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# CANADIAN GEOSCIENCE MAP 207

## RECONNAISSANCE SURFICIAL GEOLOGY

# NONACHO LAKE

Northwest Territories  
NTS 75-F



## Map Information Document

Preliminary



## Canadian Geoscience Maps

2015

Canada

## **PUBLICATION**

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1:125 000

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### **Cover Illustration**

Deflation surface and eolian veneer over glaciofluvial sediments, north of Walter Lake.  
Photograph by R.D. Knight. 2014-148

## **ABSTRACT**

Reconnaissance mapping, through aerial photograph interpretation and limited legacy field data in the Nonacho Lake map area, provides a basic understanding of surficial sediments and glacial history. Much of the area is characterized by rugged terrain, with steep-sided bedrock hills, and local relief reaching up to 100 m. Bedrock is well exposed in the western half of the map area. Till blanket, veneer and glaciofluvial outwash become increasingly more extensive in the central through to the eastern half of the map area, although bedrock can still be found in many regions. Fluted till, crag-and-tails and striations record ice advance to the west-southwest and southwest. Glaciofluvial corridors consisting of eskers, ice-contact sediments and scoured bedrock, record a generally southwestward meltwater flow across the map area during deglaciation. In the Nonacho Lake basin and Talton River valley to the east, glaciolacustrine deltas and beaches are found at 320 m, 325 m, 335 m, and 350 m. In the Gray Lake basin, they occur at 330 m, 335 m, and 350 m. Pockets of glaciolacustrine sediments occur in several isolated lake basins, including Tejean, Porter, Vital, Halliday, Powder and Doran

lakes. These are interpreted to be short lived, ice-dammed glacial lakes, with Nonacho Lake being the most extensive.

## RÉSUMÉ

La cartographie de reconnaissance, s'appuyant sur l'interprétation des photographies aériennes et d'une quantité limitée d'anciennes données de terrain pour la région de la carte Nonacho Lake, donne une compréhension de base des sédiments de surface et de l'histoire glaciaire de cette région. Une grande partie de la région est caractérisée par un relief accidenté, avec des collines rocheuses abruptes, le relief atteignant 100 m par endroits. Le substratum rocheux est bien exposé dans la moitié ouest de la région de la carte. La nappe de till, le placage de till et l'épandage fluvioglaciaire gagnent en importance dans le centre jusqu'à la moitié est de la région de la carte, bien que le substratum rocheux soit encore présent dans de nombreuses zones. Du till cannelé, des têtards et des stries témoignent de l'avancée de la glace vers l'ouest sud-ouest et le sud-ouest. Des corridors fluvioglaciaires, comprenant des eskers, des sédiments juxtaglaciaires et un substratum rocheux décapé, témoignent quant à eux d'un écoulement des eaux de fonte généralement vers le sud-ouest et traversant la région de la carte, pendant la déglaciation. Dans le bassin du lac Nonacho et la vallée de la rivière Taltson à l'est, on trouve des deltas et des plages glaciolacustres à 320 m, 325 m, 335 m et 350 m. Dans le bassin du lac Gray, on les trouve à 330 m, 335 m et 350 m. Des poches de sédiments glaciolacustres sont présentes dans plusieurs bassins lacustres isolés, y compris ceux des lacs Tejean, Porter, Vital, Halliday, Powder et Doran. On estime qu'il s'agit de lacs de barrage glaciaire et de courte durée, le lac Nonacho étant le plus vaste.

## ABOUT THE MAP

### General Information

Authors: T. Ferbey, V.M. Levson, and D.E. Kerr

Geology based on aerial photograph interpretation by T. Ferbey and V.M. Levson 2012, 2013, with revisions by D.E. Kerr, 2014. Limited field data from D.E. Kerr and R.D. Knight, 2008. Striation data from F.C. Taylor, 1959.

Geology conforms to Surficial Data Model v. 2.0

Geomatics by L. Robertson

Cartography by T. Konopelky

Initiative of the Geological Survey of Canada, conducted under the auspices of the Tri-Territorial Surficial Database Project as part of Natural Resources Canada's Geomapping for Energy and Minerals (GEM) Program.

Map projection Universal Transverse Mercator, zone 12.  
North American Datum 1983

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations above mean sea level are expressed in metres (NTS 75-F/01, NTS 75-F/02, and NTS 75-F/07–10) and feet (NTS 75-F/03–06 and NTS 75-F/11–16)

Mean magnetic declination 2015,  $13^{\circ}21'E$ , decreasing  $15.9'$  annually. Readings vary from  $12^{\circ}29'E$  in the SE corner to  $14^{\circ}13'E$  in the NW corner of the map.

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map.  
See documentation accompanying the data.

This publication is available for free download through  
GEOSCAN (<http://geoscan.ess.nrcan.gc.ca/>) .

Preliminary publications in this series have not been scientifically edited.

### **Map Viewing Files**

The published map is distributed as a Portable Document File (PDF), and may contain a subset of the overall geological data for legibility reasons at the publication scale.

## ***ABOUT THE GEOLOGY***

### **References**

Taylor, F.C. 1959. Geology, Nonacho Lake, District of Mackenzie, Northwest Territories; Geological Survey of Canada, Preliminary Map 10-1959, scale 1:253 440.  
doi:10.4095/108526

### **Author Contact**

Questions, suggestions, and comments regarding the geological information contained in the data sets should be addressed to:

D.E. Kerr  
Geological Survey of Canada  
601 Booth Street  
Ottawa ON  
K1A 0E8

[Daniel.Kerr@NRCan-RNCan.gc.ca](mailto:Daniel.Kerr@NRCan-RNCan.gc.ca)

### **Coordinate System**

Projection: Universal Transverse Mercator  
Units: metres  
Zone: 12

Horizontal Datum: NAD83  
Vertical Datum: mean sea level

### Bounding Coordinates

Western longitude: 110°00'00" W  
Eastern longitude: 108°00'00" W  
Northern latitude: 62°00'00" N  
Southern latitude: 61°00'00" N

### Data Model Information

The Geological Survey of Canada (GSC) through the Geomapping for Energy and Minerals Program (GEM) has undertaken the Geological Map Flow to develop protocols for the collection, management (compilation, interpretation), and dissemination of surficial and bedrock geology data and map information. To this end, a data model has been created.

The Surficial Data Model (SDM) was designed using ESRI geodatabase architecture. The XML workspace document provided can be imported into a geodatabase, and the geodatabase will then be populated with the feature datasets, feature classes, tables, relationship classes, subtypes and domains.

Shapefile and table (.dbf) versions of the data are included within the data. Column names have been simplified and the text values have been maintained within the shapefile attributes. The direction columns are numerical, to display rotation for points, and the symbol fields will hold the correct values to be matched to the appropriate style file.

For a more in depth description of the data model please refer to the official publication:

Deblonde, C., Plouffe, A., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Kerr, D.E., Moore, A., Parent, M., Robertson, L., Smith, I.R., St-Onge, D.A., and Weatherston, A., 2014. Science language for an integrated Geological Survey of Canada data model for surficial geology maps, version 2.0; Geological Survey of Canada, Open File 7631, 464 p. doi:10.4095/294225

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