**Abstract**

The southwest part of the Conn Lake map sheet lies within the Baffin Uplands Physiographic Region, where bedrock is extensively covered by thick glacial deposits. Some areas exhibiting scour were eroded by active, warm-based ice for longer periods of time than regions of cold-based ice. A northeastward early Holocene flow is associated with ice in Foxe Basin to the northeast. Four phases of ice flow were recognized. The Last Glacial maximum relates to phase 1: northeastward, when the region was covered by actively eroding warm-based ice. Ice flow was topographically constrained during the early stages of the Barnes Ice Cap. The next two phases (a later readvance, phase 3, and continued deglaciation, phase 4) are thought to relate to the proto-Barnes Ice Cap.

**Résumé**

La partie sud-ouest de la carte Lac Conn se trouve dans la région physiographique des montagnes de Baffin, où la roche en place est couverte par dépôts glaciaires épais. Quelques secteurs montrant l'érosion par la glace de régimes thermals à base écosive pendant de plus longues périodes que des régions de glace non-erosive. Un écoulement Holocène vers le nord-est est associé à la glace dans le bassin Foxe. Quatre phases d'écoulement glaciaire ont été identifiées. Le dernier maximum glaciaire se relie à la phase 1 : vers le nord-est, lorsque la région était couverte par la glace à base érosive. La seconde est un écoulement vers le nord nord-est pendant la formation de la calotte glaciaire Barnes. Les deux phases suivantes (une réavancée, phase 3, et déglaciation, phase 4) sont reliées à la calotte glaciaire Barnes.



National Topographic System reference

**Cover illustration**
Glaciofluvial outwash sediments dissected by meltwater channels, adjacent to Barnes Ice Cap. Photograph by D.J. Utting, 2012-004


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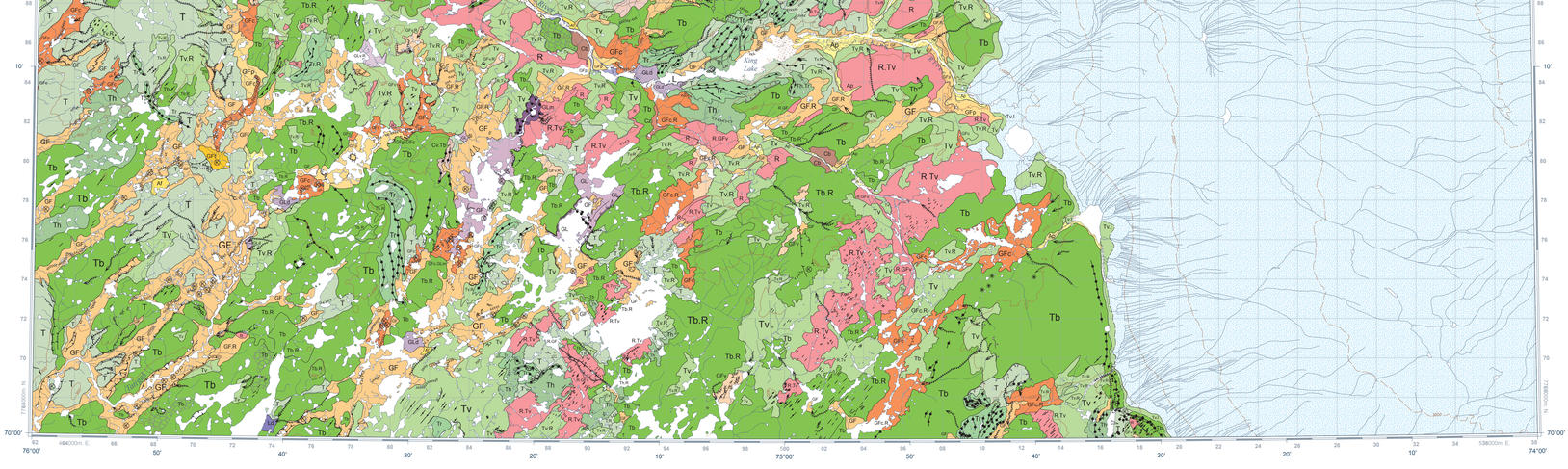
# CANADIAN GEOSCIENCE MAP 36

SURFICIAL GEOLOGY

# CONN LAKE (SOUTHWEST)

Baffin Island, Nunavut

**1:100 000**




## QUATERNARY

### SURFICIAL DEPOSITS

### HOLOCENE

#### NONGLACIAL ENVIRONMENTS

**Glacier ice:** variable thickness.

**COLLUVIAL DEPOSITS:** diamicton, typically unsorted, but may be stratified as a result of gravity induced movement (e.g. debris flows); mass wasting debris (i.e. deposited by direct gravity-induced movement that may involve water and/or ice); the character of the deposit depends primarily on its parent material.

Cv — **Colluvial veneer:** thin and discontinuous, less than 2 m thick.

Cb — **Colluvial blanket:** colluvial blanket, greater than 2 m thick.

Cz — **Colluvial landslide deposits:** variable thickness, hummocky or ridged topography with ridges transverse to direction of movement.

C — **Colluvial deposits, undifferentiated:** consists primarily of colluvial materials, variable thickness, may contain till, glaciolacustrine, glaciofluvial, and/or alluvial sediments.

**ALLUVIAL SEDIMENTS:** gravel, sand, minor silt , predominantly composed of sorted and commonly stratified, deposited by post-glacial fluvial processes.

Af — **Alluvial fan sediments:** variable thickness, forms fan-shaped landform that may exibit a steep gradient from the apex to the toe of the deposit; fan deposits may include gravelly diamictons.

Ap — **Alluvial plain sediments:** variable thickness, typically forms a single level plain with active stream channels, may exhibit terraces separated by scarps.

