

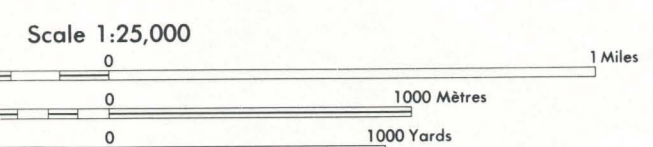


GEOLOGICAL SURVEY BRANCH
DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

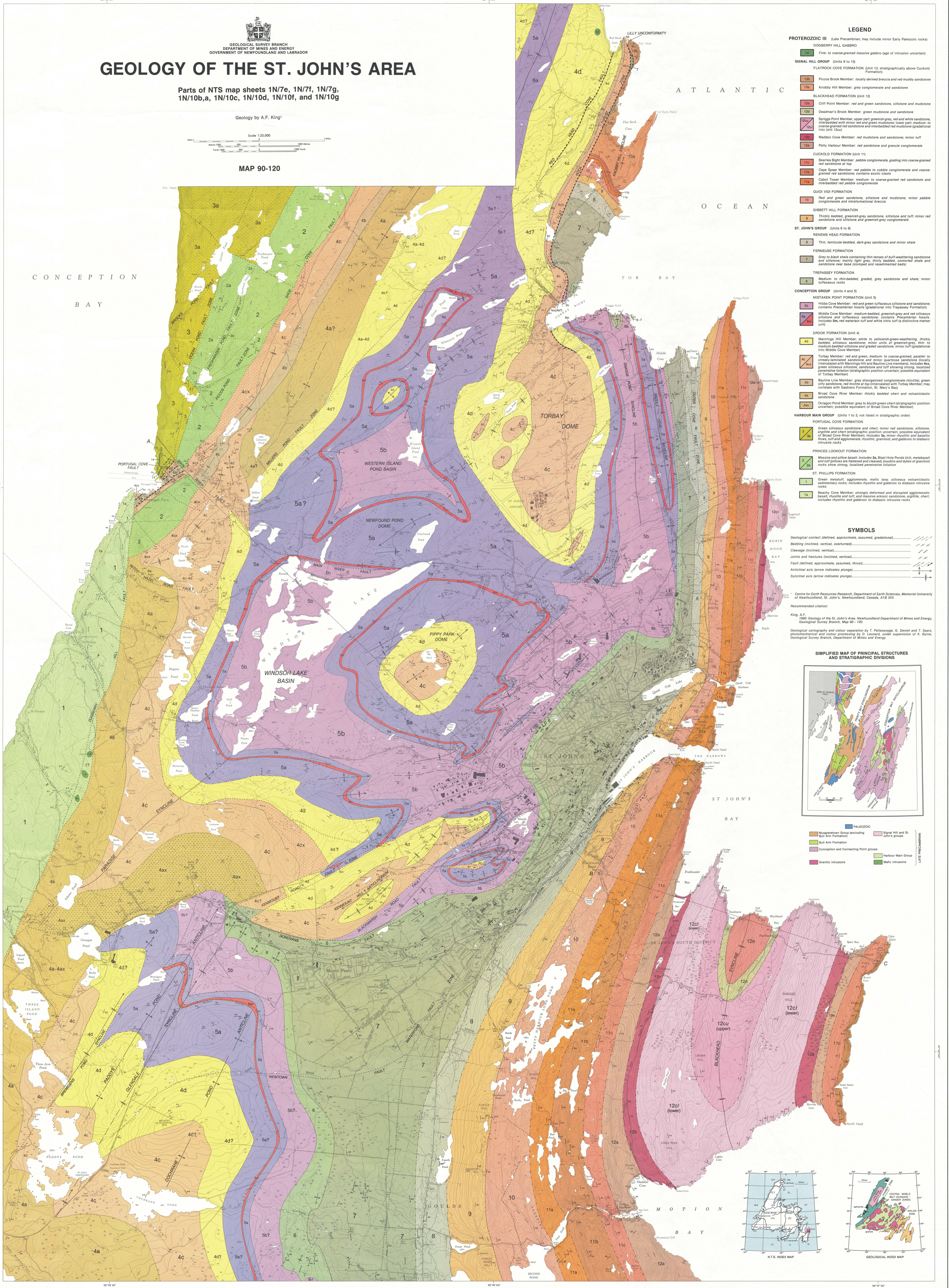
GEOLOGY OF THE ST. JOHN'S AREA

Parts of NTS map sheets 1N/7e, 1N/7f, 1N/7g,
1N/10b,a, 1N/10c, 1N/10d, 1N/10f, and 1N/10g

