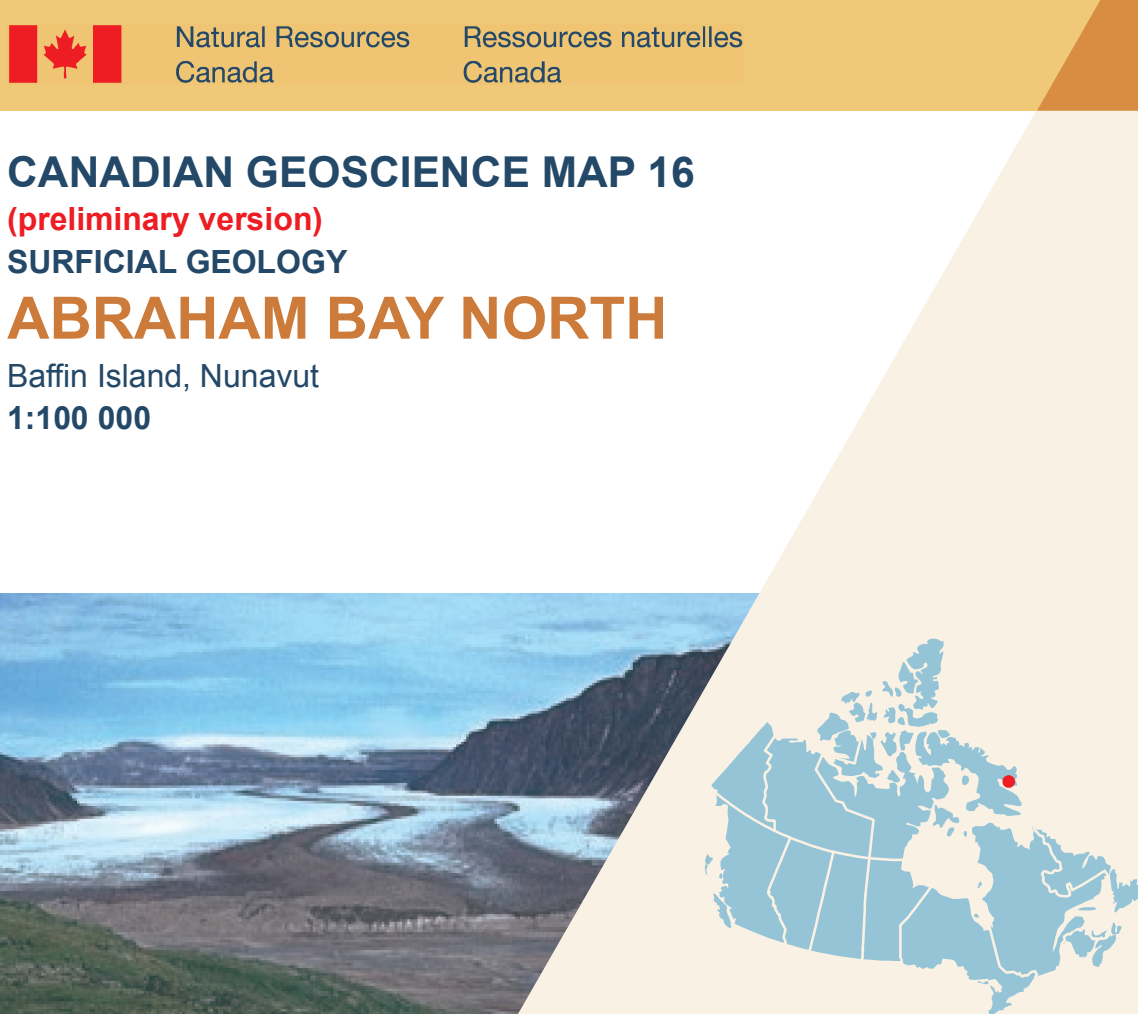


Figure 1. Cold-based ice cap on plateau at 65.8°N, 64.2°W. Note little ice age vegetation and lack of ice age moraines. 2011/01

Abstract
 In 2009, as part of the GEM program of the Geological Survey of Canada, Cumberland Peninsula east and southeast of the National Park was mapped. Mapping included several aspects of the regional tectonic geology, as well as the Quaternary geology. Regional till was sampled for sedimentological and geochemical purposes, and moraines and other deposits were sampled for cosmogenic exposure dating. The eastern part of the peninsula is today an area of intense glacial erosion and severely has experienced this style of glaciation throughout the Quaternary. From the last glacial maximum (20–23ka), alpine glaciers thickened to form regional ice divides over the mountains, low flow from these divides covered most, possibly all, of the region and deposited ice sheets locally. Despite several glacial advances, substantial areas show little or no sign of glacial erosion and retain Tertiary surfaces marked with block fields and tors.

