GEOLOGICAL SURVEY OF CANADA — COMMISSION GEOLOGIQUE DU CANADA

DEPARTMENT OF ENERGY, MINES AND RESOURCES
MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES

CANADA

EDITION 1

45 J

LEGEND

SURFICIAL DEPOSITS — REMARKS

ALLUVIAL DEPOSITS: stream-deposited material within modern active drainage systems; "modern" is defined as the period since retreat of the sea or glacial ice, which can be up to 8000 years, depending on elevation above sea level.

Ac — Alluvium: silt, sand, gravel, cobbles, and boulders deposited in channels or on floodplains.

Af — Alluvial fan sediments: sand, gravel, and boulders deposited in a fan shape, generally at break in slope adjacent to an active or intermittent stream channel.

MARINE DEPOSITS: sediments deposited in or at the margin of the marine environment; glacial deposits modified by marine processes. All sediments represent offlap conditions as a result of continuous isostatic uplift.

M R/MA, R/MA — Deepwater (depths greater than wave base) sediments and postdepositional organic cover, undifferentiated: Well drained surfaces characterized by mudboils; poorly drained surfaces characterized by frost polygons and a cover of peat and sedge meadows.
Ma clay, silt, and sand washed from slopes into deep water by wave action during emergence or deposited offshore from river mouths; marine sediments commonly overlain by peaty organic materials may include pockets of alluvium.
R/Ma, R/Ma: surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop, or less than 1 m of deposit mantles bedrock.

Mn Mnl R/Mn R/Mn — Nearshore sediments: Parallel strandlines or other slight irregularities in the surface have disrupted normal drainage, resulting in shallow dammed lakes, extensive areas of tundra ponds, and a network of tiny rivulets cutting through the organic mat. Also includes recently drained lake basins.
Mn sand, gravel, and cobbles deposited as beaches, bars, and spits; formed by wave action on till, bedrock, eskers, and by reworking of alluvial and

MnA R/MnA, R/MnA — deltaic sediments; may include ice-pushed ridges; commonly unvegetated.
Mnl sandy nearshore sediments with cover of vegetation.
R/Mn, R/Mn: surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop.

Mw — Pebbles and cobbles of Paleozoic lithologies are frost shattered on all beaches more than 3 to 4 m above present high tide. Difficult to distinguish from frost-shattered bedrock. Ridges may dam shallow lakes. Hummocky gravel deposits on beach-covered slopes probably caused by freezing of periodic outflow of groundwater through subterranean conduits in limestone, resulting in doming of the frozen overlying sediments and subsequent downslope movement of sediment during the thaw period.
Mw: sand, gravel, and cobbles forming ridges parallel to former shorelines, with intervening flat areas of peaty organic deposits resulting from poor drainage; ridges comprise more than 25% of area.
R/MnA, R/MnA: surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop.
Mws sand deposited as thin sheet on coastal plain by migrating shorelines likely derived from wave reworking of marine clayey sand or silty sand.

Md Mdn — Deltaic sediments: isostatically unlifted deltaic sand and gravel.
Mdn deltaic sediments covered with distinct beach ridges which form a chevron pattern curving back from the river on both banks.

GLACIAL DEPOSITS: sorted and unsorted sediments deposited by, on, or near glacial ice.

Gk — Glaciofluvial sediments: ice-contact stratified sand and gravel deposited as eskers in ice tunnels by meltwater streams; pebble surface, boulders scarce; commonly enriched in Precambrian erratics in contrast to surrounding nearly erratic-free terrain. — Commonly reworked by wave action; unvegetated.

T R/T, R/T — Tills calcareous, clay and silt-rich till with sparse clasts; contains erratics specific to Keewatin mainland in all localities; contains erratics specific to Quebec mainland on southeastern part of island; includes undifferentiated pockets of fine grained marine sediment. — Heavily reworked by waves except in central part and northeastern tip of island; surface characterized by mudboils or sorted circles, and small frost polygons (coil size <1 m).
Tl till plain
R/T, R/Tl surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop.

Th — Thu hummocky tills: irregular hummocks, 100-300 m diameter and 5-10 m high; probably marks zones of ice stagnation.

TM R/TM — Till and marine sediments, undifferentiated: Surface characterized by mudboils or sorted circles; sediment commonly contains marine shells.
TMl till surface veneered by fine grained marine sediments or depressions in till surface filled by marine sediments or diamicts consisting of mixtures of till and marine sediments resulting from cryoturbation processes.
R/TMl: surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop.

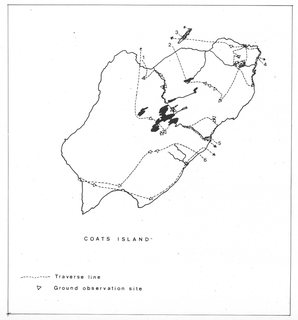
ROCK

R R — Surface comprises more than 80% frost-shattered outcrop or felsenmeer; R1 Ordovician and Silurian carbonate rocks. R2 Precambrian granite gneiss and granite with abundant pegmatites; area of Precambrian rock outcrop is restricted to Bencas Island and northeastern tip of Coats Island. — Carbonate bedrock generally frost shattered and jointed; abundant evidence of solution along joints. Precambrian bedrock generally glacially rounded and polished and shows little evidence of frost shattering.

- Geological boundary
- Small bedrock outcrop
- Drumlin
- Fluting or other glacier-inscribed linear feature
- Glacial striae (direction of ice movement known, unknown) location of measurement at centre of staff; older striae drawn with broken shaft
- De Geer moraines
- Esker (direction of flow assumed)
- Limit of marine submergence
- Nearshore ridges: beaches, bars, spits, and ice-pushed ridges
- Recently drained lake basin
- Hummocky gravel deposit on beach-covered slopes
- Small alluvial fan
- Small mound of unknown origin

Geology by J.M. Aylsworth and W.W. Shilts, based mainly on airphoto interpretation with limited ground observations and sampling, 1979.

Bedrock geology after Heywood, W.W. and Sanford, B.V. 1978: Geology of Southampton, Coats, and Mansel islands, District of Franklin; Geological Survey of Canada, Map 1494A, scale 1:1 000 000.




INDEX MAP

ROQUIS D'EXACTITUDE

Produced, 1969, by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, from aerial photographs taken in 1959 and 1961. Field Surveys 1968. Printed 1970.

Magnetic declination 1969 varies from 26°13' westerly at centre of west edge to 30°21' westerly at centre of east edge. Mean annual change 15.6' easterly.

* The daily change of the North Magnetic Pole causes the magnetic compass to be very erratic in this area.

FOR COMPLETE REFERENCE SEE REVERSE SIDE

Coats Island 1:125000
Glacial Fans
Bergs

SURFICIAL GEOLOGY
COATS ISLAND
DISTRICT OF KEEWATIN
NORTHWEST TERRITORIES

Miles 5 0 5 10 15 20 Milles
Kilometres 5 0 5 10 15 20 25 30 Kilomètres

Établie en 1969, par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, d'après des photographies aériennes prises en 1959 et 1961. Levés sur le terrain en 1968. Imprimée en 1970.

La déclinaison magnétique pour 1969 varie de 26°13' Ouest au centre de la limite Ouest à 30°21' Ouest au centre de la limite Est. Variation moyenne annuelle 15.6' Est.

La variation diurne du pôle Nord magnétique affole le compas magnétique dans cette région.

POUR UNE LISTE COMPLÈTE DES SIGNES, VOIR AU VERSO