Geology by A.F. King



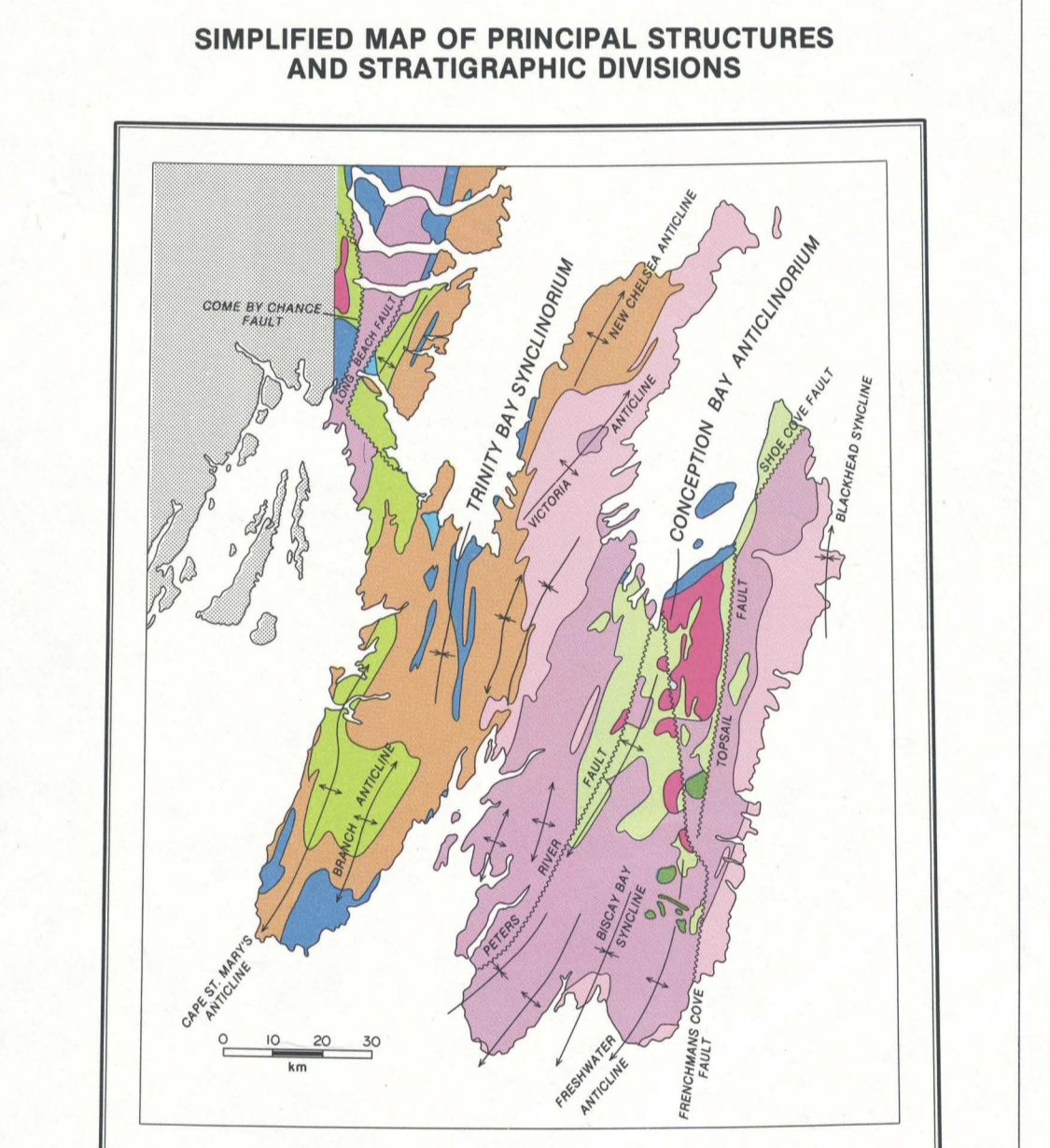
MAP 90-120



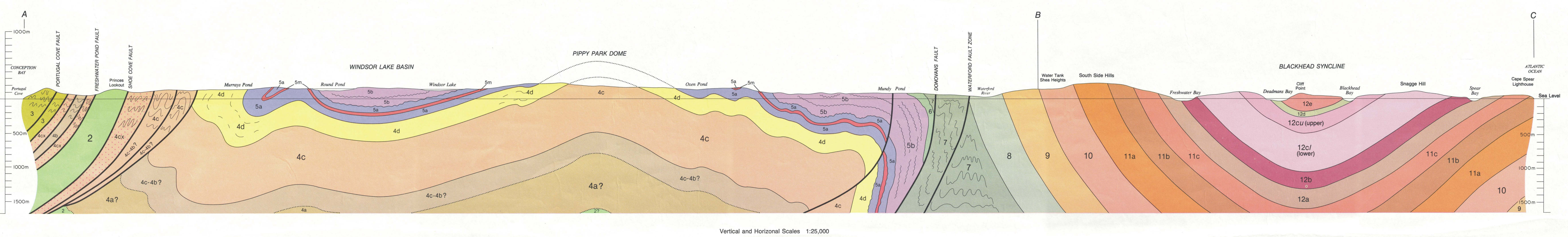
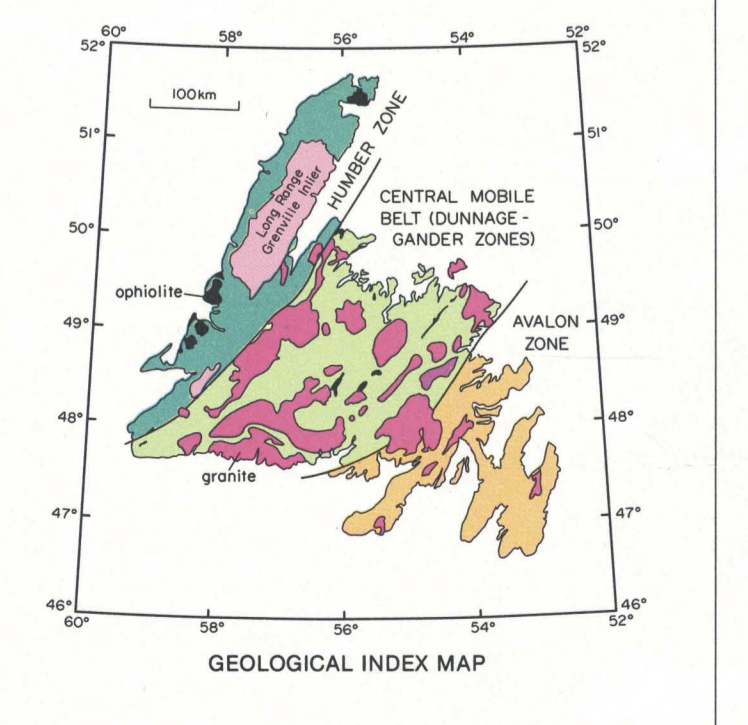
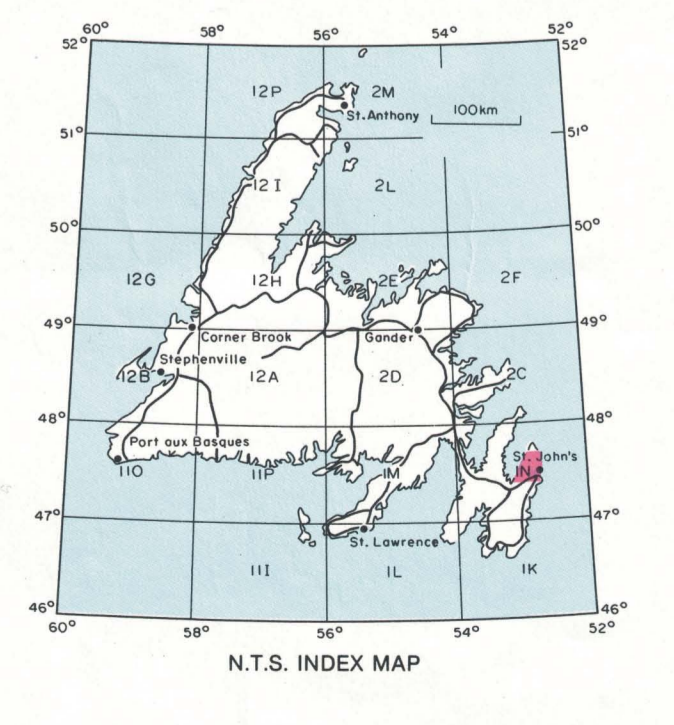
- ### LEGEND
- PROTEROZOIC III (Late Precambrian; may include minor Early Paleozoic rocks)**
- DOGBERRY HILL GABBRO
 - 14 Fine to coarse-grained massive gabbro (age of intrusion uncertain)
 - SIGNAL HILL GROUP (Units 9 to 13)**
 - FLATROCK COVE FORMATION (Unit 13; stratigraphically above Cuckold Formation)
 - 13b Ploose Brook Member: locally derived breccia and red muddy sandstone
 - 13a Knobby Hill Member: gray conglomerate and sandstone
 - BLACKHEAD FORMATION (Unit 12)
 - 12c CHIT Member: red and green sandstone, siltstone and mudstone
 - 12b Deadman's Brook Member: green mudstone and sandstone
 - 12a Spriggs Point Member: upper part greenish-grey, red and white sandstone, interbedded with minor red and green mudstone; lower part medium to coarse-grained red sandstone and interbedded red mudstone (gradational with Unit 12a)
 - 12a Middle Cove Member: red mudstone and sandstone; minor tuff
 - 12a Petty Harbour Member: red sandstone and granite conglomerate
 - CUCKOLD FORMATION (Unit 11)
 - 11c Baines Right Member: massive conglomerate, grading into coarse-grained red sandstone at top
 - 11b Cloak Member: red and white to cobble conglomerate and coarse-grained red sandstone; contains exotic clasts
