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Table 1, Radiocarbon ages.

Map number	Radiocarbon age (BP)	Laboratory number	Material	Elevation (m)
1	4380 ± 80	GSC-1914	Driftwood	26.5
2	540 ± 130	S-3531	Whalebone	2.75
3	4760 ± 260	S-3521	Whalebone	26.0
4	4460 ± 150	S-3955	Whalebone	23.0
5	7200 ± 80	GSC-5756	Shells	38.5
6	7910 ± 70	GSC-5740	Shells	53.0
7	3750 ± 80	GSC-5771	Driftwood	16.0
8	1400 ± 50	GSC-5815	Driftwood	9.25
9	1810 ± 180	S-3530	Whalebone	6.5
10	3350 ± 160	GSC-5810	Driftwood	14.0
11	3975 ± 260	S-3545	Whalebone	19.0
12	3080 ± 150	S-3556	Whalebone	14.25
13	690 ± 50	GSC-5816	Driftwood	2.5
14	2250 ± 60	GSC-5811	Driftwood	11.75
15	2280 ± 60	GSC-5847	Driftwood	13.5
16	3800 ± 80	GSC-5782	Driftwood	20.0
17	2060 ± 60	GSC-5812	Driftwood	9.0
18	3740 ± 60	GSC-5787	Driftwood	17.5
19	1290 ± 140	S-3959	Whalebone	3.0
20	5500 ± 70	GSC-6165	Shells	24.0
21	1940 ± 70	GSC-5817	Driftwood	15.0
22	8310 ± 110	GSC-5698	Shells	15.0
23	3800 ± 150	S-3532	Whalebone	18.0
24	1930 ± 170	S-3534	Whalebone	8.0
25	2950 ± 150	S-3533	Whalebone	13.0
26	930 ± 150	S-3536	Whalebone	3.0
27	3480 ± 60	TO-5063	Walrus tusk	22.5
28	1950 ± 60	GSC-5814	Driftwood	5.5
29	11 200 ± 160	MGU-330	Shells	84.0
30	6336 ± 160	MGU-332	Shells	44.5
31	7590 ± 100	MGU-333	Shells	62.0
32	8570 ± 120	MGU-331	Shells	98.0
33	14 540 ± 300	MGU-334	Shells	150.0
34	6940 ± 180	GSC-1771	Salix wood	28.0
35	10 200 ± 140	GSC-1810	Marine algae	51.0
36	8500 ± 150	GSC-1765	Shells	110.0
37	7970 ± 80	GSC-5813	Shells	62.0
38	8620 ± 80	GSC-5874	Shells	103.0
39	7020 ± 80	GSC-5788	Driftwood	12.0
40	2580 ± 200	S-3537	Whalebone	10.5
41	2090 ± 60	GSC-5805	Driftwood	8.0
42	8840 ± 80	GSC-5732	Shells	86.0
43	8430 ± 140	GSC-1128	Shells	94.0 ± 5.0
44	8760 ± 100	GSC-5859	Shells	107.0
45	8680 ± 110	GSC-5853	Shells	126.0
46	5020 ± 80	GSC-5917	Shells	15.0
47	2820 ± 170	S-3956	Whalebone	12.0
48	4750 ± 60	TO-5961	Walrus tusk	25.0
49	1240 ± 170	S-3957	Whalebone	3.5
50	>34 000	GSC-5956	Shells	50.0
51	2940 ± 70	GSC-5832	Shells	9.0
52	2250 ± 60	GSC-5829	Shells	1.0
53	2760 ± 70	GSC-5830	Shells	5.0
54	1550 ± 60	GSC-5126	Shells	2.5
55	1420 ± 50	GSC-5800	Driftwood	6.0
56	8630 ± 90	GSC-5662	Shells	90.0
57	6450 ± 70	GSC-5793	Shells	39.0
58	5140 ± 60	GSC-5794	Shells	25.0
59	4950 ± 60	GSC-4070	Plant	21.0
60	4230 ± 80	GSC-6080	Plant	19.0
61	5280 ± 80	GSC-6096	Plant	12.0
62	8610 ± 80	GSC-5739	Shells	90.0
63	7380 ± 80	GSC-5824	Shells	50.0
64	3760 ± 100	GSC-5827	Shells	3.0
65	1120 ± 100	GSC-5818	Driftwood	4.0
66	8440 ± 90	GSC-5856	Shells	100.0
67	8070 ± 90	GSC-5939	Shells	60.0
68	5910 ± 90	GSC-5970	Shells	21.0
69	2850 ± 60	GSC-5976	Shells	6.25
70	4620 ± 80	GSC-5963	Shells	23.25
71	1760 ± 70	GSC-5952	Driftwood	7.25
72	2110 ± 200	S-3968	Whalebone	7.0
73	>41 000	GSC-4119	Shells	45.5
74	>38 000	GSC-5547	Shells	44.0
75	1060 ± 140	S-3535	Whalebone	4.25
76	8550 ± 70	GSC-5653	Shells	86.0
77	4450 ± 60	GSC-5778	Driftwood	25.0
78	1850 ± 60	GSC-5846	Driftwood	8.0
79	1920 ± 60	GSC-5808	Driftwood	7.0
80	3070 ± 70	GSC-5952	Driftwood	16.5
81	3180 ± 150	S-3964	Whalebone	16.5
82	2960 ± 130	GSC-1766	Driftwood	21.0
83	8200 ± 90	GSC-5850	Shells	84.0
84	7810 ± 80	GSC-5901	Shells	15.0
85	>25 000	GSC-1764	Shells	150.0
86	1450 ± 70	GSC-5951	Driftwood	7.0
87	>33 000	S-3965	Whalebone	24.0
88	3690 ± 90	GSC-5954	Driftwood	24.5
89	8240 ± 110	GSC-5733	Shells	71.0
90	4580 ± 70	GSC-5920	Shells	23.0
91	3360 ± 150	S-3528	Whalebone	15.0
92	4400 ± 60	TO-5062	Narwhal tusk	15.0
93	2020 ± 140	S-3529	Whalebone	9.5
94	1490 ± 170	S-3544	Walrus tusk	37.0
95	1020 ± 50	GSC-5806	Driftwood	2.0
96	2580 ± 160	S-3522	Whalebone	9.0
97	3690 ± 70	GCS-2188	Driftwood	15.0
98	2180 ± 70	GSC-6132	Plant	2.5

