

LEGEND

- QUATERNARY**
- 8** **ORGANIC DEPOSITS:** peat and muck underlying mainly ferns and bogs which range in thickness from less than 1 m in highland slope fens to more than 10 m in lowland plateau bogs
- 6** **COLLUVIAL DEPOSITS:** material emplaced by gravity sliding and creep on steep rocky slopes, consisting mainly of blocky rubble which thickens downslope from cliffs to form an apron by coalescence of adjacent debris fans; may contain muddy siltification and debris-flow layers; may locally overlie till; locally re-mobilized as rock-glaciers most of which are inactive
- 5c 5d** **FLUVIAL DEPOSITS:** mainly sandy gravel, 1-20 m thick, underlying modern floodplains, deltas, and alluvial fans; may include small remnants of older terraces
- 5b** **NONGLACIAL AND PROGLACIAL ENVIRONMENTS**  
**MARINE DEPOSITS:** gravel, sand, silt, and clay, 1-30 m thick, laid down in littoral, deltaic, and offshore environments during postglacial submergence
- 5a** Beach gravel and sand in ridges, swales, and plains including modern marine deposits at the present coast; 5c, bulky accumulations 5-15 m thick as beach-ridge complexes and terrace remnants of deltas; fossiliferous; 5d, areas of scattered beach ridges in generally rocky terrain
- 4b** Glaciomarine deltas composed of ice-contact outwash deposited at marine limit
- 4a** Stony mud ranging in thickness up to 20 m that was deposited in water depths of 50-100 m mainly near retreating glaciers; includes submarine meltout till deposited adjacent to subaqueous end moraines, and glaciomarine drift deposited by melting icebergs; fossiliferous
- 3c** **PROGLACIAL AND GLACIAL ENVIRONMENTS**  
**GLACIOFLUVIAL DEPOSITS:** gravel with sand, 1-50 m thick, laid down by meltwater beneath and in front of a glacier
- 3b** Outwash, 5-50 m thick, deposited on former floodplains and fans; locally includes postglacial degradational terraces
- 3a** Ice-contact stratified drift as hummocks and ridges (kames, kame moraines, and crevasse fillings) cut by meltwater channels, and locally interspersed with undifferentiated till knolls
- 2b** **GLACIAL ENVIRONMENT**  
**TILL:** nonsorted debris up to 30 m or more in thickness, generally bouldery and sandy over Precambrian rock highlands, and more silty over sedimentary rock lowlands; locally clayey where deposited subaqueously as major end moraines
- 2a** Till, averaging 2-10 m thick, as continuous blanket in the form of fluted or drummed plains, or major end moraine ridges and associated glaciomarine drift, locally fossiliferous
- 1** Till as continuous veneer, 1-2 m thick, commonly showing relief of underlying bedrock surface; locally ornamented with De Geer moraine ridges
- 1** Till as discontinuous veneer, generally less than 2 m thick, with numerous rock outcrops and interspersed bedrock areas
- 2b** Till of variable thickness and composition with moraine topography partly subdued by siltification and mass wasting; includes undivided areas of bedrock partly buried by sandy debris (grus) and incipient blocky rubble (felsenmeer) produced by frost action
- 2a** Till of variable thickness and composition, where all traces of glacial relief have been graded by protracted siltification and where interspersed rocky areas have been reduced to mature blockfields (felsenmeer) from which small fens locally project
- 1** **RESIDUUM:** rubble and grus produced by disintegration of bedrock in place; possibly not covered by Quaternary glaciers
- PRE-QUATERNARY**
- Rc** Bedrock areas interspersed with undivided patches of thin till veneer
- Rb** Bedrock areas, largely obscured by forest vegetation in which patches of till may be present in depressions
- Ra** Exposed bedrock denuded by glaciation, nivation, and by modern and postglacial marine washing

