

Public Registry - Project Proposals

NPC 150692: DFO biopsy, tagging, acoustics, and drone work on walrus and beluga

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Proposal Status: Conformity Determination Issued

[Overview Documents Questionnaire](#)

[Project Overview](#)

Type of application: Renewal

Proponent name: Marianne Marcoux

Proponent company: Fisheries and Oceans Canada

Project Description:

This is an amendment to NPC File No. 150413 and NIRB project 24YN025. 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).

Project Schedule

Start Date: 2025-08-01

End Date: 2028-10-30

Project Map

List of project geometries:

Id	Geometry	Location Name
15625	polygon	Kinngait
16877	polygon	Coral Harbour, Nauyasat, Sanirajak and Igloodik

NPC Planning regions:

No Approved Plan

Keewatin

Project Land Use and Authorizations

Project Land Use:

Scientific Research

Marine-Based Activities

Scientific Research

Licensing Agencies:

Nunavut Impact Review Board

Government of Canada - Fisheries and Oceans Canada

Government of Canada - Fisheries and Oceans Canada

Material Use

Equipment:

Type	Quantity	Type	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
Crossbow	8	35.5 inches	Two crossbows used for deploying satellite tags and biopsy darts (if requested)
Drone	5	12x9.5x3.3 inches	Drones will be flown opportunistically over haul outs to access walrus umbers and proportions of adults and calves. Drones will also be used to assess beluga behaviour and body condition
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.

Fuel Use:

Type	Container	Capacity	Use
Gasoline	287	25	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 $205 \text{ liters} \times 7 \text{ days} \times 5 \text{ communities} = \sim 7,175 \text{ liters}$

Hazardous Material and Chemical Use:

Type	Container	Capacity	Use
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No data found

Water Consumption:

Daily Amount (m2)	Retrieval Method	Retrieval Location
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Waste and Impacts

Environmental Impacts:

Since there is no field camp proposed, waste and environmental impact is low. On rare occasions biopsy darts may be lost in the water, as they can be challenging to spot in rough water. Darts are counted when they go out and team members are told to keep a close eye on them after the sample has been collected. We also aim to collect the darts as quickly as possible to avoid losing them.

Waste Management:

Waste Type	Quantity Generated	Treatment Method	Disposal Method
No data found			