# ANNEXE A : DOCUMENTS DE SOUTIEN PRÉLIMINAIRES

A-1 BATHYMÉTRIE ET HYDROLOGIE

**A-2 CADRAGE ENVIRONNEMENTAL ET SOCIAL**

A-3 MILIEU AQUATIQUE

A-4 TRANSPORT

A-5 MICROMAMMIFÈRES

A-6 GÉOCHIMIE

A-7 QUALITÉ DE L'AIR

A-8 POTENTIEL ARCHÉOLOGIQUE

# Patriot Battery Metals Inc.

**Corvette Lithium Property**

James-Bay Region, Northern Quebec

Initial Environmental and Social Scoping Report

**Preliminary Economic Assessment – Socio-environmental Requirements**

**BBA Document No.-Rev.:** 7535001-000900-4E-ERA-0003-R01

November 7, 2022

**FINAL**

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BBA Document No.-Rev.: 7535001-000900-4E-ERA-0003-R01

## REVISION HISTORY

| Revision | Document Status – Revision Description | Date |
|---|---|---|
| R00 | Final | 2022-11-02 |
| R01 | Final – clarifications added, and typos corrected | 2022-11-07 |

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# ACRONYMS

| Acronym | Name |
|---|---|
| AEIC | Agence d'évaluation d'impact du Canada |
| asl | above sea level |
| AQI | Air Quality Index |
| CDPNQ | Centre de données sur le patrimoine naturel |
| COMEV | Environmental And Social Impact Evaluating Committee |
| COMEX | Environmental And Social Impact Review Committee |
| COSEWIC | Committee on the Status of Endangered Wildlife in Canada |
| DFO | Department of Fisheries and Oceans Canada |
| ECCC | Environment and Climate Change Canada |
| EIJBRG | Eeyou Istchee James Bay Regional Government |
| EQA | Environmental Quality Act |
| GREIBJ | Gouvernement régional Eeyou Istchee Baie James |
| GRH | George River Herd |
| IAAC | Impact Assessment Agency of Canada |
| JBNQA | James Bay and Northern Quebec Agreement |
| LRH | Leaf River Herd |
| MBCA | Migratory Birds Convention Act, 1994 |
| MELCC | Ministère De L'environnement Et De La Lutte Contre Les Changements Climatiques |
| MERN | Ministère De L'énergie Et Des Ressources Naturelles |
| MFFP | Ministère Des Forêts, De La Faune Et Des Parcs |
| NPRI | National Pollutant Release Inventory |
| PBM | Patriot Battery Metals Inc. |
| PDA | Project Development Area |
| PEA | Preliminary Economic Assessment |
| RSA | Regional Study Area |
| SARA | Species at Risk Act |
| TC | Transport Canada |
| TSP | total suspended particulates |

# 1. Introduction

## 1.1. Project Context

Patriot Battery Metals Inc. (PBM) is a mineral exploration company focused on the acquisition and development of mineral projects containing battery, base, and precious metals. The company holds 100% of the Corvette Property.

PBM is currently advancing exploration and development of the Corvette property and is aiming to complete its Preliminary Economic Assessment (PEA) in line with the requirements of the National Instrument 43-101 - Standards of Disclosure for Mineral Projects for the Corvette Lithium Project in 2023. The PEA will confirm the viability of the project's mineral resources and identify the main issues and considerations relating to the project development.

The project will require a number of newly constructed infrastructures including a primary access road linking the site to the Trans-Taiga Road, powerlines to connect the site to the existing Hydro-Québec network, an airstrip / helicopter pad, workers accommodations and infrastructures, an open pit, storage facilities for waste rock and tailings, an industrial area hosting processing infrastructures and ore stockpiles, as well as other auxiliary facilities.

## 1.2. Project Location

The Corvette Property is located in the upper James Bay region and covers over 200 square kilometers of the newly discovered Corvette Lithium district (Figure 1). The area is remote and secluded and currently has no road access or power availability. The Property is home to numerous lakes, watercourses, rock outcrops, and some wetlands. The area has been subjected to numerous forest fires over the last decades.

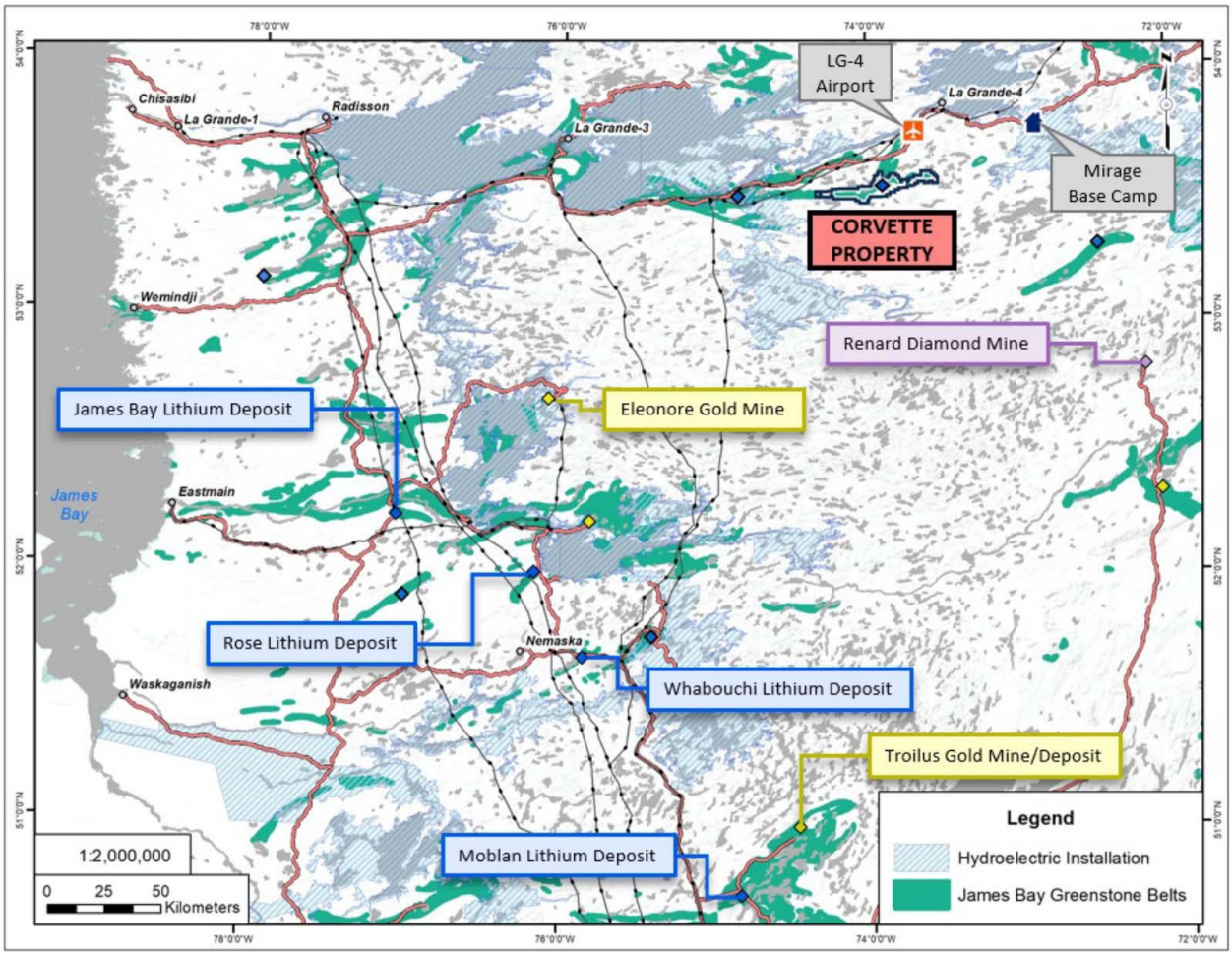



**Figure 1: Location of the Corvette Property**

Source: Corvette - Patriot Battery Metals

## 1.3. Scope of Initial Environmental and Social Report

To support the development of the Corvette Lithium Project Preliminary Economic Assessment (PEA), BBA was thus mandated to complete an initial scoping study.

The scope of BBA's Initial scoping study is in-line with the requirements of item 20 of the National Instrument 43-101 - Standards of Disclosure for Mineral Projects and includes the following component:

- Development of a preliminary conceptual project design and layout to assess potential location and considerations for the main project components;
- Description of existing biophysical and socio-economical baseline conditions;
- Identification of main environmental permits and authorizations likely required to proceed with the project;
- Identification of potential difficulties / risks to the project development;
- Identification of key stakeholders who are likely to be directly or indirectly impacted or concerned with the project and development of a preliminary engagement strategy (approach/means to communicate with stakeholders, including when and how) and key activities and agreements with local Individuals or groups that will be required;
- Initiation of some geochemistry characterization on the property.

## 1.4. Content of this Report

In addition to this introductory section, the report includes the following additional sections:

- **Section 2 – Preliminary Conceptual Design and Layout** presenting an overview of a preliminary conceptual project design and layout for the Corvette Lithium Project in terms of potential arrangement and location.
- **Section 3 – Overview of Project Socio-environmental Settings** which describes the existing biophysical and socio-economical conditions based on available desktop information.
- **Section 4 – Preliminary Regulatory Requirements** which outlines the multijurisdictional environmental regulatory requirements perceived applicable to the project at this time including federal and provincial regulatory requirements.
- **Section 5 – Main considerations for the project development** which outlines potential difficulties / risks to the project development.
- **Section 6 – Future Work and Next Steps** which is proposing a preliminary strategy and a timetable for key relevant socio-environmental activities to be completed during PFS and FS in order to obtain all required environmental permits and authorizations and favor social acceptability.

This report is complemented by two other complementary documents:

- Patriot Battery Metals Inc. (Corvette Lithium Property) Initial Stakeholder Engagement Framework (BBA, 2022) 7535001-000700-4E-ERA-0000-RAA;
- Patriot Battery Metals Inc. (Corvette Lithium Property) Initial Geochemistry Characterization (to be released by BBA later in 2022).

# 2. Preliminary Conceptual Project Design and Layout

A preliminary conceptual project design and layout was developed by BBA as part of the scoping study in order to assess the potential location for the main project components.

At this time, the conceptual project design focuses on locating the primary infrastructures that have been identified as essential for the undertaking of the project based on available desktop socio-environmental information only.

Neither the technical feasibility nor the economical sustainability of the proposed concept was assessed. The precise location and dimensions of the different project components will be further refined and confirmed as reconnaissance works, technical studies, engineering works, and baseline surveys are progressed.

## 2.1. Conceptual Design

Even though the precise delimitation of the targeted lithium mineralization is not yet defined, the Corvette Lithium Project aims to extract approximately some 12,000 tonnes per day of ore in one primary open pit. Consequently, approximately 275 $Mm^3$ of waste material may be generated during the Project Life Cycle as per PBM estimates. The conceptual project design includes the following key project components:

- Primary access road to linked to the Tans-Taiga;
- Interconnection to the Hydro-Québec Network (power lines and sub-station);
- Airstrip / Helipad;
- Open pit overlapping a fairly large lake;
- Dams and diversions to block and redirect surface water;
- Consolidated waste rock and tailings storage facilities;
- Contact water ditches and water management ponds;
- Processing infrastructures and ore stockpile;
- Overburden stockpile;
- Workers accommodations and infrastructures;
- Administrative facilities;
- Fuel storage facilities;
- Quarries / burrow Pits.

## 2.2. Conceptual Layout

The conceptual project layout illustrates the provisional location for the key project components namely the open pit, the access roads, the dams, the water diversion channels, the waste rock and tailings co-disposal storage facilities, and the industrial area. Components were sited in order to avoid when feasible valuable socio-environmental components, namely wetlands and watercourses while considering rock outcrops and existing topographical conditions.

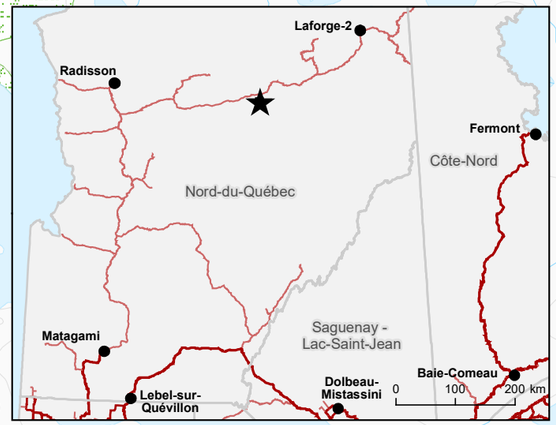
Because of the indeterminate extent of the mineralization and expected extraction volumes, three different scenarios (as described in Table 1) were developed with varying size of the open pit. The different scenarios aim to assess the varying scope of infrastructures that could be needed to develop the mine, as well as the associated environmental and social requirements and considerations.

**Table 1: Description of key project infrastructures for three scenarios considered**

| Project Component | Scenario 1 | Scenario 2 | Scenario 3 |
|---|---|---|---|
| Open pit | Limits the extent of the pit to the narrow part of lake 1.<br>Maintains a 100 m buffer from lakes 03 to 08 (north of the pit).<br>The lake 1 outlet is lost (CE20-1).<br>Approximately 2,000 m long (east-west) and 550 m wide (north-south). | Extends west to a wider section of lake 1.<br>Extends north, overlapping 1/3 of lake 02 and lakes 03 to 08.<br>The lake 1 outlet is lost (CE20-1).<br>Approximately 2,600 m long (east-west) and 1,150 m wide (north-south). | Extends west to a wider section of lake 1.<br>Extends north, overlapping 2/3 of lake 02 and lakes 03 to 08.<br>The lake 1 outlet is lost (CE20-1).<br>Approximately 3,000 m long (east-west) and 1,550 m wide (north-south). |
| Dams | 3 dams likely required.<br>Dam A: East side of pit, about 160 m long. To block lake 1 from entering the pit.<br>Dam B: West side of pit, lake 1, about 60 m long. To block the water on the west side of the pit from entering the pit.<br>Dam C: South side of pit, on the north side of lake 46. To block the water from lake 46 from entering the pit. | 4 dams likely required.<br>Dam A: East side of pit, about 500 m long. To block lake 1 from entering the pit.<br>Dam B: West side of pit, lake 1, about 100 m long. To block the water on the west side of the pit from entering the pit.<br>Dam C: South side of pit, on the north side of lake 46. To block the water from lake 46 from entering the pit.<br>Dam D: North side of pit, through lake 02, about 200 m. To block lake 02 from | 4 dams likely required.<br>Dam A: East side of pit, about 500 m. To block lake 1 from entering the pit.<br>Dam B: West side of pit, lake 1, about 120 m long. To block the water on the west side of the pit from entering the pit.<br>Dam C: South side of pit, on the north side of lake 46. To block the water from lake 46 from entering the pit.<br>Dam D: North side of pit, through lake 02, about 380 m. To block lake 02 |

| Project Component | Scenario 1 | Scenario 2 | Scenario 3 |
|---|---|---|---|
| | | entering the pit. The lake 02 outlet is lost. | from entering the pit. The lake 02 outlet is lost. |
| Surface Water Management | 2 diversions foreseen.<br>Diversion X: To connect lake 1 to the receiving environment. Between lake 1 and lake 02, about 450 m.<br>Diversion Y: To connect the western most section of lake 1 to the receiving environment. Between lake 1 and 21 or 09, about 130 m or 180 m. | 3 diversions foreseen.<br>Diversion X: To connect lake 1 to the receiving environment. Between lake 1 and 02, about 450 m.<br>Diversion Y: To connect the western most section of lake 1 to the receiving environment. Between lake 1 and 21 or 09, about 130 m or 180 m.<br>Diversion Z: To connect lake 02 to the receiving environment. Between lake 02 and 12, about 700 m. | 3 diversions foreseen.<br>Diversion X: To connect lake 1 to the receiving environment. Between lake 1 and 18, about 650 m.<br>Diversion Y: To connect the western most section of lake 1 to the receiving environment. Between lake 1 and 21 or 09, about 130 m or 180 m.<br>Diversion Z: To connect lake 02 to the receiving environment. Between lake 61 and 12, about 700 m. |
| Waste rock and tailings co-disposal storage facilities | 5 potential areas identified.<br>Area A: 51 ha<br>Area B: 136 ha<br>Area C: 108 ha<br>Area D: 120 ha<br>Area E: 170 ha | 5 potential areas identified.<br>Area A: 51 ha<br>Area B: 136 ha<br>Area C: 108 ha<br>Area D: 120 ha<br>Area E: 170 ha | 4 potential areas identified.<br>Area B: 136 ha<br>Area C: 108 ha<br>Area D: 120 ha<br>Area E: 170 ha |
| Industrial Area | One potential area identified, just north of the open pit. Approximately 38 ha. | One potential area identified, just north of the open pit. Approximately 36 ha. | One potential area identified, further north of the pit, where waste rock and tailings storage area A is located in scenarios 1 and 2. Approximately 36 ha. |
| Access Road | Primary access from the Trans-Taiga road, about X km, likely a few creek crossings.<br>Secondary access road to mine components. | Primary access from the Trans-Taiga road, about X km, likely a few creek crossings.<br>Secondary access road to mine components. | Primary access from the Trans-Taiga road, about X km, likely a few creek crossings.<br>Secondary access road to mine components. |

Maps 1, 2, and 3 illustrate the conceptual layout for scenarios 1, 2, and 3 as described in Table 1.




N

A

B

C

D

E

1-A

1-B

1-C

1-X

La Grande Rivière
(niveau/level 1)

Rivière De Pontois
(niveau/level 2)

## Composantes du projet / Project Components

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Fosse / Open Pit
- Secteur industriel / Industrial Area
- Barrage / Dam
- Dérivation / Diversion
- Chemin d'accès / Access

## Options des haldes de résidus et de stériles / Options for waste rock and tailings storage facilities

- A (51.0 ha)
- B (137.0 ha)
- C (108.9 ha)
- D (120.6 ha)
- E (171.1 ha)

## Échantillonnage / Sampling

- Forage / Drillhole (Patriot Battery Metals)
- Affleurement rocheux / Rock outcrop

## Milieu naturel / Natural Environment

- Milieu humide potentiel / Potential Wetland
- Milieu humide potentiel / Potential Wetland (Niigaan, 2022)

## Hydrographie / Hydrography

- Cours d'eau / Watercourse
- Lac et surface d'eau / Lake and Waterbody
- Bassin-versant / Watershed
- Lac potentiel / Potential Lake (Niigaan, 2022)

***Caractérisation des cours d'eau / Caracterized watercourse (Niigaan, 2022)***

- Présence confirmée / Presence confirmed
- Présence potentiel / Potential Presence

## Topographie / Topography

- Courbes de niveaux (10 m) / Contours of levels (10 m)

*Patriot Battery Metals*
*Initial Environmental and Social Scoping Report*
*Eeyou Istchee Baie-James, Québec*

# Carte / Map 1
## Plan conceptuel / Conceptual Plan - Scenario 1

***Sources :***
*CanVec, 1/250 000, RNCan, 2017*
*Modèle numérique de terrain (MNT), 1/50 000, résolution 10 m, MERN et RNCan, janvier 2018*
*Bassins hydrographiques multiéchelles du Québec, 1/20 000, MELCC, 2018*
*Cartographie des milieux humides potentiels, MELCC Québec, 2019*
*Cours d'eau et plan d'eau, GRHQ, MERN Québec, octobre 2021*
*SDA, 1/20 000, MERN Québec, juin 2022*
*Données de projet, BBA, 2022*

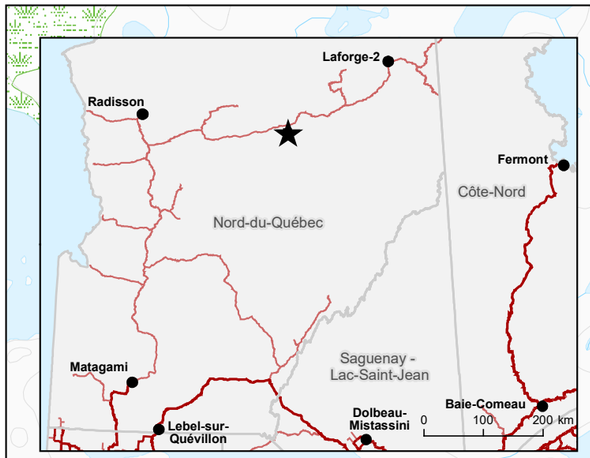
*No projet BBA : 7535001-000100-4E*

**2022-09-15**

0 300 600 m
UTM, fuseau 18, NAD 83

Préparé par : A. Gagnon | Dessiné par : A. Monnard | Vérifié par : C. Le Page

*Fichier : 7535001_000100_4E_D20_0003_R00_Scenario1.mxd*




N

La Grande Rivière (niveau/level 1)

Rivière De Pontois (niveau/level 2)

## Composantes du projet / Project Components

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Fosse / Open Pit
- Secteur industriel / Industrial Area
- Barrage / Dam
- Dérivation / Diversion
- Chemin d'accès / Access

## Options des haldes de résidus et de stériles / Options for waste rock and tailings storage facilities

- A (51.0 ha)
- B (137.0 ha)
- C (108.9 ha)
- D (120.6 ha)
- E (171.1 ha)

## Échantillonnage / Sampling

- Forage / Drillhole (Patriot Battery Metals)
- Affleurement rocheux / Rock outcrop

## Milieu naturel / Natural Environment

- Milieu humide potentiel / Potential Wetland
- Milieu humide potentiel / Potential Wetland (Niigaan, 2022)

## Hydrographie / Hydrography

- Cours d'eau / Watercourse
- Lac et surface d'eau / Lake and Waterbody
- Bassin-versant / Watershed
- Lac potentiel / Potential Lake (Niigaan, 2022)

***Caractérisation des cours d'eau / Caracterized watercourse (Niigaan, 2022)***

- Présence confirmée / Presence confirmed
- Présence potentiel / Potential Presence

## Topographie / Topography

- Courbes de niveaux (10 m) / Contours of levels (10 m)

*Patriot Battery Metals*

*Initial Environmental and Social Scoping Report*

*Eeyou Istchee Baie-James, Québec*

# Carte / Map 2

## Plan conceptuel / Conceptual Plan - Scenario 2

***Sources :***

*CanVec, 1/250 000, RNCan, 2017*
*Modèle numérique de terrain (MNT), 1/50 000, résolution 10 m, MERN et RNCan, janvier 2018*
*Bassins hydrographiques multiéchelles du Québec, 1/20 000, MELCC, 2018*
*Cartographie des milieux humides potentiels, MELCC Québec, 2019*
*Cours d'eau et plan d'eau, GRHQ, MERN Québec, octobre 2021*
*SDA, 1/20 000, MERN Québec, juin 2022*
*Données de projet, BBA, 2022*

*No projet BBA : 7535001-000100-4E*

**2022-09-15**

0 300 600 m

UTM, fuseau 18, NAD 83

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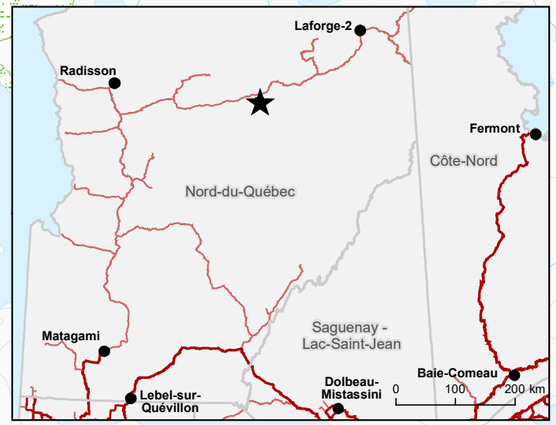


N

E

D

B

C

3-A

3-B

3-C

3-D

3-E

3-Z

3-X

La Grande Rivière
(niveau/level 1)

Rivière De Pontois
(niveau/level 2)

## Composantes du projet / Project Components

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Fosse / Open Pit
- Secteur industriel / Industrial Area
- Barrage / Dam
- Dérivation / Diversion
- Chemin d'accès / Access

## Options des haldes de résidus et de stériles / Options for waste rock and tailings storage facilities

- B (137.0 ha)
- C (108.9 ha)
- D (120.6 ha)
- E (171.1 ha)

## Échantillonnage / Sampling

- Forage / Drillhole (Patriot Battery Metals)
- Affleurement rocheux / Rock outcrop

## Milieu naturel / Natural Environment

- Milieu humide potentiel / Potential Wetland
- Milieu humide potentiel / Potential Wetland (Niigaan, 2022)

## Hydrographie / Hydrography

- Cours d'eau / Watercourse
- Lac et surface d'eau / Lake and Waterbody
- Bassin-versant / Watershed
- Lac potentiel / Potential Lake (Niigaan, 2022)

***Caractérisation des cours d'eau / Caracterized watercourse (Niigaan, 2022)***

- Présence confirmée / Presence confirmed
- Présence potentiel / Potential Presence

## Topographie / Topography

- Courbes de niveaux (10 m) / Contours of levels (10 m)

*Patriot Battery Metals*
*Initial Environmental and Social Scoping Report*
*Eeyou Istchee Baie-James, Québec*

# Carte / Map 3
## Plan conceptuel / Conceptual Plan - Scenario 3

***Sources :***
*CanVec, 1/250 000, RNCan, 2017*
*Modèle numérique de terrain (MNT), 1/50 000, résolution 10 m, MERN et RNCan, janvier 2018*
*Bassins hydrographiques multiéchelles du Québec, 1/20 000, MELCC, 2018*
*Cartographie des milieux humides potentiels, MELCC Québec, 2019*
*Cours d'eau et plan d'eau, GRHQ, MERN Québec, octobre 2021*
*SDA, 1/20 000, MERN Québec, juin 2022*
*Données de projet, BBA, 2022*

*No projet BBA : 7535001-000100-4E*

**2022-09-15**

0 300 600 m
UTM, fuseau 18, NAD 83

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*Fichier : 7535001_000100_4E_D20_0007_R00_Scenario3.mxd*

### 2.2.1. Open Pit

Even though the precise delimitation of the targeted lithium mineralization is not yet defined, three potential pit footprints were developed as part of the study based on targeted outcrops for exploration and the general trend of these outcrops. As exploration programs are still ongoing, it is possible that the resource extends from the currently identified target outcrops.

In order to facilitate mining operations, pit dewatering will be required.

For all three scenarios, the main open pit would be located within lake 1 thus resulting in the potential disconnection of lake 1 with its outlet, watercourse CE20-1, at the western side of the lake.

