

Baseline study for cumulative effects on James Bay valued coastal ecosystems



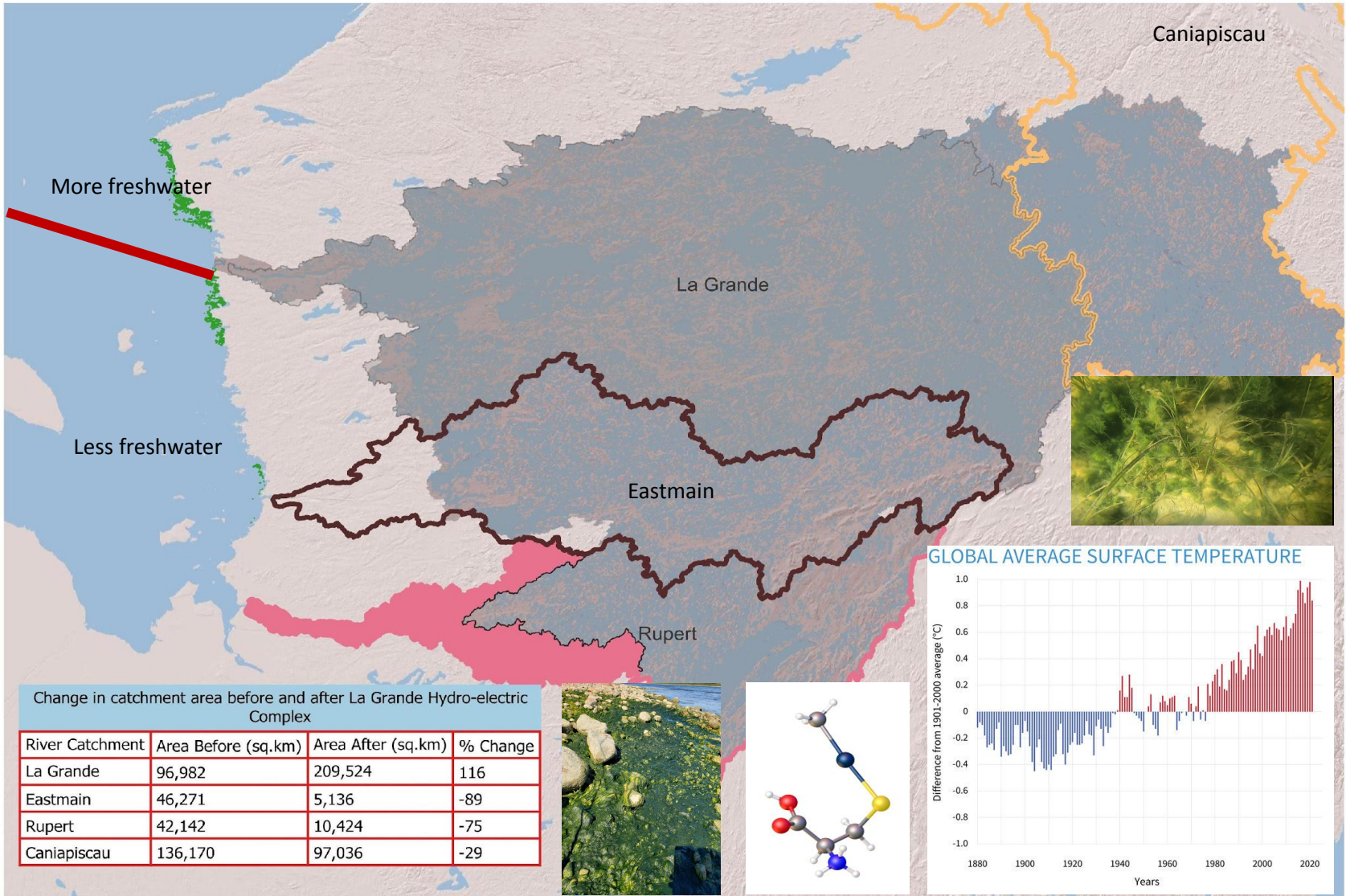
Dante Torio, PhD

Marine Scientist and Geographer
CERRI

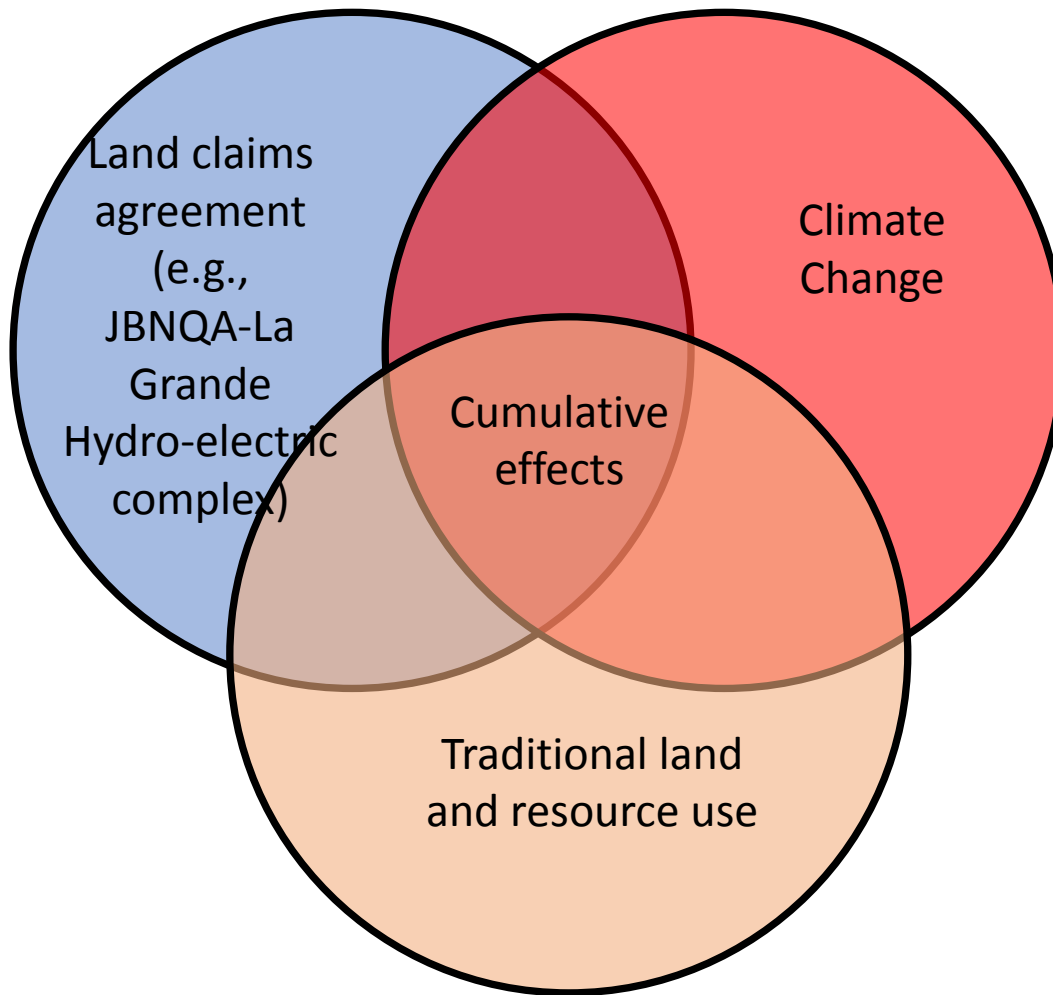


For the Crees, James Bay is Life

Environmental Change



Cumulative Effects Affecting the Cree Way of Life



“When we look at cumulative effects from an Indigenous perspective, we always consider the cultural, social, and health impacts — in addition to the environmental effects — of such activities and processes on our land, water, and air.”- <https://www.icce-caec.ca/cumulative-effects/>

