ᓄᓇᕗᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦᑎᒍᑦ ᑐᒃᓯᕋᐅᑦ ᕿᒥᕐᕈᔭᒃᓴᖅ #125841

OPP 2.0 Baseline Shoreline Mapping

ᑐᒃᓯᕋᐅᑕᐅᔪᖅ ᖃᓄᐃᑦᑐᓂᖓ:	New
ᐱᓕᕆᐊᕆᔭᐅᔪᒪᔫᑉ ᖃᓄᐃᑦᑐᓂᖓ:	Scientific Research
ᐅᓪᓗᖓ ᑐᒃᓯᕋᐅᑎᓕᐊᕕᓂᐅᑉ:	7/20/2023 5:27:29 PM
Period of operation:	from 0001-01-01 to 0001-01-01
ᑲᔪᓯᒃᑲᐃᓂᐅᓂᐊᕐᓯᒋᔭᐅᔪᑦ:	from 0001-01-01 to 0001-01-01
ᐱᓕᕆᐊᖃᕈᒪᔪᖅ:	Valerie Wynja ECCC 1125 Colonel By Drive, NWRC, Raven Road Ottawa Ontario K1S 5B6 Canada ᐅᖃᓚᐅᑏᑦ: 6132963540, ᓱᑲᔪᒃᑯᑦ:

ᑐᓴᐅᒪᓗᑦᓴᑦ

ᖃᓄᐃᑦᑐᑎᓂᓗ ᐱᓕᕆᔨᖃᑦᓂᐊᕆᔨᖅᑕᓂᓗ

ᖃᑦᑕᕐᕕᒋᑐᑦ: Non-technical Project SummaryThe overall health of Canada's oceans is strongly influenced by the coastal marine environment. Through the Oceans Protection Plan (OPP), Environment and Climate Change Canada is working to protect, preserve, and restore Canada's marine environment. Under the OPP, our team has been funded to collect baseline shoreline data for oil spill preparedness. The main purpose of the shoreline segmentation process is to collect information to help emergency responders plan and prepare for potential marine pollution incidents. A pre-spill shoreline dataset includes baseline coastal information such as the shoreline type and form, the substrate and vegetation type. •To collect key shoreline information, low-altitude helicopter overflights are conducted at the study sites to capture geotagged video and photos of the shoreline characteristics.•Once the shoreline data is collected, that information is recorded within a GIS database. •Shoreline interpretation is performed by reviewing the oblique videography and geotagged photos. The final product is a detailed vector geodatabase which describes each shoreline segment and its associated intertidal zones.Using shoreline data in environmental response The vector shoreline characterization database can be used to identify environmentally sensitive shoreline types, support a rapid response to pollution incidents, and aid in effective clean-up efforts. By presenting the data on an interactive map, we are aiming to improve decision-making during oil-spill responses. With the inclusion of information from satellite and drone imagery, we hope to provide broader coverage of Canadian shorelines to support spill response and protect marine ecosystems.Beyond supporting oil spill response, datasets and imagery have been used by local communities and environmental managers for project planning, marine safety & response preparedness, assessment of areas for marine restoration, marine planning, food security, among others.Date(s) and TimingAugust 15-23, 2023 (Cambridge Bay, NU)RemediationNA – This project will not include any sampling or modification of the landscape. Project AlternativesThe remote and vast Canadian shoreline has made shoreline mapping via helicopter and manual techniques sometimes challenging. As a result, a Canada-wide shoreline classification has never been completed for the entire country. This represents a major information gap, and risk for oil spill risk preparedness. Newer, high-resolution satellite imagery offers a good opportunity to start exploring options for coast-wide shoreline mapping and classification. As an alternative to helicopter mapping, we will be developing shoreline classification methodologies using a variety of remote sensing technologies. This includes high resolution satellite imagery, as well as very high-resolution drone imagery. We would like to compare remote sensing techniques to helicopter methods to determine if remote sensing methods will prove to be as reliable, and informative as helicopter methods.

ᐅᐃᐦᑎᑐᑦ: La santé globale des océans du Canada est fortement influencée par l'environnement marin côtier. Dans le cadre du Plan de protection des océans (PPO), Environnement et Changement climatique Canada s'efforce de protéger, de préserver et de restaurer l'environnement marin du Canada. Dans le cadre du PPO, notre équipe a été financée pour collecter des données de base sur le littoral en vue de la préparation aux déversements d'hydrocarbures. L'objectif principal du processus de segmentation du littoral est de collecter des informations pour aider les intervenants d'urgence à planifier et à se préparer à d'éventuels incidents de pollution marine. Un ensemble de données sur le littoral avant la marée noire comprend des informations côtières de base telles que le type et la forme du littoral, le substrat et le type de végétation. •Pour recueillir les principales informations sur le littoral, des survols en hélicoptère à basse altitude sont effectués sur les sites d'étude afin de capturer des vidéos et des photos géolocalisées des caractéristiques du littoral.•Une fois les données recueillies,

elles sont enregistrées dans une base de données SIG. •L'interprétation du trait de côte est réalisée en examinant la vidéographie oblique et les photos géolocalisées. Le produit final est une géodatabase vectorielle détaillée qui décrit chaque segment du littoral et les zones intertidales qui lui sont associées.Utilisation des données sur le littoral dans le cadre d'une intervention environnementale La base de données vectorielle de caractérisation du littoral peut être utilisée pour identifier les types de littoraux sensibles du point de vue de l'environnement, soutenir une réponse rapide aux incidents de pollution et contribuer à l'efficacité des efforts de nettoyage. En présentant les données sur une carte interactive, nous visons à améliorer la prise de décision lors des interventions en cas de déversement d'hydrocarbures. Avec l'inclusion d'informations provenant d'images satellites et de drones, nous espérons fournir une couverture plus large des littoraux canadiens afin de soutenir les interventions en cas de déversement et de protéger les écosystèmes marins.Au-delà de l'intervention en cas de déversement d'hydrocarbures, les ensembles de données et l'imagerie ont été utilisés par les communautés locales et les gestionnaires de l'environnement pour la planification de projets, la préparation à la sécurité et à l'intervention en mer, l'évaluation des zones de restauration marine, la planification marine, la sécurité alimentaire, entre autres.Date(s) et calendrierDu 15 au 23 août 2023 (Cambridge Bay, NU)RemédiationNA - Ce projet ne comprendra pas d'échantillonnage ni de modification du paysage. Alternatives au projetL'éloignement et l'étendue du littoral canadien ont rendu difficile la cartographie du littoral par hélicoptère et par des techniques manuelles. Par conséquent, il n'y a jamais eu de classification du littoral à l'échelle du Canada pour l'ensemble du pays. Il s'agit d'une lacune importante en matière d'information et d'un risque pour la préparation à la lutte contre les déversements d'hydrocarbures. L'imagerie satellitaire récente et à haute résolution offre une bonne occasion de commencer à explorer les options de cartographie et de classification du littoral à l'échelle de la côte. Comme alternative à la cartographie par hélicoptère, nous développerons des méthodologies de classification du littoral en utilisant une variété de technologies de télédétection. Cela inclut l'imagerie satellitaire à haute résolution, ainsi que l'imagerie par drone à très haute résolution. Nous aimerions comparer les techniques de télédétection aux méthodes héliportées afin de déterminer si les méthodes de télédétection s'avèrent aussi fiables et informatives que les méthodes héliportées.

