NIRB Application for Screening #125235

Community-driven Sea Ice and Ocean Research in the Contrasting Coastal Domains of Hudson Bay

Application Type:	New
Project Type:	Scientific Research
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Proposed Authorization:	from 0001-01-01 to 0001-01-01
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DETAILS

Non-technical project proposal description

English: The proposed project represents a collaboration between University of Manitoba (UofM), Arctic Eider Society (AES), and Northern communities around Hudson and James Bay. This project builds on the highly successful network of community driven winter oceanography and ice monitoring research programs in Sanikiluaq, Kuujjuarapik, Inukjuak, Umiujaq, and Chisasibi to Chesterfield Inlet and Naujaat. The communities of Chesterfield Inlet and Naujaat were logical choices to expand this existing project because the northwest coastal region of Hudson Bay is very different from the southeast, allowing for comparisons between the two regions. For example in the southeast, large rivers, many regulated by hydroelectricity, deliver great amounts of freshwater to the coastal zone influencing the oceanography, sea-ice, and ecosystem processes. Chesterfield Inlet and Naujaat are upstream and thus are not expected to be impacted by regulated rivers such as the Nelson and La Grande. Chesterfield Inlet and Naujaat are also located near the northwest Hudson Bay polynya; an area of intense sea-ice production, which is thought to play an important role in circulation and may help support the abundance of marine organisms in this region. Additionally, local hunters have reported thinner sea ice conditions, later ice freeze up and earlier breakup, and unpredictable travel conditions near the communities of Chesterfield Inlet and Naujaat. This project will contribute to the development of baseline data that can be used to assess and respond to climate change including changing sea-ice and ocean conditions. The objective of this project is to expand the highly successful community-driven research in eastern Hudson Bay to northwest Hudson Bay (Chesterfield Inlet and Naujaat), with a goal towards establishing comparison sites in eastern and western Hudson Bay. This comparison will support bay-wide monitoring objectives, promote inter-jurisdictional information exchange, and help test scientific hypotheses about contrasting oceanography and marine life between northwest and southeast Hudson Bay. Sampling of coastal sea water (no more than 600 L of water will be collected) and sea ice will take place from the land fast ice during the winter months (January-March 2018 and 2019) and spring (April-June 2018). Working closely with experienced local hunters, we will travel to our sampling sites by snowmobile. Sampling locations will be selected in consultation with communities. The communities of Chesterfield Inlet and Naujaat have been involved since the proposal stage (January-March 2017). Additional consultation was scheduled for November 2017, however due to blizzards community meetings have been postponed to January or February 2018. Data collection will include: i) temperature and salinity profiles of the water column, ii) water samples collected from various depths in the water column for analyses of nutrients, salinity, naturally occurring water mass tracers (e.g., forms of oxygen), and carbon; iii) installation of oceanographic equipment. The oceanographic equipment will include temperature and salinity probes, and equipment to measure water currents and ice growth. This equipment will be attached along a weighted rope corresponding to various depths in the sea-ice and water column. The rope and equipment will be lowered into the water and securely attached to the sea-ice. The equipment will be deployed in February 2018 and retrieved in May 2018. This project is in partnership with communities and knowledge exchange will be on going throughout the project. Similar to the community driven research in Sanikiluaq and communities in eastern Hudson Bay, metadata, CTD and ice data will be shared in near real time using AES' publicly accessible Interactive Knowledge Map (IK-MAP) and new SIKU platform. Results will also lead to scientific publications and presentations, as well as plain-language materials to be circulated in participating communities and to regional Inuit associations (translated into Inuktitut). Additionally, metadata will also be available on the Polar Knowledge Catalogue.

