NIRB Uuktuutinga Ihivriuqhikhamut #126201

Monitoring the movement, habitat use, and overall health and function of Arctic fishes across freshwater and marine ecosystems in the Cambridge Bay area

Uuktuutinga Qanurittuq:	New
Havaap Qanurittunia:	Scientific Research
Uuktuutinga Ublua:	Monday, July 7, 2025
Period of operation:	from 2025-03-19 to 2035-05-19
Havauhikhaq Ikayuqtinga:	Les Harris Fisheries and Oceans Canada 501 University Crescent Winnipeg MB R3T 2N6 Canada Hivayautit Nampanga:: 1-204-880-0421, Kayumiktukkut Nampanga::

QANURITTUT

Tukihiannaqtunik havaariyauyumayumik uqauhiuyun

Qablunaatitut: Aquatic resources - notably many fish species - are central to Inuit health, culture, and economic development. Understanding the environmental drivers of fish availability and quality in the context of a rapidly changing Arctic is essential to ensure their continued sustainability and availability. Our long-term (>15 years) research program in Cambridge Bay has documented spatial, temporal, and physiological aspects of habitat use and migrations of Arctic Char. We've used cutting-edge approaches, incorporating acoustic telemetry, genomics, ecological physiology, contaminant monitoring, and oceanography. Here, we aim to build upon these ongoing research efforts but also significantly extend the reach of our program by expanding acoustic tracking, physiological, and ecotoxicological investigations into several ecologically and culturally important fish species such as lake trout, cod (ogac) and sculpins (kanayok). Acoustic tracking will be used to monitor the movement, behaviour, and habitat use, and to identify critical habitats such as those used for spawning and overwintering in several species of importance. This method involves the implantation of small acoustic tags into the body cavity of the fish that can then be "heard" by acoustic receivers that will be deployed thought the marine and freshwater environments. Physiological measurements will be used to characterize the influence of temperature and oxygen changes (both seasonal and rapid changes) on the health and function of fishes. This work will involve measuring several parameters related to fish health such as heart function, metabolism, and energy balance. Acoustic tracking data will also provide information on temperatures experienced by fishes in the area which can be integrated with information regarding their physiology. Ecotoxicological work will be used to investigate the types and abundance of emerging contaminants, including plastics, ship- / oil-based pollution, and PFAS, in key habitats in the region in addition to the sources, fates, and transport of these contaminants. Aquatic passive samplers will be used to track sources and transport of these contaminants in the environment and biological sampling to track the fate and transport of contaminants through the ecosystem. These aquatic passive samplers compliment decades long aquatic passive sampler deployments in Nunavut through the AQUA-GAPS network and Environment and Climate Change Canada. Sampling of surface water, aquatic and thawed surface sediments, and Arctic char tissues will also be used to answer questions and concerns from the EHTO and community partners on the release of contaminants via permafrost thaw into critical fish and their habitats. Water samples will be obtained by filling 1L stainless steel, glass, and/or polyethylene water bottles (40L/year). Sediment samples will be taken by scooping sediment into 100-500ml whirl-pak bags and/or stainless steel/glass jars (20L/yr). By taking paired water and sediment samples, we will begin to understand the of contaminants that are entering critical fish habitats, and through contaminant pattern assessments begin to pin-point potential sources (e.g., permafrost thaw, wastewater effluent, shipping); thus, informing priority contaminants to monitor as the Arctic experiences rapid warming. Further, new collaborations will be built to explore the biological drivers of fish habitat quality in both freshwater and in the oceans. In lakes, we will explore how juvenile fish habitat use is linked to seasonal and diel patterns of plankton vertical migrations and abundance. Using our acoustic array in the marine environment, we will assess if kelp forests in the Cambridge Bay area are important marine summer feeding habitats for Arctic Char and other fish species. Finally, we will use environmental DNA (eDNA) methods to help characterize seasonal and spatial variation in the distribution and abundance of these fish species. Most work will be based out of the community of Cambridge Bay with personnel residing on site at the Canadian High Arctic Research Station (CHARS) except for two 5-10 day camps on the land per year. Camps will consist of 4 people with a total of 80-person camp days per year. The team has been working in close collaboration with the Ekaluktutiak Hunters & Trappers Organization (EHTO) for > 16 years and the board has provided support and will be a key partner on the project, assisting with sampling logistics (including the hiring of local experts) and in the organization of annual community outreach events. Overall, the proposed project will contribute significantly to our understanding of climate change impacts on fish and the fisheries they support. It will do so through extended long-term monitoring of contaminant trends, fish behavior and performance in relations with physicochemical habitats characteristics. Furthermore, by bridging data on lower food web and aquatic habitats, this project will also lay the foundations for an ecosystem-based management approach of culturally and economically important Arctic fish species.

