

| Carboniferous   |   | STRATIFIED ROCKS  |  | LATE DEVONIAN TO CARBONIFEROUS  |   |
|---|---|---|--|---|---|
| C   | undifferentiated Carboniferous units  | CcPHm   | Middle Port Hood Formation: sandstone, shale, coal and impure limestone  | GM  | undifferentiated Mabou Group  |
| WESTPHALIAN-STEPHANIAN  |   | CCHPHI  |  | WISEAN  |   |
| CUMBERLAND GROUP  |   | Lower Port Hood Formation: channelized sandstone deposits, siltstone, shale |  | WINDSOR GROUP   |   |
| CcSM  | Sydney Mines Formation: mudstone, siltstone, shale, sandstone, limestone, and major coal deposits | CC  | cross-bedded and trough cross-bedded white medium sand arkose, minor siltstone, shale, and coal                            | CWU   | Upper member including Harbert River limestone: red siltstone and sandstone with intercalated shallow marine limestone, dolostone, gypsum and halite  |
| Ccsb  |   | NAMURIAN  |  | CwM   |   |
| South Bar Formation: sandstone, pebbly sandstone, minor conglomerate, mudstone, and rare coal |   | MABOU GROUP   |  | Middle member: red siltstone, sandstone, and conglomerate with gypsum and anhydrite and thin intercalated marine carbonate beds |   |
| CcI   | Inverness Formation: arkose, pebbly sandstone and conglomerate, shale and coal                    | CmU   | Upper member including Pomquet Formation: red and green siltstone and sandstone, minor conglomerate                        | CwI   | Lower member: limestone, variably dolomitic and fossiliferous limestone, red siltstone, and thick units of gypsum and halite, and including basal laminated peloidal Macumber Formation limestone |
| CcPHu   | Upper Port Hood Formation: arkose, pebbly arkose and conglomerate, shale, and siltstone           | CmI   | Lower member including Hastings Formation: shale and siltstone, dolomitic siltstone, and thin stromatolitic dolostone beds | CW  | undifferentiated Windsor Group  |

| CENTRAL AND NORTHERN CAPE BRETON ISLAND  |   | SOUTHEASTERN CAPE BRETON ISLAND   |   | LATE DEVONIAN TO CARBONIFEROUS                                    |  |
|--|---|---|---|---|--|
| ORDOVICIAN-SILURIAN  |   | HADRYNAN - DEVONIAN   |   | FAMENNIAN-TOURNAISIAN   |  |
| OSM  | Money Point Group   | HDa   | amphibolite, variably foliated, locally schistose to gneissic   | HMg   | grey andesite to dacite lithic lapilli tuff  |
| OS (M)   |   | ORDOVICIAN  |   | HMf   | basaltic to andesitic flows and tuffs, dacite crystal tuff, minor sandstone  |
| rhyolite, felsic to intermediate tuff, lapilli tuff and volcanic breccia, minor volcanic flows and silt (433 ± 71.4 Ma, U-Pb zircon in rhyolite from Sarah Brook Formation, Dunning et al. 1990) OSM: 427 ± 4 Ma, U-Pb zircon, Money Point Group, Keppie et al. 1992 |   | OM  | McAdams Brook Formation: quartz-rich siltstone and sandstone  | HFa   | andesite lapilli tuff and flows  |
| OS (M)c  |   | GMCL  | MacLean Brook Formation: quartz arenite, siltstone, shale   | HFr   | dacite to rhyolite crystal-lithic lapilli tuff, chert, rhyolite flows  |
| pelitic schist, foliated quartz-rich wacke, quartz pebble conglomerate, siltstone, polymictic meta-conglomerate and meta-sandstone OSMc: equivalent unit in Money Point Group  |   | MIDDLE CAMBRIAN   |   | HfG   | dacite to andesite crystal-lithic lapilli tuff, basaltic flows (574 ± 1 Ma, U-Pb zircon, Bevier et al. 1993)             |
| OSv  | chloritic schist, meta-volcanic rocks, metabasalt and mylonitic diorite   | CT  | Trout Brook Formation: shale, siltstone, and minor sandstone  | HFbI  | basaltic and andesitic lapilli tuff and flows  |
