Demande de la CNER faisant l'objet d'un examen préalable #126246

Assessing changing cryohydrogeologic conditions with locally-relevant landscape indicators in Nunavut, Canada

Type de demande : New

Type de projet: Scientific Research

Date de la demande : Tuesday, October 28, 2025

Period of operation: from 2025-10-25 to 2027-12-27

Promoteur du projet:
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DÉTAILS

Description non technique de la proposition de projet

Anglais: This research project pairs Inuit Qaujimajatuqangit with permafrost and groundwater science to identify and assess locally-relevant landscape indicators of winter groundwater movement along overland travel routes. Winter overland travel by Nunavut community members primarily consists of snowmobiling and dog sledding. Encountering overflow water is a locally-relevant winter overland travel hazard. Known overflow areas, as identified by local community members, have been selected to collect field measurements during the Winter of 2025/2026 and if need be the Winter of 2026/2027. Water samples (less than 4L) are collected from the overflow water and nearby lake(s) twice a year in the Fall and Spring and analyzed for dissolved minerals. Trail cameras are set up on 4ft wooden stakes to take daily photos of the overflow water area and resulting icing formation. Small sensors (8.5x1 inch or smaller) are installed in the overflow water and nearby lake(s) to record daily water temperature, electrical conductivity, and water level. Environmental impacts of the research are negligible. Research personnel stay in accommodations in each community and do day trips to the field data collection locations with local community members in the Fall and Spring, traveling by snowmobile, ATV, or truck utilizing the community's overland travel routes. No fuel drums/containers nor supply caches will be established on the land at anytime. No waste will be deposited. All trail cameras, wooden stakes, and sensors will be removed at the end of the research project. Combined, these results improve understanding of why these winter overflow areas are already occurring where they are - and enhance predictions for local decision makers of where additional winter overflow areas may begin occurring and become future hazards along winter overland travel routes as a result of climate change. Currently, Arctic climate change prediction models rarely account for near-surface groundwater processes nor its effects on locally-relevant landscape processes such as winter overland travel hazards. Research results will be shared annually with each community's Hamlet office, Hunters and Trappers Organization, and Wildlife Office.

Français: Ce projet de recherche associe l'Inuit Qaujimajatuqangit à la science du pergélisol et des eaux souterraines afin d'identifier et d'évaluer des indicateurs paysagers locaux pertinents du mouvement des eaux souterraines en hiver le long des itinéraires de déplacement terrestre. Les déplacements terrestres hivernaux par les membres des communautés du Nunavut se font principalement en motoneige et en traîneau à chiens. La rencontre avec des eaux d'infiltration est un danger hivernal pertinent pour les déplacements terrestres locaux. Les zones connues d'infiltration, telles qu'identifiées par les membres des communautés locales, ont été sélectionnées pour effectuer des mesures sur le terrain durant l'hiver 2025/2026 et, si nécessaire, l'hiver 2026/2027. Des échantillons d'eau (moins de 4 L) sont prélevés dans les eaux d'infiltration et dans les lacs voisins deux fois par an, à l'automne et au printemps, et analysés pour les minéraux dissous. Des caméras de suivi sont installées sur des piquets en bois de 1,2 m (4 pieds) pour prendre des photos quotidiennes de la zone d'eau d'infiltration et de la formation de glace qui en résulte. De petits capteurs (8,5x2,5 cm ou plus petits) sont installés dans l'eau d'infiltration et dans les lacs voisins pour enregistrer la température de l'eau au quotidien, conductivité électrique et niveau d'eau. Les impacts environnementaux de la recherche sont négligeables. Le personnel de recherche séjourne dans des hébergements dans chaque communauté et effectue des excursions d'une journée vers les sites de collecte de données sur le terrain avec les membres de la communauté locale à l'automne et au printemps, en se déplaçant en motoneige, en VTT ou en camion en utilisant les itinéraires terrestres de la communauté. Aucun bidon ou conteneur de carburant ni cache d'approvisionnement ne sera installé sur le terrain à aucun moment. Aucun déchet ne sera déposé. Toutes les caméras de suivi, les piquets en bois et les capteurs seront retirés à la fin du projet de recherche. L'ensemble de ces résultats permet de mieux comprendre pourquoi ces zones de débordement hivernal se produisent déjà là où elles se trouvent, et améliore les prévisions pour les décideurs locaux sur les endroits où de nouvelles zones de débordement hivernal pourraient apparaître et devenir des dangers futurs le long des itinéraires terrestres hivernaux en raison du changement climatique. Actuellement, les modèles de prédiction du changement climatique dans l'Arctique tiennent rarement compte des processus des eaux souterraines proches de la surface ni de leurs effets sur les processus paysagers locaux tels que les dangers liés aux déplacements hivernaux en surface. Les résultats de la recherche seront partagés chaque année avec le bureau du hameau de chaque communauté, l'Organisation des chasseurs et trappeurs et le bureau de la faune.

