Newfoundland Labrador

Natural Resources

Map 2009-29, OPEN FILE 013J/14/0272

Geology by A.M. Hinchey and C. Laflamme (2008)
GIS/digital cartography by N.A. Stapleton

Base map in digital format published at Geomatics Canada, Earth Sciences Sector, Natural Resources Canada, Ottawa

Contour Interval 50 feet
Elevations contoured in feet above mean sea level

Universal Transverse Mercator projection (UTM) Zone 21

North American Datum (NAD) 1927

Copies of this map may be obtained from the Geoscience Publication and Information Section, Geological Survey, Department of Natural Resources, Government of Newfoundland and Labrador, P.O. Box 8700, St. John's, NL, Canada A1B 4J6 (pub@gov.nl.ca)

Departmental website: http://www.nr.gov.nl.ca/nr/
Geological Survey website: http://www.nr.gov.nl.ca/mines&en/geosurvey/

This map is subject to revision and modification. Symbols for bedding and selected minor structures are not plotted directly at the exposure location.

Published 2009.

Recommended Citation

Hinchey, A.M. and C. Laflamme
2009: Preliminary Geology of the Monkey Hill Map Area (NTS 13J/14). Scale 1:50,000. Newfoundland and Labrador Department of Natural Resources, Geological Survey, Map 2009-29, Open File 013J/14/0272

Note

Open File reports and maps issued by the Geological Survey Division of the Newfoundland and Labrador Department of Natural Resources are made available for public use without being formally edited or peer reviewed. They are based upon preliminary data and evaluation.

The purchaser agrees not to provide a digital reproduction or copy of this product to a third party. Derivative products should acknowledge the source of the data.

Disclaimer

The Geological Survey, a division of the Department of Natural Resources (the "authors and publishers"), retain the sole right to the original data and information found in any product produced. The authors and publishers assume no legal liability or responsibility for any alterations, changes or misrepresentations made by third parties with respect to these products or the original data. Furthermore, the Geological Survey assumes no liability with respect to digital reproductions or copies of original products or for derivative products made by third parties. Please consult with the Geological Survey in order to ensure originality and correctness of data and/or products.

REFERENCES

Bailey, D.G.
1981: Kaipokok Bay - Big River, Labrador. Newfoundland Department of Mines and Energy, Geological Survey Map 81-18.

Clark, A.M.S.
1979: Proterozoic deformation and igneous intrusions in part of the Makkovik Province, Labrador. Precambrian Geology, Volume 10, pages 95-114.

Clark, A.M.S.
1979: A reinterpretation of the stratigraphy and deformation of the Aillik Group, Makkovik, Labrador, Unpublished Ph.D. thesis, Memorial University of Newfoundland, St. John's, Newfoundland, 346 pages.

Gandhi, S.S., Grasty, R.L. and Grieve, R.A.F.
1969: The geology and geochronology of the Makkovik Bay area, Labrador. Canadian Journal of Earth Sciences, Volume 6, pages 1019-1034.

Gower, C.F., Flanagan, M.J., Kerr, A. and Bailey, D.G.
1982: Geology of the Kaipokok Bay-Big River area, Central Mineral Belt, Labrador. Newfoundland Department of Mines and Energy, Mineral Development Division, Report 82-7, 77 pages.

Hinchey, A.M.
2007: The Paleoproterozoic metavolcanic, metasedimentary and igneous rocks of the Aillik Domain, Makkovik Province, Labrador (NTS Map Area 13O/03). *In* Current Research. Newfoundland and Labrador Department of Natural Resources, Geological Survey, Report 07-1, pages 25-44.

Hinchey, A.M. and LaFlamme, C.
2009: The Paleoproterozoic volcano-sedimentary rocks of the Aillik Group and associated plutonic suites of the Aillik domain, Makkovik Province, Labrador (NTS map area 13J/14). *In* Current Research. Newfoundland and Labrador Department of Natural Resources, Geological Survey, Report 09-1, pages 159-182.

Kerr, A.
1989: Early Proterozoic granitoid magmatism and crustal evolution in the Makkovik Province of Labrador: A geochemical and isotopic study. Unpublished Ph.D. thesis, Memorial University of Newfoundland, St. John's, Newfoundland, 515 pages.

1994: Early Proterozoic magmatic suites of the eastern Central Mineral Belt (Makkovik Province), Labrador: Geology, geochemistry and mineral potential. Newfoundland Department of Mines and Energy, Geological Survey, Report 94-3, 149 pages.