ᐃᓄᒃᑎᑐᑦ: ᖃᓄᐃᓕᐅᕆᐊᑐᓐᖏᑦᑐᑦ ᓴᓇᔭᐅᔪᒧᑦ ᓇᐃᓈᖅᓯᒪᔪᑦᑕᒪᕐᒥᒃ ᖃᓄᐃᖕᒋᑦᑎᐊᕐᑯᓪᓗᒋᑦ ᖃᓂᒪᓇᖅᑐᖃᙱᓪᓗᑎᒃ ᑲᓇᑕᐅᑉ ᐃᒪᕖᖕᒋᑦ ᓯᖖᒋᔪᒥᒃ ᑕᐃᒪᓐᓇᐅᑎᑕᐅᔪᑦ ᓯᓪᔭᖕᒐᓂᑦ ᑕᕆᐅᖅ ᐊᑯᑎᖕᒋᓐᓂᑦ. ᑕᒪᐅᓇ ᐃᒪᕖᑦ ᓴᐳᓂᐊᖅᑕᐅᔾᔪᑎᒃᓴᖕᒋᑦ ᐸᕐᓇᐅᑎ. ᐊᑲᑎᓕᓇᕗᒃᑯᑦ ᑲᓇᑕ ᓴᓇᕐᑲᑎᕐᑲᖅᑐᑦ ᓴᐳᒻᒥᓗᒋᑦ, ᐊᓯᐅᔾᔭᐃᕐᓗᒋᑦ, ᐊᒻᒪᓗ ᐃᓂᑐᕐᑲᖕᒐᓄᑦ ᐅᑎᖅᑎᓪᓗᒋᑦ ᑲᓇᑕᐅᑉ ᑕᕆᐅᖕᒐᑕ ᐊᑯᑎᖕᒋᑦ. ᐊᑖᒍᑦ ᐃᒪᕖᑦ ᓴᐳᓂᐊᖅᑕᐅᔾᔪᑎᒃᓴᖕᒋᑦ ᐸᕐᓇᐅᑎ, ᐱᓇᓯᐊᕐᑲᑎᒥᔭᒌᑦ ᑮᓇᐅᔭᒃᓴᖅᑖᖅᑎᑕᐅᔪᑦ ᓄᐊᑦᑎᓂᐊᕐᒪᑕ ᖃᐅᔨᒪᐅᑎᒃᓴᐃᑦ ᓯᓪᔭᖕᒐᓂ ᖃᐅᔨᓴᕈᑎᑖᓂᑦ ᐅᖅᓯᐊᓗᖕᒧᑦ ᑯᕕᔪᑦ ᐱᑐᐃᓐᓇᓇᐊᕐᑲᓕᖅᓯᒪᔾᔪᑎᒃᓴᑦ.ᐅᓇ ᐱᔾᔪᑎᓪᓗᐊᑕᖕᒐ ᓯᓪᔭᓂ ᑭᒡᓕᖕᒍᐊᓕᐅᕐᓂᖅ ᐱᓕᓇᔭᐅᓂᐊᖅᑐᓂᒃ ᓄᐊᑦᑎᓗᑎᒃ ᖃᐅᔨᔪᒪᔭᒥᖕᓂᒃ ᐃᑲᔫᑎᓂᐊᖅᑐᑦ ᑐᐊᕕᕐᓇᖅᑐᓄᑦ ᑭᐅᓯᔭᓇᐊᕐᑲᖅᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᐱᑐᐃᓐᓇᓇᐊᕐᑲᓕᖅᓯᒪᔭᓇᐊᕐᑲᖅᑕᓄᑦ ᑕᓇᐅᖅ ᓯᕿᖅᑕᐅᓐᓂᖅᐸᑦ. ᓯᕗᓂᐊᓂ ᖁᕕᔪᕐᑲᓚᐅᖅᑎᓐᓇᒍ ᓯᓪᔭᖕᒐ ᖃᐅᔮᓴᖅᑕᐅᓗᓂ ᐃᓚᒥᔭᐅᓗᑎᒃ ᖃᐅᔨᒪᐅᑎᒃᓴᐃᑦ ᓯᓪᔭᖕᒐᓂᒃ ᓃᕐᓗ ᖃᓄᓇᒎᓂᖕᒐ ᐊᒻᒪᓗ ᐋᕿᒃᓯᒪᓂᖕᒐ, ᐅᔭᕋᖕᒋᑦ ᐊᒻᒪᓗ ᐱᕈᖅᑐᖕᒋᑦ ᖃᓄᓐᒎᖕᒪᖕᒌᑕ.•ᓄᐊᑦᑎᓂᐊᕐᓗᑕ ᓯᓪᔭᖕᒐᓂᒃ ᑐᑭᓯᓇᐊᕐᑲᖅᑕᑦᑎᓐᓂᒃ, ᐊᑦᑎᓈᕐᓂᐊᖅᑐᖅ ᖁᓕᒥᒎᓕᒃ ᐃᓕᑦᑎᓇᓯᒡᓗᑎᒃ ᐃᓂᖕᒋᓐᓂᑦ ᐊᒻᒪᓗ ᓄᓇᖕᒐᓂ ᑕᕐᓇᔭᐅᓯᐅᕐᓗᑎᒃ ᐊᒻᒪᓗ ᐊᔾᔨᓕᐅᓇᓗᑎᒃ ᓯᓪᔭᖕᒐ ᖃᓄᐃᓕᖕᒐᖕᒪᖕᒌᑦ.•ᑕᐃᒪᓗ ᓯᓪᔭᖕᒐᓂᒃ ᖃᐅᔨᓴᕈᑎᑖᓚᐅᕐᓗᑎᒃ, ᑖᒃᑯᐊ ᑐᑭᓯᓇᖅᓯᔪᑦ ᓂᐱᓕᐅᖅᓯᒪᓂᐊᖅᑐᑦ ᐃᓗᐊᓂ ᓄᓇᓐᖑᐊᓕᐅᕈᑎᑦ ᓄᐊᓯᒪᔪᓄᑦ. •ᓯᓪᔭᖕᒐᓂ ᑐᑭᓯᓇᖅᓯᔪᑦ ᐱᓕᓇᐊᖕᒍᔪᑦ ᕿᒥᕐᕿᐊᕐᓗᒋᑦ ᓯᕕᖕᒑᔾᔪᕐᓂᖕᒐ ᑕᕐᓇᔭᐅᓯᐅᕐᓗᒍ ᐊᒻᒪᓗ ᓄᓇᖕᒐ ᐊᔾᔨᓕᐅᕐᓗᒍ. ᐅᓇ ᑭᖕᒎᓪᓕᖅᑰᖅᓯᐅᑎ ᐱᓕᓇᐊᖕᒍᔪᖅ ᓇᓗᓇᐃᖅᓯᑦᑎᐊᕐᓗᑎᒃ ᓄᓇ ᑭᓯᖃᕐᓂᖕᒐ ᐅᑯᐊᓗ ᓇᓗᓇᐃᑦᑎᐊᖅᓯᒪᔪᑦ ᐊᑐᓂ ᓯᓪᔭᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᐊᑕᔪᑦ ᒪᓪᓕᕐᓂᖕᒋᑦᑕ ᑭᓪᓕᖕᒋᑦ. ᐊᑐᖅᓯᓗᑎᒃ ᓯᓪᔭᖕᒐᓂᑦ ᖃᐅᔨᓴᕈᑎᑖᑦ ᐊᑯᑎᑦᑎᓄᑦ ᑭᐅᓯᔾᔪᑎᒥᓂᐊᖅᑐᓄᑦ ᐅᑯᐊ ᖃᓄᐃᓕᖕᒐᖕᒪᖕᒌᑕ ᓴᓂᓕᓈᑦ ᓯᓪᔭᖕᒐᓂ ᑭᓯᖃᕐᒪᖕᒌᑕ ᖃᐅᔨᓴᕈᑎᑖᕐᕕᐅᓗᑎᒃ ᐊᑐᖅᑕᐅᓂᐊᕐᒪᑕ ᓇᓗᓇᐃᖅᓯᓗᑎᒃ ᐊᑯᑎᖕᒐᓂ ᐊᑦᑕᕐᓇᖅᑐᑦ ᓯᓪᔭᖕᒐᓂ ᖃᓄᓐᒎᖕᒪᖕᒌᑕ, ᐃᑲᔫᑎᒃᓴᐃᑦ ᑭᐅᑲᐅᑎᒋᔭᓇᐊᓂᑦ ᓯᕿᖅᑕᐅᔪᑦ, ᐊᒻᒪᓗ ᐃᑲᔫᑎᒃᓴᐃᑦ ᐊᑑᑎᖃᖅᑐᒥᒃ ᓴᓗᒻᒪᖅᓴᐃᔾᔪᑎᒃᓴᓄᑦ. ᐅᑯᐊ ᓴᕿᑕᐅᔪᑦ ᖃᐅᔨᓴᕈᑎᑖᓂ ᓄᓇᓐᖑᐊᖃᖅᓗᑎᒃ, ᑐᕿᖅᑐᒍᑦ ᐱᐅᓯᕚᓪᓕᕈᑎᒥᓂᐊᕐᒪᑕ ᐃᓯᒪᓕᐅᓇᓂᐊᕐᓗᓂ ᐅᖅᓯᐊᓗᖕᒥᒃ

