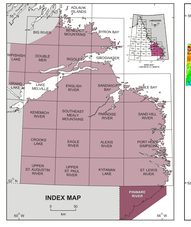
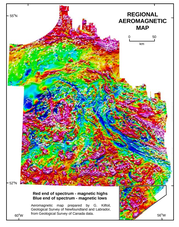
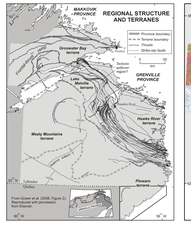
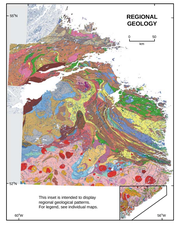
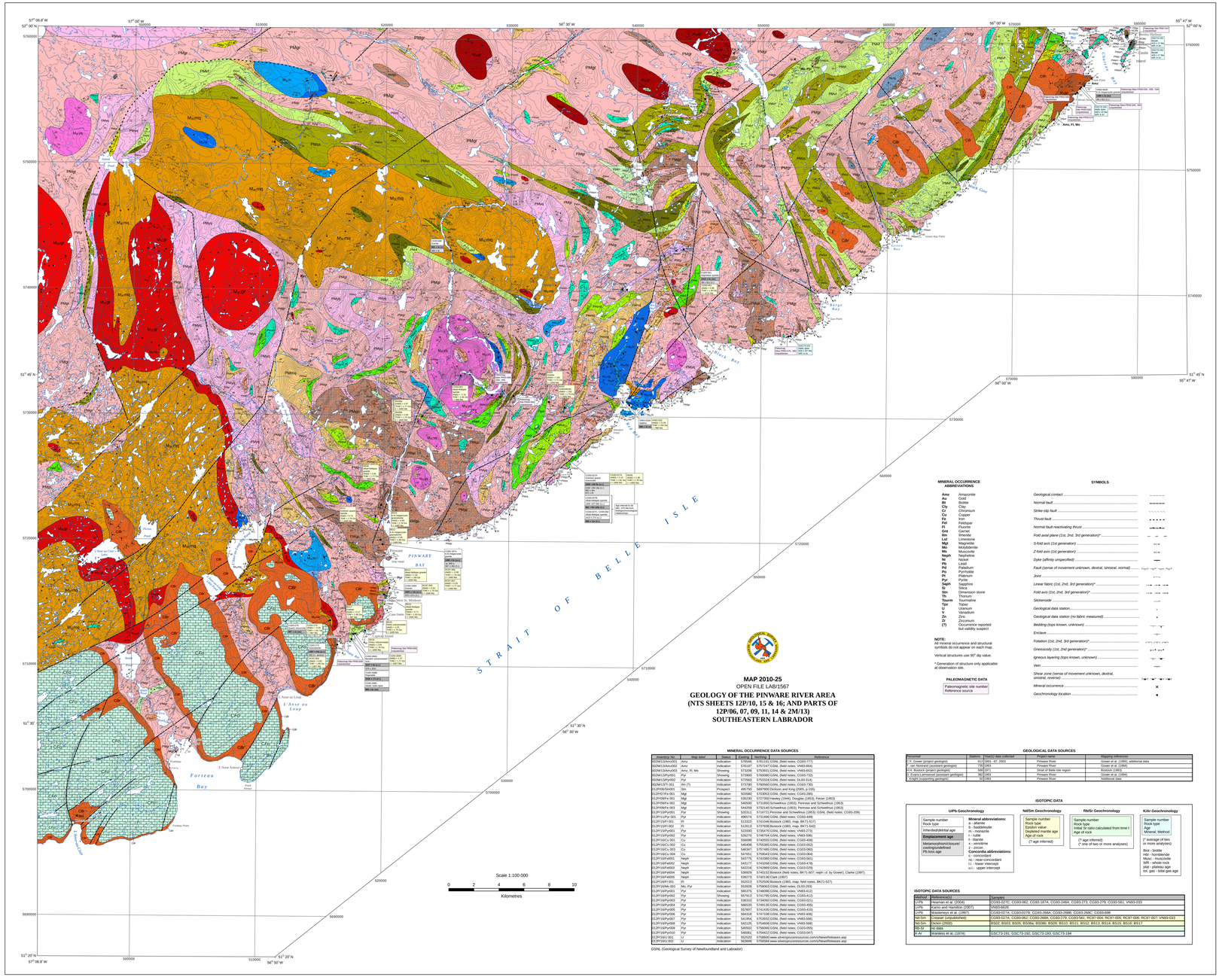
Newfoundland Labrador
NATURAL RESOURCES











