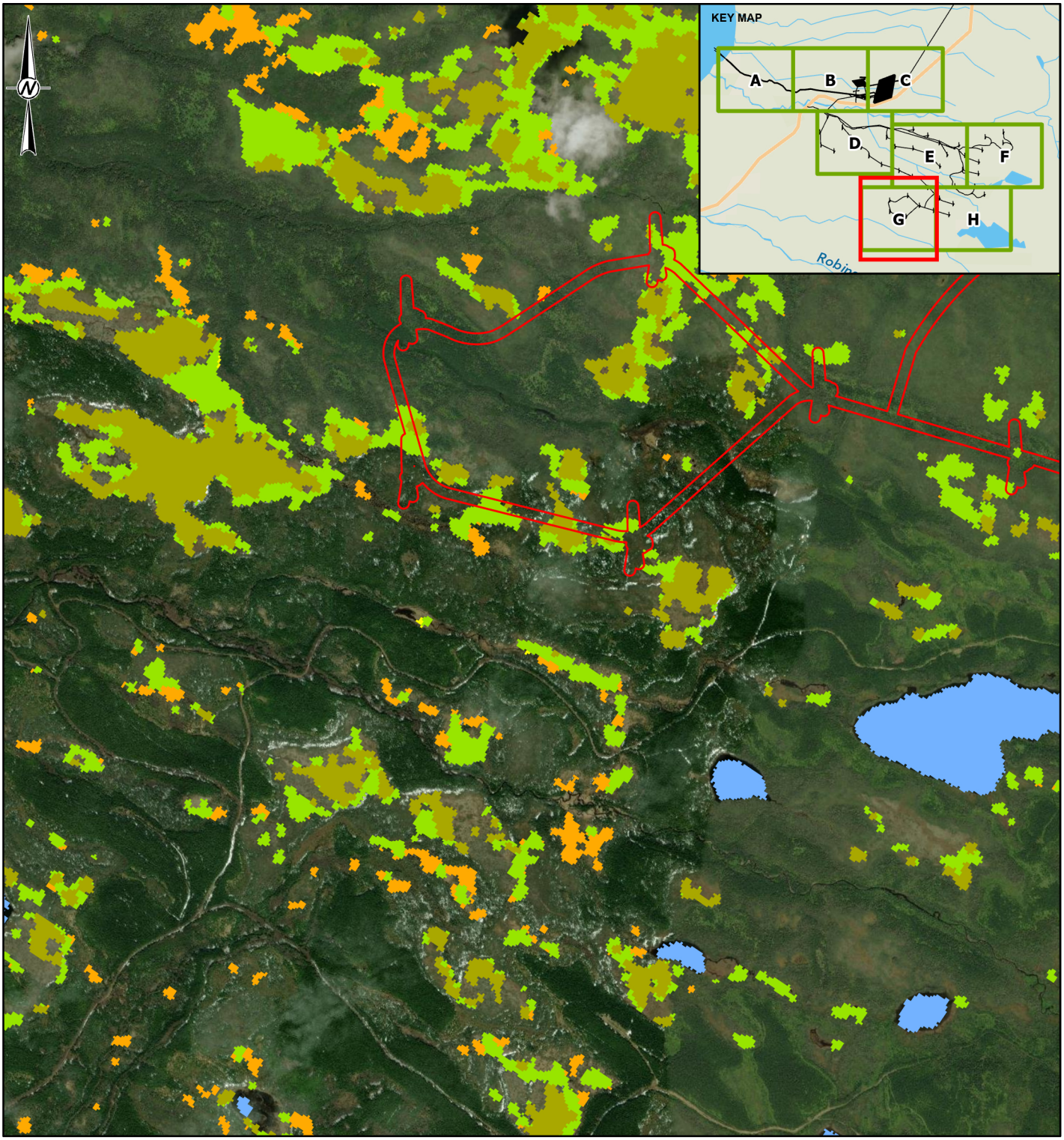
PROJECT NO.	CONTROL	REV.	APPENDIX B
CA0058602.1877	0001	0	1F

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

25mm

0

PATH: S:\Clients\Triple Point\NFLD\06602.PROJ\CA0058602.1877\40_PRO\0002_SaltCavern_FeasibilityStudy\0002_SaltCavern_FeasibilityStudy.aprx PRINTED ON: AT 11:47:53 AM