Inuktitut: ᖃᐅᔨᓴᕐᓗᒋᑦ ᐊᑦᔮᕈᖅᐸᓕᐊᔪᑦ ᓄᓇᐅᑉ ᐃᒪᕐᑯᑖᓂ, ᓯᑯᑐᖃᕐᒥᓪᓗ ᓄᓇᐅᑉ ᖃᓄᐃᓕᖓᓂᖓ ᓄᓇᓕᖕᓂ ᐊᒃᑐᐊᓂᓕᖕᓂᒃ ᓄᓇᐅᑉ ᓇᓗᓇᐃᒃᑯᑕᖏᑦᓂᒃ ᓄᓇᕗᒻᒥᑦ, ᑲᓇᑕᒥ ᑖᒻᓇ ᖃᐅᔨᓴᕈᑕᐅᔪᖅ ᑲᑎᑎᑦᑎᕗᖅ ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᑐᖃᖏᑦᓂᒃ ᓯᑯᑐᖃᕐᒥᒃ ᓄᓇᐅᑉ ᐃᒪᕐᑯᑖᓂᓪᓗ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒥᒃ ᓇᓗᓇᐃᖅᓯᔪᐊᖅᔪᑎᒃ

ᖃᐅᔨᓴᕈᐊᒻᒫᖅᓱᑎᒃ ᓄᓇᐅᑉ ᓇᓗᓇᐃᒃᑯᑕᖏᑦᓂᒃ ᐅᑭᐅᒃᑯᑦ ᓄᓇᐅᑉ ᐃᒪᕐᑯᑖᓂ ᐊᐅᓪᓛᕐᓂᖓᓂ ᐊᒃᑐᐊᓂᓕᖕᓂᒃ ᓄᓇᓕᖕᓂ ᐊᑉᕐᑯᑎᒋᔭᐅᓯᖅᑐᓄᑦ. ᐅᑭᐅᒃᑯᑦ, ᓄᓇᓕᖕᒥᐅᑦ ᓄᓇᒃᑯᑦ ᐊᐅᓪᓛᒐᔪᒃᑐᑦ ᓯᑮᑑᒃᑯᑦ ᕿᒧᒃᓯᒃᑯᓪᓗ. ᐃᒪᖅ ᑕᑕᓗᐊᓕᖅᑐᔪᒍ ᐅᑭᐅᒃᑯᑦ ᐅᓗᕆᐊᓇᑦᔪᐊᖅᒪᑦ ᓄᓇᒃᑯᑦ ᐊᐅᓪᓛᓕᖅᑐᓂ ᐃᓚᖏᑦᑎᓂ ᓄᓇᒥ. ᓄᓇᓕᖕᒥᐅᑦ ᐃᑲᔪᖅᓯᒪᕚᑦ ᓇᓗᓇᐃᖅᓯᓂᕐᒥᒃ ᖃᐅᔨᒪᔭᐅᔪᓂᒃ ᑕᑕᓗᐊᖅᑐᓂᒃ ᐃᓂᓂᒃ ᓄᓇᒥ ᑎᑎᕋᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᐃᑦ ᑲᑎᖅᓱᖅᑕᐅᓂᐊᖅᑐᑦ ᐅᑭᐅᖓᓂ 2025/2026, ᐱᔭᕇᐊᖃᕐᓂᖅᐸᑦᑕᐅᖅ ᐅᑭᐅᖓᓂ 2026/2027. ᐃᒪᖅ ᖃᐅᔨᓴᓚᒃᓴᑦ (4-ᓃᑕ ᐊᑖᓂ). ᑲᑎᖅᓱᐃᓚᐅᓱᖅᐳᑦ ᐃᒪᕐᒥ ᑕᑕᓗᐊᖅᑐᒥ ᖃᓂᒋᔭᖏᑦᓂᓪᓗ ᑕᓱᕐᓂ ᒪᕐᕈᐃᖅᓱᑎᒃ ᐊᕐᕿᒍᒥ, ᐅᑭᐊᒃᓵᒃᑯᑦ ᐅᐱᕐᙶᒃᑯᓪᓗ. ᐊᑉᕐᑯᑎᒥᓯᐅᓯᖅᑐᑦ ᐊᑦᔨᓕᐅᕈᑎᑦᓈᑦ ᐃᓕᐅᖅᑲᖅᑕᐅᓯᒪᔪᑦ (ᓯᑕᒪᓄᑦ ᐃᑎᒐᖕᓄᑦ ᑕᑭᓂᓖᑦ) ᕿᔪᖕᓂᒃ ᓇᑉᐸᖅᑯᑎᓂᒃ ᖃᐅᑕᒦᑦ ᐊᑦᔨᓕᐅᕆᑦᑕᕐᓗᓂ ᐃᒪᐅᑉ ᑕᑕᓗᐊᓕᕐᓂᖓᓂᒃ ᓯᑯᓕᕙᓪᓕᐊᓂᖓᓂᓪᓗ. ᒥᑭᔫᑦᓈᑦ ᖃᐅᔨᓴᕈᑎᑦ (8.5x1 ᒥᑭᑎᒋᔪᒥᒃ ᒥᑭᓂᖅᓴᕐᒥᓪᓘᓐᓃᑦ) ᐃᓕᖃᓚᐅᓗᑎᒃ ᐃᒪᐅᑉ ᑕᑕᓗᐊᕐᓂᖓᓄᑦ ᖃᓂᒋᔭᖏᑦᓄᓪᓗ ᑕᓱᕐᓄᑦ ᖃᐅᔨᓴᕈᑕᐅᓗᑎᒃ ᖃᐅᑕᒦᑦ ᐃᒪᐅᑉ ᐆᓇᕐᓂᖓᓂᒃ ᕐᑯᑉᐸᖅᓯᓂᖓᓂᓪᓗ. ᖃᐅᔨᓴᖅᑏᑦ ᓄᓇᓕᖕᓂ ᑐᔪᕐᒥᕕᖕᒦᓯᖅᑐᑦ ᓯᓚᒥᓗ ᐅᕐᓂᒃᑕᖅᓱᑎᒃ ᓯᑮᑑᒃᑯᑦ Hᐋᓐᑖᑯᓪᓘᓐᓃᑦ, ᐊᑐᕐᓗᑎᒃ ᐃᓂᒃᑰᕐᓂᐊᓕᕈᖕᓚᑕ. ᐊᑦᔨᓕᐅᕈᑏᑦ, ᖃᐅᔨᓴᕈᑏᑦ, ᐊᒻᒪ ᕿᔪᕐᑯᑎᑦ ᓇᑉᐸᖅᑯᑎᑦ (ᓇᓗᓇᐃᒃᑯᑕᕆᔭᐅᔪᑦ) ᐲᔭᖅᑕᐅᓕᕐᓗᑎᑦ ᖃᐅᔨᓴᕐᓂᖅ ᐃᓱᓕᓯᒪᓕᖅᐸᑦ. ᐊᕙᑎᒧᑦ ᐊᒃᑐᐃᓂᐅᔪᑦ ᐊᖏᓗᐊᙱᑦᑐᑦ. ᑲᑎ’ᔪᕆᑦ, ᑖᑉᑯᐊ ᖃᐅᔨᔭᐅᔪᑦ ᓈᒻᒪᑭᓕᖅᑎᑦᑎᒐᔭᖅᐳᑦ ᑐᑭᓯᐅᒪᓂᕐᒥᒃ ᓲᖑᐸᒪᖔᑦ ᑖᑉᑯᐊ ᐅᑭᐅᒃᑯᑦ ᑕᑕᓗᐊᓕᖅᐸᕇᕐᒪᖔᑖ ᐃᓂᒋᔭᖏᑦᓂ - ᓈᒻᒪᑭᓕᖅᑎᑦᑎᓗᑎᓪᓗ ᓇᓚᐅᑦᑖᖅᑕᐅᔪᓂᒃ ᓄᓇᓕᖕᓂ ᐃᓱᒪᓕᐅᕆᔨᓄᑦ ᓇᓂ ᐅᑭᐅᒃᑯᑦ ᑕᑕᓗᐊᓕᒃᑲᓂᕋᔭᕐᒪᖔᑖ ᓯᕗᓂᒃᓴᑉᑎᒃᓂᓪᓗ ᐅᓗᕆᐊᓇᓕᕐᓗᑎᒃ ᐅᑭᐅᒃᑯᑦ ᓄᓇᒃᑯᑦ ᐊᑉᕐᑯᑎᒋᔭᐅᓯᖅᑐᓂᒃ ᓯᓚᐅᑉ ᐊᑦᔭᕈᖅᐸᓕᐊᓂᖓ ᐱᔾᔪᑎᒋᑦᔪᒍ. ᒫᓐᓇᐅᔪᖅ, ᐅᑭᐅᖅᑕᖅᑐᒥ ᓯᓚᐅᑉ ᐊᑦᔭᕈᖅᐸᓕᐊᓂᖓᓄᑦ ᓇᓚᐅᑦᑖᕈᑎᑦ ᐃᓱᒪᒋᔭᖃᑐᐊᖅᐸᙱᑦᑐᑦ ᓄᓇᐅᑉ ᖄᖓᓂ ᐃᒪᐅᑉ ᐱᕙᓪᓕᐊᓂᖓᓂᒃ ᐊᒃᑐᐃᓂᖏᑦᓂᓪᓘᓐᓃᑦ ᓄᓇᓕᖕᒧᑦ ᐊᒃᑐᐊᓂᓕᖕᓄᑦ ᓄᓇᐅᑉ ᐱᕙᓪᓕᐊᓂᖓᓄᑦ, ᓲᕐᓗ ᐅᑭᐅᒃᑯᑦ ᓄᓇᒃᑯᑦ ᐊᐅᓪᓛᕐᓂᕐᒧᑦ ᐅᓗᕆᐊᓇᖅᑐᑦ.