Uiviititut: N/A

Inuktitut: ᐃᒫᓂ ᐃᑲᔫᑎᒃᓴᑦ – ᓇᓗᓇᐃᕐᔪᖅᑦ ᐊᒥᓱᑦ ᐃᖅᑲᓗᐃᑦ ᐆᒪᔪᑦ ᐊᔾᔨᒌᙱᒥᐊᕐᔪᒃᑐᑦ – ᑐᑦᑕᕝᕕᐅᓯᒪᔪᑦ ᐃᓄᐃᑦ ᖃᓄᐃᙱᑦᑎᐊᕐᓂᖏᓐᓄᑦ, ᐱᖁᓯᖏᓐᓄᑦ, ᐊᒻᒪ ᒪᑭᒪᔾᔪᑎᑎᒍᑦ ᐱᕙᓪᓕᐊᓂᕐᓄᑦ. ᑐᑭᓯᐊᓂᖅ ᐊᕙᑎᒥᒃ ᐱᔾᔪᑕᐅᔪᑦ ᐃᖅᑲᓗᐃᑦ ᐊᑐᐃᓐᓇᐅᓂᖏᓐᓄᑦ ᐊᒻᒪ ᖃᓄᐃᑦᑑᓂᖏᓐᓄᑦ ᐃᓱᒪᒋᓪᓗᒋᑦ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᔪᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐱᓪᒪᕆᐅᔪᖅ ᑲᔪᓰᓐᓇᕈᓐᓇᕐᑯᓪᓗᒋᑦ ᐊᑐᐃᓐᓇᐅᖏᓐᓇᕐᓗᑎᓪᓗ. ᐊᑯᓂᐅᔪᒃᑯᑦ (> 15 ᐊᕐᕌᒍᐃᑦ) ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᑦ ᐃᖅᑲᓗᒃᑑᑎᐊᒥ ᓴᖅᑮᓯᒪᔪᖅ ᐊᖏᔪᒥᒃ, ᒫᓐᓇᓚᐅᑲᒃ, ᐊᒻᒪ ᓂᕐᔪᑏᑦ ᐊᐅᓚᓂᖏᑦ ᐃᓱᒪᒋᓪᓗᒋᑦ ᓇᔪᕐᒥᒃ ᐊᑐᕐᓂᖏᑦ ᐊᒻᒪ ᒪᔪᖅᑕᕐᓂᖏᓐᓄᑦ ᑎᓱᖅᑕᕐᓂᖏᓐᓄᑦ ᑕᕆᐅᕐᒥᐅᑕᑦ ᐃᖅᑲᓗᐃᑦ. ᐊᑐᖅᓯᒪᔪᒍᑦ ᐱᐅᓛᓂᒃ ᐊᑐᖅᑕᐅᓇᓱᐊᖅᑐᓂᒃ, ᐃᓚᓕᐅᑎᓪᓗᒋᑦ ᓂᐱᓂᒃ ᓂᐱᓕᐅᕆᔾᔪᑏᑦ, ᒥᑭᔪᕋᓂᒃ ᕿᙳᒻᒥᓚᕆᐊᓕᖕᓄᑦ ᐊᑐᕐᓗᓂ, ᖃᓄᐃᓕᖓᕙᖕᓂᖏᑦ ᐊᕙᑎᒥ, ᓱᑲᔪᖕᓂᒃ ᓇᐅᑦᑎᖅᓱᕐᓂᖅ, ᐊᒻᒪ ᑕᕆᐅᓕᕆᓂᖅ. ᑕᕝᕙᓂ, ᑐᕌᓚᖃᖅᑐᖑᑦ ᑖᒃᑯᓂᖓ ᐋᖅᑭᓱᐃᕙᓕᐊᓗᑕ ᖃᐅᔨᓴᐃᓐᓇᕋᓱᐊᕐᓗᑕ ᑭᓯᐊᓂᓕᑦᑕᐅᖅ ᐊᖏᔫᒃᑯᑦ ᑎᑭᐅᑎᓗᒍ ᐱᓕᕆᐊᕙᑦ ᐊᖏᓪᓕᒋᐊᖅᐸᓪᓕᐊᓗᒍ ᓂᐱᓂᒃ ᖃᐅᔨᓴᓇᓱᖕᓂᒃᑯᑦ, ᖃᓄᐃᓕᖓᕙᖕᓂᖏᑦ ᐊᕙᑎᒥ, ᐊᒻᒪ ᑐᑯᓐᓇᖅᑐᖃᕐᕕᐅᔪᓂᒃ ᖃᐅᔨᓴᕐᓃᑦ ᐊᒥᓱᓪᓚᖓᓂ ᐆᒪᔪᑦ ᓇᔪᖅᑎᒋᑦ ᓯᓚᑎᖅᑕᓗ ᓇᔪᖅᑎᓐᓂᒃ ᐊᒻᒪ ᐱᖁᓯᒃᑯᑦ ᐱᓪᒪᕆᐅᔪᑦ ᐃᖅᑲᓗᐃᑦ ᐆᒪᔪᑦ ᐊᔾᔨᒌᙱᒥᐊᕐᔪᒃᑐᑦ ᓱᕐᓗ ᐃᖅᑲᓗᐃᑦ, ᐆᒐᐃᑦ, ᐊᒻᒪ ᑲᓇᔪᐃᑦ. ᓂᐱᖃᕐᕕᐅᔪᓂᒃ ᖃᐅᔨᒪᓇᓱᖕᓂᖅ ᐊᑐᖅᑕᐅᓗᓂ ᓇᐅᑦᑐᖅᓱᕐᓗᒋᑦ ᓅᐸᓪᓕᐊᓂᖏᑦ, ᐃᓕᖅᑯᓯᖏᑦ, ᐊᒻᒪ ᓇᔪᕐᒥᒃ ᐊᑐᖅᐸᖕᓂᖏᑦ, ᓇᓗᓇᐃᔭᕐᓗᒋᓪᓗ ᐱᕐᔪᐊᖑᔪᑦ ᓇᔪᓚᐃᑦ ᓱᕐᓗ ᑕᐃᒃᑯᐊ ᑐᖅᑕᐅᓲᑦ ᐃᓪᓕᖅᑎᓪᓗᒋᑦ ᐊᒻᒪ ᐅᑮᕝᕕᐅᕙᒃᑐᑦ ᐊᒥᓱᓚᖓᓂ ᐆᒪᔪᓂ ᐊᔾᔨᒌᙱᑦᑐᓂ ᐱᓪᒪᕆᐅᔪᑦ. ᑕᒪᓐᓇ ᐱᓕᕆᔾᔪᖅ ᐱᖃᓱᐅᔾᔨᔪᖅ ᐃᓕᔭᐅᓗᑎᒃ ᒥᑭᑦᑐᑦ ᓂᐱᓄᑦ ᓂᕕᙵᑖᑦ ᑎᒥᖏᓐᓄᑦ ᐃᖅᑲᓗᐃᑦ "ᑐᓵᔭᐅᔪᓐᓇᕐᓗᑎᒃ" ᓂᐱᓂᒃ ᑐᓵᔾᔨᑎᓄᑦ ᐋᖅᑭᒃᑕᐅᓯᒪᓇᔭᖅᑐᑦ ᑕᕆᐅᕐᒥ ᐊᒻᒪ ᐃᒪᑦᑎᐊᕙᖕᓂ ᐊᕙᑎᒥ. ᐆᒪᔪᕋᓛᑦ ᐊᐅᓚᓂᖏᓪᓗ ᐆᒃᑐᕋᖅᑕᐅᑎᓪᓗᒋᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᖃᓄᐃᑦᑑᓂᖏᑦ ᐊᒃᑐᐃᕙᖕᒪᖕᒫᑕ ᓂᓪᓚᓱᖕᓅᑦ ᐊᒻᒪ ᐊᓂᖕᓵᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖏᑦ (ᑕᒪᐃᓐᓄᑦ ᐊᕐᕌᒎᑉ ᐃᓚᐃᓐᓇᖓᓂ ᐊᒻᒪ ᓱᒃᑲᓕᔫᒃᑯᑦ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᔪᑦ) ᖃᓄᐃᙱᑦᑎᐊᕐᓂᖏᓐᓄᑦ ᐊᒻᒪ ᐊᐅᓚᓂᖏᓐᓄᑦ ᐃᖅᑲᓗᐃᑦ. ᑕᒪᓐᓇ ᐱᓕᕆᐊᖅ ᐃᓚᖅᑲᕐᓂᐊᖅᑐᑦ ᐆᒃᑐᕋᐃᓂᕐᒥᒃ ᐊᒥᓱᓂᒃ ᑭᓪᓕᐅᔪᓂᒃ ᐊᒃᑐᐊᔪᓂᒃ ᐃᖅᑲᓗᐃᑦ ᖃᓄᐃᙱᑦᑎᐊᕐᓂᖏᓐᓄᑦ ᓱᕐᓗ ᐆᒪᑎᖏᑦ ᐊᐅᓚᓂᖏᑦ, ᑳᒃᑕᕐᓂᖏᑦ, ᐊᒻᒪ ᐆᓪᓚᕐᓂᕐᒧᑦ ᓇᓗᒨᒃᑎᑦᑎᓇᓱᐊᕐᓂᑦ. ᓂᐱᖅᑐᓂᒃ ᖃᐅᔨᒪᓇᓱᖕᓂᕐᒧᑦ ᖃᐅᔨᓴᕈᑏᑦ ᑐᓴᐅᒪᔾᔪᑎᖃᕐᑎᑦᑎᓂᐊᖅᑐᑦ ᓂᓪᓚᓱᖕᓂᖕᓄᑦ ᐊᑐᖅᑕᐅᕝᑐᓂᒃ ᐃᖅᑲᓗᖕᓂᑦ ᑕᐅᕙᓂ ᐃᓚᓕᐅᔾᔭᐅᔪᓐᓇᕐᓂᐊᖅᑐᑦ ᑐᓴᐅᒪᔾᔪᑎᓄᑦ ᐱᔾᔨᑎᒋᓕᕐᓗᒋᑦ ᐆᒪᔪᐃᑦ ᐊᐅᓚᓂᖃᕝᑕᖅᑐᓄᑦ. ᑐᖅᑯᓇᖅᑐᖅᑲᕐᕕᐅᔪᓂᒃ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐱᓕᕆᔫᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᖃᐅᔨᓴᕐᓗᑎᒃ ᖃᓄᐃᑦᑑᓂᖏᓐᓂᒃ ᐊᒥᒌᔪᑦ ᓴᖅᑭᐸᓪᓕᐊᔪᑦ ᓱᑲᕐᓇᖅᑐᑦ, ᐃᖅᑲᓯᐅᑎᓪᓗᒋᑦ ᐊᐅᒃᑕᔩᑦ, ᐅᒥᐊᕐᔭᐊᒥᙵᖅᑐᑦ/ᑭᓂᖅᑐᓂᙵᖅᑐᑦ ᓱᑲᕐᓇᖅᑐᑦ, ᐊᒻᒪ PFAS, ᓇᔪᓪᓗᐊᑕᓂ ᑕᐅᕙᓂ ᓄᓇᓂ ᐊᕕᒃᑐᖅᓯᒪᔪᓂ ᖀᒃᑳᓂᐊᒍᑦ ᓇᑭᙳᕐᓂᖏᑦ, ᖃᓄᐃᓂᐊᕐᓂᖏᑦ, ᐊᒻᒪ ᑎᑭᖃᑦᑕᕐᓂᖏᑦ ᑕᒪᒃᑯᐊ ᓱᑲᕐᓇᖅᑐᑦ. ᐃᒫᓂ ᐱᑕᖃᐃᓐᓇᖅᑐᓂᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕈᑎᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᖃᐅᔨᒪᔭᐅᓇᓱᐊᕐᓗᑎᒃ ᓇᑭᙳᕐᓂᖏᑦ ᐊᒻᒪ ᑎᑭᑉᐸᓐᓂᖏᑦ ᑕᒪᒃᑯᐊ ᓱᑲᕐᓇᖅᑐᑦ ᐊᕙᑎᒧᑦ ᐊᒻᒪᓗ ᑎᒥᖏᓐᓂᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕐᓂᖏᑦ ᖃᐅᔨᓴᓪᓚᒃᓴᐃᓪᓗᑎᒃ ᖃᓄᐃᓐᓇᔭᕐᓂᖏᑦ ᐊᒻᒪᓗᑦᑕᐅᖅ ᑎᑭᑉᐸᓐᓂᖏᑦ ᓱᑲᕐᓇᖅᑐᑦ ᐊᑐᖅᕘᑦ ᐆᒪᔪᑦ ᐆᒪᓂᖅᖃᑎᒌᓐᓂᖏᑎᒍᑦ. ᑕᒃᑯᐊ ᐃᒫᓂ ᐱᑕᖃᐃᓐᓇᖅᑐᓂᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕈᑏᑦ ᐃᑲᔫᑎᖃᖅᑐᑦ ᐊᕐᕌᒍᓚᓐᓄᑦ ᐃᒫᓂ ᐱᑕᖃᐃᓐᓇᖅᑐᓂᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕕᓐᓂᒃ ᐋᖅᑭᒃᓱᕚᓯᒪᔪᓂᒃ ᓄᓇᕗᒻᒥ ᐊᑐᖅᕘᑦ ᐃᒫᓂ ᓄᓇᕐᔪᐊᒥ ᐱᑕᖃᐃᓐᓴᖅᑐᑦ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕈᑎᑦ (AQUA-GAPS) ᐱᓕᕆᖃᑎᒌᓄᑦ ᑐᓴᐅᒪᖃᑦᑕᐅᑎᔾᔪᑎᑎᒍᑦ ᐊᒻᒪ ᐊᕙᑎᒥ ᓯᓚᐅᓪᓗ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓᓄᑦ ᑲᓇᑕ. ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕐᓂᖅ ᑕᓯᕐᓂ, ᐃᒫᓂ ᐊᒻᒪ ᐊᐅᖃᑦᑕᖅᑐᓂ ᑕᓯᕐᓂ ᐃᓱᕐᓂᐅᔪᓂᒃ, ᐊᒻᒪ ᑕᕆᐅᕐᒥᐅᑕᑦ ᐃᖅᑲᓗᐃᑦ ᓂᕿᖏᓐᓂᒃ ᐊᑐᖅᑕᐅᓂᐊᕐᔪᑦᑕᐅᖅ ᑭᐅᔾᔪᑕᐅᓇᓱᓪᓗᑎᒃ ᐊᐱᖅᑯᑏᑦ ᐃᓱᒫᓘᑕᐅᔪᓗ ᐃᖅᑲᓗᒃᑑᑎᐊᖅ ᐊᖑᓇᓱᒃᑐᓕᕆᔾᔪᑎᓂ ᐊᒻᒪ ᓄᓇᓕᖕᓂ ᐱᓕᕆᖃᑎᒋᔭᐅᔪᓂ ᓴᖅᑭᓂᖏᓐᓂᑦ ᓱᑲᕐᓇᖅᑐᑦ ᑕᕝᕙᙵᓗᑦ ᓄᓇᐅᑉ ᐃᑭᐊᖕᓂ ᖁᐊᖑᐃᓐᓇᖅᑐᖅ ᐊᐅᒃᐸᓕᐊᑎᓗᒍ ᐱᕐᔪᐊᖑᔪᓄᑦ ᐃᖅᑲᓗᓐᓄᑦ ᐊᒻᒪ ᓇᔪᓚᖏᓐᓄᑦ. ᐃᒪᕐᒥᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕐᓂᖅ ᐱᔭᐅᓂᐊᖅᑐᑦ ᐃᒻᒥᖅᓯᒍᑎᒃ 1 ᓖᑕᓂᒃ ᐊᖏᖅᑐᔭᙱᑦᑐᓄᑦ ᓴᕙᕋᔭᖕᓄᑦ, ᓯᖁᒥᔭᑐᓄᑦ, ᐊᒻᒪᓗ/ᐅᕝᕙᓘᓐᓃᑦ ᐊᐅᒃᑖᓄᑦ ᐃᒪᖃᐅᑎᓄᑦ (40 ᓖᑦᑐᑦ/ᐊᕐᕌᒍᑕᒫᖅ). ᐃᖅᑲᖓᓂ ᓯᐅᕋᕐᓂᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᐅᕐᓂᖅ ᐱᔭᐅᖃᑦᑕᕐᓂᐊᖅᑐᑦ ᖃᓗᓯᓗᑎᒃ ᐃᖅᑲᖓᓂᑦ ᓯᐅᕋᕐᓂᒃ 100-500 ᒥᓖᓕᑦᑐᑦ ᐊᐅᒃᑖᓄᑦ ᕗᖃᐅᑎᓄᑦ ᐊᒻᒪᓗ/ᐅᕝᕙᓘᓐᓃᑦ ᓴᕙᕋᔭᖕᓄᑦ/ᔭᕋᓄᑦ ᕗᖃᐅᑎᓄᑦ (20 ᓖᑦᑐᑦ/ᐊᕐᕋᒍᑕᒫᑦ). ᐱᓗᑎᒃ ᑕᒪᐃᓐᓂᒃ ᐃᒪᖓᓂᒃ ᐊᒻᒪ ᓯᐅᕋᖓᓂᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᓂᒃ, ᑐᑭᓯᕙᓪᓕᐊᓂᐊᖅᑐᒍᑦ ᓱᑲᕐᓇᖅᑐᑦ ᐱᕐᔪᐊᖑᔪᓄᑦ ᐃᖅᑲᓗᐃᑦ ᓇᔪᖓᓂᓐᓂᐊᖅᐸᓪᓕᐊᔪᓂᒃ, ᐊᑐᖅᑕᐅᓗᑎᒃ ᓱᑲᕐᓇᖅᑐᑦ ᐱᐅᓯᑎᕙᒃᑕᖅᑲᓂᒃ ᕿᒥᕐᕈᓂᕐᒥ ᐱᕙᓪᓕᐊᑎᑦᑎᓂᐊᖅᑐᑦ ᓇᓗᓇᕈᓐᓃᕐᓗᑎᒃ ᐱᑕᖃᓕᖅᑎᑦᑎᖃᑎᒌᕝᕕᐅᑐᐃᓐᓇᓱᐊᓖᑦ (ᓱᕐᓗ ᓄᓇᐅᑉ ᐃᑭᐊᖓᓂ ᖁᐊᖑᐃᓐᓇᐅᔭᖅᑐᖅ ᐊᐅᒃᐸᓕᐊᑎᓗᒍ, ᓴᓗᒪᖅᓴᖅᓯᒪᔪᖅ ᐃᒥᖅ, ᐊᐅᓚᖅᑎᑦᑎᖃᑦᑕᕐᓂᖅ); ᑕᐃᒪᐃᒪᑦ, ᑐᑭᓯᑎᑕᐅᓗᑕ ᓯᕗᓪᓕᐅᔾᔭᐅᔭᕆᐊᓕᖕᓂᒃ ᓱᑲᕐᓇᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᓱᖅᓗᑕ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐊᑐᖅᑕᐅᔪᓂᒃ ᓱᒃᑲᓕᔪᓂᒃ ᐅᖅᑰᓯᕙᓪᓕᐊᔪᒥ. ᓯᓕᒃᑲᓂᖅ, ᓄᑖᑦ ᑲᑐᔾᔨᖅᑎᕆᓂᖅᓃᑦ ᐋᖅᑭᒃᓱᖅᑕᐅᓂᐊᖅᑐᑦ ᕿᒥᕈᖅᑯᓗᓂᑦ ᐊᒃᑐᐊᔪᓂᒃ ᐆᒪᔪᕋᓛᓂᑦ ᐱᔾᔨᑕᐅᔪᑦ ᐃᖅᑲᓗᐃᑦ ᓇᔪᖅᑎᖏᑕ ᐱᐅᓂᖏᓐᓄᑦ ᑕᒪᐃᓐᓂᒃ ᐃᒪᑎᐊᕙᖕᒥ ᑕᕆᐅᒥᓗ. ᑕᓯᕐᓂ, ᕿᒥᕈᓂᐊᖅᑐᒍᑦ ᖃᓄᖅ ᐃᓐᓇᕈᖅᓯᒪᙱᑦᑐᑦ ᐃᖅᑲᓗᐃᑦ ᓇᔪᖅᑎᖏᑦ ᐊᑐᕐᓂᖏᑦ ᐊᒃᑐᐊᓂᖃᕐᒪᖔᑕ ᐊᕐᕌᒍᑉ ᐃᓚᐃᓐᓇᖓᓂ ᐊᒻᒪ ᓅᓂᕆᐊᖅᑕᖅᑐᓄᑦ ᐆᒪᔪᕋᓛᑦ ᖁᓪᓗᐊᒍᓯᖅᑐᑦ ᐊᒻᒪ ᐊᒥᓲᓂᖏᓐᓄᑦ. ᐊᑐᕐᓗᑎᒃ ᓂᐱᓄᑦ ᐋᖅᑭᒃᓯᒪᔪᑦ ᑕᑯᔅ ᐊᕙᑎᖕᓗᓂ, ᕿᒥᕈᓂᐊᖅᑐᒍᑦ ᕿᖅᑯᐊᖃᕐᓃᑦ ᐃᖅᑲᓗᒃᑑᑎᐊᕈᔪᖅᒥ ᐱᓪᓗᐊᕐᒪᖔᑕ ᑕᑯᔅ ᐊᐅᔭᒃᑯᑦ ᓂᕐᒪᕝᕕᐅᕙᓪᓗᑎᒃ ᓇᔪᓕᐅᓗᑎᒃ ᑕᕆᐅᕐᒥᐅᑕᓄᑦ ᐃᖅᑲᓗᙳᑦ ᐊᓯᖏᓐᓄᓪᓗ ᐃᖅᑲᓗᙳᑦ ᐆᒪᔪᓂ ᐊᔾᔨᒌᙱᒥᐊᕐᔪᒃᑐᓂ. ᑭᖑᓪᓕᖅᐹᒥᒃ, ᐊᑐᕐᓂᐊᖅᑐᖑᑦ ᐊᕙᑎᒥ ᑭᓇᐅᔾᔪᑎᓄᑦ ᐱᓕᕆᔾᔪᑎᓂᒃ ᐃᑲᔪᖅᑕᐅᕙᒃᑐᓂᒃ ᓇᓗᓇᐃᔭᐃᑎᓪᓗᒋᑦ ᐊᕐᕌᒍᑉ ᐃᓚᐃᓐᓇᖓᓂ ᐊᒻᒪ ᐊᖏᔪᑎᒍᑦ ᐊᔾᔨᒌᙱᑦᑕᖅᑎᑦᑐᑦ ᓇᓃᕐᑲᖅᓂᖏᓐᓄᑦ ᐊᒻᒪ ᐅᓄᕐᓂᖏᓐᓄᑦ ᑕᒪᒃᑯᐊ ᐃᖅᑲᓗᐃᑦ ᐆᒪᔪᑦ ᐊᔾᔨᒌᙱᒥᐊᕐᔪᒃᑐᑦ. ᐱᓕᕆᓂᐊᒃᑖᕐᐸᓪᓕᐊᑦ ᓄᓇᓕᖕᓂᖓᓂᐊᖅᑐᑦ ᐃᖅᑲᓗᒃᑑᑎᐊᒥ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᓄᓇᖃᖅᑐᑎᒃ ᐱᓕᕆᐊᓕᐅᕈᑎᒥ ᑲᓇᑕᒥ ᖁᑎᒃᑐᒥ ᐅᑭᐅᖅᑕᖅᑐᒥ ᖃᐅᔨᓴᕕᒃ (CHARS) ᑭᓯᐊᓂ ᒪᕐᕉᒃ 5- 10 ᐅᓪᓗᐃᑦ ᓄᓇᒦᑉᐸᓪᓗᑎᒃ ᐊᕐᕌᒍᑕᒫᑦ. ᑕᒫᕐᕕᐅᓯᒪᔪᑦ ᐃᓄᖅᑲᕐᓂᐊᖅᑐᑦ ᑎᓴᒪᓂᒃ ᑲᑎᙵᔪᑦ 80-ᓂᒃ ᐃᓄᖃᕈᓐᓇᖅᑐᒥ ᓄᓇᖃᕐᕕᐅᔪᒥ ᐅᓪᓗᐃᑦ ᐊᕐᕌᒍᑕᒫᑦ. ᐱᓕᕆᖃᑎᖏᑦ ᐱᓕᕆᖃᑎᖃᕐᓂᐊᖅᑐᑦ ᑲᑐᔾᔨᖃᑎᒌᓪᓚᑦᑖᕐᓗᑎᒃ ᐃᖅᑲᓗᒃᑑᑎᐊᖅ ᐊᖑᓇᓱᒃᑐᓕᕆᔾᔪᑎᓂᒃ (EHTO) > 16 ᐊᕐᕌᒍᓄᑦ ᐊᒻᒪ ᑲᓯᒪᕗᑦ ᐃᑲᔪᖅᑐᐃᓯᒪᓪᓗᑎᒃ ᑕᒪᑐᒥᖓ ᐱᓕᕆᐊᕆᔭᐅᓪᓗᐊᑕᕐᓂᐊᖅᑐᓂᓪᓗ ᐱᓕᕆᐊᒥ, ᐃᑲᔪᖅᐸᓪᓗᑎᒃ ᖃᐅᔨᓴᓪᓚᒃᓴᓄᑦ ᐊᖅᑭᒃᓱᖅᓯᒪᔭᕆᐊᓕᖕᓄᑦ (ᐃᓚᐅᓪᓗᑎᒃ ᐃᖅᑲᓇᐃᔭᓕᖅᑎᑦᑎᓂᖅ

