

NTRAIN (2019-2022)

Nutrient Transports and living marine Resources Across the Inuit Nunangat

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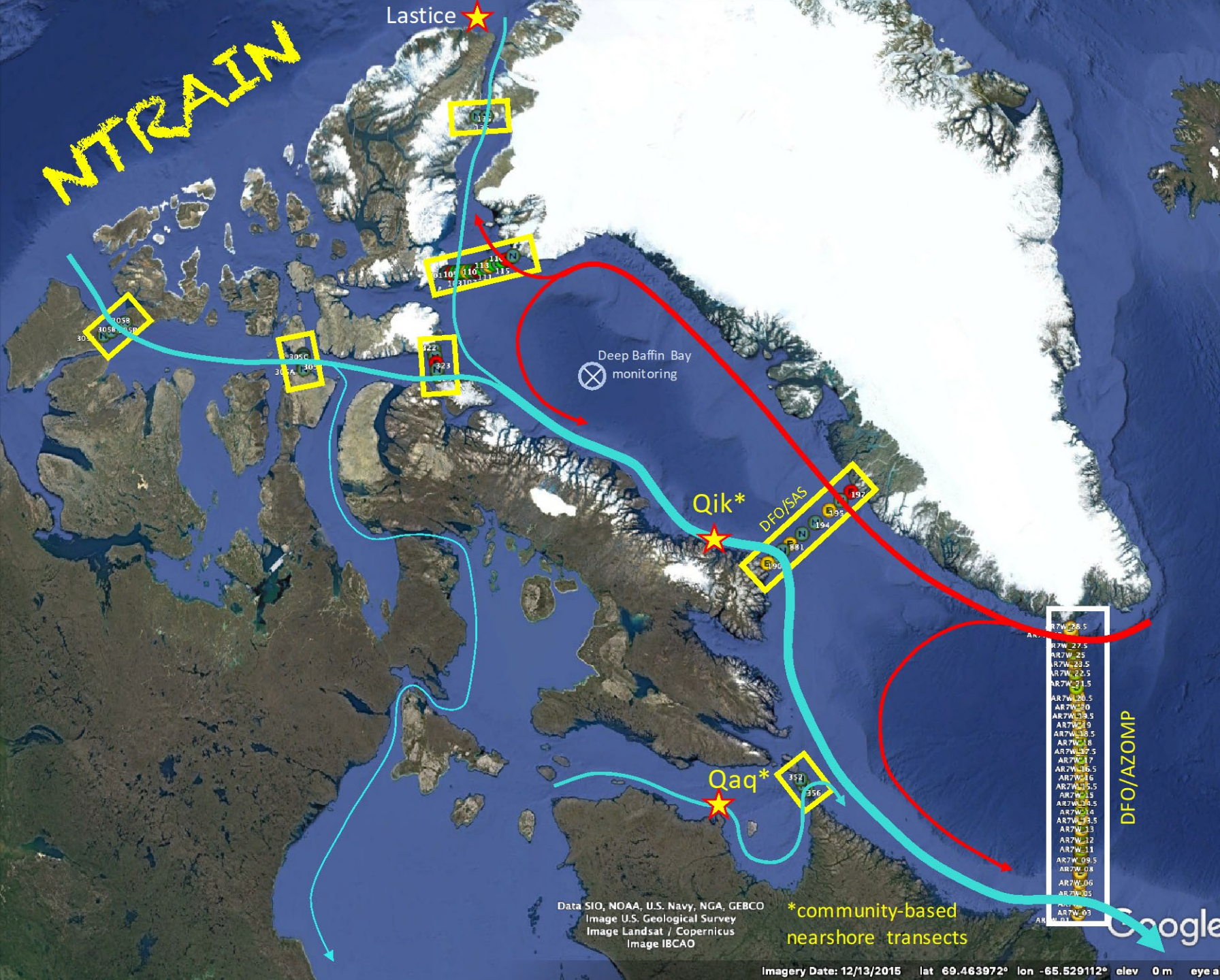
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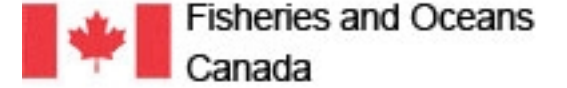
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Objectives of NTRAIN

1. Better resolve nutrient flows through the Canadian Archipelago and their impact on the “downstream” Northwest Atlantic (by enriching existing ArcticNet time series, adding new ones at strategic locations and collaborating with national and international programs);
2. Evaluate how these flows are affected by regional microbial processes versus those that occur remotely in source waters;
3. Assess how basic planktonic variables (e.g., Chl *a*, POC/PN) and the lipid composition of organic matter respond to variability and change in the physico-chemical environment;
4. Provide a factual basis to assess the marine ecosystem’s carrying capacity with respect to the production of nutritious marine wildlife;
5. Develop local capacity for the monitoring of nutrients in coastal waters.



Partners



BIO (Bedford)
 FWI (Winnipeg)
 IOS (Sidney)



Nunavik Research Center

Quaqtaq
 Qikiqtarjuaq

*community-based
 nearshore transects

Measurements

- Physical variables (salinity, temperature...)
- Dissolved inorganic macro-nutrients (nitrite, nitrate, ammonium, phosphate, silicate)
- Stable N and O isotopes in nitrate
- Dissolved organic macro-nutrients (urea, DON, DOP)
- Dissolved inorganic micro-nutrients (trace metals, e.g. iron)
- Particulate organic matter (POC, PN, POP, BSi)
- Lipid classes and fatty acid profiles of organic matter
- Stable C and N isotopes in particulate organic matter
- Microbial community composition (molecular) and N-cycling genes (DNA/RNA)

Modeling

- Water transports across gateways (NEMO)