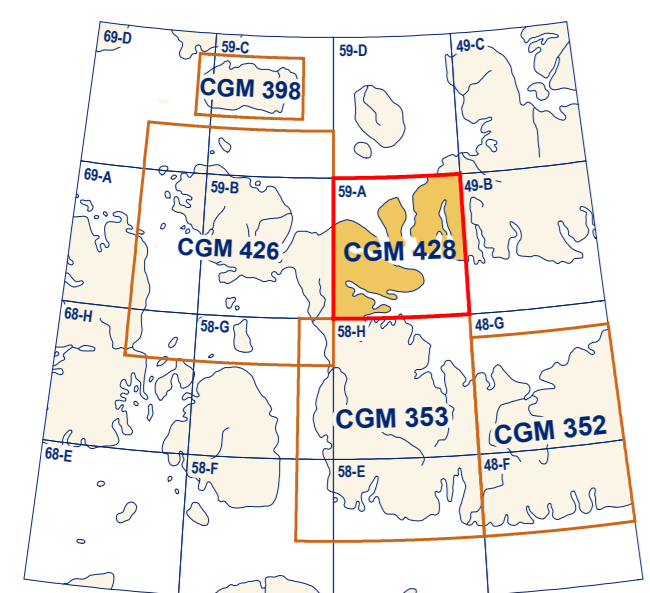


References
 Deblonde, C., Cocking, R.B., Kerr, D.E., Campbell, J.E., Eagles, S., Everett, D., Huntley, D.H., Inglis, E., Parent, M., Plouffe, A., Robertson, L., Smith, I.R., and Weatherston, A., 2018. Surficial Data Model: the science language of the integrated Geological Survey of Canada data model for surficial geology maps; Geological Survey of Canada, Open File 8236, ver. 2.3.14, 1 zip file. <https://doi.org/10.4095/308178>
 Dyke, A.S., 2001. Surficial geology, Cardigan Strait, Devon Island and Ellesmere Island, Nunavut; Geological Survey of Canada, Map 1974A, scale 1:250 000. <https://doi.org/10.4095/212706>

Abstract
 This new surficial geology map product represents the conversion of Map 1974A (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 geoscientific knowledge and information from Map 1974A 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.

