



NIRB Application for Screening #126169

DFO biopsy, tagging, acoustics, and drone work on walrus and beluga

Application Type: New

Project Type: Scientific Research

Application Date: Monday, April 14, 2025

Period of operation: from 2025-07-25 to 2025-10-22

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DETAILS

Non-technical project proposal description

English: Sea ice declines in Canada's Arctic have been accompanied by an increase in shipping traffic. Shipping can have negative direct (i.e., mortality from strikes) and indirect (e.g., noise disturbance) impacts on Arctic marine mammal populations, leading to displacement from critical habitat or disruption of critical behaviors (e.g., reproduction), with ultimate impacts on population demographics. Walrus and beluga are known to be sensitive to shipping-related disturbance, but there has been very little research carried out in Canada. Results from these two projects will be used to assess spatial and temporal overlaps between critical habitat and shipping corridors, detect behavioral (foraging, resting, vocalizing) and distribution responses to shipping activity, and develop mitigation measures (e.g., buffer zones around important terrestrial and marine habitat). This proposal covers two projects and species (across multiple areas) and has been developed in response to community-identified concerns and research priorities concerning shipping impacts on walrus/beluga behaviour, distribution, and demographics. 1. The walrus field project will take place from the communities of Coral Harbour, Nauyasat, Igloodik, Sanirajak and Kinngait, as shipping expansions through these areas of critical high-density walrus habitat stand to have disproportionate impacts on walrus. 2. The beluga work will take place from Igloodik and Kinngait, and data generated from this project will form baseline information on stock definitions, address uncertainties in habitat use, and assess monitor potential impacts of increased shipping over the next few years. Both projects will use a collection of methods to address different questions and uncertainties: 1) satellite tags to collect distribution, movement and diving data (both walrus and beluga) 2) time-lapse stationary cameras and aerial drone imagery (only walrus to monitor haul-out patterns) 3) hydrophone recordings (e.g., vocalizations of walrus and beluga and shipping noise) 4) tissue biopsies (e.g., both walrus and beluga, for analysis of stress hormone concentrations) 5) drone footage to monitor haul-outs (walrus) and gather behavioural health metrics on beluga whales. DFO will be on site in Coral Harbour, Igloodik, and Kinngait, while work in Nauyasat and Sanirajak will be community-led. The work will be conducted by boat during day trips (i.e. no field camps) from each community. Operations will take place for ~7-15 days between August 1 to October 30th (exact timing and focus areas will be based on availability of local research team, ice conditions and seasonal species occurrence). The polygons submitted for this project cover large areas to ensure we have the flexibility to follow community recommendations, however they represent a maximum distance that could be traveled. We will not be conducting our work in protected areas or national parks, for example, the Coral Harbour field work will only occur at Walrus Island and will not encroach on the Coats Island Bird Sanctuary. Both projects have and will continue to work closely with the local Hunters and Trappers Associations/Organizations to hire local boats, captains and field research assistants to conduct the work. For the 2025 field season the walrus field program (biopsy, tagging, cameras, and drone) has been supported by all communities, except Nauyasat did not support the use of drones. The beluga program has received full support from the Igloodik HTA and Kinngait HTA. For the hydrophones, Sanirajak has supported deploying a new one near the community, the beluga approval letter from Kinngait covers the hydrophone being use for both projects, and the support letter to re-deploy 3-4 hydrophones is pending for Igloodik (however verbal support has been provided).

French: Le déclin de la glace de mer dans l'Arctique canadien s'est accompagné d'une augmentation du trafic maritime. La navigation peut avoir des impacts négatifs directs (c.-à-d. mortalité due aux collisions) et indirects (p. ex. perturbation par le bruit) sur les populations de mammifères marins de l'Arctique, entraînant le déplacement de l'habitat essentiel ou la perturbation des comportements essentiels (p. ex. reproduction), avec des impacts ultimes sur la démographie de la population. On sait que le morse et le béluga sont sensibles aux perturbations liées à la navigation, mais très peu de recherches ont été menées au Canada. Les résultats de ces deux projets serviront à évaluer les chevauchements spatiaux et temporels entre l'habitat essentiel et les corridors de navigation, à détecter les réponses comportementales (alimentation, repos, vocalisation) et de répartition aux activités de navigation, et à élaborer des mesures d'atténuation (p. ex. zones tampons autour de l'habitat terrestre et marin important). Cette proposition couvre deux projets et deux espèces (dans plusieurs domaines) et a été élaborée en réponse à des Préoccupations et priorités de recherche concernant les impacts du transport maritime sur le comportement, la répartition et la démographie des morses et des bélugas. 1. Le projet de terrain pour le transport du morse se déroulera dans les collectivités de Coral Harbour, de Nauyasat, d'Igloodik, de Sanirajak et de Kinngait, car l'expansion de la navigation dans ces zones d'habitat essentiel à haute densité du morse risque d'avoir des impacts disproportionnés sur le

