NIRB Application for Screening #125884
OPP 2.0 Baseline Shoreline Mapping 2024

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Project Proponent:	Valerie Wynja ECCC 1125 Colonel By Drive, NWRC, Raven Road Ottawa Ontario K1S 5B6 Canada Phone Number:: 6132963540, Fax Number::

DETAILS

Non-technical project proposal description

English: Project information about ECCC's Shoreline Mapping for Oil Spill Preparedness in the Arctic (2024)1.Proponent information SectorGovernment of Canada, Environment and Climate Change Canada, Science &Technology Branch, Wildlife and Landscape Science Division, Landscape Science & Technology Division, Geomatics Research SectionOriginatorValerie Wynja, Physical ScientistValerie.wynja@ec.gc.caCell: 613-296-3540Proponent DescriptionThe Geomatics Research Section is focused on the use of geospatial data and information to support Environment and Climate Change Canada's wildlife conservation and protection mandate. The Geomatics Research Section contributes to a number of priority departmental programs, including Species at risk critical habitat delineation and Migratory bird conservation. 2.SummaryNon-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 TimingWe hope to perform mapping activities during several different periods in the summer (June-Sept) of 2024. 1)Summer 2024 - mapping Southern Bathurst Inlet (based out of Cambridge Bay/Bathurst Inlet, NU - logistical support through the Polar Continental Shelf Program (PCSP))2)Summer 2024 - mapping Frobisher Bay near Iqaluit (Iqaluit/based off of a Canadian Coastguard vessel)3)Summer 2024 mapping Rankin Inlet, Chesterfield Inlet and part of Baker Lake (Rankin Inlet/based off of a Canadian Coastguard vessel)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.

French: Informations sur le projet de cartographie du littoral du CECC pour la préparation aux déversements d'hydrocarbures dans l'Arctique (2024)1.Informations sur le promoteur SecteurGouvernement du Canada, Environnement et Changement climatique Canada, Direction générale de la science et de la technologie, Division de la science de la faune et du paysage, Division de la science et de la technologie du paysage, Section de la recherche géomatiqueAuteurValerie Wynja, spécialiste en sciences physiquesValerie.wynja@ec.gc.caCellulaire : 613-296-3540Description de l'auteur de la propositionLa Section de recherche en géomatique se concentre sur l'utilisation de données et d'informations géospatiales pour soutenir le mandat de conservation et de protection de la

faune d'Environnement et Changement climatique Canada. La Section de la recherche en géomatique contribue à un certain nombre de programmes ministériels prioritaires, notamment la délimitation des habitats essentiels des espèces en péril et la conservation des oiseaux migrateurs. 2.Résumé du projetRésumé non technique du projetLa 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 recueillir 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 la 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 littoral écologiquement sensibles, pour soutenir une réponse rapide aux incidents de pollution et pour 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 calendrierNous espérons réaliser des activités de cartographie pendant plusieurs périodes différentes au cours de l'été (juin-sept) 2024. 1) Été 2024 - cartographie du sud du bras de mer Bathurst (basé à Cambridge Bay/Bathurst Inlet, NU - soutien logistique par le biais du Programme du plateau continental polaire (PPCP))2) Été 2024 - cartographie de la baie Frobisher près d'Iqaluit (Iqaluit/basé sur un navire de la Garde côtière canadienne)3) Été 2024 - cartographie de Rankin Inlet, Chesterfield Inlet et d'une partie du lac Baker (Rankin Inlet/basé sur un navire de la Garde côtière canadienne).RemédiationS.O. - 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 pancanadienne du littoral 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.

Inuktitut: Hanayakhat tuhagutikhait mikhaanut ECCCkut Hinaani Nunauyaliuktait Ukhukyuanik Kuviyut Paknaiyautikhait Ukiuktaktumi (2024)1.Hananiaktut tuhagutikhait IlanganiitutKavamatukatkut Avatiligiyit ovalo Hilat Aalanguktigutainik Kanatami, Kauyimayatut & Hanaatiligiyiit Havakviit, Umayuligiyit ovalo Nunanik Kauyimayatut Havakvia, Nunaligiyiit ovalo Hanatiligiyiit Havakviani, KimilguuktitHanahimayaitValerie Wynja, KauyimayiValerie.wynja@ec.gc.caAlguyaktungitut Hivatautaa: 613-296-3540Hanayukhat UkautaitNunauyaliuktut Kimilguuktiit Havakvia kungiaktut atukhutik nunauyaliugutainik katitikhimayut ovalo tuhagutikhait Avatiligiyiit ovalo Hilat Aalanguktigutaini Kanatami umayuligiyiit minguikhikviinit ovalo munagiyainik maliklugit. Nunauyaliuktut Kimilguuktiit Havakvia ikayuktut amigaivyktunik hivuliuyukhat munagiyiit pilihimatjutainik, ilauyut Hugaat