MAP 2010-25

OPEN FILE LAB/1567

GEOLOGY OF THE PINWARE RIVER AREA (NTS SHEETS 12P/10, 15 and 16; AND PARTS OF 12P/06, 07, 09, 11, 14 & 2M/13) SOUTHEASTERN LABRADOR

PINWARE RIVER

A preliminary coloured version of this map appeared page-size, together with a report, and was based on data collected during the 1993 field season (Gower et al., 1994). Additional field data were collected in subsequent years, especially during mapping by C.F. Gower in 2003 along Highway 510. The present map also incorporates field data recorded by Bostock (1983), making use of unpublished compilations by H.H. Bostock, R.F. Emslie, and R.V. Kirkham, and includes data from Wardle (1979) in the Forteau Bay sections, and whole-rock geochemical analyses. U/Pb geochronological results (Heamanes et al., 1997, Heamen et al., 2004; Kamo and Hamilton, 2007), Nd-Sm isotopic data (R.A. Cressey, unpublished – see digital database; Dickin, 2000), K-Ar data (Wanless et al., 1974), and paleomagnetic sites (S. Murthy et al., unpublished – see digital database) are also shown. Localities designated as mineral occurrences are based mostly on observations made during the 1993 field season, but include earlier and later reported discoveries (see Mineral Occurrence Table; current to 2005).

Since the preliminary report was published, interpretation for the region has evolved, so there are some differences between the compilation presented here and that published in the preliminary report. Major changes include the recognition that the Pinware River complex is not a simple antiform, as had been applied to the whole of eastern Labrador, and from integration with data from adjacent map areas. Pre-1994 data station sites have been digitized from where originally located on aerial photographs or (rarely) on topographic maps, so reliability of location is likely mostly dependent on initial plotting accuracy. Subsequent locations are based on GPS-supported readings. Geological boundaries are moderately controlled, being positioned from outcrop data and extrapolated using structural observations, regional aeromagnetic data and topographic trends.

As is characteristic of metamorphic and plutonic terranes, individual outcrops are typically very complex, and commonly embody several different rock types. Generally, the unit polygon depicted is based on what was judged to be the dominant rock type present, but this approach was not universally followed, due to the exigencies of specific situations, such as the need to emphasize the occurrence of a rock type of economic interest, for example. In such cases, the predominant lithology can be determined by consulting the 'Unit designator' string for that locality given in the digital database. The user is alerted to the fact that, in the digital database, no attempt has been made to reconcile rock names applied to field outcrops, versus those applied to stained slabs, or petrographic thin sections. Differences may be due to subsequent, more refined identifications, but other reasons may apply, such the sample (or thin section) not being representative of its source. Unit designator and polygon labels applied are based on an awareness of such factors.

Recommended citation

Gower, C.F., 2010. Geology of the Pinware River area (NTS sheets 12P/10, 15 and 16; and parts of 12P/06, 07, 09, 11, 14 and 02M/13) southeastern Labrador Geological Survey, Mines Branch, Department of Natural Resources, Government of Newfoundland and Labrador, Map 2010-25, Open File LAB/1567.

Geological cartography by T. Pattenaude, Cartographic Unit, Geological Survey, Department of Natural Resources.