[illegible]

Personnel

Personnel on site: 16
Days on site: 30
Total Person days: 480
Operations Phase: from 2025-07-25 to 2025-10-22

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Coral Harbour, Naujaat, Sanirajak and Igloolik	Researching	Marine	Community lead walrus work has been done for the last couple years. This will be the first year doing beluga work in Igloolik.	None known	Within 200 km of the nearest community, conducting day trips from the community. We will not be conducting our work in protected areas or national parks, for example, the Coral Harbour field work will only occur at Walrus Island and will not encroach on the Coats Island Bird Sanctuary.
Kinngait	Researching	Marine	Community led walrus and beluga work was conducted last year. Baffinland shipping operations will begin in the area in the next few years.	None known	Within 200 km of Kinngait, conducting day trips from the community.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Cape Dorset	Annie Suvega	Aviq Hunters and Trappers Organization	2025-01-30
Naujaat	Dolly Mablik	Hunters and Trappers Organization	2025-01-06
Hall Beach	Paul Nagmalik	Hunters and Trappers Association	2025-01-22
Igloolik	Billy Pauloosie	Hunters and Trappers Association	2025-01-25
Igloolik	Noah Nakoolak	Aiviit Hunters and Trappers Organization	2025-01-23

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	Fish for Scientific Purposes Permit, Animal Use Protocol Permit, Authorization to disturb a marine mammal	Not Yet Applied		
Hunters and Trappers Associations/Organizations	Walrus work - Support letters from the Hunters and Trappers Organization/Associations in Coral Harbour, Igloolik, Kinngait, Naujaat and Sanirajak	Active		
Hunters and Trappers Associations/Organizations	Beluga work - Support letters from the Hunters and Trappers Organization/Associations in Igloolik and Kinngait	Active		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	Motor boats will be used during day trips from the community	

Project accomodation types

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Boats	10	TBD	Two boats will be required in each community for access to walrus and beluga areas and deployment of tags, biopsies, and hydrophones. Boats are either contracted through the local Hunters and Trappers Organizations or Inuit owned outfitters (if available).
CO2 airgun/biopsy dart	10	22 mm dart	Two airguns will be used in each area to collect biopsies (skin and blubber samples) remotely
Hydrophone	5	530mm x 60mm	Hydrophones will be deployed around Igloodik, Sanirajak and Kinngait. The purpose is to collect and record underwater noise, shipping, and vocalizations from marine mammals.
Drone	5	12x9.5x3.3 inches	Drones will be flown opportunistically over haul outs to access walrus numbers and proportions of adults and calves. Drones will also be used to assess beluga whale behaviour and body condition.
Crossbow	8	35.5 inches	Two crossbows used for deploying satellite tags and biopsy darts.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Gasoline	fuel	287	25	7175	Liters	The amount of fuel needed will vary depending on the boat and type of engine and number of successful field days- here we estimated ~205 liters for a 7 hour day trip for a double- prop. boat 205 liters x 7

						days x 5 communities= ~7,175 liters
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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:

No adverse environmental impacts are expected based on this project.

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

No adverse environmental impacts are expected based on this project.

Description of Existing Environment: Biological Environment

Description of Existing Environment: Socio-economic Environment

Miscellaneous Project Information

Monitoring walrus and beluga is especially important because Baffinland Iron Mines plans to ship ore from its Mary River mine on Baffin Island using a railway south to Steensby Inlet. This could include an all-season deep-water port, and ice-breaking ore carriers travelling through Foxe Basin and Hudson Strait. This project is important for gathering baseline data on marine mammals in Hudson Strait.