For the smallest pit (scenario 1), the eastern side of the pit is limited to the narrowest section of lake 1 to shorten the dam that would be required (dam 1-A), as shown on Map 1. The hydrological network of lakes 02 to 08 north of the pit could be useful as a base for the diversion of lake 1.

If the pit extends further east, as shown on Maps 2 and 3, the dam would be at least twice as long. The pit in scenarios 2 and 3 overlaps with lakes 03 to 08 and a portion of lake 02. In scenarios 2 and 3, the pit could potentially extend to the south into another watershed (De Pontois River watershed) and overlap with lakes 39 and 40.

### 2.2.2. Dams

In order to restrict water from entering into the pit, a number of dams will be required. Hydrological and bathymetrical studies will assist in determining the exact location of the dam.

Scenario 1 would likely require 3 dams, while scenarios 2 and 3 would require 4 dams, as shown on Maps 1, 2, and 3.

In all scenarios, a dam would be needed on the east side of the pit to block the water of lake 1 from entering into the pit area.

In scenario 1, the dam was placed in a section of lake 1 that remains relatively narrow to limit its size (dam 1-A). At this location, the dam could be around 160 m long. In scenarios 2 and 3, the pit would extend further east and thus push the dam to a larger area of lake 1. In those scenarios, dam 2-A and 3-A could measure about 500 m.

In all scenarios, a short dam (dam 1-B, 2-B, and 3-B) was also placed on the west side of the pit to limit the amount of water entering the pit area from the western tip of lake 1. Depending on the

scenario, this dam could be between 70 and 130 m long. However, it is possible this dam may not be required, depending on the hydrology of lake 1 and other technical considerations. The volume of water captured from this area may not be significant and could be pumped from the pit area.

In all scenarios, a short dam (1-C, 2-C, and 3-C) may also be needed at the outlet of lake 46. According to photointerpretation and the National Hydro Network, water flows from lake 1 to lake 48, to lake 47, to lake 46, and then back to lake 1, directly in the projected pit area (Natural Resources Canada, 2016). It may be possible to build a dam at the outlet of lake 46 (watercourse CE26-2) and reverse the current flow. Additional information on the hydrology of this system would be needed to estimate the size of the dam and the feasibility of this approach. Otherwise, an additional diversion from lake 46 to lake 1 may be needed.

Lastly, in scenarios 2 and 3, a dam would be needed through lake 02 (dam 2-D and 3-D). In scenario 2, the pit extends north to cut about 1/3 of lake 02, effectively removing its outlet (watercourse CE1-4). In scenario 3, the pit extends even further north to cut about 2/3 of lake 02, also disconnecting it from its outlet. Dam 2-D may be about 200 m long, while dam 3-D could be 380 m long.

### 2.2.3. Water Diversion

Because of the location of the pit, lake 1 would be disconnected from its outlet (watercourse CE20-1) during mining activities. Thus, in all scenarios, water diversions would be needed to reconnect lake 1 to the receiving environment. Water diversion refers to the practice of voluntarily redirecting the flow of water through purpose-built channels.

In scenarios 1 and 2 (see Maps 1 and 2), a diversion could be built from the north shore of lake 1 to lake 02 (diversion 1-X and 2-X), over a distance of about 450 m. In scenario 3 (see Map 3), because of the extent of the pit within lake 02, the diversion (3-X) from lake 1 was moved upstream, from the north shore of lake 1 to lake 18. Diversion 3-X could be about 650 m, part of which might use an existing creek as basis.

In scenario 1, once lake 1 is diverted into lake 02, water would flow through watercourse CE1-4 to eventually return to the original receiving environment, i.e., lake 27. Work would be needed to adapt the outlet of lake 02 and watercourses CE1-4 to CE1-8 to the increased water flow. For example, this may involve excavating the banks to widen the watercourse channel.

In scenarios 2 and 3, lake 02 may also be disconnected from its outlet (watercourse CE1-4) and thus, another diversion would be required to reconnect lake 02 to the receiving environment. In scenario 2, diversion 2-Z would connect lake 02 from its north-west shore to lake 12, which then

flows to the receiving environment. In scenario 3, most of lake 02 is lost to the pit, complicating the diverting from lake 02. It may be possible to raise water levels in lake 02 and reverse water flow back into lake 61 and then divert from lake 61 to lake 12 (diversion 3-Z). In both cases, diversions 2-Z and 3-Z would measure about 700 m.

In all three scenarios, there may be a dam on the west side of the pit, although it may not be necessary as previously discussed. If a dam is necessary, a diversion may also be necessary to limit the level of water retained. The diversion would be from the western most tip of lake 1 to lake 09 or 21.

### 2.2.4. Waste Rock and Tailings Co-Disposal Storage Facilities

As for any mining project, waste rock and tailing disposal storage facilities will be required as part of the Corvette Lithium Project Development. While no exact volume was provided, approximately 275 $Mm^3$ of waste material may be generated during the Project Life Cycle according to PBM. For the purpose of developing a conceptual layout, it was assumed that waste rock and tailings would be co-disposed, in a similar fashion to other lithium projects in the James Bay region (e.g., Galaxy's James Bay Lithium project, Critical Elements' Rose Lithium-Tantalum project, and Nemaska Lithium).

A number of potential areas were delineated in proximity of the open pit for co-disposal of waste rock and tailings (see Maps 1,2, and 3). These areas were selected based on a few environmental considerations. First, the absence of waterbodies and watercourses (from photointerpretation) was a key factor in the positioning of storage facilities since storage of waste rock in waterbodies frequented by fish requires complex approval (amendment to MDMER Schedule 2). Second, the selection of a relatively flat area was deliberate since storage of waste rock on hills is more limited and complex. Third, locations in proximity to the open pit and along the future access road were sought to reduce distance of transport and the development of access for the sole purpose of waste rock disposal. While the route of the access road may vary from the one shown in the conceptual layout, it will definitely be on the north side of the pit to connect to the Trans-Taiga. Finally, storage facilities were proposed in areas where significant mineralization is not expected at this time, do not overlap with protected areas, and do not extend beyond the current claims held by the proponent.

A total of five waste rock and tailings co-disposal storage facilities were identified for a total area of 589 hectares, as follows:

- Storage facility A: 51 ha;
- Storage facility B: 137 ha;

- Storage facility C: 109 ha;
- Storage facility D: 121 ha;
- Storage facility E: 171 ha.

However, in scenario 3, the industrial area is placed where the storage facility A was located for scenarios 1 and 2 (see Map 3). In this scenario, the pit extends north, limiting the possibility of developing the industrial area immediately adjacent to the pit. The industrial area is pushed north where storage facility A is located in scenarios 1 and 2. Thus, the total storage area delineated in scenario 3 is 538 hectares.

### 2.2.5. Industrial Area

An industrial area of approximately 40 hectares will be needed to host the following infrastructures:

- Processing plant;
- Ore stockpile;
- Maintenance workshop and warehouse;
- Fuel storage facilities;
- Workers Camp;
- Administration and operations buildings.

In scenario 1 and 2, the industrial area may be located adjacent to the open pit, on the north side. However, in scenario 3, the industrial area is pushed further north due to the larger pit footprint.

### 2.2.6. Access Road

#### Primary Access Road to Trans-Taiga

A primary access road to link the project site to the Trans-Taiga Road will be needed for construction and operations. Niigaan was mandated to assess an access strategy for the project, including exploration access (winter road) and long-term access (four-season road). The permanent access route should avoid favourable/targeted areas for mining infrastructures such as waste rock and tailings storage facilities.

### On-site secondary access roads

A road network will be needed to connect the open pit to the industrial area, and to the waste rock and tailings storage facilities.

## 2.2.7. Other Infrastructures

### Airstrip / heli-pad

An airstrip may be needed to support the fly-in/fly-out work crew rotation schedule and supply transport. The length of the airstrip may vary depending on the size of the planes expected, which will also depend on the size of the crew and supply transport. Furthermore, the location of the airstrip will depend on the dominant winds and relief and should be close to the main access road and to the mine site to limit transportation time and resources. A weather station has been in operation about 31 km north-east from the project site at the La Grande 4 dam, since 1985. Data gathered at this station include wind speed and wind direction and may be suitable to support the selection of the future airstrip site. Other technical considerations may be required such as ground cover (presence of rock outcrops may need blasting).

### Quarries

The project will also require construction material before the open pit can be dug to build the main access road and some of the dams. These infrastructures may require a significant volume of construction material and thus the development of quarries and the logistics and costs around this activity may be a priority for the project. This construction material will have to be sourced locally, preferably along the main access road. Depending on the type of material required and the nature of the overburden in the area, the development of quarries for construction material may involve blasting, crushing, and screening.

### Overburden stockpile

Overburden, such as top-soil, gravel, sand, or any unconsolidated material, will be removed from different areas for infrastructure development such as the open pit, the industrial area, and more. This material, mainly top soil, is usually stockpiled and preserved for reclamation purposes. Sand and gravel may be used as construction material. There may be limited overburden at the site, considering the areas of rock outcrop and the northern setting. Estimates of overburden depth in different areas of the project site will be made at a later stage. Overburden stockpile areas should be planned accordingly.

# 3. Overview of Project Socio-environmental Settings

This section of the Scoping Report describes the existing biophysical and socio-economical conditions based on available desktop information.

## 3.1. Spatial Boundaries

Two levels of spatial boundaries were identified and considered to describe the project's socio-environmental setting, namely the Project Development Area (PDA), and the Regional Study Area (RSA) as shown on Map 4.

### 3.1.1. Project Development Area

The PDA corresponds to the potential project footprint or direct influence area associated with implementation of the project. The limits of PDA are thus directly correlated with the limits of the preliminary conceptual project layout developed by BBA and presented in Section 2.2.

The PDA encompasses an area of approximative 70 km$^2$ (corresponding to approximately 9.4 km by 7.6 km) englobing major mining infrastructures identified and described in Sections 2.2.1 to 2.2.6.

The PDA will likely be extended as additional infrastructures may be eventually added to the project layout.

### 3.1.2. Regional Study Areas

The RSA includes a broader geographical zone used to capture the regional biophysical / socio-economic context and where some potential Project impacts (namely indirect and cumulative) can be induced, anticipated, and reasonably expected as part of the Project Development

Two distinct RSAs were considered, namely one for the biophysical environment and one for the human environment. The biophysical environment RSA encompasses an area of approximately 1,500 km$^2$ (corresponding to approximately 52.5 km by 28.3 km) while the human environment RSA extends over a larger area of approximately 22,000 km$^2$ (corresponding to approximately 220 km by 100 km). Socio-economical impacts typically have a broader geographical extent.

**Composantes du projet / Project Components**

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Zone d'implantation du projet (ZIP) / Project Development Area (PDA)

***Zone d'étude régionale (ZER) / Regional Study Area (RSA)***

- Milieu biophysique / Biophysical Environment
- Milieu humain / Human Environment

**Transport**

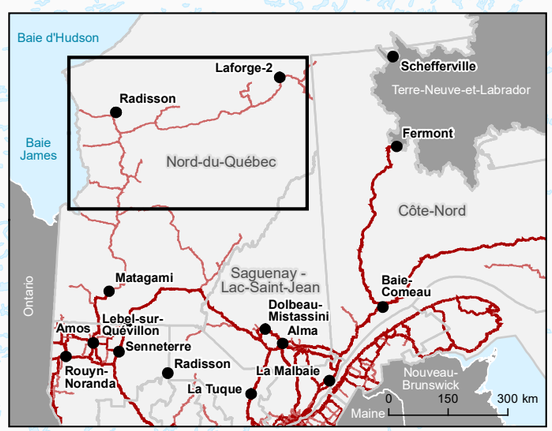
- Route locale / Local Road

250 000 500 000 750 000

6 000 000

5 750 000

Lac Denys
Lac Mureau
Lac Bienville
Lac Roz
Lac Marest
Lac Kinglet
Lac Silvy
Lac des Oeufs
Réservoir Laforge 1
Lac Vinet
Lac Hurault
Lac Craven
Lac de la Montagne du Pin
Lac Tilly
Réservoir La Grande 4
Réservoir La Grande 3
Chisasibi
Radisson
Keyano
ROUTE DE CHISASIBI
Réservoir Robert-Bourassa
Lac Guyer
ROUTE TRANSTAÏGA
Lac Brune
Lac de la Corvette
Lac Sauvolles
Lac La Savonnière
Lac Dalmas
Lac Duncan
Lac Yasinski
Lac Sakami
Wemindji
ROUTE DE WEMINDJI
ROUTE BILLY-DIAMOND
Lac Boyd
Lac Nichicun
Lac Naococane
Lac Rossignol
Réservoir Opinaca
Baie James
Eastmain
ROUTE D'EASTMAIN
Réservoir de l'Eastmain 1
Lac Biggar
Nemaska




*Patriot Battery Metals*
*Initial Environmental and Social Scoping Report*
*Eeyou Istchee Baie-James, Québec*

## Carte / Map 4
## Limites spatiales préliminaires / Preliminary Spatial Boundaries

***Sources :***
*CanVec, 1/250 000, RNCan, 2017*
*SDA, 1/20 000, MERN Québec, juin 2022*
*Données de projet, BBA, 2022*

*No projet BBA : 7535001-000100-4E*

**2022-09-14**

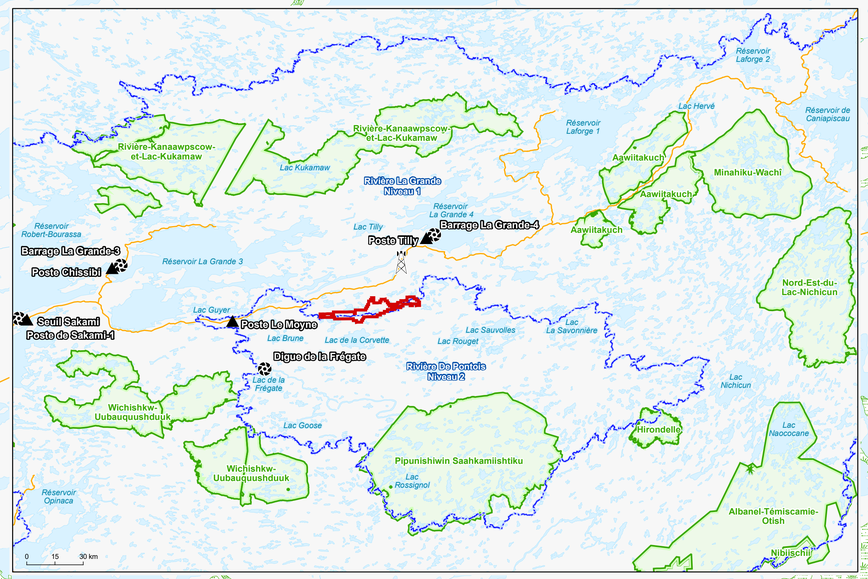
0 15 30 km
UTM, fuseau 18, NAD 83

Préparé par : É. Gagnon Dessiné par : A. Monnard Vérifié par : C. Le Page

*Fichier : 7535001_000100_4E_D20_0009_R00_LimiteSpatial_11X17.mxd*

## 3.2. Biophysical Environment

This sub-section of the Scoping Report describes the existing biophysical baseline conditions in the biophysical RSA according to desktop information. The description of the biophysical environment is generally supported by Map 5, and when relevant Maps 1, 2, and 3.






**Composantes du projet / Project Components**

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Site du projet / Project Site
- Corridor de la route projetée / Projected Road Corridor

**Infrastructures**

- Poste Hydro-Québec / Hydro-Quebec Substation
- Barrage hydroélectrique / Hydroelectric dam
- Station météorologique / Weather station

**Transport**

- Route locale / Local Road

**Dépôt de surface / Surface Deposit**

- Affleurement rocheux / Rock outcrop

**Milieu naturel / Natural Environment**

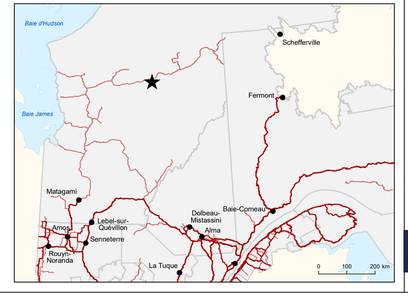
- Aire protégée / Protected Area
- Milieu humide potentiel / Potential Wetland

**Hydrographie / Hydrography**

- Cours d'eau / Watercourse
- Lac et surface d'eau / Lake and Waterbody
- Bassin-versant / Watershed

**Feux de forêt (décennie) / Forest fires (Decade)**

- 2000 - 2009
- 2010 - 2021




*Patriot Battery Metals*

Initial Environmental and Social Scoping Report
Eeyou Istchee Baie-James, Québec

## Carte / Map 5
## Principales composantes du milieu biophysique / Main components of the biophysical Environment

*Sources :*
*CanVec, 1/250 000, RNCan, 2017*
*CanVec, 1/50 000, RNCan, 2017*
*Cartographie des milieux humides potentiels, MELCC Québec, 2019*
*Adresses Québec, MERN Québec, mars 2021*
*GRHQ, MERN Québec, octobre 2021*
*SDA, 1/20 000, MERN Québec, avril 2022*
*Bassins hydrographiques multicheles du Québec, 1/20 000, MELCC, 2022*
*Dépôt de surface Nord québécois, MFFP, 2022*
*Feux de forêt, cartographie détaillée des feux, MFFP Québec, juin 2022*
*Refuge biologique, MFFP Québec, juin 2022*
*Données de projet, BBA, 2022*

*No projet BBA : 7535001-000100-4E*

**2022-10-26**

0 0,6 1,2 km
UTM, Zone 18, NAD 83

Prepared by: É. Gagnon | Drawn by: A. Monnard | Drawn by: C. Le Page

Fichier : 7535001_000100_4E_EIS_0005_ARQ_milieubiophysique.mxd

## 3.2.1. Atmospheric Environment

### 3.2.1.1. Climate

The climate in the RSA is subpolar continental characterized by short summers with prolonged daylight and long winters short daylight (MELCC, 2022).

### 3.2.1.2. Meteorological Conditions

#### La Grande 4 Dam

Two meteorological stations are located at the La Grande 4 Dam, approximately 31 km northeast from the PDA, one operated by NAVCAN and the other by Environment and Climate Change Canada (ECCC). The following parameters are measured on an hourly basis at these stations: maximum temperature, minimum temperature, mean temperature, heating degree days, cooling degree days, total precipitation, direction of maximum gust, and speed of maximum gust. However, there are no annual climate normals compiled and readily available for these stations.

#### La Grande 1 Dam

The meteorological station at La Grande 1, approximately 250 km west of the PDA, is operated by NAVCAN and provides the closest climate normals data available.

Climate normals data available at La Grande 1 for the period of 1981 to 2010 indicate the following highlights:

- Significant seasonal variations are observed;
- Annual daily average temperature averages -2.9 °C;
- Extreme maximum temperature of 37.3 °C (in July of 2005);
- Extreme minimum temperature of -44.6 °C (in February of 1979);
- Daily freezing average temperatures from November to April;
- Total yearly precipitation of 697.2 mm, with 453.8 mm of rainfall and 261.3 cm of snowfall;
- August to October are the rainiest months;
- Snowfalls typically occur between October and May, with limited snowfalls possible in June and September;
- Snowiest months have been recorded in November and December;

- Average snow depth peaks in February and March with 46 and 44 cm respectively.

### Summary

The climate normals in the PDA may vary from those at La Grande 1 since the climate normals are likely influenced by the proximity to the James Bay. The meteorological station at the La Grande 4, which is within the RSA would thus be more representative of meteorological conditions within the PDA. Climate normals data from this station should be compiled and used for the project development or a specific meteorological station may be installed at site.

## 3.2.1.3. Air quality

### Nearby Sources of Air Pollutants

There is no major source of air pollutants likely to affect air quality in the RSA.

According to the National Pollutant Release Inventory (NPRI), the closest industrial activities to the Corvette project site are the Renard mine (diamond mine by Stornoway Diamonds) and Éléonore mine (gold mine by Newmont), at 141 km and 169 km respectively (Government of Canada, 2022).

### Air Quality Monitoring

An air quality monitoring station is located in Radisson, approximately 250 km west of the PDA (Ministère de l'Environnement et de la Lutte contre les changements climatiques, s.d.). This station is part of the Réseau de surveillance de la qualité de l'air du Québec, which monitors the ambient air quality across the province of Québec. Parameters monitored at the Radisson station include Ozone ($O_3$) and particulate matter ($PM_{2.5}$) and total suspended particulates (TSP).

Between 2018 and 2021, the following results were observed:

- annual mean for $PM_{2.5}$ varied between 2.4 and 3.3 µg/m$^3$;
- annual mean for $O_3$ varied between 27 and 28.8 ppb;
- annual mean for TSP varied between 2.84 and 7.86 µg/m$^3$.

The MELCC calculates an Air Quality Index (AQI) at various air quality monitoring stations in meridional Quebec. While there is no AQI measured in proximity to the PDA or RSA, the MELCC established reference values for key contaminants. Reference values are a contaminant's concentration at which air quality is considered poor. These reference values can be used to

interpret the air quality in Radisson. The refence value for $PM_{2.5}$ is 35 µg/m$^3$ (mean for last three hours), while $O_3$ is 82 ppb (hourly mean).

The $PM_{2.5}$ and $O_3$ values measured in Radisson are much lower than the MELCC reference values for these contaminants.

### Summary

Since there is no important source of air contaminants in the RSA, air quality in the PDA is assumed to be similar to air quality measured at the Radisson air quality monitoring station and thus likely very good.

## 3.2.2. Geomorphological Conditions

### 3.2.2.1. Physiography

The RSA is part of the natural province of the low hills of La Grande River (Li, Ducruc, Côté, Bellavance, & Poisson, 2019). The eastern edge of this natural province is characterized by a low-lying terrain with rolling hills and mounds in a tight pattern, with interchanging thin glacial deposit and bedrock outcrops (Ministère de l'Environnement et de la Lutte contre les changements climatiques, s.d.).

The PDA has an elevation between 260 and 350 m above sea level (asl) (AWK Geological Consulting Ltd. 2022, Draft NI 43-101 Technical Report on the Corvette Property; Quebec Canada).

### 3.2.2.2. Geology

Almost 90% of Québec's bedrock is composed of Precambrian rocks belonging to the Canadian Shield (north of the Saint Lawrence River). The remainder consists essentially of Paleozoic rocks: the St. Lawrence Platform surrounding the Saint Lawrence River and the Appalachians to the south of the river. These geological environments offer significant discovery potential for mineral deposits.

Quebec is divided into seven main geological provinces: Superior, Nain, Churchill, Grenville, Appalachian, St. Lawrence Platform, and Hudson Bay Platform[1]. The RSA is located in the Superior Province, and the La Grande Subprovince. (Gouvernement du Québec, 2012).

The Superior Province (4.3 to 2.5 billion years [Ga]) occupies a large part of the North American continent and also covers half of Quebec, for a total surface area of 750,000 km$^2$. It is known around the world for its numerous gold, copper, zinc, nickel, and silver deposits. More recently, important diamond deposits were discovered in kimberlites. The Superior Province is subdivided into a dozen subprovinces, half of them in Quebec. The most well known is the Abitibi Subprovince, which is also the most extensive Archean volcano-sedimentary belt in the world, and famous for its gold, copper, zinc, and silver deposits.

According to the Quebec geo-mining information system (SIGEOM[2]), the general geology in the PDA is associated with the Guyer Group lithology, composed of metavolcanic and metasedimentary rocks of the Mesoarchean era (Gouvernement du Québec, s.d.). The regional geology layer specifies the PDA lies within the Guyer Group dominant unit 1, which consists of amphibolite derived from basalt. Small areas of other different geology are found throughout the PDA and immediate surroundings, including Neoarchean metaperidotite and metapyroxenite rock (lithology I4I[ME]/I4B[ME]-I4B), Mesoarchean metasomatic rock derived from felsic volcanite from the Guyer Group 2a (lithology M15(V1)), Mesoarchean iron and wacke formation from the Guyer Group 3 (lithology S9-S3), and Neoarchean Spodumene granite from the Vieux Comptoir 3 Granite Suite (lithology I1B,SO).

### 3.2.2.3. Permafrost

Permafrost is ground (soil or rock) that remains at a temperature of 0°C or lower for at least two consecutive years. Permafrost underlies about half of Canada's landmass. Most permafrost in Canada also contains water in the form of ice. According to the Permafrost Atlas of Canada[3], permafrost is likely isolated (less than 10% of the territory) in the RSA, and usually found in wetlands and at higher altitude where forest tundra is present. (Allard & K.-Seguin, 1987).

### 3.2.2.4. Seismicity

Since 2000, 19 seismic events have occurred within 300 km of the PDA (i.e., lat. 53.52 long. -73.94) (Government of Canada, 2021). Of these seismic events, six were within 100 km: one of

[1] https://mern.gouv.qc.ca/wp-content/uploads/geological-domains-quebec.pdf
[2] https://sigeom.mines.gouv.qc.ca/signet/classes/I1108_afchCarteIntr
[3] Permafrost, Atlas of Canada, 5th Edition - Open Government Portal

magnitude 4.5, three of magnitude above 2, and two of magnitude below 2. 2 shows seismic events since 2000 near the PDA.

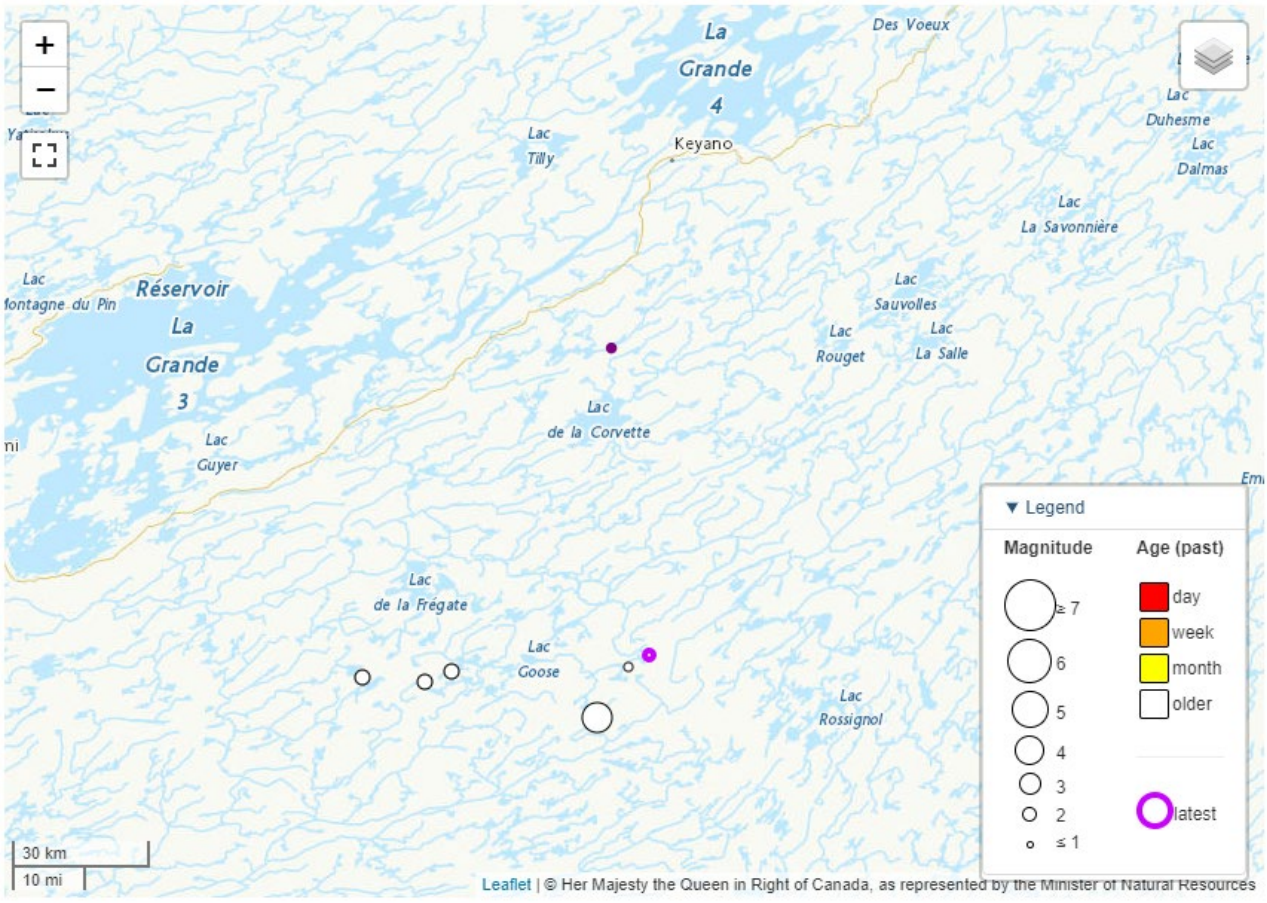



**Figure 2: Seismic events since 2000 near the PDA**

**Source:** Government of Canada - Natural Resources Canada. S.d. *Search the Earthquake Database*. Access 07-2022: https://www.seismescanada.rncan.gc.ca/stndon/NEDB-BNDS/bulletin-en.php

## 3.2.3. Geochemistry Characterization

There are no existing geochemistry data for the PDA or RSA. Geochemistry characterization is thus an important component of any mine development for various reasons, namely to manage potential environmental risks. BBA has initiated some geochemistry characterization work as part of the Initial Scoping Report. Detailed results will be included in a separate stand-alone report.

## 3.2.4. Hydrological Conditions

### 3.2.4.1. Hydrogeographic Region

The province of Quebec is divided into 13 hydrogeographic regions. These regions take into account the specific hydrological and ecological conditions of the territory. The PDA and RSA are completely located in the hydrogeographic region 09: the James and Hudson Bays, the largest hydrogeographic region in Quebec as shown in Figure 3. This region holds countless lakes and 65 notable rivers, including the La Grande river (Commission régionale sur les ressources naturelles et le territoire de la Baie-James, 2010).


**Figure 3: Hydrographic Regions of Quebec**

**Source:** Gouvernment du Québec. S.d. Rivières (bassins versants) – Les regions hydrographiques. Access 07-2022: https://www.environnement.gouv.qc.ca/eau/bassinversant/regionshydro/index.htm

### 3.2.4.2. Watershed

A watershed is the area drained by a main watercourse and its tributaries. Different sizes (or levels) of watersheds can be delineated, depending on the main watercourse selected. The level 1 watersheds are based on major rivers.

The PDA is entirely within the La Grande River watershed #06 (level 1) as shown on Map 5. The La Grande River flows from east to west over 800 km, from its headwaters at the border between Quebec and Labrador to its outlet in the James Bay. The watershed covers a vast area of over 206 000 km$^2$. In its natural state, the watershed covered 97 643 km$^2$ but the hydroelectrical project La Grande complex involved important diversions towards the La Grande River watershed. The La Grande River watershed was altered in the past half century by a number of hydroelectrical diversion projects on the Caniapiscau, Eastmain, and Opinaca rivers.

Within the La Grande River watershed (level 1), a few smaller watersheds (level 2) have been delineated, including the De Pontois River watershed (see Map 5). The RSA partially overlaps with this watershed to the south. The limit of the De Pontois River watershed may not be precisely accurate since the limit of the watershed seems to cut through a lake within the PDA, which is not possible.

### 3.2.4.3. Lakes and Waterbodies

There are numerous waterbodies and watercourses within the RSA (Map 5) and the PDA (Maps 1, 2, and 3),

Within the RSA, there are a few noticeable waterbodies and watercourses. The De la Corvette Lake is the largest lake in the RSA with an area of about 92 km$^2$ and is located approximately 10 km south of the PDA. Within the RSA, immediately downstream of the PDA is an unnamed lake of considerable size (numbered 27 on Maps 1 to 3) covering an area of about 28.5 km$^2$. The most important watercourse within the RSA is the La Grande River, approximately 20 km north of the PDA. Water in the PDA is hydrologically connected to the La Grande River, i.e., waterbodies and watercourses found within the PDA flow to the La Grande River as shown on Figure 4.

Within the PDA, the projected open pit overlaps with lake 1 as illustrated on Maps 1 to 3. Lake 1 is of an odd shape with numerous bays and very narrow sections. It is about 10 km long (east to west) and up to 1 km wide (north to south) and has an area of approximately 5 km$^2$. Other smaller lakes (all unnamed) are present within the PDA and these may be overlapped or in proximity to potential mine infrastructures. There are also many small streams but no major watercourse. Some of the most important watercourses for the development of the Corvette

project include the outlet of Lake 1 (numbered CE20-1) as well as the network of watercourses and waterbodies between lake 02 and lake 27 (numbered CE1-4 to CE1-11).

#### 3.2.4.4. Water Quality

Water quality in Northern Québec is generally of good quality due to the low anthropogenic pressure. Specific water quality monitoring was completed in the context of hydroelectrical development starting in the 1970's (Gouvernment du Québec, s.d.). The development of the hydroelectrical infrastructures complex in the La Grande River watershed has temporarily affected water quality downstream of dams. However, within a few years after the establishment of these infrastructures, water quality had returned to levels comparable to the surrounding natural environment. Within the RSA, it is expected that water would be well oxygenated, weakly acidic (average pH between 6 and 6.5), and of low conductivity (less than 25 µS/cm) (Hydro-Québec, 2020).

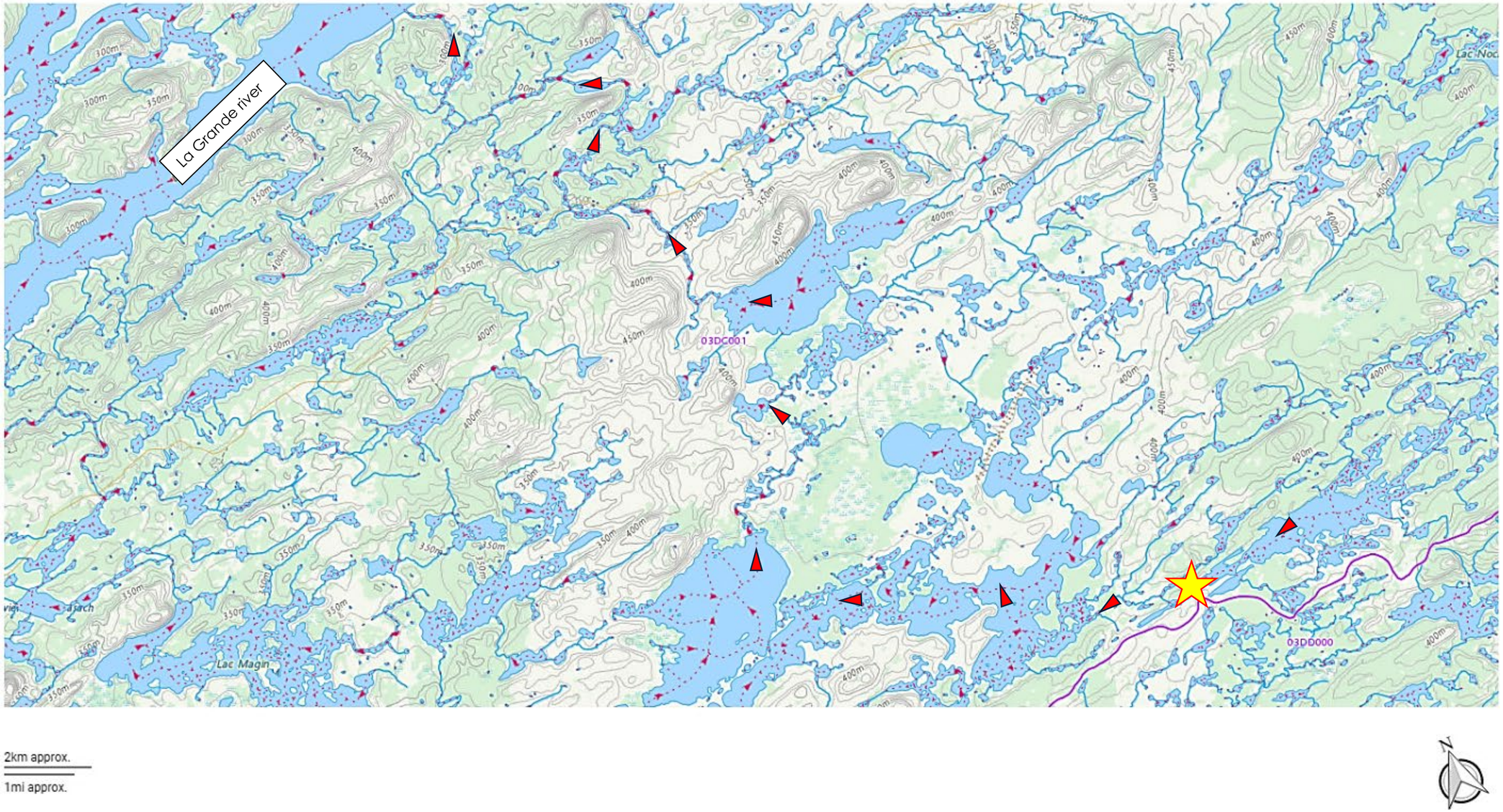



**Figure 4: General water flow from project site to La Grande river**

**Source:** Government of Canada. National Hydrographic Network. GeoBase Series. https://open.canada.ca/data/en/fgpv_vpgf/a4b190fe-e090-4e6d-881e-b87956c07977

## 3.2.5. Biodiversity Context

## 3.2.6. Protected Areas

Protected areas are primarily designed to preserve species and their genetic variability as well as maintaining the natural processes and ecosystems that sustain life in its various expressions.

In December 2002, the Government of Quebec adopted the *Natural Heritage Conservation Act* in order to contribute to the objective of safeguarding the character, diversity, and integrity of Quebec's natural heritage. The Act describes a protected area as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values." This is the definition adopted by the International Union for Conservation of Nature (IUCN). In all, 4,983 natural sites in Quebec met the definition of protected areas.

There are no protected areas within the PDA or RSA[4].

The closest protected areas (Figure 5) are all designated as territory reserve for protected area purposes and include:

1. Rivière-Kanaaupscow-et-Lac-Kukamaw Territory Reserve[5];
2. Aawiitakuch Territory Reserve[6];
3. Wichishkw-Uubauquushduuk Territory Reserve[7];
4. Pipunishiwin Saahkamiishtiku Territory Reserve[8].

[4] MELCC – Aires protégées au Québec (version du 31 mars 2022) (arcgis.com)
[5] Réserve de territoire aux fins d'aire protégé - Rivière-Kanaaupscow-et-Lac-Kukamaw (gouv.qc.ca)
[6] Réserve de territoire aux fins d'aire protégée - Aawiitakuch (gouv.qc.ca)
[7] Réserve de territoire aux fins d'aire protégé - Wichishkw-Uubauquushduuk (gouv.qc.ca)
[8] Réserve de territoire aux fins d'aire protégée Pipunishiwin-Saahkamiishtikw (gouv.qc.ca)

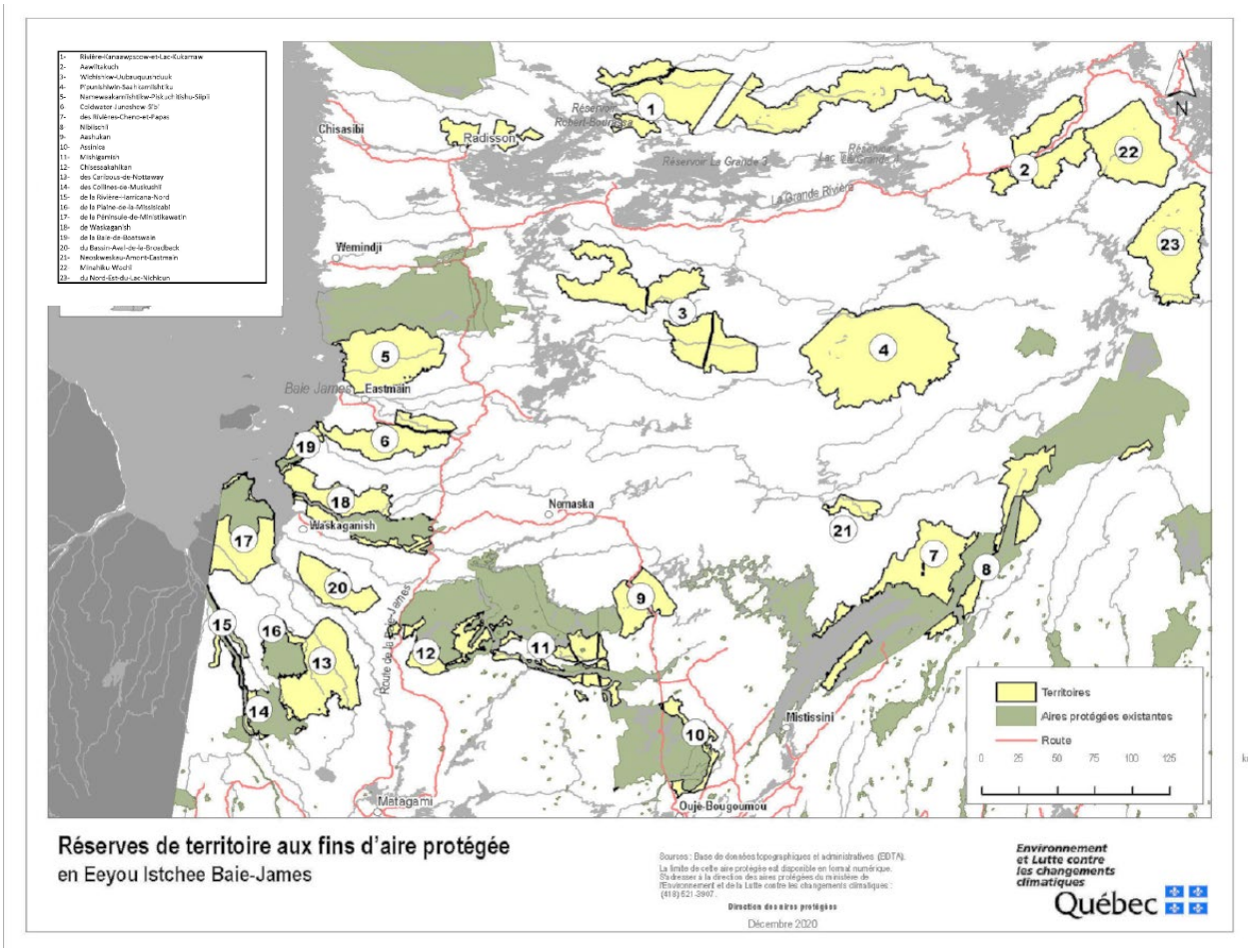



**Figure 5: Protected Area Territory Reserves in Eeyou Istchee James-Bay**

**Source:** https://www.environnement.gouv.qc.ca/biodiversite/reserves-territoires/eeyou-istchee-baie-james/carte-rtfap.pdf

## 3.2.7. Vegetation

The RSA is located within the boreal zone (Figure 6), which extends between the 48th and 58th northern latitude in Quebec and is dominated by boreal coniferous species (Gouvernement du Québec, 2021). The sub-zone in is the boreal open forest, found between the 52nd and 55th N latitude, and characterized by an open forest cover dominated by black spruce and lichen vegetative mat. The boreal open forest sub-zone has only one bioclimatic domain; the spruce-lichen stand. More precisely, the RSA is in the western spruce-lichen stand bioclimatic sub-domain, which is characterized by a drier continental climate, more frequent forest fire, and less

accentuated relief. The PDA is within the ecological region of the Eastmain and Sakami rivers (#7d), which is not subdivided into ecological sub-regions. The regional landscape unit is the De la Corvette Lake (#720), and the ecological district is the Nochet Lake low hills (#720-008). The vegetation level is not defined in the project area.

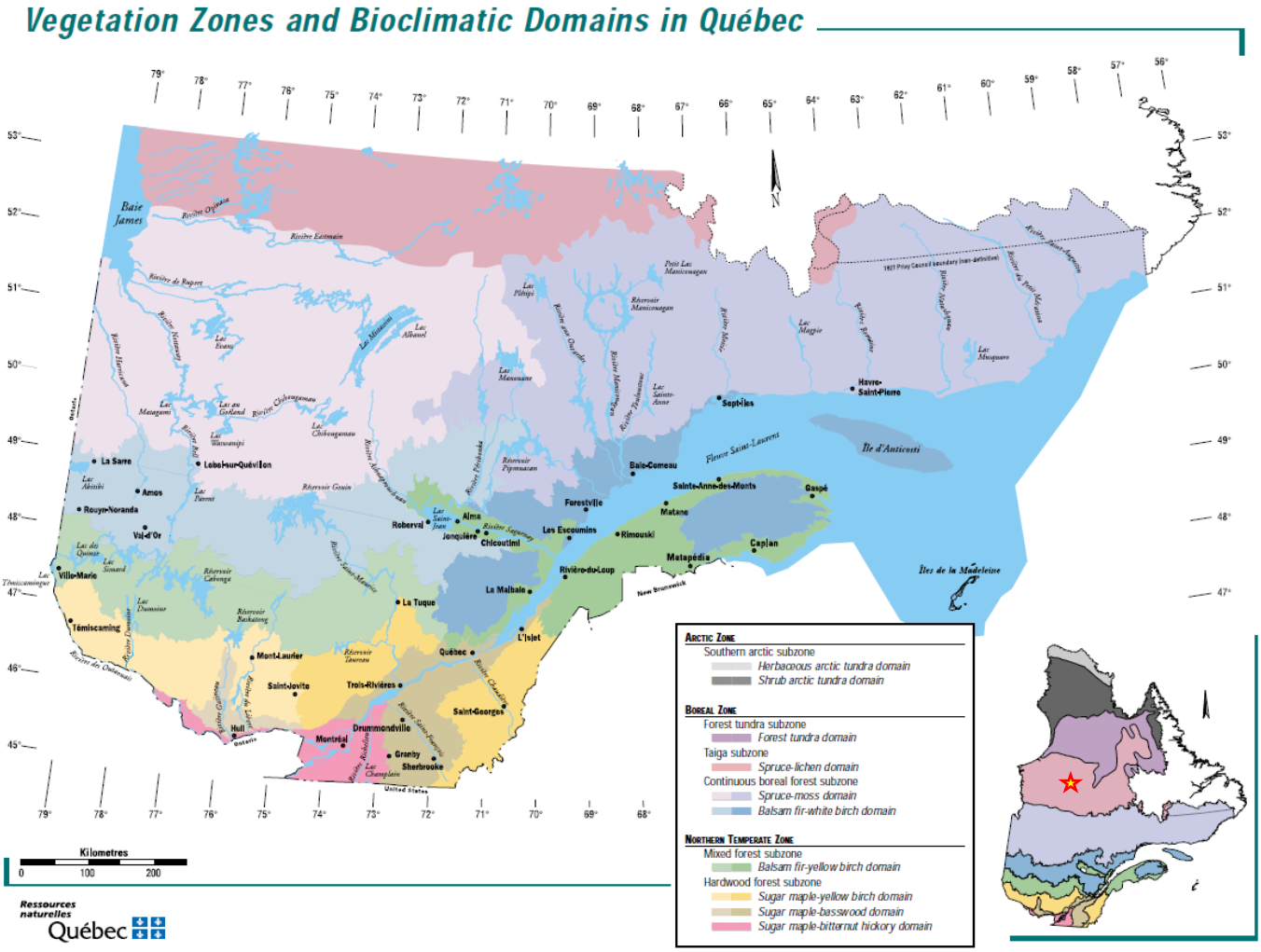



**Figure 6: Vegetation zones, bioclimatic domains and ecological regions**

**Source:** Gouvernement du Québec – Ministère des Forêts, de la Faune et des Parcs. 2021. *Système de classification écologique du Québec*. https://mern.gouv.qc.ca/english/publications/forest/publications/zone-a.pdf

The Government of Quebec conducts ecoforestry inventories of the vegetation cover in Quebec, which covers Northern Québec and the James Bay. According to data available online[9] (Gouvernement du Québec, 2019), the vegetation in the RSA consists mostly of coniferous-lichen and coniferous-moss stands, with zones of burns. This corresponds with the spruce-lichen domain described as a low-density forest cover composed mainly of black spruce on a lichen mat. In the spruce-lichen domain, burns are frequent and destroy vast areas.

Within the RSA, burned areas may be noticeable in the eastern part of the Corvette property as they occurred over the last two decades (see Map 5).

### 3.2.8. Wetlands

Wetlands are valuable habitats where the biological productivity and diversity are usually high. In northern Quebec, the most common wetlands are bogs. In the RSA, approximately 5% to 10% of the land is expected to be wetland. Other sources indicate that in the La Grande River watershed, approximately below 3% of the watershed is covered by wetland habitats, which are more prominent with proximity to the river's outlet in the James Bay area (Canards Illimités Canada, 2009).

A few potential wetlands are identified in the PDA and RSA (Maps 1, 2, 3, and 5) according to existing data.

During the summer 2022 field reconnaissance, Niigaan has identified a number of additional potential wetlands in the PDA (Maps 1,2, 3, and 7). The summer 2022 field reconnaissance consisted of an initial identification of potential wetlands in the waste rock storage facilities options and the results indicate wetlands are more prevalent than expected considering the literature and satellite imagery reviewed as part of the desktop study. However, the wetlands were only observed from the air and will need to be confirmed on the ground, characterized, and delineated.

### 3.2.9. Terrestrial Wildlife

The James Bay forests are home to at least forty species of mammals, including woodland caribou, wolves, lynx, foxes, back bears, and moose.

[9] https://mffp.gouv.qc.ca/les-forets/inventaire-ecoforestier/nord-quebecois/

During the summer 2022 field reconnaissance conducted by Niigaan, a moose, some bears, and beavers were observed within the RSA.

The woodland caribou found in Quebec are divided in three ecotypes: the migratory ecotype, the boreal ecotype, and the mountain ecotype (Gouvernement du Québec, 2022). Within the James Bay region, the woodland caribou – migratory ecotype and the woodland caribou - boreal ecotype are present. They will be referred as the migratory caribou and boreal caribou in the following sections. Both the migratory caribou and boreal caribou could occasionally be encountered within the RSA. However, according to a winter 2021 caribou survey in the James Bay region, the PDA may not represent high quality habitat for caribou.

### Woodland Caribou – Migratory Ecotype

Two herds of migratory caribou are present in Quebec: the George River Herd and the Leaf River Herd. The two populations have distinct distribution areas and demographics. In northern Québec and Labrador, the George River (GRH) and Leaf River (LRH) migratory caribou herds range over several thousand square kilometres, mainly North of the 53rd parallel (Figure 7). Thus, the migratory caribou travels hundreds to thousands of kilometers to access its functional habitats from one season to the other, year after year. The George River herd and the Leaf River herd estimated populations is 8,100 individuals and 187,000 individuals respectively (Ministère des Forêts, de la Faune et des Parcs, 2021). The migratory caribou rut in the fall and migrate to their calving grounds in the spring. Since 2018, hunting of migratory caribou is prohibited in Quebec.

### Woodland Caribou – Boreal Ecotype

There are thirteen herds of boreal caribou in Quebec (Ministère des Forêts, de la Faune et des Parcs, 2021) (Figure 8). They are present in the boreal forest, mainly between the 49$^{th}$ to the 55$^{th}$ parallel. This ecotype forms smaller local herds, which do not undertake extensive migration across the territory. The ranges of the boreal caribou and of the migratory caribou overlap as far as the 52$^{nd}$ parallel in winter. The differentiation between the two ecotypes is difficult, and thus it can be complex to determine the status and size of the boreal caribou herds in this area.

A survey of the boreal caribou herds in the James Bay region was conducted in winter 2020, which included the collaring of 21 boreal ecotype caribou and 6 migratory ecotype caribou. The survey results indicate that caribou habitat in the PDA is probably poor, partly due to the recent burns. During the 2020 survey, caribou were mainly present further east and south of the biophysical RSA, as shown on figure 9.

