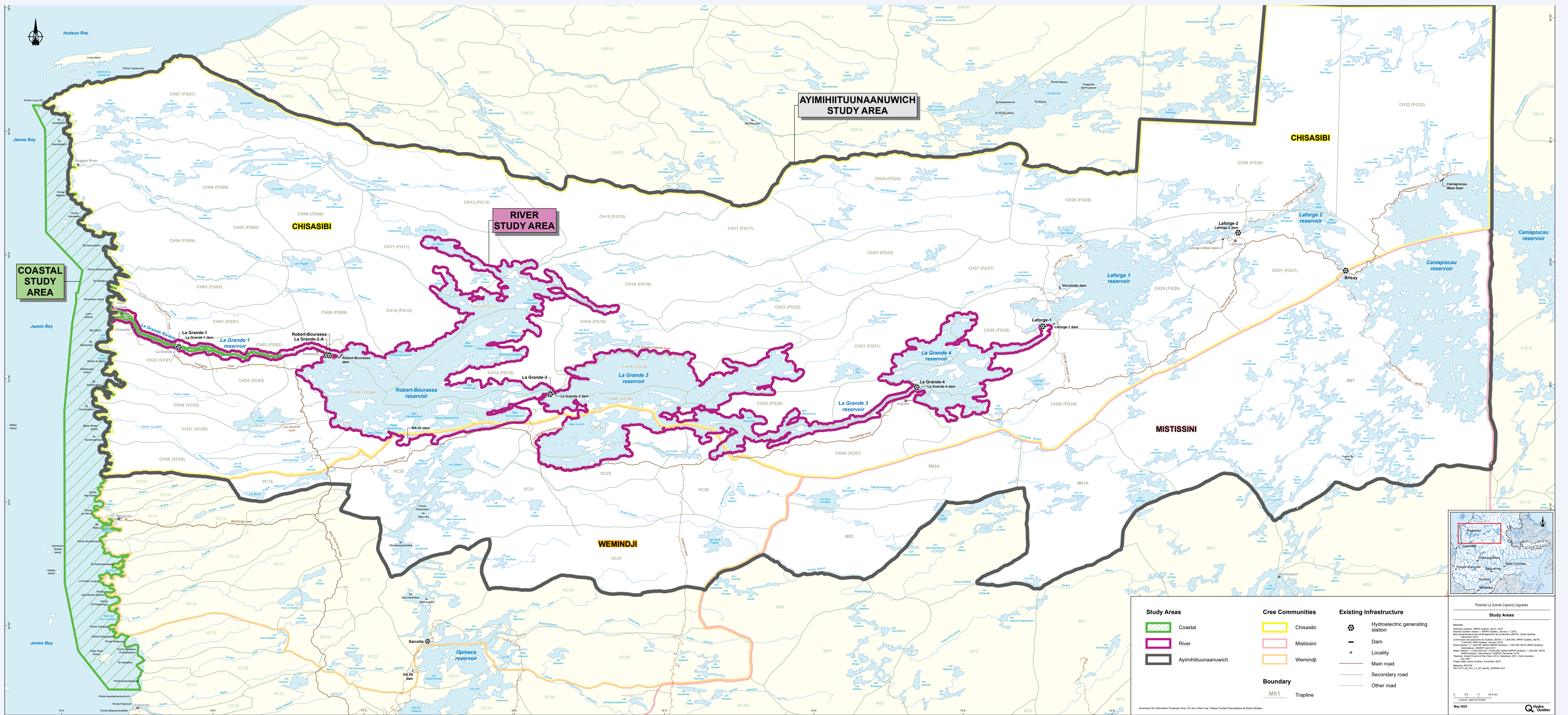




# AYIMIHIITUUNAUWICH

## Joint Process on Potential La Grande Capacity Upgrades

The Crees of Eeyou Istchee and Hydro-Québec have established the Ayimihituunaanuwich Joint Process on Potential La Grande Capacity Upgrades to assess the environmental, social and cultural aspects of potential upgrades to Robert-Bourassa, La Grande-3 and La Grande-4 generating stations.