Identification of Impacts and Proposed Mitigation Measures

This project is a collaboration with the HTO/HTA, ongoing discussions and joint planning will ensure timing of this study does not coincide with the subsistence hunt.

Cumulative Effects

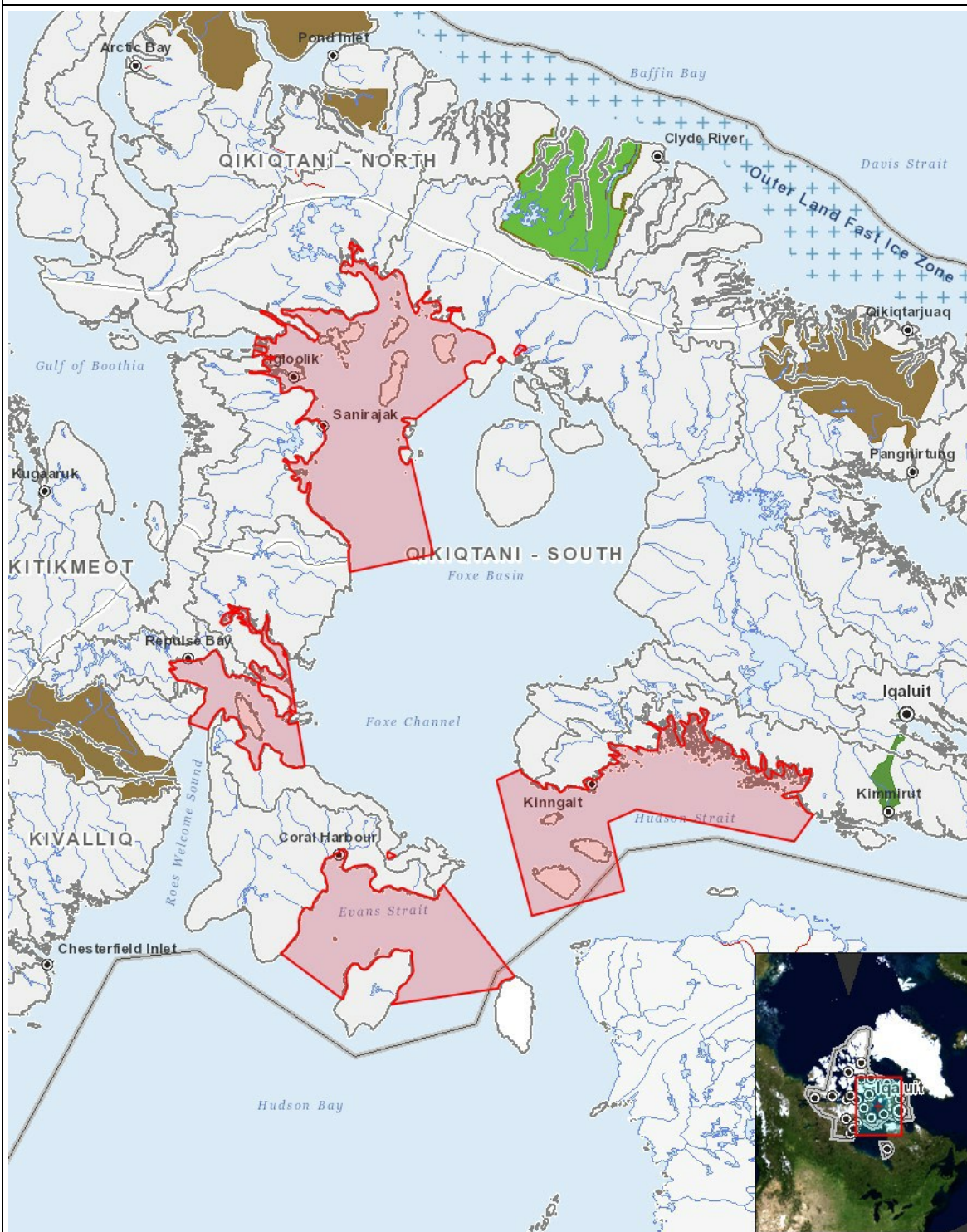
Impacts

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

Project Location



List of Project Geometries

- | | | |
|---|---------|--|
| 1 | polygon | Kinngait |
| 2 | polygon | Coral Harbour, Naujaat, Sanirajak and Igloolik |