2025
GENICE II

Reimagining Monitored Natural Attenuation as an Oil Spill Response Strategy in the Arctic (2021-2027)



Project Objective

The objective of GENICE II is to learn about what happens to oil spilled from ships in Arctic waters, and how Community-Based Monitoring (CBM) can be part of oil spill preparation and response in Chesterfield Inlet.

Research Summary

Our team visited Chesterfield Inlet in May 2025. We enjoyed our time being back in the community. Here is a summary of what we did.

- We held a third Knowledge Co-Development Workshop and an open house about our research.
- Catharine Brazeau (PhD Student) gave a presentation about her research on the role of technology in Arctic research.
- We visited students in the Science Classroom at the Victor Sammurtok School and gave a presentation about our research.
- We held an "AlgaeWatch" competition in Spring 2025. Algae often grow at the bottom of the ice, but when? We asked people to make SIKU posts showing their ice holes with and without algae.

Sampling

- In May, we went on the ice and did training for water sampling with the Sapujiyiit Guardians (Fig. 1).
- We took samples at six locations (Fig. 2 and Tab. 1).

Our Team


John Sinclair


Simon Aggark


Nicole Wilson


Jordan Thakar


Eric Collins


Catharine Brazeau



Fig. 1. Pictures of Sapujiyiit Guardians and UM team members taking and sampling and processing samples in May 2025. Photo Credits: Nicole Wilson.

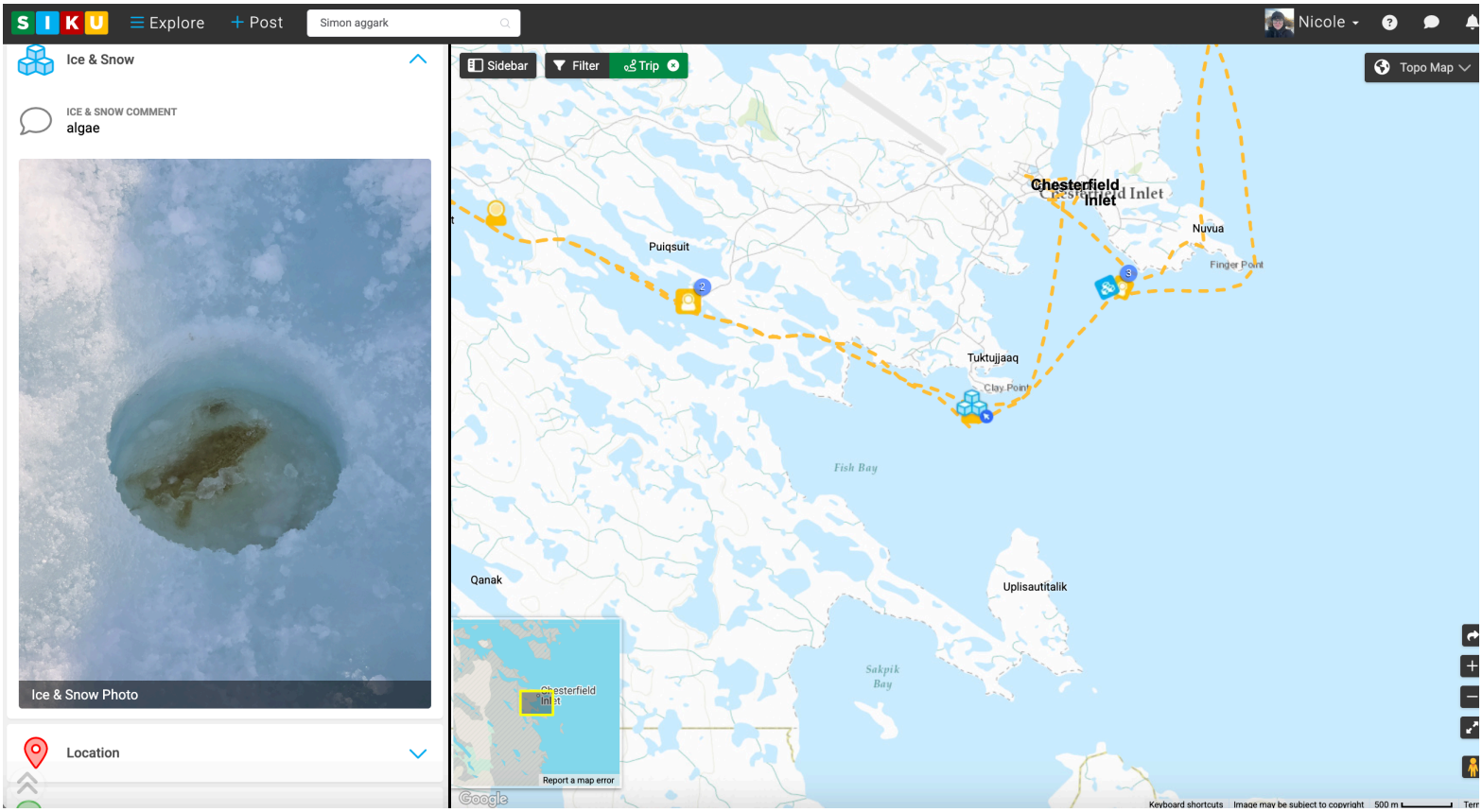


Fig. 2. SIKU post showing trip information and map from sampling near Chesterfield Inlet May 25th, 2025. Photos and trip info are posted on SIKU.