ᑯᕕᕙᖅᑲᖅᐸᑦ. ᐃᓚᓕᐅᑎᓯᒪᓗᒥᑦ ᑐᓴᒐᒃᓴᐃᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᕙᒥᑦ ᐊᒻᒪᓗ ᖁᓕᒥᑰᓕᖕᒍᐊᑎᒍᑦ ᐊᔾᔨᓕᐅᕆᑎᖅᑲᖅᑐᑎᒍᑦ, ᓂᓇᐅᒃᑐᒍᑦ ᑐᓂᓯᓯᒪᕙᓐᓇᕐᓂᐊᕿᑦᑕ ᑕᒪᒃᑭᖅᓯᒪᓗᒥᑦ ᑲᓇᑕᐅᑉ ᓯᓪᔭᕆᐊᓂᒃ ᐃᑲᔫᑎᓂᐊᖅᑐᑦ ᐅᖅᓱᐊᓗᖕᒥᒃ ᑯᕕᕙᖅᑲᖅᐸᑦ ᐊᒻᒪᓗ ᓴᐳᒻᒥᔾᔪᑎᒥᓗᒥᑦ ᑕᓇᐅᖅ ᐊᕿᑎᖕᒥᓐᓄᑦ. ᐅᖓᑖᓄᑦ ᐃᑲᔫᑎᑦ ᐅᖅᓱᐊᓗᒃ ᑯᕕᕙᖅᑲᑦᐸᑦ ᑭᐅᔨᔾᔪᑎᑦ ᐊᒻᒪᓗ ᐊᔾᔨᖕᒍᐊᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ ᓄᓇᓕᖕᓂᑦ ᐊᒻᒪᓗ ᐊᕙᑎᓕᓇᔾᑯᓂᑦ ᐊᐅᓚᑦᓯᔾᔨᖕᒥᓂᑦ ᐱᓕᕆᐊᖕᒍᓂᐊᖅᑐᓂᒃ ᐸᕐᓇᐃᔾᔪᑎᒥᓗᒥᑦ, ᑕᓇᕐᒥ ᐊᑦᑕᕐᓇᖅᑐᒦᑕᐃᓕᑎᑦᑎᔾᔪᑎᑦ ᐊᒻᒪᓗ ᑭᐅᔨᓂᖅ ᐱᑐᐃᓐᓇᓇᐊᖅᑲᓕᖅᓯᒪᒥᐊᖅᑲᖅᓂᖅᒍᑦ, ᖃᐅᔨᓴᑦᑎᐊᖅᑐᒥᑦ ᓄᓇᖓ ᑕᓇᐅᖅ ᐃᓂᑐᖅᑲᖕᒐᓄᑦ ᐅᑎᕆᓐᓇᕐᓂᖓ, ᑕᓇᐅᕐᒥ ᐸᕐᓇᐃᓂᖅ, ᓂᖅᑭᒃᓴᖅᑎᑦᑎᓂᖅ, ᐊᓯᖕᒥᓪᓗ.ᐅᓪᓗᖅ (ᐅᓪᓗᐃᑦ) ᐊᒻᒪᓗ ᖃᖓᐋᒍᓯ 15-ᒥᑦ 23-ᒧᑦ, 2023 (ᐃᖃᓗᒃᑑᑦᑎᐊᖅ, ᓄᓇᕗᑦ) ᓄᑖᕆᖅᑎᑕᐅᓂᖓ ᐃᓂᓯᖃᖓᓄᑦᐱᑕᖃᙱᑦᑐᖅ - ᐅᓇ ᐱᓕᕆᐊᖑᔪᖅ ᐃᓚᖃᙱᑦᑐᖅ ᖃᓄᐃᓐᓇᖅ ᖃᐅᔨᓴᕆᑖᔾᔮᙱᑦᑐᒍᑦ ᐅᑉᐸᓚᓐᓂᑦ ᐋᖅᑭᒋᐊᖅᓯᔫᙱᑦᑐᒍᑦ ᓄᓇᖓᓂᒃ.ᐱᓕᕆᐊᖑᔪᖅ ᐊᓯᐊᑰᕆᓇᐅᑎᖕᒥᑦᐅᖓᓯᒃᑑᑕᐅᖓᓚᑦ ᐊᒻᒪᓗ ᐊᖕᒥᕙᐋᓘᓪᓗᑎᒃ ᑲᓇᑕᐅᑉ ᓯᓪᔭᕆᑦ ᑕᐃᒪᓗ ᓯᓪᔭᓂᒃ ᓄᓇᙳᐊᓕᐅᕐᓂᐊᖅᑐᒍᑦ ᖁᓕᒥᑰᓕᒃᑯᑦ ᐊᒻᒪᓗ ᐅᐸᒃᓯᖃᑦᑕᕐᓗᑕ ᖃᓄᐃᓕᐅᕆᐊᖃᖅᑐᓄᑦ ᐃᓖᓐᓂᒃᑯᑦ ᐱᔭᕐᓂᖅᐸᙱᑦᑐᖅ. ᑕᐃᒪᓐᓇᐅᓂᖓᓄᑦ, ᑲᓇᑕᓕᒫᖅ-ᑕᒪᕐᒥᒃ ᓯᓪᔭᕆᑦ ᓇᓗᓇᐃᑦᑎᐊᓇᐊᖅᑲᕐᒪᑕ ᑕᐃᒪᓗ ᐱᓕᓇᔭᐅᓚᐅᖅᓯᒪᙱᑦᑐᑦ ᑕᒪᕐᒥᒃ ᑲᓇᑕ. ᐅᓇ ᐱᓯᒪᓂᐊᖅᑐᖅ ᐊᖕᒥᕙᓂᒃ ᑐᓴᐅᒪᔾᔪᑎᒃᓴᓂᒃ ᐱᑕᖃᙱᒻᒪᑦ, ᐊᒻᒪᓗ ᐊᑦᑕᕐᓇᖅᑐᖃᕈᓐᓇᖅᑐᖅ ᐅᖅᓱᐊᓗᒃ ᑯᕕᒃᐸᑦ ᐱᑐᐃᓐᓇᓇᐊᖅᑲᖅᓯᒪᔭᓇᐊᖅᑲᖅᑕᑦ. ᓄᑖᖕᒍᓂᖅᓴᐃᑦ, ᓴᕿᑦᑎᐊᖅᑎᑦᑎᕙᓐᓇᖅᑐᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᕙᒃᑯᑦ ᑕᐃᒪᓗ ᐱᕕᖅᑎᑦᑎᒍᑦ ᐱᐅᕙᒥᒃ ᐱᒥᐊᖅᕕᒥᓗᒍ ᖃᐅᔨᓇᓯᓪᓗᑕ ᐊᑐᕆᓐᓇᖅᑕᑦᑎᓐᓂᒃ ᓯᓪᔭᓕᒫᖕᒐᓂᑦ-ᑕᒪᕐᒥᒃ ᓄᓇᙳᐊᓕᐅᕐᓗᑕ ᐊᒻᒪᓗ ᑭᓯᖅᑲᕐᒪᖕᓛᑕ ᓇᓗᓇᐃᒃᑯᓯᕆᑎᒥᓗᒥᑦ. ᐊᓯᐊᒍᑦᑕᐅᖅ ᐊᑐᕆᓐᓇᖅᑐᒍᑦ ᖁᓕᒥᑰᓕᒃᑯᑦ ᓄᓇᙳᐊᓕᐅᕐᓗᑕ, ᓴᕿᑦᑎᓂᐊᕿᑦᑕ ᓯᓪᔭᖕᒐ ᑭᓯᖅᑲᕐᒪᖕᓛᑦ ᓇᓗᓇᐃᒃᑯᓯᕐᓗᒥᑦ ᖃᐅᔨᓴᕆᑎᒃᓴᓂᒃ ᐊᑐᖅᓯᓗᑕ ᐊᔾᔨᒦᙱᑦᑐᓂᒃ ᐊᔾᔨᓕᐅᕆᑎᓕᖕᓂᒃ ᖃᓄᓴᐅᔭᑎᒍᑦ. ᐅᑯᐊ ᐃᓚᖅᑲᖅᑐᑦ ᖃᓄᓴᐅᔭᒃᑯᑦ ᓴᕿᑦᑎᐊᕆᓐᓇᖅᑐᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᕙᑎᒍᑦ, ᐊᒻᒪᓗ ᓴᕿᑦᑎᐊᕆᓐᓇᖅᑐᑦ ᖁᓕᒥᑰᖕᒍᐊᖅᑎᒍᑦ ᐊᔾᔨᓕᐅᖅᓯᒪᕙᑦ. ᖃᓅᑎᒥᖕᒪᖕᓛᑕ ᐃᒻᒥᖕᓄᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᕙᓂᓪᓗ ᖁᓕᒥᑰᓕᖕᒍᐊᓂᓪᓗ ᐱᓕᕆᐊᖕᒍᕙᑦ ᖃᐅᔨᓂᐊᕿᑦᑕ ᐅᖓᓯᒥᓗᒥᑦ ᖃᐅᔨᓴᕆᑎᑦ ᐊᑑᑎᖅᑲᑦᑎᐊᕐᒪᖕᓛᑕ, ᐊᒻᒪᓗ ᑐᓴᕐᑎᑦᑎᕙᓐᓇᕐᒪᑕ ᑕᐃᓖᒃᑕᐅᖅ ᖁᓕᒥᑰᓕᑰᖁᔭᕆᑦᑕ.

Inuinnaqtun: Kimilguuktauhimaitut Hanayakhat NaituutaitTamaat aniaktitailigiyiit Kanatami tagiunit akhut pipkaikataktait tagiumi avatilingit. Mikhaanut Tagiut Munagitjutait Paknaiyautait (OPP), Avatiligiyit ovalo Hilat Aalanguktiligiyit Kanatami havaliktut munaginahualugit, tamaktitailigilugit ovalo utiktinahualugit Kanatami tagiut avatingit. Ataani OPP, havakatigiyavut manikhakhimaliktut katitigiaganik naunaiyagutikhait hinaani katitiklugit ukhukyuanik kuvihimayunik paknaiyakhimayaanganik. Kitkaniitut pinahuaktait hinaani ilanganut pinahuagiyainik katitiklutik tuhagutikhainik ikayugiagani ayokhaligumik kiukataktut paknaiyautikhainut ovalo paknaiyakhimalutik tagiumi halumaiktihaniagutainik. Kuvitinagit hinaani katitiniaktut ilaulugit katitigutikhait hinaani tuhagutikhait, ilaa hinaaniitut hunavaluit ovalo kanugitjutait, hunavalunik ovalo nunauyanik. •Katitilutik kitkaniitut hinaanit tuhagutikhaiat, imaiyahimagaagat tingmilutik Halikaptakut piniaktut kimilguugiaganik hinaat nunangit kungialiulugit ovalo piksaliulugit hinaat kanugitjutait.•Pitaagumik hinaanit katitigutait, tahapkoa tuhagutikhait kungialiuniaktut, titigaklugit ilanganut GISmut katitigutainut. •Hinaani ukautait piniaktut kimilguulugit pihimayait kungialiukhimayunit ovalo hinaat naunaiyaklugit piksanit. Iniktigutikhait piniaktut nunaat hinaani naunaiyaklugit kanugitaakhaat hinaangit ovalo ilauyait imaiyagutait ovalo imaukagutait. Atuklutik hinaait katitigutait avatiligiyiit kiutjutainit: Hinaagit kanugitjutait katitihimaniaktut atuniaktut naunaiyaklugit avatiligiyiga hinaat aalatkiit, ikayugutikhait kiugiaganik kilamik kuvipkaigumik ovalo ikayugiaganik halumaktigutikhait. Tunivlugit katitikhimayut nunauyaliuniaktainik, pinahuaktugut ihuakhinahualugit angiktigutikhait kuvikakat ukhukyuanik kiutjutivut. Ilauniaktut tuhagutikhait kungmuukhimayunit ovalo tingmitjutinik kungialiukhimayut, pinahuaktugut piksaliulugit/kungialiuklugit tamaat Kanatami hinaat ikayugiaganik ukhukyuat kuvikpata kiutjutikhait ovalo munagitjutikhainik tagiut ilanga. Avataanut ikayugutikhait ukhukyuat kuviyut kiutjutainik, katitihimaniaktut ovalo kungialiulugit atuklugit nunalaani ovalo avatiligiyiit munagiyiit munagiyaanganik hanayakhat paknaiyautikhait, tagiumi namaktigutikhait ovalo kiuyukhat paknaiyautikhainik, kimilguufaalugit tagiut utiktinahuaktainik, tagiumi paknaiyakhainik, nikiit ayokhagutainik, ilanganut. Ublua ovalo UblukhiutaitAugust 15mit-23mut, 2023 (Ikaluktutiak, NU)PiniaktaitNA – Hamna hanayakhat ilaulaitut kimilguugutainik ovaluniit ihuakhaitjutikhainik nunat. Hanayakhat AalangatjutikhaitAngitut ovalo avaliitut Kanatami hinaangit pihimaliktut hinaat

