



NIRB Uuktuutinga Ihivriughikhamut #125688

Passive acoustic monitoring and UAV assessment of the impacts of shipping and development on High Arctic beluga whales (Delphinapterus leucas) and narwhals (Monodon monoceros)

Uuktuutinga Qanurittuq: New

Havaap Qanurittunia: Scientific Research

Uuktuutinga Ublua: 4/13/2022 1:09:11 PM

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

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

Havauhikhaq Ikayuqtinga: Cortney Wheeler
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Canada
Hivayautit Nampanga:: 12044510087, Kayumiktukkut Nampanga::

QANURITTUT

Tukihiannaqtunik havaariya uyumayumik uqauhiuyun

Qablunaatitut: A collaborative project by Fisheries and Oceans Canada, Florida Atlantic University, and Resolute Bay Hunters and Trappers Association is being proposed in Creswell Bay on Somerset Island to research narwhal and beluga whales. The objective of the project is to use drone video and photographs to look at body size of whales, measures ship noise and beluga and narwhal vocalizations, observe beluga and narwhal behaviour in the presence and absence of vessels, assess interactions between narwhal and beluga, and collect biopsy samples to look at hormone levels and genetics in the whales. To undertake the research a temporary camp of six people will be set up. The field crew will be flown in and out of camp on a twin otter on July 26 and August 14, 2022 respectively, by the Polar Continental Shelf Program. No structures or equipment will be left at the camp site. While conducting the research, small zodiac boats with 25hp engines will be used to deploy hydrophones for recording audio, underwater cameras for taking photographs, and to record observations and capture drone photographs and videos of beluga and narwhal. The study is using non-invasive research methods, and we do not expect any long term impacts on the whales or the marine or terrestrial habitat.

Uivviititut: Un projet de collaboration entre Pêches et Océans Canada, la Florida Atlantic University et la Resolute Bay Hunters and Trappers Association est proposé dans la baie Creswell, sur l'île Somerset, pour la recherche sur les narvals et les bélugas. L'objectif du projet est d'utiliser des vidéos et des photographies de drones pour examiner la taille corporelle des baleines, mesurer le bruit des navires et les vocalisations des bélugas et des narvals, observer le comportement des bélugas et des narvals en présence et en l'absence de navires, évaluer les interactions entre le narval et le béluga et recueillir des échantillons de biopsie pour examiner les niveaux d'hormones et la génétique chez les baleines. Pour entreprendre les recherches, un camp temporaire de six personnes sera mis en place. L'équipe de terrain entrera et sortira du camp sur une loutre jumelle le 26 juillet et le 14 août 2022, respectivement, dans le cadre du Programme du plateau continental polaire. Aucune structure ou équipement ne sera laissé au camping. Pendant la recherche, de petits bateaux zodiac avec des moteurs de 25 CV seront utilisés pour déployer des hydrophones pour l'enregistrement audio, des caméras sous-marines pour prendre des photos, et pour enregistrer des observations et capturer des photographies de drones et des vidéos de bélugas et de narvals. L'étude utilise des méthodes de recherche non invasives, et nous ne prévoyons aucun impact à long terme sur les baleines ou l'habitat marin ou terrestre.

[illegible]

Personnel

Personnel on site: 6

Days on site: 20

Total Person days: 120

Operations Phase: from 2022-07-23 to 2022-08-11

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
Field camp location	Camp	Inuit Owned Surface Lands	This site has been used for scientific research on narwhal and beluga by DFO in the past.	Unknown	The nearest community is Resolute Bay, and Resolute Bay hunts beluga and narwhal from these stocks.

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Qausuittuq	Nancy Amarualik	Resolute Bay HTA	2020-01-13
Qausuittuq	Pllipoosie Iqaluk	Community member	2021-07-08

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

North Baffin

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Iqalukhiurniqmut Tariuqmilu Kaanata	Licence to Fish for Scientific Purposes	Applied, Decision Pending		
Nunavut Kavamanga, Avatiliriyikkut	Nunavut Wildlife Research Permit	Applied, Decision Pending		
Iqalukhiurniqmut Tariuqmilu Kaanata	Animal Care Protocol	Applied, Decision Pending		

Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Air	Twin otter to and from camp	
Water	Two zodiacs each with a 25hp engine	

Project accomodation types

Temporary Camp

Ihuaqutivaluin Atuqtauyukhan

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

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Zodiac with 25HP outboard motor	2	12x2	Zodiacs may be used to collect tissue samples from whales, to deploy hydrophones and to collect drone imagery and video if flying from land is not possible due to whale behaviour.
Drones	2	289.5*289.5*196 mm (length×width×height)	Drones will be flown a minimum of 20m over the surface of the water within line of sight.
Hydrophone	2	2x2 ft	Hydrophone will be deployed in the water just off shore to record the soundscape and whale vocalizations.
Underwater camera	1	1x1 ft	Underwater camera will be deployed near shore to record underwater behaviour of whales.

