GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Natural Resources
Geological Survey

LEGEND

(This legend is common to Open File maps 95-01 (NTS map sheet 14C/6), 95-02 (NTS map sheet 14C/11) and 95-03 (NTS map sheet 14C/14). Some units and locations referred to in the legend may not appear on this map sheet.)

MESOPROTEROZOIC

P2d *Fine-grained to very coarse-grained, dark-green- to brown-weathering, olivine-bearing gabbroic dykes. Many exhibit a greenschist-facies alteration*

MESOPROTEROZOIC

NAIN PLUTONIC SUITE (NPS)

P2dg *Granitic pegmatite to aplite dykes, generally white- to pale-grey-weathering, varying from undeformed to weakly foliated and lineated. May include older intrusions*

P2Mg? *Pink aplitic to pegmatitic dykes that may be equivalent to the* Manvers granite

P2Aq, P2lg *Hornblende-bearing and fayalite-bearing, medium- to coarse-grained, red- to pink-weathering, granite and associated rocks of the* Dog Island area *(14C/11), including the* Alagaiat **(P2Ag)** *and* Ivikxuak **(P2lg)** *granites;* **P2lgn,** *brown-weathering diorotic and hybrid rocks associated with the* Ivikxuak granite. *Locally strongly foliated at contact with gneisses*

P2Kg, P2Wg *Hornblende-bearing granite and quartz monzonite of* Karl Oom Islands **(P2Kg)** *and* Whale Island **(P2Wg)** *(14C/11). May be part of the* Ivikxuak granite

P2f *Ferrodiorite of the* West Red Island intrusion *(NTS 14C/6,11); contains inclusions of* P2an and Aq; **P2lg,** *granite*

P2h *Hybrid diorotic rocks of the* Skull Island – Sandy Island *area (NTS 14C/6), comprising tabular to ovoid potassium feldspar and ovoid quartz xenocrysts in a gabbroic matrix, similar to* P2lgn. *Locally exhibits net-vein-type structure indicating incomplete mixing of the granitic and mafic components*

P2N Newark Island Layered Intrusion (NTS 14C/11): *layered, medium- to fine-grained troctolite*

P2an *Undivided anorthositic and related rocks, commonly intruded by a network of granitic veins. Includes norite, leuconorite, and leucogabbro;* **P2anp,** *porphyritic diabasic marginal gabbronorotic rocks on Noazunaluk and Noazunakuluk Islands (NTS 14C/11);* **P2m,** *well-layered and granular-textured mafic rocks adjacent to the* Paul Island leuconorite pluton *(NTS 14C/6). Dominated by rocks of olivine gabbronorotic composition; locally display veinlets and segregations of pyroxene, and irregular networks and folded sills—dykes of anorthosite and norite. The compositional layering may be folded. These rocks are distinguished from nearby mafic gneisses* (Am) *in being generally hornblende-poor, but olivine-bearing*

P2C Club Island Intrusion (NTS 14C/11): *olivine-bearing(?) melanorite, showing textural indications of recrystallization, and cut by granitic dykes. May not be part of the* Nain Plutonic Suite *because it is intruded by partly recrystallized mafic dykes*

P2Jn *Leuconorite dyke within the* Jonathon intrusion *(NTS 14C/14)*

P2J Jonathon intrusion (NTS 14C/11,14): *fine-grained leucotroctolite, coarse-grained leucotroctolite and olivine-leuconorite*

P2JI Jonathon intrusion (NTS 14C/11,14): *well-layered, but variably-deformed, granular-textured mafic and ultramafic rocks bordering the western margin of the intrusion. Dominated by rocks of gabbroic, gabbronoritic, and noritic composition that locally contain olivine; lesser amounts of anorthositic rocks occur within this disrupted layered sequence. This layered succession is characterized by veinlets and segregations of pyroxene. The compositional layering is locally folded and sheared, and on Carey Island (NTS 14C/11) it has a migmatitic appearance. Irregular networks and folded sills—dykes of anorthosite and purple norite are common; the sills are thickest on* Jonathon Island *(NTS 14C/14), where they also include more tonalitic phases. These rocks are generally devoid of significant amounts of hydrous minerals*

MAFIC DYKES OF PROBABLE ARCHEAN TO MESOPROTEROZOIC AGE (Ticks and numbers indicate the dip direction and amount. See additional notes on right margin of map regarding other alphabetical modifiers for the dykes.)

