Pleistocene Surficial deposits

Unconsolidated sediments (comp. various sources)

Pennsylvanian

Howley Formation P:H

Q

Grey to red sandstone, pebble-cobble conglomerate and siltstone, black carbonaceous shale, minor bituminous coal (Hyde, 1982)

Mississippian to Pennsylvanian

Barachois Group

Arkosic and subarkosic, grey to red sandstones and pebbly sandstones, red to grey siltstones, grey to black shale and coal beds; the lithologies are arranged in fining-upwards sequences; locally developed conglomerates occur along fault margins of the St. George subbasin (Williams et al., 1985)

Codroy Group

Intercalated, coarse- to fine-grained red beds; evaporites including sulphate and chloride salts; limestones and dolostones, with some grey lacustrine siliciclastic rocks (Williams et al., 1985)

M:D

Deer Lake Group

Red and grey conglomerate, sandstone, siltstone and mudstone; grey calcareous dolostone and dolomitic limestone, with some oil shale (Williams et al., 1985)

Wigwam Brook Formation Mi:W

Red, brown and grey sandstone; grey to red, pebble to boulder conglomerate; grey limestone (Hyde, 1982)

Wetstone Point Formation

Grey, green and red sandstone and siltstone, grey pebbly sandstone and pebble-cobble conglomerate, and minor green and dark grey to black mudstone and grey limestone (Hyde, 1982)

Late Devonian to Mississippian

Anguille Group (Deer Lake Basin)

Grey and red sandstone, conglomerate, black and grey shale, minor dolostone and limestone, deposited in lacustrine and fluviatile environments (Williams et al., 1985)

Anguille Group (Bay St. George Subbasin)

Grey and red sandstone, conglomerate, black and grey shale, minor dolostone and limestone, deposited in lacustrine and fluviatile environments (Williams et al.,

**Early to Late Devonian** 

Bell Island Granite D:B

Massive, medium-grained, grey to pink, microcline granite (Bostock et al., 1983a)

Middle to Late Devonian

D:h

Silicified hydrothermal breccia and cataclastic rocks derived from various country rocks along the Cape Ray fault zone, including the Strawberry granite (comp. Dube and Lauziere, 1997)

Quartz-sanidine porphyry dykes with no ferromagnesian

Strawberry granite (Newfoundland)

Coarse-grained, pink to red, biotite- and/or muscovitebearing feldsparphyric granite (Hall and van Staal, 1999)

minerals (Chorlton and Knight, 1983)

Middle Devonian

Isle aux Morts Brook Granite

D:S

Mainly coarse-grained, equigranular, locally megacrystic, alkali feldspar-rich leucogranite with minor muscovite; includes related fine-grained hypabyssal aplitic dykes (van Staal et al., 1996b)

Early to Middle Devonian

Petites Granite D:P

Pink to red, coarse-grained, equigranular, potassium feldspar-rich granite (Williams et al., 1985)

Late Silurian to Late Devonian

Mafic dykes (comp. Chorlton and Knight, 1983)

Felsic dykes, including plagioclase- and ferromagnesianporphyritic dacite dykes, and quartz- and feldsparporphyritic leucocratic dykes (Chorlton and Knight,

Pegmatite (van Staal et al., 1996b)

Porphyritic granite, granodiorite, monzodiorite and quartz diorite (comp. Chorlton, 1980a)

Fine-grained, pink, feldsparphyric, locally amphibolebearing granite (van Staal et al., 1996b)

Fine- and medium-grained, pink biotite- and muscovitebearing, two-feldspar leucogranite; local pegmatite and a single exposure of a tuffisite dyke (comp. Chorlton and

Late Silurian to Early Devonian Clam Bank Group

SD:RB

Cross-bedded, red sandstone and pebble conglomerate, SD:C grey sandstone and fossiliferous limy shale in central part of sequence (Williams, 1985a)

Rose Blanche Granite Mainly white, rarely pink, foliated, equigranular, biotitemuscovite granite, locally garnet-bearing, and tonalite and granodiorite; contacts with country rock generally gradational and characterized by abundant migmatites;

elongated xenoliths or enclaves of country rock common

(comp. van Staal et al., 1996b; comp. Chorlton, 1980a)

