Demande de la CNER faisant l’objet d’un examen préalable #126400

Testing the impact of early land plants on the Earth system

Type de demande :	New
Type de projet:	Scientific Research
Date de la demande :	Saturday, March 14, 2026
Period of operation:	from 2026-07-05 to 2026-08-05
Promoteur du projet:	Erik Sperling Stanford University 450 Jane Stanford Way, Building 320, Room 118 Stanford California 94305 USA Téléphone :: 203-927-3754, Télécopieur ::

DÉTAILS

Description non technique de la proposition de projet

Anglais:	Document attached in documents tab.
Français:	Document attached in documents tab.
Inuktitut:	Document attached in document tab.
Inuinnaqtun:	Document not needed based on location of work.

Personnel

Personnel on site: 8
Days on site: 15
Total Person days: 120
Operations Phase: from 2026-07-05 to 2026-08-05

Activités

Emplacement	Type d'activité	Statut des terres	Historique du site	Site à valeur archéologique ou paléontologique	Proximité des collectivités les plus proches et de toute zone protégée
Read Bay--primary research camp locality	Scientific/International Polar Year Research	Crown	This is the type section for many of the Silurian-Devonian regional geology type sections and has been studied by multiple geological field parties	These Silurian-Devonian stratigraphic sections have an outstanding record of Paleozoic invertebrates (brachiopods, cononodonts, stromatoporoids, etc.), plants, and vertebrates. This site has been the subject of multiple studies.	Nearest community is Resolute Bay. It is not near any protected areas.
Cape Martyr--possible research locality if extra days at PCSP base	Scientific/International Polar Year Research	Municipal	This area has not been studied in depth but there are strikes and dips on the map of Thorsteinsson 1626A, suggesting that there are rocks worthwhile to study	Unknown, site has not been studied before	Resolute Bay.
Signal Hill--possible research locality if extra days at PCSP base	Scientific/International Polar Year Research	Municipal	This area has not been studied in depth but there are strikes and dips on the map of Thorsteinsson 1626A, suggesting that there are rocks worthwhile to study	Unknown, site has not been studied before	Resolute Bay
Read Bay--primary research camp locality	Scientific/International Polar Year Research	Inuit Owned Surface Lands	This is the type section for many of the Silurian-Devonian regional geology type sections and has been	These Silurian-Devonian stratigraphic sections have an outstanding record of Paleozoic invertebrates (brachiopods, cononodonts,	Nearest community is Resolute Bay. It is not near any protected areas.

			studied by multiple geological field parties	stromatoporoids, etc.), plants, and vertebrates. This site has been the subject of multiple studies.	
Twilight Creek--primary research camp locality	Scientific/International Polar Year Research	Crown	Twilight Creek and Cut Through Creeks are some of the best exposures of the Eids, Blue Fiord, and Bird Fiord formations in the southern Queen Elizabeth Islands. These are the reference sections in Fortier et al. 1963 and Kerr 1974, which are the definitive sources on the geology of this area.	These sites have not been studied in depth but based on Fortier et al. and Kerr this site appears to have numerous Devonian invertebrate fossils including sponges, brachiopods, corals, and conodonts	Nearest community is Resolute Bay. This site is in Qausuittuq National Park
Storm exploration camp--work on existing drill cores	Scientific/International Polar Year Research	Crown	This site is currently being explored by American West Minerals. If permission is granted, we would be visiting the camp to work on existing drill cores to address our academic questions regarding the impact of plants on the Earth system	None known.	Resolute Bay
Truro Island--backup site if we cannot land at Twilight Creek	Scientific/International Polar Year Research	Inuit Owned Surface Lands	The Ordovician-Devonian stratigraphy and geochemistry at Truro Island has been studied by various research groups	This site preserves graptolite fossil s primarily and likely Devonian fossils such as corals, brachiopods, sponges, etc.	Resolute Bay

			including Melchin and Holden 2006		

Engagement de la collectivité et avantages pour la région

Collectivité	Nom	Organisme	Date de la prise de contact
Resolute Bay	SAO	Hamlet of Resolute Bay	2026-02-18
Resolute Bay	rbhta@baffinhto.ca	Resolute Bay Hunters and Trappers Association	2026-02-18