tamalaaliktut nunait ilangit ovalo Nuutitiviit tingmiat minguikhikviit. 2.NaitumikKimilguuktaungitut Hanayakhat NaitumikTamaat Aniaktitailigiyit Kanatami tagiut akhut pipkaivaktuk hinaanit tagiut avatiligiyaginit. Mikhaanut Tagiut Munagitjutikhait Paknaiyautait (OPP), Avatiligiyit ovalo Hilat Aalanguktiligutainik Kanatami havakpaktut munagilugit, tamaktitailigilugit ovalo utiktinahualugit Kanataup hinaat avatiligiyingit. Ataani OPP, havakaatigiyavut manikhakhimaliktuk katitiklugit hunavaluit hinaanit katitikhimayut ukhukyuat kuvihimayut paknaiyautikhainik. Kitkaniitut huliniaktut hinaanit nunauyait katitigutait ilanga katitiklugit tuhagutikhait ikayugiaganik ayokhalaagutainik. Kiuyukhat paknaiyautikhainut ovalo upalugaiyagiaganik pilaaktumik hinaani kanugitjutait nunauyainik ovalo hunavalunik. •Katitiklugit kitkaniitut hinaanit tuhagutikhait, imaiyagaagat halikaptakut kimilguugiaganik tahamna kanugitaakhaak kungialiulugit ovalo piksaliulugit hinaat kanugiligutait.•Pitaagumik hinaat katitigutikhait, katitikhimaligumik, tuhagutikhait titigakhimayukhat ilanganut GISmi katitigutainut. •Hinaa ukautait kimilguuktauyukhat kungialiukhimayunit ovalo nunauyait piksaliuklugit. Kinguliit hanahimayut nunauyaliumut iliyukhat ukakhimalugit tamamik hinaat nunauyait ovalo ilangit imaiyakhimatitlugit nanihimayait imaukagutainut.Atuklutik hinaanit katitigutait avatiligiyiinit kiutjutait Hinaani kanugitjutait katitikhimayut atulaaktut naunaiyaklugit avatilgiyiit hinaat, ikayulugit kiulaaktut halumaihimayunik ovalo ikayuklugit halumaktigutainik. Tunilugit katitikhimayut nunauyamix, pinahualutik angiktigutikhainik kuvihimayunik halumaktigutikhait. Ilaulugit tuhagutikhait kungmuuhimayunik tingmitjutit ovalo tingmiuyat piksaliugutainik, tuniyumayugut angiyumik piksakhainik Kanataup hinaat ikayugiaganik kuvihimayunik kitjutainut kilamik ovalo munagilugit tagiut hinaangit. Avataanut ikayuktut ukhukyuanik kuviyunik kiuyut, katitikhimayut ovalo piksaliukhimayut atukhutik nunalaanit ovalo avatiligiyiit munagiyiit hanayakhat paknaiyautikhainik, tagiut naamagutikhainik ovalo kiuyukhat paknaiyautainik, kimilguukhimayut hinaat halumaktikhimayut, tagiut paknaiyautilikaktut, nikinik kaaktailigutikaktunut, ilanganutlu.Ubluit ovalo UblukhiutaitNunauyaliugumayugut ilangani auyakat (Junemit-Septmut) 2024mi. 1)Auyak 2024 – nunauyaliuluta Kiluhitumi (Ikluktutiamit/Kingaumit, NU – hanalgutiit ikayuktaulutik Kimilguuktinit Polar Continental Shelf Program (PCSP))2)Auyak 2024 – nunauyaliulugit Hinaat Iqaluit (Iqaluit/uhiiyakviit Hikulikiyiit Umiat)3)Auyak 2024 nunauyaliuklugit Kangiklinik, Igluligaarjuq ovalo ilanga Kamanituak (Kangiklinik/uhiiyakviit Hikulikiyiit Umiat)IhuakhaitjutikhaitNA – Hamna hanayakhak ilaulaituk kimilguugutainik ovaluniit ihuakhaitjutainik nunaat. Hanayakhat AalanguyatututNunaat ovalo angiyuk Kanatami hinaangit pipkaivaktut hinaani nunauyaliugutait halikaptakut ovalo titigauyakhutik atukhutik ilaani ayonakpaktuk. Taimaimat, Kanatami tamaat hinaat naunaiyagutait inikhimaitut tamaat Kanatami. Hamna ilautihimayuk angiyumik tuhagutikhait keeliniit ovalo kuvilaakhtuik ukhukyuat paknaiyautikaktukhak. Nutaat, hakugiktut kungmuukhimayut kungialiugutit tunilaaliktut nakuuyumik kinikhiatjutikhaiik atulaaktut hinaanut nunauyaliugutikhait ovalo iniktigutikhait. Aalanit halikaptat nunauyaliuktut, hanalaaliktugut hinaanit naunaiyautainik atukhutik aalatkiinik piksaliugutikhait atuklutik. Aatjikutiliugumayugut piksaliugutikhanik atugutikhait aalanit halikaptat, naunaiyagiaganik kimilguugutikhat. Atuklugit naamagiaganik ovalo tuhagutikhait nakuutkiyat atugumik halikaptat.

