



## **NIRB Uuktuutinga Ihivriughikhamut #125691**

### **Community-based study of under-ice benthic assemblages in the Arctic (BenthArctic)**

**Uuktuutinga Qanurittuq:** New

**Havaap Qanurittunia:** Scientific Research

**Uuktuutinga Ublua:** 4/27/2022 11:10:55 AM

**Period of operation:** from 0001-01-01 to 0001-01-01

**Piumayaat Angirutinga:** from 0001-01-01 to 0001-01-01

**Havauhikhaq Ikayuqtinga:** Annie Mercier  
Ocean Sciences / Memorial University  
St. John's Newfoundland and Labrador A1C 5S7  
Canada  
Hivayautit Nampanga:: 7098642011, Kayumiktukkut Nampanga::

# QANURITTUT

## Tukihiannaqtunik havaariya uyumayumik uqauhiuyun

**Qablunaatitut:** The proposed project builds on interest expressed by Inuit communities in Nunavut to assess the status and value of their marine benthic resources and prospects for their sustainable use in the context of food security and climate change. It aims to expand our understanding of nearshore benthic assemblages, with a focus on winter-spring processes occurring at sea-ice edges and on species of relevance to commercial and subsistence fisheries. Interlinked objectives will be dedicated to fundamental research, practical knowledge transfer and community mobilization. Field work is expected to take place in the summer/fall of 2022 and the winter/spring of 2023. The approach centers on the use of a portable remotely operated vehicle (ROV) deployed through holes in the sea ice to investigate the benthic community structure and diversity in two regions (Low vs High Arctic, specifically Sanikiluaq and Grise Fiord). The ROV will have minimal environmental impact; it will capture videos of the benthos and collect a few water, sediment and biological samples for analysis. Videos will be used for scientific analyses and to create education material; they will be shared with end users in the two localities. A complementary segment will assess methods best adapted for the collection and handling of key commercial species. Benthic life occurring underneath or close to inshore polynyas and landfast ice edges in the Arctic is an understudied topic. Findings thus have the potential to yield novel information on species interactions and benthic-pelagic coupling, including how birds and mammals both depend on and fuel the underlying benthos. The project brings together academic investigators (scientists and students), the territorial government, an NGO partner, an Inuit Birthright Corporation, the local Hunters and Trappers Organizations (HTOs), and other members of the Inuit communities. Ultimately it will produce conservation and technical guidelines for species that might be targeted for premium markets (seafood, nutraceuticals, and pharmaceuticals). Moreover, the project will ground-truth the use of small-sized submersibles as a tool for research and capacity-building in areas where other methods would be too destructive or impractical (due to ice cover or shallow depth). Community leaders and youth will be the primary informants and participants in the project.

Uiviititut: Le projet proposé s'appuie sur l'intérêt exprimé par les communautés Inuites du Nunavut pour évaluer l'état et la valeur de leurs ressources benthiques marines et les perspectives de leur utilisation durable dans le contexte de la sécurité alimentaire et des changements climatiques. Il vise à élargir notre compréhension des assemblages benthiques côtiers, en mettant l'accent sur les processus hiver-printemps se produisant près des glaces de mer et sur les espèces pertinentes pour les pêches commerciales et de subsistance. Des objectifs interdépendants seront consacrés à la recherche fondamentale, au transfert de connaissances pratiques et à la mobilisation communautaire. Les travaux sur le terrain devraient avoir lieu à l'été/automne 2022 et à l'hiver/printemps 2023. L'approche est centrée sur l'utilisation d'un submersible télécommandé (ROV) portable déployé à travers des trous dans la glace de mer pour étudier la structure de la communauté benthique et sa diversité dans deux régions principales (Bas vs Haut-Arctique, plus précisément Sanikiluaq et Grise Fiord). Le ROV aura un impact minimal sur l'environnement ; il captera des vidéos du benthos et prélèvera quelques échantillons d'eau, de sédiments et d'organismes. Des vidéos seront utilisées pour des analyses scientifiques et pour créer du matériel pédagogique ; elles seront partagées avec les partenaires dans les deux localités. Un segment complémentaire évaluera les méthodes les mieux adaptées pour la collecte et la manipulation des principales espèces commerciales. La vie benthique sous-jacente ou à proximité des polynies côtières et des glaces riveraines dans l'Arctique est un sujet sous-étudié. Les découvertes ont donc le potentiel de fournir de nouvelles informations sur les interactions entre les espèces et le couplage benthique-pélagique, y compris la façon dont les oiseaux et les mammifères dépendent et alimentent le benthos sous-jacent. Le projet rassemble des chercheurs universitaires (scientifiques et étudiants), le gouvernement territorial, une ONG partenaire, une Société de développement Inuit du Nunavut, les organisations locales de chasseurs et de trappeurs (HTO) et d'autres membres des communautés Inuites. En fin de compte, il produira des directives techniques et de conservation pour les espèces qui pourraient être ciblées pour les marchés haut de gamme (fruits de mer, nutraceutiques et pharmaceutiques). De plus, le projet vérifiera sur le terrain l'utilisation de submersibles de petite taille comme outil de recherche et de renforcement des capacités dans des domaines où d'autres méthodes seraient trop destructrices ou peu pratiques (en raison de la couverture de glace ou de la faible profondeur). Les leaders communautaires et les jeunes seront les principaux informateurs et participants au projet.

