

DESCRIPTIVE NOTES

INTRODUCTION
The Surficial Geology Map of NTS 94-004 (Canadian Geoscience Map 108) is the product of collaboration between the Geological Survey of Canada and the British Columbia Ministry of Energy, Mines and Natural Gas...

APPROACH TO SURFICIAL GEOLOGY MAPPING
Remote sensing, geophysics and field-based investigations have led to a better understanding of the regional distribution of surficial deposits, permafrost, landslides and other geomorphic processes in the NTS 94-004 map area...

INFERRED GEOLOGICAL HISTORY
The inferred landscape of NTS 94-004 is largely a product of underlying bedrock and geological structures, with ornamentation by the Late Wisconsinan Laurentide Ice Sheet...

Topography and drainage patterns were greatly modified during the phase of maximum ice cover (>18 ka BP)...

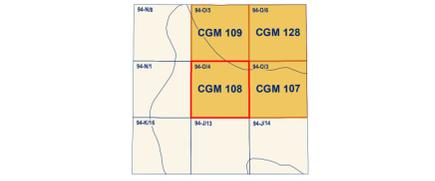
Degradation began sometime after 18 ka BP (or >21 ka BP) and ended before 10 ka BP (ca. 12 calendar ka BP)...

Post-glaciation (<10 ka BP, or ca. 12 calendar ka BP to present), changes in regional base-level level to episodes of channel incision and aggradation...

ACKNOWLEDGMENTS
Canadian Geoscience Map 108 is an outcrop of the Geo Mapping for Energy and Minerals Yukon Basins Project managed by Carl Ozyer and Amy Lane (GSFC-Canada)...

Abstract

Canadian Geoscience Map 108 depicts the surficial geology over some 750 km² covered by the Etane Creek map sheet (NTS 94-004) in northeastern British Columbia...



National Topographic System reference and index to adjoining published Geological Survey of Canada maps

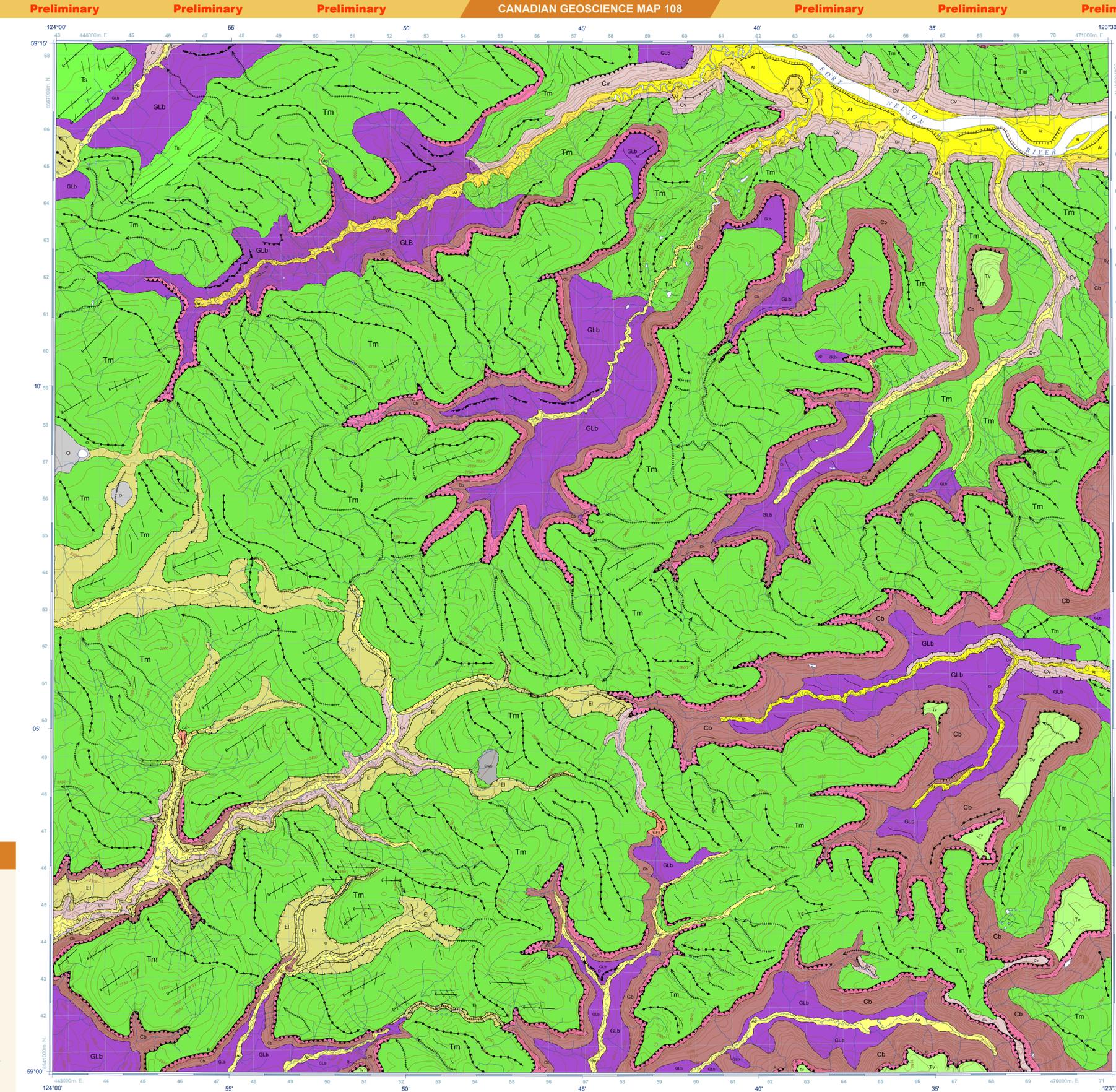
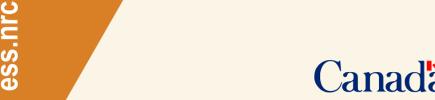
Cover Illustration
Sandstones and conglomerates exposed along an escarpment of the Tsoo Tablelands in northeast British Columbia, view north. Photograph by D.H. Hurley, 2013-08-1

