

Bedrock topography of southern Manitoba

Description

This map was constructed using a combination of drillhole and geological mapping data originally plotted and interpreted by hand (Matile and Keller, 2012), modelled in GOCAD® software and subsequently interpolated in ArcGIS. This dataset was compiled using a combination of several drillhole databases:

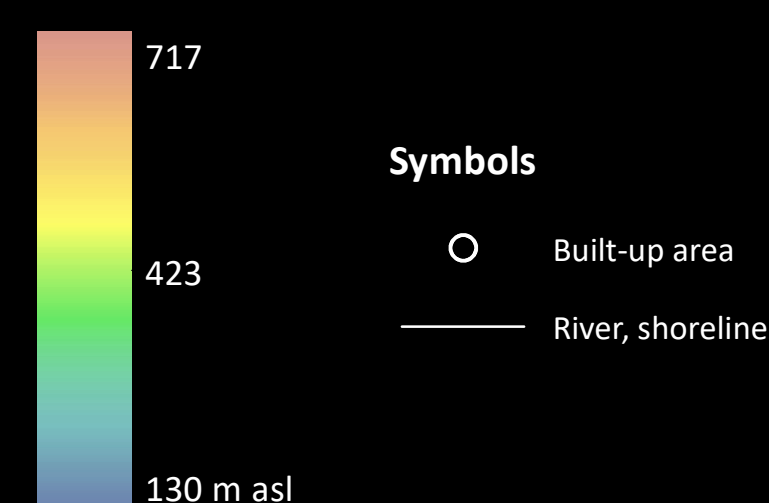
- GWDriill waterwell database (Manitoba Water Stewardship, 2007)
- Manitoba Oil and Gas Well Information System
- Manitoba Stratigraphic Database
- Williston Basin TGI database (Targeted Geoscience Initiative II Working Group, 2009)
- Western Canada Sedimentary Basin database
- rotosonic drillholes collected by the Manitoba Geological Survey.

The drillhole data was combined with buried valley aquifer channel data (Hinton et al., 2007) and various forms of surficial mapping data, which provided context for the interpretation. This dataset represents the Manitoba Geological Survey's interpretation of the available data and was originally modelled from east-west-oriented cross-sections at a 5 km north-south spacing from the United States border to 54°N; no additional data has been added for this release. Further information regarding the cross-section and 3-D modelling methodology can be found in Keller et al. (2009).

Please note that the modelled surface exhibits east to west oriented ridges that are parallel to the 5 km spacing of the cross-sections used to create the 3-D model, and are an artifact of the modelling. Additionally, a network of buried valley aquifers cut into the bedrock surface in southwestern Manitoba are not properly displayed at the scale of this map. For more information on buried valley aquifers in southwestern Manitoba, please refer to Cummings et al. (2012), Pugin et al. (2014) and Oldenborger et al. (2016).

This map is a derivative of geological modelling. The intention of this map is to provide an overview of the bedrock topography at a regional scale (1:500 000). For more detailed studies, it is recommended the reader verify the modelling output prior to any decision-making.

Legend



Geology and 3-D modelling by G.L.D. Matile and G.R. Keller

GIS/Cartography by H.O. Adediran and G.R. Keller

Suggested reference:

Keller, G.R. and Matile, G.L.D. 2021: Bedrock topography of southern Manitoba; Manitoba Agriculture and Resource Development, Manitoba Geological Survey, Geoscientific Map MAP2021-1, scale 1:1 000 000.

