Natural Resources Canada
Ressources naturelles Canada

2nd EDITION

CANADIAN GEOSCIENCE MAP 76

GEOLOGY

TECTONIC ASSEMBLAGE MAP OF PEEL SOUND

Prince of Wales and Somerset islands, Nunavut

Map Information Document

Preliminary

Geological Survey of Canada
Canadian Geoscience Maps

2015

Canada

PUBLICATION

Map Number

Natural Resources Canada, Geological Survey of Canada
Canadian Geoscience Map 76 (Preliminary, 2nd Edition)

Title

Geology, Tectonic assemblage map of Peel Sound,
Prince of Wales and Somerset islands, Nunavut

Scale

1:500 000

Catalogue Information

Catalogue No. M183-1/76-2013E-PDF
ISBN 978-1-100-22353-7
doi:10.4095/295862

Recommended Citation

Harrison, J.C., Hillary, E.M., Ford, A., Stewart, W.D., Frisch, T., Mayr, U., and Thorsteinsson, R., 2015. Geology, Tectonic assemblage map of Peel Sound, Prince of Wales and Somerset islands, Nunavut; Geological Survey of Canada, Canadian Geoscience Map 76 (2nd edition, preliminary), scale 1:500 000. doi:10.4095/295862

ABSTRACT

This map and the related geodatabase illustrate the bedrock geology of central and eastern Prince of Wales Island, Somerset Island, and northern Boothia Peninsula. Major features of the area include Archean and Paleoproterozoic granitoid and metasedimentary rocks of Boothia Uplift overlain unconformably by Paleoproterozoic and Mesoproterozoic sediments, which are, in turn, unconformably overlain by Cambrian to Devonian strata of Arctic Platform. The higher Silurian and Lower Devonian interval provides a multiphase depositional record of Boothia Uplift. Youngest events are recorded by Cretaceous kimberlite diatremes and outliers of Paleogene strata.

RÉSUME

Cette carte et la géodatabase qui s'y rapporte documentent la géologie du substratum rocheux dans le centre et l'est de l'île Prince of Wales, l'île Somerset et le nord de la presqu'île de Boothia. Les principales entités géologiques de la région comprennent des roches granitoïdes et métasédimentaires de l'Archéen et du Paléoprotérozoïque du soulèvement de Boothia, surmontées en discordance par des sédiments paléoprotérozoïques et mésoprotérozoïques qui, à leur tour, sont recouverts en

discordance par des strates d'âge cambrien à dévonien de la Plate-forme de l'Arctique. L'intervalle du Silurien supérieur et du Dévonien inférieur témoigne de l'histoire sédimentaire polyphasée du soulèvement de Boothia. Des diatrèmes de kimberlite du Crétacé et des lambeaux d'érosion de strates du Paléogène rendent compte des événements les plus récents.

ABOUT THE MAP

General Information

Authors: J.C. Harrison, E.M. Hillary, A. Ford, W.D. Stewart, T. Frisch, U. Mayr, and R. Thorsteinsson

Geological compilation by J.C. Harrison

Source map geology (senior authors) by W.D. Stewart, T. Frisch, U. Mayr, and R. Thorsteinsson

GIS development by T. Lynds

Spatial data capture by Gismo Solutions Ltd. (Edmonton) and A. Ford

Cartography by M.J. Baldock

Critical review by T. Hadlari

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

Map projection Lambert Conformal Conic, standard parallels 71°30'N and 73°30'N. North American Datum 1983

Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Mean magnetic declination 2015, 17°24'W,decreasing 21.1'E annually. Readings vary from 3°52'W in the SW corner to 30°52'W in the NE corner of the map.

This map is not to be used for navigational purposes.

Title Photograph: Paleoproterozoic basement including metasediments and marble, Bellot Strait and southern Somerset Island, Nunavut.
Photograph by T. Frisch. 2013-073

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map.
See documentation accompanying the data.

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

Preliminary publications in this series have not been scientifically edited.