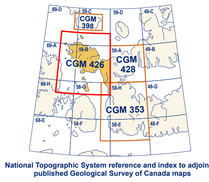
Dates are reported in the tables according to the reporting protocols of the various laboratories. All dates on terrestrial materials are normalized to the -25 per mil PDB standard. However, dates on marine materials are reported inconsistently. GSC marine dates are reported with a 400 year reservoir correction. TO and CAMS dates are reported without a reservoir correction. S dates are reported without normalization and without a reservoir correction.

Abstract

This new surficial geology map product represents the conversion of Map 1973A (Dyke, 2001) and its legend, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.3.14, Deblonde et al., 2018). All geoscience knowledge and information from Map 1973A that conformed to the SDM were maintained during the conversion process. The purpose of converting legacy map data to a common science language and common legend is to enable and facilitate the efficient digital compilation, interpretation, management, and dissemination of geological map information in a structured and consistent manner. This provides an effective knowledge-management tool designed around a geodatabase that can expand, following the type of information to appear on new surficial geology maps.

Résumé

Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 1973A (Dyke, 2001) et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique de la Carte 1973A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Le but de la conversion de cartes publiées antérieurement suivant un langage scientifique commun et une légende commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de l'information géologique cartographique en mode numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes de la géologie des formations superficielles.



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

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CANADIAN GEOSCIENCE MAP 426

SURFICIAL GEOLOGY

GRINNELL PENINSULA

Devon Island, Nunavut

NTS 59-B, parts of 59-C, 58-G, 69-A, and 69-D

1:250 000

QUATERNARY

HOLOCENE

Glacier ice: ice; 0 to 600 m thick.

COLLUVIAL DEPOSITS: block and rubble accumulations; 1 to 50 m thick.

Talus scree deposits: blocks and rubble; as much as 50 m thick; forming active accumulations of talus (scree) aprons and fans below cliffs resulting from rock falls and debris flows; commonly crossed by debris flow channels and levées.

Rock glacier debris: talus; generally 10 to 50 m thick; deformed by active flow of interstitial or buried ice to form rock (talus) glaciers with transverse ridges and furrows, pits, and steep, unstable sides and fronts.

ALLUVIAL SEDIMENTS: alluvium; gravel and sand, 2 to 20 m thick.

Alluvial floodplain sediments: gravel and sand; 2 to 20 m thick; active braided floodplains; includes active proglacial outwash.

Alluvial fan sediments: gravel and sand; 2 to 20 m thick; forming fans.

Alluvial terraced sediments: gravel and sand; 2 to 20 m thick; forming terraces.

MARINE AND GLACIOMARINE SEDIMENTS: gravel, sand, silt, and clay; 1 to 20 m thick; deposited in deltaic and beach environments during regression of the postglacial sea.

Beach sediments: gravel and sand; 1 to 5 m thick; forming ridges and swales.

Deltaic sediments: clay, silt, sand, and gravel; 5 to 20 m thick; forming coarsening-upward sequences under terraces; terraces at marine limit formed at or near the ice margin.

GLACIOMARINE SEDIMENTS: sand, silt, and clay; deposited in proglacial marine environments.

Glaciomarine offshore sediments: silt, clay silt, and fine sand, with dropstones and minor gravel; 2 to 10 m thick; deep-water proglacial environment.

Glaciomarine veneer: silt, clay silt, and fine sand; with dropstones; 1 to 2 m thick; deep-water proglacial environment.

GLACIOLACUSTRINE SEDIMENTS: clay, silt, sand, and gravel deposited in glacier-dammed lakes in deep-water environments.

Glaciolacustrine deltaic sediments: clay, silt, sand, and gravel; forming coarsening-upward sequences under terraces; 5 to 20 m thick.

Glaciolacustrine veneer: silt, clay silt, and fine sand with dropstones; 1 to 2 m thick; deep-water proglacial environment.