Fine-grained hypabyssal aplitic dykes (comp. van Staal

Early Silurian to Late Devonian Gull Lake intrusive suite

SD:GL

Post-tectonic biotite and biotite-muscovite granite and granite porphyry; massive to foliated granodiorite and tonalite; gabbro and diabase (comp. Smyth and Schillereff, 1981a)

Early Silurian to Early Devonian Devils Room granite

SD:V

Megacrystic to medium-grained, biotite and biotitemuscovite granite; mylonitic granite and amphibolite (comp. Smyth and Schillereff, 1981a; comp. Owen,

Early to Late Silurian

Wild Cove Pond Igneous Suite

Diorite, granodiorite, biotite granite, and two-mica S:W granite (Hibbard, 1983)

Intrusions into Sops Arm Group

Quartz monzonite sills and felsite dykes and sills (Smyth and Schillereff, 1981a)

Sops Arm Group

S:A

Subaerial felsic ash-flow tuffs and rhyolite flows, lesser unwelded tuff, volcanic breccia and mafic flows; limy siltstone and sandstone, limestone, slate, argillite, and conglomerate; minor quartz-carbonate schist (comp. Smyth and Schillereff, 1981a)

Early Silurian

Topsails Igneous Suite

eS:T

Granite, granodiorite, syenite and gabbro, including peralkaline intrusions, and lesser volcanic rocks (comp. Whalen and Currie, 1988)

Taylor Brook gabbro

Typically medium-grained, mesocratic, layered gabbro, containing calcic plagioclase and various combinations of olivine, augite and orthopyroxene; the layering is cut by a stock and dykes of massive pegmatitic gabbro; minor fine-grained pyroxene-bearing diorite (comp. Owen, 1991)

Intrusions into Coney Head Complex

Biotite microgranite, muscovite granite sheets, and mafic to intermediate dykes (comp. Smyth and Schillereff,

Pegmatite and granite (Cawood and van Gool, 1998)

Island Pond pluton (Grand Lake)

Foliated and locally mylonitic, medium- to coarsegrained granite and pegmatite (comp. Cawood and van

Little Paddle Point pluton

Medium-grained, equigranular granodiorite with minor granite, gabbro and diorite (Cawood and van Gool,

Glover Island Granodiorite

Foliated, white to beige, medium-grained, equigranular, biotite-amphibole granodiorite with minor granite, gabbro and diorite (comp. Cawood and van Gool, 1998; comp. Whalen, 1993b)

Tan to rose, massive to schistose, very fine-grained felsic porphyry (Owen, 1986)

Late Ordovician to Middle Devonian

Windsor Point complex O-D:W

Conglomerate, greywacke, siltstone and shale; pebbly sandstone; graphitic shale; limestone; gabbro; chloritesericite schist; breccia and cataclastic rocks; rhyolite, felsic pyroclastic and epiclastic rocks; pillowed, massive and brecciated basalt; granite (comp. Hall and van Staal,

Late Ordovician to Early Silurian

Southern Long Range mafic intrusions Mafic plutons, layered gabbro, hornblende gabbro lecogabbro, diorite, quartz diorite, and minor granodiorite (Currie and van Berkel, 1992)

Late Ordovician

Red Rocks granite

Pink to red, mainly equigranular but locally microcline megacrystic, fine- to coarse-grained, two-mica granite (comp. Hall and van Staal, 1999)

Dragon Lake granite

Coarse-grained, orange-pink, muscovite-biotite granite to monzogranite containing small microcline megacrysts (comp. Hall and van Staal, 1999)

Pin granite

Coarse-grained, two-feldspar, leucocratic muscovite granite with large perthite grains (Chorlton and Knight,

Port aux Basques granite

Strongly lineated and foliated, pink or white trondhjemite, tonalite, granodiorite, granite and monzonite sheets with aplitic and pegmatitic phases (van

