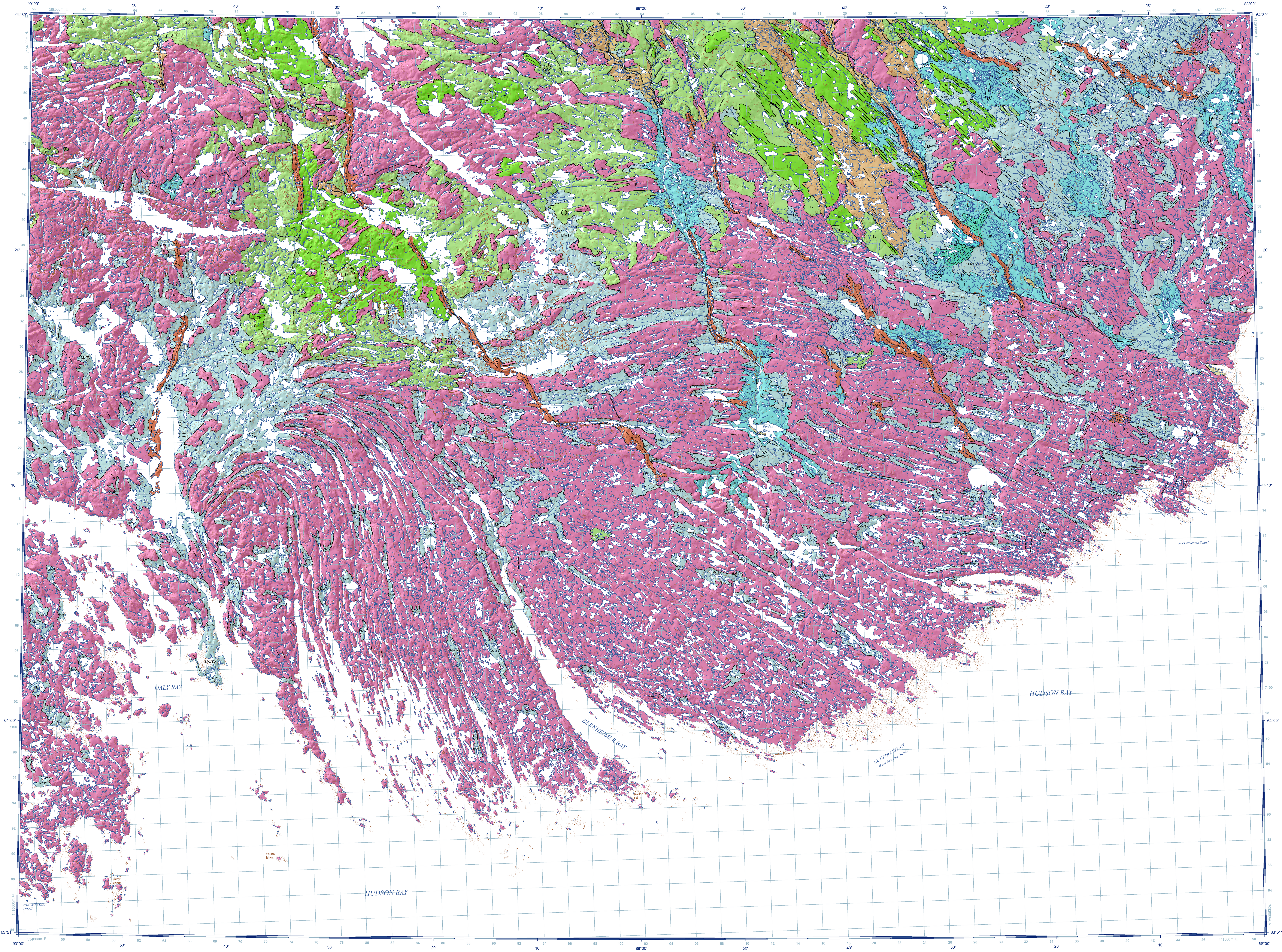


SURFICIAL DEPOSITS

QUATERNARY

HOLOCENE

ALLUVIAL DEPOSITS: sorted sand, silt and clay with minor gravel and organic detritus; commonly stratified; deposited along and/or within modern rivers and streams.

A — **Alluvial sediments, undifferentiated:** sand, gravel and mud; less than 2 m thick. Sandy alluvial deposits along the upper reaches of Gordon River are bare of vegetation, and may be recent avulsion deposits. Small alluvial units occur in the lower reaches of streams near the coast.

HOLOCENE - LATE PLEISTOCENE

MARINE DEPOSITS: sediments deposited within the Tyrrell Sea; 1 to 5 metres thick; primarily derived from reworking of glacial and glaciofluvial sediments by wave and current action. Locally includes patches of wave-reworked or winnowed till. The postglacial marine limit rises from an elevation of 140 m a.s.l. near Daly Bay to greater than 150 m along the Hudson Bay coast to the east.

Mv — **Marine veneer:** sand and/or gravel; less than 2 m thick; occurs as patches interspersed with bedrock or, less commonly, other surficial deposits. In places, the unit contains till ridges, DeGeer moraines, and reworked esker fragments.

