

Engage, Empower, Restore Ecosystem

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Harmonizing Water Resource Modeling with Indigenous Ways of Knowing

Cumberland House

E.B.Campbell Dam at the immediate upstream of the delta has been operating since 1960's, reducing the amount of water, sediment, and nutrients heading downriver dramatically, and changing the flow regime.

Problem

Currently, lack of understanding of flow and sediment needs are threatening Delta's socio-ecological system. With little sediment going in the delta, traditional livelihood have been affected. Changes in flows (e.g. Minimum flows, peak flow) and hydro-peaking all impact the ecosystem. Locals have observed changes in species composition some species can no longer live there that once did. Traditional land uses have been negatively impacted by changes in flows and lack of sediments which are need to provide nutrients to the delta's many channels and wetlands.

*"Is this the right flow for
producing animals?"*

*"Does this flow make the
river and delta healthy?"*

Photo Voice

This project will use Photovoice as a community-engaged method to create data focusing on the preferences for flow conditions and sediment dynamics in the Delta from the perspective of community members who do not necessarily have a **voice** at the modeling table.



Life is More Than
HUMAN

Welcome to the Largest Inland Delta in North America

The Saskatchewan River Delta (SRD) is the largest inland river delta in North America, totaling approximately 10,000 km². Straddling the provincial borders of Manitoba and Saskatchewan, the SRD is rich in biodiversity providing important habitat for hundreds of species of birds, mammals and fish. It also plays an important role for the First Nations, Metis Nations and other communities in the area. Human influences within the SRD have been significant, and it is important to raise awareness of this sensitive and critical eco-system.



Research Objectives

- Obj. 1** To determine preferences for flow conditions (e.g., timing, color, smell, the extent of flooding, fluctuations, and seasonality) among people from Cumberland House
- Obj. 2** To determine the impact flow conditions have on fish, animals and people in the delta,
- Obj. 3** To convey local preferences among people from delta to scientists so they can build models that are responsive to community's needs.

Taking Photos

- ✓ Participants will chose to use their smartphones or cameras

Presenting Narratives

- ✓ Participants will share their photographs to initiate **dialogue**.
- ✓ Narratives can be in forms of captions or recorded audios

Analyzing the Data

- ✓ Organize the photos and captions into **Themes**
- ✓ Identifying the target audience
- ✓ Host a photo exhibit for stakeholders



Integrated Modelling
Program for Canada
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