| OSd  |   | LOWER CAMBRIAN  |   | PRINGLE MOUNTAIN GROUP  |  |
| diorite, schistose diorite, chloritic schist, mylonite, and amphibolite  |   | CcB   | Canoe Brook Formation: mudstone, siltstone, and minor sandstone   | HP  | basaltic to rhyolitic lapilli tuff and ash tuff, minor rhyolite flows  |
| ORDOVICIAN - CAMBRIAN  |   | CMC   |   | COXHEATH GROUP  |  |
| OCM  | McLeod Brook Formation and Northern Boidale Hills volcanic unit: shale, siltstone, sandstone, basalt, andesite  | MacCodrum Formation: siltstone and shale  |   | HCr   | rhyolite tuff, lapilli tuff, rhyolite flows, minor basalt to dacite flows (613 ± 15 Ma, U-Pb zircon, Bevier et al. 1993) |
| MIDDLE TO UPPER CAMBRIAN   |   | CS  | Spaden Lake Formation (part of Morrison River Formation of Hutchinson, 1949): quartz arenite and quartz pebble conglomerate | HcA   | andesite tuff, lapilli tuff and basalt, minor rhyolite and basalt  |
| CMN  | MacNeil and MacMullin Formations: quartzite, shale, siltstone, minor limestone  | HCK   | Kevin Glen Group: red pebble to cobble conglomerate, arkose, sandstone, siltstone   | HSA   | andesite, lapilli tuff and ash tuff, minor dacite  |
| HADRYNAN - DEVONIAN  |   | LATE HADRYNAN   |   | EAST BAY HILLS GROUP  |  |
| Cb   | Bourinot Group including Ekasoni, Dugald, and Gregwa Formations: sandstone, wacke, siltstone, shale, breccia, amygdaloidal basalt, andesite, and volcanic tuff                      | MAIN-A-DIEU GROUP   |   | HEB   | amygdaloidal basalt, porphyritic basalt, tuff and lapilli tuff, minor conglomerate and sandstone                         |
| HADRNYAN - DEVONIAN  |   | HmM   | heterolithic lapilli tuff, basalt flows, conglomerate, sandstone, siltstone   | STIRLING GROUP  |  |
| ODCp   | pelitic gneiss, quartzofeldspathic gneiss, mica schist, minor calc-silicate rock, meta-conglomerate (462 ± 2 Ma, U-Pb detrital zircon, Chen et al. 1995)                            | HMM   |   | HSrI  |  |
| PSGn   | biotite gneiss, amphibolite, pegmatite and local migmatite, pelitic schist, meta-quartzite, minor marble  | Map Symbols shown in white on map   |   | rhyolite flows and lapilli tuff, minor andesite                   |  |
| PSMR   | Middle River metamorphic suite: amphibolite, gneiss, kyanite-muscovite schist, and minor marble   | Geological boundary   |   | HSb   |  |
| PSCN   | Cape North Group: gneiss, high-grade pelitic and semi-pelitic schist, calc-silicate rock, marble, and amphibolite   | Steep brittle fault   |   | basalt, andesite and dacite flows, breccia and lapilli tuff       |  |
| HOgn   | diorite, mylonitic and schistose to gneissic diorite, biotite-garnet schist, minor sheared granite  | Interpreted listric normal fault, based on observed stratigraphic position of Mabou Group rocks relative to underlying Windsor Group and on sheared contacts between the two.   |   | HSla  |  |
| PROTEROZOIC  |   | Ainslie Detachment: flat-lying zone of shearing and brecciation occurring along the top of the Macumber limestone at the base of the Windsor Group.   |   | conglomerate, sandstone, siltstone, chert and dolostone           |  |
| HCKgn  | Kellys Mountain gneiss: cordierite-bearing paragneiss   | Thick shallow-dipping mylonite occurring along the southern and southwestern margins of the Cape Breton Highlands. Half circles drawn on upper (hangingwall) fault block  |   | HSa   |  |
| HPv  | Price Point Formation: sub-volcanic dacite and andesite, some lapilli tuff and volcanic flows   | Highland Shear Zone: thick mylonitic shear zone separating gneissic and high grade rocks from lower grade units. Barbs drawn on high grade side of fault.   |   | andesite, lapilli tuff and ash tuff, minor dacite                 |  |