Long Point Group

Lower formation of thin-bedded, fossiliferous limestone with local reefs, and sandy limestone and cross-bedded sandstone at base; upper formation of thin-bedded limy sandstone, limestone and shale, and local thin olistostromal units (comp. Williams, 1985a)

Middle to Late Ordovician Goose Tickle Group

O:K

Lower dark grey to black, graptolitic shale (Black Cove Formation) overlain by American Tickle Formation of dark grey shale interbedded with green-grey sandstone, siltstone and yellow- and grey-weathering, thin bedded limestone, dolomitic limestone and dolostone, and locally shale-pebble conglomerate; shales are metamorphosed to slates and phyllites in more deformed areas; thick intervals of massive-bedded, green-grey and green sandstone and pebbly sandstone known on Port au Port Peninsula only as the Mainland Sandstone; lenses of very thick limestone conglomerate and breccia and beds of limestone conglomerate overlain by calcarenite and calcisiltite (Daniel's Harbour Member); all units dismembered into melange-like deposits locally (Knight, in preparation)

Middle Ordovician

Table Head Group mO:T

Largely comprises dark grey to light grey, thick to massive bedded, stylonodular, fossiliferous, dominantly fine grained, argillaceous and dolomitic limestone; locally grainstone; locally interbedded with fenestral limestone and dolostone near the base; minor spongebryozoan bioherms and large slump units and locally a conglomeratic aspect (Table Point Formation) overlain locally by fine-grained, fossiliferous and graptolitic, parted, stylonodular and ribbon limestone and shale (Table Cove Formation); carbonate conglomerate and megaconglomerate interbedded with calcarenite, ribbon limestone and green-grey to black shale occurs locally at the top on Port au Port Peninsula (Cape Cormorant Formation) (comp. Stenzel et al., 1990; comp. Knight

and Cawood, 1991)

Early to Late Ordovician

Southwest Brook complex

Foliated and massive tonalite, biotite granite, granodiorite, quartz diorite and leucogranite; commonly porphyritic; medium- to coarse-grained hornblende gabbro and diorite; weakly foliated fine- to mediumgrained diabase (comp. Currie and van Berkel, 1992; comp. Kean, 1983)

Harbour Le Cou Group

Thick- to medium-bedded psammite with thin beds of rusty, sulphidic pelite and sheets of garnet- and/or clinopyroxene-bearing, locally pillowed, amphibolite; calc-silicate pods or lenses are common in thick psammite beds; thin-bedded, rusty sulphidic pelite to semipelite, minor psammite with thin bands of coticule and sparse to absent amphibolite; sulphidic pelite and semipelite metamorphosed to biotite-muscovite-garnetsillimanite schist; includes some narrow sheets of Rose Blanche Granite (comp. van Staal et al., 1996b)

Pierre's Pond plutonic suite

Mainly foliated, biotite-hornblende granodiorite, and hornblende tonalite, diorite and gabbro (comp. Whalen,

Early to Middle Ordovician

Margaree orthogneiss

Mainly white, biotite and/or hornblende-bearing granodioritic to tonalitic orthogneiss containing abundant sheets and enclaves of amphibolite, metagabbro, metadiorite, hornblendite and metapyroxenite; intruded by a white to pinkish biotite granitic gneiss; all Margaree orthogneisses characteristically lack garnet; includes minor Port aux Basques granite (comp. van Staal et al., 1996a)

Kelby Cove orthogneiss

Mainly whitish grey, less commonly pink, gneissic granitoid rock varying from hornblende- and biotitebearing tonalite to biotite- and/or muscovite-bearing granite; contains abundant bands of amphibolite, metagabbro, metadiorite, hornblendite and pyroxenite; intruded by white, locally muscovite-bearing granitic gneiss; garnet and/or gedrite are locally abundant in both felsic and mafic orthogneisses; includes minor Port aux Basques granite (van Staal et al., 1996b)