Digital NTS base maps (NTS 02M/13; 12P/06, 07, 09, 10, 11, 14, 15 and 16) used for this map are available from Surveys and Mapping Branch, Natural Resources Canada.

Magnetic declination at 52° 00' N, 57° 00' W at the start of 2010 was 21° 56' W.
Elevations are in feet above sea level. Contour interval is 50 feet (12P/06, 07, 09, 10, 11, 14, 15 and 16) or 60 feet (02M/13).
UTM (Universal Transverse Mercator) Grid Zone 21, NAD (North American Datum) 27.

Correspondence

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

NOTE: Map 2010-25 is one of twenty-five maps on the geology of the Grenville Province in eastern Labrador and adjacent eastern Makkovik Province produced by the Geological Survey, Mines Branch, Department of Natural Resources, Government of Newfoundland and Labrador.

Mines Branch website: http://www.nr.gov.nl.ca/mines/index.html.

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MINERAL OCCURRENCE DATA SOURCES

Occurrence No.	Map label	Status	Existing commodities	Reference
02NA/13/ev001	Amz	Indication	S?/Au/Ag	S?/Ba/Zn/Pb/Cu/Ag	GSNL (field notes; CGS5777)
02NA/13/ev002	Amz	Indication	S?/Au/Ag	S?/Ba/Zn/Pb/Cu/Ag	GSNL (field notes; VM3-854)
02NA/13/ev003	Amz, Pl, Mo	Showing	S?/Au/Ag	S?/Ba/Zn/Pb/Cu/Ag	GSNL (field notes; VM3-852)
02NA/13/ev001	Pyr	Showing	S?/Au/Ag	S?/Ba/Zn/Pb/Cu/Ag	GSNL (field notes; CGS5-742)
02NA/13/ev002	Pyr	Indication	S?/Au/Ag	S?/Ba/Zn/Pb/Cu/Ag	GSNL (field notes; CGS5-314)
02NA/13/?/-001	Im (?)	Indication	S?/Au/Ag	S?/Ba/Zn/Pb/Cu/Ag	GSNL (field notes; CGS5-707)
02PD/06/ev001	Sm	Prospect	480750	5697900	Jackson and King (2005, p.135)
02PD/06/ev002	Sm	Prospect	480750	5697900	Jackson and King (2005, p.135)
02PD/06 v 001	Mgt	Indication	526130	5727350	Hawley (1946); Douglas (1953); Fetzer (1953)
02PD/06 v 002	Mgt	Indication	540500	5731850	Schwebius (1953); Pemose and Schwebius (1953)
02PD/06 v 003	Mgt	Indication	544208	5723140	Schwebius (1953); Pemose and Schwebius (1953)
02P/15/Pyr001	Pyr	Showing	520311	5718721	Pemose and Schwebius (1953); GSNL (field notes; CGS5-208)
02P/11/Pyr 001	Pyr	Indication	496574	5701466	GSNL (field notes; CGS5-448)
02P/15/Pt 001	Pt	Indication	513322	5741048	Bostock (1983, map; BK71-517)
02P/15/Pt 002	Pt	Indication	513322	5741048	Bostock (1983, map; BK71-517)
02P/15/Pyr001	Pyr	Indication	522000	5739470	GSNL (field notes; VM3-1170)
02P/15/Pyr002	Pyr	Indication	526270	5740704	GSNL (field notes; VM3-596)
02P/15/Cu 001	Cu	Indication	506668	5740950	GSNL (field notes; CGS5-419)
02P/15/Cu 002	Cu	Indication	545436	5750385	GSNL (field notes; CGS5-052)
02P/15/Cu 003	Cu	Indication	546347	5757485	GSNL (field notes; CGS5-060)
02P/15/Cu 004	Cu	Indication	547651	5760043	GSNL (field notes; CGS5-064)
02P/15/Nep001	Neph	Indication	541775	5743360	GSNL (field notes; CGS5-562)
02P/15/Nep002	Neph	Indication	543177	5743358	GSNL (field notes; CGS5-479)
02P/15/Nep003	Neph	Indication	543177	5743358	GSNL (field notes; CGS5-479)
02P/15/Nep004	Neph	Indication	526926	5745157	Bostock (field notes; BK71-607, depth 1.8); by Gower); Clarke (1997)
02P/15/Pt005	Neph	Indication	530273	5745136	Clark (1997)
02P/15/Pt 101	Pt	Indication	512413	5752064	Bostock (1983, map; field notes; BK71-527)
02P/15/Mo 001	Mo, Pyr	Indication	553928	5758063	GSNL (field notes; DL93-293)
02P/15/Pyr001	Pyr	Indication	565175	5748096	GSNL (field notes; VM3-612)
02P/15/Pyr002	Pyr	Showing	557913	5747790	GSNL (field notes; CGS5-412)
02P/15/Pyr003	Pyr	Indication	538153	5734050	GSNL (field notes; CGS5-031)
02P/15/Pyr004	Pyr	Indication	565520	5749135	GSNL (field notes; CGS5-455)
02P/15/Pyr005	Pyr	Indication	564518	5747108	GSNL (field notes; CGS5-403)
02P/15/Pyr006	Pyr	Indication	564518	5747108	GSNL (field notes; VM3-408)
02P/15/Pyr007	Pyr	Indication	541954	5753932	GSNL (field notes; VM3-566)
02P/15/Pyr008	Pyr	Indication	541125	5754808	GSNL (field notes; VM3-568)
02P/15/Pyr009	Pyr	Indication	546502	5756060	GSNL (field notes; CGS5-050)
02P/15/Pyr010	Pyr	Indication	546502	5756422	GSNL (field notes; CGS5-047)
02P/15/U 001	U	Indication	552520	5758060	www.silverquestresources.com/s/NewsReleases.asp
02P/15/V 002	V	Indication	553848	5758058	www.silverquestresources.com/s/NewsReleases.asp

