NIRB Application for Screening #125605

Coastal hazard assessment in Kugluktuk and Grise Fiord (Aujuittuq), Nunavut

Application Type:	New
Project Type:	Scientific Research
Application Date:	4/19/2021 6:27:52 PM
Period of operation:	from 0001-01-01 to 0001-01-01
Proposed Authorization:	from 0001-01-01 to 0001-01-01
Project Proponent:	Stephanie Coulombe Polar Knowledge Canada CHARS Campus, 1 Uvajuq Road, PO Box 2150 Cambridge Bay Nunavut X0B0C0 Canada Phone Number:: 867-983-6676, Fax Number::

DETAILS

Non-technical project proposal description

English: The overall purpose of this project is to study and measure coastal erosion in Kugluktuk and Grise Fiord. This community-based research project has two objectives: 1) to gain new knowledge of the coastal erosion processes and permafrost degradation and 2) to provide learning and training opportunities, with an emphasis on youth. The implementation of this project will take a two-year phase, scheduled between 2021 and 2023, in order to have enough time to conduct research that will lead to a successful outcome as coastal erosion involves various causes of environmental activities related to climate change.

French: Ce projet vise à étudier et mesurer l'érosion côtière à Kugluktuk et Grise Fiord. Ce projet de recherche communautaire a deux objectifs: 1) acquérir de nouvelles connaissances sur les processus d'érosion côtière et la dégradation du pergélisol et 2) offrir des opportunités d'apprentissage et de formation, en mettant l'accent sur les jeunes. La mise en œuvre de ce projet se fera sur deux ans entre 2021 et 2023. Cette période de deux ans permettra de recueillir une bonne quantité de données pour étudier la dynamique côtière des régions visées par le projet, car l'érosion côtière implique diverses causes d'activités environnementales liées aux changement climatiques.

Inuktitut: ᑕᒪᐃᓐᓄᑦ ᐱᔾᔪᑖᑦ ᐱᓕᕆᐊᖑᔪᖅ ᐃᓕᑦᑎᓇᓯᒡᓗᑎᒃ ᐊᒻᒪᓗ ᓯᒡᔭᖕᒥᓐᓂᒃ ᐆᒃᑐᕋᕐᓗᑎᒃ ᐊᐅᔪᓂᒃ ᕐᑯᕐᓗᖅᑰᕐᒥ ᐊᒻᒪᓗ ᐊᐅᓯᐃᑦᑐᕐᒥ. ᐅᓇ ᓄᓇᓕᖕᓂ-ᐱᓕᕆᐊᖑᔪᖅ ᖃᐅᔨᓴᕐᓂᖅ ᒪᕐᕉᖕᓂ ᑐᑭᓕᐅᖅᓯᕙᓪᓕᐊᓂᐊᖅᑐᖅ: 1) ᓄᑖᓂᒃ ᖃᐅᔨᓗᑎᒃ ᑐᑭᓯᓗᑎᒃ ᓯᒡᔭᓂᒃ ᐊᐅᔪᓂᒃ ᓯᑐᐊᕙᓪᓕᐊᔪᓂᒃ ᐊᒻᒪᓗ ᕐᑭᕐᑭᔪᖅ ᐊᐅᒍᓐᓇᖕᒥᑦᑐᖅ ᐊᐅᕙᓪᓕᐊᔪᖅ ᐊᒻᒪᓗ 2) ᐃᓕᓐᓂᐊᕈᑕᐅᓂᐊᕐᒪᑕ ᐊᒻᒪᓗ ᐱᔭᓇᐅᖅᓴᑎᑦᑎᔾᔪᑕᐅᓗᑎᒃ, ᐊᔭᓇᐅᔾᔪᑎᑦ ᒪᒃᑯᒃᑐᓄᑦ.

Inuinnaqtun: Tapkuat tamaitnut pityutai uuma havanguyuq naunaiyaqni piyaunilu tariup hinaa nungutpaliania talvani Kugluktuk tamnalu Auhuittuq. Una nunallaami ittuq ihivriuqniq havauhikhaq piqaqtuq malruuknik tikinnahuarutingit: 1) pitariangi nutat ilihimayauyut taphumunga tariuq hinaa nungutpaliania pityuhiit tamnalu nunap qiqumaitnaqnia huruqpaliania; tamnalu 2) piqaqtittangi ilitniq iliharniqlu pilaqnit, piplugu akhuqyuminia inulrammiqnut.

Personnel

Personnel on site: 8

Days on site: 50

Total Person days: 400

Operations Phase: from 2021-06-29 to 2021-08-29

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Kugluktuk erosion assessment	Researching	Municipal	N/A	N/A	Kugluktuk
Grise Fjord erosion assessment	Researching	Municipal	N/A	N/A	Grise Fiord

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Kugluktuk	SAO (Kimberley Young)	Hamlet of Kugluktuk	2020-07-02
Grise Fiord	Marjorie Dobson	Hamlet of Grise Fiord	2020-06-26

Authorizations

Indicate the areas in which the project is located:

Kitikmeot
North Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Government of Nunavut, Nunavut Research Institute	LICENSE TO CONDUCT PHYSICAL/NATURAL SCIENCES RESEARCH	Applied, Decision Pending		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	small boat	
Land	ATVs	

Project accomodation types

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Portable earth auger	1	100 cm x 60 cm x 60 cm	Permafrost drilling with sampling
GNSS system	1	100 cm x 30 cm	High-precision mapping
Small fixed-wing drone	1	116 cm (wingspan)	High-precision mapping (Aerial surveys of the coastal zone)
Buoys	1	42 cm x 31 cm	Measure wave and water levels (ice-free season). The instrument will be retrieved before freeze-up.
Bottom-mounted sensors	3	3 cm x 10 cm	Measure wave and water levels in the intertidal zone during low tide. All the sensors will be retrieved before freeze-up
Automatic time-lapsed cameras	3	10 cm x 10 cm x 10cm	Monitor and quantify coastal erosion in relations to storms.
ATVs	5	240 cm x 117 cm x 135 cm	Travel to study sites

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Gasoline	fuel	1	20	20	Liters	Portable earth auger refuelling.

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:

The only permanent structures we intend to install in the field are rather small. It is a vertical 3-inch ABS pipe rising about one metre out of the ground. This pipe shelters the thermistor cable and the data logger that will measure and record soil temperature data. We will also install time-lapsed cameras to monitor coastal erosion rates.

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																									
Researching		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	P	P	P	-
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

Project Location

List of Project Geometries

1	polygon	Kugluktuk erosion assessment
2	polygon	Grise Fjord erosion assessment