Unseparated Kelby Cove and Margaree orthogneisses

Tonalite, granodiorite, and granite containing biotite, subordinate muscovite, and local hornblende; local

pegmatite; lateral equivalents of rocks assigned to the Kelby Cove and Margaree orthogneisses in the Rose Blanche area (NTS 11O/10); may also include the northern extension of the Port aux Basques granite (comp. Chorlton and Knight, 1983)

St. George Group

Off-white, light grey, grey, dark grey to black, bioturbated, stromatolitic, thrombolitic, thinly bedded and laminated, clean and dolomitic limestone as well as intraclastic, peloidal, skeletal and rarely oolitic grainstone; burrow-mottled, bioturbated, thin bedded and laminated and lesser stromatolitic, light grey to grey dolostone and dololaminite and lesser green-grey and grey shaly dolostone and shale; rare chert and dolostone pebble conglomerate and sand layers associated with disconformity surfaces; locally cut by dolostone matrix breccias below disconformities; limestones are replaced both locally and pervasively in many places by tan-grey

Early Ordovician



Mafic and silicic volcanic rock and high level intrusions with minor volcaniclastic sedimentary rock (Cawood and van Gool, 1998)

Late Cambrian to Late Ordovician

Grand Bay Complex

Mainly thin-bedded, brown to grey semipelitic and pelitic biotite-, garnet-, staurolite- and kyanite-bearing schists with common thin coticule layers and sparse volcanogenic, feldspathic psammite beds; locally gedrite-bearing, commonly associated with sulphide mineralization (e.g. Isle aux Morts prospect); fine- to coarse-grained amphibolite, locally garnet-bearing amphibolite; in places interlayered with thin coticule and pelite bands; local ultramafic schist; includes interleaved Kelby Cove orthogneiss (comp. van Staal et al., 1996b)

Late Cambrian to Early Ordovician

Cape Ray Granite

Mainly coarse-grained, moderately to strongly foliated, alkali feldspar megacrystic granite to granodiorite; abundant mafic and sparse ultramafic xenoliths (van

Cape Ray Granite?

Deformed megacrystic quartz monzonite, locally augen gneiss, minor megacryst-poor patches; abundant aplite and pegmatite; tentatively correlated with the Cape Ray Granite in the Port aux Basques area (NTS 110/11) (comp. Chorlton and Knight, 1983)

Pvnns Brook Complex

Mafic volcanic rocks, minor conglomerate; altered gabbro and ultramafic rocks; serpentinite (comp. Williams et al., 1983)

Staal et al., 1996a)

Long Range Mafic-Ultramafic Complex

Mainly coarse-grained, layered to massive, locally strongly foliated, largely amphibolitic metagabbro, including troctolite, olivine gabbro, anorthositic gabbro, anorthosite, clinopyroxene gabbro and rare gabbronorite; ultramafic rocks, including peridotite, dunite, serpentinite and local rodingite; metadiabase and plagiogranite; metavolcanic rocks and dykes; amphibolite (comp. Chorlton and Knight, 1983; comp. van Staal et al., 1996a)

Unnamed ophiolite (emplaced in Fleur de Lys Supergroup) Serpentized ultramafic rock tectonically included in the Fleur de Lys Supergroup (comp. various sources)

Grand Lake Complex

Weasel Group

CO:WS

Massive and layered gabbro, variably serpentinized and metasomatized ultramafic rock, greenschist, trondhjemite, and cross-cutting mafic dykes (comp. Cawood and van Gool, 1998)

Thin-bedded, grey limestone and buff shale, dark grey

limestone conglomerate with sandy limestone matrix

shale and limestone with local limestone breccia,

(Williams et al., 1984)

Middle Cambrian to Late Ordovician

*Epine Cadoret formation* CO:EC

Black and grey slate, and minor brown weathering sandstone; may be equivalent to either Ordovician Goose Tickle Group or Cambrian March Point Formation (comp. Stouge and Godfrey, 1982)

Middle Cambrian to Middle Ordovician

Humber Arm Allochthon (high structural slices)