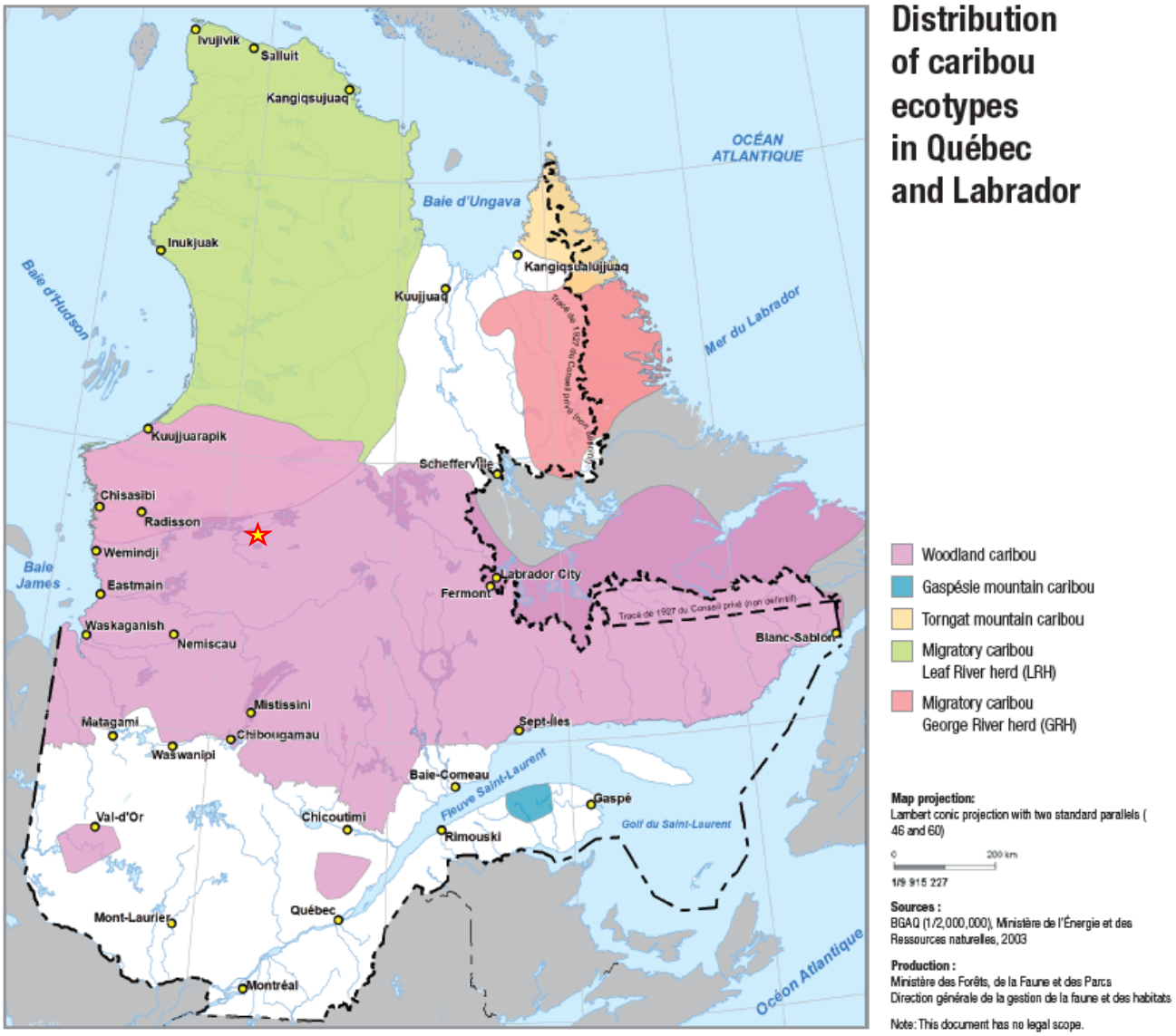



**Figure 7: Distribution of caribou ecotypes in Quebec and Labrador**

Source: Ministère des Forêts, de la Faune et des Parcs. 2021. *Woodland caribou in Québec and mountain caribou in Gaspésie: Factors in their decline, measures to halt the decline and current population status*. Accès 08-2022: https://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi0sZifwKP6AhVokYkEHdDrCbEQFnoECAkQAQ&url=https%3A%2F%2Fmffp.gouv.qc.ca%2Fwp-content%2Fuploads%2FSyntheseRevueLitt_ANGL.pdf&usg=AOvVaw3eYkS5laW_er5gVIbe_xUl

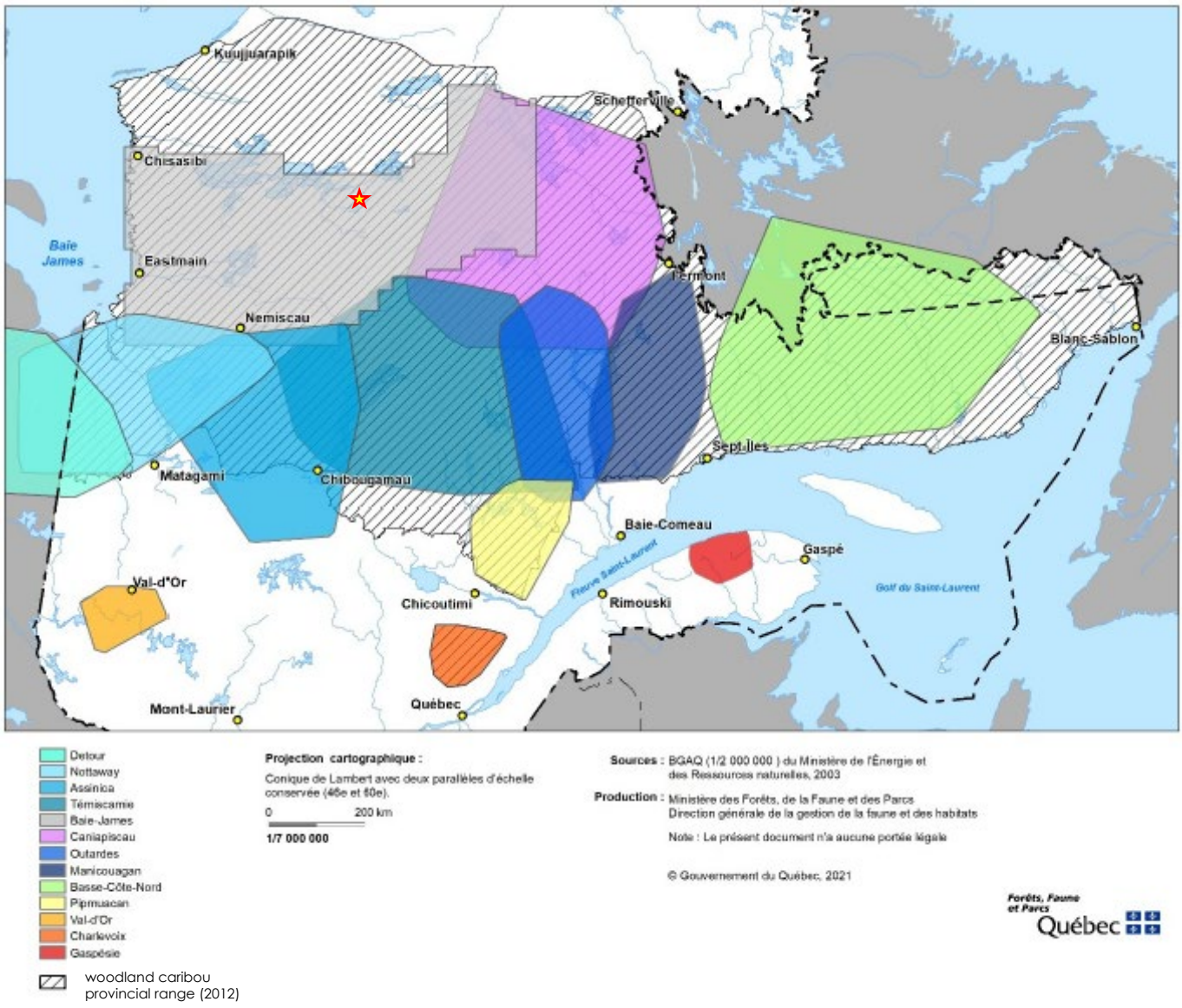



**Figure 8: Ranges of woodland caribou herds in Quebec and mountains caribou in Gaspésie**

Source: Ministère des Forêts, de la Faune et des Parcs. 2021. Revue de littérature sur les facteurs impliqués dans le déclin des populations de caribous forestiers au Québec et de caribous montagnards de la Gaspésie. Accès 08-202: https://mffp.gouv.qc.ca/wp-content/uploads/RevueLitteratureCaribou.pdf

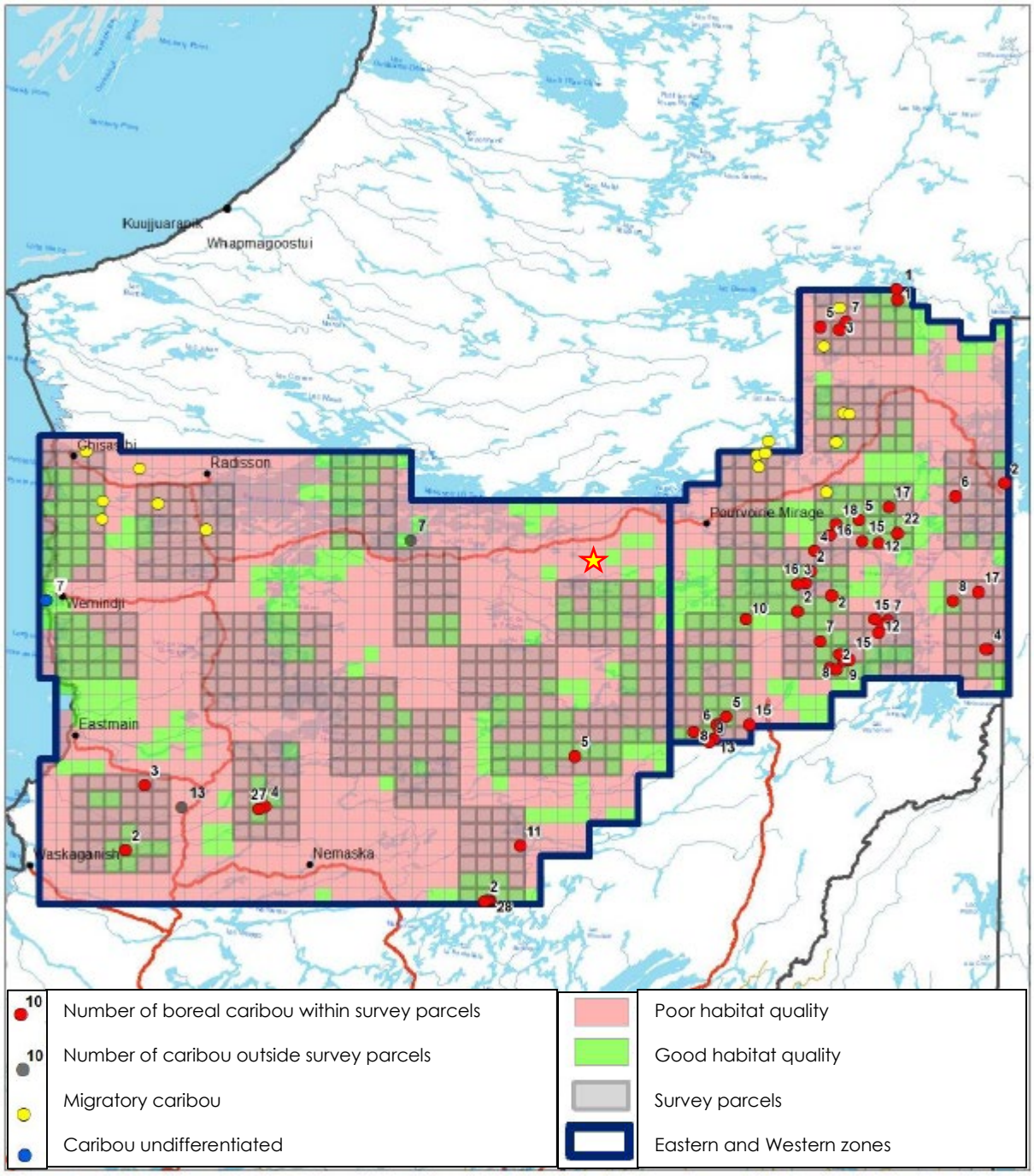



**Figure 9: Caribou groups observed and habitat quality within the survey area**

Source: https://mffp.gouv.qc.ca/wp-content/uploads/RA_inventaire_Nord-Quebec_2020.pdf

Since 2005, the woodland caribou – boreal ecotype (*Rangifer tarandus caribou*) is designated as a vulnerable species under the *Act Respecting Threatened or Vulnerable Species* (Quebec). Moreover, since 2003, the woodland caribou – boreal ecotype (*Rangifer tarandus*) is listed as a threatened species under the *Species at Risk Act* (Canada). Hunting of the woodland caribou – boreal ecotype has been prohibited in Quebec since 2001.

## Moose

Moose have a large range in Quebec, extending from the southern limit of the province to the 55th parallel (tree limit), and from the eastern to the western provincial borders (Gouvernement du Québec, 2016). Their habitat consists mostly of mixed forest, and they are known to use clearings, burns, logged areas, alder stands/forests, and wetlands. The rut takes place in the fall between September and November, while calving occurs in the spring between late-May and early-June. The RSA is relatively close to the northern habitat range limit for the species and thus the moose density in the project area is likely low (Commission régionale sur les ressources naturelles et le territoire de la Baie-James, 2010). The moose density in hunting zone 22 (which includes the RSA) was estimated at 0.26 moose per 10 $km^2$ in 1991. Hunting zone 22 is large, extending from the 50th parallel to north of the 55th parallel, with the RSA located at the 53rd parallel.

## Chiropters

One species of chiropter is possibly present in the RSA: the little brown bat (*Myotis lucifugus*) (Ministère des Forêts, de la Faune et des Parcs, 2019). The little brown bat is a small, insectivorous species of the Family Vespertilionidae. During the summer-spring, the little brown bat roosts in buildings, trees, and caves (Nature Conservancy Canada, s.d.). In the fall, it can migrate thousands of kilometers to its hibernation site, typically caves or abandoned mines where the environment remains at above-freezing temperatures. They hibernate approximately from October to April for females, and June for males. The little brown bat was emergency listed as an endangered species at the federal level in 2014 due to dramatic declines caused by an invasive fungus affecting the species, i.e., white-nose syndrome.

## Amphibians and reptiles

A total of 36 species of amphibians and reptiles are found in Quebec, of which ten species of amphibians and one species of reptile have been previously recorded in the James Bay region (Commission régionale sur les ressources naturelles et le territoire de la Baie-James, 2010). The

following species may be encountered in the PDA (Atlas des amphibiens et reptiles du Québec, s.d.):

- Blue-spotted Salamander (*Ambystoma laterale*);
- Northern Two-lined Salamander (*Eurycea bislineata*);
- Eastern American Toad (*Anaxyrus americanus*);
- Spring Peeper (*Pseudacris crucifer*);
- Wood Frog (*Lithobates sylvaticus*);
- Northern Leopard Frog (*Lithobates pipiens*);
- Mink Frog (*Lithobates septentrionalis*);
- Common Garter Snake (*Thamnophis sirtalis*).

None of these species are protected.

### 3.2.10. Avian Wildlife

#### Overview

Avian wildlife is very diverse in the James Bay region with a total of 238 bird species inventoried (Commission régionale sur les ressources naturelles et le territoire de la Baie-James, 2010). Numerous migratory birds travel to the James Bay region to nest and/or rest, especially on the coasts of the James Bay, more precisely the Boatswain Bay and Rupert Bay (Commission régionale sur les ressources naturelles et le territoire de la Baie-James, 2010). Little information is known on the paths these migratory species use, and thus no migratory corridor has been mapped for the James Bay region. Of the 238 bird species inventoried in the James Bay region, numerous could be present within the RSA. Baseline studies will be required to specify the species potentially present within the RSA and PDA.

#### Nesting Zone

The Government of Canada (Ministry of Environment and Climate Change Canada, ECCC) has divided the entire country into nesting zones of migratory birds, based on species diversity, mean annual temperature, and similarities in the nesting periods within and between zones (Government of Canada, 2018). The RSA falls at the north-east limit of the nesting zone C6, close to the limit of nesting zone D7, which is north of C6. The nesting zone C6 has a regional nesting period of late-April to mid-August, while D7 has a regional nesting period of early-May to mid-

August. These dates are derived from prediction models and could vary due to various factors. Moreover, these dates do not cover non-migratory bird species (under the provincial legislative power).

### 3.2.11. Fish and Fish Habitat

The James Bay region is characterized by countless waterbodies and watercourses, which host a variety of aquatic life (Commission régionale sur les ressources naturelles et le territoire de la Baie-James, 2010). Fish habitat in the region is omnipresent and protected under federal and provincial legislations. In general, fish habitat in northern Quebec is of very good quality due to low anthropogenic disturbance. In northern Quebec, fish populations are particular in terms of species present and their life cycle. They generally have a slower growth, extended longevity, and lower density associated with lower ecosystem productivity. Moreover, they are characterized by later sexual maturity, lower fertility, and longer reproduction cycles. Because of some of these particularities and the generally low disturbance and fishing pressure, sport fishing for trophy fish is renown in the region.

According to the website of the Mirage Adventure fishing and hunting outfitter, located about 75 km east-north-east from project site, sport fishing in the region mainly targets Northern Pike, Brook Trout, Lake Trout, and Walleye (Mirage Aventure, 2022).

Within the RSA (Map 5) and the PDA (Maps 1, 2, and 3), good quality fish habitat is expected due to the presence of numerous lakes and watercourses and limited (practically non-existent) anthropogenic disturbances.

During the summer 2022 initial field reconnaissance surveys, Niigaan has confirmed the presence of three fish species within the PDA: Northern Pike, Brook Trout, and Lake Trout. Furthermore, an initial fish habitat field reconnaissance characterization was completed, and the results are further discussed in Section 5.3 of this report.

### 3.2.12. Species at risk

Species at risk listed at the federal or provincial level are likely present within the RSA although survey effort has not yet been invested.

The Government of Québec is committed to protecting genetic biodiversity as reflected in the Act Respecting Threatened or Vulnerable Species (chapter E-12.01). The Regulation respecting threatened or vulnerable plant species and their habitats (chapter E-12.01, r. 3) and the

Regulation respecting threatened or vulnerable wildlife species and their habitats (chapter E-12.01,r.2), respectively identify plant and wildlife species which are legally protected.

At the federal level, status designation is recommended by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Species can be designated as endangered, threatened, special concern, or extirpated, of which only endangered, threatened, and extirpated species are legally protected.

## Flora

Little information is available regarding plant species at risk in the James Bay Region as few surveys were completed. A list of the plant species at risk found north of the 51st parallel was assembled in 2014. The list includes 45 species, all of which are designated as susceptible to be designated threatened or vulnerable, and found in the document "Guide de reconnaissance des habitats forestiers des plantes menacées ou vulnérables, Abitibi-Témiscamingue et Nord-du-Québec"[10].

According to the Centre de données sur le patrimoine naturel (CDPNQ) Interactive map[11], no occurrences of plant species at risk have been identified within the RSA or PDA. The closest occurrences are located about 220 km north-east and 250 km south-east outside.

## Fauna

According to the Centre de données sur le patrimoine naturel (CDPNQ) Interactive map[12], the closest occurrence of fauna species at risk have been identified about 25 km north-west of the PDA (Gouvernement du Québec, s.d.). The occurrence relates to a reproduction site for the Harlequin Duck – Eastern Population, which is designated as vulnerable at the provincial level and as threatened at the federal level.

As mentioned in Section 3.2.9, the little brown bat, a species designated as endangered at the federal level is possibly present in the RSA according to the MFFP. The woodland caribou is designated as a vulnerable species at the provincial level, and as a threatened species at the federal level could also be present in the RSA/PDA.

[10] https://mffp.gouv.qc.ca/documents/forets/connaissances/guide-plantes-menacees-2014.pdf
[11] https://services-mddelcc.maps.arcgis.com/apps/webappviewer/index.html?id=2d32025cac174712a8261b7d94a45ac2
[12] https://services-mddelcc.maps.arcgis.com/apps/webappviewer/index.html?id=2d32025cac174712a8261b7d94a45ac2

Outside the RSA, there are a number of known reproduction sites for Bald Eagle (within about 160 to 200 km from the PDA), as well as reproduction sites for Bank Swallow (within about 70 to 200 km from the PDA). The project site is a little outside the mapped range for Bald Eagle.

## 3.3. Human Environment

This sub-section of the Scoping Report describes the existing socio-economic baseline conditions in the human RSA according to desktop information. The description of the human environment is supported by Map 6.

### 3.3.1. Human Occupancy and Resource Use

#### 3.3.1.1. Administrative Framework

##### Administrative Region

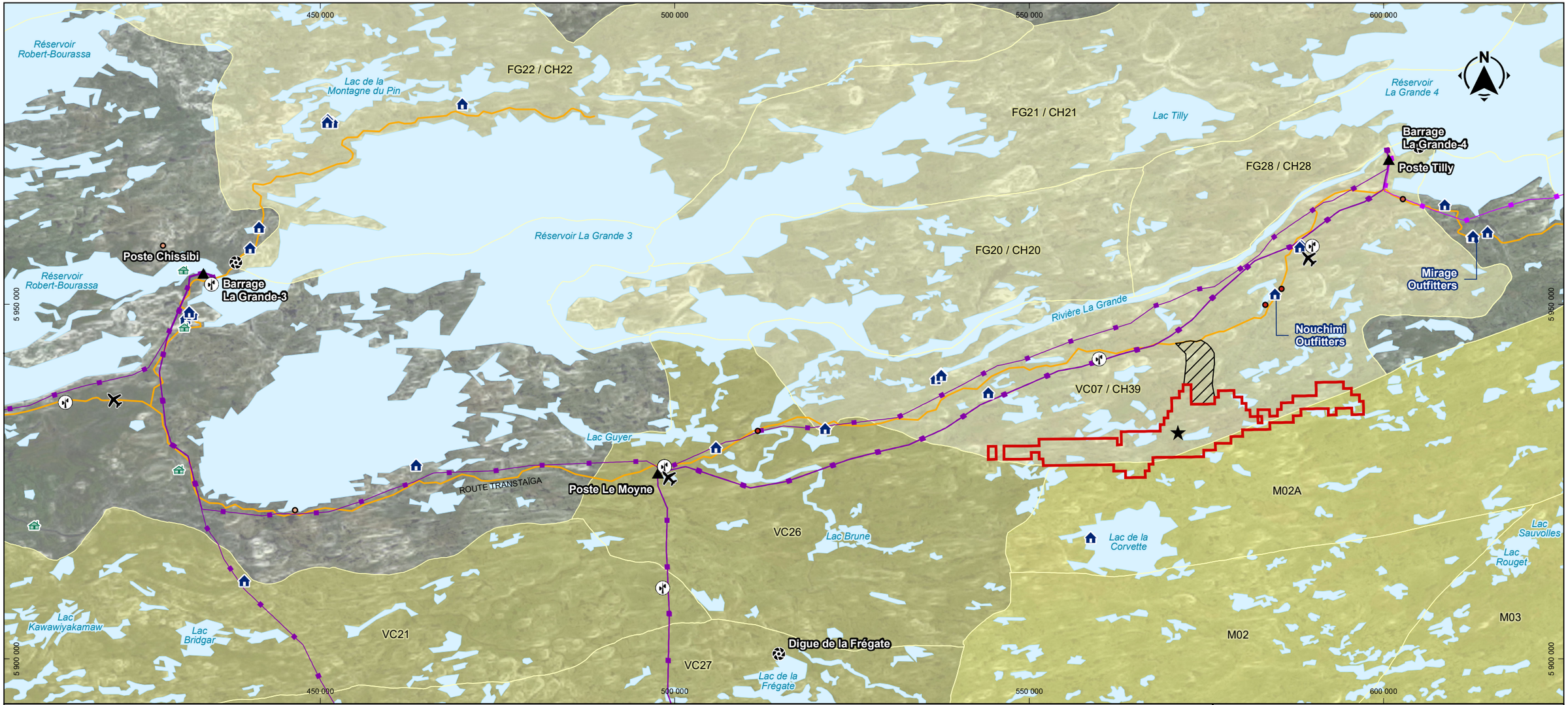
The PDA is located in the Nord-du-Québec administrative region of the province of Quebec. The region is divided in two territories: Eeyou Istchee James Bay and Nunavik. It makes up the largest administrative region of Quebec, covering 55% of the province (860,553 km$^2$) (Ministère des Affaires municipales et Habitation, 2022). However, it is also the least populated region having only 0.5% of the province's population (46 673 people in 2021) (Institut de la statistique du Québec, 2020).

##### Eeyou Istchee James Bay Territory

More precisely, the Corvette property is in the Eeyou Istchee James Bay territory. The Eeyou Istchee James Bay territory is in the west portion of the province of Quebec between the 49th and 55th parallels and covers 339 698 square kilometers (Administration régionale Baie-James, 2019).

The Eeyou Istchee James Bay territory is home to the Cree Nation and the Jamésien communities.

The Jamésien communities consist of the municipalities of Chibougamau, Chapais, Lebel-sur-Quévillon, and Matagami as well as the localities of Valcanton, Villebois, Radisson, Desmaraisville, and Miquelon, which are under the jurisdiction of the Eeyou Istchee James Bay Regional Government.




**Composantes du projet / Project Components**

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Corridor de la route projetée / Projected Road Corridor
- Site du projet / Project Site

**Transport**

- Route locale / Local Road
- Aéroport / Airport

**Ligne de transport d'énergie / Power Transmission Line**

- 735 to 765 kV
- 315 to 450 kV

**Infrastructures**

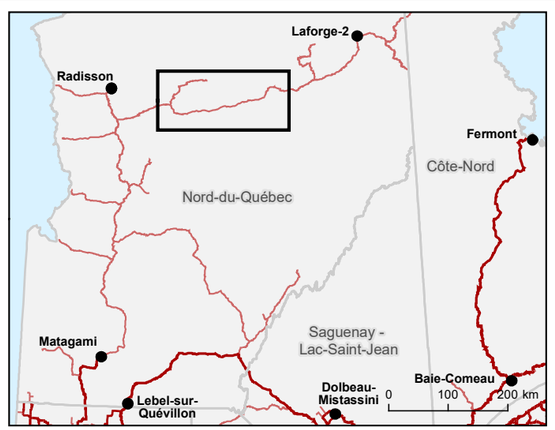
- Poste Hydro-Québec / Hydro-Quebec Substation
- Barrage hydroélectrique / Hydroelectric dam
- Tour de télécommunication / Telecommunication Tower

**Territoires de trappe autochtone / Indigenous Trappline**

- Communauté crie de Chisasibi / Chisasibi Indigenous Community
- Communauté crie de Mistissini / Mistissini Indigenous Community
- Communauté crie de Wemindji / Wemindji Indigenous Community

**Baux en terres publiques / Leases on Public Lands**

- Abri sommaire en forêt / Rough forest shelter
- Villégiature / Vacation




*Patriot Battery Metals*
*Initial Environmental and Social Scoping Report*
*Eeyou Istchee Baie-James, Québec*

## Carte / Map 6

## Principales composantes du milieu humain / Main components of the human Environment

***Sources :***
*CanVec, 1/250 000, RNCan, 2017*
*Territoire de trappe autochtone, MFFP, 2019*
*Aéroport, Ministère des Transports du Québec, 2021*
*SDA, 1/20 000, MERN Québec, juin 2022*
*Baux de villégiature, MERN Québec, juin 2022*
*Orthophoto, MFFP, résolution 5 m, 2005*
*Données de projet, BBA, 2022*

*No projet BBA : 7535001-000100-4E*

**2022-09-22**

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UTM, fuseau 18, NAD 83

Préparé par : A. Séguin | Dessiné par : A. Monnard | Vérifié par : C. Le Page

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## Cree Nation

Eeyou Istchee, which means the People's Land, comprises some eleven Cree communities and is subdivided into over three hundred traplines, which are traditional family hunting and trapping grounds.