 - 11a Cabot Tower Member: medium to coarse-grained red sandstone and interbedded red pebble conglomerate
 - QUIDI VIDI FORMATION
 - 10 Red and green sandstone, siltstone and mudstone; minor pebble conglomerate and intraformational breccia
 - GIBBET HILL FORMATION
 - 9 Thick bedded, green-grey sandstone, siltstone and tuff; minor red sandstone and siltstone and greenish-grey conglomerate
 - ST. JOHN'S GROUP (Units 6 to 8)**
 - RENEWS HEAD FORMATION
 - 8 Thin, lenticular-bedded, dark grey sandstone and minor shale
 - FERMUSE FORMATION
 - 7 Grey to black shale containing thin lenses of buff weathering sandstone and siltstone; massive light grey, thin bedded, contorted shale and sandstone; red mudstone (pumped and resedimented beds)
 - TRAPESSEY FORMATION
 - 6 Medium to thin-bedded, graded, grey sandstone and shale; minor tuffaceous rocks
 - CONCEPTION GROUP (Units 4 and 5)**
 - MISTAKEN POINT FORMATION (Unit 5)
 - 5b Hobbs Cove Member: red and green tuffaceous siltstone and sandstone; contains Precambrian fossils (gradational into Trapsessey Formation)
 - 5a Middle Cove Member: medium bedded, greenish-grey and red siltstone and tuffaceous sandstone; contains Precambrian fossils; includes 5m, red weathered tuff and white vitric tuff (a distinctive marker unit)
 - DROOK FORMATION (Unit 4)
 - 4d Mannings Hill Member: white to yellowish-green weathering, thickly bedded, siltstone sandstone; minor unit of greenish-grey, thin to medium bedded siltstone and graded sandstone; minor tuff (gradational into Middle Cove Member)
