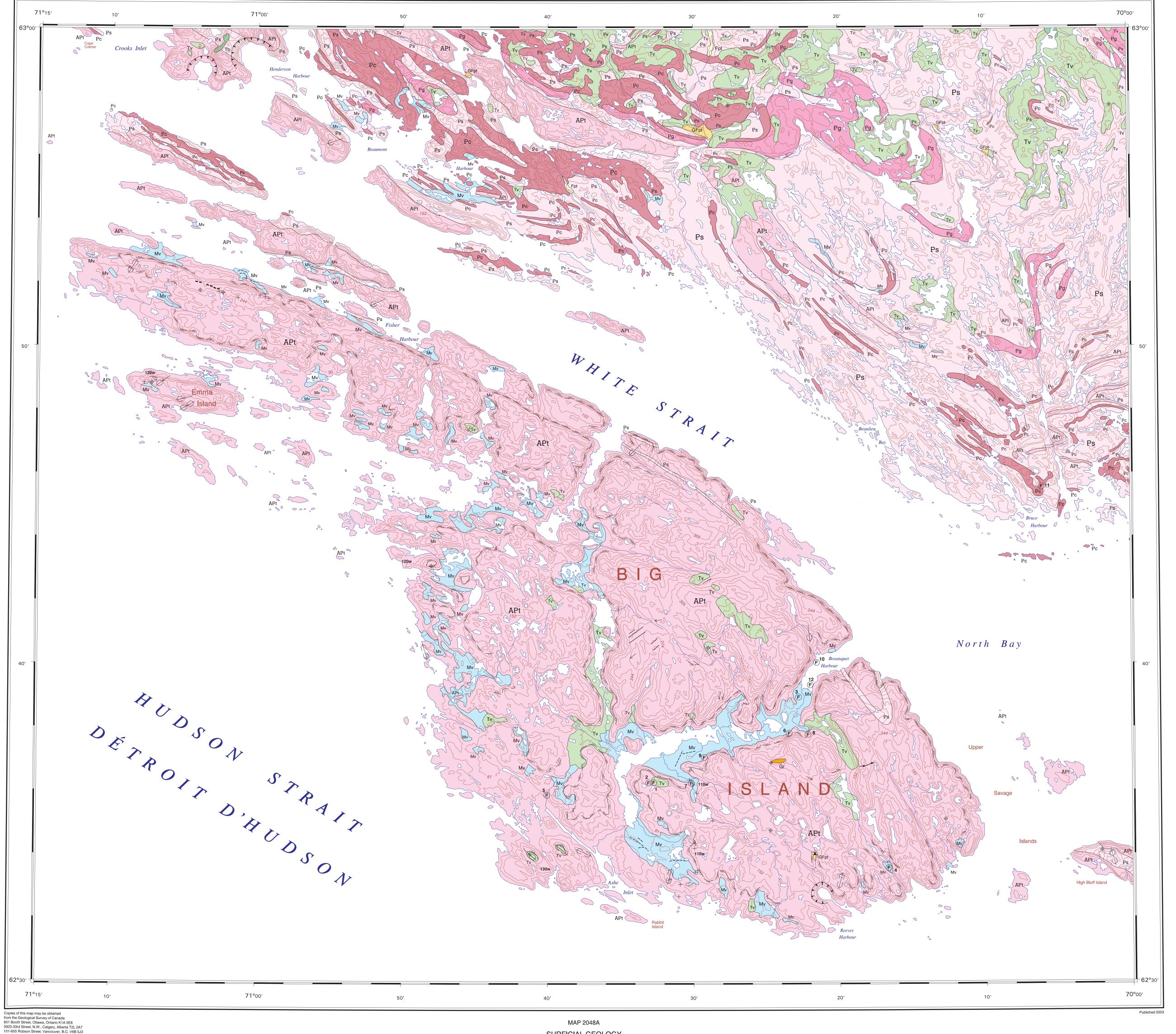
Natural Resources Ressources naturelles Canada





