Non technical summary – CASP fieldwork 2009-2011

We wish to apply for a multi-area and multi-year permit to undertake fieldwork on the Canadian Arctic Islands of Cornwallis and Ellesmere.

Project title: Provenance of clastic sediments in the Sverdrup Basin, Canadian Arctic Islands

Researchers Name and Affiliation

Name	Role	Geological Speciality	Affiliation
Dr. Robert Scott	Project Leader	Structural & regional	CASP
Dr. Helen Smyth	Deputy Project Leader & Geographical Information Systems (GIS)	Sedimentology & regional	CASP
Dr. Steve Rippington	First Aid & Communications	Structural & tectonics	CASP
Dr. Simon Kelly		Biostratigrapher	CASP
Dr. Vicky Pease		Tectonic & geochronology	University of Stockholm

Project Location

The areas are listed and shown on the map below. More details will be provided if necessary including proposed landing and base camp sites.

Cornwallis Island (NTS Sheet: 059F, 1:250,000)

- In the vicinity of the hamlet of Resolute Bay

Ellesmere Island

- Lake Hazen, northern Ellesmere: Parks Canada application decision pending (~600 km north of Grise Fiord, NTS Sheets: 120G & 340G 1:250,000)
- Central Ellesmere Island: Fosheim Peninsula, Raanes Peninsula to Princess Marie Bay (between 200 and 400 km north of Grise Fiord, NTS Sheets: 340B, 49E, 49F, 49G, 49H, 39G, 39G & 39H 1:250,000)

Timeframe: This project is part of CASP long-term Arctic research programme. Work will be undertaken during in the spring and summer months between 2009 and 2011. Each field season will last up to 10 weeks.

2009: 20th June and 20th August, 2009

Project Description

Purpose, goals & objectives

The CASP 2009-2011 field programme aims to study the geology of the Canadian Arctic Archipelago to build on existing published information, and CASP work in 2007 and 2008 (Axel Heiberg +

Ellesmere Islands). The islands within Nunavut which we would like to visit (Cornwallis and Ellesmere islands) are located on around the edges of the Sverdrup Basin, where we can study the greatest range of sedimentary rocks. Given the unstable weather systems, uncertain ground conditions it is essential that our target areas remain flexible.

The principal aim of our research is to understand the types of mineral grains that are preserved in sandstone of different ages, from which we can establish where sand grains came from originally, and how they were transported to their site of deposition.

Method of transportation: Twin Otter flights, helicopter transport within areas (3 days), and majority of access will be on foot.

Structures that will be erected: Tents will be used and removed on departure.

Methodology

Collection protocol – Small rock samples will be collected from the surface. Observations, photographs, and measurements will be recorded from each rock units. No methods will be used in the field that will disturb the environment. No samples will be taken at any site of archaeological or biological sensitivity.

Collection mechanism – samples will be reduced to the desired size using a geological hammer and location data recorded using GPS receiver (Geographical Positioning System). The geographic position data and sample information will be stored in a GIS (Geographical Information System) database.

Data and reporting

On return, analyses will be undertaken on the data and samples collected, the results of which will initially be documented in internal CASP reports, and then presented at both regional and international geological conventions, in addition the data and results will be prepared for publication in peer reviewed scientific journals. Reprints of these publications can be provided if requested.