HUDSON BAY

FISHER STRAIT

Calanus Bay

Evans Strait

Cape Netchek

Cape Prefontaine

Cape Pembroke

Cairn Cove

Bencas Island

Tundra Ponds

COATS ISLAND

Shoran Bay

Carys Swan Nest

Cape Southampton

HUDSON BAY

MAP 1633A
SURFICIAL GEOLOGY
COATS ISLAND
DISTRICT OF KEEWATIN
NORTHWEST TERRITORIES

Scale 1:125 000

Kilometres 2 0 2 4 6 8 10 Kilometres

Universal Transverse Mercator Projection

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GEOLOGICAL SURVEY OF CANADA COMMISSION GÉOLOGIQUE DU CANADA

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

HUDSON BAY

COATS ISLAND

Kilometres 0 30

Helicopter traverse lines and ground observation sites

INDEX MAP

45 O | 45 P | Part of 35 N-M
45 J | 1633A | 35 L, E & 45 H, I | 1632A

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO GEOLOGICAL SURVEY OF CANADA MAPS

LEGEND

QUATERNARY

A — *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

MO | **MO/R** | **MO/R̲** — *Deepwater (depths greater than wave base) sediments and post-depositional organic cover, undifferentiated: 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 material; may include pockets of alluvium*
MO/R, MO/R̲ : surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop, or less than 1 m of deposit mantles bedrock

Mr, Mr1 | **Mr/R** | **Mr/R̲** — *Nearshore sediments:*
Mr: sand, gravel, and cobbles deposited as beaches, bars, and spits; formed by wave action on till, bedrock, eskers, and by reworking of alluvial and deltaic sediments; may include ice-pushed ridges; commonly unvegetated
Mr1: sandy nearshore sediments with cover of vegetation
Mr/R, Mr/R̲ : surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop

MrO | **MrO/R** | **MrO/R̲** — *MrO : 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*
MrO/R, MrO/R̲ : surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop

Mw — *Mw : sand deposited as a thin sheet on the coastal plain by migrating shoreline; likely derived from wave reworking of marine clayey sand or silty sand*

Md | **Mdr** — *Deltaic sediments: isostatically uplifted deltaic sand and gravel*
Mdr : 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

G — *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*

T | **T/R** | **T/R̲** | **Th** — *Till: 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*
T: till plain
T/R, T/R̲ : surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop
Th : hummocky till: irregular hummocks, 100-300 m diameter and 5-10 m high; probably marks zones of ice stagnation

TM | **TM/R** — *Till and marine sediments, undifferentiated: 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*
TM/R: surface composed of sediment of undetermined thickness and 20 to 80% bedrock outcrop

PRE-QUATERNARY

R | **R̲** — *Surface comprises more than 80% frost-shattered outcrop or felsenmeer,*
R: Ordovician and Silurian carbonate rocks
R̲: Precambrian granite gneiss and granite with abundant pegmatites; area of Precambrian rock outcrop is restricted to Bencas Island and northeastern tip of Coats Island

Geological boundary
Small bedrock outcrop
Drumlin
Fluting or other glacier-inscribed linear feature
Glacial striae; location of measurement at centre of staff (direction of ice flow known, unknown; older striae drawn with broken shaft)
De Geer moraines
Esker (direction of flow assumed)
Limit of marine submergence (position approximate)
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

REMARKS

Well drained surfaces characterized by mudboils; poorly drained surfaces characterized by frost polygons and a cover of peat and sedge meadows. 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

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

Commonly reworked by wave action; unvegetated

Heavily reworked by waves except in central part and northeastern tip of island; surface characterized by mudboils or sorted circles, and small frost polygons (cell size <1 m)

Surface characterized by mudboils or sorted circles; sediment commonly contains marine shells

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

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

Geological cartography by I.A. Coulthart, Geological Survey of Canada

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at the scale of 1:250 000 published by the Surveys and Mapping Branch 1970. Minor base modifications by the Geological Survey of Canada, 1986

Copies of the topographical edition covering this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1986, 25°45' West, increasing 9.6' annually. Readings vary from 22°57' W in the SW corner to 28°30' W in the NE corner of the map area

Elevations in feet above mean sea level

Recommended citation:
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1987: Surficial geology, Coats Island,
District of Keewatin, Northwest Territories;
Geological Survey of Canada,
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601 Booth Street, Ottawa, Ontario K1A 0E8
3303-33rd Street, N.W., Calgary, Alberta T2L 2A7

Canada

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MAP 1633A
COATS ISLAND
DISTRICT OF KEEWATIN
NORTHWEST TERRITORIES

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1633A

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