French: N/A

Inuktitut: ᐱᓕᕆᐊᖑᔪᒪᔪᖅ ᐱᓕᕆᖃᑎᒌᖕᓂᖃᖅᑐᖅ ᓯᓚᑦᑐᖅᓴᕐᕕᒡᔪᐊᖅ ᒫᓂᑑᐸᒃᑯᑦ (UofM), ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᒥᑏᑦ ᒥᒃᓵᓄ ᑲᑐᔾᔨᖃᑎᒌᒃᑯᑦ (AES), ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᓄᓇᓕᐅᔪᓂᑦ ᑕᓯᐅᔭᕐᔪᐊᕐᒥᑦ ᐊᒻᒪᓗ ᔮᐃᒻᔅ ᐸᐃᒥᑦ. ᐱᓕᕆᐊᖅ ᐊᑐᖅᑐᖅ ᐱᐊᓂᑦᑎᐊᖅᓯᒪᔪᕐᒥᑦ ᐱᓕᕆᖃᒌᖕᓂᐅᔪᓂᑦ ᓄᓇᓕᖕᒥᑦ ᐱᓕᕆᐊᖑᔪᓂᑦ ᑕᕆᐅᓕᕆᓂᕐᒥᒃ ᐊᒻᒪᓗ ᓯᑯᒥᒃ ᖃᐅᔨᓴᐃᖃᑦᑕᕐᓂᕐᒧᑦ ᑐᕌᖓᔪᓂᑦ ᓴᓂᑭᓗᐊᕐᒥᑦ, ᑰᔾᔪᐊᕌᐱᖕᒥᑦ, ᐃᓄᒃᔪᐊᕐᒥᑦ, ᐅᒥᐅᔭᕐᒥᑦ, ᐊᒻᒪᓗ ᑦᓯᓴᓯᐱᒥᑦ ᐃᒡᓗᓕᒑᕐᔪᖕᒧᑦ ᐊᒻᒪᓗ ᓇᐅᔮᕐᒧᑦ. ᐃᓗᐊᓚᐅᕐᒪᑎᒃ ᐃᒡᓗᓕᒑᕐᔪᒡᓗ ᓇᐅᔮᓪᓗ ᓂᕈᐊᖅᑕᐅᓚᐅᖅᑑᒃ ᐊᖏᓕᒋᐊᖅᑎᑦᑐᒪᑉᓗᒍ ᐱᓕᕆᐊᖑᔪᖅ ᐱᔾᔪᑎᒋᑉᓗᒍ ᐅᐊᖕᓇᖅᐸᓯᖅ ᐱᖓᖕᓇᖅᐸᓯᖅ ᓯᒻᔭᖓ ᑕᓯᐅᔭᕐᔪᐊᑉ ᐊᔾᔨᒌᙱᑦᑎᐊᕐᒪᒍ ᓂᒋᖅᐸᓯᕐᒥᑦ ᑲᓇᖕᓇᖅᐸᓯᕐᒥᑦ,