Inuinnaqtun: ᐱᓕᕆᐊᑉ ᒥᑦᓵᓄᑦ ᑐᓴᐅᒪᔾᔪᑎᑦᓴᖅ ᑖᒃᑯᐊ ECCC−ᑯᑦ ᐅᓕᓐᓂᐅᑉ ᑭᖕᓕᖕᒐᓂ ᓄᓇᙳᐊᓕᐊᕆᓯᒪᔭᖕᒐᑕ ᐅᖅᓱᐊᓗᒻᒥᒃ ᑯᕕᔾᖃᕐᓂᖅᐸᑦ ᐊᑐᐃᓐᓇᐅᒍᑎᒋᒍᒪᓪᓗᒍ ᐅᑭᐅᖅᑕᖅᑐᒥ (2024)1.ᐃᑲᔪᖅᑐᐃᒍᑎᖃᕐᓂᕐᒧᑦ ᑐᓴᐅᒪᔾᔪᑎᓕᐊᖅ ᐱᓕᕆᕙᒃᓚᕙᒪᒃᑯᖕᒋᑦ ᑲᓇᑕᐅᑉ, ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖕᒐᓂᑦ ᑲᓇᑕᒥ, ᖃᐅᔨᓴᖅᑐᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᓴᓇᕿᑎᑦ ᐊᑑᑎᖃᕐᓂᖕᒋᓐᓂᑦ ᖃᐅᔨᒪᓕᑕᐃᑦ ᐱᓕᕆᕙᖕᒐ, ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᓄᓇᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᔨᒃᑯᑦ, ᓄᓇᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᓴᓇᕿᑎᑦ ᐊᑑᑎᖃᕐᓂᖕᒋᓐᓂᑦ ᖃᐅᔨᒪᓕᑕᐃᑦ ᐱᓕᕆᕙᖕᒐ, ᓄᓇᙳᐊᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᕙᖕᒐᐱᕆᐊᖅᑎᑦᓯᔪᒥᓂᖅᕚᓗᕆ ᕗᐃᓐᔭ, ᓂᑦᑕᔪᓂᑦ ᖃᐅᔨᓴᖅᑎ ᑭᓪᓕᓯᓂᐊᖅᑎValerie.wynja@ec.gc.caᐅᖄᓚᐅᑎᕋᓛᖕᒐ: 613-296-3540ᐃᑲᔪᖅᑐᐃᒍᑎᐅᑉ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓂᖕᒐᓄᓇᙳᐊᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᕙᖕᒐᑦ ᑐᕌᒐᖃᖅᑐᖅ ᐊᑐᖅᑕᐅᓂᖕᒋᓐᓂᑦ ᓄᓇᙳᐊᓕᕆᓂᕐᒧᑦ ᖃᐅᔨᔭᐅᓯᒪᔪᓂᑦ ᐊᒻᒪᓗ ᑐᓴᐅᒪᔾᔪᑎᓕᐊᖑᓯᒪᔪᓂᑦ ᐃᑲᔪᖅᑐᐃᒍᑎᒋᓂᐊᕐᓗᒍ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓂᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖕᒐᓂᑦ ᑲᓇᑕᒥ ᐆᒪᔪᓂᑦ ᐱᐅᖅᓱᐊᓂᕐᒥᑦ ᓴᐳᔾᔨᓂᕐᒥᓪᓗ ᐱᓕᕆᐊᑦᓴᖕᒐᓂᑦ ᑎᓕᔭᐅᔾᔪᑕᐅᓯᒪᔪᒥᑦ. ᓄᓇᙳᐊᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᓴᖅᑐᓕᕆᕙᖕᒐᑦ ᐃᑲᔫᑎᖃᖅᐸᑦᑐᑦ ᐊᒥᓱᓂᑦ ᓯᕗᓪᓕᐅᑎᔭᕆᐊᓕᖕᒋᓐᓂᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᐅᑉ ᐱᓕᕆᐊᖕᒋᓐᓂᑦ, ᐱᖃᓯᐅᑎᑦᓯᒍ ᐆᒪᔪᑦ ᐊᑉᕼᓇᖅᑑᓕᖅᑐᑦ ᐃᓂᖕᒋᑦ ᑎᑎᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑐᓛᕗᑦᑐᑦ ᑎᖕᒥᐊᑦ ᐱᐅᖅᓱᐊᖅᑕᐅᔭᕆᐊᖃᕐᓂᖕᒋᓐᓄᑦ.2.ᓇᐃᓪᓕᑎᖅᓯᒪᔪᖅᓇᓗᓇᓗᐊᖕᒋᑦᑐᖅ ᐱᓕᕆᐊᒧᑦ ᓇᐃᓈᖅᑕᐅᓯᒪᔪᖅᑖᓐᓇ ᐃᓗᓯᖕᒐ ᑲᓇᑕᒥ ᐃᒪᖅ ᐊᑦᑐᖅᑕᐅᓂᖃᓗᐊᖅᑐᖅ ᓯᔾᔭᐅᑉ ᐃᒪᖕᒐᑕ ᐊᕙᑎᖕᒐᓄᑦ. ᐊᖅᑯᑎᒋᓗᒍ ᑖᓐᓇ ᐃᒪᐅᑉ ᓴᐳᔾᔭᐅᓂᖕᒐᓄᑦ ᐸᕐᓇᐅᑦ (OPP), ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖕᒐᓄᑦ ᑲᓇᑕᒃᑯᑦ ᐃᖅᑲᓇᐃᔮᓖᑦ ᓴᐳᔾᔨᓂᕐᒥᑦ, ᓱᕐᕋᐃᑦᑑᑎᑦᓯᓂᕐᒥᑦ, ᐊᒻᒪᓗ ᐅᑎᐅᒥᑎᑦᓯᓂᕐᒥᑦ ᑲᓇᑕᐅᒥ ᐃᒪᐅᑉ ᐊᕙᑎᖕᒐᓂᑦ. ᒪᓕᑦᓯᒍ ᑖᓐᓇ OPP, ᐃᖅᑲᓇᐃᔭᖃᑎᕗᑦ ᕿᓇᐅᔭᖅᑎᑕᐅᓯᒪᔪᑦ ᑲᑎᖅᓱᐃᕐᑯᓪᓗᒋᑦ ᐅᓕᓐᓂᐅᑉ ᑭᖕᓕᖕᒐᓂ ᖃᐅᔨᓴᕋᑦᓴᓂᑦ ᐅᖅᓱᐊᓗᒻᒥᑦ ᑯᕕᔾᖃᕐᓂᖅᐸᑦ ᐱᕙᒌᔭᖅᓯᒪᓂᖅᑕᖃᕐᑯᓪᓗᒍ. ᐱᔾᔪᑎᒋᓗᐊᖅᑕᖕᒐ ᑕᒪᑦᓯᒪ ᐅᓕᓐᓂᐅᑉ ᑭᖕᓕᖕᒐᓂᑦ ᐱᓕᕆᕖᑉ ᐱᕙᓪᓕᐊᑎᑦᓯᓂᖕᒐ ᑲᑎᖅᓱᐃᓗᓂ ᑐᓴᐅᒪᔾᔪᑎᑦᓴᑲᓐᓂᕐᓂᑦ ᐃᑲᔪᕈᑕᐅᓂᐊᖅᑐᓂᑦ ᑐᐊᕕᕐᓇᖅᑐᓕᕆᓂᑦ