Autorisations

Indiquez les zones dans lesquelles le projet est situé:

North Baffin

Autorisations

Organisme de régulation	Description des autorisations	État actuel	Date de l'émission/de la demande	Date d'échéance
Gouvernement du Nunavut, Institut de recherche du Nunavut	Scientists license	Applied, Decision Pending		
Nunavut Planning Commission	Planning conformity	Active	2026-03-09	
Government of Nunavut, Department of Culture, Language, Elders, and Youth	Archeology and Paleontology permit (presuming this is the Government of Nunavut Department of Culture and Heritage	Not Yet Applied		
Office des eaux du Nunavut	Water license (or specifically statement that we do not need a water license)	Not Yet Applied		
Parcs Canada	Research permit	Applied, Decision Pending		
Qikiqtani Inuit Association	Land use permit I, non-Inuit	Applied, Decision Pending		

Project transportation types

Transportation Type	Utilisation proposée	Length of Use
Air	We will travel by PCSP helicopter to our Read Bay camp, and by PCSP Twin Otter to our Twilight Creek camp.	
Land	Access to Cape Martyr and Signal Hill will be on foot or bicycle from the PCSP Resolute Bay research station	

Project accomodation types

Temporary Camp

Utilisation de matériel

Équipement à utiliser (y compris les perceuses, les pompes, les aéronefs, les véhicules, etc.)

Type d'équipement	Quantité	Taille – Dimensions	Utilisation proposée
Helicopter	1	36 feet	A helicopter will be used for transport to and from the Polar Continental Shelf base in Resolute Bay to our research camp in Read Bay
Twin Otter plane	1	50	A Twin Otter will be used for transport to and from the Polar Continental Shelf base in Resolute Bay to our research camp at Twilight Creek (or our backup site on Truro Island)

Décrivez l'utilisation du carburant et des marchandises dangereuses

Décrivez l'utilisation de carburant :	Type de carburant	Nombre de conteneurs	Capacité du conteneur	Quantité totale	Unités	Utilisation proposée
Propane	fuel	2	25	50	Liters	Cooking on two-burner stoves
Gasoline	fuel	1	5	5	Gallons	Small generator for telepresence outreach activities

Consommation d'eau

Quantité quotidienne (m3)	Méthodes de récupération de l'eau proposées	Emplacement de récupération de l'eau proposé
0	Buckets and/or handheld water bladders	Unnamed streams and creeks near our campsites.

Déchets

Gestion des déchets

Activités du projet	Type des déchets	Quantité prévue	Méthode d'élimination	Procédures de traitement supplémentaires
Scientific/International Polar Year Research	Eaux usées (matières de vidange)	8 days x 8 ppl (Read Bay), 7 days x 6 ppl (Twiligh	All human waste will be collected using portable toilet systems available from PCSP, and transported back to Resolute Bay. None will be left in the field.	This will be properly disposed of at the PCSP base in Resolute Bay.

Répercussions environnementales :

The impacts are primarily those associated with a small team of researchers in a temporary camp, and sampling the rock strata. To mitigate this, we operate on the philosophy of no (or at least minimal) impact. We will leave no rubbish or other trace of our base camps or sampling locations. No campfires are allowed in camp and we only use small, gas-powered stoves. We use small personal tents (no structures). Team leader Dr. Sperling and Dr. Tarhan have worked and camped in many remote areas during previous field seasons throughout northwestern Canada (and elsewhere in the Arctic) during previous field seasons, and have left campsite areas essentially indistinguishable from before arriving, in keeping with the wild character of these field areas. All human waste will be packed out with the team. With respect to rock sampling, we will be collecting geological rock samples via hand or geological hammer. We will not be making any holes or excavations or using any mechanized equipment. All rock samples to be collected are normal rock samples with no aesthetic or commercial value. We will attempt to minimize the amount of sample being removed and use our rock hammers as little as possible and we will target easily accessible broken or fractured outcrops to avoid excessive hammer use. We are experienced at sampling with minimal impact on the outcrop, and as stated above, strive to minimize our impact on the environment.