Tab. 1. Locations of sampling during visit to Chesterfield Inlet in May 2025.

Inuktitut	English	Description	Latitude & Longitude
Puirsuk	First Lake	Drinking water source	63.3286° N 90.7688° W
Itavia	Beyond the big tower	Fishing site with cabins	63.3608° N 90.7070° W
Tuktuttaa	Fish Bay	Fishing site	63.3190° N 90.7169° W
Igluligaarjuk	Anchorage Harbour/ Chesterfield	Fishing site. Ships harbour there in the summer.	63.3290° N 90.6962° W
Akulliit	Second Lake	Fishing lake	63.3379 ° N 90.8229° W
Amaruqtalik	Third Lake	Fishing lake	63.3633° N 90.8677° W





Fig. 3. a) Another picture of the Sapujiyiit Guardians, b) Simon Aggark in the lab at UM. Photo Credits: a) Nicole Wilson, b) Thamali Vidanage.

Results

- We took samples in March 2024 but they did not have enough genetic material to get results. We changed the protocol to filter more water this year.
- We have preliminary results from the samples taken in May 2025 (Fig. 4).
- Our results are as expected for Arctic ecosystems with no harmful algae.
- Ashley Adams completed their Masters Thesis titled, Encouraging robust oil spill planning, preparedness and response in Chesterfield Inlet, Nunavut, Canada (1).

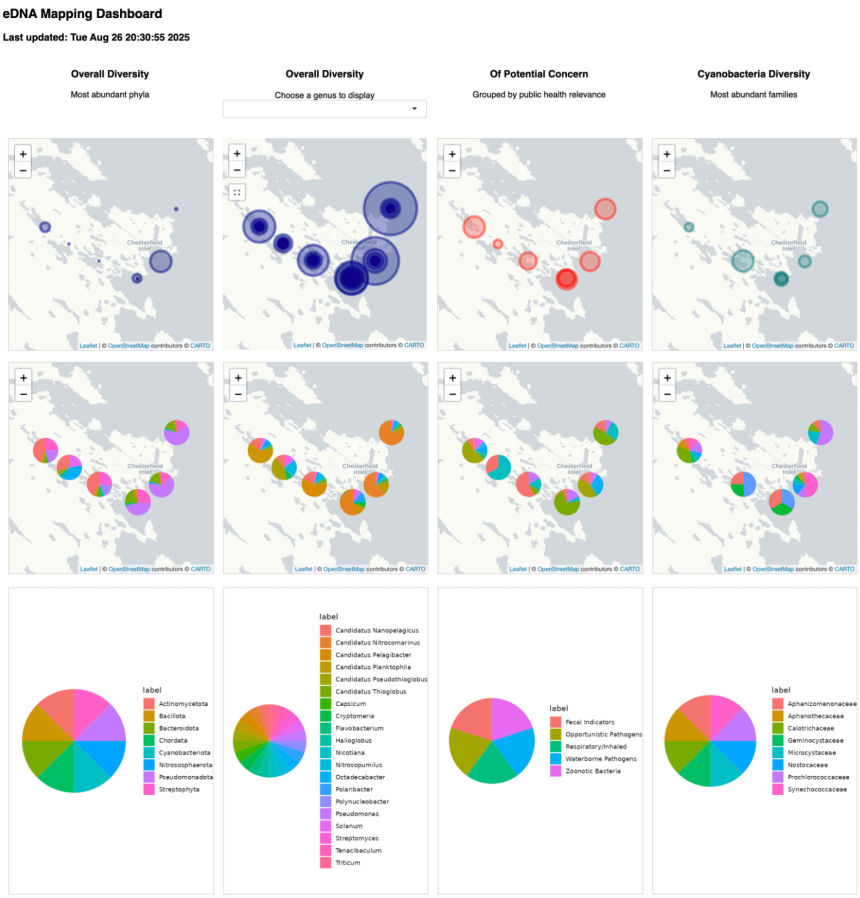


Fig. 4. GENICE II Results of Genomics-Informed water sampling displayed on eDNA Mapping Dashboard

Next Steps

- Our project has been extended for two years and will not end in 2027.
- Next year we will:
  - Continue to take and analyze samples.
  - Share results with the community.
  - Attend ArcticNet in December 2025.
  - Hold a 4th co-development workshop in 2026.

Acknowledgements

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For more information email: Nicole.J.Wilson@umanitoba.ca

References
(1) Adams, A., 2025. Encouraging robust oil spill planning, preparedness, and response in Chesterfield Inlet, Nunavut, Canada (Thesis). University of Manitoba, Winnipeg, MB. http://hdl.handle.net/1993/39022

University of Manitoba