A — **Alluvial sediments, undifferentiated:** consists primarily of alluvial units, variable thickness, may contain pockets of till, glaciolacustrine, glaciofluvial, and/or colluvial sediments.

**LACUSTRINE SEDIMENTS:** sand, silt and minor clay, deposited in active lake environments.

Ld — **Lacustrine deltaic sediments:** variable thickness, formed by active sediment build-up from flowing water entering standing water.

L — **Lacustrine sediments, undifferentiated:** consists primarily of exposed lacustrine sediments, variable thickness, may contain pockets of till, glaciolacustrine, glaciofluvial, colluvial and/or alluvial sediments.

#### PROGLACIAL AND GLACIAL ENVIRONMENTS

**GLACIOLACUSTRINE SEDIMENTS:** silt and sand, may include lenses of finer material, typically well stratified, occur in or along the margins of a glacial lake; may have been ice-dammed or formed as a result of elevated water levels due to glacial melt.

GLd — **Glaciolacustrine deltaic sediments:** cross-stratified sand and gravels; variable thickness, sediment built-up from flowing glacially-derived water entering a glacial lake.

GLv — **Glaciolacustrine veneer:** thin and discontinuous, less than 2 m thick.

GLm — **Glaciolacustrine moraine sediments:** consists primarily of glaciolacustrine materials, variable thickness, may be hummocky, ridged, may also include cross-valley (DeGeer) moraines.

GL — **Glaciolacustrine sediments, undifferentiated:** consists primarily of glaciolacustrine sediments, variable thickness, may contain pockets of till, glaciofluvial, colluvial and/or alluvial sediments.

### PLEISTOCENE (LATE WISCONSINIAN)

**GLACIOFLUVIAL SEDIMENTS:** gravel, sand and silt, minor diamicton, well to poorly stratified; deposited behind, at, or in front of the ice margin by glacial meltwater.

GFp — **Glaciofluvial outwash plain sediments:** variable thickness, typically forms a single level plain or fan, may exhibit terraces separated by scarps.

GFt — **Glaciofluvial terraced sediments:** variable thickness, typically forms single level terraces, may be separated by scarps.

GFv — **Glaciofluvial veneer:** thin to discontinuous sediment, less than 2 m thick.

GFc — **Glaciofluvial ice-contact sediments:** variable thickness, complex arrangement of kettle and kame topography, may include esker ridges.

GF — **Glaciofluvial sediments, undifferentiated:** consists primarily of glaciofluvial sediments, variable thickness, may contain till, glaciolacustrine, colluvial and/or alluvial sediments.

**GLACIAL SEDIMENTS (TILL):** diamicton, sandy to silty matrix, deposited directly by or from glacier ice.

Tv — **Till veneer:** thin and discontinuous, less than 2 m thick.

Tb — **Till blanket:** greater than 2 m thick, surface morphology forms gently rolling plains; may exhibit flutings and/or other drumlinoid forms; generally masks underlying topography.

Th — **Hummocky till:** variable thickness, forms hummocky surface morphology, may include kames and kettles; in places the unit may exhibit prominent ridges marking recessional ice margins.

Tr — **Ridged moraine:** variable thickness, prominent ridges marking recessional ice margins.

T — **Till, undifferentiated:** consists primarily of till, variable thickness, may contain pockets of glaciofluvial, glaciolacustrine, lacustrine, colluvial and/or alluvial sediments.

## PRE-QUATERNARY

### BEDROCK

R — **Bedrock:** may be overlain by discontinuous veneers of other units.

**Patterned ground:** ice-wedge polygons and stone nets.

**NOTES:**

**Compound units:** In areas where the surficial geology types are interspersed in patches or patterns too small to be discerned at the scale of mapping, compound units are used. The dominant component is listed first and separated from the secondary unit by a dot (e.g. Tb.O).

**Stratigraphic relationship:** Where underlying units are known, the unit label shows the surface unit above underlying unit with a single slash (e.g. Tb/R).

- K — Kettle, large
- Geological boundary, defined
- Geological boundary, approximate
- Esker, sense known
- Esker, sense unknown
- Major moraine ridge (lateral or laterofrontal)
- Major moraine ridge (end, interlobate, or unspecified)
- Minor moraine (DeGeer, cross-valley, unspecified)
- Paleodrainage direction
- Ice-contact terrace scarp
- Fluvial terrace scarp
- Major meltwater channel, sense known
- Minor meltwater channel, sense known
- Minor meltwater channel, sense unknown
- Lateral meltwater channel - uphill left
- Lateral meltwater channel - uphill right
- Glaciolacustrine limit of submergence, defined
- Beach crest
- Craig-and-tail
- Drumlinoid ridge
- Fluted bedrock, sense unknown
- Delta
- Kame
- Kettle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Geology by D.J. Utting and E.C. Little in 2005, with additional air photo interpretation by D.E. Kerr in 2011.

Additional geology from Ives, J.D., and Andrews, J.T., 1963. Isortoq River, Baffin Island, glacial features; Geographical Branch, Department of Mines and Technical Surveys, Ottawa, 1:250 000.

Geomatics by L. Robertson

Cartography by Natural Resources Canada

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Map projection Universal Transverse Mercator, zone 18. North American Datum 1983


CANADIAN GEOSCIENCE MAP 36

SURFICIAL GEOLOGY

CONN LAKE (SOUTHWEST)

Baffin Island, Nunavut

1:100 000


2 0 2 4 6 8 km

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 37-E/5 and 37-E/4) and feet (NTS 37-E/6 and 37-E/3)

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area. Mean magnetic declination 2013, 37°12'W, decreasing 39.0' annually. Readings vary from 36°19'W in the SW corner to 38°00'W in the NE corner of the map.

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

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.**


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