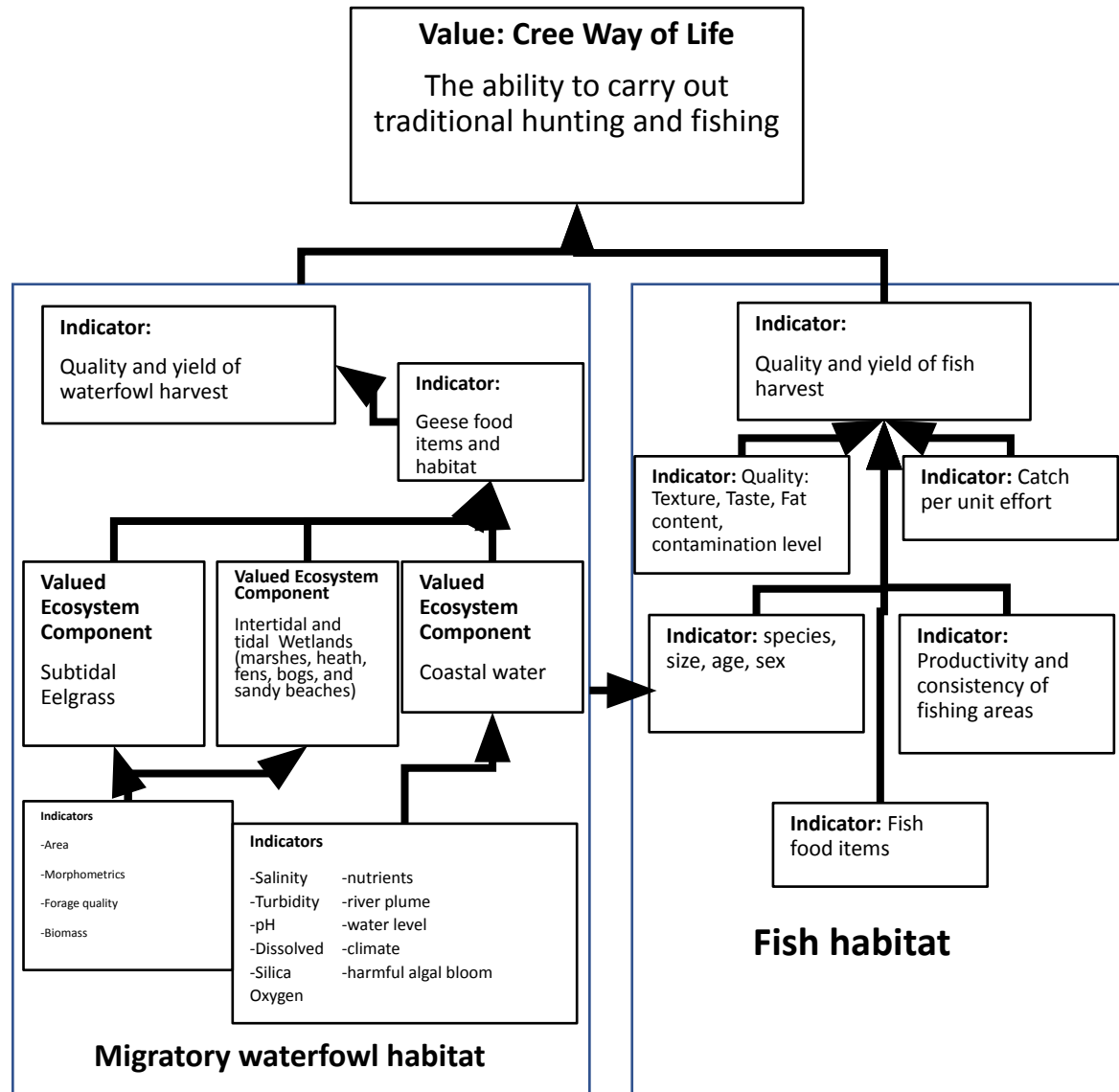
Listening to baseline conditions: elder stories, and reading trappers' journals



Parsing Traditional Ecological Knowledge

- “**Geese** and other **waterfowl** were too **fat to fly**, now they are **skinny**”
- “Our faces were **full of salt** when we traveled out of the bay, not anymore”
- “**Fish** used to have lots of **fat**, and **store longer** without using freezers”
- “**How old** are the fish and does older fish mean bigger fish?”

