NIRB Application for Screening #125971

An Updated View of the Oceanographic Conditions in the northern Canadian Arctic.

Application Type:	New
Project Type:	Scientific Research
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DETAILS

Non-technical project proposal description

English: Our group at the University of Manitoba are focused on understanding how climate change has affected the marine environment across the Canadian Arctic. Our group is led by Dr. Dorthe Dahl-Jensen, who holds a Canada Excellence Research Chair in Arctic Ice, Freshwater-Marine Coupling and Climate Change at the University of Manitoba. We are an experienced group of oceanographers and climate scientists who have worked throughout the Arctic and collaborate with several academic, government and indigenous groups to provide a comprehensive understanding of the processes and changes occurring in the Canadian Arctic. For this program we are focused on the oceanography of the northern Canadian Arctic. Our study area includes Eureka Sound, Nansen Sound, Greely Fiord, d'Iberville Fiord and Antoinette Bay, which together form the northernmost oceanographic passageway from the Arctic Ocean into the Canadian Arctic. This area is projected to be home to the last ice and as such is protected under the Tuvaijuittuq Marine Protected Area. However, due to the northern geography and near year-round ice cover the area has been understudied since the original oceanographic surveys in the 1960s and 1970s and as a result the full extent of the changes in the oceanography are not understood. The primary objective of this program is to provide an updated view of the oceanographic conditions in the northern Canadian Arctic. Our observations will be contrasted against those collected over 50 years ago to understand how this area has responded to climate change. We also wish to examine how the ocean interacts with the surrounding marine terminating glaciers and influences the seasonal landfast ice cover.To address these objectives, we have proposed a scientific program with four separate legs. Proposed sampling locations are outlined in the map below. The first and fourth legs will take place aboard the Coast Guard vessel Des Groseilliers during its annual re-supply trip to Eureka during summer 2024 and 2025. From the ship we will periodically deploy a CTD to collect a profile of the temperature, salinity and other variables used to characterize the properties of the water. The second and third legs will take place out of Eureka during winter and spring. The winter trip will be brief and focus on deploying sampling equipment on the ice in Eureka Sound to continuously monitor the oceanographic and sea ice conditions in the area throughout winter. During spring we plan to expand the CTD sampling across the study area and complement these profiles with physical samples of water and ice and observations of ice-ocean interactions at the terminus of nearby glaciers. Access to the Des Groseilliers will be limited to two scientists, but a larger group will conduct the winter and spring surveys from Eureka. We would like to hire someone from one of the surrounding communities with experience on the ice to join us during these two programs and have already been in contact with people in Grise Fiord about this opportunity. Additionally we have spoken to an outfitter in Grise Fiord who is guiding people in the area in 2025, we may provide equipment for him to take additional CTD's during his travels.Given the small scale of the program, the non-intrusive sampling techniques, and the fact that it is occurring in a very remote area of the Canadian Arctic the impact on the environment, wildlife and people is expected to be very minimal. Data will be analyzed and stored at the University of Manitoba and communicated through our project report to the NRI, through future meetings with nearby communities and at national conferences (ArcticNet).This program offers a unique opportunity to provide new insight into the oceanographic conditions of the northern Canadian Arctic, an area that has been understudied but has undergone a notable change since the last oceanographic surveys were conducted over 50 years ago. We have proposed a sampling plan but would be open to adapting the program to address any concerns or interests from the local communities.

French: Not applicable - this project is taking place in Northern Baffin.