Originally from the western Canadian prairies, the Crees traditionally lived in small nomadic groups and sustained themselves by hunting and fishing. In Québec, they resided in the James Bay region. As early as 1670, fur trading was a vital economic activity for the Crees.

During the 20th century, the growing presence of the federal government in James Bay, the introduction of compulsory school attendance, the construction of permanent homes and the decline of the fur trade affected the Cree way of life. In response to the James Bay hydroelectric development projects, the Crees set up a structured political organization, the Grand Council of the Crees (Eeyou Istchee) in the 1970s.

In 1975, the Crees, the Inuit, and the Québec and Canadian governments signed the James Bay and Northern Québec Agreement (JBNQA), which recognized the rights and territorial interests of Crees and Inuits under various agreements.

The JBNQA granted the Crees exclusive rights and interests in 5,544 km2 of land and exclusive hunting, fishing, and trapping rights on a surface area of 69,995 km2. It also stipulated various obligations on the part of the government regarding health and social services, education, and income security, primarily through associated financing and certain compensation arrangements. (Gouvernement du Québec, 2021)

Each Cree Nation is administered independently through their respective local government, and at the same time, each elected Chief sits on the Board of Directors of the Grand Council of the Crees (Eeyou Istchee) and the Council of the Cree Nation Government to address common Cree Nation issues.

Within the RSA three communities are present, namely the Cree Nation of Chisasibi, the Cree Nation of Mistissini, and the Cree Nation of Wemindji. The PDA is entirely within the Chisasibi Cree Nation territory. Daisy House is presently the Chief of the Chisasibi Cree Nation.  Cree Nations' Chiefs and various Cree boards and associations were identified as important stakeholders for the Corvette Lithium Project.

### Category III Land

The Corvette property is located on provincial Crown land of Category III under the James Bay and Northern Quebec Agreement (Figure 8). On Category III land, the Cree have exclusive trapping and fishing rights, for certain species, and non-exclusive hunting and fishing rights for others. (Gouvernement régional d'Eeyou Istchee Baie-James, 2022).

## 3.3.1.2. Population

There are no dwellings or settlements within the PDA or the RSA. In fact, the closest inhabited zones are in the locality of Radisson and the Cree community of Chisasibi, both outside the RSA.

### Radisson

The nearest populated area accessible by road from the Corvette project is Radisson, which is set about 250 km west of the PDA. Radisson is located at the end of the paved portion of the Billy-Diamond highway and has a population of 468 inhabitants. It is an urbanized space where there are grouped residential, commercial, and service uses, industrial areas, institutions, and public organizations. (Gouvernement régional d'Eeyou Istchee Baie-James, s.d.)

### Cree Nation of Chisasibi

Chisasibi is approximately 330 km west of the PDA. Its modern commercial, administrative, hospital, and educational facilities make Chisasibi a leading community in Northern Quebec. It is the biggest of the Cree communities in terms of population of the territory and has an airport which offers daily flights. Chisasibi has a population of more than 5,000 people which include approximately 4,800 Crees, 90 Inuits and 250 non-Natives of diverse origins. In addition to its socioeconomic activities, trapping, hunting, and fishing activities continue to characterize the Chisasibi community (Cree Nation of Chisasibi, 2022).

## 3.3.1.3. Resource Use

### Hydroelectricity

There are many major hydroelectric projects developed through the 70's and 90's which have transformed the La Grande Rivière watershed (Map 6). The hydroelectrical development

resulted in the flooding of hundreds of kilometers of traditional hunting and fishing grounds of the Cree communities.

The hydroelectric infrastructures on the Eeyou Istchee James Bay territory consist of eleven generating stations of the La Grande complex, including the world's largest underground generating station, the Robert-Bourassa generating facility (LG-2 – 7 722 MW) (Hydro-Québec, 2022).

## Mining (exploration and active mining)

Mining activity in the Eeyou Istchee region has been ongoing since the 1950's. There is a continued interest in mineral exploration activity and the opening of new mines across the Eeyou Istchee James Bay territory.

According to the SIGEOM platform[13], adjacent to the Corvette property and within the RSA are countless active mineral claims held by numerous exploration companies. There is no active mine within the RSA.

The closest mining activities to the Corvette project site are the Renard mine (diamond mine by Stornoway Diamonds) and Éléonore mine (gold mine by Newmont), at 141 km and 169 km respectively (Government of Canada, 2022).

## Fishing, Hunting, Camping, and Outfitting

Hunting and fishing are important activities in the James Bay Region. Within the RSA is the Mirage Adventure Outfitter base camp, located approximately 75 km east of the PDA (see Map 6). Mirage Adventure Outfitter has no exclusive rights territory and offers hunting and fishing guiding services on Crown land. There is no hunting and fishing outfit with exclusive rights within the RSA.

Residents of Quebec can fish and/or hunt in the RSA and PDA if they have a fishing and/or hunting licence. Non-residents could also fish and/or hunt in the RSA and PDA, but they would require the services of an outfitter in addition to their licence. The RSA falls in the hunting zone 22A. Considering the very limited access to the PDA, there is likely limited fishing and hunting activities in this area.

The Mirage Adventure Outfitter base camp is located at KM 358 of the Trans-Taiga highway (75 km east from the PDA). It is accessible year-round, proposing a variety of activities and services

[13] SIGÉOM | Système d'information géominière | Carte interactive (gouv.qc.ca)

such as hunting, fishing, snowmobiling, and hiking. It has a runway, a hydrobase, and a helicopter port.

The Nouchimi site is a closed down outfitter camp located at KM 286 of the Trans-Taiga highway. It comprises a dining room, bedrooms, and a hydroplane base.

The Sakami Lake Campground is located off kilometer 56 of the Trans-Taiga highway, outside the RSA. It is a campground with picnic tables, boat launch, toilets, fishing, and two Cree-family camps.

Finally, several types of leases are available on public land in Québec. These leases are managed by the MERN. For each leasing agreement, the lessee is granted the right to use the lot, under numerous conditions. Some leases that are present within the RSA are mostly scattered alongside the Trans-Taiga highway (see Map 6). Most of these leases are private vacation leases, defined as "used privately for a dwelling in which to stay in a natural environment (cottage, mobile home, or trailer)". The closest private vacation lease is approximately 18 km south-west of the PDA, on the west shore of De la Corvette Lake. The presence of this lease, as well as the ones along the Trans-Taiga road can be considered as an indication of active land use in the RSA.

#### Forestry and Agriculture

Forestry is an important activity in the south of the administrative region of Nord-du-Québec, where the limit of the commercial exploitable forest is the 52nd parallel. Therefore, there are no forestry activities within the RSA, which lies north of the 53rd parallel.

Agriculture and farming, although marginal, is practiced in the south of the administrative region of Nord-du-Quebec (Gouvernement du Québec, 2022). There is no modern agricultural industry in the RSA. The Cree communities traditionally harvest wild berries on family traplines territory but can practice traditional activities anywhere within the RSA.

### 3.3.2. Traditional Land and Resource Use

#### Traplines

Alongside modern life, Cree communities continue to hunt, trap, and fish as part of their traditional way of life. The Eeyou Istchee James Bay territory is divided into family traplines. Those lands are used year-round by Cree families for traditional activities (Cree-Québec Forestry Board, 2018). Fur-bearing animals trapped in the region include wolf, beaver, marten, muskrat, otter, mink, and weasel (Cree Trappers Association, 2019).

The PDA is located on the Cree Nation of Chisasibi trapline VC07 (CH39). Mr. Paul Ratt is the tallyman of trapline VC7 (CH39), which covers an area of about 2,070 km$^2$ and is located entirely on Category III Land (Cree geoportal, 2022). The southern part of the PDA is located on the Cree Nation of Mistissini trapline M02A. Located entirely on Category III Land, the M02A trapline covers approximatively 2202 km$^2$. During summer 2022, Niigaan conducted field reconnaissance during which no family camps or infrastructures were observed in the PDA.

### Hunting and Fishing

Amongst other things, Cree communities cherish Goose and Moose hunting. Goose break is a tradition where communities close-down and families head out to the land to hunt for four weeks in May. Moose harvesting is also a popular traditional activity for Cree families, practiced from mid September to mid October of each year. Other species like caribou, bear, lynx, red fox, ruffed grouse, and ptarmigan are also hunted throughout the year (Cree Trappers Association, 2019). Cree families fish on different community waterbodies. Sakami Lake is a popular fishing area for the Cree communities.

As part of the desktop study, no area of high importance for fishing or hunting was identified within the RSA. During consultation with Cree communities and other stakeholders, highly valued areas for traditional activities may be identified within the RSA and/or the PDA.

## 3.3.3. Employment and Economy

The local economy is mostly based on the energy sector and natural resources development.

### Energy Sector

The energy sector is an important part of the region's economic activities. Most of the economic benefits comes from Hydro-Québec's activities. More than half of the annual electricity production in Quebec comes from hydroelectric facilities in the James Bay region.

### Mining Sector

In 2019, the Nord-du-Québec region ranked first among administrative regions in terms of mining investments in the province, with 40% of mining investments representing $1.325 M (Institut de la statistique du Québec, 2020). The closest mining activities to the Corvette project site are the Renard mine (diamond mine by Stornoway Diamonds) and Éléonore mine (gold mine by

Newmont), at 141 km and 169 km respectively (Government of Canada, 2022). Those hire a number of fly-in fly-out employees.

### Sub-contractors and Service providers

The Eeyou Istchee James Bay territory, especially the Cree communities, have a growing entrepreneurial base, and industries operating in the region are encouraged to offer contract opportunities to these enterprises. The field of activity includes air charters, helicopter services, fuel supply, food and catering industry, logistical support, and accommodation within communities (Cree Mineral Exploration Board, 2022).

## 3.3.4. Social and Cultural Well-being

Comprehension of the social and cultural well-being of the population is an important environmental dimension of any Project as it provides a better understanding of the livelihood in the affected regions, the perception of the people, their attachment to the land they occupy, and their interaction with the Project. It helps to prevent Project-related misconceptions from occurring and contributes to a better understanding of potential effects on local communities (stress, social acceptability, and cohesion).

Existing literature recognizes a number of dimensions which need to be considered when assessing well-being including emotional, physical, environmental, social, financial, and intellectual well-being. Perception of what is considered a good social and cultural setting or what provides a sense of well-being, relative or total, differ from people, culture, and socio-economic context. The same way as what can be considered as individual or social stressors.

### Housing

Construction costs in the region are very high, therefore there is limited affordable housing available. This is an important issue for the local population.

### Potable water

Potable water is available in the locality of Radisson. Furthermore, all Cree communities have access to potable water either through surface water distribution network or groundwater wells.

### Accessible Health Care

In the Eeyou Istchee James Bay territory, there are five (5) Jamesian health centers (Centres de santé) in the following Jamesian communities: Chapais, Chibougamau, Lebel-sur-Quévillon, Matagami, and Radisson (Centre régional de santé et de services sociaux de la Baie-James, s.d.). Cree communities also have a network of health facilities offering basic services. The community of Chisasibi has a Regional Hospital. However, due to the current state of the facilities and the lack of space, the Chisasibi Regional Hospital cannot fulfill its mission as a regional hospital. Only a few services are offered at the Chisasibi Regional Hospital and patients needing emergency services are often evacuated or referred to other hospitals. The closest health center to the PDA is in the city of Radisson.

### Education

The education network is well developed, all Jamésian communities have primary and secondary schools. The *Centre d'études collégiales* in Chibougamau also offers general and technical training leading to an attestation or a diploma of collegial studies. The Cree School Board's Youth Sector offers education at 15 schools in nine Cree communities ranging from Pre-Kindergarten to Secondary V (Cree School Board, s.d.).

### Income

The Eeyou Istchee James Bay territory is characterized by high revenue disparities. The average income by person in the Jamésien territory is $5,386 higher than the average income in the Cree territory. (Institut de la statistique du Québec, 2020)

## 3.3.5. Infrastructures and Services

### 3.3.5.1. Roads

The Trans-Taiga is a gravel road that runs 666 km from the James Bay Road, generally on an east-west orientation. The PDA is located about 10 kilometers south of the Trans-Taiga road (Eeyou Istchee Baie-James Tourism, 2022).

### 3.3.5.2. Airports

The La Grande airport is located approximately 30 km north-east of the PDA. It is an aerodrome servicing the hydroelectric facilities of La Grande 4, and owned by Hydro-Québec.

The region is also served by the regional airport of La Grande-Rivière which is located in the municipality of Radisson. It is operated and owned by the Société de développement de la Baie-James (Société de développement de la Baie-James, 2009).

The Chisasibi airport welcomes airplanes from the airline company Air Creebec and support the Cree Board of Health and Social Services of James Bay. It is located in the community of Chisasibi (Cree Nation of Chisasibi, 2022).

### 3.3.5.3. Power Production and Transmission

Many major hydroelectric projects were developed through the 70's and 90's in James-Bay. The hydroelectric infrastructures on the Eeyou Istchee James Bay territory consist of eleven generating stations of the La Grande complex, including the world's largest underground generating station, the Robert-Bourassa generating facility (LG-2 – 7 722 MW) (Hydro-Québec, 2022). Within the RSA are a few 735 kV electric lines which connect to the La Grande complex generating stations (Hydro-Québec, 2022). One of these lines is approximately 10 km north of the PDA.

### 3.3.5.4. Telecommunication Services

Telecommunications services on the Eeyou Istchee James Bay territory is provided by a sole provider: Eeyou Communications Network. Fibre optic service is provided in the communities of Matagami, Waswanipi, Chibougamau, Oujé Bougoumou, Mistissini, Chapais, Matagami, Waskaganish, Eastmain, Wemindji, Chisasibi, Radisson, and Nemaska. However, there are telecommunication towers around the La Grande hydro-electric infrastructures used by Hydro-Québec (Eeyou Communications Network, 2018).

## 3.3.6. Heritage Resources

Human presence is very ancient in the James Bay region. Archeological excavations conducted for the La Grande complex development in the 1970's showed that human presence dates back around 4,000 years. There is also evidence of nomadic hunting and gathering (Hydro-Québec, 2015). A 2009 archeological study completed for the Ministère de la Culture et des

Communications discovered several artefacts in the La Grande River watershed. Amongst others, a diversity of lithic materials, native American ceramics, and European barter items were uncovered (Pintal, 2009). As part of the desktop study, no known archeological site was identified within the RSA.

# 4. Preliminary Regulatory Requirements

This section of the Scoping Report describes the main regulatory authorities likely to be engaged in the Corvette Lithium Project approval process and any multijurisdictional environmental regulatory requirements perceived applicable to the project at this time.

## 4.1. Overview of Regulatory Authorities

Several federal, provincial, and municipal authorities regulate environmental matters in Canada. **Erreur ! Source du renvoi introuvable.** provides a list of the main federal, provincial, and municipal authorities which regulate environmental matters and that may be directly or indirectly involved in the Corvette Lithium Mine project regulatory approval process.

IMPORTANT NOTE: Since the October 2022 Quebec elections, a number of provincial government ministries have changed names and powers. At the time of issuing this report, the changes were still being implemented on the ministries' websites. The new ministries' names are provided in tables 2 and 3.

**Table 2: Summary of Main Federal, Provincial and Municipal Authorities Regulating Environmental Matters and Potentially Involved in the Corvette Lithium Project Regulatory Approval Process**

| REGULATORY AUTHORITY | MISSION / ROLE / MANDATE | POWER OF AUTHORITY |
|---|---|---|
| FEDERAL AUTHORITIES | | |
| ENVIRONMENT AND CLIMATE CHANGE CANADA (ECCC)<br>Environnement et Changement climatique Canada<br>https://www.canada.ca/en/environment-climate-change.html | *ECCC is the lead federal authority for a wide range of environmental issues. ECCC focuses on minimizing threats to Canadians and their environment from pollution; equipping Canadians to make informed decisions on weather, water and climate conditions, and conserving and restoring Canada's natural environment.* | *The powers, duties and functions of the Minister of Environment and Climate Change extends to matters such as:*<br>▪ The preservation and enhancement of the quality of the natural environment, including water, air and soil quality, and the coordination of the relevant policies and programs of the Government of Canada<br>▪ The protection of natural resources, including migratory birds, species at risk, wetlands and invasive species<br>▪ Meteorology<br>▪ Climate change and resilience |
| IMPACT ASSESSMENT AGENCY OF CANADA (IAAC)<br>Agence d'évaluation d'impact du Canada (AEIC)<br>https://www.canada.ca/en/impact-assessment-agency.html | *The IAAC is a federal body accountable to the Minister of Environment and Climate Change. The IAAC conducts high-quality impact assessments that contribute to informed decision making on major projects in support of sustainable development.* | *The IAAC power of authority includes:*<br>▪ Leading and managing the impact assessment process for all federally designated major projects<br>▪ Leading Crown engagement and serves as the single point of contact for consultation and engagement with Indigenous peoples during impact assessments for designated projects<br>▪ Providing opportunities and funding to support public participation in impact assessments<br>▪ Working to ensure that mitigation measures are applied and are working as intended<br>▪ Promoting uniformity and coordination of impact assessment practices across Canada through research, guidance, and ongoing discussion with stakeholders and partners<br>▪ Working with a range of international jurisdictions and organizations to exchange best practices in impact assessment |
| DEPARTMENT OF FISHERIES AND OCEANS CANADA (DFO)<br>Pêches et Océans Canada<br>https://www.dfo-mpo.gc.ca/ | *DFO is the federal agency responsible for safeguarding Canada's waters and managing its fishery and ocean resources.*<br>*DFO helps to ensure healthy and sustainable aquatic ecosystems through habitat protection and sound science.* | *DFO power of authority includes:*<br>▪ Fishing licences, permits, and funding programs related to fishing, aquaculture, and marine mammal harvest<br>▪ Sustainable aquaculture, licences, regulations, statistics, and reporting<br>▪ Navigation and marine conditions, search and rescue, lighthouses and small craft harbours<br>▪ Aquatic species in Canadian waters, including fished, farmed and those that are invasive or at risk<br>▪ Science data, advice, and research about aquatic environments, fish, marine mammals and climate change<br>▪ Project reviews and authorizations, fish and fish habitat protection, information about federal contaminated sites<br>▪ Marine conservation targets and protected areas, network planning and oceans management<br>▪ Fisheries information by management region |
| TRANSPORT CANADA (TC)<br>Transport Canada<br>https://tc.canada.ca/ | *TC is the federal institution responsible for transportation policies and programs.*<br>*TC promotes safe, secure, efficient, and environmentally responsible transportation.* | *TC's responsibilities include:*<br>▪ Aviation: security, operations of airports, security of air travel<br>▪ Marine, road and rail transportation; licenses, navigation (navigable waters), signalling<br>▪ Dangerous goods; transportation and emergency response<br>▪ Transportation security; in aviation, rail, marine and road |

| REGULATORY AUTHORITY | MISSION / ROLE / MANDATE | POWER OF AUTHORITY |
|---|---|---|
| PROVINCIAL AUTHORITIES | | |
| MINISTÈRE DE L'ÉNERGIE ET DES RESSOURCES NATURELLES (MERN)<br>(New name : Ministère des Ressources naturelles et des Forêts)<br>Ministry of Energy and Natural Resources<br>https://mern.gouv.qc.ca/ | *The MERN's role is to manage Quebec's land and resources, to ensure the management and support the development of energy and mineral resources and the territory of Quebec in a sustainable development perspective.* | *The MERN's areas of activity are highly specialized and are structured around five strategic functions[14]:*<br>▪ Promote and oversee the sustainable development of energy and mineral resources<br>▪ Acting as the owner of public lands under its authority<br>▪ Supporting the efficiency of the real estate market through the administration of the Land Registry and Cadastre<br>▪ Ensuring that the territorial integrity of Quebec is maintained and respected<br>▪ Producing and disseminate strategic information for the benefit of citizens, professionals and businesses |
| MINISTÈRE DE L'ENVIRONNEMENT ET DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES (MELCC)<br>(New name : Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs)<br>Ministry of Environment and Fight Against Climate Change<br>https://www.environnement.gouv.qc.ca/index_en.asp | *The MELCC contributes to the sustainable development of Quebec by playing a key role in the fight against climate change, the protection of the environment and the conservation of biodiversity for the benefit of current and future generations.* | *The MELCC has authority over the following:*<br>▪ Issuing environmental authorizations and permits<br>▪ Making environmental emergency service available at all times, anywhere in Quebec, through Urgence-Environnement<br>▪ Handling environmental complaints<br>▪ Conducting environmental analyses<br>▪ Accrediting environmental analysis laboratories and firms that provide samplings of fertilizing residual materials and recognizing experts<br>▪ Providing professional and technical expertise on environmental issues<br>▪ Protection of vulnerable and threatened flora species<br>▪ Management of invasive flora species<br>▪ Preservation of Biodiversity<br>▪ Surface water quality and withdrawal<br>▪ Groundwater quality and withdrawal<br>▪ Management of Protected Areas<br>▪ Assisting government departments and agencies in their approach to sustainable development<br>▪ Producing information and documentation on the environment, climate change, and sustainable development in the context of its mission<br>▪ Processing access to information requests |
| EVIRONMENTAL AND SOCIAL IMPACT EVALUATING COMMITTEE (Evaluating committee – COMEV)<br>Comité d'évaluation des répercussions sur l'environnement et le milieu social<br>https://comev.ca/en/ | *The Environmental and Social Impact Evaluating Committee (Evaluating Committee or COMEV) is an advisory body composed of members appointed by the governments of Quebec, Canada and Cree nation, which is responsible for the review of the preliminary information provided by the proponent located south of the 55th parallel, including Category I and II lands of Whapmagoostui, in the territory governed by the James Bay and Northern Quebec Agreement (JBNQA).* | *Based on the preliminary information, the COMEV recommends to the Administrator to subject or not the project to the environmental and social impact assessment and review procedure provided in chapter 22 of the JBNQA.*<br>*In accordance with the Convention, after considering among other factors such as recommendations, the Administrator shall decide whether or not to proceed with the evaluation and the review of the project. When appropriate, the Administrator shall give instructions or make recommendations on the nature and scope of such assessment and review, or both.* |
| ENVIRONMENTAL AND SOCIAL IMPACT REVIEW COMMITTEE (Review Committee – COMEX) | *The Environmental and Social Impact Review Committee (the Review Committee – COMEX) is an independent body reporting to the Minister of Environment and the Fight against Climate Change. Its mission is to contribute to the protection of human health and* | *The COMEX recommends to the Minister of Environment and the Fight against Climate Change or to the Cree Regional Administrator whether or not to authorize development projects that are subject to the environmental assessment and review procedure. Where appropriate, the Committee determines the* |

[14] https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/energie-ressources-naturelles/publications-adm/plan-strategique/PL-strategique-2019-2023-MERN.pdf?1620916935

| REGULATORY AUTHORITY | MISSION / ROLE / MANDATE | POWER OF AUTHORITY |
|---|---|---|
| Comité d'examen des répercussions sur l'environnement et le milieu social<br><br>https://comexqc.ca/en/ | *the environment and to the economic and social well-being of the peoples inhabiting the territory governed by the James Bay and Northern Quebec Agreement (JBNQA) that lies south of the 55th parallel.* | *conditions under which a project may proceed, and if necessary, specifies the appropriate preventive or remediation measures.*<br>*As part of its mandate, the Review Committee devotes particular attention to the following principles:*<br>▪ the protection of aboriginal hunting, fishing and trapping rights;<br>▪ the protection of the social and natural environments;<br>▪ the protection of aboriginal peoples and their societies, communities and economies;<br>▪ the protection of wildlife, the physical and biological environments, and ecosystems;<br>▪ the rights and guarantees of aboriginal peoples in Category II lands;<br>▪ the participation of the Crees in the application of the environmental and social protection regime;<br>▪ the rights and interests of non-aboriginals;<br>▪ the right of any natural or legal person to carry out lawful projects. |
| MINISTÈRE DES FORÊTS, DE LA FAUNE ET DES PARCS (MFFP)<br>*(Doesn't exist anymore)*<br><br>Ministry of Forests, Wildlife and Parks<br><br>https://mffp.gouv.qc.ca/ | *The mission of the MFFP is to promote knowledge acquisition and to ensure the development and optimal use of forestry, wildlife and parks in Quebec from a sustainable development perspective for the benefit of the entire population.* | *The MFFP power of authority includes:*<br>▪ Management of forests (Public Land)<br>▪ Protection of designated wildlife habitat, including fish habitat<br>▪ Protection of vulnerable and threatened wildlife species<br>▪ Authorization of wild animals capture /handling for scientific, educational or wildlife management purposes (called SEG Permits)<br>▪ Management of invasive wildlife species<br>▪ Management of pests and sick animals<br>▪ Management and regulations of fishing, trapping and hunting<br>▪ Management of provincial parks |
| REGIONAL AUTHORITIES | | |
| EEYOU ISTCHEE JAMES BAY REGIONAL GOVERNMENT (EIJBRG)<br><br>Gouvernement regional Eeyou Istchee Baie James (GREIBJ)<br><br>https://greibj-eijbrg.com/en/ | *On July 24, 2012, the Crees of Eeyou Istchee and the Gouvernement du Québec signed the Agreement on Governance in the Eeyou Istchee James Bay Territory (Governance Agreement). Providing for the creation of a joint Regional Government composed of Crees and Jamésiens, the Agreement is a historic milestone in establishing a true partnership between Crees and Jamésiens, benefiting the region.*<br>*The Eeyou Istchee James Bay Regional Government is a historic initiative aimed at forging harmonious relations between Jamésiens and Crees concerning the governance of the Eeyou Istchee James Bay Territory. This forward-looking approach provides both communities with the opportunity to make a significant contribution to the region's prosperity and promising future.* | *The Regional Government is governed under the laws of Québec and exercises the same jurisdictions, functions, and powers over Category III lands in the Eeyou Istchee James Bay Territory as those formerly attributed to the Municipalité de Baie-James. The Regional Government has the authority to affirm its jurisdiction as a regional county municipality (MRC). It also acts as a regional conference of elected officers (CRÉ) with respect to Category III lands in the Eeyou Istchee James Bay Territory.*<br>The EIJBRG power of authority are the same as a MRC, which includes:<br>▪ Planning of its territory by drawing up a land use planning and development plan, by revising its content by taking into account the government's orientations in terms of land use planning and, where applicable, the metropolitan land use and development plan<br>▪ Judge compliance with the plan or interim control regulations with regard to local urban planning and regulations and government interventions<br>▪ Develop urban planning regulations for unorganized territories (TNO)<br>▪ Deal with regular or intermittent flow watercourses (including those created or modified by human intervention) within its territory<br>▪ Prepare assessment rolls for local municipalities; sell the buildings for failure to pay taxes<br>▪ Establish a residual materials management plan as well as a risk coverage plan (fire safety)<br>▪ Nuisance avoidance, especially detritus, odours, salt or stagnant water, debris or dirt caused by transport, snow-ice-sand heap, light, noise |

## 4.2. Multijurisdictional Environmental Regulatory Requirements

The mining industry in Quebec is subject to several federal and provincial legislations, and projects in Northern Quebec are in the territory governed by the James Bay and Northern Quebec Agreement (JBNQA).