dgn *Fine- to medium-grained gabbronorotic (ferrodiorotic) dykes; may be related to the ferrodiorotic rocks of the* Nain Plutonic Suite

dS Sculpin dykes: *olivine-bearing, fine- to coarse-grained gabbroic and gabbronoritic dykes; some have abundant brown hornblende. Vary from massive to foliated, some have a diffuse layering oblique to their margins, and they locally exhibit variable effects of metamorphic recrystallization. Those on* Central Island *(NTS 14C/11) are broken up by granitic sheets*

dK Khemertut dykes: *hornblende- and phlogopite-rich, locally carbonate-bearing, lamprophyres*

dA Akkuneq dykes: *a multigeneration assemblage of variably recrystallized, massive to foliated amphibolite and 'mafic granulite' (orthopyroxene-bearing) dykes. This regionally diverse assemblage of rocks may include intrusions of* Archean to Mesoproterozoic age, *but criteria to correlate specific generations are equivocal*

PALEOPROTEROZOIC

Ptmz Satok Island monzonite (NTS 14C/6): *buff-weathering, medium-grained olivine + clinopyroxene monzonite. Contains inclusions of recrystallized norite, and is intruded by* Khemertut lamprophyre dykes

Ptmo Satok Island gabbro (NTS 14C/6): *massive to foliated, layered to gneissose, ilmenite- and apatite-rich olivine gabbro and hornblende ferrodiorite*

Ptg *Massive to schistose, pink-, grey- to rusty- weathering aplitic to pegmatoidal granites, locally porphyritic. May include more than one age of rocks; Fluorite, allanite and orthopyroxene are locally present. The* Loon Island granite *(NTS 14C/11) predates at least some of the deformed mafic dykes*

ARCHEAN

Adg *Various aplitic to pegmatitic dykes, intrusive into the gneisses but older than the* Akkuneq dykes

Ag *Weakly foliated to diffusely layered and gneissose, grey-weathering, locally porphyritic granitoid rocks, including metre-scale dykes and sheets that may not be related to the larger units. Compositional variations are from quartz diorite to leucogranite. Locally contains inclusions of older gneiss. In places, some of the rocks assigned to this subdivision resemble* Ptg *(e.g., rocks of central* Web Island *(NTS 14C/11) resemble those of central* East Red Island *(NTS 14C/11)). The mineral assemblage of these rocks in the northern part of the area is largely that of amphibolite facies, although remnants of orthopyroxene are preserved locally; however, rocks assigned to this subdivision in the* Nukasusutok – Akuliatut Islands *area (NTS 14C/6) are at granulite facies;* **Agb,** *schistic granulite facies granitoid rock containing orthopyroxene- and garnet-bearing diffuse melt veins and irregular pods; similar to* Aqb

Amo *Olivine-bearing meta-igneous rocks of indeterminate affinity. Derived from a well-layered medium- to coarse-grained olivine gabbronorite, and locally retains subophitic texture, could be an early member of the* Nain Plutonic Suite

Aum Ultramafic rocks: *peridotites occurring in association with some of the mafic gneisses, and as podiform units within the quartzofeldspathic gneisses. Units on* Ulighordlialuk and Akuliatut Islands *(NTS 14C/6) are an agmatite of ultramafic blocks in a groundmass of quartzofeldspathic granulite and pegmatite*

Apg *Gneisses of metasedimentary origin. Dominantly semipelitic and pelitic gneisses containing garnet and sillimanite, and having a lit-par-lit network of white granitoid sheets. Garnet and sillimanite are, in many places, replaced by pyroxene hornfels assemblages comprising combinations of cordierite, hypersthene, and spinel; some gneisses also contain regional metamorphic cordierite and hypersthene. Corundum is present in paragneiss on one of the islets west of* Kamutiktalik Island *(NTS 14C/6);* **Apgs,** *white, grey and rusty quartzite; units on* Ulighordlialuk Island *and to the south are largely megabreccias composed of quartzite blocks in a host of grey gneiss and pegmatite*

Am *Black- to dark-green-weathering, massive to well-layered, mafic gneisses of diverse origin, probably representing supracrustal and plutonic components. These gneisses are usually characterized by dykes and veins of a migmatizing granitic component, in places reflecting the intrusion of the enclosing quartzofeldspathic gneiss. The mafic gneisses are hornblende-rich rocks that encompass mafic granulite and amphibolite. Some of the melanocratic rocks on* West Red Island *(NTS 14C/11) and* Nukasusutok Island *(NTS 14C/6), and a leucocratic member on* Paul Island *(NTS 14C/6), contain olivine*

