

The research project **Boothia-Somerset: Integrated Geoscience of the Northwest Passage** is primarily undertaking bedrock mapping by foot traverse of a 17,500 km² region for which knowledge stems from 1963 and 1986 mapping without benefit of aeromagnetic constraints or age constraints. This activity will significantly upgrade the outdated geoscience framework of this area, expand the impact of new geo-constraints on the mainland (GEM-2 RAE Thelon Activity findings), and provide relevant data and knowledge to this remote region of Nunavut that, because of global warming and the resulting increased shipping, will increasingly be exposed to matters related to resource assessment and economic development.

The primary activity (July 9 –August 13, 2018) involves daily foot traverses, 8-12 km in length, by pairs of mappers. Six traverse pairs will be set out at different locations each morning by helicopter, and will be picked up sequentially each evening by helicopter. During the day, the helicopter will mostly remain at the basecamp. Observations and interpretations of rock exposures will be recorded on traverse with a hand-held, battery-operated computer and downloaded each evening into the project database. These observations will be integrated with available aeromagnetic data to define and characterize bedrock units. Samples taken with hammer by hand will yield additional age/timing information and lithogeochemical data from which mineral prospectivity can be assessed. Collectively, the nature, age, and deformation history of the region will be resolved and portrayed in new publically-available maps and reports.

Helicopter is the primary transportation mode, with flying not more than 3 hours per day, mainly to drop off traverse pairs and/or targeted researchers and retrieve them sequentially each evening. A twin otter flight from Resolute Bay every ten days will bring groceries, mail and transport local residents to and from the camp.

Operations will take place from a low-impact, temporary, tent camp to be constructed with material brought in and flown out when completed. The proposed camp site, located 200 km south of the Resolute Bay, is proposed to be located near Creswell Bay where there is an existing fixed-wing Twin Otter landing strip. Office and Kitchen shelter will be constructed with 12' by 14' cotton tents supported by aluminum poles, while small, cotton, single centre-pole (Logan) tents will provide individual, personal sleeping space.

The overarching intent of this project is to make available modern knowledge for a region between Taloyoak and Resolute Bay, so that stakeholders can understand and assess its geological history and mineral resource potential using up-to-date, relevant data.