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 de l'environnement existant : Environnement physique

These areas represent standard physical environments in the region, in the sense there is nothing particularly observably different (except the particulars of the underlying geology, which we are interested in studying). We have not been to this area before so are primarily providing this information based on aerial photographs. Our camp areas will be near the helicopter/twin otter landing areas on flat ground. The rocks we are studying will primarily be near small streams, which is how the rocks are best exposed on Cornwallis and Bathurst Islands.

Description de l'environnement existant : Environnement biologique

These areas represent standard biological environments in the region, in the sense there is nothing especially different or unique about them. However, we would note we are geologists and so there may be unique biological environment features that we are unaware of. If those are revealed during this NIRB review, we would be happy to revise our plans accordingly.

Description de l'environnement existant : Environnement socio-économique

Our research will start at the PCSP base in Resolute Bay, where we are hiring a wildlife monitor and purchasing some of our field food. Our actual field research will be remote to this community and will not directly impact it.We are not aware of archaeological or culturally significant sites near our field areas based on our knowledge to date, but can adjust our plans accordingly if those are revealed during the NIRB screening process.There is a strong Silurian-Devonian paleontological record in the rocks we are studying--indeed, the paleontological and geochemical record in these rocks is the prime reasons we are going to these areas (to study the impact of early land plants on the Earth systems). We have explained our scientific and paleontological research plan in all applications and are separately applying for a Government of Nunavut paleontological permit.We are not aware of any subsistence harvesting, guiding, trapping, or tourism activities in our areas, based on our research and discussions with our wildlife monitor. We have reached out to the Hamlet of Resolute Bay, Resolute Bay Hunters and Trappers Association, and Qikiqtani Inuit Association with our plans, and can adjust our plans if any of these organizations or the NIRB screening procedure reveals proximity to such activities. We do not believe this proposal relates to traffic patterns, human health, or VSEC components.

Miscellaneous Project Information

Identification des répercussions et mesures d'atténuation proposées

The impacts are primarily those associated with a small team of researchers in a temporary camp, and

sampling the rock strata. To mitigate this, we operate on the philosophy of no (or at least minimal) impact. We will leave no rubbish or other trace of our base camps or sampling locations. No campfires are allowed in camp and we only use small, gas-powered stoves. We use small personal tents (no structures). Team leader Dr. Sperling and Dr. Tarhan have worked and camped in many remote areas during previous field seasons throughout northwestern Canada (and elsewhere in the Arctic) during previous field seasons, and have left campsite areas essentially indistinguishable from before arriving, in keeping with the wild character of these field areas. Our team previously did fieldwork in Qausuittuq National Park in 2023 at Grant Point, and our camp area was essentially unchanged (pictures available on request). In fact we left it 'cleaner than we found it' by hauling out some minor trash apparently left by an older and less careful field party (the previous geological work at that site was in the late 1980s). All human waste will be packed out with the team, using the portable toilet system available from the PCSP base in Resolute Bay. With respect to rock sampling, we will be collecting geological rock samples via hand or geological hammer. We will not be making any holes or excavations or using any mechanized equipment. All rock samples to be collected are normal rock samples with no aesthetic or commercial value. We will attempt to minimize the amount of sample being removed and use our rock hammers as little as possible and we will target easily accessible broken or fractured outcrops to avoid excessive hammer use. We are experienced at sampling with minimal impact on the outcrop, and as stated above, strive to minimize our impact on the environment.

Répercussions cumulatives

Although there have been geological field parties where we are planning to camp and work, they have commonly been decades apart. For at least some of our sites, they have not been re-studied in nearly 50 years. Thus, we do not believe there are cumulative effects from re-study of these geological field areas.