ᓄᓇᓕᖕᓂ ᖃᐅᔨᒪᔨᑕᒻᒪᕆᖕᓂᒃ) ᐊᒻᒪ ᐋᖅᑭᒃᓱᐃᑎᓪᓗᒋᑦ ᐊᕐᕋᒍᑕᒫᑦ ᓄᓇᓕᖕᓄ ᑐᓴᕋᓱᐊᕐᓂᕐᒧᑦ ᐱᓕᕆᓂᕐᓂᒃ. ᑕᒪᐃᓐᓂᒡᓕ, ᑐᒃᓯᕋᖅᑕᐅᔪᖅ ᐱᓕᕆᐊᖅ ᐃᑲᔫᑎᖃᕐᔪᐊᕐᓂᐊᖅᑐᑦ ᑐᑭᓯᓂᑦᑎᓐᓂ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓᓂᑦ ᐊᒃᑐᐃᓂᕐᓂᒃ ᐃᖃᓗᖕᓄᑦ ᐊᒻᒪ ᐃᖃᓗᓕᕆᓂᕐᒧᑦ ᐃᑲᔪᖅᑐᐃᒍᑎᒃ. ᑕᐃᒪᐃᓕᐅᕐᓂᐊᖅᑐᑦ ᐊᑐᖅᑕᐅᓗᑎᒃ ᐊᑯᓂᐅᔫᒃᑯᑦ ᓇᐅᑦᑎᖅᓱᕐᓂᕐᒧᑦ ᓱᐳᕐᓇᖅᑐᑦ ᖃᓄᐃᓕᕚᓪᓕᐊᓂᖏᓐᓄᑦ, ᐃᖃᓗᐃᑦ ᐃᓕᖅᑯᓯᖏᓐᓄᑦ ᐊᒻᒪ ᖃᓄᐃᑉᐸᓪᓕᐊᓃᑦ ᐊᒃᑐᐊᓂᓖᑦ ᑎᒥᐅᑉ ᐃᓚᐅᕈᑎᒃᓴᖏᓐᓄᑦ ᓇᔪᖕᖏᓐᓂ ᖃᓄᐃᓕᖓᓂᐅᔪᑦ. ᓱᓕᒃᑲᓐᓂᖅ, ᐊᒃᑐᐊᖃᑎᕆᓕᖅᑎᓪᓗᒋᑦ ᖃᐅᔨᓴᕈᑏᑦ ᒥᑎᑑᑕᐅᓂᖅᓴᓂ ᓂᕆᖃᑦᑕᐅᑎᓂᐅᕝᑐᓂ ᐊᒻᒪ ᐃᒫᓂ ᓇᔪᕐᓂ, ᑕᒪᓐᓇ ᐱᓕᕆᐊᖅ ᑐᙵᕕᓕᐅᕐᓂᐊᖅᑐᑦ ᐆᒪᓂᖃᖅᑐᑦ ᓇᔪᕐᒥᓂᑦ – ᑐᙵᕕᕆᔭᐅᓗᑎᒃ ᐊᐅᓚᑦᑎᔾᔪᑕᐅᓇᓱᐊᖅᑐᑦ ᐱᖅᑯᓯᒃᑯᑦ ᐊᒻᒪ ᒪᑭᒪᔾᔪᑎᑎᒎᑦ ᐱᒪᕆᐅᕆᔭᐅᔪᓄᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐃᖃᓗᐃᑦ ᐆᒪᔪᑦ ᐊᔾᔨᙱᕆᐊᕐᔪᒃᑐᓂ.