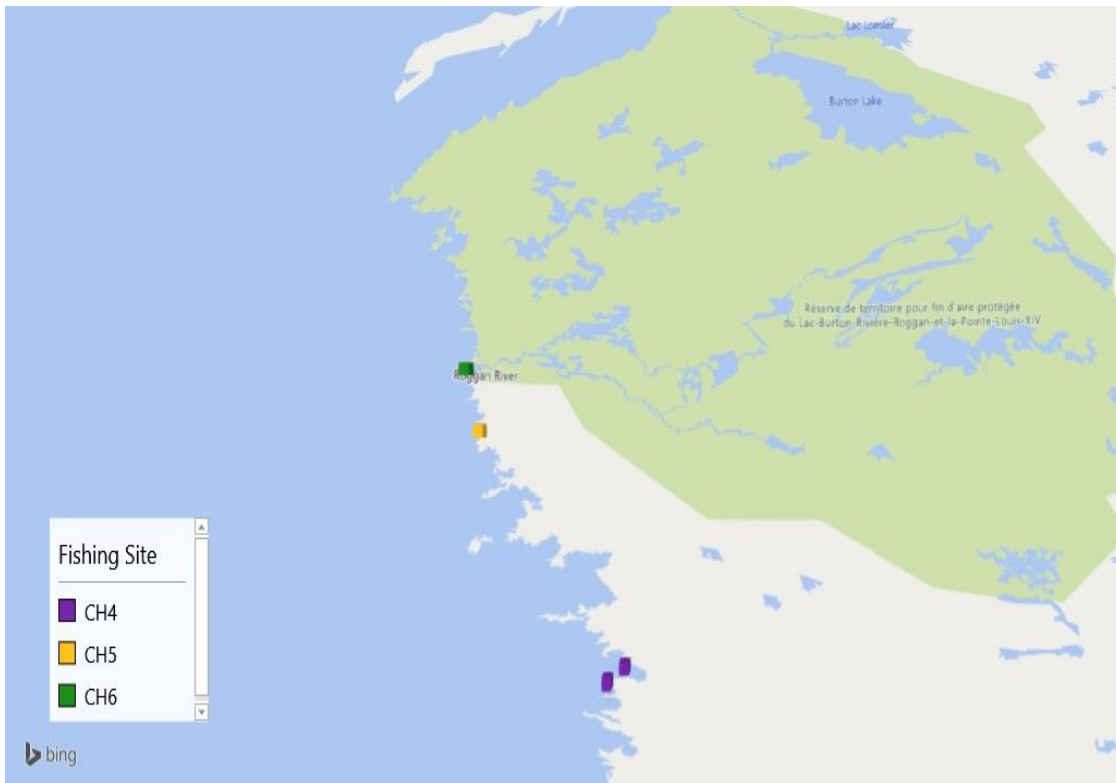
Two-eyed 'seeing' the indicators



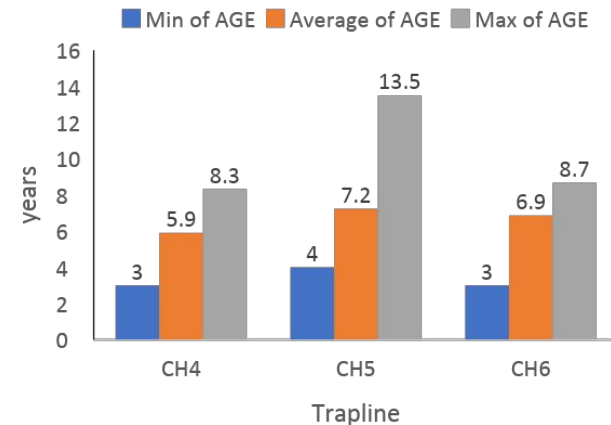
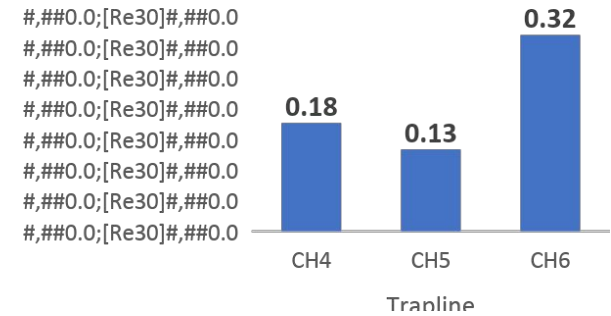
Project Output

RELATIONAL DATABASE

- Biophysical
- Socio-cultural
- Place names



kg/hour/net



CERRI's mandate and youth involvement

Objectives:

- 1) Build meaningful scientific capacity in Chisasibi with a focus on the youth

Learning Model:

- STEM-TEK (Science, Technology, Engineering, and Math with Traditional Ecological Knowledge)
- Train and employ at least 1 youth from each of Chisasibi's 40 traplines
- Lead stewardship of their own trapline.



FUN!!!

Youth activities

- National Geographic Pristine Seas Expedition (August 2-8, 2022)
In the News!

- Conferences such as this



Training!

Fieldworks



Laboratory!



Lessons learned from the project

- The notion of time from an indigenous perspective is extremely important in baseline studies
 - Seasonal quality and availability of bush food
 - When is the reference condition?
 - Timeline, especially for contaminants (E.g., before 1975 and after 1975-present)
- Cumulative impacts from existing land claim agreement
 - Guaranteed level of harvest
 - Invalid projection and outdated data (E.g., It was assumed some contaminants have decreased over time
What if the projections were wrong?)
- Potential impacts of new agreements
 - Endorsed by the federal and provincial governments but not fully supported at the community or trapline level (e.g., La Grande Alliance)
 - Only considers direct impacts within the immediate vicinity of the project sites. How about indirect and long term impacts?



Insights on environmental stewardship

Increasing roles of indigenous people and community-led organizations in identifying what the impacts are, baseline data, and reference conditions

Community-based research centers are critical to understanding the impacts from local perspectives

There is a temporal, spatial, and magnitude dimensions of cumulative effects that need to be documented with novel paradigms

Involvement of youth is critical to the continuity of cumulative effects research and other community-based studies

Compliance to Impact Assessment Act

- TEK is our guiding principle on:
 - project design
 - baseline data collection (e.g., environmental, social, health, economic and cultural, land use, traditional place names);
 - identification of valued components, indicators, or measurement methods;
 - identification of appropriate spatial and temporal boundaries;
 - identification of potential mitigation measures; and
 - identification of considerations for, and development of, follow-up and monitoring procedures.

Ref:

<https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/practitioners-guide-impact-assessment-act/in-digenous-knowledge-under-the-impact-assessment-act.html>