



## **NIRB Uuktuutinga Ihivriughikhamut #125623**

### **The Arctic Observing Network: Capturing and Understanding Arctic Change with Renewed Observations at the Davis Strait Gateway**

**Uuktuutinga Qanurittuq:** New

**Havaap Qanurittunia:** Marine Based Activities

**Uuktuutinga Ublua:** 7/6/2021 12:17:24 PM

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

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

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# QANURITTUT

## Tukihiannaqtunik havaariyauyumayumik uqauiyuyun

**Qablunaatitut:** The Davis Strait observatory is a long-term program, started in 2004, focused on documenting and understanding the exchange of freshwater and heat between the Arctic Ocean and the North Atlantic. Heat carried northward by the ocean can accelerate the melting of Greenland's glaciers, with large impacts on local ecosystems, on the equator-to-pole movement of heat in the global ocean, and on global sea level rise. Freshwater exiting the Arctic has impact on northern ecosystems and on the equator-to-pole movement of heat in the global ocean. Measurements of ocean temperature, salinity and currents, and of the sounds made by marine mammals, are collected by an line of 12 moorings (strings of science instruments suspended from a float that is anchored to the sea floor) at locations spanning Davis Strait. These moorings are serviced every other year using a research ship. During the mooring service cruise, we also collect measurements of temperature, salinity and chemical properties at multiple sites along lines that cross southern Baffin Bay, Davis Strait and the northern Labrador Sea. The original project operated from 2004-2017, while this new effort supports measurements from fall 2020 through at least fall 2024. All data are freely available for download at the US Arctic Observing Network archive (<https://arcticdata.io>) or by request to [craiglee@uw.edu](mailto:craiglee@uw.edu). Results from research using this data are published in open scientific journals. We have extensive experience working with subsistence hunting communities on the North Slope of Alaska to mitigate research impacts on local activity. The most important component of this effort has been frequent, open communication. We have achieved this through regular participation in Alaska Eskimo Whaling Commission meetings and community visits that include Townhall gatherings, informal science presentations and radio interviews. When actually at sea, we communicate through email and radio to identify and resolve any potential conflicts between subsistence and research activity. I envision working to develop a similar relationship here, and am seeking guidance on how best to proceed. To this end, I have reached out to Mr. Andrew Bresnahan, Senior Policy Advisor for the Qikiqtani Inuit Association, for guidance regarding potential impacts of our proposed work and on how to establish communication with the nearby communities.

**Uiviititut:** N/A

**Inuktitut:** N/A

Inuinnaqtun: N/A

Personnel on site: 6

Days on site: 1

Total Person days: 6

Operations Phase: from 2021-08-01 to 2021-08-04

Operations Phase: from 2021-08-04 to 2024-10-22

### Post-Closure Phase: from to

# Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtailiyainnit nuna
BI2 mooring location and CTD station	Marine Based Activities	Marine	N/A	N/A	Qikiqtarjuaq
BI4 mooring location and CTD station	Marine Based Activities	Marine	N/A	N/A	Qikiqtarjuaq
NL01 CTD station	Marine Based Activities	Marine	N/A	N/A	Qikiqtarjuaq
SML01 CTD station	Marine Based Activities	Marine	N/A	N/A	Qikiqtarjuaq

## Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Information is not available			

# Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

South Baffin

## Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Nunavunmi Ihivriuqniqmut Timiqutigiyanga	Scientific Research License	Applied, Decision Pending		

## Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Water	RV Sanna	

## Project accomodation types

Alaanut,

# Ihuaqutivaluin Atuqtauyukhan

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

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
mooring	2	50-100m	oceanographic moorings will be deployed at two locations off Cape Dyer, measuring salinity, temperature and ocean currents.
research ship	1	15 m to 90 m	Project will involve visits to these marine sites by a scientific research vessel in 2021, 2022, and 2024. In 2021, the vessel with be R/V Sanna, from Greenland. The vessels for 2022 and 2024 have not yet been determined.

