



NIRB Uuktuutinga Ihivriuqhikhamut #126401

Adaptation to an ice-free summer by Arctic seabirds

Uuktuutinga Qanurittuq: New

Havaap Qanurittunia: Scientific Research

Uuktuutinga Ublua: Monday, May 4, 2026

Period of operation: from 2019-06-10 to 2029-08-15

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QANURITTUT

Tukihinnaqtunik havaariyaumayumik uqauhiyun

Qablunaatitut: Coats Island (Appatuurjuaq) is an important seabird colony in Nunavut. We propose to conduct research on nesting thick-billed murres and glaucous gulls during the summer (June 20 – August 15). Research activities will include trapping, banding, and observing migratory birds and involve 3-8 people. General ActivitiesThe site is located on Coats Island/Appatuurjuaq (62.94132N, -82.01722W). The camp is supplied by twin otter on tundra tires in June. The base camp consists of 4 small cabins. These structures rest on granite surrounded by vegetation. In general, the work and camping arrangements and resulting impact on the land are similar to our other years of work here and hence impact will again be low. Fuel (gasoline, propane) will be stored near the camp well above the ocean high water line on a cliff, in small, 25L gerry cans and 20lb tanks. These materials will be located on a flat location, with a small berm built around them in the event of a fuel spill. All sumps will be located 30m above the high water line, and will be back-filled, mounded, and contoured to match surrounding landscape prior to leaving the camp. Current MSDS will be kept in a central location (the cabin office area) so as to be accessible to all personnel. We keep an Emergency Spill Kit at the camp and have a Spill Contingency Plan in place which has been submitted with past permit applications. We will use gas to run 2 generators and the ATV, and 100lbs propane to fuel the stove. We will fly into and out of the site by Twin Otter. We will have a total of about 5 flights through the season to mobilizing the field site, resupply and change over crew members, and to demobilize the field site at the end of the season. We will use an ATV after each flight to haul gear from the plane to the cabin. Inuit research assistants may also use the ATV for hunting. Combustible garbage will be burned in a SmartAsh incinerator – the ash and all non-combustibles (e.g., cans, jars, etc.) will be flown out for proper disposal in Iqaluit. Grey water from washing dishes and clothes is poured into a sump and buried at the end of the field season. The camp has a composting toilet. Our operation will offer socio-economic benefits to the area. We will again be hiring two or three Inuit assistants to participate in our field work, hopefully through the IFRA program. All of our groceries and some equipment where practical will be purchased in Iqaluit. Seabird ResearchThe science team will arrive in mid-June and depart the second week of August. We will use the same science procedures employed for the past 45 years. Observations will be made of adult murres incubating from concealed locations (blinds) along the cliffs. Defined areas of the colony will be counted daily to determine population trends, again without disturbing the birds. Future Arctic seas will have longer ice-free periods. We will establish novel genomic and physiological techniques to examine the resilience of Arctic seabirds to a less-icy future. Specifically, we will examine whether particular genes or blood chemistries are associated with the ability of thick-billed murres to cope with environmental change. We will use GPS-depth-camera-accelerometers, stomach temperature tags and satellite tags to track murres at sea in response to changing ice cover. We will measure energy expenditure with doubly-labelled water. We will also determine whether unmanned aerial vehicles can be used to census murres in the Canadian Arctic. As a major cause of biologist mortality in Canada is air/boat accidents, we propose that unmanned aerial vehicles can be used to safely record murre numbers. We will fly vehicles past at varying distances and heights to determine what height and distance can be used to accurately census murre numbers without disturbing the birds. We will measure fish populations using an uncrewed surface vehicle (USV) with hydroacoustics. Finally, chemical pollution is an important component of environmental change in the Arctic. We will measure pollution levels in various tissues from glaucous gulls and murres.