SURFICIAL GEOLOGY

**WHITE STRAIT** 

**BAFFIN ISLAND** 

NUNAVUT

Scale 1:100 000/Échelle 1/100 000

Projection transverse universelle de Mercator Système de référence géodésique nord-américain, 1927

© Sa Majesté la Reine du chef du Canada 2003

Universal Transverse Mercator Projection

North American Datum 1927

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Any revisions or additional geological information known to the user

would be welcomed by the Geological Survey of Canada

Digital base map from data compiled by Geomatics Canada, modified by ESS Info

Mean magnetic declination 2003, 32°19′W, decreasing 23.0′ annually. Readings vary from 31°44'W in the SW corner to 32°51'W in the NE corner of the map

Elevations in metres above mean sea level

2047A

2044A

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

Author: D.A. Hodgson

Geology by D.A. Hodgson, 1995-1997, 1999

Digital map compilation by D.A. Hodgson, 1997–2002

Digital cartography by E. Everett, Earth Sciences Sector Information Division (ESS Info)

This map was produced from processes that conform to the ESS Info Publishing

Services Subdivision Quality Management System, Ottawa, registered to the ISO 9001: 2000 standard

LEGEND

This legend is common to maps 2042A, 2043A, 2044A, 2045A, 2046A, 2047A, and 2048A. Coloured legend blocks indicate map units that appear on this map. Not all map symbols shown in the legend appear on this map.

## QUATERNARY HOLOCENE

FLUVIAL DEPOSITS (nonglacial alluvial floodplain, terrace, fan, and delta topsets): gravel, sand, boulders, minor silt, and muck; 1-10 m thick; deposited in braidplains.

MARINE DEPOSITS: sediments deposited during postglacial regression of a high

Marine veneer: sand, silt, and gravel; 0.5-2 m thick; discontinuous cover of littoral and offshore sediment including beach ridges and sea-ice-rafted debris; mimics surface of underlying till or rock. Fine-grained sediment bears a continuous vegetation cover patterned with subparallel rills.

> GLACIAL MARINE DEPOSITS: sand, silt, gravel, and boulders; 2-30 m thick; deposited in the high proglacial sea.

Glacial marine delta: sand, silt, boulders, and gravel; 2–20 m thick; massive to crossbedded sediments that coursen upwards in ice-contact deposits or at termination of outwash trains or meltwater channels.

Glacial marine blanket: sand, silt, minor gravel, and dropstones; 2–30 m thick; deposited from suspension and iceberg rafting; locally capped by Holocene marine

GLACIOFLUVIAL DEPOSITS: gravel and sand; 1-30 m thick; deposited by meltwater

behind, at, and in front of ice margins.

Glaciofluvial outwash: stratified gravel and sand; 1-30 m thick; proglacial floodplains, terraces, and fans; includes kame terraces, minor subglacial and subaquatic deposits, glacial lacustrine channelled deltas and fans; locally kettled; grade to glacial marine deltas at marine limit; may include washed till surfaces with few fines.

Glaciofluvial ice-contact deposits (eskers and kames): poorly stratified to sorted gravel, sand, and boulders; 5-20 m thick; forming ridges and hummocks.

## EARLY HOLOCENE AND WISCONSINAN

TILL: clast-supported silty sand, dominantly cobble- and boulder-size igneous and metamorphic clasts; 0.5–20 m thick; deposited in subglacial and ice-marginal environments of local ice caps (Meta Incognita Peninsula) and of the Foxe Ice Dome (Amadjuak Ice Divide). Minor silty till deposited on Hudson Strait coast by Labrador (i.e. trans-strait) and central Laurentide (i.e. down-strait continental outlet) ice.

**Hummocky till:** diamicton which may be underlain by remnant glacier ice; 1 – 20 m thick; rolling to hummocky; mainly in Frobisher Bay moraines.