GSNL (Geological Survey of Newfoundland and Labrador)

GEOLOGICAL DATA SOURCES

Acronym	Station	Station type	Date(s) data collected	Project name	Mapping reference(s)
C.F. Gower (project geologist)	912	1991, 97, 2003		Pinware River	Gower et al. (1994); additional data
van Nostrand (project geologist)	730	1993		Pinware River	Gower et al. (1994)
H.H. Bostock (project geologist)	588	1971		Strait of Belle Isle region	Bostock (1983)
T. Evans-Lamswood (project geologist)	30	1993		Pinware River	Gower et al. (1994)
Knight (supporting geologist)	93	1993		Pinware River	Additional data

ISOTOPIC DATA

U/Pb Geochronology

Sample number
Rock type
Inherited/detrital age

Emplacement age

Metamorphism/closure/cooling/unroofed
Pb loss age

Nd/Sm Geochronology

Sample number
Rock type
Epsilon value
Depleted mantle age
Age of rock

(? age inferred)

Rb/Sr Geochronology

Sample number
Rock type
Initial Sr ratio calculated from time 1
Age of rock

(? age inferred)
(* one of two or more analyses)

K/Ar Geochronology

Sample number
Rock type
Age
Mineral; Method

(? average of two or more analyses)

Bot - biotite
Hbl - hornblende
Musc - muscovite
Whole - whole rock
plat - plateau age
tot. gas - total gas age

ISOTOPIC DATA SOURCES

Abbreviation(s)	Reference(s)	Samples
U-Pb	Heamen et al. (2004)	CGS3-027C; CGS3-027E; CGS3-187A; CGS3-248A; CGS3-273; CGS3-279; CGS3-561; VM3-033
U-Pb	Kamo and Hamilton (2007)	VM3-662B
U-Pb	Wasteneys et al. (1997)	CGS3-027A; CGS3-027B; CGS3-268A; CGS3-268B; CGS3-268C; CGS3-498
Nd-Sm	Cressey (unpublished)	CGS3-027A; CGS3-062; CGS3-268A; CGS3-279; CGS3-561; RC37-006; RC37-008; RC37-009; RC37-007; VM3-033
Nd-Sm	Dickin (2000)	RN32; RN35; RN36; RN38a; RN38b; RN39; RN40; RN41; RN42; RN43; RN44; RN45; RN46; RN47
Rb-Sr	no data	
K-Ar	Wanless et al. (1974)	GSC?3-191; GSC?3-192; GSC?3-193; GSC?3-194

LEGEND

DEVONIAN (?)