- Geological boundary (definite, gradational, inferred) .....
- Ridge following sedimentary rock stratification .....
- Speculative stadal glacial limit .....
- Early Wisconsinan or older .....
- Late Wisconsinan .....
- Crque; pre-last glaciation, post-last glaciation .....
- Tor, castellated weathered bedrock pinnacle .....
- Small bedrock outcrop .....
- Drumlin, fluting (nondirectional) .....
- Crag and tail (rock hill with drift lodged on down-glacier side) .....
- Roche moutonnée, rock drumlin, stoss and lee (ice-streamlined bedrock) .....
- Striation (ice-flow direction based on miniature crag and tail, stoss and lee, chattermarks; numbers indicate relative age of crosscut facets, 1 being oldest, dot indicates point of observation) .....
- Crevasse filling (ice-contact gravel ridge) .....
- End moraine crest (glacier-marginal ridge of till) .....
- De Geer moraines .....
- Ice-thrust bedrock ridge .....
- Ice-contact delta .....
- Concentration of large boulders .....
- Abandoned meltwater channel (proglacial, submarginal with barb on uphill side); also proglacial lake spillway .....
- Marine limit (defined, approximate) .....
- Proglacial lake shoreline .....
- Raised beach .....
- Edge of fluvial terrace .....
- Karst area (bedrock surface pitted with numerous solution-collapse depressions; commonly mantled with till) .....
- Sinkhole (single depression by dissolution of bedrock); line of sinks along stratification .....
- Fault or fracture with sharp edges (postglacial?) .....
- Rock glacier(?) .....
- Composition and/or genesis of material largely uncertain .....
- Fossil locality and site number .....
- Mudflow, landslide, slump (in till and marine clay) .....
- Sackung (large-scale cliff failure in bedrock) .....
- Radiocarbon age determination and site number .....
- | Date     | Material          |
|----------|-------------------|
| Lab. no. | Elevation (m)     |
| 10095    | 3110 ± 130 Shell  |
| 10096    | GSC-1318 4.5      |
| 10097    | 4690 ± 130 Shell  |
| 10098    | GSC-1403 6.1      |
| 10099    | 990 ± 130 Shell   |
| 10100    | GSC-1802 1.5      |
| 10101    | 11020 ± 180 Shell |
| 10102    | GSC-2919 75       |
| 10103    | 9000 ± 80 Shell   |
| 10104    | GSC-3908 34       |
| 10105    | 12000 ± 160 Shell |
| 10106    | GSC-1605 85       |
| 10107    | 8000 ± 200 Shell  |
| 10108    | GSC-1758 7.6      |
| 10109    | 12000 ± 170 Shell |
| 10110    | GSC-4214 21       |
| 10111    | 12000 ± 140 Shell |
| 10112    | GSC-1762 84       |
| 10113    | 12000 ± 360 Shell |
| 10114    | GSC-1485 106      |

Geology by Douglas R. Grant, 1972, 1980, 1984

Geological cartography by J.D. Naraway, Geological Survey of Canada

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Base map at the same scale published by the Surveys and Mapping Branch in 1973. Roads and reservoirs were revised by the Geological Survey of Canada for this edition