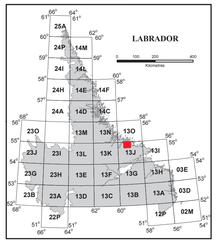
Kerr, A., Krogh, T.E., Corfu, F., Schärer, U., Gandhi, S.S. And Kwok, Y.Y.
1992: Episodic Early Proterozoic granitoid plutonism in the Makkovik Province, Labrador: U–Pb geochronological data and geological implications. Canadian Journal of Earth Sciences, Volume 29, pages 1166-1179.

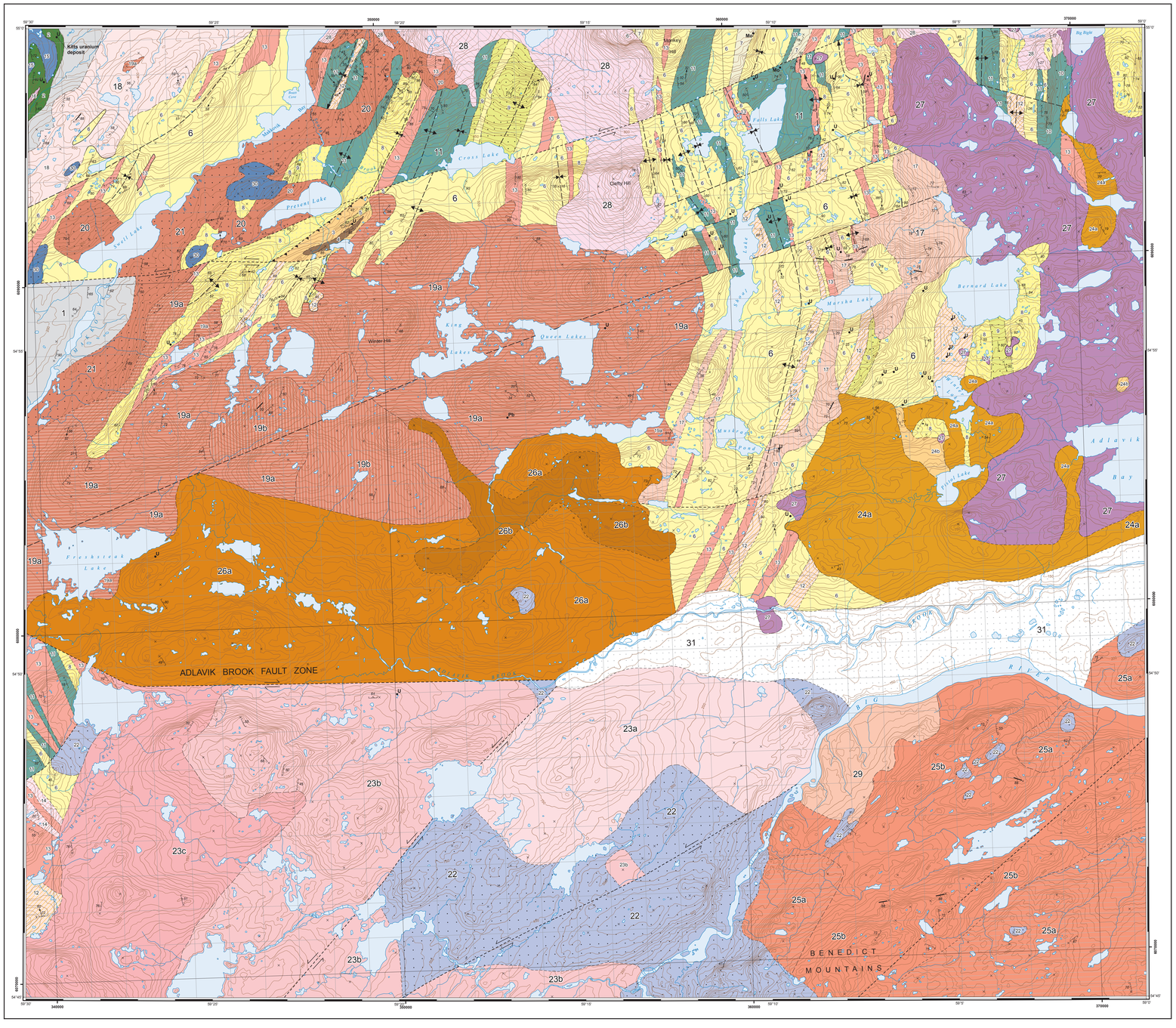
Ketchum, J.W.F., Culshaw, N.G., and Barr, S.M.
2002: Anatomy and orogenic history of a Paleoproterozoic accretionary belt: the Makkovik Province, Labrador, Canada. Canadian Journal of Earth Sciences, Volume 39, pages 711-730.

