ASSEMBLAGE AGE, PERIOD: Series (Stage, Absolute age range)

ASSEMBLAGE NAME: *Assemblage description, in the following form: major rock types, minor rock types, or setting. Assemblages are subdivisions (groupings) of stratigraphic or metamorphic rock units that share common characteristics and are mappable at a regional scale.*
Where applicable, the dominant and subordinate components of the assemblage are indicated by units, i.e. 1, 2, 3 ... with each unit described as follows: major rock types and component features; minor rock types and features; rock unit name and symbol. Where applicable, assemblages are subdivided in bold text in a formation, unless indicated otherwise as "...group", "...member", "...suite", "...bed".
Where applicable, some units within an assemblage are distinguished by their own colour to add detail and clarity to the map.

SYMBOLS WITHIN TECTONIC SETTING

Unit 3 Unit 2 Unit 1

PLUTONIC ASSEMBLAGE AGE, PERIOD: Series (Stage, Absolute age range)

PLUTONIC ASSEMBLAGE NAME: *Plutonic assemblage description, in the following form: major rock types, minor rock types, or setting. Assemblages are subdivisions (groupings) of intrusive rock units that share common characteristics and are mappable at a regional scale.*
Where applicable, the dominant and subordinate components of the assemblage are indicated by units, i.e. 1, 2, 3 ... with each unit described as follows: major rock types and component features; minor rock types and features; rock unit name and symbol. Where applicable, assemblages are subdivided in bold text in a formation, unless indicated otherwise as "...group", "...member", "...suite", "...bed".
Where indicated, some units within an assemblage are distinguished by their own colour to add detail and clarity to the map.

Granite suite tectonic setting

Unit 3 Unit 2 Unit 1

For clarity at this map scale, not all units in the legend are indicated separately on the map. For example, units of the Sonsoky Bay assemblage, labelled Ord-sD, Ord-sE, and Ord-sG are amalgamated under the colour of their parent, Ord-sD.

Brackets indicate grouping of assemblages and component units by type of tectonic setting and colour coded as follows:

- light overlap assemblages (Cenozoic only)
- red: plutonic arc, stitching plutons
- brown: fold/thrust belt-derived clastic wedge
- light green: volcanic arc (continental or oceanic)
- purple: slope and deep water settings
- light blue: shelf, platform
- dark blue: intracratonic basin
- orange: rift-related
- green: large igneous province (LIP)
- dark blue: orogen, crater

Figure 1. Explanation of map unit features.

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

Abstract

This map and the related geodatabase illustrate the bedrock geology of central and southern Banks Island (including the greater part of Aulavik National Park of Canada) and northwestern Victoria Island. Major features of the area include Meso- and Neoproterozoic rocks of Amundsen basin, Franklin large igneous province basaltic rocks related to the Franklin Large Igneous Province (ca. 723 Ma), Cambrian to Devonian strata of Arctic Platform and the Ellesmerian foreland, unconformably overlain by near-flat-lying Cretaceous and Cenozoic strata of the Beaufort Sea basin, unconsolidated Holocene sediments of the Arctic margin.

Résumé

Cette carte et la géodatabase qui s'y rapporte documentent la géologie du substratum rocheux dans le centre et le sud de l'île Banks (y compris la majeure partie du parc national du Canada Aulavik) et le nord-ouest de l'île Victoria. Les principales entités géologiques de la région comprennent des roches méso-et néoprotérozoïques et néoprotérozoïques du bassin d'Amundsen, des filons-couches de diabase et des roches basaltiques effusives appartenant à la grande province magmatique de Franklin (env. 723 Ma), des strates du Cambrien au Dévonien de la plate-forme de l'Arctique et de l'avant-pays ellesmérien, recouvertes en discordance par des strates presque horizontales d'âge crétacé et paléogène du bassin de Banks, ainsi que des sédiments Holocènes non consolidés de la marge continentale de l'Arctique.

Catalogue No. M183-1/35-2015E-PDF
ISBN 978-1-100-22052-1
doi:10.4095/295660

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Natural Resources Canada, 2015

