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Roy Mullins (SAO, Hamlet of Chesterfield Inlet)
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Dear Aqigiq HTO Board and Hamlet of Chesterfield Inlet,

We are writing to outline our plans to conduct oceanographic and archaeological research around and on Southampton Island in August 2018. Our research group includes ocean scientists from the Universities of Manitoba and New Brunswick and Fisheries and Oceans Canada, as well as archaeologists from the University of Manitoba. We think that biological production is highly concentrated in and around the Southampton Island area where large numbers of marine mammals and birds occur. Unfortunately, we know little about how the ecosystem functions in these areas as there is little available data. Our project seeks to understand why this region is so productive through a foodweb study, with particular interest in the Roes Welcome Sound, Frozen Strait and Fisher strait areas. We also believe that this ecosystem productivity benefitted the earliest Nunavummiut dating back to the Dorset period (~ 2500 years before present) thus enabling these populations to survive a major climatic shift that saw increasingly colder temperatures and an expanded sea ice environment. Thus a second goal of our work is to study the stability of the past marine ecosystem by examining human use of the region over the last 2500 years via both archaeological investigations of faunal (animal) remains and an analysis of ocean sediments that can provide a record of ecosystem production dating back 1000s of years.

In support of the foodweb study, we plan to deploy 2 oceanographic moorings between 2018 and 2020. Our preliminary aim is to place them east of Fisher Strait and just south of Roes Welcome Sound (see Figure 1); however, we would like to receive input from the board as to their thoughts regarding their placement. Each mooring will consist of sensors moored to the ocean floor by an iron train-wheel. The sensors will monitor physical and biological properties of the water column over an annual cycle. These properties will include currents, temperature, salinity, primary production, zooplankton and fish abundance, mammal sounds (passive microphone), and sediment that settles to the ocean floor. The moorings will be retrieved and re-deployed once annually for the duration of the project. We plan to visit the region during the summers of 2018, 2019, and 2020 aboard a small (64ft) research vessel to collect water samples and record oceanographic data. The data to be collected as part of this project will represent the first detailed oceanographic study of the region. We would like to ask whether there are particular aspects of the marine system that your community would like us to collect while we are nearby.

The archaeological fieldwork will consist of pedestrian foot survey to identify sites dating to the Dorset period, and possibly the preceding Pre-Dorset period (~4000 – 2500 years before present). We will also revisit some of the larger Thule Inuit sites

that exist in the area. We will use a compact terrestrial laser scanner to digitally document each identified site to create detailed surface maps and document any visible surface features. Our aim is to excavate small test units (i.e. 25 cm²) to acquire preserved faunal remains with which to understand which species were being hunted and the role these animals played in early subsistence practices and technological organization. All test pits will be backfilled and the surface of the site returned as close as possible to its original condition. All recovered materials will be safely stored in Milne's archaeology lab – ArcTec – at the University of Manitoba where they will be inventoried and analyzed. When research on the faunal remains is completed, all of the material will be returned to Nunavut's repository at the Canadian Museum of Nature in Ottawa. The archaeological field team will enlist the help of community participants and will welcome them to visit the site(s). When the fieldwork is complete, we will bring our findings to Coral Harbour and invite local stakeholders to provide their insights and understanding of the recovered materials and sites so as to initiate a community-based dialogue about the area's culture-history.

We believe the information gained by this research will help to better understand the coastal marine system that supports important country foods, like fish, seals, whales, and walrus. We anticipate that the information will help understand how sensitive the marine system will be to changes such as increased vessel traffic. We will make every possible effort to keep you informed on the project, and to develop ways that we can collaborate with community members on the research. We welcome the opportunity to discuss the project with you and would like to start by visiting Chesterfield Inlet this summer, either before or after our first research cruise during the first 2 weeks of August. We note that some project collaborators who can speak to our project's plans already plan to visit in February under the auspices of a related sea ice community based monitoring project.

We look forward to talking to you more about this soon. Thank you,

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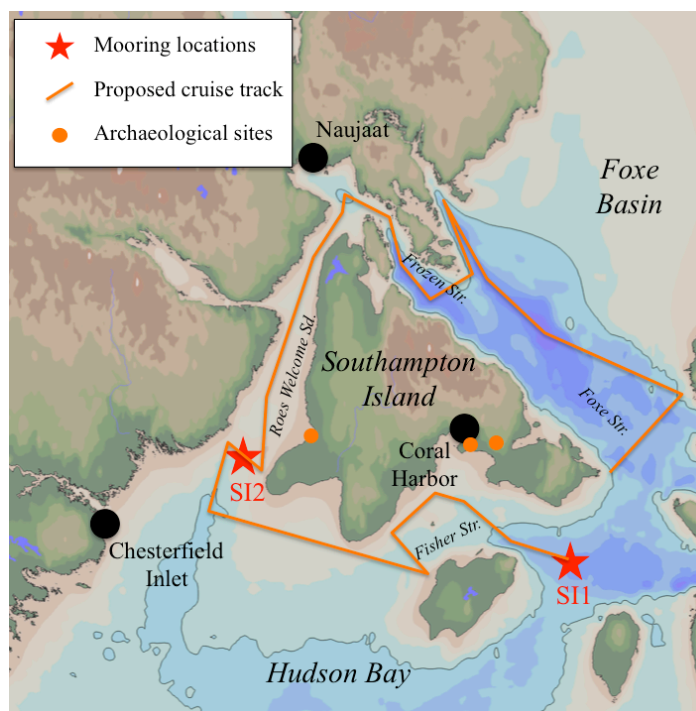


Figure 1. Map of the region of interest including our suggested mooring locations, proposed cruise track and existing archaeological sites.