Inuktitut: ᐱᓕᕆᖃᑎᒋᔭᕗᑦ ᓯᓚᑦᑐᖅᓴᕐᕕᐊᓗᒃᒥ ᒫᓂᑑᐸᒥ ᐱᓕᕆᐊᖃᕐᒪᑕ ᑐᑭᓯᓇᓱᒡᓗᑎᒃ ᖃᓄᖅ ᓯᓚᐅᑉ ᐊᓯᙵᖅᐸᓪᓕᐊᓂᖓ ᐊᒃᑐᐃᓯᒪᖕᒪᖔᑦ ᑕᕆᐅᕐᒥᐅᑕᐃᑦ ᐃᓂᒋᔮᒃᑕᖏᓐᓂᒃ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖓᓂᒃ. ᐱᓕᕆᖃᑎᒋᔭᕗᑦ ᐊᐅᓚᑕᐅᔪᖅ ᑑᒃᑖᖅ ᑐᐊᑎ ᑕᕼᓪ-ᔩᓐᓴᓐᒧᑦ, ᓇᓗᓇᐃᒃᑯᑎᑖᕐᓯᒪᔪᖅ ᑲᓇᑕᒥ ᐱᐅᓪᓚᕆᒃᑐᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᓂᕐᒧᑦ ᐃᒃᓯᕙᐅᑕᐅᓂᕐᒧᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ ᓯᑯᓕᕆᓂᕐᒧᑦ, ᑕᕆᐅᙱᙵᑦᑐᓂᒃ-ᑕᕆᐅᕐᒥᐅᑕᓂ ᐱᓕᕆᐊᙳᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᙵᖅᐸᓪᓕᐊᓂᖓᓄᑦ ᐅᕙᓂ ᓯᓚᑦᑐᖅᓴᕐᕕᐊᓗᒃᒥ ᒫᓂᑑᐸᒥ. ᐱᓕᕆᐊᖃᓕᒪᑦᑎᐊᖅᑐᒍᑦ ᑕᕆᐅᕐᒥᐅᑕᓕᕆᓂᕐᒥᒃ ᐊᒻᒪ ᓯᓚᐅᑉ ᒥᒃᓵᓄᑦ ᖃᐅᔨᓴᖅᑎᐅᓪᓗᑕ ᐊᒻᒪ ᐱᓕᕆᖃᑎᒌᓯᒪᓪᓗᑕ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐊᒻᒪᓗ ᐱᓕᕆᖃᑎᖃᖅᐸᒃᐸᑕ ᐅᓄᕈᓘᔭᖅᑐᓂᒃ ᐃᓕᓐᓂᐊᖅᑐᓕᕆᓂᕐᒧᑦ, ᓚᕙᒪᓕᕆᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓄᓇᖃᖅᑳᖅᑐᓂᒃ ᐱᓕᕆᔩᓂᒃ ᑐᑭᓯᓇᖅᓯᒡᓗᑕ ᖃᓄᐃᑉᐸᓪᓕᐊᕐᔪᑎᐅᔪᓂᒃ ᐊᒻᒪ ᐊᓯᙵᖅᐸᓪᓕᐊᔪᓂᒃ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖓᓂ. ᑖᔅᓱᒥᖓ ᐱᓕᕆᐊᖅᑎᒡᓗᑕ ᑕᕆᐅᕐᒥᐅᑕᓕᕆᓂᕐᒥ ᐱᓕᕆᐊᖃᓗᐊᖅᑐᒍᑦ ᑲᓇᑕᐅᑉ ᐅᐊᖕᓇᖓᑕ ᐅᑭᐅᖅᑕᖅᑐᖓᓂ. ᖃᐅᔨᓴᕐᕕᒋᔭᕗᑦ ᐅᑯᓂᖓ ᐃᓚᖃᖅᑐᑦ ᐃᐅᕆᑲ ᓴᐅᓐ (Eureka Sound), ᓈᓐᓴᓐ ᓴᐅᓐ (Nansen Sound), ᒍᕆᓕ ᕕᐅᑦ (Greely Fiord), ᑎ'ᐊᐃᐳᕕᐊᓪ ᕕᐅᑦ (d'Iberville Fiord) ᐊᒻᒪ ᐋᓐᑐᐊᓈᑦ ᐸᐃ (Antoinette Bay), ᑖᒃᑯᐊᓗ ᑲᑎᖕᖓᓪᓗᑎᒃ ᐅᐊᖕᓇᒦᓛᙳᔪᑦ