Aq *Amphibolite- to granulite-facies layered quartzofeldspathic gneiss. At outcrop scale, commonly contain parallel mafic gneiss layers derived from pre-deformational mafic dykes and from disrupted metagabbroic plutonic and metavolcanic supracrustal rocks, and lesser paragneiss and ultramafic lenses and rafts. The layering in these rocks is locally continuous, having a mylonitic and laminar character, some of which is a consequence of high-grade zonal ductile deformation. The following types are distinguished on the map:* **Aqd,** *diffusely layered nebulitic and massive granulite- and retrogressed granulite-facies gneisses, probably including granitoid rocks of different age than some of the migmatitic rocks;* **Aqm,** *grey- to brown-weathering migmatitic gneiss, at amphibolite- and retrogressed granulite-facies;* **Aqmp,** *pegmatite-rich granulite-facies gneisses in which the multi-generation granitic pegmatitic component is both parallel to, and highly transgressive to, the layering; Includes agmatitic rocks in which the older basic and quartzofeldspathic gnesses are subordinate to the pegmatite component;* **Aqb,** *blebby gneiss in which garnet + orthopyroxene-bearing mobilizate forms irregular and foliation-parallel veins.*

OPEN FILE MAP 95-02

KEY

(This key is common to Open File maps 95-01 (NTS map sheet 14C/6), 95-02 (NTS map sheet 14C/11) and 95-03 (NTS map sheet 14C/14). Some symbols in the key may not appear on this map sheet.)

Outcrop examined, binocular observation

Geological contact (defined, approximate, assumed)

Gneissic layering and associated foliation (inclined, vertical, dip unknown)

Mineral foliation in dykes and non-migmatized rocks (inclined, vertical, dip unknown)

Foliation axial planar to folds of gneissic layering

Broad warps and open folds of the layering, with axial trend

Fold plunge

Fold asymmetry, viewed normal to plunge

Mineral lineation, probably of more than one age

Igneous layering in plutons and dykes (inclined)

Deformed compositional layering in border zones of the Jonathon Intrusion and Paul Island intrusion (inclined, vertical)

Dip of defined contact between gneisses and plutons of the Nain Plutonic Suite

Quartz and pegmatitic segregations in granites of unit Ptg

Sulphide occurrence or rusty zone

Topographic linear

Ductile shear zone

Fault

Limit of mapping

NOTES

1. The following are the alphabetical designators for Akkuneq, Sculpin and Khemertut dykes. Mineralogical modifiers are based on thin section examination, but some 'granulite' and 'amphibolite' designators are based on mesoscopic field and hand specimen attributes.

f = foliated and/or lineated dykes
f' = folded dykes
g = granulite (orthopyroxene-bearing) dykes
a = amphibolite dykes (lack orthopyroxene)
c = clinopyroxene + biotite-rich dykes
p = feldspar phenocrystic/xenocrystic dykes
l = layered dykes
s = glomeroporphyritic or 'snowflake-textured' dykes
d = dioritic dykes (may be related to the NPS in some cases)

Where numbers appear next to multiple dykes they indicate the relative age as determined from dyke intersections, 1 being the oldest.

2. Metamorphic indicators for all units, based both on mesoscopic characteristics of the rocks and on thin section examination, are as follows:

A = amphibolite facies, may be totally retrogressed granulite facies
G = granulite facies, with minimal retrogression
Gr = granulite facies assemblages showing significant alteration to lower grade minerals (both amphibolite and greenschist-facies)
PH = pyroxene hornfels contact metamorphic overprint as defined by the secondary association in paragenesis of cordierite + hypersthene and cordierite + spinel after garnet and sillimanite respectively.

3. Names of topographic features given in parentheses are taken from 'List of Labrador Eskimo Place Names' by E. P. Wheeler, 2nd. (National Museum of Canada, Bulletin 131, 1953). Names already on the base maps are augmented with new names only where there is a significant difference between the NTS name and Wheeler's designation.

4. Information on this map is based on data collected by B. Ryan in July and August, 1990. Additional data for Dog Island supplied by K. Royse (Leicester University) based on work in July and August, 1994.

5. The distribution of the plutonic rocks of the Nain Plutonic Suite on the western part of West Red Island is modified from Wiebe (1981).

6. Geochronological data presented on the map are from several sources. Some data are from unpublished reports by Connelly (1992, 1993, 1994) on file with the Geological Survey, some are from personal communication with J. C. Connelly, and some are from published reports by Connelly and Ryan (1993, 1994).

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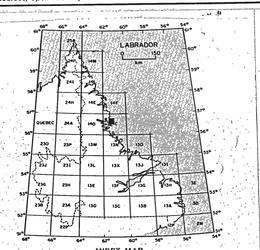

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DOG ISLAND

LABRADOR NORTH DISTRICT

NEWFOUNDLAND

Scale 1:50,000 Echelle

Miles 1 0 1 2 3 4 5 Miles
Metres 1000 0 1000 2000 3000 4000 Mètres
Yards 1000 0 1000 2000 3000 4000 Yards

This Provisional Map is equivalent to a standard map in accuracy of control

Some names on this map are not yet official. Corrections or additions are invited by the Survey and Mapping Branch

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection