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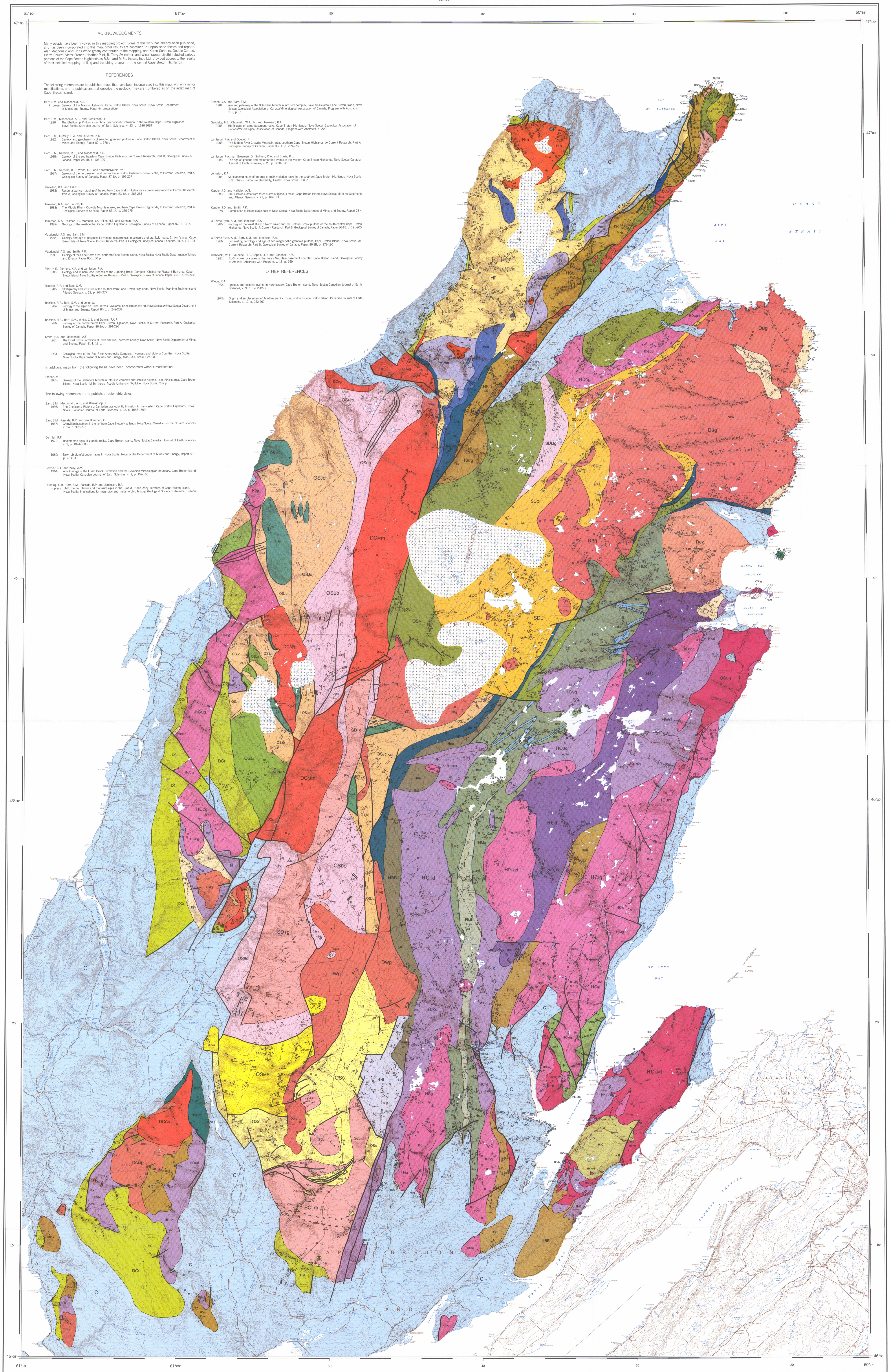

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Many people have been involved in this mapping project. Some of this work has already been published, and has been incorporated into this map; other results are contained in unpublished theses and reports. Alan Macdonald and Chris White greatly contributed to the mapping, and Karen Connors, Debbie Conrod, Pierre Doucet, Victor French, Heather Plint, R. Terry Swinamer, and Winai Yaowanoiyothin studied various portions of the Cape Breton Highlands as B.Sc. and M.Sc. theses. Inco Ltd. provided access to the results of their detailed mapping, drilling and trenching program in the central Cape Breton Highlands.