Personnel

Personnel on site: 3
Days on site: 60
Total Person days: 180
Operations Phase: from 2025-10-25 to 2027-12-27

Activités

Emplacement	Type d'activité	Statut des terres	Historique du site	Site à valeur archéologique ou paléontologique	Proximité des collectivités les plus proches et de toute zone protégée
Arviat - Itiguarjuit (rolling hills) overflow area	Sampling sites	Municipal	N/A	N/A	Approximately 20 km NNW of Arviat
Arviat - Amaruqtalik (wolf esker) overflow area	Sampling sites	Municipal	N/A	N/A	10km SSW of Arviat
Rankin Inlet - overflow area #1	Sampling sites	Inuit Owned Sub-Surface Lands	N/A	N/A	Approximately 20km NNW of Rankin Inlet
Rankin Inlet - overflow area #2	Sampling sites	Municipal	N/A	N/A	Approximately 11 km WNW from Rankin Inlet
Coral Harbour - Mamittuittuq overflow area	Sampling sites	Inuit Owned Surface Lands	N/A	N/A	125km WSW of Coral HarbourWithin 2km (but outside) the Ikkattuaq Migratory Bird Sanctuary boundary
Iqaluit - overflow area #1	Sampling sites	Crown	N/A	N/A	Approximately 15km SE of Iqaluit
Whale Cove - overflow area	Sampling sites	Crown	N/A	N/A	Approximately 30km NW of Whale Cove

