



NIRB Application for Screening #125477

Testing an industrial vessel of opportunity model for ship-time access to survey Canadian Arctic gateway ecosystems using baited remote underwater video

Application Type: New

Project Type: Scientific Research

Application Date: 7/26/2019 1:38:50 PM

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

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

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DETAILS

Non-technical project proposal description

English: This research project has been proposed by Dr. Jonathan A. D. Fisher, a Research Scientist within Memorial University of Newfoundland's Centre for Fisheries Ecosystems Research. Jonathan is based in St. John's, Newfoundland and Labrador. Jonathan focuses his research and student training on helping to understand changes in marine ecosystems of Canada's Arctic and sub-Arctic seas. There are two main goals of this research project. The first goal is to test whether baited remote underwater video lander (baited with squid to attract fish, sharks and invertebrates) can be deployed and left to record for up to 10 hours from the MSV Botnica icebreaker as it escorts large iron ore ships into and out of Eclipse Sound, Nunavut. The second goal is to work with other interested researchers to use the video data collected at the sea bottom to identify marine species and their habitats within what is expected to become the Tallurutiup Imanga/Lancaster Sound National Marine Conservation Area. This work involves putting one researcher and an underwater video camera system onto a ship for one month. No animals will be harmed in this project and no equipment will be left in Nunavut. The beauty and diversity of the deep sea in eastern Nunavut has largely been out of sight to scientists. That is partly because of the challenge and expense of collecting images from deep, cold habitats. However, my laboratory has demonstrated how useful baited remote underwater video can be to quantify local abundances of Greenland sharks and reveal benthic habitats, invertebrates and fishes in the eastern Canadian Arctic. This project grew from an offer from the marine transportation industry to develop a scientific sampling program that fits within the MSV Botnica as it fulfils its primary escort mission. This research model for Arctic ship time access has potential to grow in the coming years, yielding significant contributions from industry partners to science programs in areas where required icebreaker ship time is otherwise extremely expensive. Most importantly, this means this model of cooperation means that fewer icebreakers would be needed in Nunavut waters if science and transportation companies can work together. This project is requested to take place in the offshore waters of Eclipse Sound and Milne Inlet within the Qikiqtaaluk region of Nunavut. The closest community to the proposed project site is Pond Inlet, Nunavut. The project is proposed to take place during the most ice-free times of year, in the later summer and early fall (between late July and late October, as weather permits).

French: Ce projet de recherche a été proposé par Jonathan A. D. Fisher, chercheur scientifique au Centre de recherche sur les écosystèmes des pêches de l'Université Memorial de Terre-Neuve. Jonathan est basé à St. John's, à Terre-Neuve-et-Labrador. Jonathan concentre sa recherche et sa formation sur l'aide à la compréhension des changements dans les écosystèmes marins des mers arctiques et subarctiques du Canada. Ce projet de recherche a deux objectifs principaux. Le premier objectif est de vérifier si un atterrisseur vidéo sous-marin isolé appâté (avec un calmar pour attirer les poissons, les requins et les invertébrés) peut être déployé et enregistré pendant 10 heures au maximum depuis le brise-glace MSV Botnica lorsqu'il escorte de gros navires hors du détroit d'Eclipse, au Nunavut. Le second objectif est de travailler avec d'autres chercheurs intéressés pour utiliser les données vidéo recueillies au fond de la mer afin d'identifier les espèces marines et leurs habitats dans ce qui devrait devenir l'aire marine nationale de conservation de Tallurutiup Imanga / Lancaster Sound. Ce travail consiste à installer un chercheur et un système de caméra vidéo sous-marine sur un navire pendant un mois. Aucun animal ne sera blessé dans ce projet et aucun équipement ne sera laissé au Nunavut. La beauté et la diversité des eaux profondes de l'est du Nunavut ont été en grande partie perdues de vue pour les scientifiques. Cela est en partie dû au défi et aux dépenses liés à la collecte d'images provenant d'habitats profonds et froids. Cependant, mon laboratoire a démontré l'utilité d'une vidéo sous-marine éloignée avec appâts pour quantifier les abondances locales de requins du Groenland et révéler les habitats benthiques, les invertébrés et les poissons de l'est de l'Arctique canadien. Ce projet découle d'une offre de l'industrie du transport maritime d'élaborer un programme d'échantillonnage scientifique qui s'intègre au MSV Botnica dans la réalisation de sa mission principale d'escorte. Ce modèle de recherche sur l'accès à l'heure des navires arctiques pourrait se développer dans les années à venir, apportant une contribution importante des partenaires de l'industrie aux programmes scientifiques dans des domaines où la durée requise des navires brise-glace est extrêmement coûteuse. Cela signifie surtout que ce modèle de coopération signifie que moins de brise-glace seront nécessaires dans les eaux du Nunavut si les entreprises de la science et du transport peuvent travailler ensemble. Ce projet doit être réalisé dans les eaux extracôtières d'Eclipse Sound et de Milne Inlet, dans la région de Qikiqtaaluk Nunavut. La communauté la plus proche du site du projet proposé est Pond Inlet, au Nunavut. Il est proposé que le projet se déroule pendant les périodes les plus libres de la glace, à savoir l'été et le début de l'automne (entre fin juillet et fin octobre, si le temps le permet).

[illegible]

Operations Phase: from 2019-07-17 to 2019-10-24

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Potential camera deployment extent	Researching	Marine	Marine waterway and transportation route; proposed Tallurutiup Imanga conservation area	N/A	Adjacent to Pond Inlet and Bylot Island Migratory Bird Sanctuary

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Information is not available			

Authorizations

Indicate the areas in which the project is located:

Transboundary

North Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Other	Nunavut Planning Commission	Active	2019-07-17	

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	The researcher will be aboard the MVS Botnica icebreaker during this project.	

Project accomodation types

Other,

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
baited underwater camera and frame	1	0.5 m3, 100 kg	We propose to deploy a remote baited remote underwater video camera lander to document fish and invertebrates on the sea floor. The device observes but does not collect specimens, making it a very low impact equipment.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Information is not available						

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 environmental impacts are anticipated from this work. At-sea operations will be at the discretion of the Captain in coordination with their primary activity to escort iron ore transport ships.

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

Aboard MSV Botnica, an icebreaker tasked with escorting iron ore ships into and out of Milne Inlet .

SECTION H2: Disposal At Sea

No disposal at sea.

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

Marine waters to 1000 m depth

Description of Existing Environment: Biological Environment

Tallurutiup Imanga region serves as an important area for marine mammals and birds due to local highly productive Arctic waters.

Description of Existing Environment: Socio-economic Environment

Adjacent to Pond Inlet and to the Baffinland Mary's River mining operation.

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Cumulative Effects

None anticipated.

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																										
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Operation																										
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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	polyline	Potential camera deployment extent
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