Dd Sandwich Bay and Battle Harbour dykes

EARLY CAMBRIAN

Ꞓ Forteau Formation

Ꞓbr Brador Formation (subdivided into L'Anse-au-Clair, Crow Head and Daisy Sabbin members)

NEOPROTEROZOIC – EARLY CAMBRIAN

NPcl Lighthouse Cove Formation

NPbt Bateau Formation

NEOPROTEROZOIC

NPdn NPgt NPsb

NPdn Double Mer Formation

NPgt Gilbert arkose

NPsb Sandwich Bay conglomerate

Nc Nd Nq

Nc Clastic dykes

Nd Long Range dykes

Nq Quartz veins

LATE MESOPROTEROZOIC (M$_2$ 1200 – 900 Ma)
LATE POST-GRENVILLIAN INTRUSIONS (M$_3$ ca. 975 – 955 Ma)
e.g., Lake Plain pluton

M$_3$gb M$_3$gr M$_3$gt M$_3$ym M$_3$mz M$_3$zm M$_3$zy M$_3$zt

M$_3$gb Massive to weakly foliated megacrystic/porphyritic granite to quartz monzonite

M$_3$gr Massive to weakly foliated granite to alkali-feldspar granite

M$_3$gt Massive to weakly foliated leucogabbro to leuconorite

M$_3$ym Massive to weakly foliated monzogabbro and monzonorite

M$_3$mz Massive to weakly foliated quartz monzonite; mantled feldspar textures

M$_3$zm Massive to weakly foliated monzonite to monzodiorite

M$_3$zy Massive to weakly foliated syenite; quartz syenite and alkali-feldspar quartz syenite

M$_3$zt

EARLY POST-GRENVILLIAN INTRUSIONS (M$_3$ ca. 985 – 975 Ma)
e.g., Beaver Brook and Picton Pond plutons

M$_3$gr M$_3$ym M$_3$mz M$_3$zm M$_3$zy M$_3$zq M$_3$zt

M$_3$gr Weakly to moderately foliated granite to alkali-feldspar granite

M$_3$ym Weakly to moderately foliated leucogabbro to leuconorite

M$_3$mz Weakly to moderately foliated monzogabbro to monzonorite

M$_3$zm Weakly to moderately foliated monzonite to quartz monzonite

M$_3$zy Weakly to moderately foliated gabbro, norite and troctolite

M$_3$zq Weakly to moderately foliated syenite, quartz syenite and alkali-feldspar syenite

L'Anse-au-Diable, York Point, Gilbert Bay mafic dykes

SYN-GRENVILLIAN INTRUSIONS (M$_M$ ca. 1085 – 985 Ma)

M$_M$gd M$_M$gb M$_M$gr M$_M$gt M$_M$ym M$_M$zt

M$_M$gd Moderately to strongly foliated granodiorite to quartz diorite

M$_M$gb Moderately to strongly foliated megacrystic/porphyritic granodiorite to quartz diorite

M$_M$gr Moderately to strongly foliated granite to alkali-feldspar granite

M$_M$ym Moderately to strongly foliated augerite- or nepheline-bearing syenite

M$_M$zt Unnamed mafic dykes (Makkovik Province and adjacent Grenville Province)

