

Project Title:

Arctic carbonate rocks, Ellesmere Island, Nunavut

Researchers names and affiliations:

Leader: Benoit Beauchamp, University of Calgary, Calgary, Alberta

Student: Bryana Fraser, University of Calgary, Calgary, Alberta

Student: Daniel Calvo Gonzalez, University of Calgary, Calgary, Alberta

Project Location:

The study area is located in the Blue Mountains, Ellesmere Island

Timeframe:

Estimated 18 days between June 21, 2022 to July 20, 2022

Project Description:***Purpose:***

We will investigate different rock units of carbonate rocks that have recorded important interplay between large forces some 300 million years ago in the area now occupied by the Canadian Arctic. We will focus on an area of the Sverdrup Basin centered on Ellesmere Island, where this phenomenon is well displayed in outcrops of ancient reefs that responded to these forces.

Goals and objectives

The project will address two aspects of importance in the Sverdrup Basin:

1. **Carbonate units.** A focus of this project is to examine outcrops of large ancient reefs and surrounding rocks on Ellesmere Island.
2. **Geological History:** We will investigate to what extent the type of sediments contained in ancient reefs reflect large geological forces that were at play some 300 million years ago.

Method of transportation:

Twin Otter transportation from Resolute Bay to Blue Mountain area (Ellesmere Island) by PCSP.

Helicopter transportation to study area.

Walk from camp sites to outcrops.

Structures to be erected:

The research team consists only of two people. Only two temporary personal tents and a tent for storage and cooking will be erected at the different camp sites. We are planning three different camp sites.

Restoration/abandonment plans:

Each camp site will be restored to its original conditions. All garbage will be gathered and shipped back to Resolute.

Methodology:***Collection protocol and mechanism***

About 50 small rock samples (less than 0.5 kg each) will be collected for geochemical and microscopic analysis. Samples will be collected with a geological hammer and will be catalogued and preserved in Calgary by the Geological Survey of Canada. No fossils will be collected.

Individuals selected for your research

The two individuals in our research team are with the Department of Geoscience at the University of Calgary. The field leader is Professor Benoit Beauchamp, who will be accompanied by his graduate student, Bryana Fraser, who will be acquiring her field data in support of her ongoing MSc research.

Data:***Use of data:***

In the short term, the data will be used in support of the work of the researcher and the graduate student. The data will then be published in peer-reviewed journals, after which it will be made publicly available through the GSC to anyone who wishes to use it.

Reporting

Three to five peer-reviewed papers will result from this project. Report to the media and/or the communities will be provided upon request, including customized presentations, if there is an interest for our work.