Inuinnaqtun: Imarmiuttat atugakhaliurnirmullu – pidjutit ilitturnaqtut amigaittunik iqalukhiuktukhanik nirjutinik – akunnganik Inuit inuuhirinnaqtumiglu, pitquhiqtuqpaktunik, uvuunalu havaakhaliurnirmullu aullaqtirutikhanik. Kangiqhigiami avatinganik aquttut iqalungnik piinarialaqininga qanurittaakhaaniglu pipluni qilaminnuaq aallannguqtuq Ukiuqtaqtumi ihariagijaujuq naunairiami pihimmaaqtuq nungulaittumut piinarialaqiningalu. Hivitujumik (> 15nik ukiunik) ihivriurnikkut pinahuarutit Iqaluktuuttiami titiraqtut najugait, atukaffaaqtut, uvvalu iqaijarnikkut pidjutit najugait aturningit uvvalu nuutirniit Ukiuqtaqtumi Iqalukpit. Atuqtugut kibluiqhimajunik upautidjutit, ilaliutiblugit uuktuutinirnunut nirjutit ingilraliningit, ingattaqhimailinirnut, nunami iqaijarnikkut, halumailrunik munaridjutinik, uvvalu tarjutigut iqaijarnikkut. Hamani, piniaqtugut nappaqtigijaangat ukuninga aulahimmaaqtunik ihivriudjutikharnik pidjutikharnik kihimi anginirmik tikiutijaangat havaakhangit taimaa angiglijuumirutikharnik auladjutikharnik, iqaijaliqinikkut, unalu nunami ihivriurutikharnik qaffiujunik pitquhiliqinikkut akhuurnaqtunik iqalungnik huradjanik taimaittunik tahirmi ihuuq, uugak (ogac) halumailrungillu kanajuq (kanayok). Naunaijainikkut naunaijainiq atuqtauniaqtuq munarigiami ingilraninga, pitquhinga, najugangillu aturninga, ilitarigiamilu hivitujut najugangit ukunatitut tahapkuat atuqtaujut akhuraaluk amihuuniglu huradjanik akhuurninganik. Una pidjuhiq ilalik naunaipkutat mikijut atatat timingat ilulia iqalungnut tamnaunia “turaangajut” tapkunannga apjaqturnit pidjutaunia pijauniat ihumani tarjumi halumajut imaq avatait. Iqaijarnikkut aktilaangit atuqtauniaqtut naunaijariangani uunarniit uvvalu aniqhaarut aallanngurningit (tamarnik ukiutigut uvvalu qilamik aallannguqtirningit) aanniaqtailinikkut uvvalu auladjutainun iqalukhiuqtut. Una havaakhaq ilauqarniaqtuq qaffiujunik atuqtakharnik aulahimajut talvuuna iqalungnik inuuhirinikkut taimaittunik uummatiliqinikkut auladjutikharnik, auladjutikharniglu, unalu qullirutikharnik. Naunaijaqhugit naunaijautit tunihiniaqtut kangiqhidjutinik uunarniitigut atuqtaujut iqalukhiuqtinit kitut ilaujut kangiqhidjutinik mikhaagut iqaijarnikkut. Havagvik nalunaqtuliqinikkut taapkua pidjutigijait idjuhiit, hulaqutit, ilauqatigiingnirmullu hunat taapkua hivuuranaqtut avatiptingnut havaktaujukhat ihivriuriangani qanurittut amigainingilu halumailrut, ukualu palaastiit, umiat/uqhurjuat halumailrut, PFAS-lu, nunagijainit nunami ilagiarutini ihuaqutini, uqhurnik, aullaqtittijaanganilu ukuninga halumailrunik. Naluuyaqtut naunaiyagakhat atuqtauniaqtut naunaiyagiangani ikayuutit uvalu akyaqlugit hapkua halumailgut avatingini uvalu huradjat ihivgiugutit naunaiyagiangani halumailgut avatingitigut. Hapkuat imarmiutanik qangiutivaktun ihivriudjutikharnik nan’ngaridjutit 10-nik ukiunganik aulahimaanginaqtun ihivriudjutikharnik aulatitivakhimayut Nunavunmi talvuuna Naluujaqtut Nunarjuami Aitturnikkut Uuktuutit (AQUA-GAPS) qaritaujaliqidjutitigun Avatiliqijitkullu Hilaup Aallannguqtirninga Kanatami. Ihivriudjutikhangit qaanganiitunik imarnik, imarmiuttanik mahaktiqhimajuniglu qaanganiitunik nunangit, Unalu Iqalukpiit kakiijautikhangit atuqtauniaqtun kiujaangat apiqquutingnik ihumagijauhimajuniglu talvannga Ekaluktutiak Anguniaqtit Naniriaqtunullu Katimajiit EHTO-mit nunallaanilu ilaqatigiiktunik talvuuna halumaittunik talvuuna nunap qiqaumaninga mahaktiqpallianiaqtun akhuurnaqtunik iqalungnik nunagijainiglu. Imarmik naunaijagakhat pijauniaqqut 1 L qipliqtut haviit, hikuliat, uvvalu/uvvaluniit ajurnaqpiaktuq, qullirmik, ihuaqhijuminaqtumik maniktuq halumailrut piliuqtauhimajuq qiplariktunnuat halumailrut, atuqtaujuq palaastik puukhanik, niqinik puukhanik, aallaniglu puuqhimajunik imarmik hikuliat (40 L/ukiuq). Nunavaluit naunaijagakhat pijauniaqut 100-500 ml whirl-pak puukattaq taamnalu/uvvaluniit qipliqtut haviit/hikuliaq puukhangit (20 L/ukiuq). Piplugit imait nunalu naunaijagakhat, kangiqhilirniaqtugut halumailrut itilijut ihariagijaujunik iqaluit najugainik, halumailruniglu atuqtaujunik naunaijaijut piniqhalihaaliqhutik (ilaa, nunap qiqumaninga auktuqpallianinganik, kuvigarvikhat, uhidjutit); talvuuna, ilittuqhaijaangat pijumalluaqtainik halumaittunik munaridjutikharnik Ukiuktaqtuni atuqpakhimajainik qilaminnuaq. Imaalu, nutaat havaqatigiingningit havaktauniaqtut qiniqhialutik akhaluutinik iqalungnik huradjanik qanuriningit tamarnik imap uvvalu tarjumi. Tattit iluani, qiniqhianiaqtugut qanuq iqalugait najugait atuqtaujut atadjutiqaqtut ukiutigut uvvalu uqhurjuanik auladjutainik upalungaijautini aulaningit uvvalu amigainingit. Aturlutik nivjaujanik tarjurmi avatingnit,