## 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

Havaulikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Information is not available				

### Avatiliriniqmut Ayurhautingit:

As with any marine shipping, ship-based scientific operations can produce short term behavioral impacts on marine mammals (changing the direction of their travel, avoiding an area where a ship is working). We mitigate these impact by suspending operations when marine mammals are observed in an area. Noise levels are those associated with routine ship operations. Overall impacts are very low given the short duration that the ship is operating in any area.

# **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**

In construction year (2021), we will use RV Sanna, a 32m research vessel operated by Greenland Institute of Natural Resources to deploy 2 small scientific moorings. In operations years (2022 and 2024), we will likely use RV Armstrong, a 72m research vessel operated by Woods Hole Oceanographic Institution to service moorings and conduct CTD (conductivity, temperature and depth) stations to measure ocean water properties at sites NL01-NL08 and SML01. RV Sanna has a crew of six. RV Armstrong has a crew of 30. In 2021, the Sanna cruise will depart Ilulissat, Greenland on 3 August and return to Sisimiut, Greenland on 6 August. Schedules for 2022 and 2024 are TBD though will also likely sail from and return to Greenland ports. There will be no intermediate port calls on any of the cruises. For 2021, Sanna will transit directly to the Cape Dyer area and return directly to Sisimiut. Once on station, total time to complete the mooring construction will be less than 12 hours. In 2022 and 2024, in addition to the operations in the settlement area, the project will include mooring operations across Davis Strait to the Greenland shelf and CTD stations throughout Davis Strait, southern Baffin Bay, and northern Labrador Sea. There are no additional regulatory requirements for those operations. Cruises are scheduled when all operational areas are ice free and no ice breaking is required. The moorings BI2 and BI4 and CTD stations NL01 - NL08 are within the Outer Land Fast Ice Zone, but other than occasional grounded icebergs, no ice will be present at those sites during our operational windows. There will be no discharges of any bilge, ballast, grey or black water, solid waste, oils or hazardous or toxic substances. Research vessels used in these operation comply with all local and international regulations relating to environmental controls, waste storage and discharge, including MARPOL Annexes I, IV and V, Canada's Vessel Pollution and Dangerous Chemicals Regulations (SOR/2012-69) and Canada Shipping Act, 2001. Research vessels used in these operation have detailed spill and emergency response plans per local and international regulations and industry best practices. Due to the very limited nature of the 2021 cruise, there will be no dedicated wildlife observers, though the Sanna bridge crew is very experienced in conducting marine mammal surveys. In 2022 and 2024 we will likely have dedicated observers as part of bird and marine mammal scientific survey operations. Our primary wildlife mitigation is to simply suspend operations when marine mammals are observed in an operating area.

## **SECTION H2: Disposal At Sea**

N/A. No disposal or discharge during these operations.

## **SECTION I1: Municipal Development**

### **Qanurittuq Ittunik Avatinga: Avatingalluanga**

The moorings are offshore Cape Dyer, south of Akpait NWA and Qaqulluit NWA. The sites will be accessed by ship, approaching from Greenland. In operations years, the NL01-NL08 CTD sampling stations are north of Akpait and Qaqulluit wildlife areas. There are no shore landings or port calls.

### **Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga**

The area is visited by sea birds and marine mammals, potentially including whales listed under SARA and polar bears.

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

N/A

## **Miscellaneous Project Information**

### **Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit**

All route planning and transits will be designed to avoid the sensitive NWAs. Operations are suspended when marine mammals of any species are observed in an operating area.