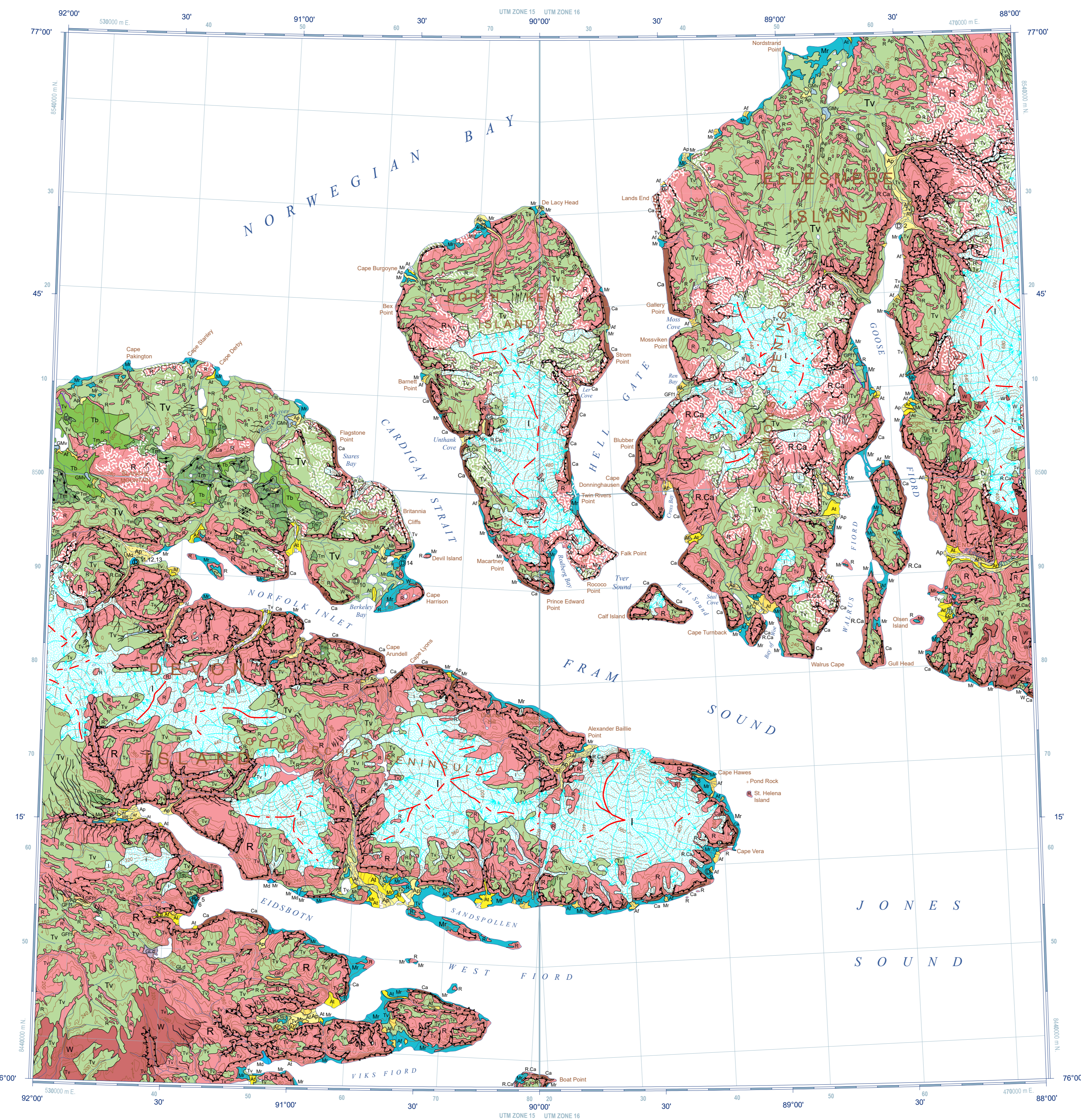
Résumé
 Ce nouveau produit cartographique de la géologie des formations superficielles correspond à la conversion de la Carte 1974A (Dyke, 2001) et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDF version 2.3.14) de la Commission géologique du Canada (Deblonde et al., 2018). Toutes les connaissances et l'information de nature géoscientifique de la Carte 1974A 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.



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Natural Resources Canada / Ressources naturelles Canada

CANADIAN GEOSCIENCE MAP 428
SURFICIAL GEOLOGY
CARDIGAN STRAIT
 Devon Island and Ellesmere Island, Nunavut
 NTS 59-A
 1:250 000



QUATERNARY

HOLOCENE

- I: Glacier ice; ice: 0 to 600 m thick.
- Ca: 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.
- Ap: ALLUVIAL SEDIMENTS: alluvium; gravel and sand, 2 to 20 m thick.
- Al: Alluvial floodplain sediments: gravel and sand; 2 to 20 m thick; active braided floodplains; includes active proglacial outwash.
- At: Alluvial fan sediments: gravel and sand; 2 to 20 m thick; forming fans.
- At: Alluvial terraced sediments: gravel and sand; 2 to 20 m thick; forming terraces.
- Mr: Beach sediments: gravel and sand; 1 to 5 m thick; forming ridges and swales.
- Md: 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.
- GMv: GLACIOMARINE SEDIMENTS: sand, silt, and clay; deposited in proglacial marine environments.
- GLd: GLACIOLACUSTRINE SEDIMENTS: clay, silt, sand, and gravel deposited in glacier-dammed lakes in deep-water environments.
- GLv: GLACIOLACUSTRINE DELTAIC SEDIMENTS: clay, silt, sand, and gravel; forming coarsening-upward sequences under terraces; 5 to 20 m thick.
- GLv: GLACIOLACUSTRINE VENEER: silt, clay silt, and fine sand with dropstones; 1 to 2 m thick; deep-water proglacial environment.
- GF1: GLACIOFLUVIAL SEDIMENTS: gravel and sand; 1 to 10 m thick; deposited behind, at, and in front of the ice margin.
- GF1: Terraced sediments: gravel and sand; 1 to 10 m thick; forming proglacial terraces.
- GF1: Outwash fan sediments: gravel and sand; 1 to 10 m thick; forming proglacial subaerial fans.