Natural Resources Canada Ressources naturelles du Canada

CANADIAN GEOSCIENCE MAP 108 SURFICIAL GEOLOGY ETANE CREEK British Columbia 1:50 000



Canadian Geoscience Maps



CANADIAN GEOSCIENCE MAP 108 SURFICIAL GEOLOGY ETANE CREEK British Columbia 1:50 000

Authors: D.H. Hurley, A.S. Hickin, W. Chow, and M. Mirzababaei
Geomatics by D.H. Hurley, W. Chow, and M. Mirzababaei
Cartography by W. Chow
Initiative of the Geological Survey of Canada, conducted under the auspices of the Yukon Basin Project as part of Natural Resources Canada's Geomapping for Energy and Minerals (GEM) program

CANADIAN GEOSCIENCE MAP 108 SURFICIAL GEOLOGY ETANE CREEK British Columbia 1:50 000

Map projection Universal Transverse Mercator, zone 10, North American Datum 1983
Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations in feet above mean sea level
Magnetic declination 2013, 20°28'E, decreasing 21' annually.

CANADIAN GEOSCIENCE MAP 108 SURFICIAL GEOLOGY ETANE CREEK British Columbia 1:50 000

The Geological Survey of Canada welcomes corrections or additional information from users.
This publication is available for free download through GEOSCAN (http://geoscan.nrcan.gc.ca/)

CANADIAN GEOSCIENCE MAP 108 SURFICIAL GEOLOGY ETANE CREEK British Columbia 1:50 000

Map projection Universal Transverse Mercator, zone 10, North American Datum 1983
Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations in feet above mean sea level
Magnetic declination 2013, 20°28'E, decreasing 21' annually.

Holocene earth materials and landforms

Organic Deposits
Owb Peat bogs: fibric to humic organic matter; massive to stratified accumulations; generally greater than 2 m thick; confined to topographic depressions or level areas...

Alluvial fan deposits
Af Alluvial fan deposits: boulders, gravel, sand and silt; generally massive to planar stratified; well to rapidly drained...

Alluvial floodplain sediments
Ap Alluvial floodplain sediments: gravel, sand and silt; massive, trough crossbedded, ripple-bedded, planar stratified; well to rapidly drained...

Late Pleistocene earth materials and landforms
Ei Loess: silt and sand; generally massive, well-sorted, crossbedded or ripple-bedded; moderately to well drained...

Colluvial deposits
Cv Colluvial veneer: clast-supported diamictons and rubble; massive to stratified, poorly sorted; well to rapidly drained...

Colluvial blanket
Cb Colluvial blanket: clast-supported diamictons and rubble; massive to stratified, poorly sorted; well to rapidly drained...

Glaciolacustrine deposits
Glb Glaciolacustrine deposits: silt and clay with subordinate sand, gravel and diamicton; massive or rhythmically interbedded...

Hummocky outwash
Ghf Kames and hummocky outwash: boulders, cobbles, pebble-gravel, sand, silt and diamicton; generally massive to stratified...

Moraine ridges
Tm Moraine ridges: sand, silt and clay-rich diamictons; massive, matrix-supported; clast contents less than 20%...

