



NIRB Application for Screening #126193

Coastal invertebrates sampling around Belcher Islands, Qikiqtait

Application Type: New

Project Type: Scientific Research

Application Date: Friday, June 27, 2025

Period of operation: from 2025-05-16 to 2028-11-14

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DETAILS

Non-technical project proposal description

English: This research supports current community-based and DFO research and conservation initiatives within the Belcher Islands (Qikiqtait Area). Coastal sampling in collaboration with the Sanikiluaq community and partnership with the Arctic Eider Society and Hunters' and Trappers Association will continue around the Belcher Islands through zooplankton tows and community benthic dredge to collect invertebrate. The main species of interest includes Icelandic scallop (*Chlamys islandica*), green sea urchin (*Strongylocentrotus droebachiensis*) and Atlantic sea cucumbers (*Cucumaria frondosa*) that will continue to be collected from spring to fall (see map) providing the opportunity to examine temporal and spatial differences in genetic diversity, carbon source use and trophic position of each species between northern versus southern areas of Qikiqtait. Objectives: 1) Identify sea-ice algae reliance of benthic species, including sea scallops, urchins and sea cucumbers by analyzing highly-branched isoprenoid (HBI). 2) Establish food web baseline using stable isotopes. 3) Compare nearshore-offshore in their foraging ecology using biotracers.

French: NA

[illegible]

Inuinnaqtun: NA

Personnel

Personnel on site: 3

Days on site: 56

Total Person days: 168

Operations Phase: from 2025-05-16 to 2028-11-14

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Sampling stations for benthic invertebrates around Belcher Islands	Dredging	Marine	NA	NA	Sanikiluaq

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Sanikiluaq	Lucassie Arragutainaq	HTA	2025-02-20

Authorizations

Indicate the areas in which the project is located:

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Fisheries and Oceans Canada	LICENCE TO FISH FOR SCIENTIFIC PURPOSES	Applied, Decision Pending		
Hunters and Trappers Associations/Organizations	Letter of support from the Sanikiluaq HTA	Active	2025-05-21	

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	HTA Boat	

Project accomodation types

Community

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
HTA Boat	1	28ft	HTA community boat (Silver dolphin 28) is used to sample invertebrates from the stations marked in the map.
CTD	1	NA	CTD measures temperature, depth and salinity
Community benthic dredge	1	50x100 cm2	Collect benthic invertebrates (urchins, scallops, sea cucumbers) that will be frozen and sent back to Winnipeg for lab analysis.
Zooplankton net	1	50cm diameter (500um mesh size)	Collect zooplankton from the water column. Samples will be frozen and shipped to Winnipeg for lab analysis.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Gasoline	fuel	50	25	1250	Gallons	Boat fuel
NA	hazardous	0	0	0	Liters	No chemicals will be used to preserve samples, they will be frozen

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0		

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Information is not available				

Environmental Impacts:

Benthic samples will be collected using a community benthic dredge. Community members use this equipment to sample for scallops in established scallops' bed for consumption. There is no other sampling method possible to collect benthic species in the region. However, due to the small size (50x100cm) of the community benthic dredge and the short time dredging (10-15 min), the impact to the sea floor is negligible. The use of small-scale, community-based dredging ensures that harvesting remains sustainable and minimally disruptive to the benthic environment. Potential impacts on the sea floor due to the benthic dredge scrapping the seabed includes: Sediment disturbance: moving rocks and resuspending sediment Displacement and/or mortality of benthic organisms: some organisms may be displaced, and a few may be killed during the dredging, but most species in contact with the dredge will be collected within it and brought up to the surface. Water: temporary increased turbidity during dredging. Positive impact to the community: This program hires community members to advise on sampling sites and assist with the sample collection.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

Sampling sites nearshore range from 20-60m depth. The seabed in these zones consists of a mix of sandy and rocky substrates.

Description of Existing Environment: Biological Environment

Sanikiluaq, located in the Belcher Islands of Hudson Bay, has a long-standing tradition of harvesting Icelandic scallops, sea cucumbers and sea urchins for community use. They are typically collected using small boats and a benthic dredge operating in nearshore areas where scallop beds are well established.

Description of Existing Environment: Socio-economic Environment

Community members in Sanikiluaq rely on the harvesting of scallops, sea cucumbers, and urchins as an important part of their traditional diet. These marine invertebrates, along with other species such as Arctic char and marine mammals (seals, belugas), form the foundation of local subsistence practices, contributing both to food security and the preservation of Inuit cultural heritage.

