



## **NIRB Uuktuutinga Ihivriughikhamut #126400**

### **Testing the impact of early land plants on the Earth system**

**Uuktuutinga Qanurittuq:** New

**Havaap Qanurittunia:** Scientific Research

**Uuktuutinga Ublua:** Saturday, March 14, 2026

**Period of operation:** from 2026-07-05 to 2026-08-05

**Havauhikhaq Ikayuuqtinga:** Erik Sperling  
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# **QANURITTUT**

## **Tukihannaqtunik havaariyauyumayumik uqauhiuyun**

Qablunaatitut: Document attached in documents tab.

Uviititut: 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

## Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunangga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannuqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtaliyainnit nuna
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, conodonts, 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	These Silurian-Devonian stratigraphic sections have an outstanding record of Paleozoic	Nearest community is Resolute Bay. It is not near any protected areas.

			sections and has been studied by multiple geological field parties	invertebrates (brachiopods, conodonts, 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	Scientific/International Polar Year Research	Inuit Owned Surface Lands	The Ordovician-Devonian stratigraphy and	This site preserves graptolite fossils primarily and likely Devonian	Resolute Bay

land at Twilight Creek			geochemistry at Truro Island has been studied by various research groups including Melchin and Holden 2006	fossils such as corals, brachiopods, sponges, etc.	
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**Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun**

<b>Nunauyuq</b>	<b>Atia</b>	<b>Timiuyuq</b>	<b>Upluani Uqaqatigiyaungmata</b>
Qausuittuq	SAO	Hamlet of Resolute Bay	2026-02-18
Qausuittuq	rbhta@baffinhto.ca	Resolute Bay Hunters and Trappers Association	2026-02-18

# Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq:

North Baffin

## Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Nunavut Kavamanga, Nunavunmi Ihivriunniqmut Timiqutigiyanga	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		
Nunavut Imaligiyyit Katimayit	Water license (or specifically statement that we do not need a water license)	Not Yet Applied		
Pulaarviit Kaanata	Research permit	Applied, Decision Pending		
Qikiqtani Inuit Katimayit	Land use permit I, non-Inuit	Applied, Decision Pending		

## Project transportation types

Transportation Type	Qanuq Atuqtauniarmangaa	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

# Ihuaqutivaluin Atuqtauyukhan

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

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
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)

## Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Propane	fuel	2	25	50	Liters	Cooking on two-burner stoves
Gasoline	fuel	1	5	5	Gallons	Small generator for telepresence outreach activities

## Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqittagaani qanuq	Atulirumayain imavaluin utiqittagani humi
0	Buckets and/or handheld water bladders	Unnamed streams and creeks near our campsites.

# Iqqakuq

## Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Scientific/International Polar Year Research	Anaagun (inuin anaaguin)	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.

### Avatiliriniqmut Ayurhautingit:

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**

### **Qanurittuq Ittunik Avatinga: Avatingalluanga**

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.

### **Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga**

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.

### **Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga**

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**

### **Naunaiyainiq ukuninnga Ayurhauitingit unalu Piumayaat Ikiikliyuumiutinahuarutit**

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.

### **Tamatkiumayunik Ihuikgutivaktunik**

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.

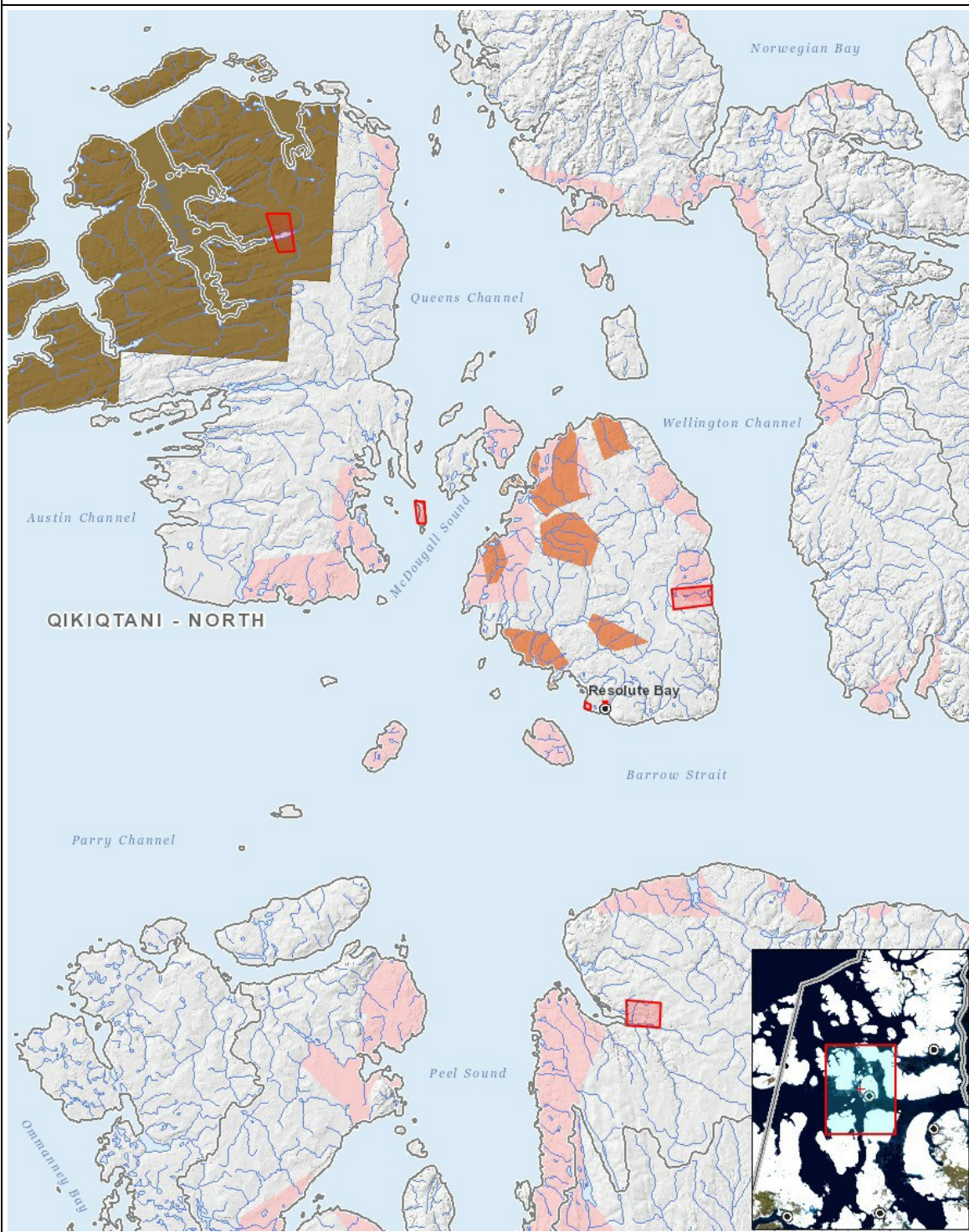
# Impacts

## Ilitariyauniq Avatiliriniqmut Ayurhauingit

	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
<b>Havakvinga</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Aulapkaininnga</b>																									
Scientific/International Polar Year Research		N	-	-	-	-	-	-	-	-	N	-	-	-	-	-	-	-	-	-	P	-	-	-	-
<b>Piiqtauniq</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

# Havaariyauyukhamut Nayugaa



## List of Project Geometries

- |   |         |  |
|---|---------|--|
| 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      |