En Résumé
 En 2009, dans le cadre du programme GEM, la Commission géologique du Canada a cartographié les régions de Cumberland à l'est et au sud-est du parc national. La cartographie inclut plusieurs aspects de la géologie régionale tectonique, ainsi que la géologie du Quaternaire. Des échantillons de till régional ont été effectués à des fins de datation cosmogénique et géochimiques ainsi que des moraines et d'autres dépôts à des fins de datation cosmogénique. La partie est de la péninsule est aujourd'hui une région de glaciation intense et de toute évidence, ce type de glaciation a eu lieu tout au long du Quaternaire. Durant le dernier maximum glaciaire (20–23ka), les glaciers alpins se sont épaissis pour former des lignes de partage glaciaire au-dessus des montagnes. L'écoulement glaciaire provenant de ces lignes de partage glaciaire couvrait une grande partie sinon toute la région et a déposé des dépôts glaciaires en bordure de plusieurs forêts. Cette glace locale entraine en conséquence avec l'érosion glaciaire dans la baie Cumberland. Malgré plusieurs glaciations, des régions importantes ne montrent que très peu ou même aucun signe d'érosion glaciaire et retiennent les surfaces du Tertiaire recouvertes de champs de blocs et de tors.

CANADIAN GEOSCIENCE MAP 16 (preliminary version) SURFICIAL GEOLOGY ABRAHAM BAY NORTH
 Baffin Island, Nunavut
 1:100 000



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 Canada

SURFICIAL DEPOSITS

QUATERNARY

HOLOCENE

NEOGLACIAL

GLACIOFLUVIAL SEDIMENTS: gravel and sand, 1–10 m thick, deposited beyond the ice margin

- nGf1: Proglacial outwash: gravel and sand, 1–10 m thick, forming fans.
- nGf2: Proglacial outwash: gravel and sand, 1–10 m thick, forming active fans.
- nGf3: Proglacial outwash: gravel and sand, 1–10 m thick, forming active fans.
- nTm: Till: nonstratified glacial debris commonly very bouldery with a silty sand matrix
- nLm: Lateral-frontal moraines: 5–100 m high ridges and hummocks with over-stepped, falling slopes and shallowly buried glacial ice cores and associated ground moraine with minor glaciofluvial sediments, distinguished from older moraines by lack of mature loam and peat covers.

POSTGLACIAL (including Neoglaciation)

FLUVIAL SEDIMENTS: alluvium: gravel and sand deposited beyond primary influence of Holocene glaciers

- Al: Alluvial fans: gravel and sand commonly bouldery, with detrital organic layers and buried soils, 1–20 m thick, formed by steep gradient streams and debris flows forming channels and levees.
- Ap: Alluvial plains: gravel and sand, 1–10 m thick.
- At: Alluvial terraces: gravel and sand, 1–10 m thick, above limit of modern flooding.

COLLUVIUM: block and rubble accumulations, 1–40 m thick

- cl: Colluvial fan deposits: blocky to gravelly debris-flow accumulations mixed with silt, 1–50 m thick, traversed by narrow channels and debris levees; typically intersect steep slopes (Ca) at the ends of prominent debris slopes; on off-surface slopes less than angle of repose but steeper than those of alluvial fans.
- Ca: Talus: generally active accumulations of blocks and rubble, as much as 50 m thick forming talus (scree) aprons at angle of repose below cliffs derived from rock falls.
- Cr: Rock glacier debris: tillus, generally 10–50 m thick, deformed by interstitial flow of buried ice to form talus glaciers, irregular terraces on steep slopes with bare rock ridges on trends above steep frontal rises; some rises stable and well vegetated; most rises unstable, unvegetated, and at angle of repose.