Cartographic Representations Used on Map

This map utilizes ESRI Cartographic Representations in order to customize the display of standard GSC symbols for visual clarity on the PDF of the map only. The digital data still contains the original symbol from the standard GSC symbol set. The following legend features have Cartographic Representations applied:

Fault: approximate, showing downthrown side
Dextral strike-slip fault: approximate
Dextral strike-slip fault: assumed
Sinistral strike-slip fault: assumed
Thrust fault: approximate, teeth indicate upthrust side
Thrust fault: assumed, teeth indicate upthrust side
Monocline, (arrow indicates direction of down flexure)
Diabase dyke
Diabase dyke (solid circle indicates downthrown side of fault intruded by dyke)

ABOUT THE GEOLOGY

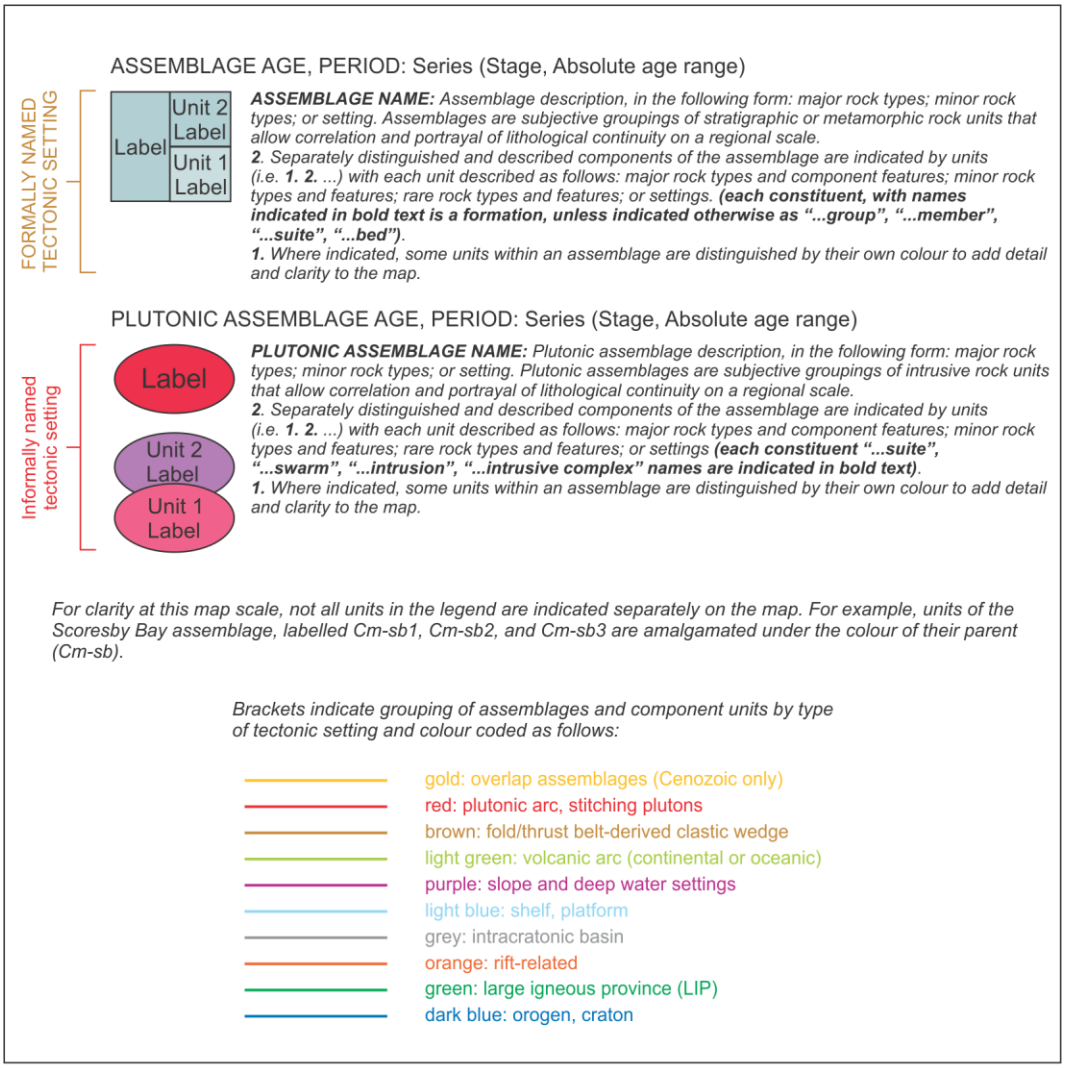

Figure 1. Explanation of map unit features.