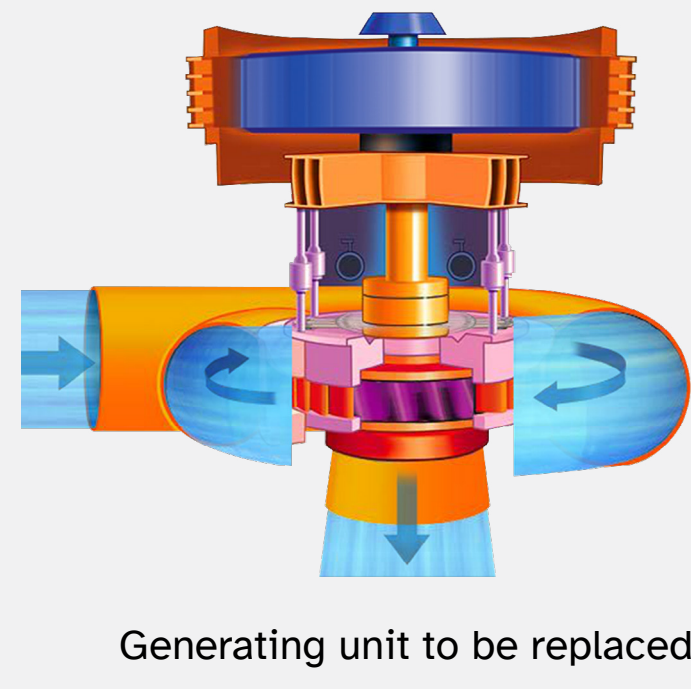
### Environmental Study Program

Three main study areas have been determined for the purposes of the environmental evaluation: the Ayimihituunaanuwich area (dialogue zone), the riverine study area (including the river and reservoirs), and the coastal study area.

- The Ayimihituunaanuwich area is used for the human environment studies and cumulative effects assessment.
- The riverine area is used for biophysical environment studies, and sometimes divided into sectors.
- The coastal study area is specifically used for eelgrass and oceanography studies.

### What are the potential La Grande upgrades?

The generating units of Robert-Bourassa, La Grande-3 and La Grande-4 are approaching the end of their service life. The potential capacity upgrades aim at making optimal use of the existing facilities by replacing older generating units with new units that could have an increased capacity. This would enable Hydro-Québec to better meet the demand for electricity during winter peaks (e.g., on the coldest days) and ensure safe and reliable operation of the generating stations.



Generating unit to be replaced



### Ayimihituunaanuwich Joint Process and Cree Participation in the Studies

The Crees of Eeyou Istchee and Hydro Québec have established the Ayimihituunaanuwich Joint Process on Potential La Grande Upgrades. This process involved the creation of a Main Table and a Technical Table. The Main Table is a forum for cooperation and oversight of the Joint Process and a possible collaboration agreement. The Technical Table supervises the environmental study program to assess the possible environmental, social and cultural impacts of the potential capacity upgrades.



Cree participation in the environmental studies takes many forms:

- Hydro-Québec recognizes that tallymen and land users have knowledge about the environment that is of interest for the environmental study and must be integrated. Involvement of Cree land users in field campaigns is crucial.
- 2 Cree representatives on the Technical Table were part of the process to select the team that would carry out the environmental study program. The selected consulting team is a partnership formed by AECOM and 3 Cree firms: Niigaan/Synergis, Maamuu consultants and EnviroCree Ltd.
- All consultants will attend a cultural awareness session to learn about Cree culture, history and the important knowledge held by the Cree communities.