ᖃᓄᐃᓐᓂᖅᓴᐅᓂᖕᒪᓂᓕᓇᔪᖕᓇᖅᓱᑎᒃ ᑖᑉᑯᐊᒃ ᒪᕿᒃ ᐃᓂᐅᔪᓂᑦ. ᐆᒃᑑᑎᒥᓗᒍ ᓂᒥᖅᐸᓯᕐᒥᑦ ᑲᓇᖕᓇᖅᐸᓯᕐᒥᑦ ᐱᑕᖃᖅᑐᖅ, ᒪᕿᒃ ᑰᒃᔪᐊᖅᑑᖕᓂᒃ, ᐊᒥᓱᑦ ᐋᖅᑭᐅᒪᔪᒃᑯᑦ ᐃᒪᕐᒥᒃ ᐊᑐᖅᓱᑎᒃ ᐆᒪᖅᑯᑎᖃᖅᑐᑦ, ᐃᒪᑦᑎᐊᕙᒃᓚᒃ ᓯᓪᓴᖅᐸᓯᖕᒧᐊᖃᑦᑕᖅᓱᓂ ᑕᓇᐅᕐᒧᑦ, ᑕᓇᐅᖅ ᓯᑯᓯᒪᔪᕐᒧᑦ, ᐊᒻᒪᓗ ᐱᕿᖅᐸᓪᓕᐊᖅᑲᑎᑭᖕᓂᖅᑲᖅᑐᓂᒃ ᐆᒪᓂᖅᑲᖅᑐᓄᑦ. ᐃᓪᓗᓕᒫᖅᔪᓪᓗ ᓇᐅᔾᔫᓪᓗ ᑕᒃᐸᐅᖕᒪᖕᒪᖕᒪᑕ ᑕᐃᒪᓐᓇᒎᓗ ᓂᓇᐅᒥᔭᐅᙱᑦᑐᖅ ᐊᒃᑐᖅᑕᐅᓂᐊᖅᓂᕐᒥᓐᓄᑦ ᐋᖅᑭᐅᒪᓂᖅᑲᖅᑐᓂᑦ ᑰᖕᓄᑦ ᓲᕐᓗ ᓂᐅᑦᓴᓐ-ᑐᑦ ᐊᒻᒪᓗ ᓚᒍᖀᓐ-ᑐᑦ. ᐃᓪᓗᓕᒫᖅᔪᓪᓗ ᓇᐅᔾᔫᓪᓗ ᐃᓂᐅᔪᒦᓪᒪᑎᒃ ᖃᓂᖕᒪᓂᑦ ᐅᐊᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᐱᖕᒪᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᑕᓯᐅᔭᖅᔪᐊᖅᒥᑦ ᓯᑯᓯᐃᑦᑐᒧᑦ ᐊᕙᑕᖕᒪᓂᑦ ᓯᑯᑕᖅᑲᐅᖅᓱᓂ; ᐃᓂᐅᔪᖅ ᑕᓇᐅᕐᒥᑦ ᓯᑯᓕᐅᖅᓂᖅᑲᑦᑎᐊᖅᓱᓂ, ᐱᓪᒪᓇᐅᔪᒥᒃ ᐊᐅᓚᓐᓂᖅᑲᕿᓯᒥᔭᐅᑉᓱᓂ ᓇᒍᙵᐅᓂᐅᔪᓂᒃ ᐊᒻᒪᓗ ᐃᑲᔪᖅᓂᖅᑲᕈᖕᓇᖅᓱᓂ ᐱᑕᖅᑲᐅᑦᑎᐊᖅᓂᕐᒥᓐᓄᑦ ᑕᓇᐅᖅᒥᐅᑕᐃᑦ ᐆᒪᔪᕿᓛᓂᒃ ᑖᓪᕙᓂ ᐃᓂᐅᔪᒥᑦ. ᐊᒻᒪᓗ, ᒪᖃᐃᑏᑦ ᐅᖃᖃᑦᑕᖅᓯᒪᔪᑦ ᕖᓐᓂᖅᓴᒥᒃ ᓯᑰᖃᑦᑕᖅᓂᖕᒪᑦ, ᓯᑯᐊᓚᐃᓐᓂᖅᓴᐅᑉᓱᓂ ᐊᒻᒪᓗ ᓯᖁᑉᑎᐊᓚᓂᖅᓴᐅᑉᓱᓂ, ᐊᒻᒪᓗ ᓇᓄᓇᖅᑲᑦᑕᖅᓱᑎᒃ ᐊᑐᖅᑕᐅᔪᖕᓇᖅᓯᓂᖕᒪᓄᑦ ᓯᑯ ᖃᓂᑕᖅᒥᓐᓂᑦ ᐃᓪᓗᓕᒫᖅᔫᑉ ᐊᒻᒪᓗ ᓇᐅᔾᔫᑉ. ᑖᓐᓇ ᐱᓕᕆᐊᖅ ᐃᑲᔪᖅᓯᖅᓯᓂᐊᖅᑐᖅ ᑭᓪᓕᐅᔪᓂᒃ ᓈᓴᐅᑎᓂᒃ/ᑎᑎᖅᑲᓕᐅᕆᓂᖅᒧᑦ ᐊᑐᖅᑕᐅᔪᖕᓇᖅᓯᓂᐊᖅᑐᓂᒃ ᖃᐅᔨᓴᐃᓂᐊᖅᓱᑎᒃ ᐊᒻᒪᓗ ᑲᒪᒋᓂᐊᖅᓱᒥᑦ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖕᒪ ᐃᓚᐅᖅᓱᑎᒃ ᐊᓯᐊᙳᖅᐸᓪᓕᐊᓂᖕᒪ ᑕᓇᐅᖅᒥᑦ ᓯᑰᑉ ᐊᒻᒪᓗ ᑕᓇᐅᑉ ᖃᓄᐃᓐᓂᖕᒪᓂᑦ. ᐱᓕᕆᐊᑉ ᑐᕌᒐᓇᔭᖕᒪ ᐊᖕᒥᓪᓕᒥᐊᖅᑐᒍ ᐱᐊᓂᑦᑎᐊᖅᓯᒪᔪᖅ ᓄᓇᓕᖕᒥᑦ ᐊᐅᓚᑕᐅᔪᖅ ᖃᐅᔨᓴᐃᓂᖅ ᑲᓇᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᑕᓯᐅᔭᖅᔪᐊᖅ ᐅᐊᖕᓇᖕᒪᓂᑦ ᐱᖕᒪᖕᓇᖅᐸᓯᖕᒪᓄᑦ ᑕᓯᐅᔭᖅᔪᐊᖅ (ᐃᓪᓗᓕᒫᖅᔪᒃ ᐊᒻᒪᓗ ᓇᐅᔾᔫᑦ), ᓴᖅᑭᑦᑎᓂᐊᖅᓱᑎᒃ ᖃᓄᐃᓐᓂᖅᓴᐅᓂᐅᔪᓂᒃ ᐃᓂᐅᔪᑦ ᒥᒃᓵᓄᑦ ᑲᓇᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᐊᒻᒪᓗ ᐱᖕᒪᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᑕᓯᐅᔭᖅᔪᐊᖅ. ᖃᓄᐃᓐᓂᖅᓴᐅᔪᓕᓇᓂᖅ ᐃᑲᔪᐃᓂᖅᑲᖅᓂᐊᖅᑐᖅ ᓯᓪᓴᓂᒃ ᖃᐅᔨᒥᐊᖅᑲᑦᑕᖅᓂᖅᒧᑦ ᑐᕌᒐᓇᔭᐅᔪᓂᒃ, ᐊᕕᒃᑐᖅᓯᒪᔪᐃᑦ ᑐᓂᓯᖅᑲᑦᑕᐅᑎᓗᑎᒃ ᑐᑭᓯᐅᒪᔾᔪᑎᓂᒃ, ᐊᒻᒪᓗ ᐃᑲᔪᖅᓗᓂ ᓱᓇᑐᐃᓐᓇᓕᓂᖅᒧᑦ ᐃᓱᒪᒋᔭᐅᔪᓂᒃ ᐊᔾᔨᒌᙱᑦᑐᓕᓂᖅᒧᑦ ᑕᓇᐅᖅᒥᑦ ᐊᒻᒪᓗ ᑕᓇᐅᖅᒥᐅᑕᐃᑦ ᐆᒪᔪᓂᒃ ᐅᐊᖕᓇᖕᒪᓂᑦ ᐱᖕᒪᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᐊᒻᒪᓗ ᓂᒥᐊᓂᑦ ᑲᓇᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᑕᓯᐅᔭᖅᔪᐊᖅ. ᐋᖅᑭᐅᒪᔪᓕᓂᖅ:ᐆᒃᑐᕋᐃᓂᖅ ᓯᓪᓴᐅᑉ ᐃᒪᖕᒪᓂᑦ ᐊᒻᒪᓗ ᓯᑯᒥᑦ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᖅ ᓄᓇᒥᑦ ᓯᑯᐊᓚᔪᒥᑦ ᐅᑭᐅᒃᑯᑦ (ᔭᓄᐊᓕ-ᒥᑦ ᒫᑦᓯ-ᒧᑦ, 2018 2019) ᐊᒻᒪᓗ ᐅᐱᕐᖔᒃᑯᑦ (ᐄᐳᓕ-ᒥᑦ ᔫᓂ-ᒧᑦ 2018). ᐱᓕᕆᐊᒃᑎᒥᓗᒥᑦ ᒪᖃᐃᑎᐅᔪᑦ, ᓯᕿᑑᒃᑯᑦ ᐃᖕᒥᖅᑫᓴᓪᓗᑕ ᐆᒃᑐᕋᐃᕝᕕᒥᓂᐊᖅᑕᑉᑎᖕᓄᑦ. ᐆᒃᑐᕋᐃᕝᕕᐅᓂᐊᖅᑐᑦ ᓂᕈᐊᖅᑕᐅᓂᐊᖅᑐᑦ ᐅᖃᖅᑲᑎᒥᓗᒥᑦ ᓄᓇᓕᖕᒥᐅᑕᐃᑦ. ᐃᓪᓗᓕᒫᖅᔪᓪᓗ ᓇᐅᔾᔫᓪᓗ ᐃᓚᐅᖃᑕᐅᓯᒪᓕᖅᑑᒃ ᑕᐃᒪᙵᓂᑦ ᑐᒃᓯᕋᐅᓯᐅᖅᓯᒪᓕᖅᒪᑕ (ᔭᓄᐊᓕ-ᒥᑦ ᒫᑦᓯ-ᒧᑦ, 2017 ᒥᑦ). ᐅᖃᖃᑎᖃᒃᑲᓐᓂᖅᓂᐊᓚᐅᖅᑰᓚᐅᕐᓗᐊᑦ ᓄᕝᕕᓇ 2017-ᒥᑦ, ᑭᓯᐊᓂ ᐱᖅᓯᖃᑦᑕᖅᓂᖅᒧᑦ ᓄᓇᓕᖕᒥᑦ ᑲᑎᒪᔩᑦ ᐅᖓᓯᒃᓯᒥᐊᖅᑕᐅᓚᐅᖅᑐᑦ ᔭᓄᐊᓕ 2018-ᒧᑦ. ᓈᓴᐅᑏᑦ/ᑎᑎᖅᑲᐃᑦ ᑲᑎᑕᐅᔪᓂᑦ ᐃᓚᐅᓂᐊᖅᑐᑦ: i) ᐆᓇᖅᓂᖕᒪ ᐊᒻᒪᓗ ᑕᓇᐅᒥᒃᑎᒥᓂᖕᒪᓂᑦ ᐃᒪᐅᑉ, ii) ᐃᒪᕐᒥᒃ ᐆᒃᑐᕋᐃᓃᑦ ᑲᑎᑕᐅᔪᓂᑦ ᐊᔾᔨᒌᙱᑦᑐᓂᑦ ᐃᑎᓂᐅᔪᓂᑦ ᓂᖅᑭᒥᔭᐅᔪᓄᑦ, ᑕᓇᐅᒥᒃᑎᒥᓂᖕᒪᓄᑦ, ᐃᖕᒥᖕᓂᑦ ᐱᔪᓂᒃ ᐃᒪᕐᒥᑦ ᐱᔾᔪᑏᑦ (ᓲᕐᓗ, ᐊᓂᖅᔫᖅᑐᖅᑕᐳᑦ), ᐊᒻᒪᓗ ᑳᐸᓐ; iii) ᐃᓕᐅᖅᑲᐃᓗᑎᒃ ᑕᓇᐅᓕᓇᓂᖅᒧᑦ ᐃᒪᖅᒥᒃ ᐱᖁᑎᓂᒃ. ᑕᓇᐅᓕᓇᓂᖅᒧᑦ ᐃᒪᖅᒥᒃ ᐱᖁᑎᓂᑦ ᐃᓚᐅᓂᐊᖅᑐᑦ ᐆᓇᖅᓂᖅᒪᓄᑦ ᐊᒻᒪᓗ ᑕᓇᐅᒥᖅᓂᖅᒪᓄᑦ ᐊᑐᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᐆᒃᑐᕋᐃᓂᕐᒥᒃ ᐃᒪᐅᑉ ᐊᐅᓚᓐᓂᖅᒪᓄᑦ ᐊᒻᒪᓗ ᓯᑯ ᐊᖅᑭᓪᓕᕙᓪᓕᐊᓂᖅᒪᓄᑦ. ᐱᖁᑏᑦ ᐊᑕᓂᐊᖅᑐᑦ ᐅᖁᒪᐃᑦᑐᒧᑦ ᐊᒃᓱᓈᖅᑐᒧᑦ ᐊᔾᔨᒌᙱᑦᑐᓂᑦ ᐃᑎᓂᐅᔪᓄᑦ ᓯᑯᒥᑦ ᐊᒻᒪᓗ ᐃᒪᖅᒥᑦ. ᐊᒃᓱᓈᖅ ᐊᒻᒪᓗ ᐱᖁᑏᑦ ᐊᑦᑎᒃᓯᑎᑕᐅᓂᐊᖅᑐᑦ ᐃᒪᕐᒧᑦ ᐊᒻᒪᓗ ᐄᖅᑕᐃᓕᑎᓪᓗᒥᑦ ᐊᑕᓗᑎᒃ ᓯᑯᒧᑦ. ᐱᖁᑏᑦ ᐅᓪᓴᖅᑕᐅᓂᐊᖅᑐᑦ ᕕᐳᐊᓕ 2018-ᒥᑦ ᐱᔭᐅᓗᑎᓪᓗ ᒪᐃ 2018-ᒥᑦ.