Mr — **Marine littoral sediments:** sand and gravel; 2 to 5 m thick; generally well-sorted material; forms flights of beach ridges, bars, spits, and terraces, commonly strewn with boulders; derived primarily from reworking of esker sediments. Surfaces characterised by orthogonal frost cracks. Isolated beach ridges are marked as symbols.

Md — **Marine deltaic sediments:** sand and gravel; up to 10 m thick; forms planar surfaces. The main deposit formed at 140-150 m a.s.l., where a large esker along Mistake Creek emptied into the high postglacial sea.

Mb — **Marine blanket:** sands and silts; more than 2 m thick; forming a continuous cover that generally masks underlying sediments and bedrock.

GLACIOFLUVIAL DEPOSITS: sand, gravel and minor silt; well to poorly sorted; massive to stratified; deposited by meltwater streams, either from, or in contact with, glacial ice in a subglacial or subaerial environment. Below marine limit, glaciofluvial sediments are commonly modified and/or reworked by wave action.

GFp — **Outwash sediments:** sand and gravel; 1 to 10 m thick; moderately to well-sorted; commonly with kettles and/or channel scars on the surface; they represent the distal facies of ice-contact stratified drift deposited in a proglacial, subaerial environment within meltwater channels or corridors.

GFc — **Ice-contact sediments:** sand, gravel, and cobbles; 2 to 20 m thick; moderately to well sorted; deposited in a subglacial or englacial environment; forming large sharp-crested or flat-topped esker ridges and hummocks; predominantly found in, but not restricted to, the subglacial meltwater corridors. Below an elevation of about 140 m to 160 m a.s.l., esker flanks have been modified and terraced by wave action. The ridge crests of unmodified and modified eskers are denoted by separate symbols.

GF — **Glaciofluvial sediments, undifferentiated (Meltwater corridor complex):** hybrid unit comprised of several landform –sediment assemblages (facies) which cannot be separated at the scale of mapping; comprised primarily of sand and gravel, interspersed with boulders, sandy diamicton, and eroded till; 2 to 5 m thick; formed in subglacial conduits and shallow subaerial meltwater channels; predominant glaciofluvial ice-contact landforms are esker ridges, hummocks, short sinuous transverse ridges, kettles and knobs, interspersed with eroded till features. The corridors range from 500 m to 2.5 km in width, and commonly have distinct lateral boundaries. Most of the corridor deposits are thought to be subglacial sediments.

GLACIAL DEPOSITS: silty sand diamicton (till); unsorted to poorly sorted; generally massive; thickness can exceed 20 m in buried depressions and streamlined landforms but is generally less than 5 m; deposited beneath active ice as lodgement and basal meltout tills. Surface boulder abundance is variable, related to either glacial deposition or subsequent winnowing and removal of the fines by meltwater or wave action. Below marine limit, the surface till is commonly modified and/or reworked by wave action.

Tv — **Till veneer:** bouldery, silty sand diamicton; less than 1 m thick; forms a discontinuous cover over bedrock and is interspersed with rock outcrops; deposits are thin enough to reveal details of underlying rock structure; mudboils and frost-heaved slabs are common. Till ridges and DeGeer moraines are present within this unit below elevations of 150 m a.s.l.

Tb — **Till blanket:** silty sand diamicton; 1 m to more than 20 m thick; forms a continuous cover that generally masks underlying bedrock topography; occurs as till plains or swaths of streamlined forms such as drumlins and crag-and-tail forms indicating ice flow towards the southeast and south-southeast, and later to the south near Daly Bay; mudboils are common on landform surfaces.

PRE-QUATERNARY

BEDROCK: Archean to Paleoproterozoic metamorphosed intrusive igneous and supracrustal rocks.

R — **Bedrock, undifferentiated:** intact and frost-riven outcrops of various lithologies, predominantly granitic to intermediate gneisses, granodiorite, and minor supracrustal rocks. Dykes trend NE-SW. Curving, multigenerational folds and faults form prominent topographic features. Variously modified by glacial erosion; surfaces range from rough and weathered to glacially polished and striated.

Stratigraphic relationship: where observed or can be confidently inferred, a map unit stratigraphic sequence is shown with a maximum of two map unit designators separated by a slash ("/") (e.g., Mv/Tv designates marine veneer overlying till veneer).