### Study Timeline & Field Activities

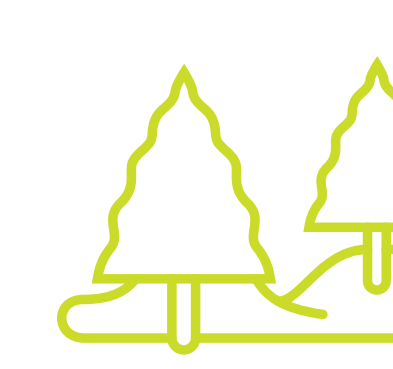
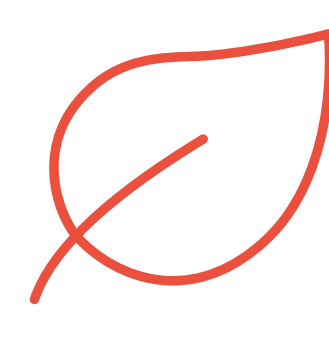
#### Winter 2025-2026

- Water quality
- Hydrology and hydraulics
- Ice cover\*\*



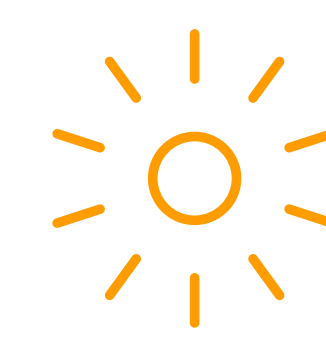
#### Fall 2025

- Land use study and socio economic profile
- Water quality
- Fish habitats



#### Spring 2025

- Water quality
- Fish habitats\*



#### Summer 2025

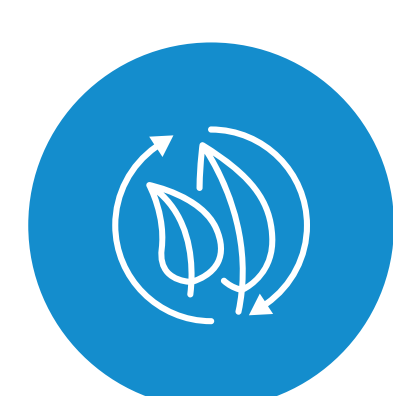
- Bank dynamics
- Archaeology
- Land use study and socio-economic profile
- Land use studies (snowmobile / navigation)
- Hydrology and hydraulics
- Water quality

\* Fish habitat studies will be carried out in 2025 and 2026.  
\*\* Ice cover studies will be carried out in 2026.

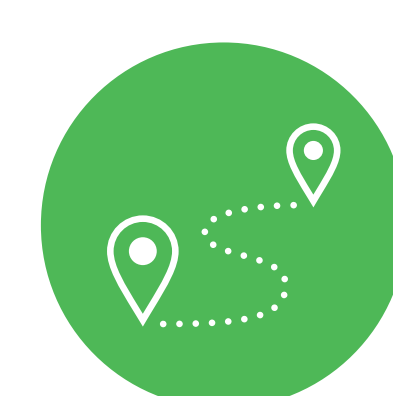
### Next Steps



Once field campaigns are done, the team of environmental specialists will compile the results and they will be reviewed by the Technical Table.



Then the team will analyze the possible interactions between project components, valued ecosystem components and concerns expressed by land users and members of the community.



This exercise will lead to the identification of possible impacts of the potential La Grande upgrades, as well as mitigation and compensation measures.



Finally, everything will be gathered in environmental evaluation reports and submitted to the authorities with an application to modify the existing authorisations for LG-2, LG-3 and LG-4 on the entire Chisasibi (the Great River).