ihivriurniaqtugut tarjum natqua nauttiat Iqaluktuuttiami najugaani akhuurnaqtun tarjurmi aujami nirijaangat najugaingit talvani Iqalukpiit aallaniglu iqalungnik huradjanik. Kingulliqpamik, aturniaqtugut avatiliqinikkut DNA (eDNA) hanaqidjutikharnik ikajurianganik naunaijaijaangat ukiungani najugaanilu naunairutiqaqtun talvani nunamiittunik amigaitilaangillu ukuninga iqalungnik huradjanik. Amigainiqhat havaat pijutiqaqniaqtut nunagiyauyumi Iqaluktuuttiami havaktunik igluqaqtunik talvani Kanatamiut Qutiktumi Ilituqhaivikmi Havakviuyumi (CHARS) kihiani malruuknik 5-nit 10-ni ubluni aulaaqtitiyuni maniqami atuni ukiumi. Tangmarviit piqarniaqtut 4-nik inungnik atauttimut 80-inungnik katimajaqturviujuni ubluni atauhirmi ukiumi. Ikajuqtigiit havaqatiqaqtut qaniniqhanik havaqatigiingninginik Ekaluktutiak Angunahuaqtit Timiujuni (EHTO) > 16-ni ukiuni katimajinilu pipkaijut ikajuutinik ikajuqtigiilluarninginik havaami, ikajuqhutik naunaijagakhanik aulaninginik (ilaujullu havaktikhaqhiuriangani nunagijaujumi ajunngittut) timiujullu aippaagutuaraangat nunagijaujumi uqaqatigiigutinik huliviujunik. Tamainnit, atulirumajaujuq havaaq ikajuutauniaqtuq angijumik kangiqhidjutiptingnik hilap aallanngurninganik akturnniginik iqalukhiuqtuni iqalukhiuqtilu ikajurninginik. Taimailiurniaqtuq hivitujumik munaridjutinik halumailrunik aulaningit, iqaluit idjuhiit uvvalu havauhiit ilaujut iqaijarnikkut najugait idjuhiit. Taimaalu, katitiqhugit naunaijautit mikitqiatigut niqitigut pidjutait uvvalu imarmiuttanik najugait, una havaaq tunngaviqarniaqtuq nunami-pihimajut munaridjutikkut upautiniq pitquhikkut uvvalu maniliurnikkut akhuurnaqtut Ukiuqtaqtumi iqalukhiuqtut huradjat.