 - 4c Torbay Member: red and green, medium to coarse-grained, parallel to linear laminated sandstone and minor dolerite sandstone locally interbedded with Mannings Hill and Baines Line members; includes 4x, grey siltstone and tuffaceous sandstone and tuff showing strong localized penetrative foliation (stratigraphic position uncertain; possible equivalent of Torbay Member)
 - 4b Baines Line Member: grey disorganized conglomerate (matrix) green siltstone and tuffaceous sandstone; includes 4y, red weathered tuffaceous sandstone; possible correlation with Gables Formation, St. Mary's Bay
 - 4a Broad Cove Member: thickly bedded chert and volcaniclastic sandstone
 - 4aX Octagon Cove Member: grey to bluish-green chert (stratigraphic position uncertain; possible equivalent of Broad Cove Member)
 - HARBOUR MAIN GROUP (Units 1 to 3; not listed in stratigraphic order)**
 - 3 Green siltstone sandstone and chert; minor red sandstone, siltstone, argillite and chert (stratigraphic position uncertain; possible equivalent of Broad Cove Member); includes 3a, minor dolerite and basaltic flows and agglomerate, rhythmic, granitoid, and gabbroic to diabasic intrusive rocks
 - 2 PRINCES LOOKOUT FORMATION
 - 2 Massive and pillow basalt. Includes 2a, Blast Hole Ponds Unit, metabasalt and tuff; pillow basalt and tuffaceous sandstone and shales of granoblastic rocks show strong, localized penetrative foliation