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Benthic samples will be collected using a community benthic dredge. Community members use this equipment to sample for scallops in established scallops' bed for consumption. There is no other sampling method possible to collect benthic species in the region. The use of small-scale, community-based dredging ensures that harvesting remains sustainable and minimally disruptive to the benthic environment.

Cumulative Effects

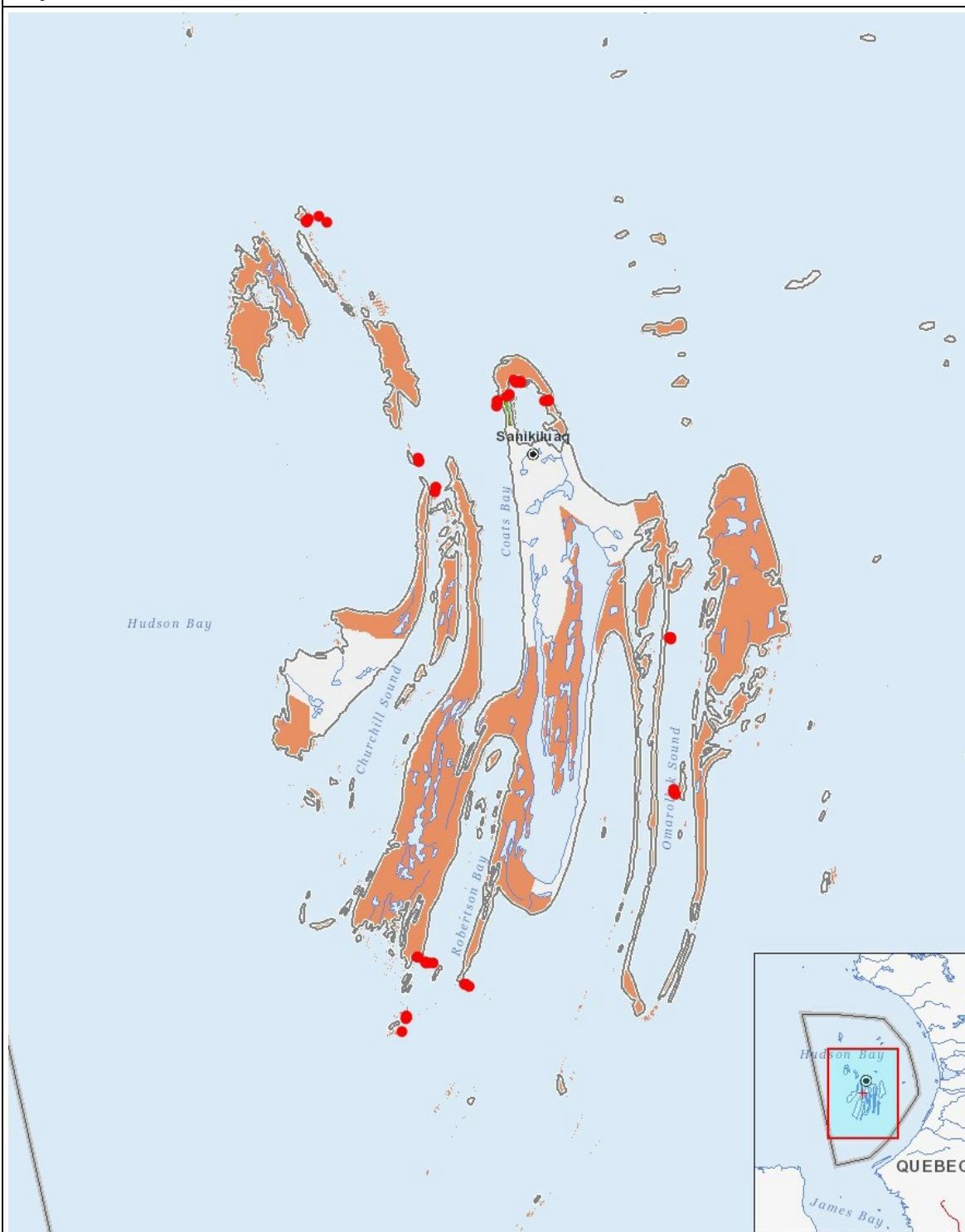
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation																									
Dredging		-	-	-	-	-	-	-	-	-	-	-	-	N	N	-	N	-	-	-	P	-	-	-	-
Decommissioning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

- | | | |
|---|-------|--|
| 1 | point | Sampling stations for benthic invertebrates around Belcher Islands |
|---|-------|--|