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LEGEND

STRATIFIED ROCKS

CARBONIFEROUS

- C — Undivided unmetamorphosed Carboniferous sedimentary rocks (may include sedimentary rocks of the Fisset Brook Formation in the northwestern highlands and Baddeck areas)

DEVONIAN TO CARBONIFEROUS

- DCF — FISSET BROOK FORMATION; basalt, rhyolite, pyroclastic rocks, siltstone, conglomerate, breccia (376 ± 12 Ma, Rb-Sr, Fisset Brook area, Cormier and Kelley, 1964, recalculated by Keppie and Smith, 1978; 370 ± 20 Ma, Rb-Sr, Lake Ainslie area, Cormier and Kelley, 1964, recalculated by Keppie and Smith, 1978; 342 ± 5 Ma, Rb-Sr, A. Huard, pers.comm., 1984)
- DCv — Basalt, rhyolite

DEVONIAN

- Dm — Mylonite, chlorite schist in shear zones
- DM — MacMillan Mountain volcanics; undivided rhyolite, felsic pyroclastic rocks, siltstone, quartz pebble conglomerate, mafic to intermediate flows (384 ± 10 Ma, Rb-Sr, Jamieson and Doucet, 1983)

SILURO-DEVONIAN

- SDc — Cheticamp Lake Gneiss; orthogneiss and semipelitic paragneiss, biotite schist (396 ± 2 Ma, U-Pb, [zircon] in migmatite leucosome, Dunning et al., in press)
- SDcp — Cheticamp Lake Gneiss; pelitic variety

SILURIAN

- SI — Ingonish Island rhyolite (412 ± 15 Ma, Rb-Sr, Keppie and Halliday, 1986)

ORDOVICIAN TO SILURIAN

MONEY POINT GROUP (OSMr - OSM)

- OSM — Undivided
- OSMp — Pelitic, semipelitic, and psammitic schist, metamorphosed conglomerate
- OSMm — Mafic to felsic volcanic and pyroclastic schists
- OSMr — Metarhyolite

JUMPING BROOK METAMORPHIC SUITE (OSJa - OSJe)

- OSJe — George Brook Amphibolite
- OSJd — Corney Brook Schist
- OSJc — Dauphinee Brook Schist
- OSJb — Barren Brook Schist
- OSJa — Faribault Brook Metavolcanics
- OSMR — Middle River metamorphic suite, undivided
- OSs — Sarach Brook Metamorphic Suite, undivided (433 ± 7/-4 Ma, U-Pb [zircon] in rhyolite, Dunning et al., in press)

HADRYNIAN TO DEVONIAN

GILLANDERS MOUNTAIN METAMORPHIC UNIT (HDGM - HDGp)

- HDGp — Psammitic to pelitic schist, metabasite, minor quartzofeldspathic augen gneiss
- HDGs — Semipelitic schist, quartzofeldspathic gneiss, impure quartzite, amphibolite, mafic and felsic metavolcanic rocks
- HDGm — Massive to foliated amphibolite, garnetiferous semipelitic schist, minor graphitic schist

HADRYNIAN TO SILURIAN

CAPE NORTH GROUP

- HSc — Undivided
- HScp — Pelitic gneiss
- HScm — Marble and calc-silicate gneiss
- HScg — Quartz-feldspar-biotite-hornblende gneiss

HADRYNIAN TO CAMBRIAN

- HЄN — Neils Harbour Gneiss (550 ± 80 Ma, Rb-Sr, Cormier, 1972, recalculated by Keppie and Smith, 1978; 403 ± 3 Ma, U-Pb [zircon], Dunning et al., in press; Coastal Gneiss of Wiebe, 1972)

HADRYNIAN

- HBB — Bateman Brook gneiss, undivided
- HBR — BARACHOIS RIVER FORMATION; potassium feldspar augen gneiss, psammite, amphibolite, schist, phyllite, biotite metasiltstone

MCMILLAN FLOWAGE FORMATION (HMa - HMe)

- HMe — Upper clastic member; semipelitic schists, psammite, amphibolite
- HMd — Marble member; marble and quartzite
- HMc — Middle clastic member; semipelitic, pelitic, and mafic schists, amphibolite, quartzite
- HMca — Roper Brook amphibolite
- HMb — Quartzite member; massive quartzite
- HMa — Lower clastic member; semipelitic and pelitic schists and phyllites, amphibolites, and mafic phyllites
- HG — GEORGE RIVER GROUP
- HK — Kellys Mountain gneiss (701 ± 66 Ma, Rb-Sr, Olszewski et al., 1981)
- HP — PRICE POINT FORMATION; dacitic-andesitic tuffs and flows
- Hgn — Undivided Hadrynian gneissic rocks