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

Outwash plain sediments: gravel and sand; 1 to 10 m thick; forming proglacial braided floodplains.

Terraced sediments: gravel and sand; 1 to 10 m thick; forming proglacial terraces.

Outwash fan sediments: gravel and sand; 1 to 10 m thick; forming proglacial subaerial fans.

EARLY HOLOCENE AND WISCONSINAN

GLACIAL SEDIMENTS (TILL): nonsorted stony muds; 0.5 to 60 m thick; deposited in subglacial and ice-marginal environments; lithic composition generally reflects underlying bedrock.

End moraine complex: diamicton; varied thickness; 5 to 60 m high end moraine ridges and hummocks; comprised of debris-rich, relict glacier ice mantled by till; kettled in places and characterized by large ice-wedge polygons; may contain coarse, blocky rubble (ice thrust bedrock).

Till veneer: diamicton; 0.5 to 2 m thick; discontinuous.

Till blanket: diamicton; 2 to 10 m thick; forming an undulating blanket; commonly extending laterally from end moraines.

PRE-QUATERNARY

Nonscoured and weathered bedrock: rubble; varied thickness; derived from underlying bedrock by frost action mainly before last glaciation, variously colluviated; mantling nonscoured rock; smooth surfaces exhibiting little or no sign of glacial erosion in the form of lake basins or ice-moulded eminences; commonly incised by lateral meltwater channels.

BEDROCK: rock of various compositions and ages modified by postglacial processes and by glacial erosion during the Quaternary; Precambrian gneisses in the east, mainly gently inclined Paleozoic carbonates, with sandstone shale and gypsum in the central and western part, and folded Paleozoic to Mesozoic clastic rocks and carbonates in the northwest of the project area.

Bedrock, undifferentiated: scoured bedrock; hilly and hummocky surfaces with lake basins and ice-moulded eminences resulting from light to moderate glacial scouring; surface generally disintegrated by postglacial frost action; complex polygons represent major escarpments, tens to hundreds of metres high, variously lined by talus; locally overlain by felsenmeer pattern.

Complex units: two map-unit designators separated by a dot (.) are used where the surficial cover forms a complex area and the units are too small to be mapped individually (e.g. R.Ca designates an area of bedrock with colluvial deposits). The map-unit polygon is coloured according to the dominant unit and labeled in descending order of cover.

Area covered by perennial ice fields during the Little Ice Age

Large ice-wedge polygons

Felsenmeer, surface generally disintegrated by postglacial frost action

Geological contact, defined

Limit of submergence:

Marine, defined

Glaciolacustrine, defined

Glacial lake spillway, paleoflow known

Minor meltwater channel:

Subglacial and proglacial, paleoflow known

Lateral, barb on upslope side

Moraine:

Lateral

Major, end

Drumlinoid or fluting, length not mapped to scale

Fluted, ice-moulded bedrock, ice flow direction known, length not mapped to scale

Glacier flowlines:

Direction unknown

Direction known

Dispersal train (plume) margin, defined

Ice divide

Bedrock scarp, cliff

Striations:

Ice flow direction unknown

Ice flow direction known

Crossed, 1 = older, 4 = younger

95 Station location, ground observation (elevation in metres)

25 Dated sample location, radiocarbon, *see* Table 1

Recommended citation
Geological Survey of Canada, 2023. Surficial geology, Grinnell Peninsula, Devon Island, Nunavut, NTS 59-B, parts of 59-C, 58-G, 69-A, and 69-D; Geological Survey of Canada, Canadian Geoscience Map 426 (Surficial Data Model v. 2.3.14 conversion of Map 1973A), scale 1:250 000. https://doi.org/10.4095/322192

CANADIAN GEOSCIENCE MAP 426

Geological Survey of Canada
Canadian Geoscience Maps

Canada

Author: Geological Survey of Canada

Geology based on field work by A.S. Dyke, 1993, 1994, and by C. Hattestrand and A. Stroven, 1994 (Baillie-Hamilton Island), and on airphoto interpretation

Geology conforms to Surficial Data Model v. 2.3.14 (Deblonde et al., 2018).

Geological data conversion by D. Kerr, 2015 and 2019

Geology has been spatially adjusted to fit the updated base.

Geomatics by S. Eagles, J. Kingsley, and C.D. Stevens

Cartography by N. Côté

Scientific editing by L. Ewert

Initiative of the Geological Survey of Canada, conducted under the auspices of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

Map projection Universal Transverse Mercator, zone 15
North American Datum 1983

SURFICIAL GEOLOGY
GRINNELL PENINSULA
Devon Island, Nunavut
NTS 59-B, parts of 59-C, 58-G, 69-A, and 69-D
1:250 000

5 0 5 10 15 20 km

Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications
Elevations in metres above mean sea level

Proximity to the North Magnetic Pole causes the magnetic compass to be useless in this area.

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users at (gscpublications-cgcpublications@nrcan-rncan.gc.ca).

Data may include additional observations not portrayed on this map. *See* map info document accompanying the downloaded data for more information about this publication.

This publication is available for free download through GEOSCAN (https://geoscan.nrcan.gc.ca/).

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