[illegible]

Operations Phase: from 2022-05-31 to 2023-06-30

## Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannuqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
Sanikiluaq: we have had two preliminary on-site meetings and exchanges with local partners (HTA members and High School)	Camp	Inuit Owned Surface Lands	N/A	N/A	N/A
Vicinity of Sanikiluaq in Belcher islands: we have obtained information on sites of interest from partners	Sampling sites	Marine	N/A	N/A	Sanikiluaq
Grise Fiord: a visit and on-site meeting with local partners (HTA members, outfitter) occurred in 2021	Camp	Inuit Owned Surface Lands	N/A	N/A	N/A
Vicinity of Grise Fiord: that has not been explored yet	Sampling sites	Marine	N/A	N/A	Grise Fiord

## Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Ausuittuq	Susie Qaunaq	Aviq Hunters and Trappers Organization	2021-08-03
Sanikiluaq	Lucassie Arragutainaq	Sanikiluaq Hunters and Trappers Organization	2019-03-15
Sanikiluaq	Joel Heath	Arctic Eider Society	2019-03-15
Ausuittuq	Terry Noah	Ausuittuq Adventures	2021-08-11
Sanikiluaq	Michelle Morrison	Paatsaali School	2022-02-04

# Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

North Baffin

South Baffin

## Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Iqalukhiurniqmut Tariuqmilu Kaanata	Licence to Fish for Scientific Purposes	Active	2022-03-03	2022-09-30
Hunters and Trappers Associations/Organizations	Sanikiluaq HTO and Iviq HTO -- Partners in project and help with local logistics in Sanikiluaq and Grise Fiord	Active	2022-01-31	

## Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Water	Small boats (locally owned) to reach field sites: ice-free areas	
Land	Snowmobiles and / or all-terrain vehicles (locally owned) to reach field sites : shore or ice floe	

## Project accomodation types

Nunauyuq

# Ihuaqutivaluin Atuqtauyukhan

Hanalrutit atuqtaunahuat (ukuallu ikuutat, pampiutainnik, tingmitinik, akhaluutinik, hunaluuniit)

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Portable remotely operated vehicle	1	12x14x20 inches	Underwater surveys, sample collection
Nets	2	12x24x12 inches	Sample collection

## Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Information is not available						

## Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqtittagaani qanuq	Atulirumayain imavaluin utiqtittagani humi
0		

# Iqqakuq

## Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtitarnirutikhan piyutin
Information is not available				

### Avatiliriniqmut Ayurhautingit:

We will be staying in the communities, either at hotel or rented house. We will hire guides and outfitters. We will also give invited presentations at HTO and/or schools. No predicted impact on the communities other than positive ones, like engagement, training, employment and use of infrastructure. At the field sites (marine / nearshore) sampling will occur using one of the following: a portable underwater ROV (camera) with very small capacity for sample collection (water, sediment, organisms) or locally owned fishing boats and gear. Minimal disturbance will therefore occur (under the supervision of local partners). In addition, local partners may contribute portions of fishing catches as samples, again with minimal disruptions typical of community activities (following their own permits as applicable).

# **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**

**Qanurittuq Ittunik Avatinga: Avatingalluanga**

**Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga**

**Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga**

**Miscellaneous Project Information**

**Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit**

**Tamatkiumayunik Ihuikgutivaktunik**

# Impacts

## Ilitariyauniq Avatiliriniqmut Ayurhautingit

		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
Havakvinga																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Aulapkaininnga																										
Camp		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	P	-	P	-
Sampling sites		-	-	-	-	-	-	-	-	M	-	-	-	-		-	-	-	M	-		-	P	-	-	-
Piiqtauniq																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Nakuuyyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyauyuq)



#### List of Project Geometries

- |   |          |  |
|---|----------|--|
| 1 | polyline | Vicinity of Sanikiluaq in Belcher islands: we have obtained information on sites of interest from partners               |
| 2 | polyline | Vicinity of Grise Fiord: that has not been explored yet  |
| 3 | point    | Sanikiluaq: we have had two preliminary on-site meetings and exchanges with local partners (HTA members and High School) |
| 4 | point    | Grise Fiord: a visit and on-site meeting with local partners (HTA members, outfitter) occurred in 2021                   |