Engagement de la collectivité et avantages pour la région

Collectivité	Nom	Organisme	Date de la prise de contact
Rankin Inlet	Kono Tattuinee (President)	Kivalliq Inuit Association (KIA) head office	2024-11-19
Rankin Inlet	Tommy Bruce (Manager, Industrial Relations and Technology (Business and Economic Development)	Kivalliq Inuit Association (KIA) head office	2024-11-19
Rankin Inlet	Maria Serra (G.I.S. Coordinator)	Kivalliq Inuit Association (KIA) head office	2024-11-19
Arviat	Shirley Tagalik (Board of Directors Chair)	Aqqiumavvik Society	2024-11-20
Arviat	Kukik Baker (Executive Director)	Aqqiumavvik Society	2024-11-20
Arviat	Darryl Baker (Inuit Educator)	Aqqiumavvik Society	2024-11-21
Arviat	Alex Ishalook (Chair) + 4 Board Members	Arviat Hunters and Trappers Organization	2024-11-21
Arviat	Jimmy Muckpah	Aqqiumavvik Society	2024-11-20

	(SmartICE Operations and Knowledge Coordinator, Aqqiumavvik Society – Arviat)		
Arviat	Lucas Owlijoot (SmartICE Knowledge Coordinator, Aqqiumavvik Society – Arviat)	Aqqiumavvik Society	2024-11-20
Arviat	Dr. Katherine Wilson (Director of Knowledge Co-Production)	SmartICE	2024-11-18
Arviat	John Main (Member of Cabinet, Arviat North-Whale Cove Constituency)	Member of the Legislative Assembly	2024-11-22
Rankin Inlet	Atuat Shouldice	Crown-Indigenous Relations and Northern Affairs Canada	2025-06-04
Rankin Inlet	Kyle Amsel	Crown-Indigenous Relations and Northern Affairs Canada	2025-06-04
Iqaluit	Christine Wilson	Environment and Climate Change Canada	2025-09-27
Whale Cove	Oliver Shipton (Mayor of Whale Cove, Wildlife Officer)	Hamlet of Whale Cove	2025-10-15
Coral Harbour	Tooma Nakushuk	Hamlet of Coral Harbour	2025-10-24

Autorisations

Indiquez les zones dans lesquelles le projet est situé:

Kivalliq
South Baffin

Autorisations

Organisme de régulation	Description des autorisations	État actuel	Date de l'émission/de la demande	Date d'échéance
Nunavut Planning Commission	Conformity Determination	Applied, Decision Pending		
Office des eaux du Nunavut	Application for Approval Without a Licence No: 8WLC-ACC----	Applied, Decision Pending		
Institut de recherche du Nunavut	Physical/Natural Sciences Research Permit	Applied, Decision Pending		

Project transportation types

Transportation Type	Utilisation proposée	Length of Use
Air	Commercial (Calm Air, Canadian North) flights between communities	
Land	Snowmobile, ATV, or Truck	

Project accomodation types

Collectivité

Utilisation de matériel

Équipement à utiliser (y compris les perceuses, les pompes, les aéronefs, les véhicules, etc.)