Table 3 outlines primary multijurisdictional federal and provincial environmental regulatory requirements perceived applicable to the Corvette project.

**Table 3: Overview of Primary Federal and Provincial Environmental Approval Requirements for the Corvette Lithium Project**

| REGULATORY AUTHORITY | ACT / REGULATION | CLAUSE | IMPLICATION FOR CORVETTE PROJECT |
|---|---|---|---|
| FEDERAL AUTHORITIES | | | |
| **ENVIRONMENT AND CLIMATE CHANGE CANADA (ECCC)** | *Species at Risk Act* (SARA) [S.C. 2002, c. 29])<br>https://laws-lois.justice.gc.ca/eng/acts/s-15.3/ | **Killing, harming, etc., listed wildlife species**<br>*Article 32 (1) No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.*<br>**Damage or destruction of residence**<br>*Article 33 No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada.* | If baseline surveys confirm the presence of any federally protected Species at Risk in the Project direct or indirect area of influence and that the Project is likely to impact the identified species, any part of its critical habitat, or the residences of its individuals, an agreement or a permit would be required as per article 73 (1) of the *Species at Risk Act*. |
| | *Migratory Birds Convention Act, 1994* (MBCA).<br>https://laws-lois.justice.gc.ca/eng/acts/m-7.01/ | **Prohibitions**<br>*Article 5 Except as authorized by the regulations, no person shall, without lawful excuse,*<br>*(a) be in possession of a migratory bird or nest; or*<br>*(b) buy, sell, exchange or give a migratory bird or nest or make it the subject of a commercial transaction.*<br>*Article 5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.* | The Project should comply to ECCC guidelines to reduce risks to migratory birds which includes several requirements including detailed bird surveys, restricted activity period and potentially specific mitigation measures (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html). |
| | *Fisheries Act* (R.S.C., 1985, c. F-14)<br>https://laws-lois.justice.gc.ca/eng/acts/f-14/<br>*Metal and Diamond Mining Effluent Regulations* (MDMER)<br>*https://laws-lois.justice.gc.ca/eng/Regulations/SOR-2002-222/index.html* | **Deposit of deleterious substance prohibited**<br>*Article 36 (3) Subject to subsection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water.* | Effluent released from the mine site will have to comply with maximum concentrations for deleterious substances established through regulations, norms, and project-specific permits, mainly Table 2 of Schedule 4 of the *Metal and Diamond Mining Effluent Regulations* (MDMER). |
| **IMPACT ASSESSMENT AGENCY OF CANADA (IAAC)** | *Impact Assessment Act* (S.C. 2019, c. 28, s. 1)<br>https://laws.justice.gc.ca/eng/acts/I-2.75/index.html<br>*Physical Activities Regulations* (SOR/2019-285)<br>https://laws.justice.gc.ca/eng/regulations/SOR-2019-285/index.html<br>*Information and Management of Time Limits Regulations* (SOR/2019-283)<br>https://laws.justice.gc.ca/eng/regulations/SOR-2019-283/index.html | **Proponent**<br>*Article 7 (1) Subject to subsection (3), the proponent of a designated project must not do any act or thing in connection with the carrying out of the designated project, in whole or in part, if that act or thing may cause any of the following effects:* [exhaustive list of various topics/effects under the federal government's authority]<br>*Article (3) The proponent of a designated project may do an act or thing in connection with the carrying out of the designated project, in whole or in part, that may cause any of the effects described in subsection (1) if*<br>*(b) the proponent complies with the conditions included in the decision statement that is issued to the proponent under section 65 with respect to that designated project and is not expired or revoked;*<br>*Article 2 designated project means one or more physical activities that*<br>*(a) are carried out in Canada or on federal lands; and*<br>*(b) are designated* [in the *Physical Activities Regulations* (SOR/209-285)]<br>**Physical Activities** | The Corvette project will be required to complete the federal impact assessment process since the metal mine will have an ore production capacity of more than 5 000 t/day in order to obtain a favorable decision statement allowing the project to proceed. |

| REGULATORY AUTHORITY | ACT / REGULATION | CLAUSE | IMPLICATION FOR CORVETTE PROJECT |
|---|---|---|---|
| | | *Article 18.c the construction, operation, decommissioning and abandonment of […] a new metal mine, other than a rare earth element mine, placer mine or uranium mine, with an ore production capacity of 5 000 t/day or more* | |
| **FISHERIES AND OCEANS CANADA (DFO)** | *Fisheries Act* (R.S.C., 1985, c. F-14)<br>https://laws-lois.justice.gc.ca/eng/acts/f-14/ | **Death of fish**<br>*Article 34.4 (1) No person shall carry on any work, undertaking or activity, other than fishing, that results in the death of fish*<br>*Article 34.4 (2) A person may carry on a work, undertaking or activity without contravening subsection (1) if* (b) *the carrying on of the work, undertaking or activity is authorized by the Minister and the work, undertaking or activity is carried on in accordance with the conditions established by the Minister*<br>**Harmful alteration, disruption or destruction of fish habitat**<br>*Article 35 (1) No person shall carry on a work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat*<br>*Article 35(2) A person may carry on a work, undertaking or activity without contravening subsection (1) if (b) the carrying on of the work, undertaking or activity is authorized by the Minister and the work, undertaking or activity is carried on in accordance with the conditions established by the Minister* | Activities anticipated for the Corvette project will include work taking place in or near water and likely to result in the death of fish and/or the harmful alteration, disruption or destruction of fish habitat. Thorough baseline surveys, compensation program and follow-up program will be required to obtain an authorization. |
| **TRANSPORT CANADA (TC)** | *Canadian Navigable Waters Act* (R.S.C., 1985, c. N-22)<br>https://laws-lois.justice.gc.ca/eng/acts/n-22/<br>*Minor Works Order* (SOR/2021-170)<br>https://laws-lois.justice.gc.ca/eng/regulations/SOR-2021-170/index.html<br>*Major Works Order* (SOR/2019-320)<br>https://laws-lois.justice.gc.ca/eng/regulations/SOR-2019-320/index.html | **Prohibition**<br>*Article 3 Except in accordance with this Act, it is prohibited to construct, place, alter, rebuild, remove or decommission a work in, on, over, under, through or across any navigable water.*<br>**Minor works**<br>*Article 4 (1) An owner of a minor work may construct, place, alter, rebuild, remove or decommission the minor work in, on, over, under, through or across any navigable water in accordance with the requirements under this Act.*<br>**Major Works in any Navigable Water and Works in Navigable Waters Listed in Schedule**<br>Article 4.1: If the major work or work other than a minor work does not interfere with navigation, the owner proposing the work must submit information to the Minister and publish a notice.<br>Article 5(1): If the major work or work other than a minor work may interfere with navigation, the owner proposing the work must make an application for an approval to the Minister.<br>**Works in Navigable Waters not Listed in Schedule**<br>Article 9.1: If the work, other than a major or minor work, does not interfere with navigation, the owner proposing the work must submit information to the Minister and publish a notice. | Approval may be required for major work in any navigable water, such as a dam that is capable of impounding at least 30 000 $m^3$ of water, or certain water diversion structures.<br>Minor works include various activities that may be part of the Corvette project such as erosion-protection works, water intakes, and watercourse crossings. If these activities are carried out in navigable water, they must be done in compliance with the Act.<br>Lake 1 would likely be considered a navigable water. There is no navigable water in the project area that are listed in the Schedule of the Act. |

| REGULATORY AUTHORITY | ACT / REGULATION | CLAUSE | IMPLICATION FOR CORVETTE PROJECT |
|---|---|---|---|
| PROVINCIAL AUTHORITIES | | | |
| **ENVIRONMENTAL AND SOCIAL IMPACT REVIEW COMMITTEE (Review Committee – COMEX)** | *James Bay and Northern Quebec Agreement* (JBNQA), and *Environmental Quality Act* (EQA) | Chapter 22 of the JBNQA defines the environmental protection regime that must be abided by on the James Bay territory. It includes the requirement for environmental and social impact assessment of some proposed projects. This procedure is lead by the COMEX and COMEX, as explained in Table 3 above.<br>EQA, Title II, Chapter II, Division III: **Environmental and social impact assessment and review procedure**<br>Article 153: *The projects automatically subject to the assessment and review procedure contemplated by this subdivision are listed in Schedule A and the projects which are automatically exempt from the said procedure are listed in Schedule B.* | The Corvette project will be required to complete the environmental and social impact assessment procedure as per Chapter 22 of the JBNQA and article 153 of the EQA.<br>As listed in Schedule A of the EQA, "(a) all mining developments, including the additions to, alterations or modifications of existing mining developments" are automatically required to undergo the impact assessment procedure to obtain a ministerial decree.<br>If the decree authorizes the project to proceed, it will include project-specific terms and conditions that must be complied with. For example, the decree would likely include effluent concentrations limits. |
| **MINISTÈRE DE L'ÉNERGIE ET DES RESSOURCES NATURELLES (MERN)**<br><br>(New name : Ministère des Ressources naturelles et des Forêts) | *Mining Act* (chapter M-13.1)<br>https://www.legisquebec.gouv.qc.ca/en/document/cs/M-13.1 | The *Mining Act* regulates the different phases of mining projects and provides a legal framework for different aspects of such projects like mining rights, reporting and notices, protective measures, site selection for mining infrastructures, and inspection. The Act requires that a rehabilitation and restoration plan be approved by the MERN, and that a financial security be provided for the implementation of this plan. | The Corvette project is subject to the *Mining Act* and must comply with numerous clauses.<br>Claims and leases must be in place for prospecting and mining activities to be carried out. Every year, the proponent will need to report on exploration and extraction activities to the MERN (Chapter IV, Division II). The proponent will be required to submit a rehabilitation and restoration plan (Chapter IV, Division III). The selection of the processing plant location as well as the tailings storage facilities location will need to be approved by the MERN (Chapter IV, Division VII). |
| **MINISTÈRE DE L'ENVIRONNEMENT ET DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES (MELCC)**<br><br>(New name : Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs) | *Environment Quality Act* (EQA)<br>(chapter Q-2)<br>https://www.legisquebec.gouv.qc.ca/en/document/cs/Q-2 | The Environmental Quality Act is the foundation to numerous regulations that aim to protect the environment, including its ecological, social, and economic dimensions. It establishes broad prohibitions and requirements and affirms the importance of the environment as a public interest. The following are some of likely applicable regulations enabled under the EQA:<br>▪ Regulation respecting the regulatory scheme applying to activities on the basis of their environmental impact<br>▪ Regulation respecting the operation of industrial establishments<br>▪ Regulation respecting activities in wetlands, bodies of water and sensitive areas<br>▪ Clean Air Regulation<br>▪ Regulation respecting sand pits and quarries<br>▪ Regulation respecting the declaration of water withdrawals<br>▪ Water Withdrawal and Protection Regulation<br>▪ Regulation respecting hazardous materials<br>▪ Land Protection and Rehabilitation Regulation | The Corvette project is subject to the *Environment Quality Act* and must comply with numerous clauses and regulations under this Act.<br>Multiple permits and authorization may be required including but not limited to:<br>▪ Authorization to operate an industrial establishment<br>▪ Authorization for the withdrawal of surface water or groundwater, including related work and works<br>▪ Authorization for activities in wetlands or waterbodies<br>▪ Authorization for waterworks, sewers, and water treatment<br>▪ Authorization to Install an apparatus or equipment to prevent, reduce or cause the cessation of the contaminants release into the atmosphere<br>▪ Authorizations for mining activities |
| | | Directive 019 on the Mining Industry | Directive 019 is used to analyze mining projects that require a certificate of authorization under the EQA and establishes requirements these projects have to conform with. Environmental protection topics such as mining effluent, water management, noise level, waste rock and tailings management, and tailings characterization are covered in the Directive 019. The Directive also notes the required information when presenting a certificate of authorization request to the MELCC. |
| | *Act Respecting Threatened or Vulnerable Species* (chapter E-12.01)<br>http://legisquebec.gouv.qc.ca/en/showdoc/cs/e-12.01 | This Act applies to the threatened or vulnerable wildlife and plant species designated under this Act which live in Quebec or are imported into Quebec. | If baseline surveys confirm the presence of any threatened or vulnerable plant species in the project direct or indirect area of influence and that the project is likely to impact a provincially regulated vulnerable or threatened |

| REGULATORY AUTHORITY | ACT / REGULATION | CLAUSE | IMPLICATION FOR CORVETTE PROJECT |
|---|---|---|---|
| | | | plant species, or its habitat, an authorization would be required. The authorization may require habitat compensation measures. |
| **MINISTÈRE DES FORÊTS, DE LA FAUNE ET DES PARCS (MFFP)** (Doesn't exist anymore) | *Act Respecting Threatened or Vulnerable Species* (chapter E-12.01) http://legisquebec.gouv.qc.ca/en/showdoc/cs/e-12.01 | This Act applies to the threatened or vulnerable wildlife and plant species designated under this Act which live in Québec or are imported into Québec. | If baseline surveys confirm the presence of any threatened or vulnerable wildlife species in the project direct or indirect area of influence and that the project is likely to impact a provincially regulated vulnerable or threatened wildlife species, or its habitat, an authorization would be required. The authorization may require habitat compensation measures. |

## 4.3. Other Acts and Regulations Likely Applicable

In addition to primary acts and regulations listed above, numerous other legislations may apply to project activities and require the obtention of permits and authorizations.

### Federal level

- *Canadian Environmental Protection Act, 1999* (S.C. 1999, c. 33):
  - *Environmental Emergency Regulations, 2019* (SOR/2019-51);
  - *Release and Environmental Emergency Notification Regulations* (SOR/2011-90);
  - *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* (SOR/2008-197).
- *Fisheries Act* (R.S.C., 1985, c. F-14):
  - *Metal and Diamond Mining Effluent Regulations* (SOR/2002-222; MDMER).
- *Explosives Act* (R.S.C., 1985, c. E 17):
  - *Explosives Regulations, 2013* (SOR/2013-211).

### Provincial level

- *Mining Act* (chapter M-13.1):
  - *Regulation respecting mineral substances other than petroleum, natural gas and brine* (M-13.1, r. 2).
- *Dam Safety Act* (S-3.1.01):
  - *Dam Safety Regulation* (S-3.1.01, r. 1).
- *Sustainable Forest Development Act* (chapter A-18.1):
  - *Regulation respecting the sustainable development of forests in the domain of the State* (chapter A-18.1, r. 0.01);
  - *Regulation respecting forestry permits* (chapter A-18.1, r. 8.1).
- *Act Respecting the conservation and development of wildlife* (chapter C-61.1):
  - *Regulation respecting wildlife habitats* (chapter C-61.1, r. 18).
- *Act respecting occupational health and safety* (chapter S-2.1, s. 223):
  - *Regulation respecting occupational health and safety in mines* (S-2.1, r. 14)

  - *Regulation respecting the quality of the work environment* (chapter S-2.1, r. 11);
  - *Hazardous Products Information Regulation* (chapter S-2.1, r. 8.1).
- *Act respecting explosives* (chapter E-22):
  - *Regulation under the Act respecting explosives* (chapter E-22, r.1).
- *Building Act* (chapter B-1.1):
  - *Construction Code* (chapter B-1.1, r. 2);
  - *Safety Code* (chapter B-1.1, r. 3).

## 4.4. Impact Assessment Procedures and Associated Timelines

### 4.4.1. Federal Impact Assessment Procedure

There are five main phases to the federal impact assessment procedure carried out by the Impact Assessment Agency of Canada (IAAC, or the Agency) (Impact Assessment Agency of Canada, 2022). The following section summarizes the process, and Figure 10 illustrates it. The noted timelines are regulated by the *Information and Management of Time Limits Regulations*.

Figure 10 includes potential assessment phases that likely won't apply to the Corvette Project. For example, a substitution allows the proponent to skip phases 2 and 3 of the federal impact assessment procedure at the request of another impact assessment jurisdiction and under certain conditions. Substitution is defined at articles 31 to 33 of the *Impact Assessment Act*.

#### Phase 1 – Planning (180 days – Agency timeline)

The Agency confirms the project is subject to the impact assessment process and ensures the Initial Project Description submitted by the proponent complies with the regulations. Once the Initial Project Description complies, the Agency posts it to the registry and the 180-day timeline starts. Through engagement and consultation conducted by the Agency, a summary of issues is created. The proponent responds to the summary of issues and submits a Detailed Project Description that must comply with the regulations. The 180-day timeline stops for the Agency when the proponent is answering to the summary of issues and completing its Detailed Project Description. The Agency then issues the Tailored Impact Statement Guidelines and Notice of Commencement.

A template document of possible Tailored Impact Statement Guidelines exists and can be referenced when designing baseline studies prior to receiving the project specific tailored guidelines[15].

### Phase 2 – Impact Statement (3 years – Proponent timeline)

Engagement by both the proponent and the Agency is ongoing. The proponent develops the Impact Statement following the requirements mainly outlined in the Tailored Impact Statement Guidelines. The Agency invites comments and engages with stakeholders to ensure the Impact Statement includes the required information. The Agency must be satisfied the Impact Statement complies with regulations within 3 years of the Notice of Commencement (possible extension at the proponent's request). The Impact Statement must be submitted in both official languages (French and English).

### Phase 3 – Impact Assessment (300 days – Agency timeline)

The Agency conducts its analysis on the Impact Statement and considers comments and expert advice provided by stakeholders and other federal agencies. The Agency seeks clarifications from the proponent and asks questions on the Impact Statement. When information requests are sent to the proponent, the 300-day timeline stops for the Agency until responses are submitted. The Agency conducts consultation and engagement, and public meetings may be held. The Agency develops the draft Impact Assessment Report as well as draft potential conditions and consults with Indigenous groups and seeks views on these documents. The Agency considers the comments and finalizes the Impact Assessment Report with potential conditions before submitting it to the Minister.

### Phase 4 – Decision-Making (30 days – Minister timeline)

Based on the Impact Assessment Report, the Minister determines if the adverse effects are in the public interest. The Minister then issues a Decision Statement with the reasons for the determination, within 30 days of receiving the Impact Assessment Report from the Agency.

[15] https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/practitioners-guide-impact-assessment-act/tailored-impact-statement-guidelines-projects-impact-assessment-act.html.

## Phase 5 – Post Decision

The proponent must develop and carry out the follow-up and monitoring programs and comply with the Decision Statement.

## Project assessed under IAA

Only two projects have triggered the federal impact assessment process since the coming in effect of the *Impact Assessment Act* (IAA) in 2020. Both the Wasamac Gold Mine Project and the Upper Beaver Gold Project are in the impact statement phase.

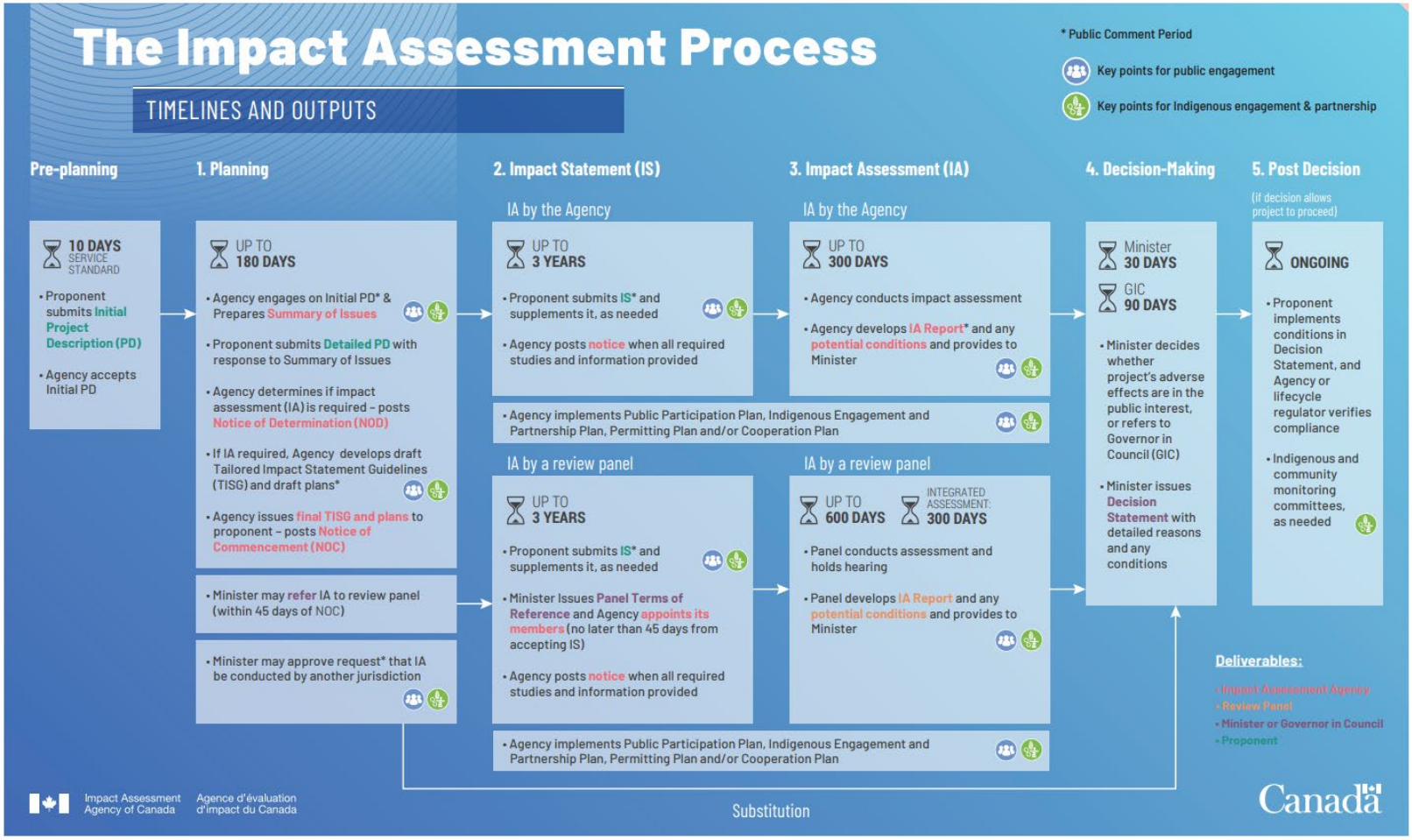



**Figure 10: Federal Impact Assessment Process with Timelines**

**Source**: https://www.canada.ca/content/dam/iaac-acei/documents/acts- regulations/legislation-regulations/ia-process-timelines-outputs-en.pdf

### 4.4.2. Provincial Impact Assessment Procedure

There are five main steps to the provincial impact assessment procedure for projects in northern Quebec. The procedure is conducted by the Environmental and Social Impact Evaluating Committee (COMEV) and the Environmental and Social Impact Review Committee (COMEX, or Review Committee). There are a few timelines applicable to the COMEX-COMEV procedure, which are noted in the *Environmental Quality Act* (mainly articles 159, 161, 162). The timelines can always be extended if needed and thus are not very strict. Figure 11 was developed to summarize the procedure.

#### Step 1 – Preliminary Information Statement

The proponent must submit a Preliminary Information Form as well as a notice of intent to the Administrator. The content of the Preliminary Information is set out in the *Regulation respecting the environmental and social impact assessment and review procedure applicable to the territory of James Bay and Northern Québec*.

#### Step 2 – Assessment and Directive

The Administrator forwards the Preliminary Information to the COMEV, which may ask for clarifications. Once the COMEV has completed its analysis, it sends to the Administrator a directive outlining the nature and scope of the impact study that must be undertaken by the proponent. The Administrator can revise the directive if necessary and after consulting with the COMEV. The Administrator should forward the directive to the proponent within 30 days of receiving it, unless they require more time.

#### Step 3 – Preparing the Impact Study

The proponent undertakes the impact study in compliance with the directive and the *Regulation respecting the environmental and social impact assessment and review procedure applicable to the territory of James Bay and Northern Québec*. The impact assessment statement (i.e., the proponent's impact study report) must also meet the consultation expectations set in the document *Consultations Conducted by the Proponent: Expectations of the Review Committee*.

### Step 4 – Review

The proponent submits the impact assessment statement to the Administrator who forwards it to the COMEX (a.k.a. Review Committee). The Review Committee analyzes the statement and calls on relevant expertise from Quebec government departments and the government of the Cree Nation. At the request of the COMEX, the Administrator may forward questions and comments to the proponent or require further research and studies. The public is given the opportunity to submit comments on the project and the Review Committee may hold public hearings or other forms of consultation. When the Review Committee has completed its review, it recommends to the Administrator whether the project should be authorized. The COMEX can also specify modifications or additional measures considered necessary. The COMEX has 45 days to review the impact assessment statement and make its recommendation to the Administrator, unless they require more time.

### Step 5 – Decision

The Administrator reviews the COMEX's recommendation and either refuses the project or approves it and issues a certificate of authorization.

