

Surficial Geology, Snyder Lake, northwestern Manitoba (parts of NTS 64N5)

Notes

Quaternary geological investigations were undertaken in the Snyder Lake area of northwestern Manitoba in the summer of 2011. In conjunction with detailed bedrock mapping (Kremer and Böhm, 2011) this work provides a modern geoscience knowledge-base tailored towards current and future mineral exploration and/or infrastructure development. Geologic observations, sampling of glacial sediments (till) and/or measurements of ice-flow indicators were recorded at 131 stations within a 577 km² area along the shores of Snyder and Grevstad lakes. This map is complemented by a Report of Activities (Trommelen, 2011a) and a field-based ice-flow indicator data repository (Trommelen, 2011b), and builds on previous 1:250 000 scale mapping (Dredge et al., 1982).

The region is part of the extensive discontinuous permafrost zone (Sladen, 2011) and permafrost was encountered beneath organic deposits. Elevation varies mainly from 380 to 430 m asl. Local relief is generally 10 to 30 m, but reaches up to 60 metres at several large crag-and-tail landforms (tadpole-shaped landforms developed by glacial erosion of rocks of unequal resistance and/or by infill of a lee-side cavity). Numerous lakes and wetlands are present throughout the hummocky bouldery terrain, interspersed with swaths of streamlined terrain. The drift cover is generally thick and bedrock outcrops are rare. Where present, the regional southwest trend of bedrock ridges typically coincides with the main ice-flow orientation, which has enhanced the bedrock ridges and eroded linear lake basins. Two main southwest-trending esker channel systems are present across the area. The ice-flow indicator record on Grevstad Lake is quite sparse and most interpretations were made on indicators from the Snyder Lake area (Figure 1).

The underlying bedrock consists predominantly of Archean granitic gneiss, Paleoproterozoic psammite, pelite and calcisilicate of the Wollaston Supergroup, and subordinate granitic intrusive rocks (Kremer and Böhm 2011).

References

- Dredge, L. A., Nixon, F. M. and Richardson, R. J. H. 1982: Surficial geology, Kasmere Lake, Manitoba; Geological Survey of Canada, Preliminary Map, Map 19-1981, scale 1:250 000.
- Kremer, P. D. and Böhm, C. O. 2011: Bedrock geology of the Snyder Lake area, northwestern Manitoba (parts of NTS 64N5). Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, Preliminary Map PMAP2011-1, scale 1: 35 000.
- Sladen, W. E. 2011: Permafrost; Geological Survey of Canada, Open file 6724.
- Trommelen, M. S. 2011a: Far North Geomapping Initiative: Quaternary geology of the Snyder-Grevstad lakes area, far northwestern Manitoba (parts of NTS 64N5); in Report of Activities 2011, Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, p. 18-28.
- Trommelen, M. S. 2011b: Field-based ice-flow indicator data, Snyder-Grevstad lakes area, northwestern Manitoba (parts of NTS 64N5), Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, Data Repository Item DR2011002, Microsoft Excel® file.