Type d'équipement	Quantité	Taille – Dimensions	Utilisation proposée
snowmobile + qamutiik	2	3x8ft	Up to two snowmobiles with qamutiik (wooden sleds) to transport researchers and field gear
ATV	2	5x5ft	Up to two all-terrain vehicles will be utilized to transport researcher personnel and field gear to and from field data collection areas.
Trail cameras	14	6x4inches	Trail cameras installed one metre above ground level on wooden stakes to take daily photos of overflow water and icing formation
sensors - solinst levelogger	14	8.5x1inch	Solinst leveloggers to install in nearby lake(s) and overflow water areas to record daily water temperature, electrical conductivity, and water level
sensors - ibutton	14	1inch	ibutton sensors to install in nearby lake(s) and overflow water areas to record daily water temperature
truck	1	7x19ft	Up to one truck will be utilized to transport researcher personnel and field gear to and from field data collection areas.

Décrivez l'utilisation du carburant et des marchandises dangereuses

Décrivez l'utilisation de carburant :	Type de carburant	Nombre de conteneurs	Capacité du conteneur	Quantité totale	Unités	Utilisation proposée
Information is not available						

Consommation d'eau

Quantité quotidienne (m3)	Méthodes de récupération de l'eau proposées	Emplacement de récupération de l'eau proposé
0	A total of 12 unnamed lakes and 10 overflow areas near Arviat, Whale Cove, Rankin Inlet, Coral Harbour, Iqaluit (see map)	Submerge water sampling containers in water source

Déchets

Gestion des déchets

Activités du projet	Type des déchets	Quantité prévue	Méthode d'élimination	Procédures de traitement supplémentaires
Sampling sites	Déchets combustibles	10kg	All water sampling equipment (gloves, bottles, etc) will be removed from site and disposed of in southern Canada.	Wooden stakes for trail cameras will be donated to the community for firewood.

Répercussions environnementales :

This research project was co-designed with Nunavut residents and organizations in order to align the research topic, question, and methods with community research priorities and safe winter overland travel community data information needs. Environmental impacts are negligible. Research personnel will stay in community accommodations and do day trips to the field data collection locations in the Fall and Spring traveling by snowmobile, ATV, or truck along regularly utilized community overland routes. No fuel drums/containers nor supply caches will be established on the land at anytime. No waste will be deposited. All trail cameras, wooden stakes, and sensors will be removed at the end of the research project. Research project methods (timelapse cameras, sensors, and water sampling) were selected to avoid any potential impacts to water quality and quantity (i.e. no drilling). Research equipment (sensors and timelapse cameras) were selected based on their small size to minimize and avoid disruptions. Overland travel to and from the field locations will take place when local community members deem the conditions are safe and at times that will not disrupt local community member and wildlife activities (i.e. in compliance with caribou and/or other wildlife protection measures).

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 de l'environnement existant : Environnement physique

Overland transportation to/from the sampling sites takes place by truck on municipal roads, or by snowmobile or ATV on regularly utilized local community overland trails (often sandy or gravelly). Topography is flat. Sampling sites have a sand, gravel, or boulder surficial geology. Arviat sampling sites are near sandy hills (i.e. esker or raised marine beach). Water flows through this surficial geology and then onto the land surface to create the overflow areas and subsequent icings in the winter. Water is clear and colourless, and of good quality. Bedrock is near surface and underlies the surficial geology. Permafrost is continuous. Ice lenses, or other permafrost features, are not apparent. Soil profile is less than 1cm thick or non existent. Air quality is good. No noise at the sampling sites unless a community member is passing by on a snowmobile or ATV. Ground is slowly rising above sea level at a rate of 9 millimetres per year due to isostatic rebound.