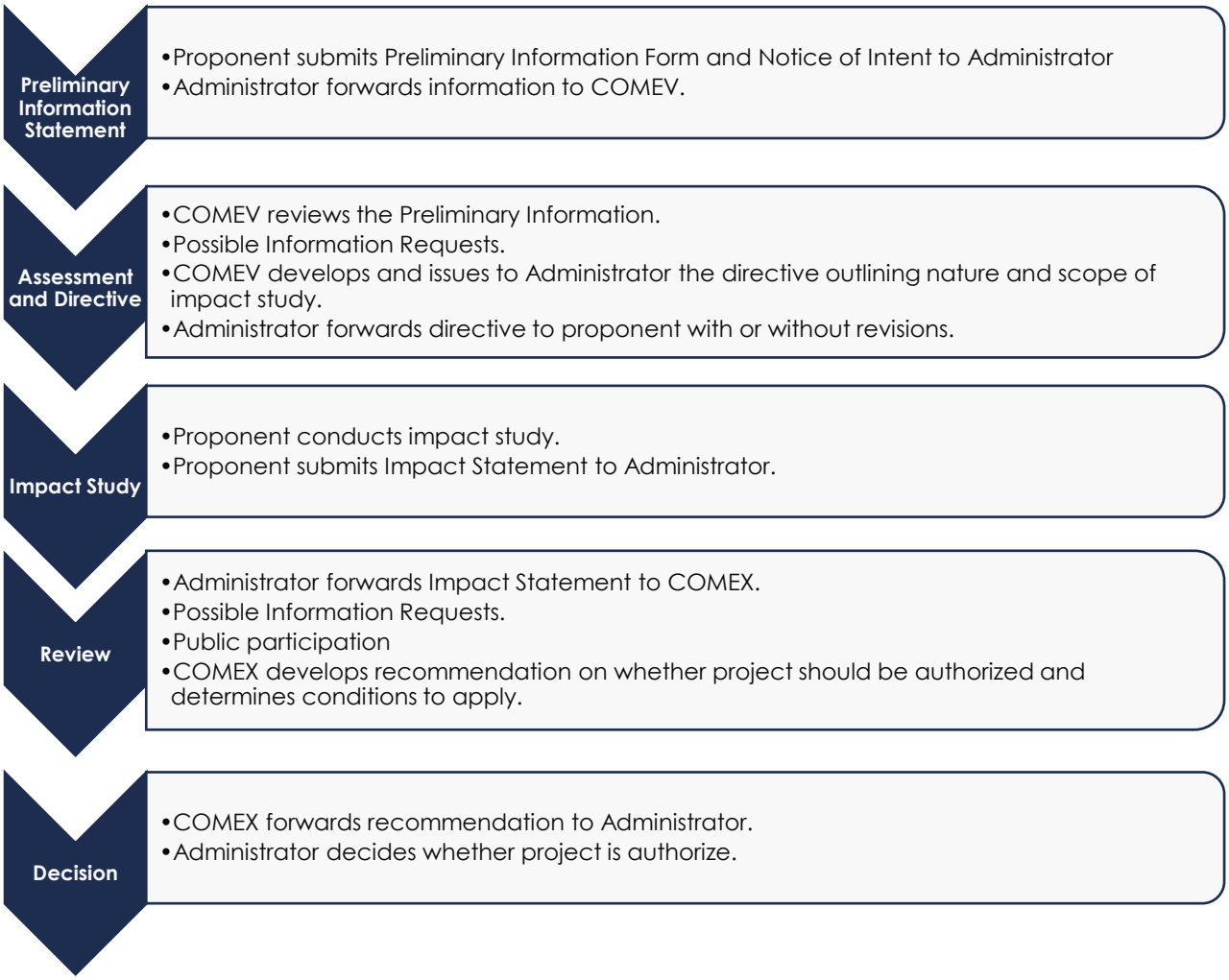



**Figure 11: Provincial Impact Assessment Process**

# 5. Main Socio-environmental Considerations for the Project Development

This sub-section of the Scoping Report describes the main considerations that are likely to influence on the Corvette Lithium Project.

## 5.1. Timelines associated with the Regulatory Requirements

As described in Section 4, several federal and provincial permits and authorizations will be required as part of the Project.

The most stringent approval processes foreseen inevitably include:

- The federal impact assessment process managed by the Impact Assessment Agency of Canada;
- The provincial environmental and social impact assessment procedure managed by the COMEV and COMEX;
- The authorizations process concerning Fish and Fish Habitat Protection Regulations managed by Fisheries and Oceans Canada.

Each regulatory process is unique and completed in parallel. Unfortunately, federal, and provincial authorities have different jurisdictions and requirements and don't synchronise in any matter their respective review and approval process.

In recent years, authorities are becoming more and more stringent as far as detailed requirements and commitments. Delays relating to regulatory approvals have been ever increasing. Typically, the environmental approval process for a large mining project may take between 3 and 5 years after the official project notice has been filed.

Prior to filing any application, a thorough and season specific baseline surveys program will have to be complete to support the various applications. Again, authorities are becoming more and more demanding about the scope, the geographical extent, and the prolonged period considered. Furthermore, engineering work as well as the detailed project design will have to be sufficiently progressed.

## 5.2. Water Management

Water management is an important consideration for most mining projects in Quebec and inevitably a major one for the Corvette Lithium project. As described in Section 3.2.4 of this report, there are numerous waterbodies and watercourses within the PDA (Maps 1, 2, and 3).

Consequently, some field reconnaissance was already initiated by Niigaan in summer 2022 in order to advance the understanding of the hydrology of lake 1 and assess the potential presence of watercourses and waterbodies within the waste rock and tailings co-disposal storage facilities options.

The bathymetry for the entire lake 1 was completed, with transects set at 50 meters apart for the western one-third of the lake and transects set at 100 meters apart for the eastern two-thirds. The bathymetry results show that the western portion of the lake, where the open pit will be developed, is shallow with depths mainly between zero (0) and six (6) meters. The central portion of the lake has depths mainly between six (6) and twelve (12) meters, with some areas reaching depths of eighteen (18) meters. The eastern portion of the lake shows depths between zero (0) and four (4) meters.

The gauging water level and water flow in lake 1 was also initiated during the summer 2022 field campaign by Niigaan. One gauge was installed at the outlet of the lake (watercourse CE20-1), and two gauges at its tributaries at the eastern limit of the lake.

A number of waterbodies and watercourses that did not appear on the available hydrographic mapping available online were observed by Niigaan and further mapped (Maps 1, 2, and 3).

### Open Pit Requirements

For all three conceptual scenarios, the main open pit would be located within lake 1. The pit in scenarios 2 and 3 would also overlap with lakes 3 to 8 and a portion of lake 2. In scenarios 2 and 3, the pit could potentially extend to the south into another watershed (De Pontois River watershed) and overlap with lakes 39 and 40. Watercourses are also likely present within the waste rock storage facilities options. In order to facilitate mining operations, pit dewatering will be required which is a significant consideration due to the potential size of the pit.

### Dams Requirements

In order to restrict water from entering into the pit, a number of dams will be required. As described in Section 2.2.2 of this report, scenario 1 would likely require 3 dams, while scenarios 2

and 3 would require 4 dams, as shown on Maps 1, 2, and 3 to block water from entering into the pit.

## Water Diversion Requirements

Because of the location of the pit, lake 1 would be disconnected from its outlet (watercourse CE20-1) during mining activities. Thus, in all scenarios, water diversions would be needed to reconnect lake 1 to the receiving environment. Water diversion refers to the practice of voluntarily redirecting the flow of water through purpose-built channels. As described in Section 2.2.3 of this report, scenario 1 would likely require 2 water diversion, while scenarios 2 and 3 would require 3 diversions, as shown on Maps 1, 2 and 3 to ensure adequate water flows during mining operations.

## Surface Water Management

In addition to the key conceptual water management infrastructures mentioned above, contact water ditches and settling ponds will be needed around each waste rock and tailings storage facilities. At this point in time, it is assumed that water quality of this contact water will be good and that only suspended solid will be treated through settling ponds prior to releasing water back to the receiving environment. Similar systems would be developed around the industrial area and along access roads.

If tailings or waste rock are acid generating or metal leaching, this material will have to be segregated preferably within one storage facility to limit the water management requirements. A water collection and treatment system would have to be developed depending on the volume of material, water balance, and contaminants of concerns. Moreover, water will be required for ore processing, but it is assumed that process water will be recycled as much as possible. Finally, groundwater will resurge in the pit as excavation progresses and surface water and rainwater will enter the pit. Water accumulating in the pit will need to be pumped out and depending on its quality, may require treatment. Water treatment facilities such as a treatment plant and water retention pond have not been positioned at this time.

## Mining Activities in Lakes

In Quebec and more generally in Canada, the development of mining infrastructure within natural waterbodies and watercourses may be permitted. For example, lakes and streams may be overprinted (i.e., removed) for the development of open pits or tailings storage facilities. Generally, the waterbody is isolated, fish are relocated or harvested (usually offered to locals),

and the waterbody is dewatered. The fish habitat loss must be compensated, preferably before the loss occurs.

As previously mentioned, the disposal of tailings and waste rock in waters frequented by fish requires the amendment of Schedule 2 of the *Metal and Diamond Mining Effluent Regulations* (MDMER). The process is overseen by Environment and Climate Change Canada (ECCC). The loss of fish habitat for the development of the open pit is permitted by Fisheries and Oceans Canada (DFO) under the *Fisheries Act*. Whether the fish habitat loss is permitted under the MDMER or the *Fisheries Act*, the proponent is required to compensate or offset this loss. A significant financial guarantee (e.g., letter of credit or performance bond) is also required to ensure the compensation or offsetting plan is carried out.

Below are a few examples of mining projects that proposed waterbody drainage and that have been permitted or are currently being permitted.

**Renard Diamond Mine – Northern Quebec, 140 km southeast of Corvette property**

The construction of Stornoway's Renard Diamond Mine involved the dewatering of two lakes (lakes F3302 and F3303) for the development of the open pits[16]. In total, at least 45,800 $m^2$ of waterbodies and watercourses were dewatered for the construction of the mine. The project has undergone the federal impact assessment process and received a positive decree in 2013. The Comprehensive Study Report (i.e., the impact assessment conducted by the federal government at the time) notes that the compensation plan is sufficient to offset the fish habitat loss generated by the project. The compensation plan was approved by DFO and supported by the Cree community. The Renard Diamond Mine also received a positive certificate of authorization in 2012 following the provincial impact assessment, with condition 2.12 stating the proponent had one year following the project authorization to submit its final fish habitat compensation plan for approbation by the Administrator[17]. A figure of the proposed Renard Diamond mine layout is available in Appendix A.

**Rose Lithium-Tantalum Mine – Northern Quebec, 220 km southwest of Corvette property**

The Rose Lithium-Tantalum Mine project by Critical Elements Lithium Corp. involves the draining of two small waterbodies (Lake 1 and Lake 2) for the development of the open pit[18]. In total, the project is expected to deteriorate, destroy or disturb 423,000 $m^2$ of fish habitat. The project has undergone the federal impact assessment process and the Impact Assessment Report noted that the effects of dewatering the waterbodies would be offset by the compensation plan. A

[16] https://www.ceaa-acee.gc.ca/050/evaluations/document/89245.
[17] https://www.environnement.gouv.qc.ca/evaluations/projet/maj-sud/2012/3214-14-041-20121204.pdf.
[18] https://www.cecorp.ca/wp-content/uploads/161-14192-03_RPT-01_R1_V1_CELC_Rose-FS-2022.pdf.

positive Decision Statement was issued in August 2021[19]. Considering the various mitigation measures and proponent commitments, it was determined that the project would likely not cause significant adverse effects. The offsetting/compensation was developed to DFO's satisfaction and in consultation with First Nations during the regulatory phase. The project received its general certificate of authorization on November 2nd, 2022, completing the provincial impact assessment process. A figure of the proposed Rose Lithium-Tantalum mine layout is available in Appendix A.

**Côté Gold Mine – Ontario**

The Côté Gold Mine project involves the draining of Côté Lake for the proposed development of the open pit[20]. Other waterbodies and watercourses will also be dammed or realigned for the development of different mine infrastructure. At least 690,000 $m^2$ of fish habitat will be lost. The federal Environmental Assessment Report assessed the impact of fish habitat loss and recommended a few mitigation measures beyond the proposed offsetting plan. The positive federal decree was issued in 2016 and included as a condition that the fish habitat offsetting/compensation plan must be developed in consultation with DFO and Aboriginal groups. A figure of the proposed Côté Gold mine layout is available in Appendix A.

**Magino Gold Project – Ontario**

The Magino Gold Project involves the draining of Webb Lake and an unnamed waterbody for the proposed development of the open pit[21]. Based on the Impact Assessment Report submitted by the federal impact assessment body, the waterbody loss with the development of the open pit amount to 162,000 $m^2$. Moreover, the project proposes the disposal of tailings and waste rock as well as other project infrastructure in natural waterbodies/watercourses, resulting in a total loss of about 605,000 $m^2$ of waterbodies and streams. The disposal of tailings and waste rock in waters frequented by fish was permitted by the amendment of the MDMER Schedule 2. The project received a positive Decision Statement in January 2019[22]. Considering the various mitigation measures and proponent commitments, it was determined that the project would likely not cause significant adverse effects. The offsetting/compensation plan was developed to DFO's satisfaction and in consultation with Indigenous groups during the regulatory phase. A figure of the proposed Magino Gold mine layout is available in Appendix A.

[19] https://www.ceaa-acee.gc.ca/050/evaluations/document/141037.
[20] https://www.ceaa-acee.gc.ca/050/documents/p80036/113703E.pdf.
[21] https://www.ceaa-acee.gc.ca/050/evaluations/document/129464.
[22] https://www.ceaa-acee.gc.ca/050/evaluations/document/129476.

## 5.3. Fish and Fish Habitat

The proposed Corvette Lithium Project and associated works will require the development of mining infrastructures either directly within or adjacent to designated fish habitat.

Work taking place within or near water and likely to result in the death of fish and/or the deterioration, destruction, or disturbance of fish habitats requires an authorization under the *Fisheries Act*, which is administered by Fisheries and Oceans Canada (DFO). Part of the DFO authorization process will involve the development and implementation of a fish habitat compensation plan for all fish habitat destroyed and/or disturbed by project infrastructures. Other authorizations may be required depending on the activity and the habitat affected. For example, the disposal of waste rock in waters frequented by fish requires the modification of the *Metal and Diamond Mining Effluent Regulations*, Schedule 2 (as per article section 5(1)).

Thus, it is important to have a thorough understanding of the fish habitat and fish presence at the project site while developing the project.

### Presence of Fish and Fish Habitat

Considering the importance of the fish and fish habitat related requirements, an initial fish habitat field reconnaissance characterization was completed by Niigaan in the summer of 2022. The reconnaissance works have included initial fish habitat validation, watercourse mapping and connectivity assessment, and an initial assessment of the potential waste rock and tailings storage areas. Niigaan conducted the field reconnaissance for the entire lake 1 (foreseen open pit for all Conceptual Layout) and some of their observations extend to the eastern portion of lake 1.

According to preliminary observations by Niigaan, key fish habitats were identified across lake 1 including:

- Shoals: 35 locations;
- Aquatic grass beds: four (4) locations;
- Potential spawning grounds: two (2) locations.

These habitat functions were identified based on factors such as water flow type, substrate material size, and the presence of aquatic vegetation. The functions were attributed according to the professional judgment of the technicians and biologists on the field depending on the fish species inventoried or potentially present, and the associated life stage (adult, juvenile, fry, breeder).

The shoals found in lake 1 are described as outcrops of coarse substrate close to the surface of the lake. This type of habitat is used by fish for shelter and feeding, as well as spawning grounds by some lithophile fish species.

One of the aquatic grass beds is located at the western limit of lake 1, while the other three (3) are in the eastern portion of the lake. The aquatic grass beds are described as having sparse vegetation. Thus, this type of habitat does not offer optimal condition as spawning ground for phytophiles fish like Northern Pike but may still be used as a marginal spawning habitat, a nursery, or a feeding ground.

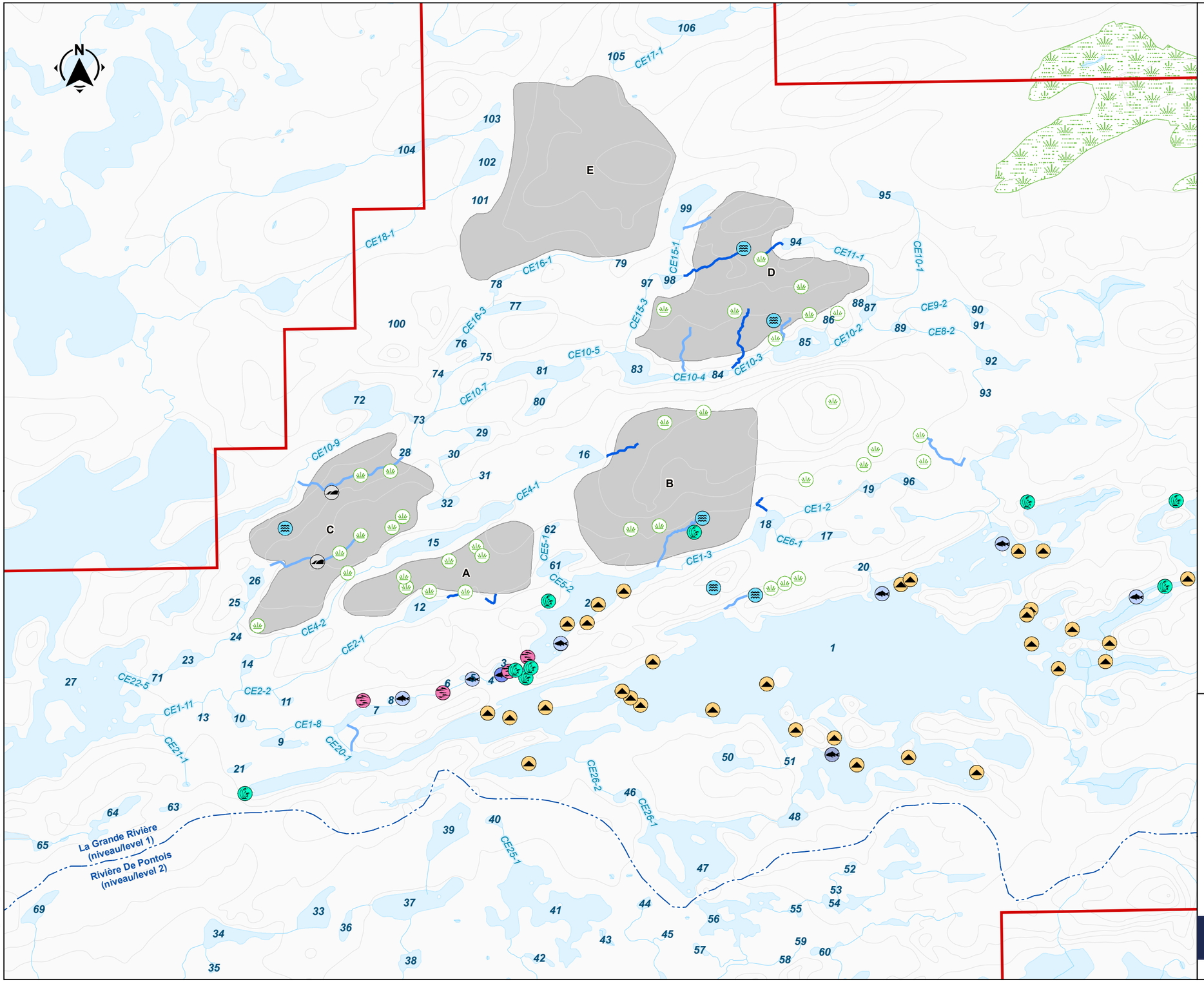
The two potential spawning grounds found in lake 1 are in the tributaries of the lake, at its eastern limit. They are characterized by running water and a high proportion of gravel in the streambed.

Moreover, initial fish habitat validation was carried out between lake 2 and lake 7. A total of four (4) shoals were observed on the south shore of lake 2. Aquatic grass beds were also identified, including one (1) in lake 2 and three (3) in the watercourse connecting lake 2 and lake 3 (watercourse 2-4). Another aquatic grass bed was observed in a lake northeast of lake 1. Finally, five (5) spawning grounds were identified between lakes 2 and 7.

During the summer 2022 field reconnaissance, Niigaan confirmed the presence of three (3) fish species; Brook trout, Lake trout, and Northern Pike. Lake Trout and Northern Pike were observed in lake 1, while Brook Trout and Northern Pike were seen between lakes 2 and 7.

A number of waterbodies and watercourses that did not appear on the detailed hydrographic mapping available online were also observed by Niigaan and further mapped (see Maps 1, 2, 3, and 7).

Map 7 outlines the Initial Fish and Fish Habitat Assessment.




**Composantes du projet / Project Components**

- Limite des claims désignés / Designated claim Limit (Patriot Battery Metals)
- Options des haldes de résidus et de stériles / Options for waste rock and tailings storage facilities

**Milieu naturel / Natural Environment**

- Milieu humide potentiel / Potential Wetland (MELCC, 2019)

**Hydrographie / Hydrography**

- Cours d'eau / Watercourse
- Lac et surface d'eau / Lake and Waterbody
- Bassin-versant / Watershed

***Caractérisation des cours d'eau / Caracterized watercourse (Niigaan, 2022)***

- Présence confirmée / Presence confirmed
- Présence potentiel / Potential Presence

**Reconnaissance terrain / Field Reconnaissance**

***Éléments d'intérêts / Elements of interest (Niigaan, 2022)***

- Affleurement rocheux / Rock outcrop
- Lac potentiel / Potential Lake
- Milieu humide potentiel / Potential Wetland

***Habitat du poisson / Fish habitat (Niigaan, 2022)***

- Bas-fond / Shoal
- Frayère potentielle / Potential spawning ground
- Herbier aquatic / Aquatic grass bed

***Présence confirmée des espèces / Species Presence Confirmed (Niigaan, 2022)***

- Grand brochet / Northern Pike
- Omble de fontaine / Brook trout
- Touladi / Lake Trout

**Topographie / Topography**

- Courbes de niveaux (10 m) / Contours of levels (10 m)

*Patriot Battery Metals*
*Initial Environmental and Social Scoping Report*
*Eeyou Istchee Baie-James, Québec*

## Carte / Map 7

## Évaluation initiale – Poisson et habitat du poisson / Initial Fish and Fish Habitat Assessment

***Sources :***
*CanVec, 1/250 000, RNCan, 2017*
*Modèle numérique de terrain (MNT), 1/50 000, résolution 10 m, MERN et RNCan, janvier 2018*
*Bassins hydrographiques multiéchelles du Québec, 1/20 000, MELCC, 2018*
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*Cours d'eau et plan d'eau, GRHQ, MERN Québec, octobre 2021*
*SDA, 1/20 000, MERN Québec, juin 2022*
*Données de projet, BBA, 2022*

*No projet BBA : 7535001-000100-4E*

**2022-09-16**

0 300 600 m
UTM, fuseau 18, NAD 83

Préparé par : A. Gagnon | Dessiné par : A. Monnard | Vérifié par : C. Le Page

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## 5.4. Biodiversity Management

According to the International Council on Mining & Metals:

*The mining and metals industry's biodiversity conservation performance is under increasing scrutiny from NGOs, commentators, and financial analysts. This is due in part to a growing awareness of the importance of biodiversity conservation, but also because the industry often operates in remote and environmentally sensitive areas of the world. Demonstrating a commitment to biodiversity conservation is now an essential element of sustainable development for the mining and metals industry*.

Biodiversity management will thus be an important consideration for the Project. A number of species at risk could be present and may be potentially affected. A thorough multi-year survey program will be required and a biodiversity management plan will need to be developed.

## 5.5. Recruitment of Qualified Manpower

The Corvette Lithium Project will require hundreds of qualified employees during construction and operation. The availability and training of the manpower is an important matter for Project development.

In the province of Quebec, the unemployment rate is currently at a record low of 4.4%, the lowest in Canada. According to a survey of manpower and training needs for companies of the Jamésien part of Eeyou Istchee James Bay territory, more than 50% of companies have at least one job vacancy (Comité condition féminine Baie-James, 2021).

Most of the mining companies operating in Northern Québec have difficulties hiring employees at the provincial level. It is almost impossible for companies to recruit most of their employees locally, especially in less populated regions like the Eeyou Istchee James Bay territory.

The recruitment problem causes different consequences for companies:

- Projects need to be cancelled or aborted;
- Contracts or orders are declined;
- Salaries are increased;
- Less qualified employees are hired;
- Employees have to work longer shifts;
- Accidents and health and safety issues are more frequent.

Fly-in fly-out as well as drive-in-drive-out is a common practice for mining companies operating in Quebec. In fact, almost all mining companies remotely located in the province have no choice but to adopt this practice.

## 5.6. Social Acceptability and Stakeholder Management

Social acceptability is the outcome of a collective judgment, perception, and opinion of a project or proposed development. A number of factors are known to contribute to social acceptability. One of these factors is participation in decision-making.

Informing and consulting with regulatory authorities as well as local communities and stakeholders is therefore a major consideration of any successful major project development. Properly engaging with stakeholders that are likely to be directly or indirectly interested by the proposed project will result in the creation of constructive and collaborative relationships with local, provincial, and federal authorities and communities.

Stakeholder engagement is not a onetime conversation, but rather a series of opportunities and forums to engage in a dialogue with stakeholders. It is also meant to provide an opportunity to learn how these external parties view the project and its related risks, impacts, and opportunities.

It is our understanding that PBM has been active in its communications with the local community. It has contacted the Cree Nation of Chisasibi and letters and emails have been exchanged with the Chisasibi Chief, Daisy House. Furthermore, PBM is in contact with the Ratt family, which owns the VC07 trapline. Mr. Steve Ratt, the trapline owner's nephew is the main contact. Communications have also begun with Nouchimi camp representatives as well as the Société du Plan Nord and Hydro-Québec.

An Impact and Benefits Agreement (IBA) is essential to solidify a trusting relationship with the indigenous community. This agreement between the mine owner and the indigenous community outlines the obligations of each party regarding various project related topics such as employment and training, business opportunities, benefit payments, lines of communication, meeting requirements, participation and engagement in the project, and more. There are usually a few steps leading to the signature of IBAs, including official meetings and a Memorandum of Understanding (MOU). In the case of the Corvette project, only one IBA would likely be signed between the mine owner, the Grand Council of the Crees (Eeyou Istchee), and the affected Cree communities.

PBM has created a contact registry for the project which is an important tool for social engagement. This tool should be kept up to date throughout the life of the project.

Since early engagement is important in relationship building, Patriot Battery Metals should begin meeting with important stakeholders (including key regulatory authorities) as soon as possible. Furthermore, the Corvette project would benefit from employing a dedicated resource for its stakeholder engagement and community relations in the early phase of the PFS. Having someone answering to stakeholders' requests and managing community relations will help address issues that could have a direct impact on the project.