References

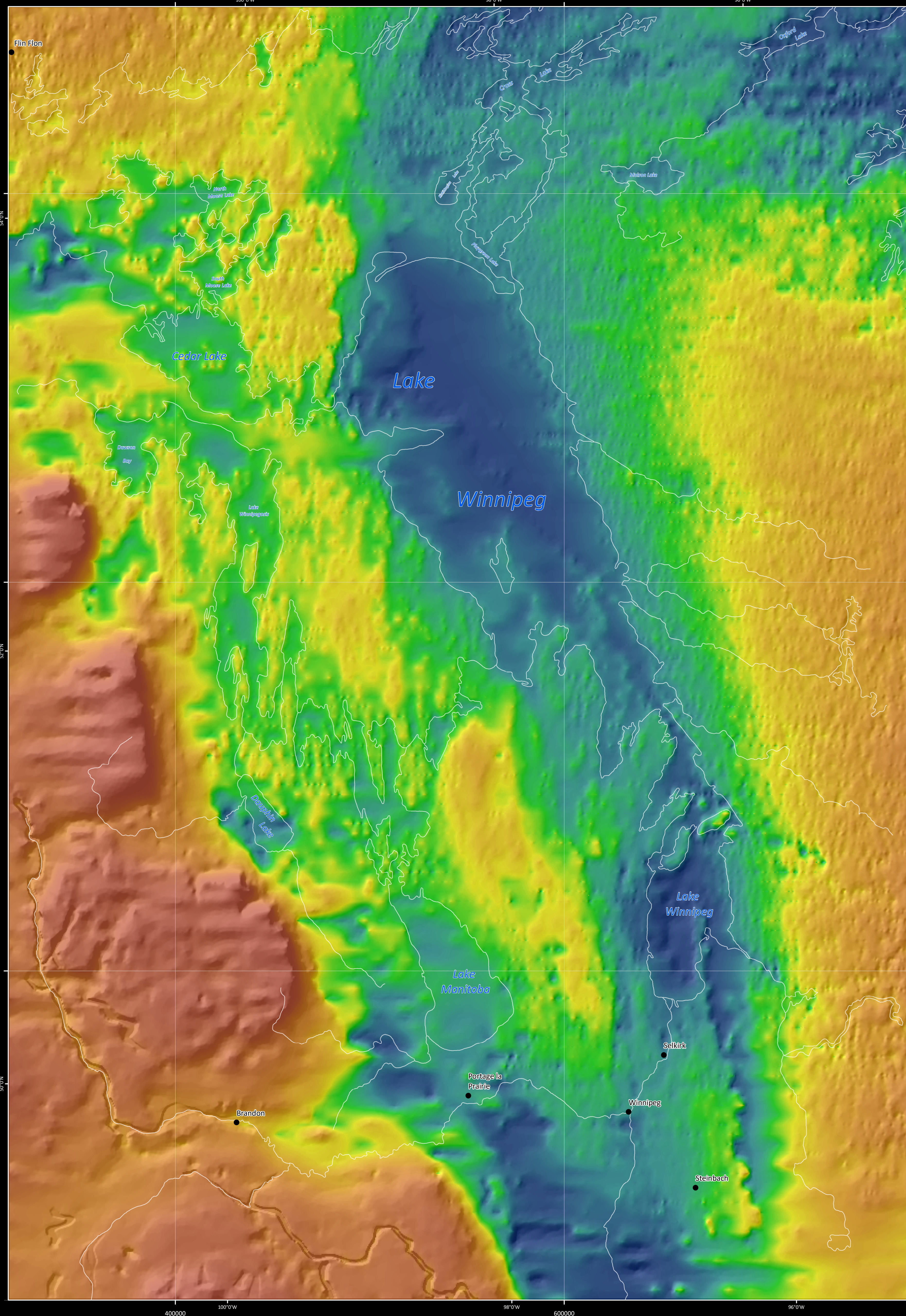
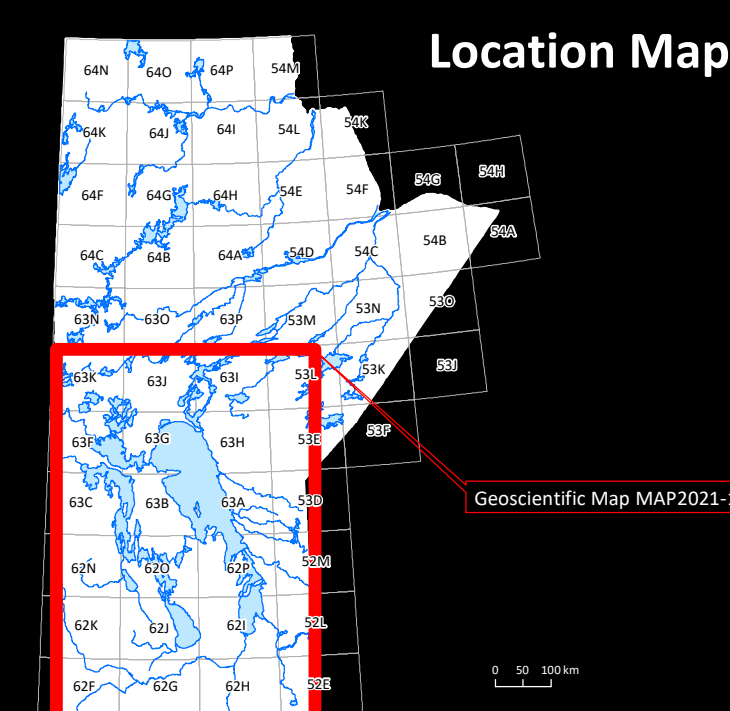
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Scale 1:1 000 000