PRE-GRENVILLIAN INTRUSIONS (M$_M$ ca. 1200 – 1085 Ma)
e.g., Gilbert Bay pluton

M$_M$gr M$_M$ym

M$_M$gr Weakly to strongly foliated granite

M$_M$ym Weakly to strongly foliated monzonite to monzonorite

MIDDLE MESOPROTEROZOIC (M$_1$ 1350 – 1200 Ma)
e.g., Upper North River intrusion

M$_1$gr M$_1$zy M$_1$zt M$_1$zq

M$_1$gr Massive or weakly foliated granite and alkali-feldspar granite

M$_1$zy Weakly to strongly foliated syenite, quartz syenite and alkali-feldspar syenite

M$_1$zq

EARLY MESOPROTEROZOIC (M$_1$ 1600 – 1350 Ma)
e.g., Upper Paradise River, Kylaman Lake and 13B/12 intrusions, and Michael Gabbro

M$_1$ym M$_1$zm M$_1$zy M$_1$gt M$_1$zt M$_1$zq M$_1$zu M$_1$zv M$_1$zw M$_1$zx M$_1$zy M$_1$zz

M$_1$ym Massive or weakly foliated monzogabbro to monzonorite; indistinctly layered in places

M$_1$zm Weakly to markedly foliated amphibolite, plus leucocratic and melanocratic variants; granulite facies equivalents

M$_1$zy Massive, weakly or strongly foliated diorite to amphibolite, may be metamorphic derivative of monzodiorite or monzogabbro; coarse grained to pegmatitic and characteristically white-weathering

M$_1$gt Massive, weakly to strongly foliated megacrystic/porphyritic granitoid rocks

M$_1$zq Massive, weakly or strongly foliated granite to quartz monzonite

M$_1$zu Massive, weakly or strongly foliated leucogabbronorite and anorthositic gabbro, locally grading into gabbronorite, locally coronitic

M$_1$zv Moderately to strongly foliated monzonorite

M$_1$zw Moderately to strongly foliated monzonite to quartz monzonite

M$_1$zx Moderately to strongly foliated monzonite to monzodiorite

M$_1$zy Massive to strongly foliated gabbro, norite and troctolite, commonly layered; subophitic and locally coronitic; includes recrystallized derivatives retaining igneous textures

M$_1$zm Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

M$_1$zq Moderately to strongly foliated syenite and quartz syenite

M$_1$zt Mafic dykes; includes Michael Gabbro

LATE PALEOPROTEROZOIC AND EARLY MESOPROTEROZOIC (PM 1800 – 1350 Ma)
(Ages generally unknown, but ca. 1650 Ma and 1500 – 1470 Ma rocks identified)
RECRYSTALLIZED IGNEOUS ROCKS

PMzr PMgd PMzd PMgr PMzr PMzm PMmz PMym PMzy PMzm PMgm

PMzr Medium-grained, equigranular, recrystallized weakly to strongly foliated diorite, quartz diorite and to leucanorthosite

PMgd Weakly to strongly foliated granite to granodiorite

PMgr Megacrystic/porphyritic recrystallized granite to quartz monzonite

PMzr Medium- to coarse-grained, recrystallized weakly to strongly foliated granite and alkali-feldspar granite

PMzm Medium- to coarse-grained, recrystallized leuconorite, leucogabbro

PMmz Medium- to coarse-grained, recrystallized, weakly to strongly foliated, monzodiorite to monzonite

PMym Medium- to coarse-grained, recrystallized, weakly to strongly foliated quartz monzonite

PMzy Medium- to coarse-grained, gabbro, norite and troctolite

PMzm Medium- to coarse-grained, recrystallized, weakly to strongly foliated tonalite to granodiorite

PMzy Medium- to coarse-grained, recrystallized, weakly to strongly foliated syenite, alkali-feldspar syenite and quartz syenite

PMgm Amphibolite; generally thought to be derived from mafic dykes

SUPRACRUSTAL ROCKS PROVISIONALLY ASSIGNED AS PITTS HARBOUR GROUP

PMsc PMsp PMsqz PMsm PMsz PMsf PMsm

Sedimentary protolith

PMsc Calc-silicate rocks, compositionally layered, medium grained

PMsp Pelitic schist and gneiss

PMsqz Quartzite, meta-arkose, thin to thick bedded

PMsm Quartz-feldspar psammitic schist and gneiss; medium grained and commonly rusty-weathering