ᑕᕆᐊᒃᑯᑦ ᐊᖅᑯᑎᐱᔭᕐᑯᔪᒥᒃ ᐅᑭᐅᕐᑕᖅᑑᑉ ᑕᕆᐅᖓᓂ ᑲᓇᑕᐅᑉ ᐅᑭᐅᕐᑕᖅᑐᖓᓄᑦ. ᑕᒪᓐᓇ ᐃᓱᒪᒋᔭᐅᔪᖅ ᑭᖑᓪᓕᖅᐹᖑᓇᓱᒋᔭᐅᓪᓗᓂ ᓯᑯᓄᑦ ᐃᓂᒋᔭᐅᓂᐊᕐᓂᖓ ᐊᒻᒪᓗ ᑕᐃᒪᐃᒻᒪᑦ ᓴᐳᔾᔭᐅᓯᒪᓪᓗᓂ ᐅᕝᕙ ᑐᕌᐃᔪᐅᑦᑐᖅ ᑕᕆᐅᕐᒥᐅᑕᓂᒃ ᓴᐳᔾᔭᐅᓯᒪᕝᕕᒃᒥ. ᑭᓯᐊᓂᓕ, ᐅᑭᐅᕐᑕᖅᑐᖅ ᖃᓄᐃᓕᖓᓂ ᐊᒻᒪᓗ ᐊᕐᕌᒍᓕᒫᖅ ᐊᐳᑎᐅᕙᒃᑐᖅ ᖃᐅᔨᓴᖅᑕᐅᑦᑎᐊᕐᓯᒪᙱᓗᐊᖅᓗᓂ ᑕᐃᒪᙱᑦ ᓯᕗᓪᓕᐅᓂᑯᑦ ᑕᕆᐅᕐᒥᐅᑕᓂ ᖃᐅᔨᓴᕈᑎᑦ 1960-ᖏᓐᓂ ᐊᒻᒪ 1970-ᖏᓐᓂ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᕐᓯᒪᖕᒪ ᐊᒻᒪᓗ ᐊᓯᔾᔨᕈᑎᐅᓗᐊᖅᑐᖅ ᑕᕆᐅᕐᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑐᑭᓯᓯᒪᔭᐅᓗᐊᙱᒪᒃᑕ. ᐱᔾᔪᑎᒋᔭᐅᓗᐊᕐᑐᖅ ᐱᓕᕆᐊᒧᑦ ᓄᑖᙳᕆᐊᖅᑎᑦᑎᓇᓱᒃᓱᑎ ᑲᓇᑕᐅᑉ ᐅᑭᐅᕐᑕᖅᑐᖓᑕ ᑕᕆᐅᖓ ᖃᓄᐃᓕᖓᓂᖓᓂ ᓴᖅᑭᑎᑦᑎᓇᓱᒃᓱᑎᒃ. ᖃᐅᔨᓴᕈᑎᒋᔭᕗᑦ ᕿᒥᕈᐊᕈᑎᒋᓂᐊᖅᑕᕗᑦ ᐊᕝᕙᖅᑕᐅᓚᐅᖅᓯᒪᓂᑯᓄᑦ ᐊᕐᕋᒍ 50 ᓯᕗᓂᐊᓂ ᑐᑭᓯᓇᓱᒃᓗᑕ ᖃᓄᖅ ᑕᒪᓐᓇ ᓯᓚᐅᑉ ᐊᓯᙳᖅᐸᓪᓕᐊᓂᖓᓄᑦ ᖃᓄᐃᐸᓪᓖᓕᖅᓯᒪᔭᕆᐊᒃᓴᖓᓂᒃ. ᖃᐅᔨᓴᕈᒪᓕᓪᓗᑕ ᖃᓄᖅ ᑕᕆᐅᖅ ᐊᒃᑐᐃᓂᖃᖃᑦᑕᕐᒪᖔ ᐊᐅᔪᐃᑦᑐᓂ ᓯᑯᑐᖃᓗᙵᓂ ᐊᒻᒪᓗ ᐊᒃᑐᐃᔾᔪᑎᐅᔪᓂ ᓯᑰᑉ ᖄᖅᑕᕆᕙᒃᑕᖓᓄᑦ.ᑕᒪᒃᑯᐊ ᐱᓕᕆᐊᕆᓂᐊᕐᓗᒋ ᑐᒃᓯᕋᐅᓯᐅᓚᐅᕐᕋᑦᑕ ᖃᐅᔨᓴᕈᑎᒋᓂᐊᖅᑕᑦᑎᓐᓂ ᑎᓴᒪᐅᓕᖓᓂᐊᕐᓗᓂ ᐱᓕᕆᐊᖅᑲᕐᓂᖅ. ᑐᒃᓯᕋᐅᓯᐅᖅᑕᐅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᒃᓴᓂ ᐱᓕᕆᕝᕙᐅᓂᐊᖅᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᓄᓇᙵᐊᕐᒥ ᐊᑖᓃᑦᑐᒥ. ᓯᕗᓪᓕᖅᐹᖅ ᐱᓕᕆᓂᖅ ᐊᒻᒪ ᑎᓴᒪᒋᔭᐅᔪᖅ ᐱᓕᕆᓂᖅ ᐱᓕᕆᓂᐅᓂᐊᖅᑐᖅ ᓯᑯᓯᐅᑎᒥ ᑎ ᒍᕈᓯᓕᐅᑉ (Des Groseilliers) ᐊᕐᕋᒍᒧᑦ ᐱᕐᑯᑎᓂᒃ ᐃᐅᓇᑲᒧᑦ ᐅᓯᑎᓪᓗᒋᑦ 2024 ᐊᒻᒪ 2025 ᐊᐅᔭᖏᓐᓂ. ᐅᒥᐊᕐᔪᐊᕐᒥ ᕐᑯᓪᓗᒃᑎᑦᑎᖃᑦᑕᕐᓂᐊᖅᑐᒧᑦ ᖃᐅᔨᓇᓱᒍᑎᒥ ᓯᓚ ᖃᓄᐃᓐᓂᖓᓂ (CTD) ᑲᑎᑦᑎᓇᓱᒃᓗᑕ ᓯᓚᐅᑉ ᐅᖅᑰᓇᕐᓂᖓᓂ, ᑕᕆᐅᖃᕐᓂᖓᓂᒃ ᐊᒻᒪ ᐊᓯᖏᓐᓂᒃ ᖃᓄᐃᓕᕈᑎᐅᕙᒃᑐᓂᒃ ᐃᒪᖅ ᖃᓄᐃᓕᖓᔭᕆᐊᒃᓴᖓᓂᒃ. ᐊᐃᑉᐸᖓ ᐊᒻᒪ ᐱᖓᔪᒋᔭᖓ ᐱᓕᕆᓂᐅᔪᑦ ᐃᐅᓇᑲᐅᑉ ᖃᓂᒋᔭᖓᓂ ᐱᓕᕆᐊᖑᓂᐊᕐᑐᖅ ᐅᑭᐅᒃᑯᑦ ᐊᒻᒪ ᐅᐱᕐᖔᒃᑯᑦ. ᐅᑭᐅᒃᑯᑦ ᐱᓕᕆᓂᖅ ᕿᓚᒥᕈᓘᓇᔭᕐᑐᖅ ᐊᒻᒪᓗ ᓯᑯᒧᐊᕐᓯᓇᔭᖅᓱᑎᒃ ᐃᐅᓇᑲ ᓴᐅᓐᒥ ᖃᐅᔨᓴᖅᐸᓪᓕᐊᔾᔪᑎᒋᓂᐊᖅᑐᒥ ᑕᕆᐅᕐᒥ ᐊᒻᒪ ᓯᑯᒦᑦᑐᖅ ᓂᓚᒃ ᖃᓄᐃᐸᓪᓕᐊᖓᒪᖔ ᐅᑭᐅᓕᒫᖅ. ᐅᐱᕐᖔᒥᓪᓕ ᐃᓱᒪᔪᒍ ᐊᖏᓪᓕᒋᐊᕈᒪᓪᓗᑎᒧᑦ ᕐᑯᓪᓗᒃᑎᑦᑎᖃᑦᑕᕐᓂᕐᒧᑦ ᖃᐅᔨᓇᓱᒍᑎᒥ ᓯᓚ ᖃᓄᐃᓐᓂᖓᓂ (CTD) ᖃᐅᔨᓴᕗᒃᓴᑖᕋᓱᖓᓂ ᖃᐅᔨᓴᕐᕕᒋᔭᐅᔪᒥ ᐊᒻᒪᓗ ᖃᓂᒋᔭᖏᓐᓃᑦᑐᓂᒃ ᐃᒪᕐᓂ ᐊᒻᒪ ᓂᓚᖓᓂ ᐊᒻᒪᓗ ᖃᐅᔨᓴᑲᑕᒡᓗᒍ ᓯᑯ ᑕᕆᐅᕐᒦᑦᑐᕐᓗ ᖃᓄᐃᐸᓪᓕᐊᖓᒪᖔᑕ ᓯᑯᑐᖃᓗᐃᑦ ᖃᓂᒋᔭᖏᓐᓂ. ᐅᒥᐊᕐᔪᐊᖅ ᑎ ᒍᕈᓯᓕᐅᑉ (Des Groseilliers) ᐊᑐᐃᓐᓇᐅᑎᑕᐅᓂᐊᖅᑐᖅ ᒪᕐᕉᖕᓄᑦ ᖃᐅᔨᓴᖅᑏᖕᓄᑦ, ᑭᓯᐊᓂᓕ ᐅᓄᕐᓂᖅᓴᐃᑦ ᐅᑭᐅᒃᑯᑦ ᐅᐱᕐᖔᒃᑯᓪᓗ ᖃᐅᔨᓴᓕᕚᖓᑕ ᐃᐅᓇᑲᐅᑉ ᖃᓂᒋᔭᖏᓐᓂ ᐱᓕᕆᖃᑦᑕᕐᓂᐊᖅᑐᑦ. ᐃᖅᑲᓇᐃᔭᖅᑎᑖᕈᒪᕙᑦᑕ ᖃᓂᑦᑐᒥ ᓄᓇᖅᑐᓂ ᓯᑯᒥ ᖃᐅᔨᒪᑦᑎᐊᕐᓗᓂ ᐅᕙᑦᑎᓐᓂ ᐃᓚᐅᓂᐊᖅᑐᒥ ᒪᕐᕉᖕᓂ ᐱᓕᕆᓂᐅᓂᐊᖅᑑᖓᓂ ᐊᒻᒪᓗ ᐊᐅᓯᐃᑦᑐᖅᒥᐅᑦ ᖃᐅᔨᑎᓯᒪᓕᖅᓱᑎᒧᑦ ᑖᔅᓯᒥᖓ ᐱᓕᕆᐊᒃᓴᐅᔪᓐᓇᖅᑐᒥ. ᐊᒻᒪᓗ ᐅᖃᖃᑎᖃᕐᓯᒪᔪᒧᑦ ᐊᐅᓪᓚᕈᔾᔨᕙᒃᑐᒥ ᐊᐅᓯᐃᑦᑐᕐᒥ 2025-ᒥ ᐊᐅᓪᓚᕈᔾᔩᓚᖅᑐᒥ ᐱᕐᑯᑎᒃᑲᓐᓂᕐᓂ ᓇᒃᓴᒃᑲᓐᓂᑐᐃᓐᓇᓇᐊᖃᕐᓂᑦᑎᓐᓂ ᓯᓚᒥ ᖃᐅᔨᓴᕈᑎᒃᓴᓂᒃ ᖃᐅᔨᓇᓱᒍᑎᒥ ᓯᓚ ᖃᓄᐃᓐᓂᖓᓂ (CTD) ᐃᖏᕐᕋᑲᑕᒋᐊᖃᖅᑎᓪᓗᒍ. ᒥᑭᑦᑐᓂ ᐱᓕᕆᐊᖃᕐᓂᐊᕋᓗᐊᖅᑎᓪᓗᒋᑦ ᐅᓇ ᐸᒡᕕᓵᓇᓐᓇᙱᑦᑐᖅ ᖃᐅᔨᓴᖅᑕᐅᔪᒃᓴᓂ ᐱᑲᑕᒐᓱᖕᓂᖅ ᐊᒻᒪᓗ ᐃᓄᖃᙱᑦᑐᒦᓐᓂᐊᖅᓱᑎᒃ ᑲᓇᑕᐅᑉ ᐅᑭᐅᕐᑕᖅᑐᖓᓂ ᑕᐃᒪᓕ ᐊᒃᑐᐃᓂᖃᓗᐊᕝᔫᙱᑦᑐᖅ ᐊᕙᑎᒋᔭᐅᔪᒥᑦ, ᐆᒪᔪᓂᒃ ᐊᒻᒪᓗ ᐃᓄᙵ. ᑲᑎᑕᐅᕙᓪᓕᐊᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᐊᖅᑐᑦ ᐊᒻᒪ ᐸᐸᑕᐅᓗᑎᒃ ᓯᓚᑦᑐᖅᓴᕐᕕᐊᓗᒃᒥ ᒫᓂᑑᐸᒥ ᐊᒻᒪ ᑐᓴᐅᒪᑎᑦᑎᔾᔪᑎᐅᓂᐊᖅᓱᓂ ᓄᓇᕘᒻᒥ ᖃᐅᔨᓴᖅᑐᓕᕆᔨᓄᑦ ᑲᑎᒪᑲᑕᓕᖏᓐᒪᑕ ᓄᓇᓕᙵᓂ ᖃᓂᒋᔭᖏᓐᓃᑦᑐᓂᒃ ᐊᒻᒪᓗ ᑲᓇᑕᒥ ᑲᑎᒪᕝᕕᔪᐊᖅᑎᓪᓗᒋᑦ (ArcticNet).ᐅᓇ ᐱᓕᕆᐊᒃᓴᖅ ᐱᕕᖄᕈᑎᐅᔪᓐᓇᖅᑐᖅ ᑕᕆᐅᓕᕆᓂᕐᒥ ᖃᐅᔨᕚᓪᓕᕈᑎᐅᓗᓂ ᑲᓇᑕᐅᑉ ᐅᑭᐅᕐᑕᖅᑐᖓᓂ, ᑕᒪᓐᓇᓗ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᙱᓗᐊᖅᓗᓂ ᑭᓯᐊᓂᓕ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓯᒪᒻᒪᑕᒃᓗᓂ ᑕᐃᒪᙱᓐᓂ ᑭᖑᓪᓕᖅᐹᒥ ᑕᕆᐅᓕᕆᓂᕐᒧᑦ ᖃᐅᔨᓴᓚᐅᕐᓯᒪᖕᒪᑕ ᐊᕐᕋᒍ 50 ᑭᖑᓂᖓᓂ. ᑐᒃᓯᕋᐅᓯᐅᓚᐅᕐᕋᑦᑕ ᖃᐅᔨᓴᖅᑕᐅᔪᒃᓴᓕᕆᓂᕐᒧᑦ ᐸᕐᓇᐅᓯᐅᖅᓱᑕ ᐱᓕᕆᐊᒧᑦ ᐊᑐᖅᑕᐅᓕᕐᔭᖅᑐᒥ ᐃᓱᒫᓘᑎᒋᔭᐅᔪᓄᓪᓗ ᓄᓇᖃᖅᑐᓂᒃ ᑕᒫᓂ.

