



NIRB Application for Screening #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)

Application Type: New

Project Type: Scientific Research

Application Date: 4/13/2022 1:09:11 PM

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

Proposed Authorization: from 0001-01-01 to 0001-01-01

Project Proponent: Cortney Wheeler
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DETAILS

Non-technical project proposal description

English: 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.

French: 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

Activities

| Location | Activity Type | Land Status | Site history | Site archaeological or paleontological value | Proximity to the nearest communities and any protected areas |
|---------------------|---------------|---------------------------|---|--|---|
| 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. |

Community Involvement & Regional Benefits

| Community | Name | Organization | Date Contacted |
|--------------|-------------------|------------------|----------------|
| Resolute Bay | Nancy Amarualik | Resolute Bay HTA | 2020-01-13 |
| Resolute Bay | Pllipoosie Iqaluk | Community member | 2021-07-08 |

Authorizations

Indicate the areas in which the project is located:

North Baffin

Authorizations

| Regulatory Authority | Authorization Description | Current Status | Date Issued / Applied | Expiry Date |
|--|---|---------------------------|-----------------------|-------------|
| Fisheries and Oceans Canada | Licence to Fish for Scientific Purposes | Applied, Decision Pending | | |
| Government of Nunavut, Department of Environment | Nunavut Wildlife Research Permit | Applied, Decision Pending | | |
| Fisheries and Oceans Canada | Animal Care Protocol | Applied, Decision Pending | | |

Project transportation types

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

Project accomodation types

Temporary Camp

Material Use

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

| Equipment Type | Quantity | Size - Dimensions | Proposed Use |
|---------------------------------|----------|--|---|
| 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. |

Detail Fuel and Hazardous Material Use

| Detail fuel material use: | Fuel Type | Number of containers | Container Capacity | Total Amount | Units | Proposed Use |
|---------------------------|-----------|----------------------|--------------------|--------------|---------|-----------------------------------|
| Gasoline | fuel | 2 | 45 | 90 | Gallons | Gasoline will be used in zodiacs. |

Water Consumption

| Daily amount (m3) | Proposed water retrieval methods | Proposed water retrieval location |
|-------------------|----------------------------------|--|
| 0 | Buckets/carboys | Creswell River/nearest freshwater runoff |

Waste

Waste Management

| Project Activity | Type of Waste | Projected Amount Generated | Method of Disposal | Additional treatment procedures |
|--|----------------------|----------------------------|--|---------------------------------|
| Scientific/International Polar Year Research | Sewage (human waste) | 0.02 m3 | Waste will remain on land (urine)/be buried on land (feces). | No treatment will be conducted. |

Environmental Impacts:

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

Description of Existing Environment: Physical Environment

Description of Existing Environment: Biological Environment

Description of Existing Environment: Socio-economic Environment

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Cumulative Effects

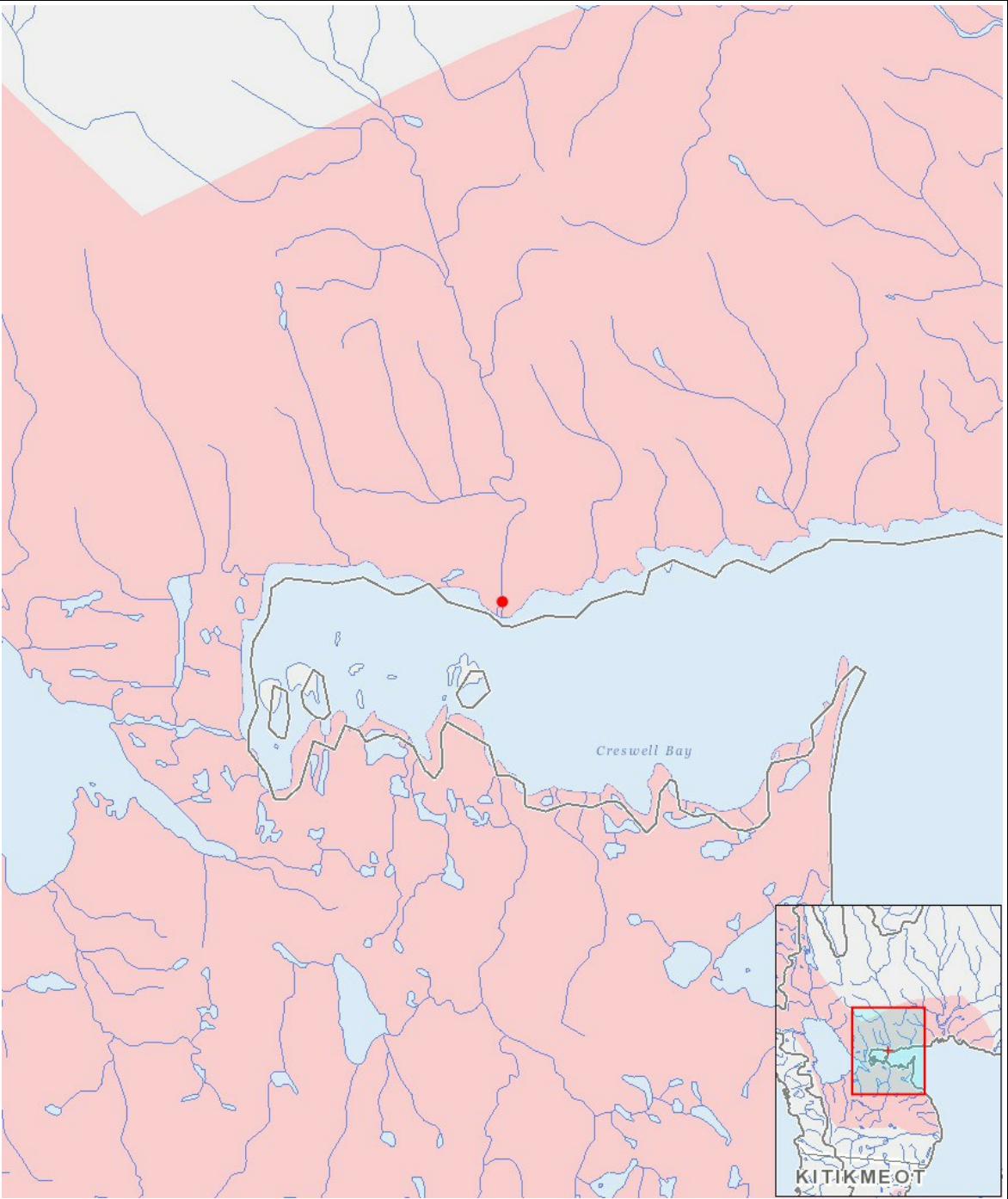
Impacts

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 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Camp | | - | - | - | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - | | - | P | - | - | - |
| Decommissioning | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | | - | - | - | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - |

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

Project Location



List of Project Geometries

| | | |
|---|-------|---------------------|
| 1 | point | Field camp location |
|---|-------|---------------------|