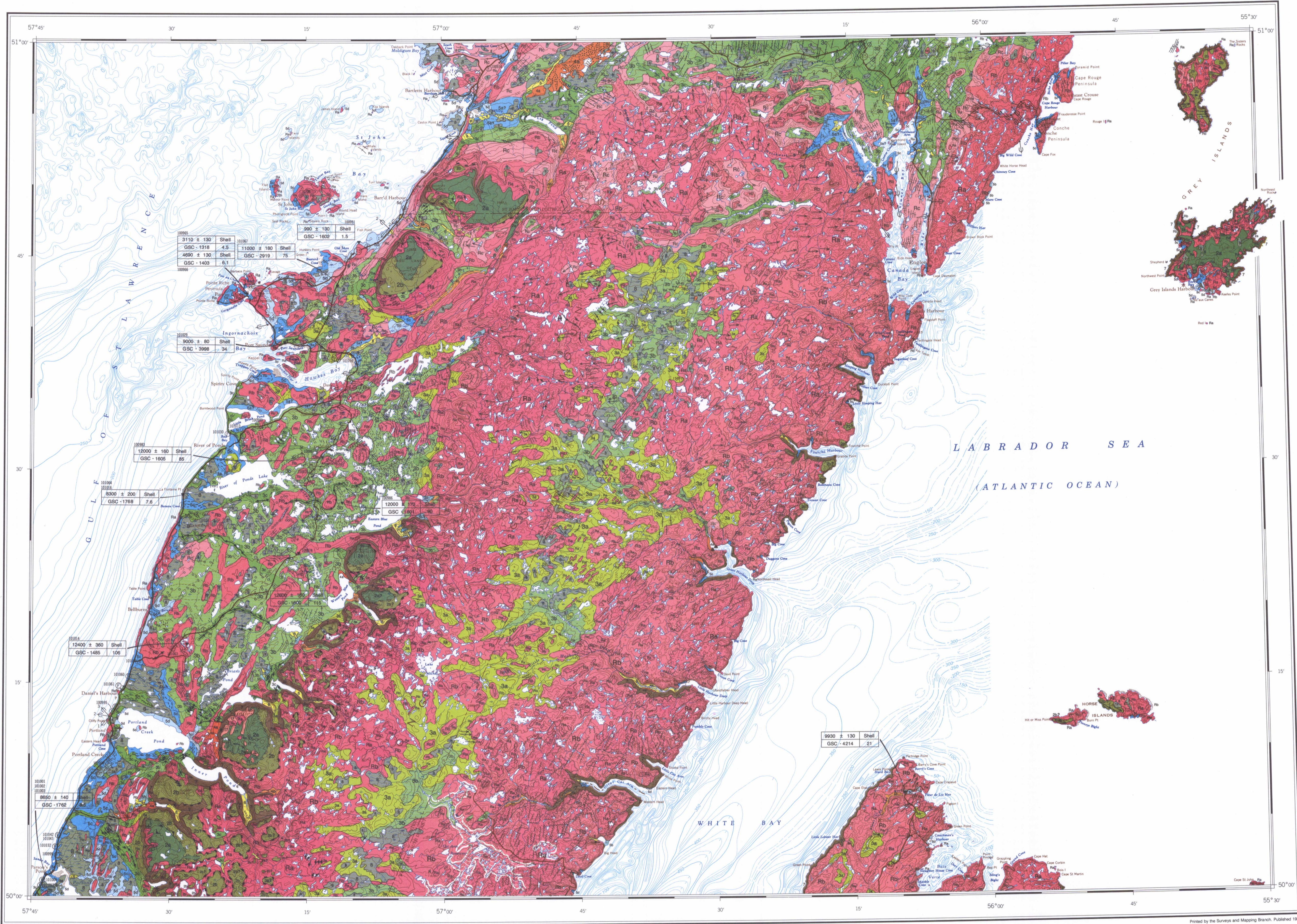
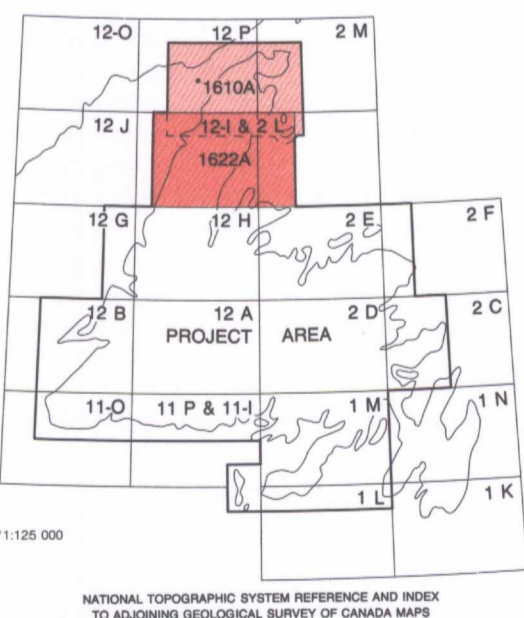
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Mean magnetic declination 1985, 26°12' West, decreasing 8.6' annually. Readings vary from 25°47'W in the SW corner to 26°34'W in the NE corner of the map area

Elevations in feet above mean sea level

Bathymetry: Canadian Hydrographic Service, Department of Fisheries and Oceans, Canada. Bathymetric contours in metres

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MAP 1622A

SURFICIAL GEOLOGY

**PORT SAUNDERS**  
NEWFOUNDLAND

Scale 1:250 000

Kilometres 5 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection  
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