Ophiolitic and related rocks of the Little Port, Mount Barren and Bay of Islands complexes, including and mafic gneiss and amphibolite; structurally

ultramafic rocks, gabbro, trondhjemite, diabase, basalt, underlying grey to black, scaly, shale melange with conspicuous blocks of ophiolitic and sedimentary rocks (comp. Williams and Cawood, 1989)

Pinchgut Lake Group CO:PL

Grey and silver-grey phyllite, slate, calcareous and dolomitic phyllite, dolomitic and phyllitic ribbon limestone, oolitic and quartzitic limestone and dolostone, and limestone conglomerate (comp. Knight, 1996)

Middle Cambrian to Early Ordovician

Port au Port Group

CO:T

Muddy carbonate rocks, oolitic sequences, silty mudstone, and stromatolites, variably dolomitized, deposited in a subtidal to peritidal environment on a narrow, high-energy carbonate platform (comp. James et

**Middle Cambrian** 

Reluctant Head Formation mC:R

Grey to silvery-grey, slate and phyllite intercalated with dolomitic ribbon limestone, planar thin-bedded and laminated dolomitic argillite and lesser dolomitic and argillaceous, stylonodular and parted limestone and oolitic and intraclastic grainstone; small pebble to boulder, matrix- to clast-supported carbonate conglomerates are interspersed throughout the formation which is shalier in the lower part; towards the top of the formation, ribbon limestones are intercalated with bedded, bioturbated fine-grained, grainy and fossiliferous dolomitic limestones and a rare stromatolitic limestone (comp. Knight and Boyce, 1991; comp. Knight, in preparation)

**Early Cambrian to Early Ordovician** Port aux Basques Complex

CO:PB

Mainly grey to greenish grey quartzose to feldspathic psammite interbedded with thin garnet and kyanite/sillimanite-bearing silvery pelite; numerous tholeiitic amphibolite sills and/or dykes and very rare coticule beds; progressively more migmatitic towards the southeast; includes interleaved Margaree and Kelby Cove orthogneisses and thin Port aux Basques granite sheets (van Staal et al., 1996b)

**Ediacaran to Middle Ordovician** 

Humber Arm Allochthon (intermediate structural slices)

Arkosic sandstone, conglomerate, argillite and local mafic volcanic rocks of the Blow Me Down Brook Formation; alkalic volcanic rocks and associated sedimentary rocks of the Skinner Cove and Crouchers formations, and the Fox Island Group; underlying grey to black, scaly, shale melange with mainly sedimentary blocks from the intermediate and lower slices of the

Ediacaran

Neoproterozoic to Middle Ordovician

N-O:H

Lady Slipper Pluton

Intensely lineated tonalitic to granodioritic gneiss containing varying proportions of interbanded amphibolite (comp. Cawood and van Gool, 1998)

allochthon (comp. Williams and Cawood, 1989)

Deep water carbonate conglomerate, grainstone, ribbon limestone and shale (Cow Head Group), overlain by quartzo-feldspathic sandstone and shale (Lower Head Formation); slate, quartzitic and quartzo-feldspathic sandstone and lesser conglomerate (Curling group), deep water carbonate conglomerate, grainstone, ribbon

limestone and shale (Northern Head Group), overlain by

quartzo-feldspathic sandstone and shale (Eagle Island

Marble, variably recrystallized dolostone, quartzite and

St. George and/or Table Head groups (comp. Owen,

schist, probably derived from the Labrador, Port au Port,

Formation) (comp. Knight, in preparation)

1991; comp. Hyde, 1982)

facies (comp. Williams et al., 1985)

(Bostock et al., 1983c)

Undivided sedimentary units of the Humber Zone

Humber Arm Allochthon (low structural slices)

**Neoproterozoic to Early Ordovician** Fleur de Lys Supergroup

N-O:F

Dominantly metaclastic schists with interlayered amphibolite and greenschist; the supergroup has been polydeformed by up to three major deformations; metamorphism is in the upper greenschist or lower amphibolite facies, or locally in the middle amphibolite