### **Tamatkiumayunik Ihuikgutivaktunik**

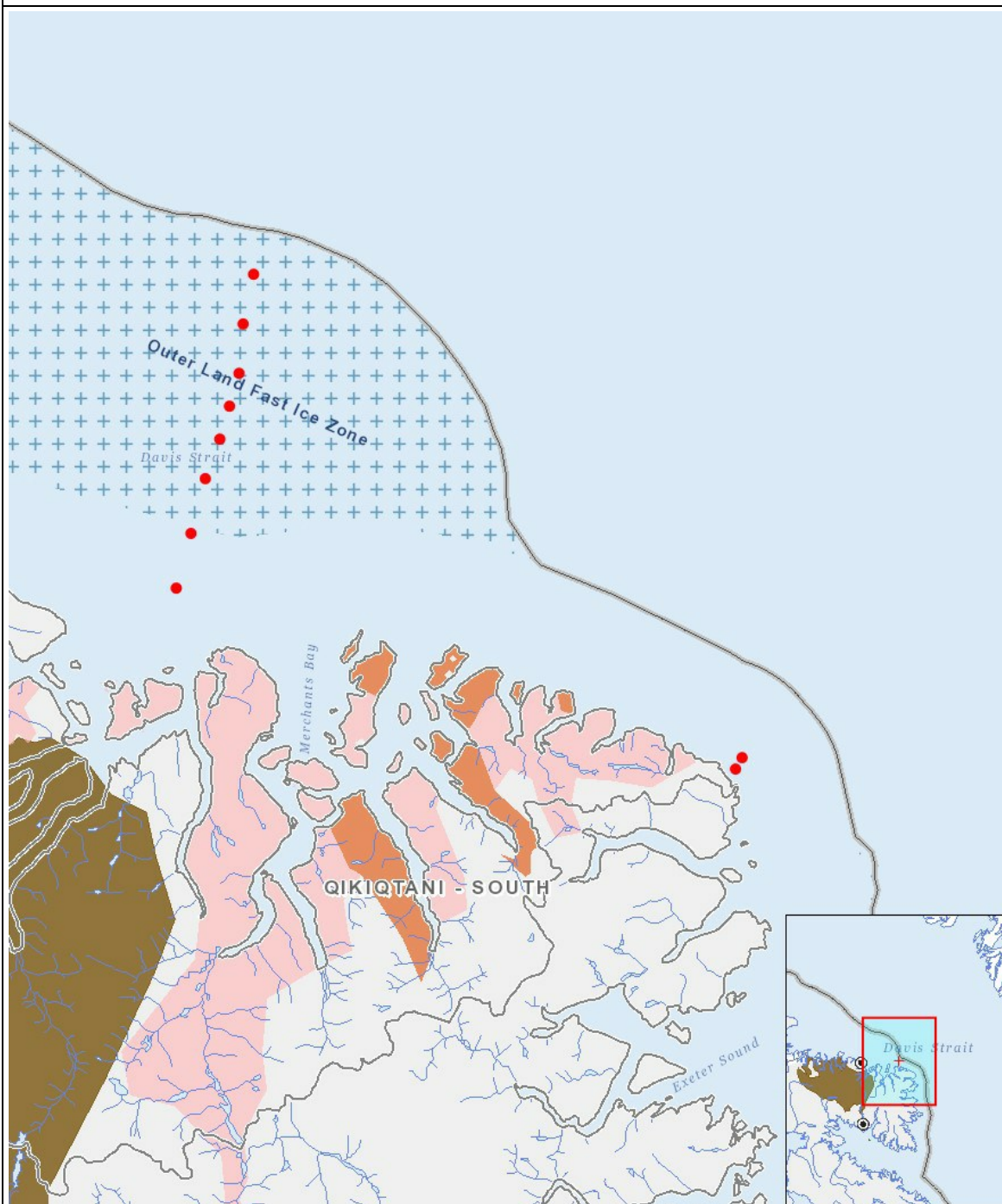
Given the very low frequency of visiting the area and short duration of the visits we expect no significant cumulative effects from these activities.

Impacts

Ilitariyauniq Avatiliriniqmut Ayurhautingit

	Havakvinga																								
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	Aulapkaininnga																								
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	Piiqtauniq																								
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(P = Nakuuyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyauyuq)



# List of Project Geometries

1	point	BI2 mooring location and CTD station
2	point	SML01 CTD station
3	point	NL01 CTD station
4	point	NL02 CTD station
5	point	NL03 CTD station
6	point	NL04 CTD station
7	point	NL05 CTD station
8	point	NL06 CTD station
9	point	NL07 CTD station
10	point	NL08 CTD station
11	point	BI4 mooring location and CTD station