LEGEND

- BOG
- FEN
- SWAMP
- MARSH
- WATER
- PLANNED PROJECT LAYOUT

0 250 500 1,000

1:25,000 METRES

NOTE(S)

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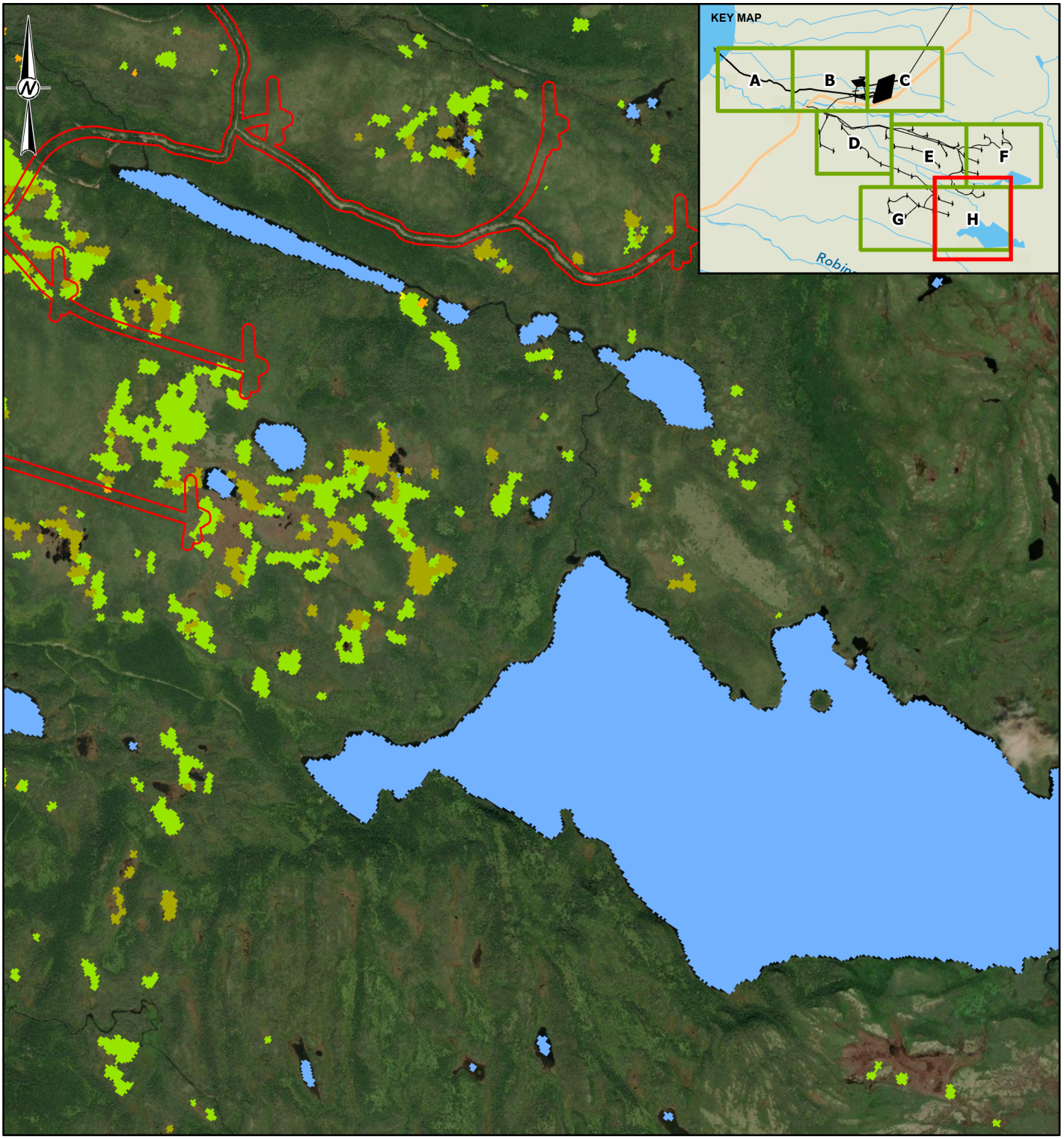

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