Uiviititut: L'île Coats (Appatuurjuaq) est une importante colonie d'oiseaux marins au Nunavut. Nous proposons de mener des recherches sur les guillemots de Brünnich et les goélands bourgmestres nicheurs durant l'été (20 juin – 15 août). Les activités de recherche comprendront la capture, le baguage et l'observation d'oiseaux migrants, et impliqueront de 3 à 10 personnes. Activités généralesLe site est situé sur l'île Coats/Appatuurjuaq (62.94132N, -82.01722W). Le camp est ravitaillé par un Twin Otter sur roues tundra en juin. Le camp de base est composé de quatre petites cabanes. Ces structures reposent sur du granite entouré de végétation. De manière générale, les activités de travail et les installations de camping, ainsi que leur impact sur le terrain, sont similaires à ceux des années précédentes; l'impact sera donc encore une fois faible. Le carburant (essence, propane) sera entreposé près du camp, bien au-dessus de la ligne de marée haute, sur une falaise, dans de petits jerricans de 25 L et des bonbonnes de 20 lb. Ces matériaux seront placés sur une surface plane, avec une petite digue construite autour d'eux en cas de déversement. Tous les puisards seront situés à 30 m au-dessus de la ligne de marée haute, puis remblayés, surélevés et façonnés pour correspondre au paysage environnant avant de quitter le camp. Les fiches signalétiques (FS) à jour seront conservées dans un endroit central (le bureau de la cabane) afin d'être accessibles à tout le

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunangga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyaranguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
USV area	Scientific/International Polar Year Research	Marine	None known.	None known.	Coral Harbour
Colony	Scientific/International Polar Year Research	Inuit Owned Surface Lands	Scientific research since 1981	Not known.	Coral Harbour

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Salliq	Noah Nakoolak	Aiviit HTO	2026-03-05

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

Kivalliq
South Baffin

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Kaanatami Huradjat Munariniq	Migratory birds & bird banding permit (Pending new authorizations)	Active	2024-06-27	2026-12-31
Nunavut Kavamanga, Avatiliriyikkut	Wildlife permit (Pending new authorizations)	Active	2024-06-01	2026-08-31
Nunavut Imaligiyyit Katimayit	Permit or exemption	Applied, Decision Pending		
Kivalliq Inuit Katimayit	Permit	Applied, Decision Pending		

Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Air	Twin Otter to field camp	
Water	Uncrewed surface vehicle (no people on it)	
Land	ATV to carry gear	

Project accomodation types

Permanent Camp

Ihuaqutivaluin Atuqtauyukhan

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

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Unoccupied surface vehicle	2	0.5 x 2 m	Measure fish abundance around the seabird colony
GPS-depth-accelerometer (Technosmart AxyTrek)	30	0.5 cm X 2 cm X 2 cm	Track bird locations
Generator	1	28x27x41 inches	To charge equipment when solar system not sufficient
Drone (DJI Mavic 3)	1	0.5 m X 0.5 m X 0.25 m	Count birds
Camera loggers (Little Leonardo)	20	3 cm X 2 cm X 0.5 cm	Record behaviour of birds
Camera trap (Reconyx)	15	10 cm X 10 cm X 10 cm	Record behaviour of birds
ATV (Honda)	1	2 m X 2 m X 2 m	To carry gear up to camp
Depth-geolocators (Migrate technology)	40	0.5 cm X 0.5 cm X 0.5 cm	Record year-round behaviour of hte birds
Stomach logger (Anipill)	20	0.5 cm X 0.5 cm X 0.5 cm	Measure stomach temperature of bird

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturningga

Qanurittuq urhuqyuaq hunavaluit aturningga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Ataattimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Gasoline	fuel	5	20	100	Liters	To power ATV and generator
Propane	fuel	5	20	100	Liters	Camp stove

Imaqmik Aturningga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
0	Snow melt	Next to camp

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Huilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Scientific/International Polar Year Research	Ikulalaaqtun iqqakuuvaluin	100 lbs	Incinerated at camp.	Ashes carried out.
Scientific/International Polar Year Research	Qirnarivyaktuq imaq	1 m ³	Grey water will be disposed of in a sump near camp, away from water sources and will be backfilled to match the slope of the land.	None.
Scientific/International Polar Year Research	Ikulalimanngittun iqqakuuvaluin	20 lbs	Flown out at the end of each season and placed in landfill.	None.

Avatiliriniqmut Ayurhauingit:

This research will identify key habitats for seabirds, including those within proposed marine protected areas. Thus, it should have a positive impact on those areas, as well as a positive impact on the birds themselves by allowing governments to protect the species. There will be some flushing of individuals due to our activities, including drone and capture, but we do not believe there will be any impact on reproductive success and survival, and any impacts will be mitigated by the scientific knowledge gained.

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

The Coats Island murre camp is surrounded by majestic cliffs that drop directly into the island.

Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga

There is a large murre colony at this site.

Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga

Caribou-hunting occurs at Coats island, but not near our camp.