Marten, B.E.
1977: The relationship between the Aillik Group and the Hopedale gneiss, Kaipokok Bay, Labrador. Unpublished Ph.D. thesis, Memorial University of Newfoundland, St. John's, Newfoundland, 389 pages.

Schärer, U., Krogh, T.E., Wardle, R.J., Ryan, B., and Gandhi, S.S.
1988: U–Pb ages of early and middle Proterozoic volcanism and metamorphism in the Makkovik Orogen, Labrador. Canadian Journal of Earth Sciences, Volume 25, pages 1098-1107.

INDEX MAP





LEGEND

PLEISTOCENE - RECENT

31 — Fluvioglacial and glacial gravels and sand

PALEOPROTEROZOIC

INTRUSIVE ROCKS

Unclassified units - no stratigraphic order implied

30 — Medium- to coarse-grained, biotite-bearing gabbro, non-foliated, massive

29 — Medium- to coarse-grained, biotite–hornblende granodiorite, massive, undeformed, locally plagioclase porphyritic (possible equivalent of Numok Intrusive Suite or fine-grained Big River Granite)

Non-foliated intrusions ca. 1650 – 1640 Ma

Monkey Hill Intrusive Suite (ca. 1640 Ma)

28 — Fine- to medium-grained, biotite monzogranite to syenogranite and minor quartz monzonite, leucocratic, locally plagioclase porphyritic

Adlavik Intrusive Suite (ca. 1650 Ma)

27 — Medium-grained (locally coarse-grained) gabbro, includes leucogabbro and minor melanogabbro; biotite-bearing, locally plagioclase porphyritic

Non-foliated to weakly foliated intrusions ca. 1802 – 1795 Ma

Freshsteak granitoid

26b — Fine- to medium-grained, biotite–hornblende granodiorite, massive, leucocratic, equigranular, rarely plagioclase porphyritic

26a — Fine- to medium-grained, biotite–hornblende quartz monzonite to monzodiorite, massive, leucocratic, locally plagioclase porphyritic

Big River Granite (ca. 1802 Ma)

25b — Coarse-grained, magnetite- and fluorite-bearing, biotite monzogranite, K-feldspar phenocrysts preserve occasional pseudo-rapakivi texture, locally slightly foliated

25a — Coarse- to very coarse-grained, magnetite-bearing, hornblende–biotite monzogranite to syenogranite, locally varying to quartz syenite, K-feldspar phenocrysts preserve occasional pseudo-rapakivi texture, locally slightly foliated

Lanceground Intrusive Suite

24b — Fine- to medium-grained, massive, biotite granodiorite to locally monzogranite, undeformed

24a — Pistol Lake granite: pink to buff, medium- to coarse-grained, hornblende syenogranite to quartz syenite

Numok Intrusive Suite (ca. 1801 Ma)

23c — Pink-brown, medium- to coarse-grained, hornblende–biotite (± clinopyroxene) syenogranite to syenite, weakly to moderately foliated, locally potassium feldspar porphyritic

23b — Medium- to coarse-grained, massive, biotite–hornblende quartz monzonite to monzonite, locally porphyritic (K-feldspar), weakly foliated in areas, locally crumbly in appearance (due to presence of clinopyroxene and possible relict fayalite?)

23a — Coarse-grained, magnetite–biotite quartz monzonite to monzonite, non-foliated

Unnamed intrusion

22 — Fine- to medium-grained, biotite-bearing gabbro to locally leucogabbro, massive, occurs as xenoliths in Big River Granite and Numok Intrusive Suite

Moderately to strongly foliated intrusion ca. 1802 – 1800 Ma

Kennedy Mountain Intrusive Suite (Units 19–21 ca. 1800 Ma)

21 — Fine- to medium-grained, monzodiorite to granodiorite, foliated, locally plagioclase porphyritic, occurs in the Swell Lake area

20 — Medium- to coarse-grained, biotite monzogranite with minor syenogranite, locally foliated, often fluorite-bearing; possible northern

19b — Cross Lake granite: medium- to coarse-grained, biotite-bearing, hornblende monzogranite to granodiorite, foliated

19a — Cross Lake granite: medium- to coarse-grained, leucocratic, often fluorite-bearing, biotite monzogranite and minor syenogranite,

Long Island Quartz Monzonite (ca. 1802 Ma)

18 — Granodiorite, monzodiorite to quartz monzonite, plagioclase-porphyritic, leucocratic to melanocratic, moderately foliated