Description de l'environnement existant : Environnement biologique

Some algae growth has been reported by local community members as a result of the overflow water. Tundra vegetation growth is minimal (sporadic) with surficial geology often exposed at surface. Lakes are small in size. Some lakes of sufficient depth to not freeze to the bottom during winter contain fish. Geese land on the lakes during the summer. Sampling sites do not take place within wildlife protected areas, but are within the typical habitat of caribou, polar bear, grizzly bear, wolverine, Harris's Sparrow – Qupanuarjuk or Qupanuaqand, Peregrine Falcon – Kiggaviarjuk or Kigavik, Red-necked Phalarope – Aupaluktuq Saurraq or Aupaqtuq Saarvaq, Red-necked Phalarope – Aupaluktuq Saurraq or Aupaqtuq Saarvaq, Short-eared Owl – Siutikituq Ukpik, other wildlife. No research takes place in the marine environment. Researchers will comply with all caribou, polar bear, grizzly bear, wolverine and/or other wildlife protection measures when traveling to/from sampling sites, and while at sampling sites.

Description de l'environnement existant : Environnement socio-économique

Research personnel stay in each communities' established accommodations, utilizing existing community infrastructure for personal needs and providing economic benefit to each community. Local community members, and their trucks, ATVs and snowmobiles, are hired in each community to accompany researchers onto the land thereby providing further local community socio-economic benefit. Community members regularly use the established overland trails to get to their cabins or hunting areas by snowmobile and ATV. Arviat, Rankin Inlet, and Iqaluit sampling sites sometimes used by community members to refill water bottles.

Miscellaneous Project Information

This research project was co-designed with the Aqqiumavvik Society and Hunters and Trappers

Organization in Arviat, Nunavut through three in-person visits to the communities of Arviat and Rankin Inlet in November 2024, May 2025, and October 2025. In-person visits entailed being on the agenda of the Arviat Hunters and Trappers Organization Board meetings to engage them on the intention of the research, and decide on the research topic, methods, and sampling sites. Meetings and informal conversations were had with the Aqqiumavvik Society, the Mayor of Arviat, the Kivalliq Inuit Association Head Office, Arviat Wildlife Office, and private citizens to provide input on the research project design and further align this project's activities to benefit local decision makers information needs and compliment/enhance existing research projects and activities taking place in the community. The aforementioned organizations, based on their knowledge, also provided information on additional communities with known overflow area in Nunavut (and local community residents) for me to contact. The local Hamlet Office and Hunters and Trappers organization in each participating community were engaged with to confirm the existence of their known overflow areas and receive their support for those locations to be included in this research project.

Identification des répercussions et mesures d'atténuation proposées

Overland transportation takes place on existing local community overland trails to thereby not cause any new ground disturbances nor erosion. Water samples are collected from the lake shore or standing on the land next to the overflow area water (i.e. no boats nor boots entering of water bodies) to avoid possible altering of water quality. Sampling methods and equipment were selected for their small size to not disturb the environment. Hunters and Trappers Organizations and Hamlet Offices in each community are contacted to go over project methods and equipment, and incorporate any mitigation measures specific to that community (i.e. days it is best to access the sampling sites). Researchers will comply with all caribou, polar bear, grizzly bear, wolverine and/or other wildlife protection measures when traveling to/from sampling sites, and while at sampling sites. No fuel drums/containers nor supply caches will be established on the land at anytime. No waste will be deposited.

Répercussions cumulatives

Cumulative effects of water sampling, small sensors use, timelapse cameras use, accessing the sampling sites twice per year on the communities' regularly utilized trails, and staying in community accomodations are NEGLIGIBLE. All trail cameras, wooden stakes, and sensors will be removed from the sampling sites at the end of the research project.