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Gasoline	fuel	2	45	90	Gallons	Gasoline will be used in zodiacs.

Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
0	Buckets/carboys	Creswell River/nearest freshwater runoff

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Scientific/International Polar Year Research	Anaagun (inuin anaaguin)	0.02 m3	Waste will remain on land (urine)/be buried on land (feces).	No treatment will be conducted.

Avatiliriniqmut Ayurhautingit:

This is a small field camp and all garbage/equipment will be brought in and out of the field camp with the crew. The only waste left will be human excrement and it is predicted to have minimal environmental impacts.

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

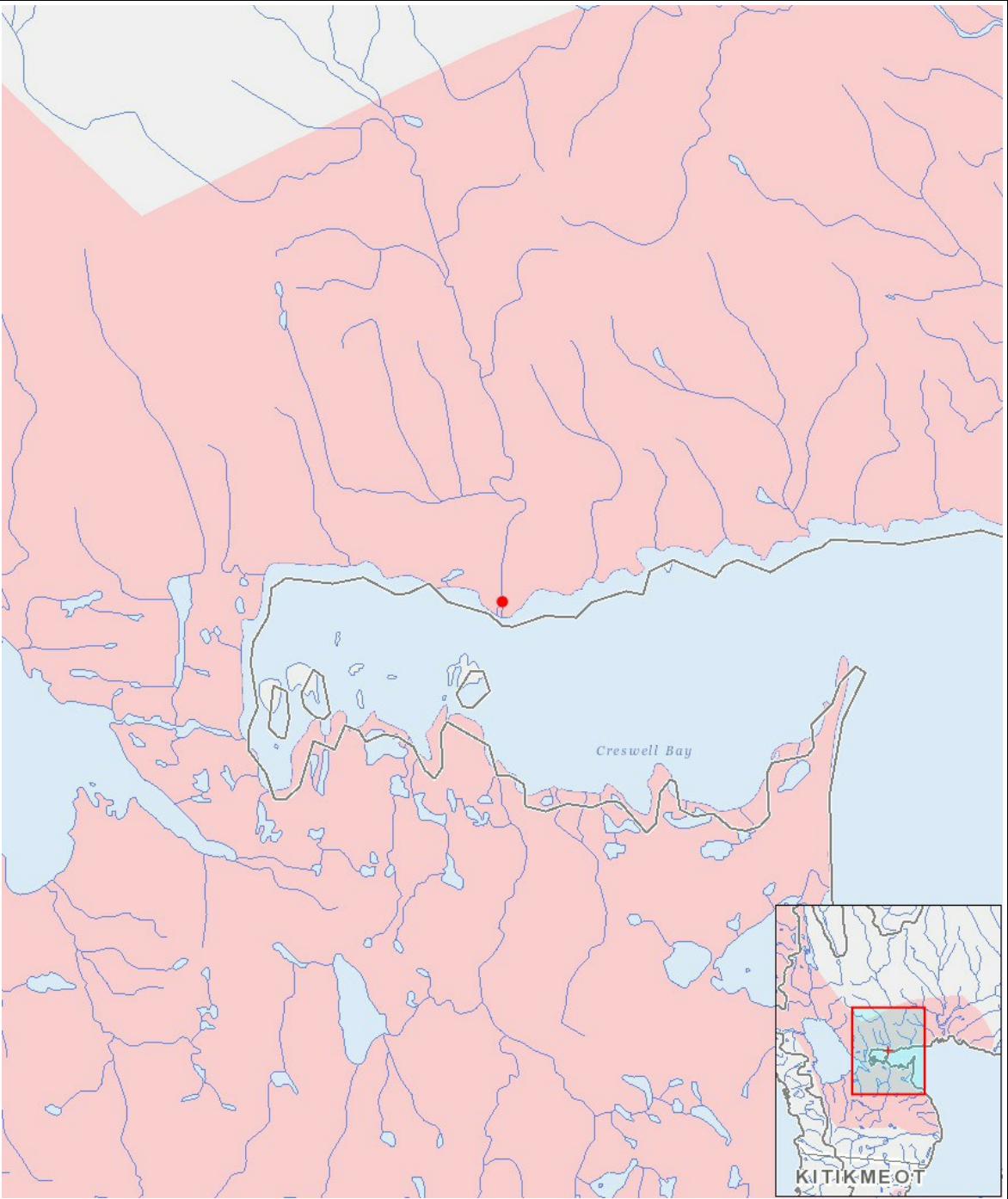
Impacts

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

Havaariyauyukhamut Nayugaa



List of Project Geometries

1	point	Field camp location
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