## 5.7. Logistics associated with auxiliary activities

### 5.7.1. Connection to the Hydro-Québec Network

The operation of the mine, especially the processing plant, will need a reliable power supply on a continuous and long-term basis. It may be possible to connect the project site to the Hydro-Québec 735 kV powerlines distributing electricity produced at the La Grande complex, located about 15 km north of the projected PDA. This would involve the construction of a substation and of a powerline. An agreement with Hydro-Québec will also be necessary. Moreover, this activity would likely trigger an environmental and social impact assessment in and of itself, which would be managed by Hydro-Québec. The planning of this undertaking should be started early in the development of the Corvette Lithium Project to limit unforeseen delays and obstacles. Other mining projects such as Windfall / Osisko are currently awaiting power supply to advance to the operation phase and must implement temporary measures for power generation.

### 5.7.2. Quarries

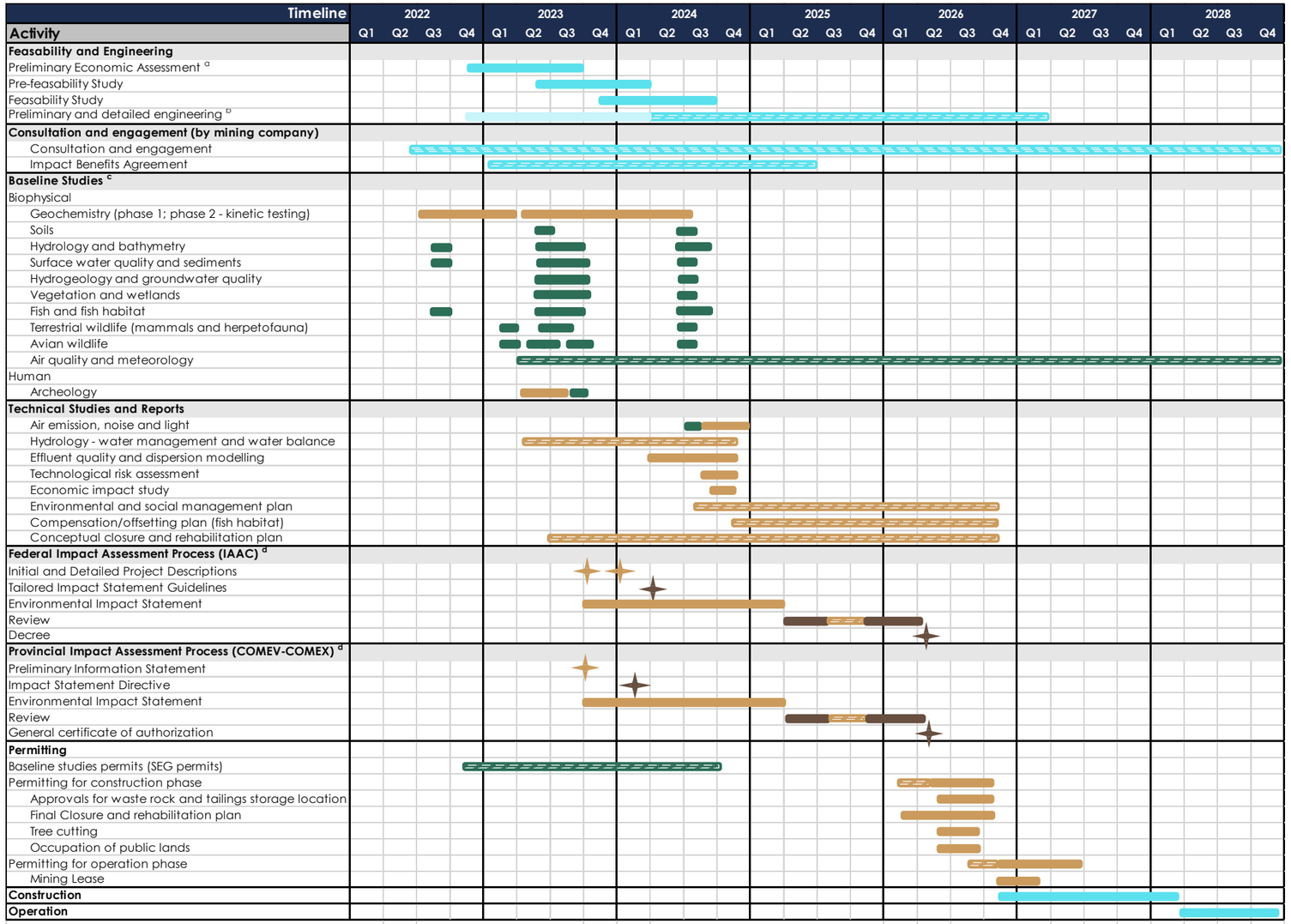
As discussed in Section 2.2, some of the projected mine infrastructures will need to be built before the open pit can be dug. Thus, overburden and waste rock from the open pit area will not be available for the construction of infrastructures early in the site development. For example, the construction of the dams that will allow the dewatering of the open pit area will have to be built from material extracted in nearby quarries. A significant volume of construction material (i.e., aggregate) may need to be extracted, which could require blasting. In general, this consideration will need to be addressed early during the project design and planning.

# 6. Future Work and Next Steps

A number of specific considerations related to the Project development have been described in Section 5. In order to mitigate risks and delays associated with these considerations, BBA recommends:

- Investing specific financial and human resources as early as the PEA relating to environmental and social management, as well as engineering design;
- Developing and maintaining trusting relationship with stakeholders (regulators, aboriginal and non aboriginal communities);
- Securing appropriate technical experts and consultants that will be available to support the Project development;
- Developing and implementing detailed baseline field surveys protocols and strategy.

These priority considerations have been included in a simple Gantt chart, and a flowchart. The Gantt chart illustrates the general timelines of project development and permitting milestones associated with the Corvette project, from the Preliminary Economic Assessment to construction (Figure 12). To build the chart, BBA referred to the Tailored Impact Statement Guidelines Template for Designated Projects Subject to the Impact Assessment Act, as well as regulations and other projects undergoing the assessment processes. Numerous assumptions are noted in the chart. The flowchart outlines the impact assessment procedures and general project development and permitting requirements for the Corvette project (Figure 13).




a: The PEA would have to include a strong final mine layout to limit the possibility of future changes and delays.

b: Detailed engineering is required for modelling that will inform the Impact Statement, and for construction and operation permitting

c: If baseline studies contracts are not signed at least six months prior to field season, surveys may not be conducted. Protocols should be presented, discussed, and supported by authorities. Baseline studies should be based on a final mine layout. Some baseline studies are dependant on precise infrastructures locations. Changes to mine layout would delay baseline studies or require additional baseline studies at a later date. Adequate engagement with Indigenous groups should be conducted prior to baseline studies.

d: Assuming all information required for the project descriptions is available, the project descriptions are receivable, and limited questions from the governments. Assuming all baseline and technical studies are completed as scheduled and limited additional studies required by regulators. Assuming the mine layout doesn't change considerably during the assessment. Assuming the governments only have one round of questions and the information is available to answer the questions in a timely manner.

**Figure 12: Gantt Chart of the General Timelines of the Development and Permitting of the Corvette Lithium Project**

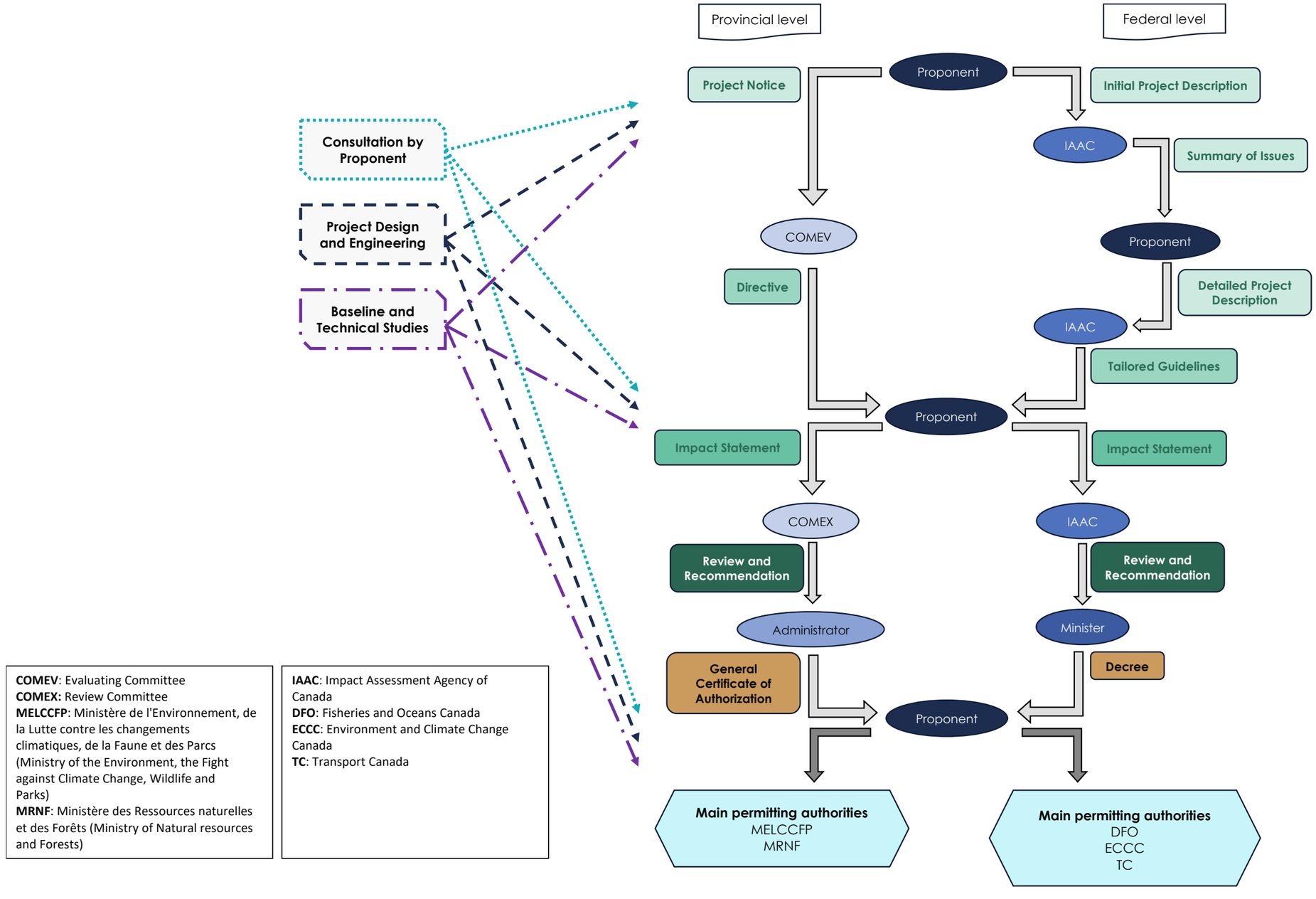



**Figure 13: Flowchart of the General Steps of Development and Permitting of the Corvette Lithium Project**

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# Appendix A: Figures of mine layouts with infrastructures in natural waterbodies

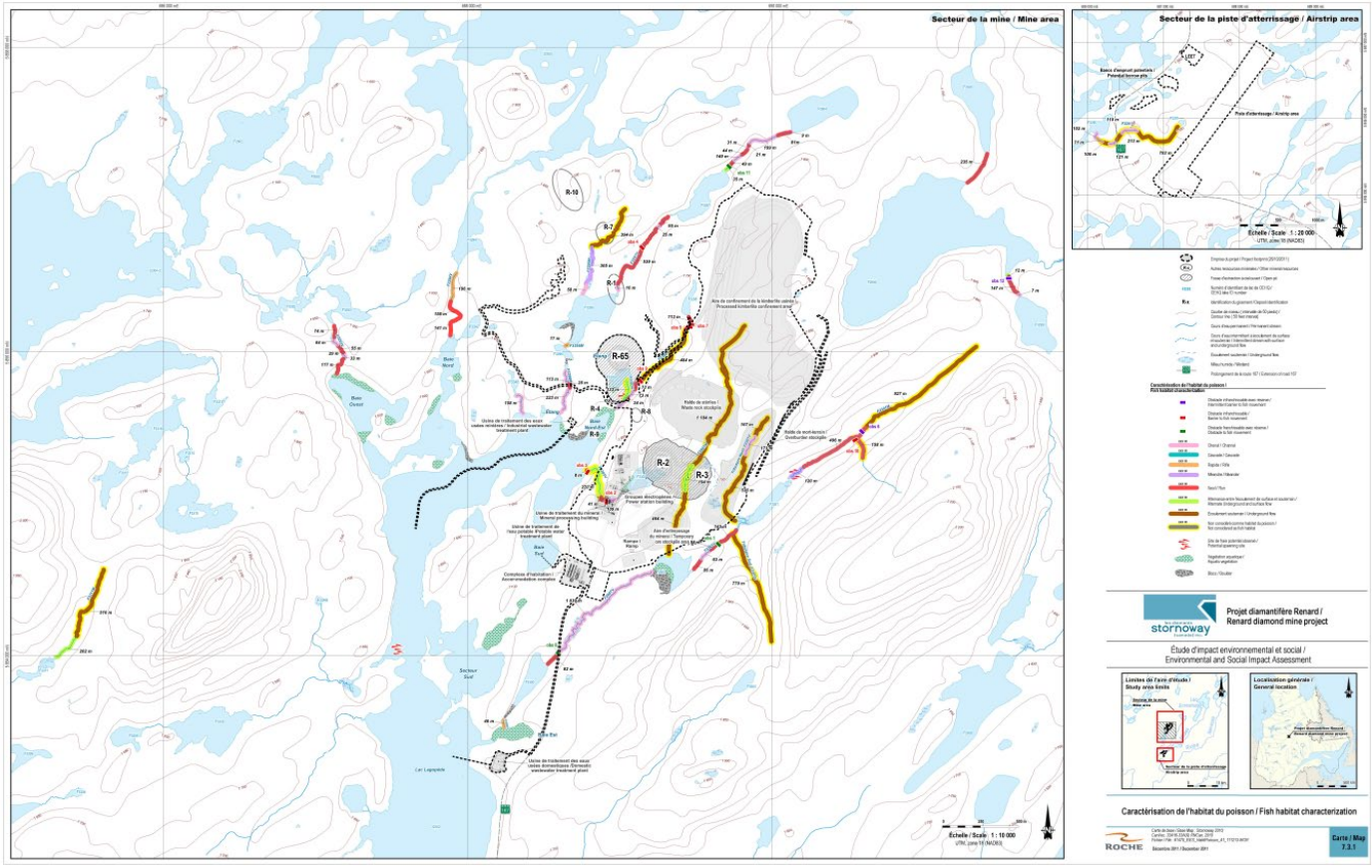


**Figure 14: Renard Diamond Mine - Infrastructures and Fish Habitat Characterization[23]**

[23] https://www.ceaa-acee.gc.ca/050/documents_staticpost/55169/56411E.pdf

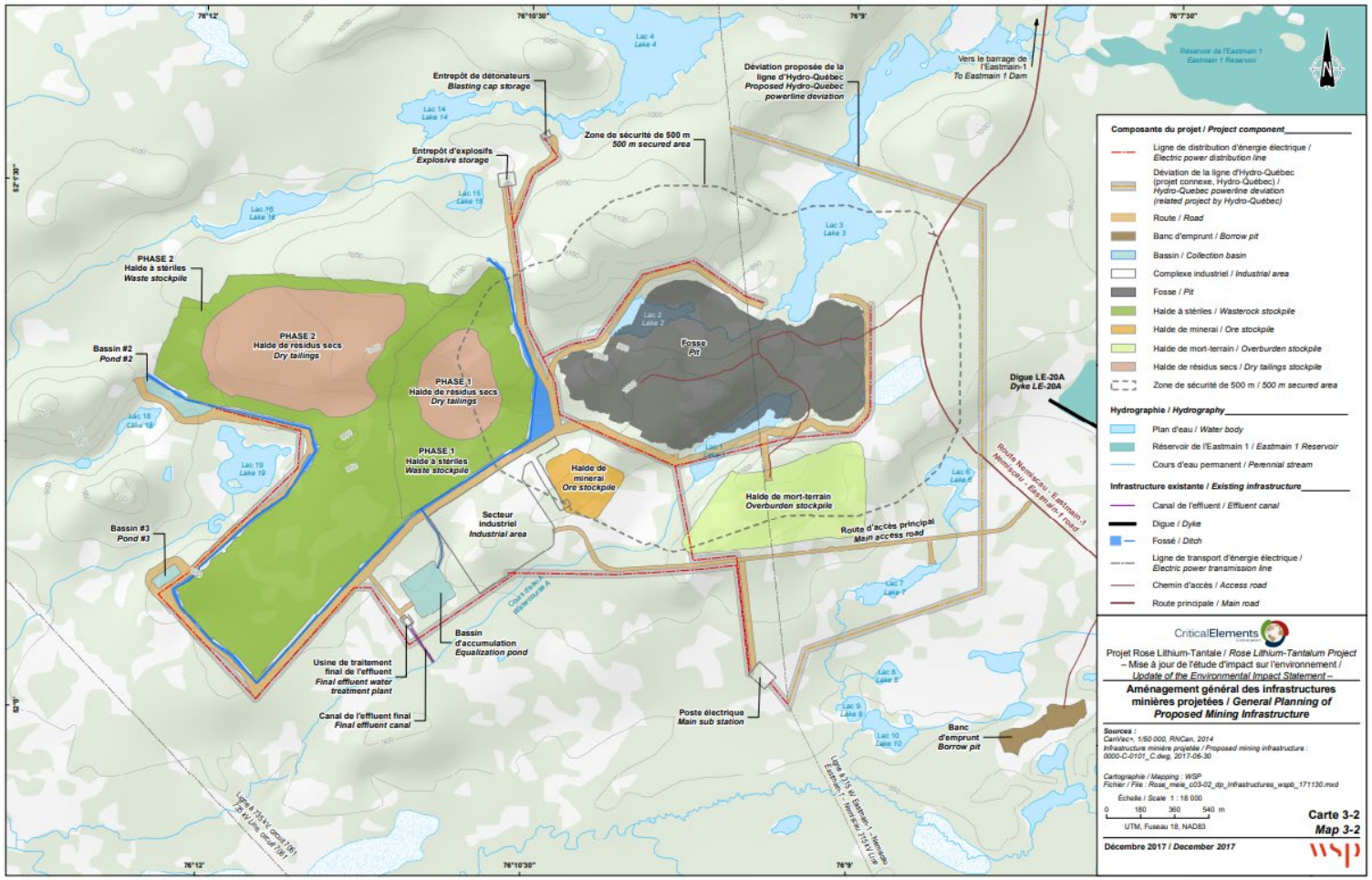


**Figure 15: Rose Lithium Tantalum - General Planning of Proposed Mining Infrastructures[24]**

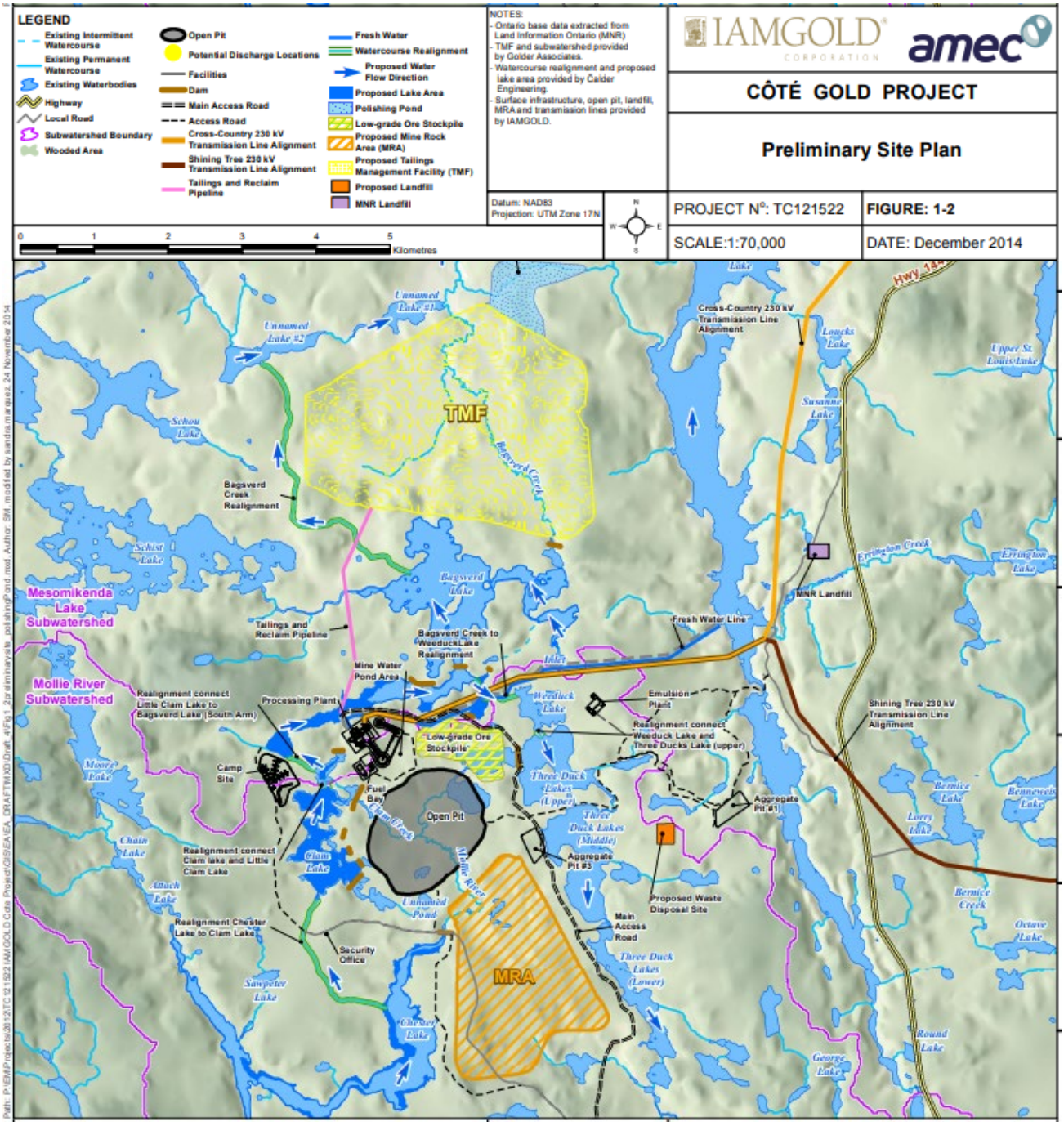


**Figure 16: Côté Gold Mine - Preliminary Site Plan [25]**

[25] https://www.ceaa-acee.gc.ca/050/documents/p80036/101177E.pdf

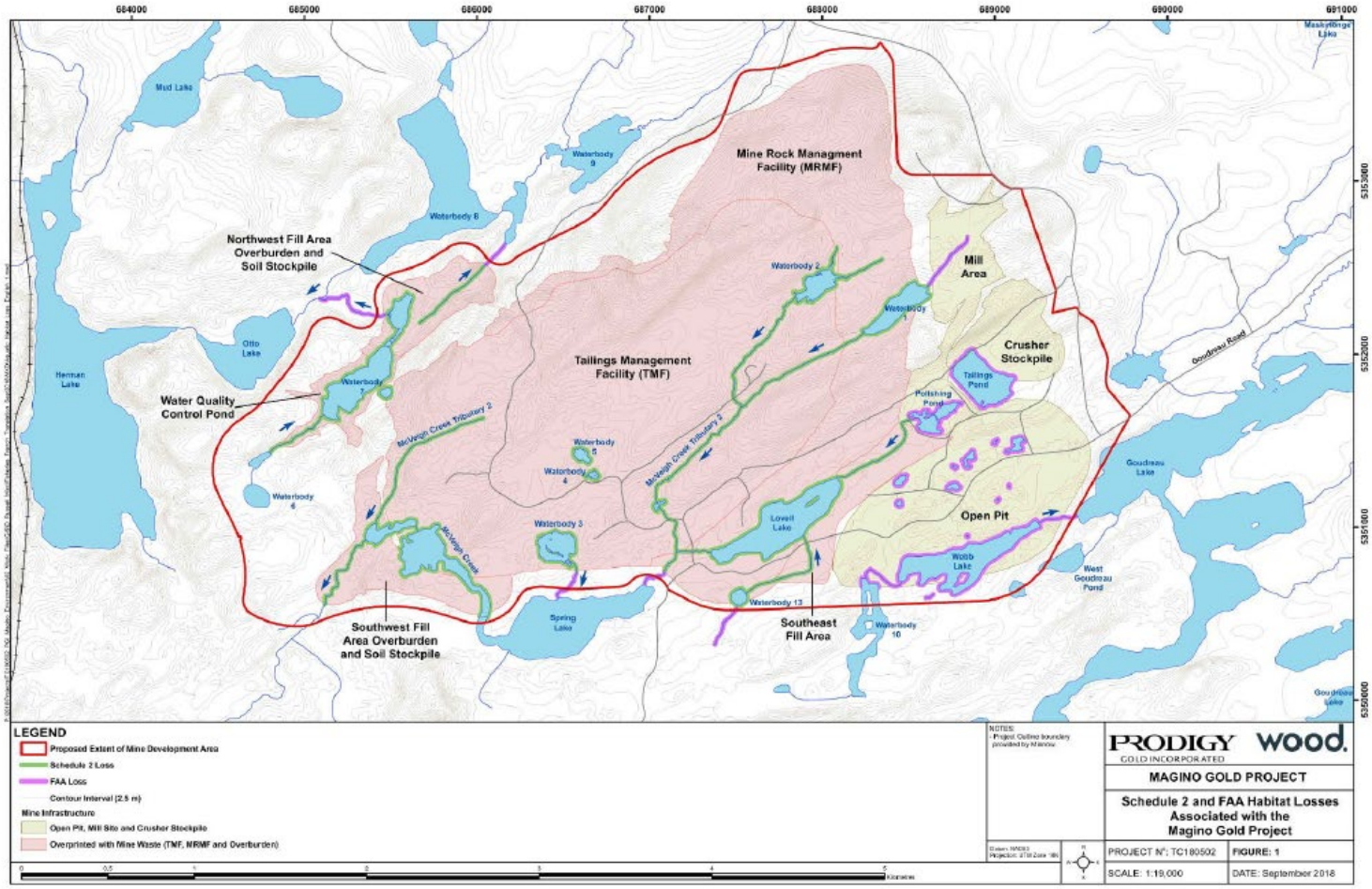


**Figure 17: Magino Gold Project - Fish Habitat Loss Associated with Mine Infrastructures[26]**

[26] https://www.ceaa-acee.gc.ca/050/documents/p80044/126611E.pdf.