Allochthonous rocks emplaced during the Taconian

Orogeny; tonalite and gabbro of the Coney Head

Complex; slate, sandstone, and greenschist of the

Taylors Pond and Maiden Point formations, and the

Murrays Cove Schist (comp. Smyth and Schillereff,

Southern White Bay Allochthon

Hare Bay Allochthon

N-O:R

Six structural slices of transported rocks comprising: 1. shale and sandstone, 2. greywacke, volcanic rocks and dykes, 3. sandy limestone and conglomerate, 4. shalematrix melange, 5. pillow lava and shale, and 6. peridotite, mafic volcanic rocks, amphibolite and schists

**Neoproterozoic to Middle Cambrian** 

Labrador Group NC:L

Red, pink, purple and grey arkosic conglomerate, arkosic, micaceous and hematitic sandstone and siltstone; white, green, red and pink quartz arenites and calcareous sandstones; olive-grey, grey, black and red shales (metamorphosed to phyllites and slates in deformed areas) locally with limestone concretions; black, grey, red and pink, intraclastic fossiliferous, oolitic, oncolitic and stylonodular, argillaceous and arenaceous, fine to grainy limestones and rarely dolostone; dark grey, mafic volcanics occur locally (comp. Knight and Cawood, 1991; comp. Bostock et al., 1983a)

Massive to mildly foliated and schistose, pink, subalkalic

metadiabase; mafic and felsic metavolcanic rocks (comp.

granite; albite-chlorite schist, biotite amphibolite and

Williams et al., 1983; Knight, 1994)

Neoproterozoic **Hughes Lake Complex** 

Hare Hill Granite

Massive, red to pink, one or two feldspar, riebeckite and aegirine granite; foliated to lineated leucogranite; intensely sheared muscovite granite (possibly Silurian in part) (Currie and van Berkel, 1992; Currie et al., 1986)

Läbrador

Late Mesoproterozoic to Late Cambrian

Late Mesoproterozoic to Neoproterozoic

Grenvillian granitoid rocks

Middle Mesoproterozoic to Neoproterozoic

Elsonian anorthosite suites

Late Paleoproterozoic to Early Mesoproterozoic

Long Range gneiss complex?

Long Range gneiss complex

**Middle Mesoproterozoic** 

M2:A

PM:L?

PM:L

Dark green, medium-grained, amphibole-bearing metagabbro, typically with subophitic texture (Owen,

Dominantly equigranular and potassium feldspar-

megacrystic biotite hornblende granite; lesser biotite-

hornblende granodiorite and mesocratic pyroxene-

bearing granitoid rocks (charnockite) (comp. Owen,

Altered mafic dykes, mainly amphibolitic (Currie and

Coarse-grained, massive to well foliated, grey to bluish

grey and buff anorthosite and gabbroic anorthosite,

locally cut by mafic dykes, now amphibolite; layered

gabbro and anorthositic gabbro, gradational with and

related to anorthosite plutons (comp. Williams, 1985a)

Quartzo-feldspathic and calc-silicate gneiss inclusions in

the Gull Lake intrusive suite (Smyth and Schillereff,

Mainly quartzo-feldspathic gneiss, including granitic-

lesser amounts of amphibolite, and dioritic and mafic

gneiss; screens of paragneiss, including metacarbonate

rocks, pelitic gneiss, and quartzite; metamorphosed in

the amphibolite and granulite facies (comp. Owen, 1991)

granodioritic, quartz dioritic, and tonalitic compositions:

van Berkel, 1992)

Department of Environment and Conservation

Map No. 2d

Department of Natural Resources

BEDROCK GEOLOGY LEGEND

SYMBOLS Contact (defined, approximate, assumed).... Contact; gradational or transitional.. Unconformity, defined... Anticlinal axis defined.. Synclinal axis defined..

Colman-Sadd, S. P., and Crisby-Whittle, L. V. J. (compilers) 2005: Partial bedrock geology dataset for the Island of Newfoundland (NTS 02E, 02F, 02L, 02M, 11O, 11P, 12A, 12B, 12G, 12H, 12I, 12P and parts of 01M, 02D). Newfoundland and Labrador Department of Natural Resources, Geological Survey, Open File NFLD/2616 version 6.0.