ᐸᕐᓇᓂᕐᒧᑦ ᐱᕗᒌᔭᕐᓯᒪᓂᕐᒧᓪᓗ ᐃᒪᕐᒧᑦ ᓱᕈᓐᓇᖅᑐᖃᕋᔭᕐᓂᖅᐸᑦ ᑲᒪᒋᔭᕆᐊᓕᓐᓂᑦ. ᑯᕕᔪᖃᖅᑐᒥᓂᐅᑎᓪᓗᒍ
ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒐᓃᑦᑐᑦ ᖃᐅᔫᒍᑕᐅᓯᒪᔪᑦ ᐱᖃᓯᐅᕝᔨᓯᒪᔪᑦ ᑭᓪᓕᖕᒐᓂ ᓯᓐᔮᐃᑦ ᑐᓴᐅᒪᔭᐅᕝᔪᑎᖕᒋᓐᓂᑦ ᓲᕐᓗ
ᖃᓄᐃᑦᑑᓂᖕᒐᓂᒃ ᐊᒻᒪᓗ ᑕᐅᑦᑐᖕᒋᓐᓂᑦ, ᐃᖅᑲᖕᒐᓂ ᐱᕈᖅᑐᖕᒋᓪᓗ ᖃᓄᐃᑦᑑᒻᒪᖕᒫᑕ. •ᑲᑎᖅᓱᐃᓂᖅ ᐅᓕᓐᓂᐅᑉ
ᑭᓪᓕᖕᒐᓂ ᑐᓴᐅᒪᕝᔪᑎᒋᔭᐅᒃᑲᓐᓂᕈᓐᓇᖅᑐᓂᑦ, ᐊᐸᓯᓈᖃᖅᑕᖅᑐᖅ–ᖁᑌᒎᓕᒃᑯᑦ ᖃᐅᔨᓴᕐᕕᐅᔪᓂ
ᐊᕝᔨᓕᐅᓇᕕᐅᓪᓗᓂᒃ ᐊᕝᔨᙳᐊᓂᓪᓗ ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒋᓐᓂ.•ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒐᓂ ᖃᐅᔨᓴᐅᑕᐅᓯᒪᔪᑦ
ᑲᑎᖅᓱᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ, ᑎᑎᕋᖅᑕᐅᕚᑦᑐᑦ ᑐᓴᐅᒪᒃᑲᓐᓂᕈᑎᑦᓴᐃᑦ ᐃᒪᐃᑦᑐᒥᑦ ᐊᑐᖅᓱᑎᒃ GIS ᑲᑎᖅᓱᐃᕕᒻᒥᒃ
ᖃᐅᔨᓴᐅᑎᒥᓂᕐᓂᑦ. •ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕ ᑐᑭᓕᒃ ᕿᒥᕐᕈᓇᑦᑕᐅᓪᓗᑎᒃ ᓴᓂᕚᓂᒃ ᐊᐅᓚᙵᓕᐊᖑᓯᒪᔪᑦ ᐊᒻᒪᓗ
ᐊᕝᔨᓕᐅᖅᑕᐅᓯᒪᔪᑦ ᐊᕝᔨᓕᐅᕈᒻᒧᑦ. ᑭᖑᓪᓕᖅᐹᖅ ᓇᓗᓇᐃᔭᐃᑦᓯᐊᕐᓂᖅ ᖃᐅᔨᓴᖅᑕᐅᒥᓂᕐᒥᑦ
ᖃᐅᔨᓴᐅᑎᒥᓂᐅᔪᓂᑦ ᑐᖅᑯᖅᑐᐃᕕᒃ ᓇᓗᓇᐃᔭᐃᓯᒪᔪᖅ ᐊᑐᓂᑦ ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒋᓐᓂᑦ ᐊᑦᑐᐊᓂᖕᒋᓪᓗ
ᑎᓂᑦᑕᖅᑐᓄᑦ ᐅᓕᑦᑕᖅᑐᓄᑦ ᑭᓪᓕᖕᒋᓐᓂᑦ.ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒐᓂᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ
ᐊᕙᑎᓕᓇᓂᕐᒨᖕᒐᔪᑦ ᖃᐅᔨᓴᐅᑦ ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒐᓂ ᓇᓗᓇᐃᔭᐃᓂᕐᒧᑦ ᑐᖅᑯᐃᕕᒃ ᖃᐅᔨᓴᐅᑎᒥᓂᕐᓂᑦ
ᐊᑐᖅᑕᐅᒍᓐᓇᕐᒥᔪᖅ ᓇᓗᓇᐃᖅᓯᒐᓱᐊᕈᑕᐅᓗᓂ ᐊᕙᑎᒨᖕᒐᔪᑦ ᐱᓪᓗᒋᑦ ᐅᓕᓐᓃᑦ ᑭᓪᓕᖕᒋᑦ, ᐃᑲᔪᖅᓱᓂᖃᖅᓱᓂᓗ
ᑐᓴᕖᓐᓇᖅᑐᖃᓕᖅᑎᓪᓗᒍ ᖃᓄᐃᒋᐊᕈᑎᑦᓴᓂᑦ ᓱᕈᕐᓇᖅᑐᑦ ᐱᓪᓗᒋᑦ, ᐃᑲᔪᖅᓯᒐᔭᖅᓱᓂᓗ ᓴᓗᒪᐃᑦᓯᐊᕆᐊᖃᕐᓂᕐᒥᑦ
ᓱᕈᕐᓇᖅᑐᓂᑦ. ᓂᑦᑕᑎᓪᓗᒋᑦ ᑕᒪᒃᑯᐊ ᖃᐅᔨᓴᐅᑎᒥᓃᑦ ᓄᓇᙳᐊᒥ, ᐱᕚᓪᓕᑎᑦᓯᓇᓱᐊᖅᑯᒍᑦ
ᐃᓱᒪᓕᐅᕈᑕᐅᕚᑦᑐᓂᑦ–ᑐᑭᑖᕈᑕᐅᕚᑦᑐᓂᑦ ᑯᕕᔪᖃᖅᑐᒥᓂᐅᑎᓪᓗᒍ ᖃᓄᐃᒋᐊᕈᑕᐅᕚᑦᑐᓂᑦ.
ᐊᑕᐅᑦᓯᒨᖅᑲᐃᓂᒃᑯᑦ ᑐᓴᐅᒪᔾᔪᑎᓂᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔫᒃᑯᑦ ᐊᒻᒪᓗ ᖃᖓᑕᒍᓐᓇᖅᑐᓄᑦ
ᐊᕝᔨᓕᐅᖅᑕᐅᓯᒪᔪᑎᒍᑦ, ᓂᕈᐅᒍᑎᒋᕙᒌᑦ ᐊᖏᓂᖅᓴᑲᓐᓂᕐᒥᑦ ᖃᐅᔨᓴᕐᓂᕐᒥᒃ ᑲᓇᑕᒥ ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒋᓐᓂᑦ
ᐃᑲᔪᕈᑕᐅᖁᓪᓗᒍ ᑯᕕᔪᖃᖅᑐᒥᐅᑉᐸᑦ ᐅᖅᓱᐊᓗᒻᒥᒃ ᖃᓄᐃᓕᐅᕆᐊᖃᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓴᐳᑎᓗᒋᑦ ᐃᒪᕐᒥᐅᑕᑦ
ᓇᔪᖕᒋᑦ ᓯᓚᖃᑎᒌᖕᓂᖕᒋᓪᓗ.ᑕᒪᓐᓇᑑᖕᒋᑦᑐᖅ ᐃᑲᔪᕈᑎᖃᕐᓂᖅ ᑯᕕᔪᖃᖅᑐᒥᓂᐅᑎᓪᓗᒍ ᐅᖅᓱᐊᓗᒻᒥᒃ