Inuinnaqtun: Not applicable - this project is taking place in Northern Baffin.

Personnel

Personnel on site: 4
Days on site: 40
Total Person days: 160
Operations Phase: from 2024-07-24 to 2025-08-17

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Nansen Sound, Eureka Sound and surrounding area.	Scientific/International Polar Year Research	Marine	N/A	NA - working in the marine environment.	Grise Fiord and Resolute are the nearest communities, but are several hundred kilometres away.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Grise Fiord	Jarloo	N/A	2024-04-15
Grise Fiord	Terry Noah	N/A	2024-04-15

Authorizations

Indicate the areas in which the project is located:

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Research Institute	We have submitted our application for the physical/natural sciences research license.	Applied, Decision Pending		
Nunavut Water Board	We are currently attempting to contact the NWB to apply for an exemption, but their website is not working and they have yet to answer our emails. We will keep trying.	Not Yet Applied		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	Canadian Coast Guard vessel, snowmobiles and helicopters.	

Project accomodation types

Other,

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Snowmobiles	4	200 x 100 x 80 cm	Access to sampling sites around the study area during winter and spring field programs on the landfast ice.
Coast Guard Ice Breaker	1	Large	We plan to work from the CCGS Des Groseilliers during its annual re-supply to Eureka. We are not expanding the travel of the ship but rather operating during its planned voyage.
Helicopter	1	Large	Access to sampling sites during spring, particularly near the glacier termini. This will be coordinated with PCSP.
Ice Augers	1	100 x 50 x 50 cm	Ice Augers will be used during winter and spring to both sample the ice and sample the underlying ocean. WE use ION electric augers to avoid the use of gasoline.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Aviation fuel	fuel	4	200	800	Liters	Use for fuelling helicopters during the spring program. Will be arranged with PCSP.
Gasoline	fuel	5	200	1000	Liters	Use for fuelling snowmobiles during the winter and spring programs.

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0	A small volume of water samples will be collected by Nissan sampling bottles during winter and spring programs.	A few sites across the study area.

