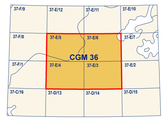
Abstract

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. The second is a north-northeastward flow 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 du feuillet cartographique de Conn Lake se situe dans la région physiographique des hautes terres de Baffin, où le socle rocheux est largement recouvert d'épais dépôts glaciaires. Quelques secteurs montrant un affouillement glaciaire rendent compte d'une érosion par un glacier actif à base chaude sur de plus longues périodes que des régions occupées par un glacier à base froide. Un écoulement vers le nord-est à l'Holocène inférieur est associé à la glace présente dans le bassin Foxe au nord-est. Quatre phases d'écoulement glaciaire ont été distinguées. Le dernier pléniglaciaire se rapporte à la phase 1, où l'écoulement s'effectuait vers le nord-est, quand la région a été recouverte d'un glacier à base chaude à action érosive. La seconde phase correspond à un écoulement dirigé vers le nord–nord-est lors des premiers stades de formation de la calotte glaciaire de Barnes. Les deux phases suivantes (une réavancée ultérieure, phase 3, et la poursuite de la déglaciation, phase 4) seraient reliées à la protocalotte glaciaire de Barnes.



National Topographic System reference.

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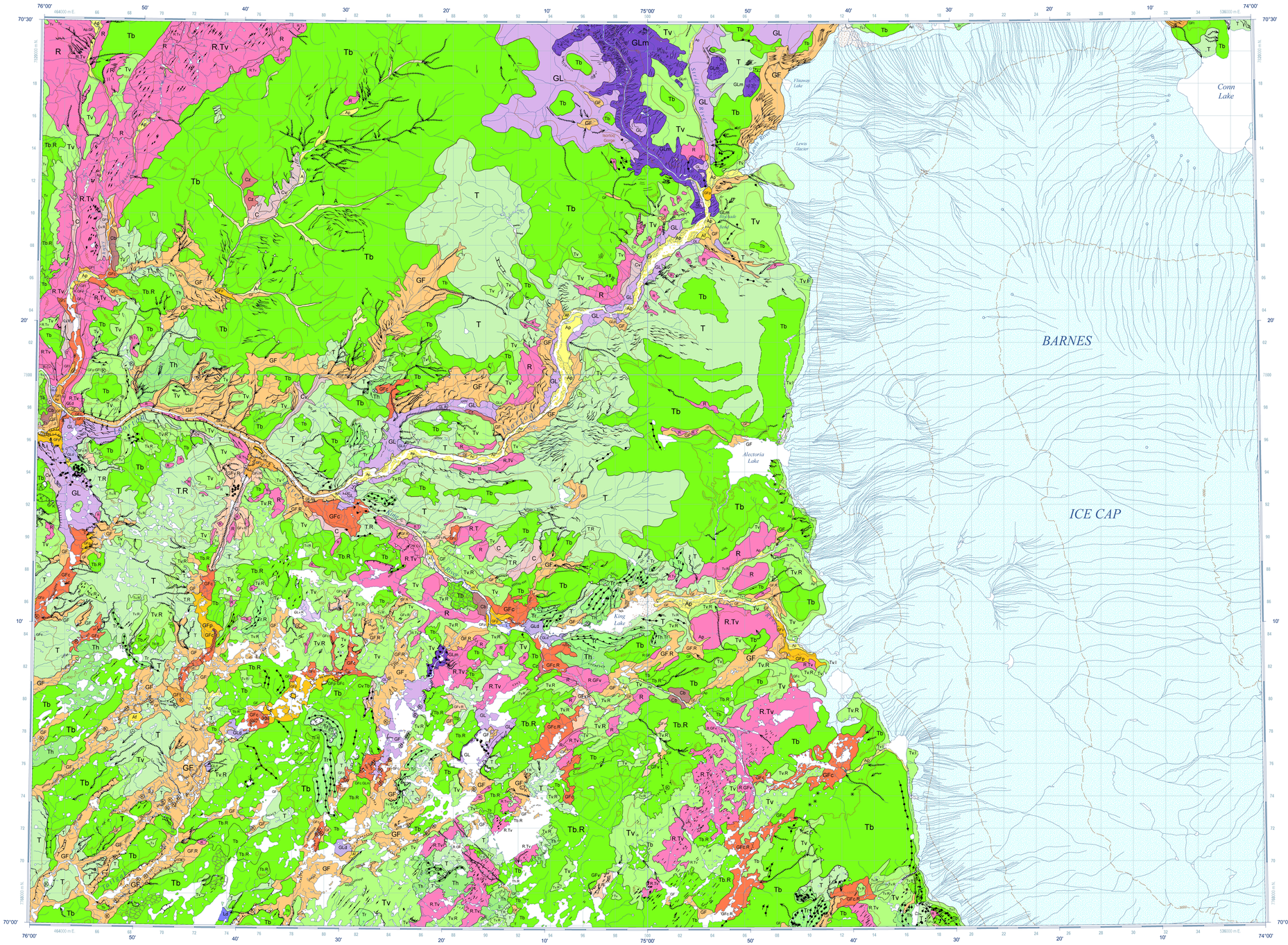
2nd EDITION

CANADIAN GEOSCIENCE MAP 36
SURFICIAL GEOLOGY
CONN LAKE (SOUTHWEST)
Baffin Island, Nunavut

NTS 37-E/3, NTS 37-E/4, NTS 37-E/5, and NTS 37-E/6

1:100 000



QUATERNARY

HOLOCENE

MODERN GLACIAL ENVIRONMENT

Glacier ice: variable thickness; may include ice of Holocene age away from the margin, and Pleistocene age exposed at the margin.