nunauyaliugutainik atukhugit halikaptat ovalo naunaiyakhugit ilaani ayokhakhutik. Taimaimat, Kanatami tamaat hinaat naunaiyagutait inikhimaitut tamaat Kanatamut nunaa. Hamna ilauyut angiyumik tuhagutikhait pikangitumik ovalo ayokhalaagutait ukhukyuat kuvigumik, ayokhaligumik paknaiyautikhainiklu. Kungialiukhimaitut kungmuuhimayunik tunilaatut pilaagutipinik pilikluta kinikhiatjutainik pilaaktut tagiumi hinaat nunauyaliugiaganik ovalo naunaiyaklugit. Aalanut halikaptanik nunauyaliugutait, hananiaktugutlu hinaanit naunaiyagutainik pilaagutainut atuklutik aalakiinik kungialiugutit. Hapkoa ilauniaktut kungmuutjutit kungialiuklugit, ovalo tingmitjunut piksaliulutik. Aatjikutiliugumayugut nipiliugutainik tagiut atuklutik halikaptanik naunaiyagiaganik nipigliugutit ihuakhilaaktut ovalo tuhagutikhainik atugumik halikaptanik.

Personnel

Personnel on site: 2

Days on site: 10

Total Person days: 20

Operations Phase: from 2023-08-10 to 2023-09-25

ᐱᓕᕆᐊᕆᔭᐅᓂᐊᖅᑐᑦ

ᓇᒥ	ᖃᓄᐃᓪᓗᒥᑦ ᐱᓕᕆᐊᖃᕐᓂᐊᖅᐸ	ᑭᒃᑯᑦ ᓄᓇᖁᑖᓂ	ᑐᓴᐅᒪᔭᒃᓴᑦ ᓄᓇᐅᑉ ᖃᓄᖅ ᐊᑐᖓᐅᓚᐅᖅᓯᒪᔭᕆᐊᖕᒐᓐᓂᒃ	ᐃᑦᓴᕐᓂᑕᖃᕐᕕᐅᕙᓚᐅᖅᐸ ᐃᓄᒃᓄᑦ ᓇᔪᖅᑕᐅᖃᑦᑕᕐᓂᒎᕙᓗ ᑕᐃᑦᓱᒪᓂᑐᖃᐅᓕᖅᑐᖅ	ᖃᓂᓐᓂᖅᐹᖅ ᓄᓇᓕᒥᔭᐅᔪᖅ ᐊᒻᒪᓗ ᓴᐳᒻᒥᒃᓯᕕᐅᕙᓗ ᓯᓇᓄᑦ
Area around Cambridge Bay (This polygon shows the approx. extent of the mapping area) This mapping work will be based out of Cambridge Bay . (Timing - August 15-23, 2023)	Aerial surveys	Inuit Owned Surface Lands	na	na	Proximity to nearest communities: Cambridge Bay. Proximity to nearest protected areas: Queen Maud Gulf MBS.
Area around Cambridge Bay (This polygon shows the approx. extent of the mapping area) This mapping work will be based out of Cambridge Bay . (Timing - August 15-23, 2023)	Aerial surveys	Crown	Na	Na	Proximity to nearest communities: Cambridge Bay. Proximity to nearest protected areas: Queen Maud Gulf MBS.

ᓄᓇᓕᐅᑉ ᐃᓚᐅᖃᑕᐅᓂᖓ ᓄᓇᓖᓐᓄ ᐊᕕᒃᑐᖅᓯᒪᐅᕐᓂᖓᓄᑦ ᐃᑲᔪᑕᐅᔪᓐᓇᖅᑐᑦ

ᓄᓇᓕᒥᔭᖅ	ᐊᑏᑦ	ᑲᑐᔾᔨᐊᖃᑎᒌᒥᔭᖅ	ᖃᖓᓗ

			ᑐᓴᖅᑎᑕᐅᓚᐅᕆᐊᖏᓐᓂᒃ
ᐃᖃᓗᒃᑑᑦᓯᐊᖅ	Ivorson Maksagak	EHTO	2023-07-14

ᓚᐃᓴᓐᓰᑦ ᐱᒍᙵᐅᑏ ᐊᖏᖅᑕᐅᓯᒪᔪᑦ

ᓇᒦᒥᐊᖏᓐᓂᒃ ᐱᓕᕆᐊᕆᐤᕕᐅᓂᐊᖅᑐᑦ ᑎᑎᕋᕐᔪᒥᑦ:

Kitikmeot
North Baffin

ᓚᐃᓴᓐᓰᑦ ᐱᒍᙵᐅᑏ ᐊᖏᖅᑕᐅᓯᒪᔪᑦ

ᒐᕙᒪᒌᔭᐅᔫᑉ ᐊᕕᒃᑐᖅᓯᒪᐅᕐᓂᖓᓐᓂ ᒪᓕᒐᕐᓅᖓᔪᓂᒃ ᐱᖁᔭᕐᓅᖓᔪᓂᒡᓗ ᑲᒪᔩᑦ ᐱᔪᙵᐅᑎᖭᕈᑎᓂᒃ ᓚᐃᓴᓐᓯᓅᓪᓗ ᑲᔪᓯᒃᑲᐃᔩᑦ	ᖃᓄᐃᑦᑐᓪᓚᓇᐅᕙ ᓚᐃᓴᓐᓯᑖᕈᑕᐅᔪᖅ ᐱᔪᙵᐅᑎᑖᕈᑕᐅᔪᖅ ᐊᖏᖅᑕᐅᔪᕐᓅᓐᓃᑦ	ᒫᓐᓇ ᖃᓄᐃᓕᖓᕙ	ᐅᓪᓗᒥ ᑐᓂᔭᖅ/ ᑐᒃᓯᖅᑑᑕᐅᓚᐅᖅᓯᒪᔪᖅ	ᑭᒡᓕᖃᕐᕕᖓ
ᑲᓇᑕᒥ ᐆᒪᔪᓕᕆᔩᑦ	Asked for permission/permit to fly past Queen Maud MBS to capture geotagged videos and photos. CWS determined that I did not need to obtain a permit given that I am flying a distance from shore and not landing in the protected areas.	Active	2023-06-23	
ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᒃᑯᖏᑦ	Seeking permission to place one fuel cache on Inuit owned lands. Fuel cache will allow the helicopter to refuel during helicopter surveys.	Applied, Decision Pending		
ᓄᓇᕗᒥ ᖃᐅᔨᓴᖅᑐᓕᕆᔨᒃᑯᑦ	Application submitted for a scientific research license to conduct shoreline videography in Nunavut.	Applied, Decision Pending		
ᑲᓇᑕᒥ ᒥᙳᐃᖅᓯᕐᕕᓕᕆᔨᒃᑯᑦ	Parks Canada notified me that I do not require a National Park permit for Simirlik National Park as I	Active	2023-03-30	

	will not be landing in the park. They provided me with some flight guidelines for flying over the park.			
ᑲᓇᑕᒥ ᓄᓇᕗᑦᑲᑦᑐᑕᓂᓇᖅᑯᑦ ᐅᑭᐅᖅᑕᕗᑐᒥ ᐱᓕᕆᓂᓇᔨᓪᓗ	CIRNAC - Lands administration office. Permission to cache fuel on crown lands.	Active	2023-05-04	

Project transportation types

Transportation Type	ᓯᓚᒍᑦ ᐊᑐᓚᐅᓂᐊᖅᐸ	Length of Use
Air	Low-altitude helicopter flights	

Project accomodation types

ᓄᓇᓕᒫᖅ

ᐊᓯᖏᓚ,

ᐊᑐᒥᐅᓂᐊᖅᑐᖅ

ᐱᕐᑯᑦ ᐊᖏᔪᖅ ᐊᑐᖅᑕᐅᓂᐅᓴᔪᖅ ᐃᓚᖃᓯᐅᑎᓗᒋᑦ ᐃᑰᑕᐃᑦ, ᒥᓪᓗᐊᕈᑏᑦ, ᖃᖓᑕᔫᖅ, ᓄᓇᓯᐅᑦ ᐊᓯᖏᓪᓗ

ᐊᖏᔪᖅ ᐱᕐᑯᑦ ᐊᑐᒥᐅᓂᐊᖅᑐᖅ ᖃᓄᐃᑦᑑᓂᖓ	ᖃᑦᓯᐅᕖᑦ	ᐊᖏᓂᖏᑦ - ᐳᖅᑐᓂᖏᑦ	ᓱᓇᒧᑦ ᐊᑐᒥᐅᓂᐊᖅᐸ
Helicopter	1	20 X 8	To collect key shoreline information and establish a shoreline database, low-altitude helicopter overflights (approximately 60-70 knots, 200-300 feet elevation above the water, and 300ft off the shoreline) are conducted at the study site to capture video of the shoreline characteristics.
Video camera	1	24 x 6	Video camera on a gimbal to collect geotagged videos.
Camera	1	6 x 4	Digital camera to collect geotagged photos.
GPS	2	2 x 3	GPS to record our flight path.
Tough book tablet	1	4 x 6	Toughbook tablet to display map and to record our flight path.

ᑎᑎᕋᐅᓯᙵᓗᒍ ᐅᖅᓱᒃᓴᐃᑦ ᐊᑦᑕᓇᖅᑐᖅᑕᓖᓪᓗ ᐊᑐᖅᑕᐅᓂᐊᕐᓂᖏᑦ

ᓱᓇᒧᑦ ᐅᖅᓱᒃᓴᒡᒋᐊᖅ ᐊᑐᒥᐅᓂᐊᖅᐸ	ᖃᓄᐃᑦᑐᓪᓚᙵᐅᕙ ᐅᖅᓱᒃᓴᒡᒋᐊᖅ	ᖃᑦᓯᐅᕖᑦ ᐅᖅᓱᒃᓴᖃᐅᑏᑦ	ᐴᒃᓴᐅᐸ ᐃᒪᖄᖅᑎᒋᔪᓐᓇᕐᓂᖓ	ᑲᑎᓪᓗᒍ	ᐴᒃᓴᐃᑦ ᐊᒥᓲᓂᖏᑦ	ᓱᓇᒧᑦ ᐊᑐᒥᐅᓂᐊᖅᐸ
Aviation fuel	fuel	0	208	0	Liters	Access to bulk aviation fuel from the Cambridge Bay Airport.
Aviation fuel	fuel	12	208	2496	Liters	We have applied to the Polar Continental Shelf Program for logistical research

						support in the Arctic. They have proposed one-two fuel caches with 6 drums max each south of Cambridge Bay near Kent Peninsula. Planned removal of drums by August 27th, 2023.

ᐃᒪᖅ ᐊᑐᖅᑕᐅᔪᒪᖅᑐᖅ

ᐅᓪᓗ ᑕᒪᖅ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᖅ	ᖁᓄᖅ ᐃᒥᖅᑕᖅᑲᑦᑕᖅᓂᐊᖅᐸᑦ	ᓄᑭ ᐃᒥᖅᑕᖅᑲᑦᑕᖅᓂᐊᖅᐸᑦ
0		

ᐊᑲᑕᔪᑦ

ᐊᑲᑕᔪᓪᓗᓂᐊᕐᓂᖅ

ᐱᓪᓗᐊᓗᐅᔾᔨᒪᔨᒧᑦ ᐱᓪᓗᐊᓗᒃᑲᐅᓂᐊᖅᑐᖅ	ᖃᓄᐅᐃᑦᑐᖅ ᐊᑲᑕᔪᖅ	ᖃᓄᐅᑎᒋ ᐊᑲᑕᔪᑦ ᓴᖅᑭᐊᓂᐊᖅᑐᓗᒃᑲᐅᕐᓂᑦ	ᖃᓄᐅᖅ ᐊᑲᑕᖅᑕᐅᓂᐊᖅᓯ	ᓴᓗᒪᖅᓴᐅᑎᑲᒃᓴᓂᐅᓂᐊᖅᑐᑦ
Waste disposal	Other, Food and domestic wastes	5lbs	Disposal in such a manner to always avoid release into the environment and accessto wildlife. Anything we bring in, we will pack out with us and dispose of properly at an approved facility.	NA