ᖃᓄᐃᒋᐊᓇᐊᖃᕐᓂᐅᑉ, ᖃᐅᔨᓴᐅᑎᒥᓃᑦ ᐊᒻᒪᓗ ᐊᕝᔨᙳᐊᑦ ᐊᑐᖅᑕᐅᖃᑦᑕᖅᓯᒪᕆᕗᑦ ᓄᓇᓕᐅᔪᓂ ᓄᓇᖃᖅᑐᓄᑦ
ᐊᒻᒪᓗ ᐊᕙᑎᓕᓇᓂᕐᒧᑦ ᐊᐅᓚᑦᔨᑦ ᐱᓕᓇᐊᒧᑦ ᐸᕐᓇᒍᑎᒋᓪᓗᒋᑦ, ᐃᒪᐃᕐᒥᐅᑕᐃᑦ
ᐊᑦᑕᓇᖅᑐᒦᑎᑕᐅᑦᑕᐃᓕᓂᕐᒧᑦ ᐊᒻᒪᓗ ᖃᓄᐃᒋᐊᕐᓂᐊᕐᓗᓂ ᐱᕗᒌᔭᕐᓂᕐᒧᑦ, ᖃᐅᔨᓴᖅᑕᐅᓂᖕᒋᑦ ᐃᓂᐅᔪᑦ
ᐃᒪᕐᒥᐅᑕᑦ ᖃᓄᐃᒍᓐᓃᖅᑎᑕᐅᒋᐊᖅᑲᕐᓂᖕ ᐅᑎᖅᑎᑕᐅᓗᓂ ᐃᓕᖅᑯᓯᖕᒐᓄᑦ, ᓂᕆᖃᕆᐊᖅᑲᕐᓂᖅ,
ᑕᒪᒃᑯᐊᖑᒻᒥᔪᑦ.ᐅᓪᓗᖅᓯᐅᑦ(ᑎᑦ) ᐊᒻᒪᓗ ᐱᕕᖃᕐᓂᖅᓄᓇᙳᐊᓕᐅᖅᐸᓪᓕᐊᒍᒪᒐᓗᐊᕐᒥᔪᑦ ᐊᑕᐅᓯᐊᙱᓪᓗᑕ
ᐱᓕᕆᓂᑦᑎᓐᓂ ᐊᐅᔭᖕᒐᓂ (ᔫᓂ–ᓯᑦᑖᕝᕙᒧᑦ) 2024–ᒥ. 1)ᐊᐅᔭᖕᒐᓂ 2024– ᓄᓇᙳᐊᓕᕆᓂᖅ
ᐅᐊᖕᓇᖅᐸᓯᖕᒐᓂ ᕿᖑᐊᓐ (ᐃᖃᓗᑦᑑᑎᐊᒥ/ᕿᖑᐊᓂ, ᓄᓇᕗᑦ– ᑎᒥᕐᑯᑕᐅᔪᖅ ᐸᕐᓇᐅᑎᓗᒍ ᐊᖅᑯᑎᒋᓗᒍ
ᐅᑭᐅᖅᑕᖅᑐᒥ ᓄᓇᒥ ᐅᔭᖅᑲᑦ ᖃᓕᓈᑦ ᐱᓕᕆᐊᖅᒧ (PSCP)2)ᐊᐅᔭᖕᒐᓂ 2024– ᓄᓇᙳᐊᓕᕆᓂᖅ ᐃᖃᓗᐃᑦ
ᖃᓂᒋᔭᖕᒐᓂ (ᐃᖃᓗᓐᓂ/ᑲᓇᑕᒥ ᓇᐅᑦᓯᑐᖅᑎᒍᓐᓄ ᐅᒥᐊᕐᔪᐊᖕᒐᓃᓪᓗᑕ)3)ᐊᐅᔭᖕᒐᓂ 2024– ᓄᓇᙳᐊᓕᕆᓂᖅ
ᑲᖕᒋᖅᓭᓂᕐᒥ, ᐃᒡᓗᓕᓘᕐᔪᖕᒥ ᐃᓚᖕᒐᓂᓗ ᖃᒪᓂ’ᑐᐊᑉ /ᑲᓇᑕᒥ ᓇᐅᑦᓯᑐᖅᑎᒍᓐᓄ
ᐅᒥᐊᖕᒐᓃᓪᓗᑕᖃᐅᔨᓴᕐᓂᕐᒨᖕᒐᔪᖅᑕᓴᒃᓱᒨᖕᒐ ᐊᑦᑐᖅᑕᐅᒐᔭᖕᒋᑦᑐᖅ-ᑕᒪᓐᓇ ᐱᓕᕆᐊᖅ ᐱᖃᑕᐅᑎᑦᓯᔮᖕᒋᑦᑐᖅ
ᖃᐅᔨᓴᕋᑦᓴᓂᑦ ᐱᓇᓱᐊᒐᖅᑲᕐᓂᕐᒥᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐋᖅᑭᒋᐊᕆᓂᕐᒥᑦ ᓄᓇᒥᑦ. ᐱᓕᕆᐊᒧᑦ
ᐊᑐᖅᑕᐅᑲᓐᓂᕈᓐᓇᖅᑐᑦᐅᖕᒐᓯᑦᑐᒦᓐᓂᖕᒐ ᐊᒻᒪᓗ ᐊᖕᒋᓂᖕᒐ ᑲᓇᑕᒥ ᐅᓕᓐᓃᑦ ᑭᓪᓕᖕᒋᑦ ᖁᑌᒎᓕᒃᑯᑦ ᑭᓯᐊᓂ
ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒋᓐᓂᑦ ᓄᓇᙳᐊᓕᐅᕐᓂᖅᑕᖅᓯᒪᕗᖅ ᐊᒻᒪᓗ ᐊᒃᑲᒻᒧᑦ ᐱᓇᓱᐊᕐᓗᓂ ᐃᓖᓐᓂᒃᑯᑦ
ᖃᔪᕐᓇᓚᓚᖃᑦᑕᖅᓯᒪᕗᖅ. ᑕᒪᓐᓇ ᐱᔪᑎᒋᓪᓗᒍ, ᑲᓇᑕᓕᒫᒥ ᐅᓕᓐᓂᑦ ᑭᓪᓕᖕᒋᓐᓃᖕᒐᔪᑦ
ᓇᓗᓇᐃᖅᑕᐅᑦᓯᐊᕋᓱᐊᕐᓂᖕᒋᑦ ᐃᖅᑲᓇᐃᖅᑕᐅᓯᒪᖕᒋᓚᑦ ᓄᓇᕗᒻᒥ. ᑕᒪᓐᓇ ᐊᐳᕈᑎᑕᖃᖃᑦᑕᖅᓯᒪᔪᖅ ᐊᒥᓱᓂᑦ,
ᐊᒻᒪᓗ ᖁᕕᔪᖃᑦᑕᓂᖅᐸᑦ ᐅᖅᓱᐊᓗᒻᒥᑦ ᐊᑦᑕᓇᕈᓇᕐᓂᖕᒐᓄᑦ ᐱᕗᒌᔭᕐᓂᖅ ᐊᔪᕐᓇᖅᓯᒪᓪᓗᓂ. ᓄᑕᐅᓂᖅᓴᐃᑦ,
ᓴᙱᓂᖅᓴᐃᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔫᒃᑯᑦ ᐊᕝᔨᙳᐊᑦ ᐊᑐᕋᑦᓴᑦᓯᐊᖑᔾᔨᑦ ᐱᒋᐊᕈᑎᒋᓗᒋᑦ ᖃᐅᓚᓱᐊᕐᓂᕐᒥᑦ ᓯᔭᐃᑦ
–ᐊᒥᓲᓂᖅᓴᐃᑦ ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒋᓐᓂᑦ ᓄᓇᙳᐊᓕᐅᕈᑎᒋᓗᒋᑦ ᐊᖅᑭᓱᕐᓗᒋᓪᓗ. ᐊᑐᖅᑕᐅᖖᕈᓐᓇᕐᒪᑕ
ᖁᑌᒎᓕᒃᑯᑦ ᓄᓇᙳᐊᓕᐅᖕᒋᖖᒍᕐᓗᓂ, ᓴᖅᑭᑎᑦᓯᒍᒫᕐᓂᐊᖅᑐᒍᑦ ᐅᓕᓐᓂᐅᑉ ᑭᓪᓕᖕᒋᓐᓂᑦ ᐋᖅᑭᑦᓱᐃᒍᑕᐅᓲᓂᑦ
ᐊᑐᓚᑦᓴᓂᑦ ᐊᕝᔨᒌᖕᒋᑦᑐᓂᑦ ᐅᖕᒐᓯᑦᑐᒥ ᖃᐅᔮᕝᔪᑎᖃᖅᑐᓂᑦ ᓴᓇᕐᕈᑎᓂᑦ ᐊᑐᓚᑦᓴᓂᑦ ᖃᐅᔨᒪᔭᐅᓕᖅᑐᓂᑦ
ᓴᙱᓂᖅᓴᓂᑦ. ᑕᒪᓐᓇ ᐱᖃᓯᐅᕝᔨᕝᔪᖅ ᓴᙱᓂᖅᓴᓂᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔫᒃᑯᑦ ᐊᕝᔨᙳᐊᓕᐅᕈᑎᓂᑦ, ᐊᒻᒪᓗᑦᑕᐅᖅ
ᓴᙱᔪᓂᑦ ᖃᐊᑕᑎᑕᐅᓱᑎᒍᑦ ᐊᕝᔨᓕᐅᓇᓱᓂᑦ. ᒥᑦᓴᐅᓴᒍᒪᓚᑦᑎᒍ ᐅᖕᒐᓯᑦᑐᒧᑦ ᖃᐅᔾᔪᑎᓖᑦ ᐊᑐᕋᑦᓴᐃᑦ
ᖁᑌᒎᓕᒃᑯᑦ ᐊᑐᕋᑦᓴᐃᑦ ᖃᐅᔨᓚᓱᐊᕈᑎᒋᓗᒋᑦ ᐅᖕᒐᓯᑦᑐᒥ ᐊᑐᕋᑦᓴᐃᑦ ᐱᐅᓂᖅᓴᐅᓚᔭᕐᒪᖖᒐᑕ
ᑕᑎᑦᓴᐅᓚᓗᐊᕐᒪᖖᒐᑕᓗ ᖃᐅᔾᔪᑎᑦᓯᐊᖑᓚ;ᐊᕐᒪᖕᒐᑕᓗ ᖁᑌᒎᓕᒃᑯᑦ ᐊᑐᕋᑦᓴᐃᑦ ᓴᓂᐊᓐᓂ.