References

Blackadar, R.G., Christie, R.L., and Taylor, F.C., 1967. Geology, Boothia Peninsula and King William Island, District of Franklin; Geological Survey of Canada, Preliminary Map 2-1967, scale 1:506 880. doi:10.4095/108493

de Freitas, T.A., Harrison, J.C., and Mayr, U., 1997. Sequence stratigraphic correlation chart of the lower Paleozoic Franklinian succession, Canadian Arctic Islands and parts of north Greenland; Geological Survey of Canada, Open File 3410. doi:10.4095/208912

Dewing, K. and Nowlan, G.S., 2004. Correlation chart of Cambrian and Ordovician stratigraphy, Arctic Islands, Nunavut, Canada. Geological Survey of Canada, Open File 1837, 1 sheet. doi:10.4095/214889

Frisch, T., 2011. Geology, Precambrian geology of northern Boothia Peninsula and Somerset Island, Nunavut; Geological Survey of Canada, Open File 6051, scale 1:250 000. doi:10.4095/287896

Harrison, J.C., Mayr, U., McNeil, D.H., Sweet, A.R., McIntyre, D.J., Eberle, J.J., Harington, C.R., Chalmers, J.A., Dam, G. and Nøhr-Hansen, H., 1999. Correlation of Cenozoic sequences of the Canadian Arctic region and Greenland; implications for the tectonic history of northern North America; Bulletin of Canadian Petroleum Geology vol. 47, no. 3, 1999; pages 223-254.

Mayr, U., Brent, T.A., de Freitas, T., Frisch, T., Nowlan, G.S., and Okulitch, A.V., 2004. Geology of eastern Prince of Wales Island and adjacent smaller islands, Nunavut; Geological Survey of Canada, Bulletin no. 574; 88 pages, 1 CD-ROM. doi:10.4095/215690

Mayr, U., Frisch, T., de Freitas, T., Okulitch, A.V., and Kerr, J.W., 2003. Geology, eastern Prince of Wales Island and adjacent smaller islands, Nunavut; Geological Survey of Canada, Map 2016A, scale 1:125 000. doi:10.4095/214111

Stewart, W.D., 1987. Late Proterozoic To Early Tertiary Stratigraphy of Somerset Island and northern Boothia Peninsula, District of Franklin, N.W.T.; Geological Survey of Canada, Paper 83-26, 78 pages.

Stewart, W.D. and Kerr, J.W., 1984a. Geology, Somerset Island South, District of Franklin; Geological Survey of Canada, Map 1596A, scale 1:250 000. doi:10.4095/120338

Stewart, W.D. and Kerr, J.W., 1984b. Geology, Somerset Island North, District of Franklin; Geological Survey of Canada, Map 1595A, scale 1:250 000. doi:10.4095/120337

Stewart, W.D. and Kerr, J.W., 1984c. Geology, Boothia Peninsula, North, District of Franklin; Geological Survey of Canada, Map 1597A, scale 1:250 000. doi:10.4095/120340

Stewart, W.D. and Kerr, J.W., 1984d. Geology, Central Boothia Peninsula, District of Franklin; Geological Survey of Canada, Map 1598A, scale 1:250 000. doi:10.4095/120340

Thorsteinsson, R. and Uyeno, T.T. (ed.),1980. Stratigraphy and conodonts of Upper Silurian and Lower Devonian rocks in the environs of the Boothia Uplift, Canadian Arctic Archipelago; Geological Survey of Canada, Bulletin 292; 75 pages. doi:10.4095/119467

Author Contact

Questions, suggestions, and comments regarding the geological information contained in the data sets should be addressed to:

Christopher Harrison
Geological Survey of Canada
481 - 601 Booth Street
Ottawa ON
K1A 0E8

Christopher.Harrison@NRCan-RNCan.gc.ca

Coordinate System

Projection: Lambert Conformal Conic, standard parallels 68°54'N and 70°34'N
Units: metres
Horizontal Datum: NAD83
Vertical Datum: mean sea level

Bounding Coordinates

Western longitude: 100°00’00”W
Eastern longitude: 90°00’00”W
Northern latitude: 74°00’00”N
Southern latitude: 71°00’00”N

Data Model Information

This Canadian Geoscience Map does not conform to the Bedrock Mapping Geodatabase Data Model v.3.1. Therefore, some of the feature classes and feature attributes require explanation. Consult “Explanation_of_attributes.rtf” in Data folder for complete description of the feature classes and feature attributes.

LICENCE AGREEMENT

ACCORD DE LICENCE