MARINE SEDIMENTS: gravel, sand, silt, and minor clay, 1–20 m thick, deposited in beach, deltaic, and offshore environments during regression of proglacial sea

- Mr: Beach sediments: gravel and sand, commonly bouldery, 1–5 m thick, forming raised beach ridges and swales and the modern, transgressive beach, a barrier beach in places.
- Md: Deltaic sediments: sand and gravel, typically overlying the sand and silt, 1–20 m thick, forming raised terraces, terraces at marine limit formed at or near the ice margin.
- Mv: Nearshore to offshore veneers: sand, silt, and minor clay with dropstones, 1–2 m thick.
- Mb: Nearshore to offshore blanket: sand, silt, and minor clay with dropstones, 2–20 m thick.

EARLY HOLOCENE AND WISCONSINAN

GLACIOFLUVIAL SEDIMENTS: gravel, sand, silt, and minor clay, 1–10 m thick, deposited in littoral and deeper water environments in glacier dammed lakes

- Gln: Nearshore proglacial sediment: sand, silt, and minor clay, 1–2 m thick.

GLACIOFLUVIAL SEDIMENTS: gravel and sand, 1–10m thick, deposited behind, at, and in front of the ice margin

- Gf1: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf2: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf3: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf4: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf5: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf6: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf7: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf8: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf9: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.
- Gf10: Proglacial outwash: gravel and sand, 1–10 m thick, forming fan-shaped deposits.

GLACIOFLUVIAL SEDIMENTS: ice-cored and/or lateral moraines, 5–40 m high, deposited from original site of glacial deposition by down-slope flow of ice debris mixture; till mixed in places with some, commonly act as local base level for some accumulation, hence difficult to distinguish from Cr in places, mainly stable rises.

- Tm: Till veneer: variably bouldery (10–40% cover; typically 20–40%) dominion with silty sand matrix, 0.5–2 m thick and discontinuous; insufficiently thick to obscure relief of underlying bedrock.
- Tv: Till blanket: variably bouldery (10–40% cover; typically 20–40%) dominion with silty sand matrix, 2–10 m thick, sufficiently thick to obscure relief of underlying bedrock.

PRE-WISCONSINAN

BECKROCK

PRE-QUATERNARY

R1: Ciffs: major escarpments, typically hundreds of metres high, forming serrated faces with multiple debris hoppers; glacially scoured surfaces removed by postglacial scarp retreating proglacial basins and meanderbelt further east.

R2: Scoured rock: hilly and hummocky surfaces with lake basins and ice moulded embayments resulting from glacial scouring and with patchy veneers of commonly deposited of matrix material; probably covered by warm-based ice during stadial intervals of Wisconsin Glaciation, including Last Glacial Maximum.

Geological boundary (defined)
 Geological boundary (direction known)
 Fluted bedrock (direction known)
 Drumlin
 Esker
 Lateral moraine
 Lateral meltwater channel: barb on upslope side
 Proglacial meltwater channel
 Marine limit
 Lactodrine limit
 Cirque
 Arête
 Cliff
 Glacial lake limit
 Dyke
 Felt observation (colour relative to geological units)
 Strike (ice flow direction known)
 Strike (ice flow direction unknown)
 Strike from literature (Kagan et al., 2001)
 Pingo
 Station, marine shoreline elevation in metres from literature (Kagan, 2001)

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Map projection: Universal Transverse Mercator, zone 20, North American Datum 1983
 Base map: of the scale of 1:50 000 from Natural Resources Canada, with modifications.
 Elevations in feet above mean sea level.
 Map magnetic declination 2011: 32°07'W, decreasing 28' annually. Readings vary from 32°58'W in the SW corner to 33°40'W in the NE corner of the map.

The Geological Survey of Canada welcomes corrections or additional information from users. This map conforms to the ISO 9001:2000 standard used by the Scientific and Technical Publishing Services Quality Management System.

This publication, including digital data, can be made available in French upon request. Contact: (http://geoscan.nrcan.gc.ca). It is also available from the Geological Survey of Canada Bookstore (http://type.nrcan.gc.ca/bookstore).

Four trim marks around perimeter of map sheet. Trim map sheet first, then fold at folding marks.
 Cover and additional panels are 17cm wide when folded.