Personnel

Personnel on site: 7
Days on site: 21
Total Person days: 147
Operations Phase: from 2025-03-19 to 2035-05-19

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyaranngugtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtailiyainnit nuna
Jayko (Jayco) River commercial fishery study site	Sampling sites	Inuit Owned Surface Lands	N/A	N/A	Approximately 40 km from the community of Cambridge Bay
Subsistence waters near Cambridge Bay	Sampling sites	Inuit Owned Surface Lands	N/A	N/A	In proximity to the community of Cambridge Bay (0-30 km)
Greiner and Anderson Bay watersheds	Sampling sites	Inuit Owned Surface Lands	N/A	N/A	In proximity to the community of Cambridge Bay (10-40 km)
Greiner and Anderson Bay watersheds	Camp	Inuit Owned Surface Lands	N/A	N/A	In proximity to the community of Cambridge Bay (20km). A small, 4-person camp will be set up in the Greiner watershed at Inuhuktok. The camp will include one 10'x12' wall tent, and four personal tents. All garbage will be brought back to the community and disposed of in the local dump. Water for drinking and cooking will be taken directly from the lake. When out on the land, waste will be buried at least 100m from any water sources or brought back to the community for disposal.

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Ikaluktuttiak	Bevery Maksagak (Manager - EHTO)	Ekaluktutiak HTO	2024-08-15
Ikaluktuttiak	Bevery Maksagak (Manager - EHTO)	Ekaluktutiak HTO	2024-10-23

Ikaluktuttiak	Bevery Maksagak (Manager - EHTO)	Ekaluktutiak HTO	2025-01-10
Ikaluktuttiak	Rose Maksagak (Manager - EHTO)	Ekaluktutiak HTO	2025-05-06
Ikaluktuttiak	Rose Maksagak (Manager - EHTO)	Ekaluktutiak HTO	2025-05-21

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Hunters and Trappers Associations/Organizations	The Ekauktukiak Hunters and Trappers Organization supported all our proposed research in Cambridge Bay	Active	2024-12-03	2026-03-31
Hunters and Trappers Associations/Organizations	The Ekauktukiak Hunters and Trappers Organization supported all our proposed contaminants research in Cambridge Bay	Active	2024-12-03	2026-03-31
Iqalukhiurniqmut Tariuqmilu Kaanata	License to fish for scientific purposes issued by DFO	Active	2025-04-30	2026-03-31
Iqalukhiurniqmut Tariuqmilu Kaanata	Animal use protocol license issued by DFO	Active	2025-04-30	2026-03-31
Alaanut	Nunavut Planning Commission decision.	Active	2025-05-05	2035-06-01

Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	Length of Use
Water	We will be travelling via boat to multiple sampling sites in and around Cambridge Bay.	
Land	We will be travelling via ATV to multiple sampling sites in and around Cambridge Bay.	

Project accomodation types

Temporary Camp

Nunauyuq

Ihuaqutivaluin Atuqtauyukhan

Hanalrutit atuqtaunahuat (ukuallu ikuutat, pampiutainnik, tingmitinik, akhaluutinik, hunaluuniit)

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
ATV	7	Single rider and 2-ups	Up to 7 used at a time for transportation of personnel, equipment and fish between/within sampling location and hamlet
Snowmachine	4	Single rider and 2-ups	Up to 4 used at a time for transportation of personnel, equipment and fish between/within sampling location and hamlet
Pickup truck	1	4x4	Pickup truck will be rented for transportation of personnel, equipment and fish between sampling locations and hamlet
Boat	1	unknown	Locals will be contracted through the EHTO to use their boats to access receiver locations throughout the marine environments
Trail cameras	Up to 8	14x11.5x6.4cm	Trail cameras will be deployed on wooden tripods, as done in projects in surrounding communities (such as NPC 150208)
VR2-AR acoustic receiver	40	401x81mm	Receivers deployed in freshwater and/or marine environments throughout the study area
VR2-Tx acoustic receiver	6	308x73mm	Receivers deployed in freshwater and/or marine environments throughout the study area
Acoustic tags	60	Varying dimensions V7: 7x23mm V13: 13x39mm V16:16x71mm	Tags will be implanted into the aforementioned fish species (e.g. Arctic char, lake trout, cod, and sculpin), allowing them to be tracked via the acoustic receivers
Aquatic passive contaminants sampler	8	91.4x2.5cm	Aquatic samplers will be attached to a subset of the deployed receiver moorings throughout the freshwater and marine environments

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Gasoline	fuel	15	20	300	Liters	Jerry cans Storage at

						one time
Gasoline	fuel	1	1000	1000	Liters	Total summer fuel use for fuel for ATVs or snowmachines, rented local boats, and small generators

Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqtittagaani qanuq	Atulirumayain imavaluin utiqtittagani humi
1	Manual transport of water (buckets).	River/lakes and main bay.

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Other	Qirnarivyaktuq imaq	160L/day	Stored and disposed of in daily municipal waste water system through the Canadian High Arctic Research Station	Municipal treatment
Camp	Anaagun (inuin anaaguin)	4L/day	When out on the land, waste will be buried at least 100m from any water sources or brought back to the community for disposal (in winter)	N/A

Avatiliriniqmut Ayurhautingit:

The predicted environmental impacts of undertaking our scientific research in Cambridge Bay are all positive. All of our proposed scientific research assists in the management, conservation, and understanding of marine species such as fish and invertebrates.