Personnel

Personnel on site: 2

Days on site: 25

Total Person days: 50

Operations Phase: from 2024-06-01 to 2024-09-30

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Frobisher Bay Study Site	Aerial surveys	Inuit Owned Surface Lands	NA	NA	Proximity to nearest communities: Iqaluit, Apex are within the study site. Proximity to nearest protected areas: Katannilik Territorial Park, Sylvia Grinnell and Qaummaarviit Territorial Park are within the study site, Dewy Soper MBS (285 km away)
Frobisher Bay Study Site	Aerial surveys	Crown	NA	NA	Proximity to nearest communities: Iqaluit, Apex are within the study site. Proximity to nearest protected areas: Katannilik Territorial Park, Sylvia Grinnell and Qaummaarviit Territorial Park are within the study site, Dewy Soper MBS (285 km away)
Rankin Inlet, Chesterfield Inlet and Baker Lake Study Site	Aerial surveys	Inuit Owned Surface Lands	NA	NA	Proximity to nearest communities: Rankin Inlet, Chesterfield Inlet and Baker Lake are within the study site. Whale Cove and Arviat are close to the study site. Proximity to nearest protected areas: Iqalugaarjuup Nunanga Territorial Park is close to the study site. McConnel River MBS is 250 km away.
Rankin Inlet,	Aerial surveys	Inuit Owned	NA	NA	Proximity to