NONGLACIAL ENVIRONMENTS

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.

- Cz — **Landslide deposits:** diamicton; variable thickness; hummocky or ridged topography with ridges transverse to direction of movement.
- Cv — **Colluvial veneer:** diamicton; less than 2 m thick; thin and discontinuous.
- Cb — **Colluvial blanket:** diamicton; greater than 2 m thick.
- C — **Colluvial deposits, undifferentiated:** 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.

- Ap — **Alluvial plain sediments:** sand and gravel; variable thickness; typically forms a single level plain with active stream channels; may exhibit terraces separated by scarps.
- Af — **Alluvial fan sediments:** sand and gravel; 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.
- A — **Alluvial sediments, undifferentiated:** sand and gravel; 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 — **Deltaic sediments:** sand and silt; variable thickness; formed by active sediment build-up from flowing water entering standing water.
- L — **Lacustrine sediments, undifferentiated:** sand, silt, and minor clay; variable thickness; may contain pockets of till, glaciolacustrine, glaciofluvial, colluvial and/ or alluvial sediments.

HOLOCENE AND PLEISTOCENE (LATE WISCONSIN)

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 — **Deltaic sediments:** sand and gravels; cross-stratified; variable thickness; sediment built-up from flowing glacially-derived water entering a glacial lake.
- GLm — **Subaqueous moraine complex:** consists primarily of glaciolacustrine materials, variable thickness, may be hummocky, ridged, may also include cross-valley (De Geer) moraines.
- GLv — **Glaciolacustrine veneer:** silt and sand; less than 2 m thick; thin and discontinuous.
- GL — **Glaciolacustrine sediments, undifferentiated:** silt and sand; variable thickness; may contain pockets of till, glaciofluvial, colluvial, and/or alluvial sediments.

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 — **Outwash plain sediments:** variable thickness, typically forms a single level plain or fan; may exhibit terraces separated by scarps.
- GFt — **Terraced sediments:** variable thickness, typically forms single level terraces, may be separated by scarps.
- GFc — **Ice-contact sediments:** variable thickness, complex arrangement of kettle and kame topography, may include esker ridges.
- GFv — **Glaciofluvial veneer:** sand and gravel; less than 2 m thick; thin to discontinuous sediment.
- 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.

- Th — **Hummocky till:** diamicton; 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:** diamicton; variable thickness; prominent ridges marking recessional ice margins.
- Tv — **Till veneer:** diamicton; less than 2 m thick; thin and discontinuous.
- Tb — **Till blanket:** diamicton; greater than 2 m thick; surface morphology forms gently rolling plains; may exhibit flutings and/or other drumlinoid forms; generally masks underlying topography.
- T — **Till, undifferentiated:** diamicton; variable thickness; may contain pockets of glaciofluvial, glaciolacustrine, lacustrine, colluvial, and/or alluvial sediments.

PRE-QUATERNARY

- R — **Bedrock, undifferentiated:** may be overlain by discontinuous veneers of other sediment types.

Complex units: where the surficial cover forms a complex and the map units are too small to be mapped individually, yet constitutes a significant aerial extent of the total polygon, a dot (".") separates the first dominant map unit designator from the less abundant secondary unit (e.g. Tb.R designates an area of till blanket with some areas of bedrock).

- **Patterned ground:** ice-wedge polygons and stone nets.
- Kettle, large
- Geological contact, defined
- Geological contact, approximate
- Terrace scarp
- Beach crest
- Glaciolacustrine limit of submergence, defined
- Paleodrainage direction
- Minor meltwater channel, sense unknown
- Minor meltwater channel, sense known
- Lateral meltwater channel (barb on upslope side)
- Major meltwater channel
- Minor moraine (De Geer, cross-valley, unspecified)
- Major moraine ridge (lateral or laterofrontal)
- Major moraine ridge (end, interlobate, or unspecified)
- Ice-contact scarp
- Esker, direction unknown
- Esker, direction known
- Drumlinoid ridge
- Crag-and-tail
- Fluted bedrock, direction unknown
- Delta, paleocurrent known
- Kettle (small)
- Kame

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Geological Survey of Canada
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Canada

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Geology based on aerial photograph interpretation and fieldwork by D.J. Utting and E.C. Little in 2005, with additional air photo interpretation by D.E. Kerr in 2011.

Geology conforms to Surficial Data Model v. 2.0

Data conversion by D.E. Kerr, 2015

Geomatics and cartography by G.S. Hanna

Joint initiative of the Geological Survey of Canada and Canada-Nunavut Geoscience Office, conducted under the auspices of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

Map projection Universal Transverse Mercator, zone 18. 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 37-E/5 and NTS 37-E/4) and feet (NTS 37-E/6 and NTS 37-E/3)

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CONN LAKE (SOUTHWEST)
Baffin Island, Nunavut
NTS 37-E/3, NTS 37-E/4, NTS 37-E/5, and NTS 37-E/6
1:100 000

2 0 2 4 6 8 km

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area. Mean magnetic declination 2015, 35°18'W, decreasing 39.1' annually. Readings vary from 34°26'W in the SW corner to 36°06'W in the NE corner of the map

This map is not to be used for navigational purposes.

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

Title photograph: Glaciofluvial outwash sediments dissected by Meltwater channels, adjacent to Barnes Ice Cap, Baffin Island, Nunavut.
Photograph by D.J. Utting, 2012-004

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

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Preliminary publications in this series have not been scientifically edited.

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