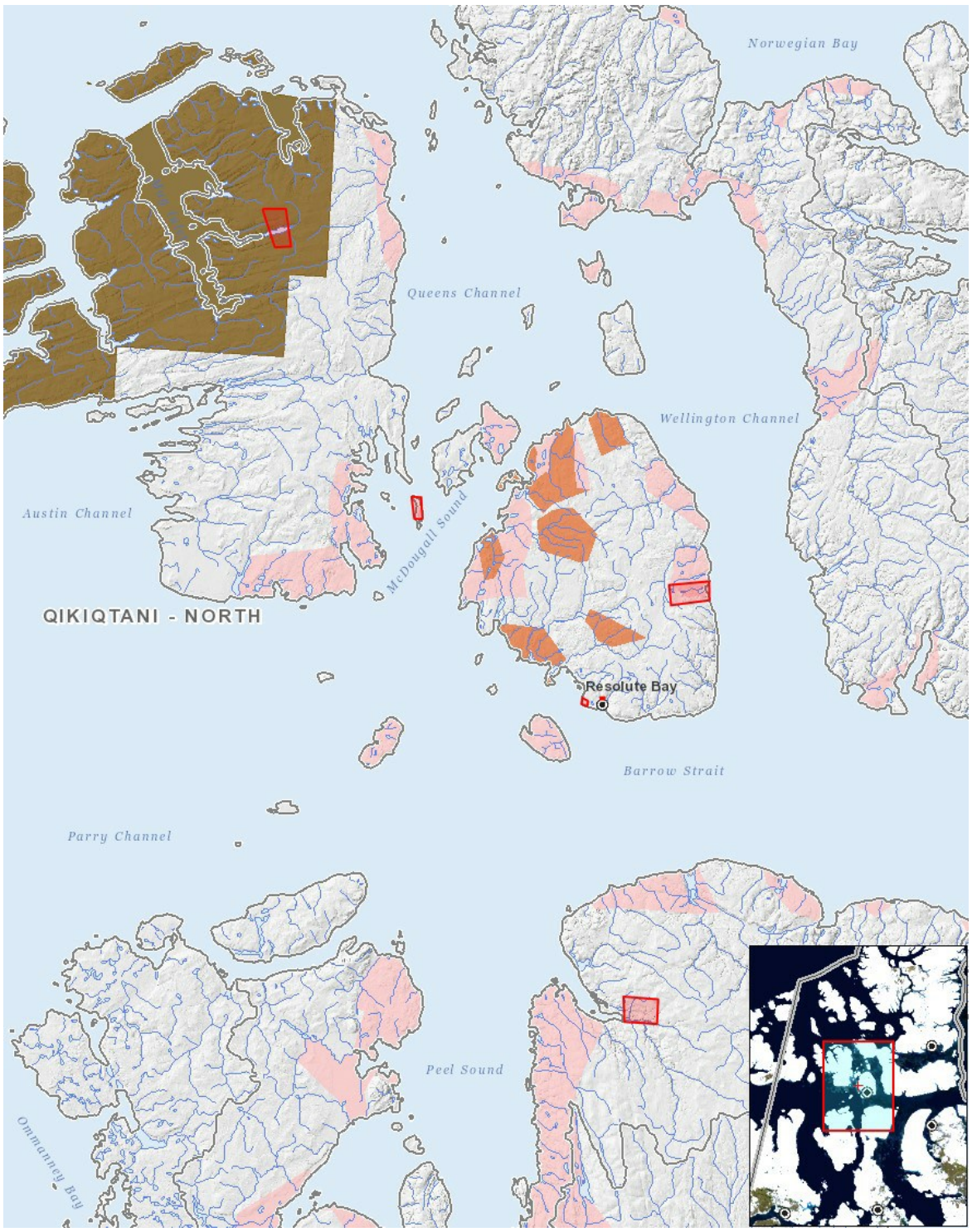
Impacts

Identification des répercussions environnementales

	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																									
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-
Exploitation																									
Scientific/International Polar Year Research		N	-	-	-	-	-	-	-	N	-	-	-	-		-	-	-	-	-		-	P	-	-	-
Désaffectation																									
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Négative et non gérable, M = Négative et gérable, U = Inconnue)

Site du projet



Liste des géométries de projet

1	polygon	Read Bay--primary research camp locality
2	polygon	Cape Martyr--possible research locality if extra days at PCSP base
3	polygon	Signal Hill--possible research locality if extra days at PCSP base
4	polygon	Twilight Creek--primary research camp locality
5	polygon	Storm exploration camp--work on existing drill cores
6	polygon	Truro Island--backup site if we cannot land at Twilight Creek