Chesterfield Inlet and Baker Lake Study Site		Sub-Surface Lands			nearest communities: Rankin Inlet, Chesterfield Inlet and Baker Lake are within the study site. Whale Cove and Arviat are close to the study site. Proximity to nearest protected areas: Iqalugaarjuup Nunanga Territorial Park is close to the study site. McConnel River MBS is 250 km away.
Rankin Inlet, Chesterfield Inlet and Baker Lake Study Site	Aerial surveys	Crown	NA	NA	Proximity to nearest communities: Rankin Inlet, Chesterfield Inlet and Baker Lake are within the study site. Whale Cove and Arviat are close to the study site. Proximity to nearest protected areas: Iqalugaarjuup Nunanga Territorial Park is close to the study site. McConnel River MBS is 250 km away.
Southern Bathurst Inlet Study Site	Aerial surveys	Crown	NA	NA	Proximity to nearest communities: Cambridge Bay (280 km away) and Kugluktuk (340 km away) are close to the study site. Proximity to nearest protected areas Queen Maud Gulf MBS is 120 km away. Thelon Wildlife Sanctuary is 260 km away.
Southern Bathurst Inlet Study Site	Aerial surveys	Inuit Owned Surface Lands	NA	NA	Proximity to nearest communities: Cambridge Bay (280 km away) and Kugluktuk (340 km away) are close to

					the study site. Proximity to nearest protected areas Queen Maud Gulf MBS is 120 km away. Thelon Wildlife Sanctuary is 260 km away.
Southern Bathurst Inlet Study Site	Aerial surveys	Inuit Owned Sub-Surface Lands	NA	NA	Proximity to nearest communities: Cambridge Bay (280 km away) and Kugluktuk (340 km away) are close to the study site. Proximity to nearest protected areas Queen Maud Gulf MBS is 120 km away. Thelon Wildlife Sanctuary is 260 km away.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Cambridge Bay	Ivorson Maksagak	EHTO	2024-01-09
Baker Lake	Baker Lake HTO	Baker Lake HTO	2024-02-15
Chesterfield Inlet	Chesterfield Inlet HTO	Chesterfield Inlet HTO	2024-02-15
Rankin Inlet	Rankin Inlet HTO	Rankin Inlet HTO	2024-02-15

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	Application will be submitted for a scientific research license for conducting shoreline videography in Nunavut. This will be done following NIRB review.	Not Yet Applied		
Kitikmeot Inuit Association	Seeking permission to potentially place one fuel cache on Inuit owned lands. Fuel cache will allow the helicopter to refuel during helicopter surveys in Bathurst Inlet.	Not Yet Applied		
Aboriginal Affairs and Northern Development Canada	CIRNAC - Lands administration office. Permission to potentially cache fuel on crown lands.	Not Yet Applied		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Helicopter survey over the coast	

Project accomodation types

Community

Other,

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Helicopter	1	20 X 8	Use helicopter 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	6x4	Digital camera to collect geotagged photos.
GPS	1	2x3	GPS to record our flight path.
Toughbook tablet	1	4x6	Toughbook tablet to display map and to record our flight path.
Drone	2	10x12	Potentially fly drone along the coastline to see if we can collect high resolution imagery suitable to doing a remote sensing classification.

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	0	208	0	Liters	Access to aviation fuel from the coastguard ship for mapping in Frobisher Bay and Rankin/Chesterfield Inlets.
Aviation fuel	fuel	0	208	0	Liters	Access to aviation fuel from the Cambridge Bay Airport with the Southern Bathurst Inlet Study Site.
Aviation fuel	fuel	15	208	3120	Liters	We have applied to the Polar Continental Shelf Program for logistical research support in the Arctic. We have proposed

						one a fuel cache with 10-15 drums at the Bathurst Inlet Lodge. Coordinates: 66 50' 14.62N; 108 00' 57.64

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
Fuel and chemical storage	Combustible wastes	1 fuel cache	We shall locate all fuel and other hazardous materials a minimum distance awayfrom the high-water mark of any water body and environmentally sensitive areas as requiredby the appropriate authorizing agencies. The materials shall be stored in such a manner asto prevent their release into the environment.We shall use adequate secondary containment or a surface liner (e.g., selfsupportinginsta-berms and fold-a-tanks) when storing barreled fuel and chemicals at alllocations.We shall ensure that re-fuelling of all equipment occurs a minimum distanceaway from the high-water mark of any water body as required by the appropriate authorizingagencies.We shall have a Spill Contingency Plan in place at all fuel storage or transferlocations and shall ensure that appropriate spill response equipment and clean-up materials(e.g., shovels, pumps, barrels, drip pans, and absorbents) are readily available.	NA
Waste disposal	Other, food and domestic wastes	Minimal	We shall manage all hazardous and non-hazardous waste including food,domestic wastes and debris in such a manner to always avoid release into the environment and accessto wildlife until	NA

			disposed of appropriately or at an approved facility.	

Environmental Impacts:

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

Description of Existing Environment: Physical Environment

This year, our work falls outside of any Migratory Bird Sanctuaries, National Parks, and other Conservation Areas. The Sylvia Grinnell Territorial Park and Katannilik Territorial parks are within the study site's boundaries for the proposed work around Frobisher Bay. For the Frobisher Bay Study site: Proximity to nearest communities: Iqaluit, Apex are within the study site. Proximity to nearest protected areas: Katannilik Territorial Park, Sylvia Grinnell and Qaummaarviit Territorial Park are within the study site, Dewy Soper MBS (285 km away)For the Rankin Inlet study site: Proximity to nearest communities: Rankin Inlet, Chesterfield Inlet and Baker Lake are within the study site. Whale Cove and Arviat are close to the study site. Proximity to nearest protected areas: Iqalugaarjuup Nunanga Territorial Park is close to the study site. McConnel River MBS is 250 km away.For the Bathurst Inlet Study site: Proximity to nearest communities: Cambridge Bay (280 km away) and Kugluktuk (340 km away) are close to the study site. Proximity to nearest protected areas Queen Maud Gulf MBS is 120 km away. Thelon Wildlife Sanctuary is 260 km away.