Till blanket: diamicton; 1–10 m thick; undulating plain with minor fluted, hummocky, ridged, ribbed, or channelled areas; solifluction lobes on steeper slopes; thick end moraines; minor till veneer or glaciofluvial outwash; rare glaciolacustrine fines.

**Till veneer:** diamicton; 0.5–2 m thick; >40% of area is till, <60% of area is rock ledges and knobs, and rubble; bedrock topography is evident; minor till blanket, minor colluvium, including talus, colluvial fans, solifluction lobes, and undifferentiated valley-bottom deposits; minor washed-till boulder fields.

## QUATERNARY AND PRE-QUATERNARY

BEDROCK AND ROCK WEATHERING PRODUCTS: intact and frost-riven outcrop, discontinuous cover of rubble, boulders, gravel, sand, and minor silt; glacially scoured to frost-rived or disaggregated outcrop; <40% till and boulder fields (including till from which finer fraction was washed by glacial meltwater or a higher sea), and colluvium; very minor fluvial deposits, muck, or raised marine nearshore and shoreline deposits. Topography variable from rolling to rough with some major and numerous minor ridges and scarps. Vegetation continuous to absent, low Arctic to mid-Arctic, depending on substrate, exposure, and elevation. Subdivided by M.R. St-Onge by resistance to weathering, least to most: units OI, Ps, Pc, APt, and Pg.

Ordovician limestone.

Clastic metasedimentary rocks of Paleoproterozoic Sugluk and Lake Harbour groups and Blandford Bay assemblage.

Marble of Paleoproterozoic Lake Harbour Group.

Tonalite-monzogranite orthogneiss of Archean Superior Province and of Paleoproterozoic Narsajuaq arc and Ramsey River.

Monzogranite of Paleoproterozoic Cumberland batholith.

End and/or lateral moraine Assumed ice margin (readvance/recessional); thick till on proximal side Subaqueous push moraine (De Geer moraine) Subglacial or proglacial meltwater outlet (flow direction known, unknown) Lateral (sidehill) meltwater channel; barb upslope Perched delta; marine or glaciolacustrine Glacial lake shoreline Limit of marine inundation, observed Limit of marine inundation, interpolated where data permits Beach ridges, prominent Elevation (m): w - washing limit, d - delta top, b - beach <sup>14</sup>C date location (see Table 1)

## REFERENCE

St-Onge, M.R., Scott, D.J., and Wodicka, N. 1999: Geology, White Strait, Nunavut; Geological Survey of Canada, Map 1985A, scale 1:100 000.

Map no.	Age <sup>1</sup>	Lab. identification	Elev. (m)	Material
1	43 350 ± 2100	AA-12605	114	Mollusc
2	37 360 ± 1050	AA-12606	114	Mollusc
3	34 390 ± 710	AA-7899	15	Molluscs
4	8155 ± 95	AA-12609	55	Mollusc
5	7980 ± 220	GSC-425	75	Molluscs
6	7845 ± 75	AA-13050	34	Mollusc
7	7775 ± 95	AA-12607	58	Mollusc
8	7710 ± 190	GSC-5699	49	Molluscs
9	7540 ± 130	GSC-5677	45	Mollusc
10	7410 ± 70	AA-7900	-11	Mollusc
11	7380 ± 200	GSC-5688	39	Molluscs
12	6255 ± 65	AA-7898	-4	Mollusc

**Table 1.** Summary of radiocarbon dates. <sup>1</sup>For nonmarine material, the normalized age (machine age corrected to a  $\delta^{13}$ C = -25‰) is given where available, otherwise the uncorrected age is given. For marine organisms, where the isotopic ratio is known the age is corrected following GSC convention to a  $\delta^{13}$ C = 0‰, which is equivalent to subtracting a marine reservoir effect of 400 years from a normalized age; otherwise the uncorrected age (which incorporates the marine reservoir effect) is given.

Recommended citation:

Hodgson, D.A. 2003: Surficial geology, White Strait, Baffin Island, Nunavut; Geological Survey of Canada, Map 2048A, scale 1:100 000.

LOCATION MAP