Syn-volcanic intrusions ca. 1860 – 1850 Ma

17 — Foliated quartz feldspar porphyritic granite(s), recrystallized, fine–grained; locally appears highly altered

Pre-1860 Ma intrusions

16 — Quartz-feldspar-porphyritic granite, biotite-bearing, leucocratic, locally sheared

15 — Kitts Metagabbro: Fine- to medium-grained metagabbro; amphiboles are tremolite to actinolite, locally coarse–grained

VOLCANIC AND SEDIMENTARY ROCKS

(1)Aillik Group ca. 1880 – 1860 Ma

14 — Strongly altered, feldspar porphyry interpreted to represent altered rhyolite, pink-grey, foliated

13 — Fine-grained, porphyritic to aphanitic rhyolite, locally flow-banded; includes minor felsic tuff, recrystallized

12 — Banded felsic tuff, includes minor lapilli tuff, tuffaceous sandstone, and rhyolite, foliated, recrystallized

11 — Fine-grained basalt, typically amphibolite grade, contains locally preserved calcite–epidote nodules, relict pillows, cut by quartz veins

10 — Fine-grained, mafic tuff (hornblende schist) with minor basalt flows, foliated, metamorphosed

9 — Polymictic, matrix-supported conglomerate, silica matrix, contains poorly sorted, subrounded clasts of dominantly pink to grey sandstone, tuffaceous sandstone and felsic tuff with minor foliated to non-foliated granite, quartzite, rhyolite, marble, basalt, mafic tuff and possible jaspenoid

8 — Thinly bedded to laminated arenaceous sandstone, interbedded with lesser siltstone, minor marble, commonly preserves primary structures; includes minor marble and tuffaceous sandstone

7 — Polymictic conglomerate to tuffaceous conglomerate, interbedded (2 to 10 m scale) with tuffaceous sandstone; clasts are poorly sorted, subrounded and are dominantly tuffaceous sandstone and minor metasandstone, non-foliated granite, amphibolite, rhyolite, quartzite, marble and mafic tuff

6 — Non to weakly bedded, tuffaceous to volcaniclastic sandstone; includes minor rhyolite flows, banded felsic tuff, and volcaniclastic breccia; pervasively altered

(2)Unclassified Present Lake sequence

5 — Orthoquartzite, massive to weakly bedded, contains disseminated sulphides (pyrite, molybdenite)

4 — Banded iron formation, comprising thinly banded (2 to 15 mm thick) magnetite–hematite layers interbedded with quartzite layers and minor semi-pelite layers

3 — Semipelite-quartzite (mudstone/sandstone), thinly bedded with beds that are 3- to 10-cm thick and isoclinally folded

(3)Post Hill Group

2 — Mafic pillow lava: fine-grained, amphibolite (metabasalt), preserves relict pillows, interbedded with minor horizons of psammite, pelite, argillite and orthoquarzite; part of the Kitts Pillow Lava formation (Marten, 1977)

ARCHEAN

1 — Locally migmatitic, quartzofeldspathic orthogneiss, strongly foliated, highly strained, contains 1- to 3-cm thick compositional banding

Notes: (1) this group was previously termed the Upper Aillik Group, see Marten (1977), and subsequently renamed Aillik Group by Ketchum *et al.*, 2002
(2) informal name; rocks were previously interpreted to be part of the Aillik Group, see Gower *et al.*, 1982; herein it is interpreted being correlated with part of the Post Hill Group
(3) previously termed the Lower Aillik Group, see Marten, 1977, and renamed based on distinct lithology and geochronological age, by Ketchum *et al.*, 2002

Symbols

- Geological Contact (defined, approximate, assumed)
- Strike-slip Fault (dextral, sinistral, assumed)
- Fault (defined, approximate, assumed)
- Thrust Fault (assumed)
- Antiformal Axis (approximate)
- Synformal Axis (approximate)
- Bedding (tops unknown, tops known)
- Dyke
- Flow Contact (top unknown)
- Fold Axial Plane (generation unknown)
- Fold Axis (generation unknown)
- Foliation or Cleavage (generation unknown, 1st generation)
- Igneous Layering (tops unknown)
- Intersection Lineation (1st generation)
- Linear Fabric (generation unknown, 1st generation)
- Slicken Striae
- U, Pb, Mo Mineral Occurence (uranium, lead, molybdenum)
- Stations

Map 2009-29

Preliminary Geology of the Monkey Hill Map Area (NTS 13J/14)

OPEN FILE 013J/14/0272

0 0.5 1 2 3 4 5 Kilometres

1:50,000