Description of Existing Environment: Biological Environment

This year, our work falls outside of any Migratory Bird Sanctuaries, National Parks, and other Conservation Areas. The Sylvia Grinnell Territorial Park and Katannilik Territorial parks are within the study site's boundaries for the proposed work around Frobisher Bay. The proposed project would take place within habitats of far-ranging wildlife species such as migratory and non-migratory birds, arctic fox, arctic hare and Species at Risk or Special Concern such as Polar Bears, Grizzly Bears, Wolverine, Harlequin Duck, Peregrine Falcon, Red Knot, Red-necked Phalarope, Short-eared Owl and Caribou.

Description of Existing Environment: Socio-economic Environment

This work will be taking place in several different locations a) Frobisher Bay and the nearest community is Iqaluit. We plan to fly past and map the coastline of Frobisher Bay from Iqaluit up to Ward Inlet/Eggleston Bay. B) Southern Bathurst Inlet and the nearest communities are Cambridge Bay, Kugluktuk and Gjoa Haven. We plan to fly around the inlet south of Ekalulia Island. C) Hudson Bay and the nearest communities are Rankin Inlet, Chesterfield Inlet and Baker Lake and Whale Cove. We plan to fly the coast of Rankin Inlet, Chesterfield Inlet and possibly Baker Lake if the helicopter range permits this. 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

Identification of Impacts and Proposed Mitigation Measures

The helicopter makes 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 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.

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. We plan to minimize cumulative impacts by limiting the overflights to one pass.

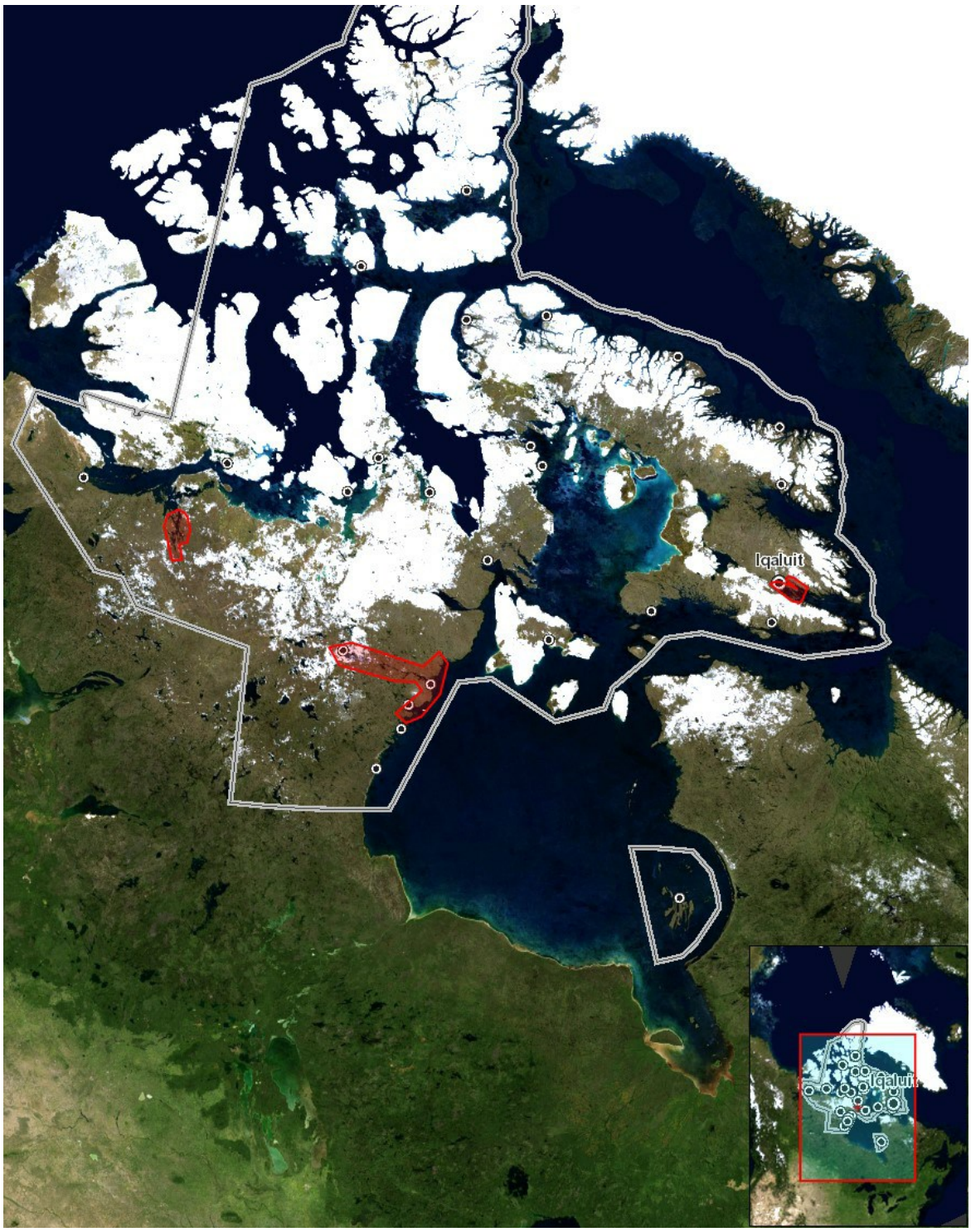
Impacts

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																									
Aerial surveys		-	-	-	-	-	-	-	-	-	-	-	M		M	M	M	-	-		-	-	-	-	-
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

Project Location



List of Project Geometries

1	polygon	Frobisher Bay Study Site
2	polygon	Rankin Inlet, Chesterfield Inlet and Baker Lake Study Site
3	polygon	Southern Bathurst Inlet Study Site