ᓈᓴᐅᑏᑦ/ᑎᑎᖅᑲᐃᑦ ᐊᒻᒪᓗ ᐅᓂᑉᑳᓕᐅᕆᓂᖅ ᐱᓕᕆᐊᖅ ᐱᓕᕆᐊᒃᑎᒥᓂᖅᑲᖅᑐᖅ ᓄᓇᓕᖕᒥᐅᓂᑦ ᐊᒻᒪᓗ ᖃᐅᔨᒪᓂᓕᓴᐅᔪᓂᒃ ᑐᓂᓯᖅᑲᑦᑕᐅᑎᓂᖅᑲᐃᓐᓇᖅᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᖑᓂᒧᒃᑖᖅᒪᓂᑦ. ᐊᔾᔨᒥᒍᑦ ᓄᓇᓕᖕᒥᑦ ᐱᓕᕆᐊᖑᒍᓐᓂ ᖃᐅᔨᓴᐃᓂᖅ ᓴᓂᑭᓗᐊᕐᒥᑦ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂᑦ ᑲᓇᖕᓇᖅᐸᓯᖕᒪᓂᑦ ᑕᓯᐅᔭᖅᔪᐊᖅ, ᓄᓇᙳᐊᓄᑦ ᓈᓴᐅᑏᑦ/ᑎᑎᖅᑲᐃᑦ, ᑕᓇᐅᓇᖕᓂᖕᒪ, ᐆᓇᖅᓂᖕᒪ, ᐊᒻᒪᓗ ᐃᑎᓂᖅᒥᓄᑦ ᐃᒪᐅᑉ, ᐊᒻᒪᓗ ᑕᓇᐅᑉ ᓯᑯᖕᒪᓗ ᐆᒃᑐᕋᐅᑏᑦ ᑐᓂᐅᑕᐅᓂᐊᖅᑐᑦ ᐊᑐᖅᑐᓂᒃ ᒥᑏᑦ ᒥᒃᓵᓄ ᑲᑐᔾᔨᖅᑲᑎᒌᒃᑯᑦ (AES) ᐃᓄᓗᒃᑖᓄᑦ ᐱᔭᐅᔪᖕᓇᖅᑐᕐᒥᓂᑦ ᐊᑐᖅᑕᐅᓗᑎᒃ ᓄᓇᙳᐊᖅ (IK-MAP) ᐊᒻᒪᓗ ᓄᑖᖅ SIKU ᑐᙵᕕᒃ. ᖃᓄᐃᖕᒪᓂᐅᔪᑦ ᓱᓇᑐᐃᓐᓇᓕᓂᖅᒧᑦ ᐅᖃᓕᒫᒐᙳᖅᑎᑕᐅᓂᐊᖅᒥᔪᑦ ᑕᑯᖃᓈᖅᑐᐅᔪᒃᓴᓄᓪᓗ, ᐊᒻᒪᓗ ᑐᑭᓯᓇᖅᑐᓂᒃ ᐅᖃᐅᓯᓂᒃ ᐊᑐᖅᑐᓂᒃ ᑐᓂᐅᖅᑲᐅᑕᐅᓂᐊᖅᑐᑦ ᐃᓚᐅᖅᑲᐅᑕᐅᔪᓄᑦ ᓄᓇᓕᖕᓄᑦ ᐊᒻᒪᓗ ᐊᕕᒃᑐᖅᓯᒪᔪᕐᓂᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᒃᑯᓐᓄᑦ (ᐃᓄᒃᑎᑐᑦᑐᖅᓯᒪᔪᑦ). ᐊᒻᒪᓗ ᓄᓇᙳᐊᓄᑦ ᓈᓴᐅᑏᑦ/ᑎᑎᖅᑲᐃᑦ ᒪᓂᒪᓂᐊᖅᒥᔪᑦ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᖃᐅᔨᒪᓂᖅ

Inuinnaqtun: N/A

Personnel

Personnel on site: 4

Days on site: 28

Total Person days: 112

Operations Phase: from 2017-12-31 to 2019-02-26

Activities

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
General Research area of the Coastal Marine Area Near Chesterfield Inlet and Repulse Bay. Reserach will be conducted from the landfast Ice	Scientific/International Polar Year Research	Marine	N/A	In Chesterfield Inlet and Naujaat there are numerous Thule sites along the shore. Many of these sites are well marked by the community. However, our experienced local guides, will ensure we do not snowmobile near these sites, so as not to disturb these archeological sites.	This marine based, community driven, sea-ice and winter oceanographic research will be conducted from the communities of Chesterfield Inlet and Naujaat. Working from the land fast ice, we will travel with hired local guides from the communities of Chesterfield Inlet and Naujaat to sea-ice and water sampling locations. We will return each day to the community. Thus, our sampling sites will not be far from these communities.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Naujaat	Dolly Mablik	Arviq Hunters and Trappers Organization	2017-03-06
Naujaat	Robert Hedley	Hamlet of Naujaat	2017-11-07
Chesterfield Inlet	Maryanne Issalik, Harry Aggark, Barney Aggark	Aqigiq Hunters and Trapper Organization	2017-01-09
Chesterfield Inlet	Simionie Sammurtok	Hamlet of Chesterfield Inlet	2017-03-22
Chesterfield Inlet	Janice Issalik	Aqigiq Hunters and Trapper Organization	2017-09-20

Authorizations

Indicate the areas in which the project is located

Kivalliq

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Fisheries and Oceans Canada	We will require a DFO research license for our spring 2018 field work as we will be collecting ice cores that would include ice algae	Not Yet Applied		
Nunavut Research Institute	Land and Water Based Research licence	Not Yet Applied		

Project transportation types

Transportation Type	Quantity	Proposed Use	Length of Use
Air	0	We will travel to Chesterfield Inlet and Naujaat via Calm Air Scheduled flights	
Water	0	We will rely on existing community dock structures to embark and disembark local boats.	
Land	0	Local hunters/guides will be hired to transport individuals and equipment from town to sampling sites on landfast ice by snowmobile. If work takes place in the summer months, we will rely on existing community dock structures to embark and disembark local boats.	

Project accomodation types

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Local Snowmobile	4	10.2 ft long	Transportation across landfast ice to access sampling locations
Ice Auger	2	5 ft long	To make a hole in the sea ice to measure sea ice thickness and collect water samples from below sea ice

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Gasoline	fuel	30	20	600	Liters	For Snowmobiles and Ice Augers
Lithium Batteries	hazardous	1	1	1	Liters	For powering oceanographic equipment like CTD
10% Hydrochloric Acid	hazardous	1	0.5	0.5	Liters	For cleaning lab glassware and sample bottles. This will be done where we are staying and all chemicals are brought back to winnipeg for proper disposal

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
Scientific/International Polar Year Research	Hazardous	0.5 L 10% Hydrochloric Acid	The dilute acid will be brought back to University of Manitoba for appropriate disposal.	All lithium batteries will be packaged and ship back to University of Manitoba in applicable dangerous goods packaging
Scientific/International Polar Year Research	Non-Combustible wastes	40 AA lithium batteries	All lithium batteries will be brought back to the university of Manitoba for appropriate disposal.	All lithium batteries will be packaged and ship back to University of Manitoba in applicable dangerous goods packaging

Environmental Impacts:

We expect no environmental impacts from this project. We will be staying in a house in the communities and traveling with hunters on their snowmobiles each day onto the land fast sea ice. Everything we bring onto the ice will return with us. Supplies such as augers will be stored in the community, while all dangerous goods including lithium batteries and 10% hydrochloric acid will be shipped (in appropriate DG packaging) back to University of Manitoba.

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

Repulse Bay lies north of Southampton Island. From the entrance of Repulse Bay, Frozen Strait runs southeast to Foxe Basin and Roes Welcome Sound runs south-southwest between Southampton Island and the mainland to the more distant Hudson Bay. The open water (ice-free) season near Naujaat is shorter than the season near other Kivalliq communities. Between 1981 and 2010 the open water season typically ran from mid-July to mid-October, with considerable year to year variation. Southeastern Foxe Basin, east of Naujaat, sometimes contains sea ice for most of the year. Repulse Bay and Frozen Strait area has a complex oceanography due to variable depths and strong currents. Chesterfield Inlet or Igluligaarjuk is located in Fisher Bay, at the mouth of Chesterfield Inlet. The Inlet is a long (~160 km), narrow inlet that connects Baker Lake to Hudson Bay. The marine coastline near the community has many small points and bays, and there are numerous islands and rocky reefs. On average between 1981 and 2010, the open water (ice-free) season near the community ran from early July to early November, though year-to-year variation is high and the bays near the community can sometimes freeze quite early and can hold ice longer into the summer. The ice cover near Chesterfield Inlet and Roes Welcome Sound to Naujaat is a mix of landfast and mobile ice with a recurrent large polynya along the fast ice edge that is formed by prevailing winds, and presents dangerous conditions for locals travelling or hunting on the ice.