 - 1 ST. PHILLIPS FORMATION
 - 1 Green mafic/ultramafic agglomerate, mafic lava; siliceous volcanoclastic sedimentary rocks; includes 1a, minor dolerite and basaltic flows and agglomerate, rhythmic, granitoid, and gabbroic to diabasic intrusive rocks
 - 1a Beachy Cove Member: strongly deformed and disrupted agglomerate, basalt, mylonite and tuff, and massive andesitic sandstone, argillite, chert; includes 1aX, mafic and gabbroic to diabasic intrusive rocks

- ### SYMBOLS
- Geological contact (defined, approximate, assumed, gradational)
 - Bedding (inclined, vertical, overturned)
 - Hood
 - Bay
 - Crevasse (inclined, vertical)
 - Joints and fractures (inclined, vertical)
 - Fault (defined, approximate, assumed, thrust)
 - Anticlinal axis (arrow indicates plunge)
 - Synclinal axis (arrow indicates plunge)

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 Geological cartography and colour separation by T. Pattenavagh, G. Deviel and T. Sears, photoreproduced and colour processing by G. Leonard under supervision of A. Byrne, Geological Survey Branch, Department of Mines and Energy.



- ### UNIT RECOGNITION
- Magdalen Group including (Signal Hill and St. John's)
 - 11a-13c
 - Conception and Connecting Point groups
 - 4, 5
 - Harbour Main Group
 - 1, 2, 3
 - Mafic intrusions
 - 14



Vertical and Horizontal Scales 1:25,000