PMsz Coarse-grained to pegmatitic-granitic material (diatexite), characteristically associated with psammitic gneiss and quartzite

Volcanic protolith

PMsf Fine- to medium-grained, banded quartzofeldspathic rocks; locally having lensoid shapes, possibly felsic volcaniclastic protolith

PMsm Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods; interpreted as mafic volcanic rocks

LATE PALEOPROTEROZOIC (P$_2$ 1800 – 1600 Ma)
LATE LABRADORIAN GRANITOID INTRUSIONS (P$_2$ 1660 – 1600 Ma)
e.g., Paradise Arm intrusion and Hawke Bay intrusive suite

P$_2$gr P$_2$gb P$_2$gd P$_2$zd P$_2$gr P$_2$zm P$_2$zq P$_2$zr P$_2$zt P$_2$zv P$_2$zd

P$_2$dr Diorite, quartz diorite and tonalite; locally grading into leucogabbronorite

P$_2$gb Alkali-feldspar granite, granite and quartz syenite forming discrete plutons

P$_2$gd Granite to granodiorite forming discrete unmingmatized plutons

P$_2$gb Megacrystic/porphyritic granite to granodiorite

P$_2$gr Granite and minor alkali-feldspar granite

P$_2$zm Monzonorite and monzogabbro

P$_2$zq Quartz monzonite, including rare quartz syenite

P$_2$zr Monzonite, including minor syenite

P$_2$zt Syenite to quartz syenite forming discrete plutons

P$_2$zd Unnamed mafic dykes

LATE LABRADORIAN ANORTHOSITIC AND MAFIC INTRUSIONS (P$_2$ 1660 – 1600 Ma)
e.g., White Bear Arm complex and Sand Hill Big Pond intrusion

P$_2$zw P$_2$zm P$_2$zy P$_2$zq P$_2$zu P$_2$zt P$_2$zv

P$_2$zq Weakly to markedly foliated mafic granulite, plus leucocratic and melanocratic variants

P$_2$zm Weakly to markedly foliated amphibolite, plus leucocratic and melanocratic variants

P$_2$zw Massive to strongly foliated anorthosite and leucogabbronorite

P$_2$zy Massive to strongly foliated gabbro and norite, commonly layered; subophitic and locally coronitic

P$_2$zu Primary textured to recrystallized leucogabbronorite and leucogabbro; coronitic locally

P$_2$zt Primary textured to recrystallized leucotroctolite

P$_2$zv Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing

EARLY LABRADORIAN MAFIC AND ASSOCIATED ROCKS (P$_2$ 1710 – 1660 Ma)
e.g., Alexis River anorthosite (assigned here although age is uncertain)

P$_2$zq P$_2$zu P$_2$zt P$_2$zm P$_2$zy P$_2$zm

P$_2$zq Weakly foliated to gneissic amphibolite and mafic granulite, plus leucocratic and melanocratic variants

P$_2$zm Weakly foliated to gneissic anorthosite and leucogabbronorite

P$_2$zu Weakly foliated to gneissic leucogabbronorite and leucogabbro; coronitic locally

P$_2$zt Weakly foliated to gneissic monzonorite and monzogabbro

P$_2$zy Weakly foliated to gneissic gabbro and norite

P$_2$zm Massive, weakly or strongly foliated ultramafic rocks, commonly layered and locally showing cumulate textures

EARLY LABRADORIAN GRANITOID AND ASSOCIATED ROCKS (P$_2$ 1670 and 1671 Ma)
e.g., Nevezuk Island and Red Island events