Natural Resources Canada | Ressources naturelles du Canada

2nd EDITION

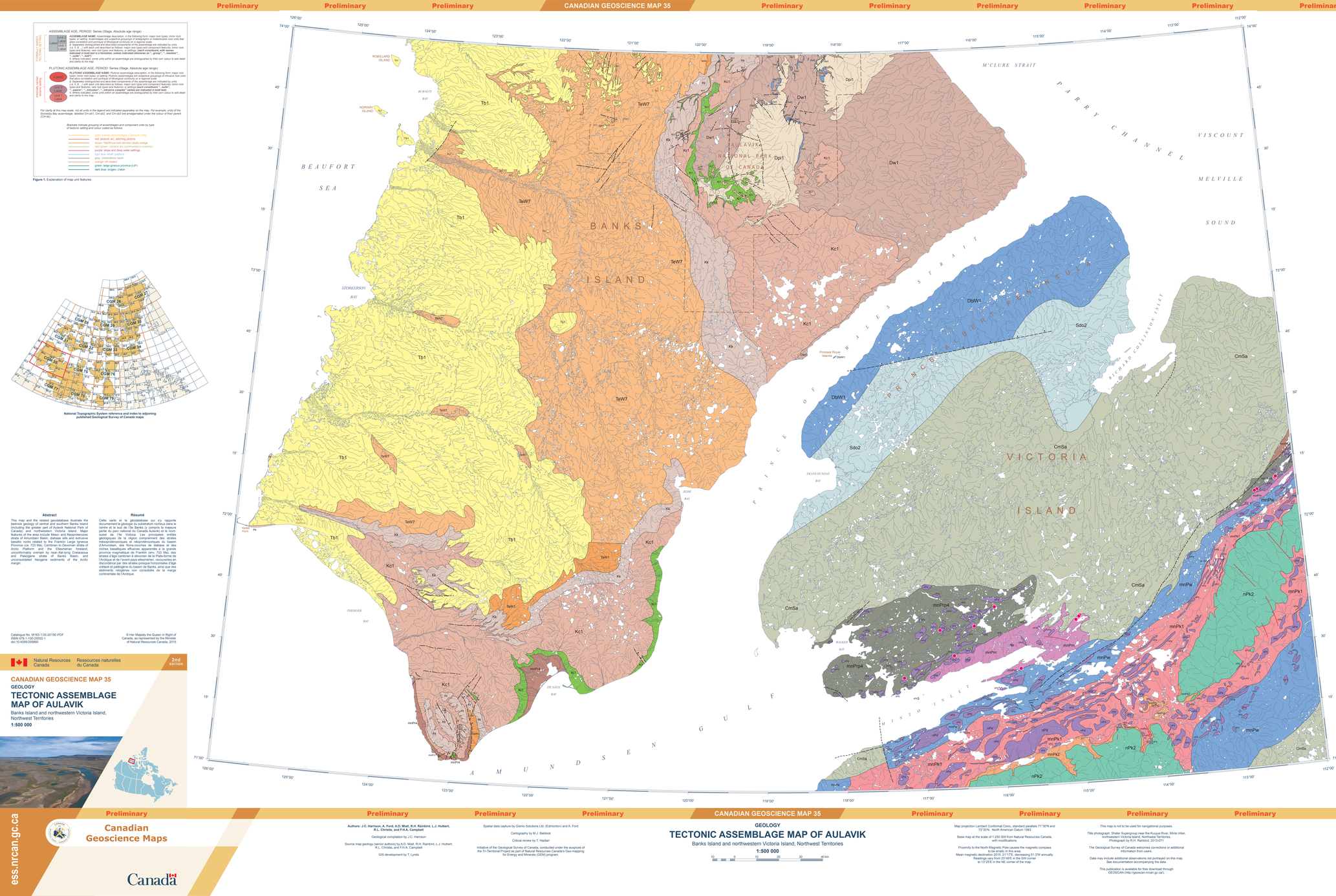
CANADIAN GEOSCIENCE MAP 35

GEOLOGY

TECTONIC ASSEMBLAGE MAP OF AULAVIK

Banks Island and northwestern Victoria Island, Northwest Territories

1:500 000



REFERENCES

Christie, R.L., Fyles, J.G., Thorsteinsson, R. and Tozer, E.T., 1963. Geology, Banks, Victoria and Stefansson Islands, District of Franklin; Geological Survey of Canada, Map 1125A, scale 1:1 013 760.

Cook, D.G. and MacLean, B.C., 2004. Subsurface Proterozoic stratigraphy and tectonics of the western plains of the Northwest Territories; Geological Survey of Canada, Bulletin 575, 81 p. doi:10.4095/219739

de Freitas, T.A., Harrison, J.C. and Mair, G., 1997. Sequence stratigraphic correlation chart of the lower Paleozoic strata of the Canadian Arctic Islands and parts of north Greenland; Geological Survey of Canada, Open File 3410, doi:10.4095/209912

Dostal, J., Baragar, W.R.A., and Dupuy, C., 1986. Petrogenesis of the Natkusiak continental basalts, Victoria Island, Northwest Territories, Canada; Canadian Journal of Earth Sciences: Volume 23, Issue 5, p.622-632.

Embry, A.F., 1991. Chapter 15: Middle-Upper Devonian Clastic Wedge of the Arctic Islands, in Geology of the Innuitian Orogen and Arctic Platform of Canada and Greenland; Trettin, H.P. (ed.); Geological Survey of Canada, Geology of Canada Series no. 3, p.255-279.

Embry, A.F., 1991. Chapter 14: Mesozoic History of the Arctic Islands, in, Geology of the Innuitian Orogen and Arctic Platform of Canada and Greenland; Trettin, H.P. (ed.); Geological Survey of Canada, Geology of Canada Series no. 3, p.371-432.