EARLY HOLOCENE AND WISCONSINAN

- Tm: 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.
- Tv: End moraine complex: diamiction; varied thickness; 5 to 60 m high end moraine ridges and hummocks; comprising debris-rich, retlit glacier ice mantled by till; kettled in places and characterized by large ice-wedge polygons; may contain coarse, blocky rubble (ice thrust bedrock).
- Tb: Till veneer: diamiction; 0.5 to 2 m thick; discontinuous.
- Tb: Till blanket: diamiction; 2 to 10 m thick; forming an undulating blanket; commonly extending laterally from end moraines.

PRE-QUATERNARY

- W: 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

- R: 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.

Legend:

- Area covered by perennial ice fields during the Little Ice Age
- Large ice-wedge polygons
- Felsenmeer, surface generally disintegrated by postglacial frost action
- Geological boundary (confidence defined)
- Limit of submergence: Marine, defined
- Glaciolacustrine, defined
- Minor meltwater channel, lateral
- Moraine, 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
- Ice divide
- Bedrock scarp, cliff
- Striation: Ice flow direction unknown
- Ice flow direction known
- Crossed, 1 = older, 2 = younger
- Dated sample location, radiocarbon, see Table 1

Table 1. Radiocarbon ages.

Map ID	Laboratory number	Latitude	Longitude	Elevation (m a.s.l.)	Material	Radiocarbon age (BP)
1	GSC-865	76.904564	-88.651768	101	Shells	>34000
2	GSC-2630	76.818374	-88.496622	-1	Shells	370 ± 60
3	GSC-5881	76.768084	-90.483655	80	Shells	7580 ± 100
4	GSC-907	76.822048	-90.237065	33	Shells	9700 ± 200
5	GSC-2996	76.172777	-91.372639	19	Driftwood	3650 ± 60
6	GSC-3008	76.174577	-91.381345	35	Driftwood	5990 ± 70
7	GSC-858	76.458430	-88.315703	120	Shells	8720 ± 110
8	GSC-866	76.295728	-89.381467	114	Shells	9260 ± 100
9	GSC-1704	76.204945	-89.324667	25	Driftwood	4980 ± 140
10	GSC-874	76.482148	-90.748642	114	Shells	8950 ± 80
11	GSC-5885	76.495911	-91.651031	30	Shells	6230 ± 80
12	GSC-5900	76.495911	-91.651031	30	Plant detritus	6160 ± 80
13	TO-4806	76.495911	-91.651031	30	Detrital Sph. sp.	5920 ± 60
14	GSC-2178	76.499917	-90.560495	19 ± 1	Charcoal	3580 ± 150
15	GSC-3006	76.159745	-91.518220	48	Shells	8440 ± 80

Dates are reported in the table 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.

Recommended citation
 Geological Survey of Canada, 2023. Surficial geology, Cardigan Strait, Devon Island and Ellesmere Island, Nunavut, NTS 59-A. Geological Survey of Canada, Canadian Geoscience Map 428 (Surficial Data Model v. 2.3.14 conversion of Map 1974A), scale 1:250 000. <https://doi.org/10.4095/326898>

SURFICIAL GEOLOGY
CARDIGAN STRAIT
 Devon Island and Ellesmere Island, Nunavut
 NTS 59-A
 1:250 000

Author: Geological Survey of Canada
 Geology based on field work by A.S. Dyke, 1993 and 1994, and by C. Hattestrand and A. Stroven, 1994, and on airphoto interpretation
 Geology conforms to Surficial Data Model v. 2.3.14 (Deblonde et al., 2018).
 Geological data conversion by D.E. Kerr, 2015 and 2019
 Geology has been spatially adjusted to fit the updated base.
 Geomatics by S. Eagles, J. Kingsley, C.D. Stevens, and S.Y. Keskinler
 Cartography by M.J. Baldoek
 Scientific editing by L. Ewert

Initiative of the Geological Survey of Canada, conducted under the auspices of the Information Management Project as part of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program
 Map projection: Universal Transverse Mercator, zone 16 North American Datum 1983
 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 (gscpublications-gcpublishings@nrcan-mcan.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.
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Geological Survey of Canada
 Canadian Geoscience Maps