HELIKIAN

POLLETTS COVE RIVER GROUP (HPm, HP)

- HP — Semipelitic and psammitic gneiss amphibolite, granitoid gneiss, calc-silicate schist
- HPm — Marble

PLUTONIC ROCKS

DEVONIAN AND CARBONIFEROUS

- DCAg — Andrews Mountain Granite
- DCPg — Pleasant Bay granite (364 ± 35 Ma, Rb-Sr, Cormier, 1972, recalculated by Keppie and Smith, 1978)
- DCsg — Sugarloaf granite
- DCSPg — Salmon Pool granite (365 ± 10/-5 Ma, U-Pb [zircon], Jamieson et al., 1987)
- DCwg — Wilkie Sugarloaf Granite and related intrusions (330 ± 23 Ma, Rb-Sr, Keppie and Halliday, 1986)
- DCMm — Margaree Pluton, megacrystic granite (343 ± 17 Ma, Rb-Sr, O'Beirne-Ryan et al., 1986)
- DCGs — Gillanders Mountain syenogranite (341 ± 6 Ma, Rb-Sr, French and Barr, 1984)

DEVONIAN

- Dcg — Cameron Brook megacrystic granodiorite (402 ± 3 Ma, U-Pb [zircon], Dunning et al., in press)
- DLg — Lake Ainslie granodiorite and granite
- DBg — Black Brook Suite (granite and granodiorite), including White Point, Black Brook, Warren Brook, and Clyburn Brook plutons of Wiebe, 1972, 1975 (373 ± 2 Ma, U-Pb, [monazite], Dunning et al., in press)
- DGAg — Grande Anse Granite
- DGMg — Gillanders Mountain monzogranite (379 ± 19 Ma, Rb-Sr, French and Barr, 1984)
- DMg — McLean Brook granite
- Dwg — West Branch North River Granite (399.6 ± 4.6 Ma, Rb-Sr, O'Beirne-Ryan and Jamieson, 1986), includes Bothan Brook granite of O'Beirne-Ryan and Jamieson, 1986
- DPg — Park Spur Granite
- Dg — Undifferentiated unfoliated granitoid rocks
- Dmd — Microdiorite, occurring as dykes

SILURIAN TO CARBONIFEROUS

- SCLm — Leonard MacLeod Brook Complex; granite-microgranite occurring as an intrusion breccia in mafic volcaniclastic rocks (may be OSs)

SILURO-DEVONIAN

- SDMg — Middle Aspy River granitic orthogneiss
- SDGg — Gulch Brook Granite (413 ± 10 Ma, Rb-Sr, Keppie and Halliday, 1986)
- SDTg — Taylors Barren Pluton (419 ± 17 Ma, Rb-Sr, Gaudette et al., 1985)

ORDOVICIAN TO SILURIAN

- OScg — Cape Smokey Granite (493 + 1/-2 Ma, U-Pb, [zircon], Dunning et al., in press)
- OSPm — Megacrystic orthogneiss (Pleasant Bay Complex)
- OSBo — Belle Côte Road gneiss (Pleasant Bay Complex), mainly quartzofeldspathic orthogneiss (433 ± 20 Ma, U-Pb [zircon], Jamieson et al., 1986)

HADRYNIAN TO DEVONIAN

- HDGd — Gillanders Mountain diorite and satellitic dioritic plutons
- HDLd — Lake Ainslie dioritic rocks
- HDcgd — Cross Mountain granite, granodiorite, and leucotonalite
- HDGgd — Glasgow Brook granodioritic orthogneiss
- HDSgd — Ski Hill Granodiorite
- HDg — Undifferentiated granitoid rocks
- HDMl — Middle Head Leucodiorite
- HDMq — Morrison Brook Quartz Monzonite

HADRYNIAN TO CAMBRIAN

- HЄKd — Kathy Road Dioritic Suite (560 ± 2 Ma, U-Pb [zircon], Dunning et al., in press)
- HЄTd — Timber Lake Dioritic Suite
- HЄBg — Beinn Bhreagh granodiorite, diorite, granite
- HЄCg — Cheticamp Pluton (550 ± 8 Ma, U-Pb [zircon], Jamieson et al., 1986, 525 ± 40 Ma, Rb-Sr, Barr et al, 1986)
- HЄIg — Indian Brook Granodiorite (564 ± 5 Ma, U-Pb [titanite], Dunning et al., in press)
- HЄMg — Murray Brook Granodiorite
- HЄBgr — Birch Plain Granite (approximately 520 Ma, Rb-Sr, J. Blenkinsop, pers.comm.)
- HЄGg — Goose Cove Brook granite and granodiorite
- HЄKBg — Kerrs Brook Granite/Granodiorite
- HЄKg — Kellys Mountain granite
- HЄKMl — Kellys Mountain leucogranite (553 ± 17 Ma, Rb-Sr, Cormier, 1972, recalculated by Keppie and Smith, 1978)
- HЄSl — St. Anns Leucogranite (515 ± 17 Ma, Rb-Sr, Cormier, 1980)
- HЄGq — Gisborne Flowage Quartz Diorite (564 ± 2 Ma, U-Pb [zircon], Dunning et al., in press)
- HЄMq — Murray Mountain Quartz Monzodiorite
- HЄIt — Ingonish River Tonalite (555 ± 2 Ma, U-Pb [zircon], Dunning et al., in press)

HADRYNIAN

- HKd — Kellys Mountain dioritic rocks (636 ± 69 Ma, Rb-Sr, Gaudette et al., 1985)
- Hd — Undifferentiated dioritic rocks
- Hwd — Wreck Cove Dioritic Suite (560 Ma, $^{40}Ar/^{39}Ar$ hornblende, P.H.Reynolds, pers.comm.)
- HBg — Baddeck River granodiorite (556 ± 4 Ma, U-Pb [zircon], Dunning et al., in press)
- Hsg — Snake Cat Lake granodiorite
- HNg — New Glen megacrystic granite (708 ± 53 Ma, Rb-Sr, Krueger Enterprises, Inc., pers.comm., 1984)
- HNl — North Branch Baddeck River Leucotonalite (614 ± 38/-4 Ma, U-Pb [zircon], Jamieson et al., 1986)

HELIKIAN

- Ha — Anorthosite
- HRa — Red River anorthosite
- Hm — Monzodiorite, diorite, dioritic gabbro
- Hs — Syenite
- HLs — Lowland Brook syenite (1040 + 10/-40 Ma, U-Pb [zircon], Barr et al., 1987)

Note: Mafic and lamprophyric dykes occur in most of the units, except the Carboniferous sedimentary rocks - these have not been identified individually

Drift-covered area
Rock outcrop, area of outcrop, float
Geological boundary (defined, approximate)
Bedding, top known (inclined, vertical, overturned)
Bedding, top unknown (inclined, vertical)
Primary flow structure in igneous rock (inclined)
Schistosity (inclined, vertical, dip unknown)
Gneissic foliation (inclined, vertical, dip unknown)
Lineation (inclined, inclined but plunge unknown, first generation, second generation)
Fault (assumed)
Thrust fault (defined, assumed; teeth indicate upthrust side)
Shearing and dip (inclined, vertical)
Antiform (assumed)
Synform (assumed, plunge known)
Quarry or mine
Mine or mineral prospect (lead, zinc, copper gold, molybdenum) ... Pb, Zn, Cu, Au, Mo

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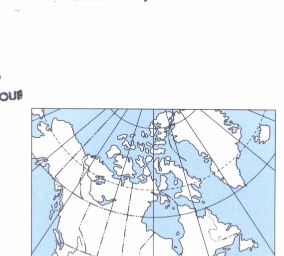
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Nova Scotia Department of Mines and Energy

Canada

Geology by S.M. Barr, R.A. Jamieson and R.P. Raeside, 1982-1986

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MAP 1752A

GEOLOGY

NORTHERN CAPE BRETON ISLAND

NOVA SCOTIA

Scale 1:100 000 - Échelle 1/100 000

Kilometres 2 0 2 4 6 8 Kilomètres

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Mean magnetic declination 1992, 22°29′ W decreasing 5.9′ annually. Readings vary from 22°51′ W in the NE corner to 22°05′ W in the SW corner of the map

Elevations in feet above mean sea level

	11 N/2	11 N/1
	11 K/15	11 K/16
11 K/11	11 K/10 1752A	11 K/9
11 K/6	11 K/7	11 K/8
11 K/3	11 K/2	11 K/1

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1752A

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