| PLHgn  | Lime Hill gneissic complex: marble, calc-silicate rock, cordierite-andalusite/sillimanite gneiss, multiphase granitic injection complex   | Thrust fault: mylonite, with barbs drawn on side of fault containing older overthrust units.  |   | lapilli tuff and ash tuff, rhyolite flows                         |  |
| PM PG  | PM: marble, calc-silicate rock, gneiss, minor quartzite PG: limestone, marble, dolostone, calc-silicate rock, quartzite, feldspathic arenite, wacke, minor mafic metavolcanic rocks | REFERENCE LIST OF MAPS AND REPORTS USED IN COMPIATION OF OPEN FILE 3159   |   | rhyolite porphyry (681 ± 6/2 Ma, U-Pb zircon, Bevier et al. 1993) |  |
| Pq   | quartzite, psammite schist, quartzofeldspathic gneiss, minor calc-silicate rock and amphibolite   | Currie, K.L. 1987: Relations between metamorphism and magmatism near Cheticamp, Cape Breton Island, Nova Scotia. Geological Survey of Canada, Paper 85-23, 66 p.  |   | HDd   |  |
| Pw   | biotite and chlorite schist, metawacke, marble, dolostone, calc-silicate rock, quartzite, gneiss, schist, mafic metavolcanic rocks, amphibolite                                     | Dunning, G.R., Barr, S.M., Raeside, R.P., and Jamieson, R.A. 1980: U-Pb zircon, titanite, and monazite ages in the Bras d'Or and Aspy terranes of Cape Breton Island, Nova Scotia: implications for magmatic and metamorphic history. Geological Society of America, Bulletin, v. 100, p. 322-330.    |   | diorite   |  |
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| CARBONIFEROUS       |   | PLUTONIC ROCKS |  |
|---------------------|---|----------------|--|
| Cgb                 | St. Peters Canal gabbro: gabbro, diabase (339 ± 2 Ma, U-Pb zircon, Barr et al. 1995)  | HSgd           | granodiorite   |
| DEVONIAN            |   | HSI            | tonalite, granodiorite   |
| DMg                 | Margaree pluton, coarse porphyritic rapakivi granite  | HSd            | diorite  |
| LATE HADRYNAN       |   | LATE HADRYNAN  |  |
| Dg                  | granite to syenogranite (includes Salmon Pool Pluton dated at 365 ± 10/-5 Ma, U-Pb zircon, Jamieson et al. 1986)  | HCCg           | Cheticamp pluton: biotite granite, biotite-muscovite monzogranite (378 ± 5/1 Ma, U-Pb zircon, Bevier et al. 1993)  |
| DLg                 | Lower St. Esprit Pluton: hornblende-biotite monzogranite (402 ± 3 Ma, U-Pb zircon, Dunning et al. 1990)   | Hit            | Ingonish River tonalite: medium- to coarse-grained tonalite (555 ± 2 Ma, U-Pb zircon, Dunning et al. 1990)   |
| DCBg                | Cameron Brook granodiorite: coarse-grained porphyritic granodiorite (402 ± 3 Ma, U-Pb zircon, Dunning et al. 1990)  | Hgd            | granodiorite, locally granite (includes Baddeck River granodiorite, 556 ± 4 Ma, U-Pb zircon, Dunning et al. 1990)  |
| DBg                 | Black Brook Granitic Suite: medium- to coarse-grained granodiorite, granite, and muscovite-biotite granite (373 ± 2 Ma, U-Pb monazite, Dunning et al. 1990)   | HKd            | Kathy Road diorite: medium-grained amphibole-rich diorite, variably foliated to gneissic diorite, amphibolite (560 ± 2 Ma U-Pb zircon, Dunning et al. 1990)  |
| DNRg                | West Branch North River Pluton: composite pluton of medium- to coarse-grained, light grey, porphyritic biotite-hornblende granodiorite, and medium- to coarse-grained pink granite  | HGd            | Gisborne Flowage quartz diorite (564 ± 2 Ma, U-Pb zircon, Dunning et al. 1990)   |