Description of Existing Environment: Biological Environment

The northwest region of Hudson Bay, including Repulse Bay and coastal waters at the mouth of Chesterfield Inlet are considered a biological hotpot of productivity in Hudson Bay. The coastal ecosystem of this region supports many larger marine mammals including Walrus, Beluga, Narwhal, and various species of seal. Anadromous Arctic Char are also abundant in the coastal waters in and near Chesterfield Inlet during the summer months. However, very little is known about the nutrient cycling, primary production and the base of the food chain near Chesterfield Inlet and Repulse Bay which support larger marine mammals and fish species.

Description of Existing Environment: Socio-economic Environment

The social and economic structure of Naujaat and Chesterfield Inlet (Igluligaarjuk) straddles traditional and modern Nunavut lifestyles. In Naujaat, Roughly 40% of the population is under the age of 15 and roughly 60% is below the age of 25. Many community residents live a fairly traditional lifestyle and the community’s business industry is relatively small. The employment rate in Naujaat is roughly 40%, the unemployment rate is roughly 34.5%, and the Hamlet is the main employer. The average income is roughly $11,000.There is currently a diamond mine in the exploratory stage one kilometer north of Naujaat. Traditional harvesting continues to play an essential role in food provisioning in Naujaat. Important harvest species include Caribou; Beluga; Ringed Seal; Narwhal; Polar Bear; and Arctic Char. For example, the Nunavut Wildlife Harvest Study of 2004 estimated that Naujaat residents harvested, on average, ~745 Caribou, ~415 Ringed seal, ~45 Narwhal, ~23 Beluga, ~12 Polar Bear, and ~4,300 Arctic Char per year between 1996 and 2001. Chesterfield Inlet contains a health centre, a school, a Co-op, and a Northern Store, but participation in traditional subsistence activities such as hunting, trapping, and fishing remains strong. Over a third of the community’s population is under 15 years of age and over two thirds of residents are under 35 years of age. The employment rate for the community is roughly 65%, the unemployment rate is roughly 16%, and the average income is roughly $20,000.Igluligaarjuk has a school and an Arctic College learning centre. With regard to industry, there is a fish processing plant in Igluligaarjuk, as well as a hotel, several retail outlets, several construction-related ventures, a health centre, and a care home. Also, some residents of Igluligaarjuk are involved with the Meadowbank gold mine near Baker Lake. Hunting and fishing are commonly practiced by Igluligaarjuk residents. This includes Caribou hunting on the surrounding land, seal hunting on the ice and at the floe edges, Char fishing, and other pursuits. There is a commercial fishery for Arctic Char in the summer and residents fish for Char year-round; much of this fishing is done in the Inlet and other marine areas near the community. Other important harvest species include Beluga, Polar Bear, and Waterfowl. Igluligaarjuk residents sometimes travel considerable distances when hunting. For example, some residents travel to Repulse Bay to hunt Narwhal. The 2004 Nunavut Wildlife Harvest Study (NWHS) provides some idea of the scale of harvesting in Igluligaarjuk: for example, NWHS estimates suggest residents harvested, on average, ~655 Caribou, ~92 Ringed seal, ~17 Beluga, ~9 Polar Bear, and ~2500 Arctic Char per year between 1996 and 2001.

Identification of Impacts and Proposed Mitigation Measures

We expect no environmental impacts from this project. We will be staying in a house in the communities and traveling with hunters on their snowmobiles each day onto the land fast sea ice. Everything we bring onto the ice will return with us. Supplies such as augers will be stored in the community, while all dangerous goods including lithium batteries and 10% hydrochloric acid will be shipped (in appropriate DG packaging) back to University of Manitoba.

Cumulative Effects

N/A

Impacts

Identification of Environmental Impacts

Construction																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Operation																									
Scientific/International Polar Year Research		-	-	-	-	P	-	-	-	-	P	-	-		-	-	-	-	-		P	-	-	-	-
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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