



Annual Summary 2023

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GENICE II: Reimagining Monitored Natural Attenuation as an Oil Spill Response Tool in the Arctic

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Research Question and Objectives

GENICE II is a project that looks at how spilled oil gets broken down by microorganisms in arctic waters, and how knowledge on this process can be integrated into decision-making around spill prevention and response (<https://genomeprairie.ca/project/genice-ii/>). The objective of this component of the project (Activity 2 & 3) is to co-develop Community-Based Monitoring (CBM) and Policy Analysis related to oil spills to support Inuit self-determination.

Research & Engagement Conducted

Our team has conducted the following research and engagement in Chesterfield, Inlet:

- Our team travelled to Chesterfield Inlet, NU from May 2nd to 5th, 2023. During this field trip we presented to the high school science class, held an open house, and conducted our Co-Development Workshop #1.
- Master's student (Suresh B.K.) conducted fieldwork from 27 June to 14 July 2023. Fourteen interviews with Inuit Qaujimajatuqangit (IQ) holders (4 women and 10 men) were conducted in collaboration with Youth Researcher Larry Ittinuar Jr and translated with support from Phillipa Aggark.
- Team members (Suresh B.K. and Larry Ittinuar Jr.) have transcribed IQ interviews and analyzed them to identify IQ indicators that might be monitored over time through CBM.
- Produced a 2-page Community Report for Chesterfield Inlet (Inuktitut and English attached).
- Document collection regarding community level spill response plans for planning and responding to ship-based spills.

Table 1 Updated GENICE II Research Team Members in addition to Co-PIs

Larry Ittinuar Jr. (Inuit Youth Researcher)	Suresh B.K. (Graduate Student)
Ashley Adams (Graduate Student)	Catharine Brazeau (Graduate Student)

Preliminary Findings

We are very early in the research process, but our preliminary results are the following:

- During Co-Development Workshop #1 we sought input on the development of genomics informed CBM. Through workshop exercises we identified nine sites for potential future monitoring (see Community Report).
- IQ interviewees described environmental changes (e.g., in lakes, the ocean, sea ice, birds, and animals) attributed to shipping, climate change, mining, and wildfires and discussed their experiences impacts to traditional harvesting, travel safety, and weather prediction.

Next Steps

In 2024, we have planned the following research activities:

- Analyze IQ Interviews and prepare summaries to share with community (Winter 2024)
- Conduct member-checking and quote verification with IQ interview participants (Winter 2024)
- Hold Co-Development Workshop #2 (Winter 2024):
 - Present the results of IQ interviews and facilitate discussion of IQ indicators in CBM.
 - Conduct training for water sampling and water sampling with youth researcher and Inuit Guardians
 - Conduct genomics sequencing demonstration
- Continue work on local needs regarding community level spill response plans (CLSP)
- Begin document analysis pertaining to CLSP for ship- based accidents