ᐊᓯᑎᒥᐅᑕᓂᑦᑐᑦ ᐊᑲᑐᖅᑕᐅᓯᒪᔪᑦ

We anticipate the low-altitude helicopter overflight will have a relatively low potential impact of wildlife and the environment. Wildlife may be impacted by: Noise, sudden movements, physical contact with helicopter (unlikely). Anticipated wildlife impact may include: brief periods of alertness while maintaining activities, animals may watch the aircraft, minor changes in animals existing travel speeds, methods and routes, and no change in animal group size or movements. Some moderate impacts might include flight to escape terrain, or flocks of birds taking flights or other changes in animal behavior. Mitigation measures: - Prior to initiation, identify and map sensitive sites (such as breeding, nesting, calving, migration) so we are aware of their location. - Seasonally (mid May-mid-July) avoid caribou birthing/rearing habitats by limiting helicopter flights altitudes to a minimum of 400m above the ground. - Select particular routes, heli-pads, heli-spots for all helicopter activities to avoid caribou birthing/reading areas. - Avoid landing sites on or near critical seasonal caribou habitats. - No circling above wildlife if spotted. - Avoid bear feeding sites, by limiting helicopter flights altitudes to a minimum of 400m above the ground and avoid general bear habiat by limiting helicopter flights altitudes to a minimum of 200m above the ground. - Liming helicopter overflights to a minimum of 400m above the ground in areas around waterfowl and shorebirds, and no circling over wetlands and flocks of birds. - Utilizing existing airstrips or using existing disturbed areas for helicopter takeoff and landings. - Predetermine suitable flight routes to: maintain avoidance distance, visual screening and reduced frequency of flights near critical areas. - Identify suitable landing sites in advance. - Plan fieldwork outside of calving/nesting/birthing season. - Convey the mitigation measures to all staff.

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

ᒫᓐᓇ ᐊᕙᑎᐅᑉ ᖃᓄᐃᑦᑐᓪᓚᕆᐅᓂᖓ: ᓄᓇᐅᑉ ᖃᓄᐃᑦᑑᓂᖓ

We will be planning to map part of the coastline of one Migratory Bird Sanctuary (please note that we connected CWS about permits).We will be flying past the coast of Queen Maud Gulf MBS.

ᒫᓐᓇ ᐊᕙᑎᐅᑉ ᖃᓄᐃᑦᑐᓪᓚᕆᐅᓂᖓ: ᐆᒪᔪᖅᑕᖃᕐᓂᖓ

We will be planning to map the coastline of one Migratory Bird Sanctuaries. We will be flying past the coast of Queen Maud Gulf MBS. The sanctuary is important not only for geese, but also for the many other species of migratory birds and wildlife that it supports.Queen Maud Gulf (Ahiak) Migratory Bird Sanctuary encompasses the most extensive wetlands in the central Arctic, which provide essential habitat for over 1% of the global white geese population. Over 2 million white geese nest within the sanctuary. This includes over 90% of the world's Ross's goose population and 8% of the Canadian snow goose population (including over 30% of the western Canadian arctic lesser snow goose population). The sanctuary also supports smaller populations of nesting and moulting Canada goose, greater white-fronted goose, brant and tundra swan. The geese arrive in the sanctuary in late May to moult in the inland lakes and rivers; remaining until late August or early September when they leave the area.This sanctuary is also important for many other species of migratory birds - from waterbirds and waterfowl to shorebirds and landbirds. Other species of migratory birds that breed in the sanctuary include:•long-tailed duck•king eider•American golden-plover•semipalmated plover•pectoral sandpiper•dunlin•semipalmated sandpiper•red phalarope•glaucous gull•herring gull•arctic tern•pacific loon•red-throated loon•parasitic jaeger•long-tailed jaeger•common redpoll•lapland longspur•savannah sparrow•peregrine falcon•rough-legged hawk•snowy owlSeveral species listed under the federal Species at Risk Act either breed within or utilize the sanctuary, including the barren-ground caribou (dolphin and union population), peregrine falcon and red knot (rufa subspecies). The entirety of the sanctuary is used by the barren-ground caribou (beverly ahiak herd) as part of its traditional calving grounds. It also supports an estimated 6000 muskoxen and is believed to be the original stock for most of the present-day mainland muskoxen. These ungulate herds, and the vast open habitat, also support substantial populations of predators like wolves, grizzly bears, foxes and wolverines.The most abundant marine animals in the area are the ringed seals that spend their time in the offshore waters, while the sanctuary's

numerous lakes, ponds and rivers are home to several species of fish. The most abundant of these is the arctic char.Source: https://www.canada.ca/en/environment-climate-change/services/migratory-bird-sanctuaries/locations/queen-maud-gulf-ahiak.html

ᐃᓐᓇ ᐊᕐᑎᐅᕆ ᖃᓄᐃᑦᑐᓕᓇᐅᓂᖅ: ᐃᓄᓕᓇᓂᑦᔨᖅᓱᑦ-ᐱᕙᓕᐊᔪᓕᓇᓂᑦᔨᖅᓱᑦ

This work will be taking place in and around the Coronation Gulft/Bathurst Inlet/QMG area. The nearest community is Cambridge Bay. We anticipate that the overall impact of this work will be positive on the socioeconomic environment as it will equip communities with resources/information about the coastline to support decisions about shoreline management during an environmental emergency.

Miscellaneous Project Information

ᓇᓗᓇᐃᖅᑕᐅᓂᖅᑎᑦ ᐊᑲᖅᑕᐅᓯᒪᔪᑦ ᖃᓄᐃᑦᑐᐅᓂᖅᑎᑦ ᕿᓚᐅᒋᔭᓯᖅᑕᐅᓂᐊᖃᖅᑎᓪᓗ

The helicopter does a single pass along the shoreline and moves along the coast. We typically fly at 110km an hour, so we pass by sites fairly quickly, reducing and limiting impact to the wildlife present. We anticipate the low-altitude helicopter overflight will have a relatively low potential impact of wildlife and the environment. Wildlife may be impacted by: Noise, sudden movements, physical contact with helicopter (unlikely). Anticipated wildlife impact may include: brief periods of alertness while maintaining activities, animals may watch the aircraft, minor changes in animals existing travel speeds, methods and routes, and no change in animal group size or movements. Some moderate impacts might include flight to escape terrain, or flocks of birds taking flights or other changes in animal behavior. As we are doing a single pass in the helicopter, past the coastline, we do NOT anticipate the single flight having an impact on changes in animal activity periods, change in animal bedding and feeding areas, lower productivity or abandonment of preferred habitats. Aircraft are noisy machines that travel at high speed with the ability to approach wildlife closely. All aircraft approaches will invoke some kind of reaction from animals. It is difficult to assess the impact of short-term reaction on populations, productivity and habitat use. Helicopters are also associated with rotor downwash and brownouts: high velocity wind vortices are generated by helicopter blades when the machine is hovering above a runway or bushland. This generates blankets of airborne dust particles, reduces habitat values and exposes vegetation and wildlife to lethal wind velocities. Direct physical damage such as to hearing or vegetation being shredded by rotor downwash. Mitigation measures:-Prior to initiation, identify and map sensitive sites (such as breeding, nesting, calving, migration) so we are aware of their location.-Seasonally (mid May-mid-July) avoid caribou birthing/rearing habitats by limiting helicopter flights altitudes to a minimum of 400m above the ground. -Select particular routes, heli-pads, heli-spots for all helicopter activities to avoid caribou birthing/reading areas. -Avoid landing sites on or near critical seasonal caribou habitats.-No circling above wildlife if spotted.-Avoid bear feeding sites, by limiting helicopter flights altitudes to a minimum of 400m above the ground and avoid general bear habitat by limiting helicopter flights altitudes to a minimum of 200m above the ground. -Liming helicopter overflights to a minimum of 400m above the ground in areas around waterfowl and shorebirds, and no circling over wetlands and flocks of birds.-Utilizing existing airstrips or using existing disturbed areas for helicopter takeoff and landings. -Predetermine suitable flight routes to: maintain avoidance distance, visual screening and reduced frequency of flights near critical areas. -Identify suitable landing sites in advance.-Plan fieldwork outside of calving/nesting/birthing season.-Convey the mitigation measures to all staff.

