

Fury and Hecla Geoscience Project

Project Proposal

Plain Language Summary

The Fury and Hecla Geoscience Project will be led by the Canada-Nunavut Geoscience Office (CNGO) in collaboration with experts and students from several Canadian Universities. The project's mandate is to fill some of the last remaining gaps in geoscience knowledge on Baffin Island. The project will require field work in the summers of 2018 and 2019 to cover NTS sheets 47E, F, G, and H, and parts of 37C and F, 47C and D, and 48A.

In 2018, field work will be staged from Igloodlik and based from a temporary camp on the lower Gifford River from July 11 to August 15. Bedrock and surficial geology mapping and sampling will be focused on the southern half of the study area, and use two helicopters to transport crews to their work sites each day. Mapping teams will collect visual observations, photographs, fist-size samples, and the natural magnetic and radioactive properties of the rocks and sediments. The 2019 field season will be conducted in the northern part of the study area, with targeted visits on northern Melville Peninsula. The timeframe for field work and the mapping methods will be similar to the 2018 field season. A suitable camp site for the 2019 work will be chosen during the 2018 field season.

This project will facilitate new research projects for 1 MSc and 4 PhD students from several Canadian universities through a Strategic Partnership Grant from the Natural Science and Engineering Research Council of Canada. In general, thematic research projects will be focused on: the tectonic history of the area; the possible record of Earth's early lifeforms in old sedimentary rocks; the thickness of beds and presence of fossils in younger sedimentary rocks; and the glacial history of the region, including past variations in sea-level during the last ice age. The project will also help identify and assess the potential for uranium, iron ore, base- and precious-metals, diamond-kimberlites, carving stone, oil-bearing shale, and aggregate occurrences and deposits.

Community consultation in Igloolik and Arctic Bay is planned for March 2018, when advice and suggestions from the Hamlet councils, HTO's, and the public will be incorporated into this project proposal. The project will require numerous local contracts with businesses and individuals in Igloolik, including for expediting, storage, groceries, local accommodations, wildlife monitors, and a camp-cook assistant.

The project results will be published as new maps and georeferenced datasets, field reports and scientific peer-reviewed journal articles, and through presentations made at international and national conferences. All products will be made available for free download from the CNGO's website and Natural Resources Canada's GEOSCAN website. This project will provide the fundamental baseline information to better understand the geological history of Baffin Island, promote new mineral resource exploration, and support future land-use planning strategies in Nunavut.