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

Qanurittuq Ittunik Avatinga: Avatingalluanga

In both Cambridge Bay, there are trails from the community to our locations of sampling. These trails are maintained by the local municipalities for use to access subsistence harvesting locations near the communities.

Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga

Typical Arctic species (caribou, seals, muskox, fish, birds, small mammals, medium mammals, mosses, lichens, flowers) can be found in proximity to all of our sampling sites.

Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga

Our locations of sampling in each community are areas of local importance for subsistence and economic harvesting of fish species (majority being for Arctic char). These locations have been selected by the HTO and community members to learn more about the wildlife species they harvest and consume through the examination of movement patterns, diet, and contaminant loads. Our research project will hire up to seven local individuals from the respective communities to assist with all field-related work.

Miscellaneous Project Information

Our scientific research is developed and guided alongside co-management partners (HTO/HTA/RWOs). We DO NOT conduct any research that these bodies have not been in support of, nor at locations that they have not been supportive of. We are in constant communication with the respective local bodies throughout the year, providing dates research will occur, research plans (that have already been approved), providing updates on work completed to date and results when available in the form of plain language summaries and reports shared to local HTO/HTA/RWOs and the communities as a whole. Letters of support have been provided by the EHTO. No NRI license is required for this work. All biological samples will be inventoried/stored at the FWI before being handed over to specific team members or consultants for processing/analyses. Physical samples will organized, inventoried, maintained, and tracked using the partial time of two biologists. Data will be stored on a DFO laptop, a government secure server (P: or I: Drive), and backed up on an external hard drive. The backing up of all data will occur when new data are added/collected for the overall project and will be done multiple times per field season or when lab-derived data are generated. Acoustic telemetry data will be provided to OTN to be entered into their database which we have contributed to since 2013. We will work with the Regional Data Manager to enter metadata data/raw data on the Enterprise Data HUB and the Gov Can Open Data Portal. All data and analysis scripts will be made publicly available through DRYAD. No chemicals or hazardous materials are being used while sampling or while at camp.

Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit

There are no foreseeable impacts of this research that are negative - all impacts of our scientific research are positive as they assist in the conservation, management, and understanding of marine species such as fish and invertebrates. There will be no (or minimal) land or water disturbance.

Tamatkiumayunik Ihuikgutivaktunik

There are no foreseeable cumulative effects of this research that are negative - all effects of our scientific research are positive as they assist in the conservation, management, and understanding of marine species such as fish and invertebrates. There will be no (or minimal) land or water disturbance.

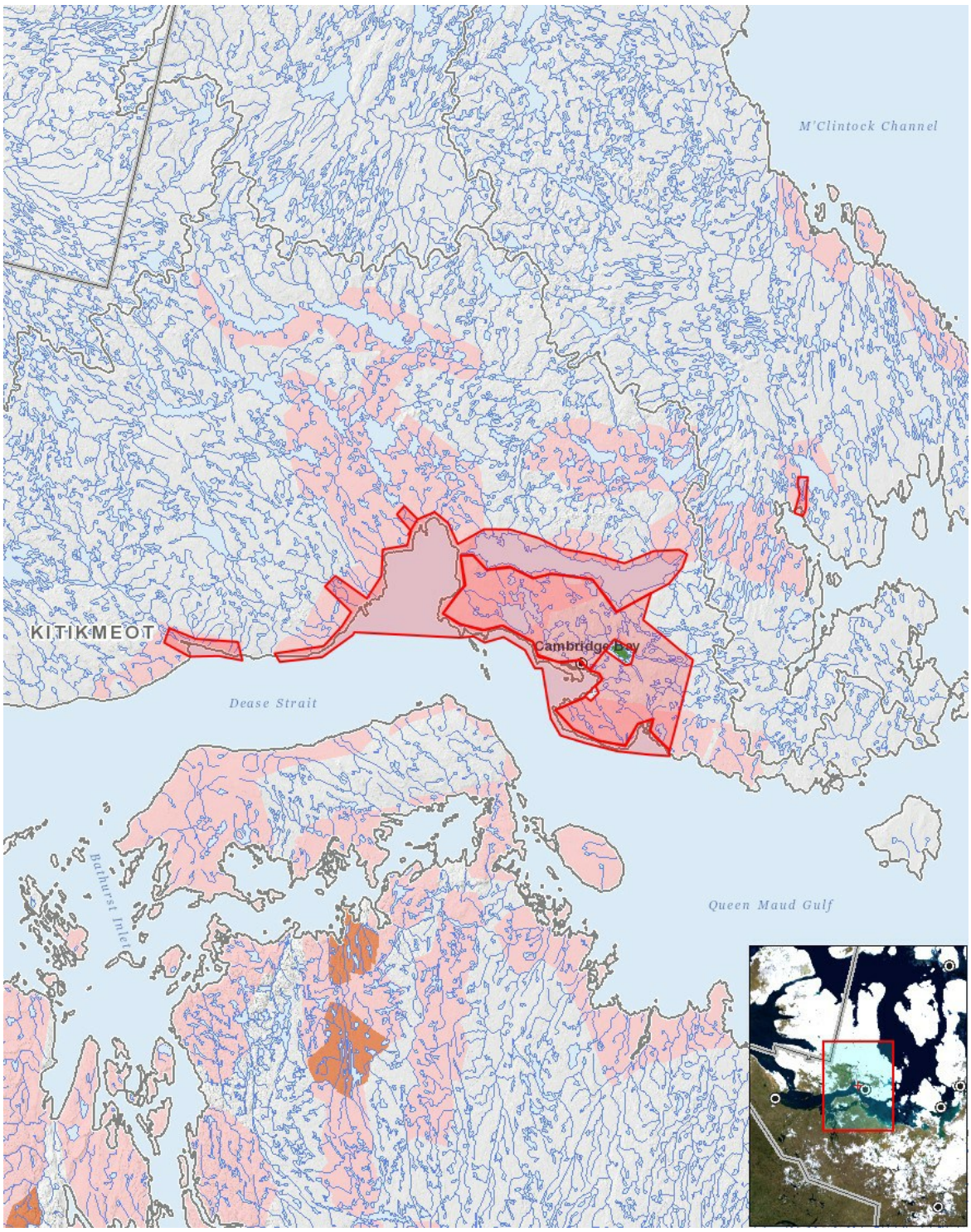
Impacts

Ilitariyauniq Avatiliriniqmut Ayurhautingit

	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
Havakvinga																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Aulapkaininnga																									
Sampling sites		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	P	-		-	P	P	-	P
Piiqtauniq																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Nakuuyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyauyuq)

Havaariyauyukhamut Nayugaa



List of Project Geometries

1	polygon	Jayko (Jayco) River commercial fishery study site
2	polygon	Subsistence waters near Cambridge Bay
3	polygon	Subsistence waters near Cambridge Bay
4	polygon	Greiner and Anderson Bay watersheds