| DNHgn               | Neils Harbour orthogneiss (403 ± 3 Ma, U-Pb zircon, Dunning et al. 1990) with abundant inclusions of inclusions of mica schist and cross-cutting dykes of DBg   | HGq            | Indian Brook granodiorite: medium-grained granodiorite to granite containing hornblende and biotite (564 ± 5 Ma, U-Pb titanite, Dunning et al. 1990)   |
| SILURIAN-DEVONIAN   |   | Higd           | medium-grained equigranular granite, biotite monzogranite, locally foliated and weakly chloritized   |
| SDg                 | medium-grained equigranular granite, biotite monzogranite, locally foliated and weakly chloritized  | Hd             | diorite, variably foliated to schistose chloritized and epidotized diorite   |
| SDd                 | diorite   | Hgr            | foliated to non-foliated, locally mylonitic, medium grained pink granite   |
| SDCgn               | Cheticamp Lake gneissic complex: quartzofeldspathic gneiss, biotite schist, granodiorite orthogneiss, (386 ± 2 Ma, U-Pb zircon, Dunning et al. 1990), mixed paragneiss and orthogneiss  | HCCgd          | coarse-grained biotite granite, granodiorite (includes Crampton Cove pluton, 574 ± 3 Ma, U-Pb zircon, Bevier et al. 1993)  |
| SDPBgn              | Pleasant Bay-Belle Cole Road gneissic complex: tonalitic to granodioritic orthogneiss, amphibolite, pelitic gneiss foliated granitic rocks and pegmatite (gneiss dated at 433 ± 20/-10 Ma, U-Pb zircon by Jamieson et al. 1986, and 411 ± 2 monazite by Barr and Jamieson 1991) | Hgds           | medium- to fine-grained schistose granodiorite, gneissic granodiorite gradational to diorite and lined amphibolite, strongly foliated and sheared rocks include biotite-garnet schist and amphibole-feldspar-quartz gneiss |
| SDPBog              | coarse-grained foliated granite, granitic gneiss  | Hqm            | medium-grained to porphyritic biotite-amphibole quartz monzonite   |
| SDPBgd              | schistose and gneissic granodiorite   | HNbt           | North Branch Baddeck River leucotonalite: medium- to coarse-grained tonalite, variably foliated to weakly gneissic with biotite (614 ± 38/-4 Ma U-Pb zircon, Jamieson et al. 1986)   |
| SILURIAN            |   | HCgd           | granodiorite (includes Chisholm Brook Suite, 620 ± 3/2 Ma, U-Pb zircon, Barr et al. 1990)  |
| STBg                | Taylor's Barron Pluton: medium- to coarse-grained, pink, weakly to strongly foliated granite and augen granite  | ORDOVICIAN     |  |
| Og                  | granite (includes Cape Smokey granite, 493 ± 2 Ma, U-Pb zircon, Dunning et al. 1995; and Kellys Mountain leucogranite, 498 ± 2 Ma, Barr et al. 1990)  | Hg             | granite, leucogranite  |
| Omg                 | monzogranite  | Hgb            | gabbro   |
| HADRNYAN - DEVONIAN |   | HELKIAN        |  |
| HDgn                | Berechols River gneissic complex: medium-grained orthogneiss and augen gneiss derived from granodiorite, sheared mylonitic gneiss, and minor migmatite and paragneiss   | HLs            | Lowland Brook syenite (1080 ± 5/-3 Ma, U-Pb zircon, Miller et al. 1993)  |
| Hmd                 | monzonite, diorite, gabbro  |                |  |
| HDg                 | medium-grained variably foliated granite  | Ha             | anorthosite  |
| HDgd                | granodiorite, variably foliated to gneissic   | HBC            | Blair River Complex: predominantly quartzofeldspathic orthogneiss, with dispersed high grade calc-silicate rock, marble, amphibolite, metagabbro   |
| HDd                 | diorite   |                |  |

