

Structural geology of the northern Liard Range, Franklin Mountains, Northwest Territories

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The Northern Liard Range is located within the Franklin Mountains of the Northwest Territories. Mapping of the Liard Range, at a scale of 1:50,000, in the western half of the Sawmill Mountain (NTS 95B/13) and eastern half of the Etanda Lakes (NTS 95C/16) map areas was initiated in the summer of 2001. The work is part of a Masters project being carried out by the first author at Queen's University.

In the study area, the Liard Range changes its structural trend from northwest-southeast, in the south, to north northeast-south southwest, in the north. In the southern portion of the map area, the Flett Formation is thrust on top of the Lower Mattson Formation. This east-verging thrust is interpreted to terminate in the area of the flexure. To the north of the flexure, the southwest-plunging Mattson Anticline defines the structure of the range. In the vicinity of the flexure, the structure on the east side of the range is characterized by box-folds. The box folds have shallowly east-dipping crestal surfaces and steeply dipping east and west limbs. The folds vary in complexity from ridge to ridge with some folds being harmonic while others display various types of structures.

Fieldwork will resume in the summer of 2002 in the Liard and Kotaneelee ranges and physical analogue modeling will be used to examine how the mechanical properties of the stratigraphic sequence controls the nature of the structures observed and to investigate possible origins of the change in structural trend of the Liard Range.