Streamlined till
Ts Streamlined till: silt and clay-rich diamictons; massive, matrix-supported and compact; clast contents less than 20%...

Till veneer
Tv Till veneer: sand, silt and clay-rich diamictons; massive, matrix-supported and compact; clast contents less than 20%...

Bedrock
R Undifferentiated bedrock: conglomerate, sandstone, siltstone, shale and limestone; exposed in escarpments between 300 m and 80 km in length...

- Geological boundary (Confidence: approximate)
- - - - - Bedrock scarp
- - - - - Major moraine ridge (unspecified)
- - - - - Other moraine ridge (unspecified)
- - - - - Drumlin ridge
- - - - - Major meltwater channel scarp
- - - - - Minor meltwater channel central axis (unspecified, sense: known)
- - - - - Terrace scarp (environment: glacioluvial)
- - - - - Terrace scarp (environment: fluvial)
- - - - - Terrace scarp (environment: glaciolacustrine)
o Station location (ground observation)

Preliminary publications in this series have not been scientifically edited.

REFERENCES

Bednarski, J.M., 2003a. Batulamaa Lake, Northwest Territories - Yukon Territory - British Columbia (NTS 9504); Geological Survey of Canada, Open File 4502, scale 1:50 000.
Bednarski, J.M., 2003b. Surficial geology of Fort Liard, Northwest Territories - British Columbia, Geological Survey of Canada, Open File 4760, scale 1:50 000.
Hurley, D.H., 2006a. Surficial geology of Lake Bowe, Northwest Territories - British Columbia, Geological Survey of Canada, Open File 4754, scale 1:50 000.
Bednarski, J.M., 2003c. Surficial geology of Colville Lake, Northwest Territories - British Columbia, Geological Survey of Canada, Open File 4754, scale 1:50 000.
Bednarski, J.M., 2003d. Surficial geology of Elaine Creek, British Columbia, Geological Survey of Canada, Open File 4844, scale 1:50 000.
Clément, C., Kowal, R., Hurley, D. and Dalziel, R., 2004. Ecosystem units of the Saithean area, Skeena Forest Products (Fort Nelson) Report, 39 pages and appendices.
DeBruin, C., Proulx, A., Boisvert, E., Buller, G., Davernport, P., Everett, D., Hurley, D., Inglis, E., Kerr, D., Moore, A., Paradis, S.J., Parent, M., Smith, R., St-Onge, D. and Westharrow, A., 2012. Source language for an Integrated Geological Survey of Canada Data Model for Surficial Maps Version 1.1. Results of Geological Survey of Canada Surface Legacy Review Committee, Geological Survey of Canada Open File 7003, 237 pages.
Denduch, M., 2010. Surficial geology of the Kotme Creek area (NTS 004P05), British Columbia, Ministry of Energy, Mines and Petroleum Resources, Open File 2010-08, Geological Survey of Canada Open File 5668, scale 1:50 000.
Hurley, D.H. and Hickin, A.S., 2010. Surficial deposits, landforms, glacial history and potential for granular aggregate and free sand: Masmahaim Lake Map Area (NTS 94-0), British Columbia, Geological Survey of Canada, Open File 6403, 17 pages.
Hurley, D., Hickin, A. and Chow, W., 2014. Surficial geology, geomorphology, granular resource evaluation and geohazard assessment for the Masmahaim Lake map area (NTS 94-0), northeastern British Columbia, Geological Survey of Canada, Open File 6863, 20 pages.
Hurley, D.H., Hickin, A.S. and Fenn, C., 2010. 19th Provincial surficial geology, glacial history and paleogeographic reconstructions of the Tsoo River (NTS 94-N) and Masmahaim Lake map areas (NTS 94-0), British Columbia, Geoscience Reports 2010, BC Ministry of Energy, page 37-57.
Hurley, D.H. and Sobolev, G., 2010. Application of the GEM surficial geology data model to resource evaluation and geohazard assessment for the Masmahaim Lake map area (NTS 94-0), British Columbia, Geological Survey of Canada, Open File 6552, 22 pages.
Stott, D.F. and Taylor, G.C., 1968. Geology of Masmahaim Lake, Geological Survey of Canada, Map 2-1968, scale 1:250 000.
Tommlen, M. and Levson, V.M., 2008. Quaternary stratigraphy of the Prophet River, northeastern British Columbia, Canadian Journal of Earth Sciences, Vol. 45, pages 565-575.

Recommended citation
Hurley, D.H., Hickin, A.S., Chow, W., and Mirzababaei, M., 2013. Surficial geology, Etane Creek, British Columbia, Geological Survey of Canada, Canadian Geoscience Map 108 (preliminary), scale 1:50 000. doi:10.4095/292000