P$_2$gd P$_2$zd P$_2$zm P$_2$zy P$_2$zq P$_2$zu P$_2$zt P$_2$zm P$_2$zm

P$_2$zd Foliated to gneissic diorite to quartz diorite, and compositionally equivalent well-banded gneiss; in part derived from leucogabbronorite

P$_2$gd Foliated to gneissic granodiorite and compositionally equivalent well-banded gneiss

P$_2$zd Foliated to gneissic megacrystic/porphyritic granitoid rocks, augen gneiss

P$_2$zr Foliated to gneissic granite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P$_2$zm Foliated to gneissic quartz monzonite, grading into diorite or syenite, and compositionally equivalent well-banded gneiss

P$_2$zm Foliated to gneissic monzonite and monzodiorite, and compositionally equivalent well-banded gneiss

P$_2$zy Foliated to gneissic syenite, alkali-feldspar syenite and alkali-feldspar granite, and compositionally equivalent well-banded gneiss

P$_2$zm Amphibolite skialiths, lenses and layers (mainly remnants of former dykes)

PRE-LABRADORIAN GRANITOID ROCKS (P$_M$ 1800 – 1710 Ma)
(Age uncertain; certainly pre-1870 Ma, probably 1800 – 1770 Ma)

P$_M$gd P$_M$zd P$_M$zq P$_M$zu P$_M$zv P$_M$zt P$_M$zt P$_M$zm

Sedimentary protolith

P$_M$zc Calc-silicate rocks, compositionally layered, medium grained

P$_M$zp Fine- to medium-grained pelitic schist and gneiss

P$_M$zq Weakly to strongly foliated amphibolite, plus leucocratic and melanocratic variants; granulite facies equivalents

P$_M$zt Quartz-feldspar psammitic schist and gneiss; medium grained and commonly rusty-weathering

P$_M$zm Metasedimentary diatexite; coarse grained to pegmatitic and characteristically white-weathering

Volcanic protolith

P$_M$vf Fine- to medium-grained, banded quartzofeldspathic rocks; locally have lensoid shapes, possibly indicating felsic volcaniclastic protolith

P$_M$vm Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods; interpreted as mafic volcanic rocks

P$_M$vp Felsic volcanic porphyry interpreted to be hypabyssal

MAFIC AND ULTRAMAFIC INTRUSIONS (P$_2$ 1660 – 1600 Ma)
e.g., Pinware River complex

P$_2$zu P$_2$zy P$_2$zq P$_2$zt P$_2$zm

P$_2$zu Mafic to ultramafic rocks, compositionally layered, medium grained

P$_2$zy Coronitic gabbro and norite

P$_2$zq Quartzite, meta-arkose, thin to thick bedded

P$_2$zt Quartz-feldspar psammitic schist and gneiss; medium grained and commonly rusty-weathering

Volcanic protolith

P$_2$zb P$_2$zf P$_2$zv P$_2$zm P$_2$zm

P$_2$zb Volcanic breccia, angular clasts, grading into agglomerate

P$_2$zf Fine- to medium-grained, banded quartzofeldspathic rocks; locally have lensoid shapes, possibly indicating felsic volcaniclastic protolith

P$_2$zv Intermediate volcanic rocks

P$_2$zm Fine- to medium-grained, banded amphibolite containing quartz-feldspar layers and calc-silicate pods; interpreted as mafic volcanic rocks

P$_2$vp Felsic volcanic porphyry interpreted to be hypabyssal

ARE GENERALLY POORLY CONSTRAINED

β δ

β Brittle deformation; cataclastic rocks, pseudotachylite

δ Ductile deformation; mylonite, straight gneiss

ARE GENERALLY POORLY CONSTRAINED

f k g q

f Aplite, microgranite (felsite)

k Carbonate vein

g Pegmatite

q Quartz vein

NOTES

1. Legend is common to all maps (Map 2010-01 to Map 2010-25), but all units do not appear on every map.
2. Uncoloured units do not appear as polygons on maps, but are in unit-designator strings in database.
3. Some mafic dykes are shown as polygons (especially where orientation is unknown).