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Nunavunmi Parnaiyit  
Nunavut Planning Commission  
Commission d'Aménagement du Nunavut



PUBLIC REGISTRY



Project Proposal Notices

Project Proposals

## Public Registry - Project Proposals

NPC 150065: Cape Bounty Arctic Watershed Observatory (CBAWO)

Proposal Status: Conformity Determination Issued

Overview

Documents

### Project Overview

Type of application: New

Proponent name: Melissa Lafreniere  
Proponent company: Queen's University

### Project Description:

Our work is intended to determine how climate change affects the land and water. Our work involves obtaining water and sediment samples from the streams and lakes at Cape Bounty, and determining how vegetation changes with climate. We also study permafrost and the effects it has on water and land. This study is the longest record of changes in rivers and lakes in Nunavut and will be useful for understanding how water and the land will respond to climate and permafrost change, and the potential effects on wildlife and vegetation. We have been doing this work since 2003 and hope to continue in the future. In 2023, we will have a camp from mid-May to early August. Initially, we will collect snow and lake water samples, and take sediment samples from the lakes. When the rivers start to flow, we will sample and measure the discharge, sediment and nutrients. We will start plant measurements in late June to determine growth patterns and gas exchange. Through this time, we will maintain soil water measuring equipment to determine the rate of thaw and water movement in the subsurface. We will also sample the fish and lakes for mercury, and we expect Debbie Iqaluk (or another resident of Resolute) to work at the camp in late July. In August, we will remove instruments from the lake to obtain the data.

### Project Schedule

Start Date: 2023-05-15

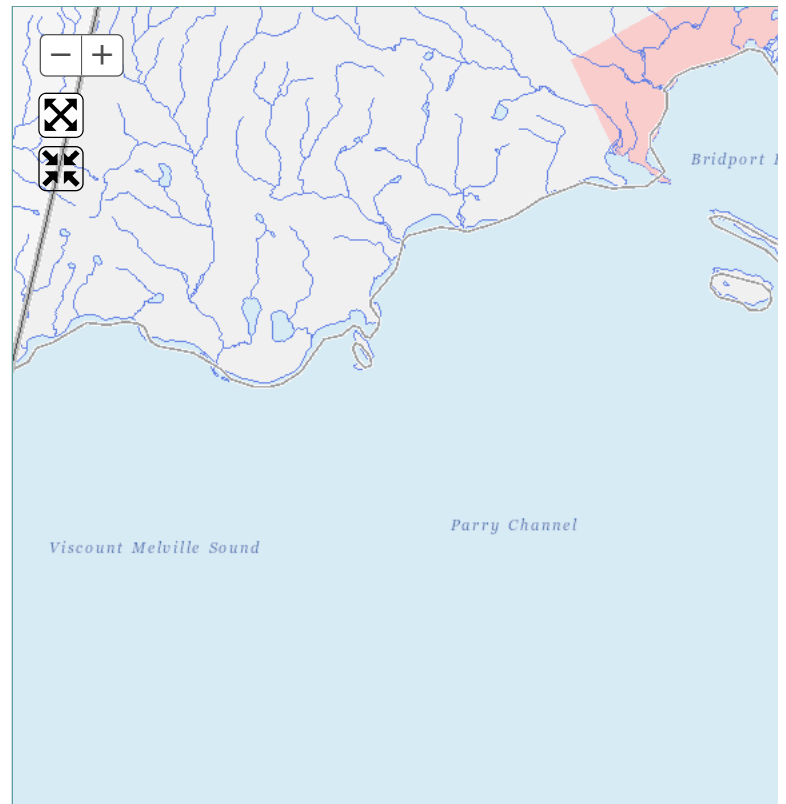
End Date: 2023-08-15

### Project Map

### List of project geometries:

Id	Geometry	Location Name
10337	polygon	Cape Bounty Arctic Watershed Observatory

NPC Planning regions:  
North Baffin



## Project Land Use and Authorizations

## Project Land Use:

Scientific Research

## Licensing Agencies:

Government of Canada - Crown-Indigenous Relations and

Northern Affairs Canada

Nunavut Water Board

Nunavut Impact Review Board

## Material Use

## Equipment:

Type	Quantity	Type	Use
Snowmobile	1	2 x .5	To move personnel and equipment around the catchment
ATV	1	1.5 x 1	To move personnel and equipment around the catchment
Aircraft	1	10 x 2	To mobilize, and demobilize camp, and exchange personnel
Ice Auger	1	3x .2	To drill holes in lake ice to collect water samples
Generator	1	.2 x.4	Honda Generator will be used for lights, and running the electric incinerating toilet

## Fuel Use:

Type	Container	Capacity	Use
Gasoline	1	208	To fuel Honda generator, snowmobiles and ATV
Propane	12	100	Heating of tents and cooking
Propane	6	20	Cooking

## Hazardous Material and Chemical Use:

Type	Container	Capacity	Use
Hydrochloric Acid	1	1	We will use 50-100 microL of HCl to preserve some of the water samples we collect. We will use approximately 300-500 ml in total

## Water Consumption:

Daily Amount (m <sup>2</sup> )	Retrieval Method	Retrieval Location
0	West River, and/or West Lake	20 L jugs

## Waste and Impacts

## Environmental Impacts:

The facility is a seasonal field camp (tents, semi-permanent) operated between May and August and occupied by 4-8 people. Major activities include: regular sampling of water for analysis, measurement of stream and river discharge with electronic sensors, soil water sampling, vegetation measurements, and lake water sampling and associated sensor measurements. Research water samples involve ~1 litre and are carefully taken to avoid disturbing the channel or water body. Work is carried out via snow machine or foot, and the camp is supported by aircraft from Resolute that land on the lake ice (May-June) or an established strip near the camp. ATV use is restricted to use on the airstrip, and moving boats along a designated path between East and West lakes at the beginning and end of seasons to

minimize tracks on the land. Camp water is manually collected by filling 20 L containers (approximately 20-60 L per day). Camp domestic grey water is disposed of in a screened sump pit that is back filled, and the camp utilizes an electric incinerating toilet to for waste disposal with no liquid discharge. All camp solid waste (garbage) is returned promptly to Resolute, usually at 1-2 week intervals. No garbage incineration is undertaken. Sampling does not generate waste water and no chemical discharges are involved. Fuel use is limited to propane and gasoline for feeling generator and ATV/or snowmobile. Gasoline is stored on spill pallets with spill kits immediately available.

Waste Management:

Waste Type	Quantity Generated	Treatment Method	Disposal Method
No data found			

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