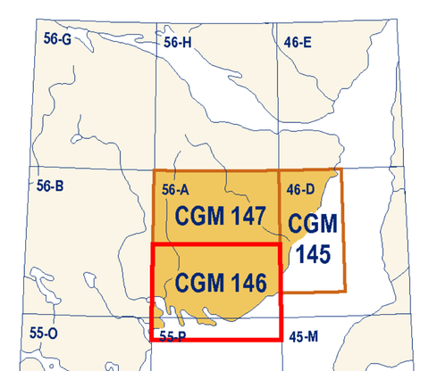
- Geological boundary (defined)
- Beach crest
- Limit of marine submergence (confidence defined; environment glaciomarine)
- Esker ridge (with beach ridges/strandlines; sense known or inferred)
- Esker ridge (sense known or inferred)
- Ice-contact terrace scarp
- Major subglacial meltwater corridor (well-defined lateral limit)
- Minor meltwater channel (proglacial or subglacial; sense known)
- Minor moraine ridge (DeGeer, recessional, rogen)
- Fluted bedrock (sense known)
- Fluted bedrock or drift (sense unknown or unspecified)
- Crag-and-tail ridge
- Drumlinoid ridge
- Delta (sense known)
- Thermokarst depression
- Crossed striations (1 = oldest; 2 = younger)
- Small outcrop
- Observation site
- Sample site

Abstract

Preliminary surficial geology studies, based on air photo interpretation and limited field data, were undertaken in the Daly Bay South map area (NTS 56-A, south) to provide an understanding of the distribution and nature of surficial materials, and regional glacial history. Much of the area is underlain by folded and faulted bedrock containing shallow glacially scoured lake basins. Striae and glacially-moulded bedrock surfaces indicate regional ice flow toward the southeast and late flow south into Daly Bay. Prevalent till veneers and blankets form drumlinoids oriented southeast. Esker systems and substratified deposits developed in well-defined subglacial meltwater corridors oriented parallel to regional and late ice flow directions. Flat-topped eskers suggest they developed late in the glacial cycle, when the ice was thin. Sandy to bouldery marine sediments extend inland to elevations of 140 m (trimline in west) to 150 m a.s.l. (delta in east). De Geer moraines indicate northward ice retreat north of Daly Bay.

Résumé

Pour établir la distribution et la nature des sédiments de surface et l'histoire glaciaire du secteur sud de la baie Daly (SNRC 56-A, sud), nous avons entrepris des études préliminaires de la géologie de surface en analysant des photos aériennes et un ensemble limité de données de terrain. Une bonne partie du secteur est couverte d'un substratum rocheux plissé et faillé contenant des bassins lacustres peu profonds creusés par les glaciers. Les stries et les surfaces du substratum rocheux façonnées par les glaciers indiquent un écoulement glaciaire vers le sud-est à l'échelle régionale et, plus tard, un écoulement vers le sud jusque dans la baie Daly. Les placages et les nappes de till répandus forment des drumlinoides orientés vers le sud-est. Les réseaux d'eskers et les dépôts sous-stratifiés ont formé des corridors d'eau de fonte sous-glaciaire bien définis, parallèles à la direction de l'écoulement glaciaire à l'échelle régionale et de l'écoulement tardiglaciaire. Le fait que le sommet des eskers est plat donne à penser qu'ils ont été formés tard dans le cycle glaciaire, lorsque la glace était mince. Des dépôts marins composés de sable ou de blocs s'étendent vers l'intérieur des terres jusqu'à une altitude de 140 m (ligne de découpe à l'ouest) à 150 m au-dessus du niveau de la mer (delta à l'est). La présence de moraines De Geer indique un recul de la glace vers le nord au nord de la baie Daly.



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

Cover illustration
Flights of raised beaches of sand and gravel ascending to a delta marking the postglacial marine limit (140 m asl), west of Mistake Creek, Nunavut. Photograph by I. McMartin. 2013-095

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CANADIAN GEOSCIENCE MAP 146

RECONNAISSANCE SURFICIAL GEOLOGY

DALY BAY (SOUTH) AND CAPE FULLERTON (NORTH)

Nunavut
NTS 56-A south and NTS 55-P north
1:100 000

REFERENCES

McMartin, I., Wodicka, N., Bazor, D., Boyd, B., and Percival, J.A., in press. Till composition across the Rae craton south of Wager Bay, Nunavut: results from the Geo-Mapping Frontiers' Tehery project; Geological Survey of Canada, Open File 7417.

Recommended citation
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Canadian Geoscience Maps

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Geomatics and cartography by L. Robertson

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Map projection Universal Transverse Mercator, zone 16. North American Datum 1983

Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations in metres above mean sea level

RECONNAISSANCE SURFICIAL GEOLOGY

DALY BAY (SOUTH) AND CAPE FULLERTON (NORTH)

Nunavut
NTS 56-A south and NTS 55-P north
1:100 000

2 0 2 4 6 8 km

Shaded relief image derived from the digital elevation model supplied by the Mapping Information Branch / GeoData Acquisition & Management Division, Natural Resources Canada
Illumination: azimuth 315°, altitude 45°, vertical factor 1x

Mean magnetic declination 2013, 13°36'W, decreasing 6.6' annually. Readings vary from 11°47'W in the SW corner to 15°23'W in the NE corner of the map.

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/).

This map is not to be used for navigation purposes.

Preliminary publications in this series have not been scientifically edited.

CANADIAN GEOSCIENCE MAP 146
RECONNAISSANCE SURFICIAL GEOLOGY
DALY BAY (SOUTH) AND CAPE FULLERTON (NORTH)
Nunavut
NTS 56-A south and NTS 55-P north

Canada