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Scientific/International Polar Year Research	Combustible wastes	<1 m3	All waste will be discarded following the guidance of the Canadian Coast Guard and Eureka Weather Station. This includes combusting, transporting back south and human waste.	N/A

Environmental Impacts:

This project will lead to very minimal environmental impacts. We are operating onboard the CCGS Des Groseilliers during summer ad from Eureka during winter/spring and will follow their lead on disposing of waste. Really the only risk stems from refuelling snowmobiles, but care is taken during this procedure and an appropriate spill kit will be readily available should a small amount of fuel spill.

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

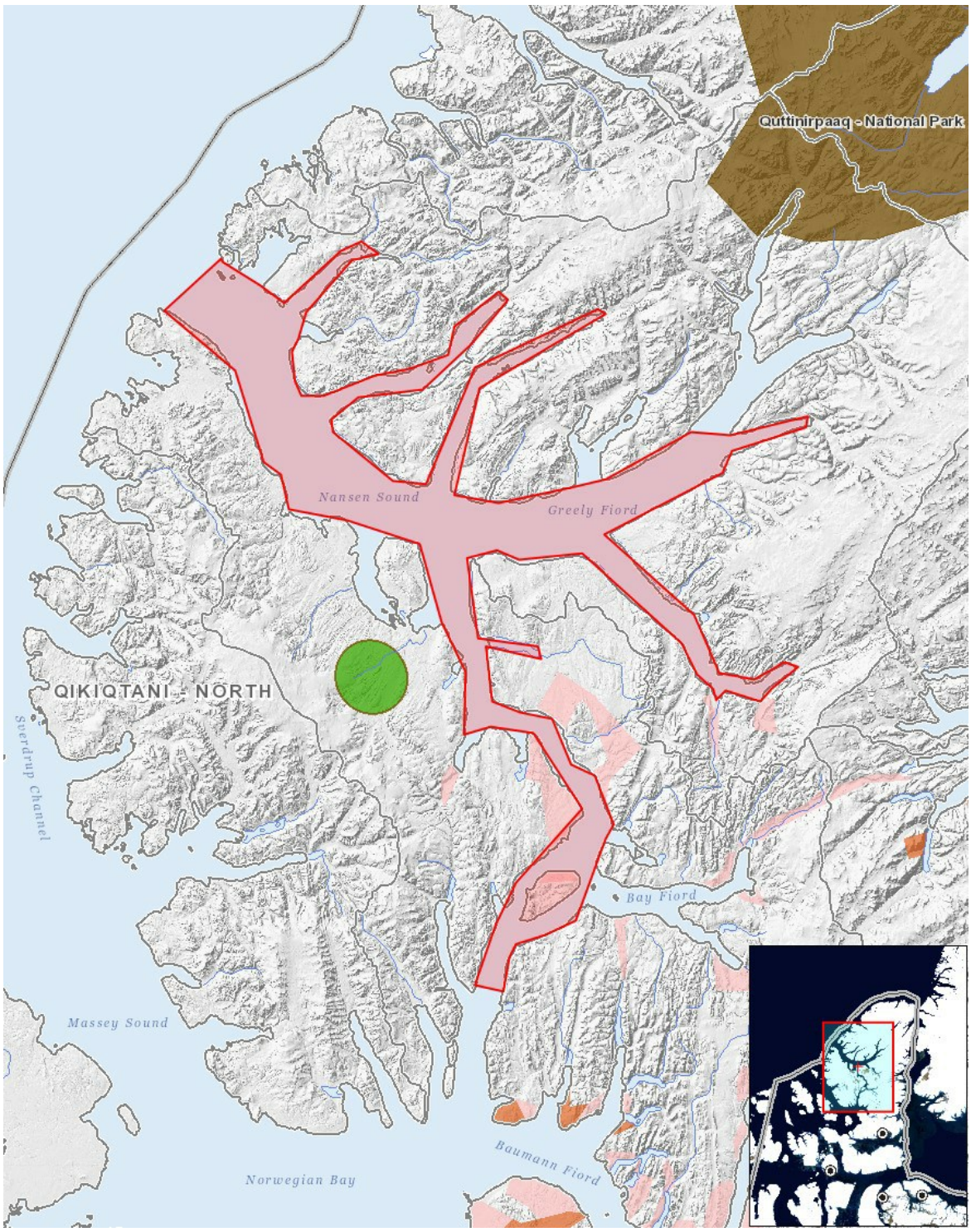
Impacts

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																									
Scientific/International Polar Year Research		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	Nansen Sound, Eureka Sound and surrounding area.