Miscellaneous Project Information

Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikkliyuumiutinahuarutit

Impacts: Counting and tracking the birds may lead to some disturbance to the colony. Mitigation: We will minimize our time at or near the colony.

Tamatkiumayunik Ihuikgutivaktunik

No cumulative effects should occur.

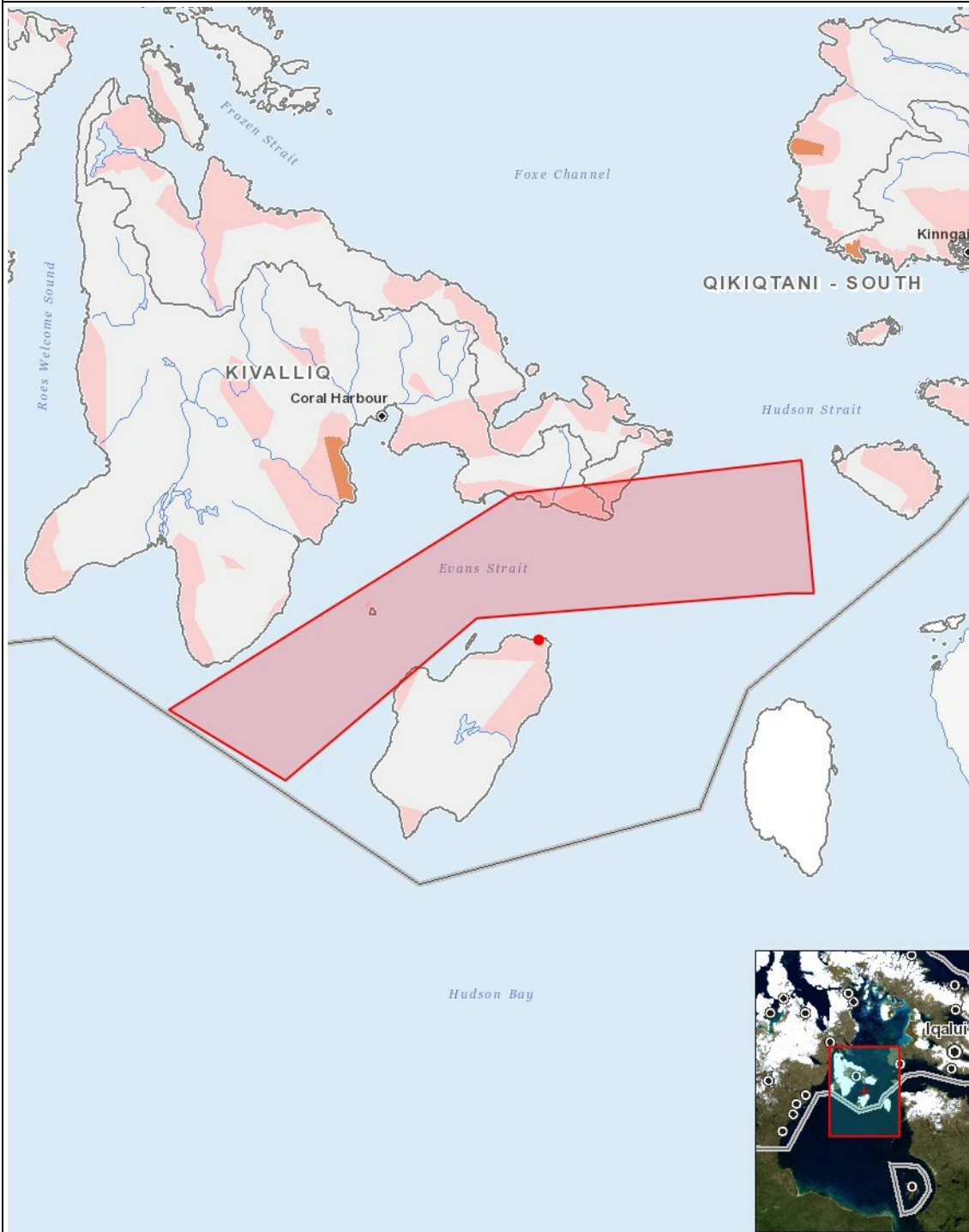
Impacts

Ilitariyauniq Avatiliriniqmut Ayurhauingit

	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																									
Scientific/International Polar Year Research	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	-	P	-	P	-	P	-	-	-	-
Piiqtauniq																									
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Havaariyauyukhamut Nayugaa



List of Project Geometries

1	polygon	USV area
2	point	Colony