### For more information

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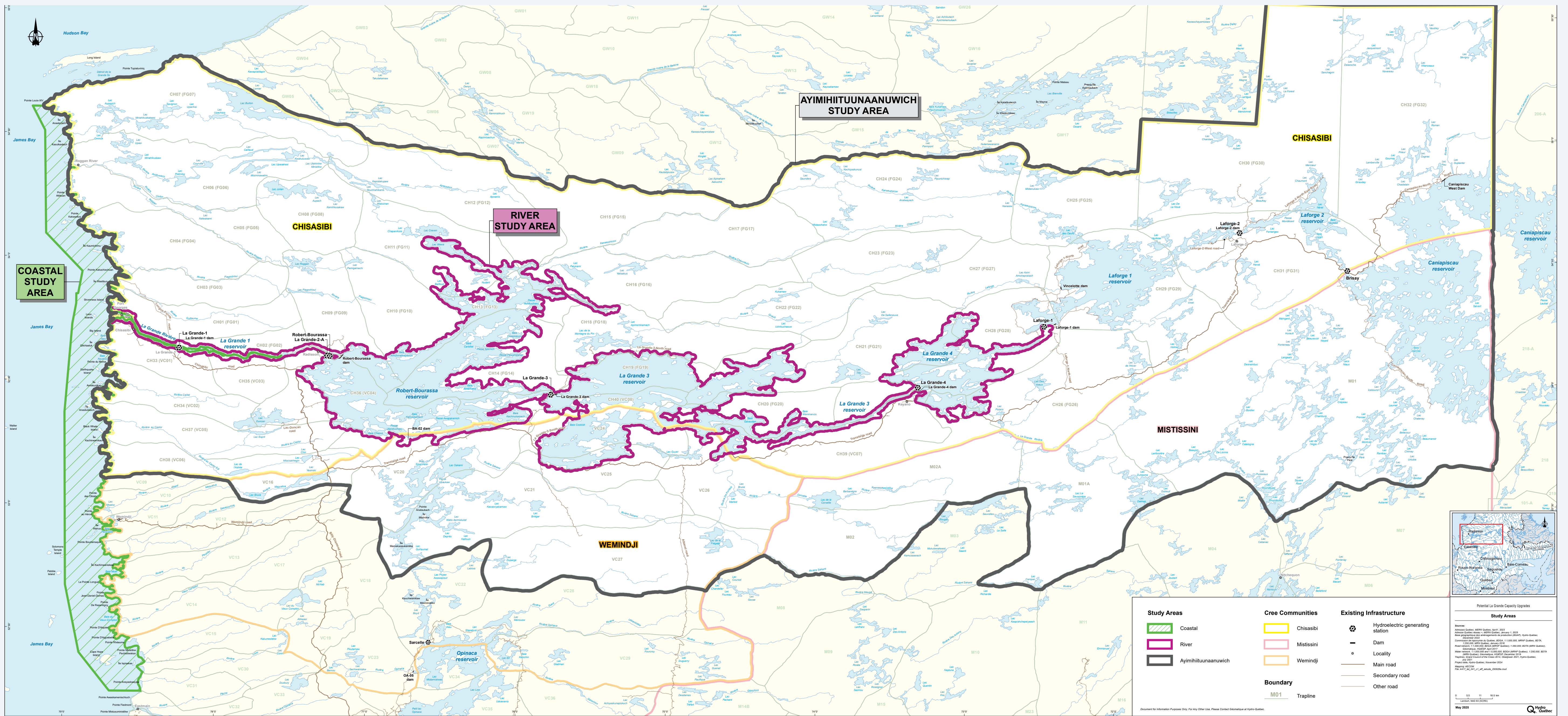
sammy.blackned@wemindji.ca



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#### Biological Environment

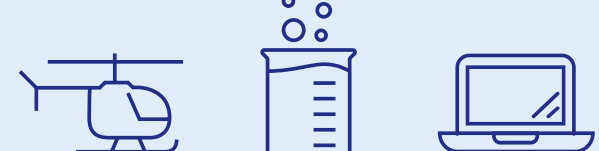
##### Fish Habitat\*

###### Objectives

- Characterize aquatic habitat within the project area of influence
- Carry out seasonal monitoring of habitat use by various fish species
- Initiate studies on fish species valued by the Cree Community