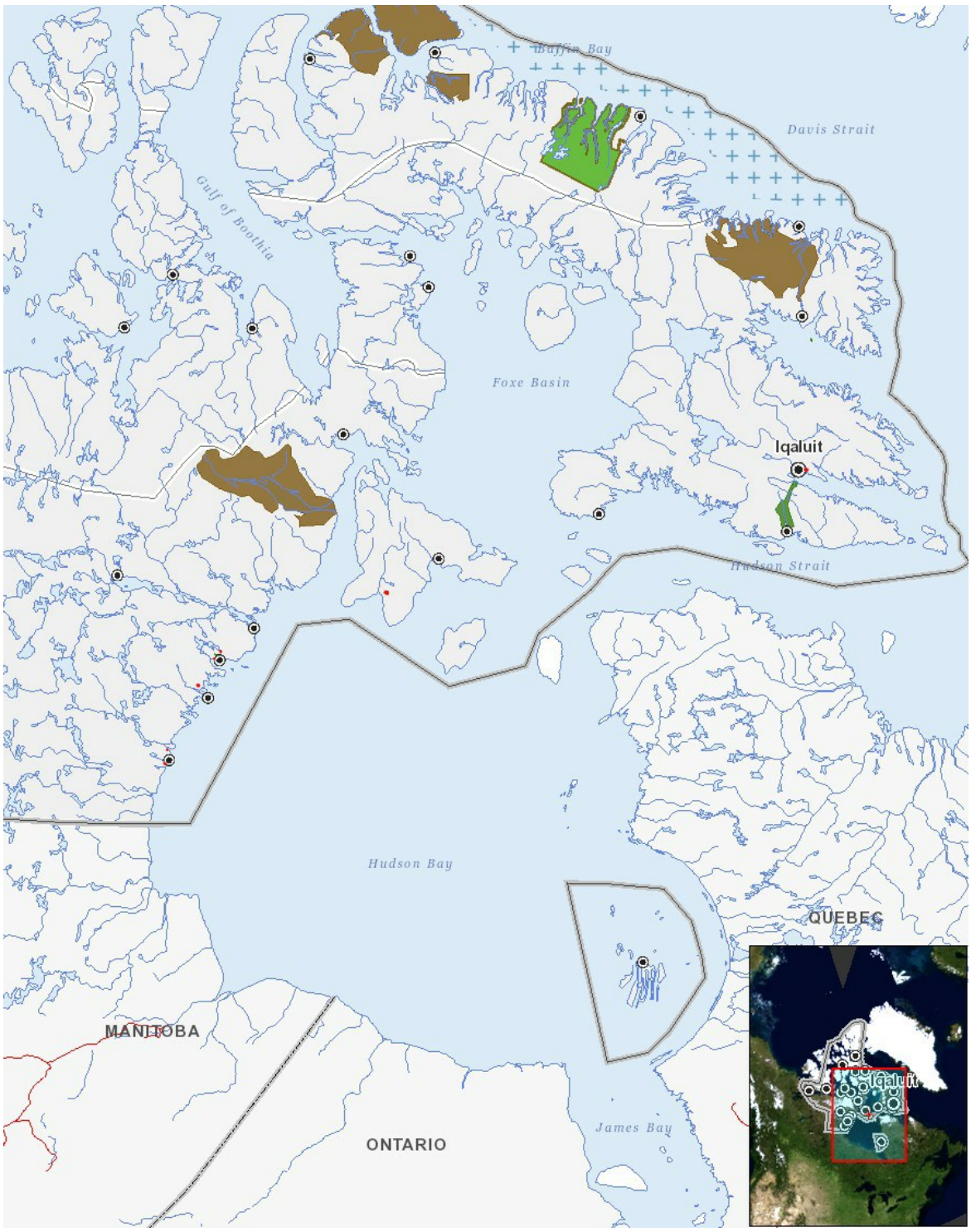
Impacts

Identification des répercussions environnementales

	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																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Exploitation																									
Sampling sites		P	P	P	-	P	P	P	P	P	P	P	P		P	P	P	P	P		P	P	P	P	P
Désaffectation																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Négative et non gérable, M = Négative et gérable, U = Inconnue)

Site du projet



Liste des géométries de projet

1	polygon	Arviat - Itiguarjuit (rolling hills) overflow area
2	polygon	Arviat - Amaruqtalik (wolf esker) overflow area
3	polygon	Rankin Inlet - overflow area #1
4	polygon	Rankin Inlet - overflow area #2
5	polygon	Coral Harbour - Mamittuittuq overflow area
6	polygon	Iqaluit - overflow area #1
7	polygon	Whale Cove - overflow area