Cumulative Effects

Disturbance for wildlife is an additive effect. While the occasional disturbance may be of limited short-term impact (such as this shoreline mapping project), each successive disturbance (other

projects in the area) can escalate the impact. The duration of disturbances can be of escalating importance. Wildlife initial response to disturbance is to flee to a secure area, so the ability to have a security area available where there is no disturbance is crucial for mitigation for shore-term and long-term impacts. The following may be considered to mitigate cumulative impacts:-Where aircraft operations impact wildlife, impacts should be restricted to a minority of their habitat use areas. -For anticipated cumulative impacts, consider implementing protocols can which can identify: oOnly one flight path to be used. oHelicopter will not standby in or around higher elevation habitats oWhere possible flight paths will be restricted to lower elevation corridors oIn the event of an emergency situation, helicopter access with no restrictions will be permitted oAircraft meeting stricter noise standards be allowed to fly in a special incentive corridor.

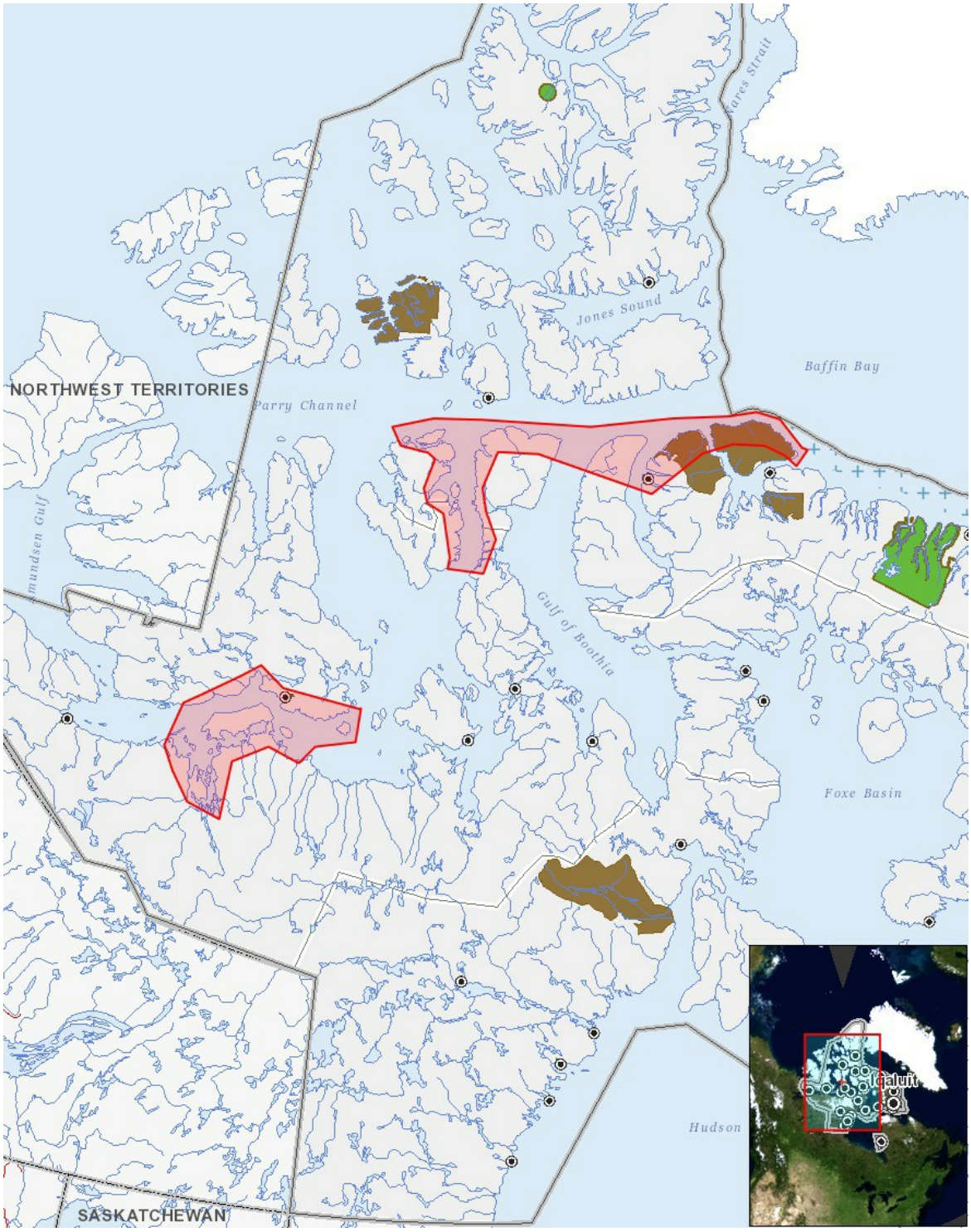
Impacts

ᓇᓗᓇᐃᖅᑕᐅᓂᖏᑦ ᐊᕙᑎᒥᐅᑕᓃᑦᑐᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᑦ

	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
ᓴᓇᓂᖅ																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
ᐅᔭᕋᒃᑕᕐᓂᖅ																									
Aerial surveys		-	-	-	-	-	-	-	-	-	-	-	M		M	M	M	-	M		-	-	-	-	-
ᐃᑐᑦᑎᕆᓂᖅ																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = ᐊᑲᐅᓈᕈᑎᔪᓐᓇᖅᑐᑦ, N = ᐊᑲᐅᖕᒋᔾᔪᑕᐅᔪᓐᓇᖅᑐᑦ ᐸᓚᐅᒥᔾᔪᓯᖅᑐᖅᑕᐅᔪᓐᓇᖏᑦᑐᓪᓗ, M = ᐊᑲᐅᖕᒋᔾᔪᑕᐅᔪᓐᓇᖅᑐᑦ ᐸᓚᐅᒥᔾᔪᓯᖅᑐᖅᑕᐅᔪᓐᓇᖅᑐᓪᓗ, U = ᖃᐅᔨᒪᓐᓇᖏᑦᑐᖅ)

ᓇᒻᒪᖅᑎᖅ ᐱᓕᕆᐊᓕᕆᔨᐅᔪᖅ



List of Project Geometries

1 polygon	Southern Coastline of Lancaster Sound (This polygon shows the approx. extent of the mapping area) This mapping work will be performed from a Canadian Coast Guard vessel. (Timing - Sept 7-13, 2023)
2 polygon	Area around Cambridge Bay (This polygon shows the approx. extent of the mapping area) This mapping work will be based out of Cambridge Bay . (Timing - August 15-23, 2023)