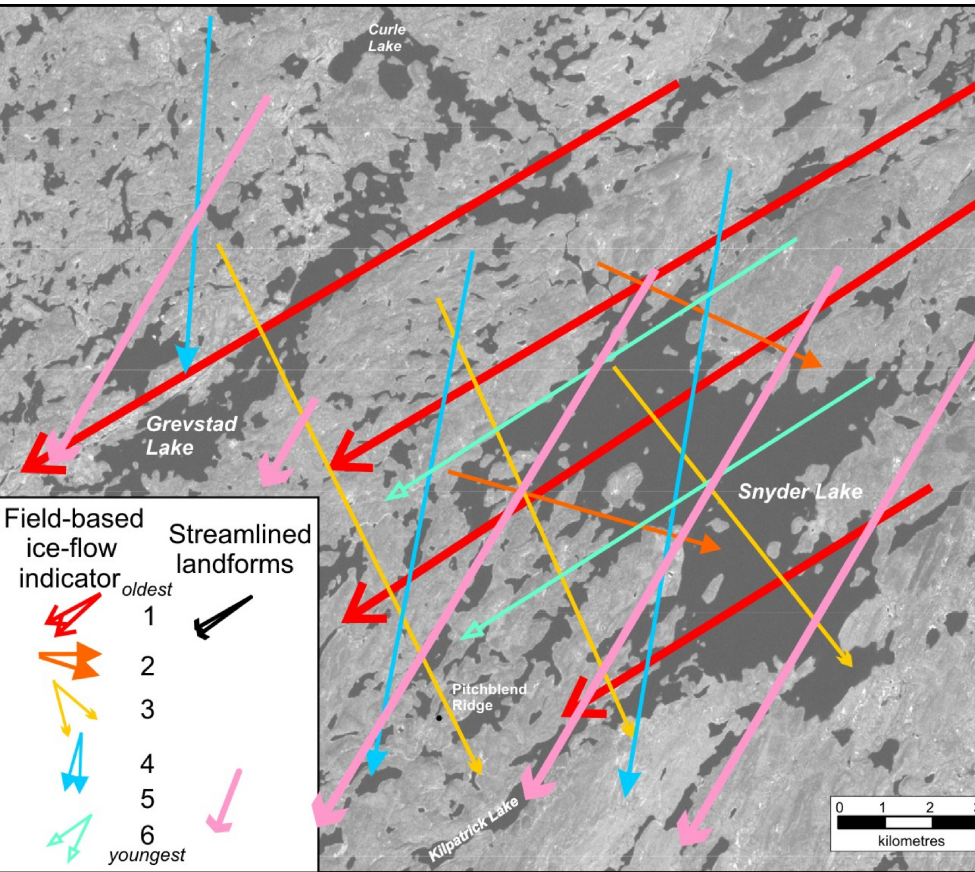
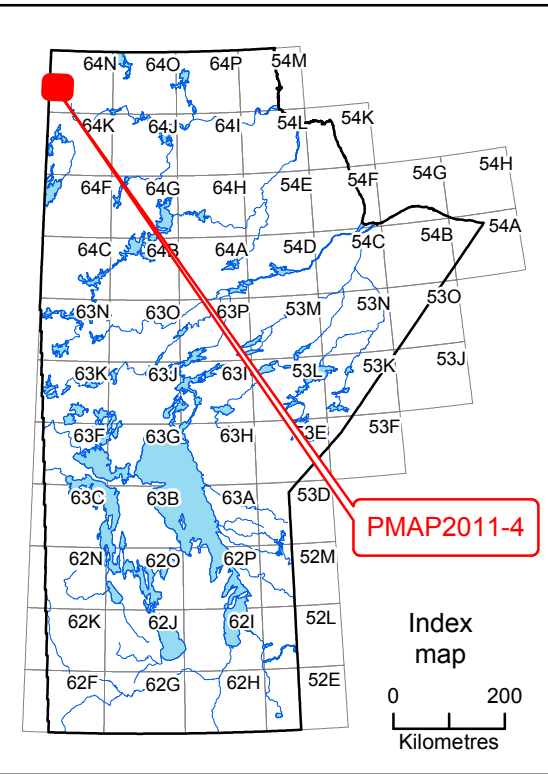


Figure 1. Generalized ice-flow history for the map area, interpreted from field-based micro-scale ice-flow indicators and streamlined landform orientation.



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SUGGESTED REFERENCE:
Trommelen, M.S. 2011: Surficial geology, Snyder Lake, northwestern Manitoba (part of NTS 64N5); Manitoba Innovation, Energy and Mines, Manitoba Geological Survey, Preliminary Map PMAP2011-4, scale 1:50 000.

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This map is a provisional summary of work carried out during the summer field season and is produced directly from the geologist's manuscript. It is not to be regarded as a final interpretation of the geology of the area.

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