###### Study area

- Riverine study area, from the estuary to LG-4



#### Physical and Biological Environment

##### Ice Processes\*\*

###### Objectives

- Evaluate the project's impacts on ice cover
- Spatial coverage
- Thickness
- Formation/removal dates

###### Study area

- Riverine study area, from the estuary to LG-4



#### Physical Environment

##### Water Quality

###### Objectives

- Verify the stability of water quality since 2000
- Produce an updated baseline of water and sediment quality
- Produce a baseline of water quality downstream of the river segment identified in the current erosion study

###### Study area

- Riverine study area from the estuary to LG-4
- Previous stations (27)
- Additional stations:
  - 2 downstream of LG1
  - 2 downstream of Robert-Bourassa
- In continuity with previous sampling sites, but adapted to new land use



#### Human Environment

##### Archeology

###### Objectives

- Update archaeological knowledge since 2009 (more than 14 years)
- In the event that the potential study identifies sites, an excavation program will be developed and submitted to the Ministry of Culture for approval

###### Study areas

1. Segment A covers the river outlet at KP 0 including Fort George Island to LG-1 generating station
2. LG-2 reservoir (from LG-1 generating station (KP 36.5) to the Eastern part of Robert-Bourassa (LG-2) reservoir, at KP 117 of the river
3. Section B extends from the eastern boundary of Robert-Bourassa (LG-2) reservoir (KP 210) to LG-3 generating station (KP 239)
4. LG-3 reservoir Segment C covers the riverbed between the eastern boundary of LG-3 reservoir (KP-388) and LG-4 reservoir and generating station (KP 470)
5. LG-4 reservoir



#### Human Environment

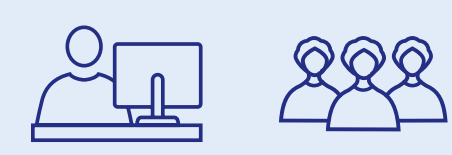
##### Cree Land Use and Socioeconomic Profile

###### Objectives

- Document activities and land use, valued and sensitive elements of the land (ex: archaeological site)
- perceived concerns or issues regarding current operations
- Draw up a socioeconomic portrait of the communities
- Identify community projects and future perspectives

###### Study area

- Ayimihituunaanuwich study area, from the estuary to LG-4



#### Physical Environment

##### Oceanography

###### Objectives

- Gather knowledge and concerns to better understand the variables that influence the freshwater plume
- Update model with recent bathymetry data
- Deploy instruments to position the freshwater boundary according to various tidal and flow conditions
- Develop 3D hydrodynamic model to better represent flow stratification in water column
- Incorporate results and conclusions of recent studies

###### Study area

- Coastal study area, specifically in the estuary between Kps -10 and 10



#### Biological environment

##### Eelgrass

###### Objectives

- Assess the condition of the eelgrass bed between Pointe Louis-XIV and Rivière Conn
- Compare to previous results
- Check for algae in association with the beds and general eelgrass conditions
- In collaboration with CHCRP

###### Study area

- Coastal study area, extending further south
- 4 areas:
  1. from Pointe Louis-XIV to the mouth of Chisasibi (La Grande Rivière)
  2. from the mouth of Chisasibi to (and including) Baie Dead Duck
  3. from the southernmost point of (but not including) Baie Dead Duck to Pointe des Oblats
  4. Pointe des Oblats to Rivière Conn



#### Physical Environment

##### Bank Dynamics Between LG4 and the Estuary

###### Objectives

- Update the state of knowledge in relation to the dynamics of the riverbanks
- Specify the current state of the banks
- Generate knowledge essential to better assess potential impacts that could result from the capacity upgrades

###### Study area potential

- Riverine study area, in these sectors:
  - LG-1 reservoir and estuary segment
  - Robert-Bourassa reservoir (LG-2)
  - LG-3 reservoir



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 \*\* Ice cover studies will be carried out in 2026.

#### Methods