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 Cretaceous to Paleogene sequences of the Canadian Arctic region and Greenland; implications for the tectonic history of northern North America; Bulletin of Canadian Petroleum Geology: v.47, no.3, 1999, p.223-254.

Hubert, L.J., Rainbird, R.H., Jefferson, C.W., and Fraser, P., 2005. Map of mafic and ultramafic bodies related to the Franklin Large Igneous Province, Victoria Island, Nunavut, Victoria Island; Geological Survey of Canada, Open File 4926, scale 1:500 000, doi:10.4095/220618

Mall, A.D., 1976. Proterozoic and Paleozoic Geology of Banks Island, Arctic Canada; Geological Survey of Canada, Bulletin 258, 77 p. doi:10.4095/103364

Mall, A.D., 1979. Geology of Parker River, Bernard River, Cape M'Clure and Mercy Bay, District of Franklin; Geological Survey of Canada, Map 1455A, scale 1:250 000, doi:10.4095/109178

Mall,A.D., 1979. Geology, De Salis Bay, District of Franklin; Geological Survey of Canada, Map 1456A, scale 1:250 000, doi:10.4095/109182

Mall, A.D., 1979. Geology, Banks Island, District of Franklin; Geological Survey of Canada, Map 1454A, scale 1:500 000, doi:10.4095/109177

Mall, A.D., 1979. Mesozoic and Tertiary geology of Banks Island, Arctic Canada, the history of an unstable craton margin; Geological Survey of Canada, Memoir 367, 253 p. doi:10.4095/109620

Okulitch, A.V., 1991. Geology of the Canadian Arctic Archipelago, Northwest Territories and North Greenland; Geological Survey of Canada, Open File 2290, scale 1:1 000 000, doi:10.4095/131948

Okulitch, A.V. and Lumsy, J. 2006. Open File 5171, Northwest Territories Nunavut; Geological Survey of Canada, Map 1819/1071/12-G, Open File 3645, scale 1:1 000 000 (National Earth Science Series, Geological Atlas), doi:10.4095/221240

Rainbird, R.H., 1998. Bedrock and surficial geology, Wynniatt Bay, District of Franklin, Northwest Territories; Geological Survey of Canada, Open File 3571, scale 1:125 000, doi:10.4095/210085

Rainbird, R.H., Jefferson, C.W., Hildebrand, R.S., and Worth, J.K., 1994. The Shaler Supergroup and revision of Neoproterozoic stratigraphy in Amundsen Basin, Northwest Territories; Geological Survey of Canada, Current Research 1994-C, p.67-76.

Rainbird, R.H., Jefferson, C.W., and Young, G.M., 1996. The early Neoproterozoic sedimentary Succession B of northwestern Laurentia: Correlations and paleogeographic significance; Geological Society of America Bulletin, 108, p.454-470.

Thorsteinsson, R. and Tozer, E. T., 1962. Banks, Victoria, and Stefansson Islands, Arctic Archipelago; Geological Survey of Canada, Memoir 330, 85 p.

Recommended citation
Harrison, J.C., Ford, A., Mall, A.D., Rainbird, R.H., Hulbert, L.J., Christie, R.L., and Campbell, F.H.A., 2015. Geology, Tectonic assemblage map of Aulavik, Banks Island and northwestern Victoria Island, Northwest Territories; Geological Survey of Canada, Canadian Geoscience Map 35 (2nd edition, preliminary), scale 1:500 000, doi:10.4095/295660

Canadian Geoscience Maps

ess.nrcan.gc.ca

Canada

Authors: J.C. Harrison, A. Ford, A.D. Mall, R.H. Rainbird, L.J. Hulbert, R.L. Christie, and F.H.A. Campbell

Geological compilation by J.C. Harrison

Source map geology (senior authors) by A.D. Mall, R.H. Rainbird, L.J. Hulbert, R.L. Christie, and F.H.A. Campbell

GIS development by T. Lynds

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

Cartography by M.J. Babbick

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.

CANADIAN GEOSCIENCE MAP 35

GEOLOGY

TECTONIC ASSEMBLAGE MAP OF AULAVIK

Banks Island and northwestern Victoria Island, Northwest Territories

1:500 000

10 0 10 20 30 40 km

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, 21° 21'E, increasing 51.3'W annually. Readings vary from 21°48'E in the SW corner to 13°25'E in the NE corner of the map.

This map is not to be used for navigational purposes.

Title photograph: Shaler Supergroup near the Kuujjua River, Minto Inlet, Northwest Territories, Victoria Island, Nunavut.
Photograph by R.H. Rainbird, 2013-071

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.

CANADIAN GEOSCIENCE MAP 35

GEOLOGY

TECTONIC ASSEMBLAGE MAP OF AULAVIK

Banks Island and northwestern Victoria Island, Northwest Territories

2nd EDITION