

G L E N E L G  
B A Y

### LEGEND

**CENOZOIC**

**HOLOCENE**

- Hf FLUVIAL DEPOSITS: gravel and silt/sand channel, floodplain, delta and terrace deposits; 1 to 10m thick
- Hb RAISED BEACH DEPOSITS: boundary to silt/sand over ill. rubble to silt/gravel over rock; single ridges shown by symbol; a few cm to several m thick

**PLEISTOCENE**

- Pt1 GLACIOMARINE DEPOSITS: silt or fine sand; massive to finely laminated deposits with scattered claststones; commonly gullied; deposited adjacent to major glacial meltwater outlets; 1 to 20 m thick
- Pt2 GLACIOLUVIAL DEPOSITS: boundary to gravelly sand; blocks of hummocky complexes deposited in subglacial or marginal environment; proglacial floodplains, deltas and fans; marine deltas may include massive to stratified sand or silt beds up to 20 m thick; 1 to 20 m thick
- Pt3 Victoria Island fill: stony loam commonly shows brecciation on air photos, some beds of siltstone dunitic; deposited by continental glacier; possibly late Wisconsinan maximum; includes silt veneer too thin to mask underlying bedrock relief; <1 to 10 m thick
- Pt4 Prince Albert Peninsula fill: stony loam; numerous gravel lens deposits; prominent frost-furrows troughs; time of deposition unknown; 1 to 10 m thick

----- unconf. -----

**PALEOZOIC**

**CAMBRIAN-ORDOVICIAN**

- C-O Undifferentiated Cambrian and Ordovician sedimentary rocks including Saline River Formation: variegated red and green ripple cross-laminated siltstone and very fine sandstone containing numerous burrows (e.g. Planolites) desiccation cracks and halite casts (formerly map unit 10a of Thorsheim and Toner, 1962). Gradational upward into very laminated dolomite with green siltstone interbeds. Sharp erosional unconformity with Nelson Head Formation (Shaler Supergroup) exposed in creek gullies on northwest side of Glenelg Bay. Gradational overlain by Cass River and Cape Clay Formations: strongly dolomitized and variably silicified massive to finely stratified wavy fan dolomite (formerly map unit 10b of Thorsheim and Toner, 1962; cf. Kluth, 1992)

----- unconf. -----

**NEOPROTEROZOIC**

723-4-2 Ma (U-Pb baddeleyite; Heaman et al., 1992)

- Nfg Franklin igneous event-dolerite-gabbro sills and dykes: differentiation sequence in silt: olivine-chromite cumulates, clinopyroxene cumulates, plagioclase-olivine cumulates, plagioclase-clinopyroxene cumulates, plagioclase-olivine cumulates with locally derived sedimentary rock xenoliths in gabbroic matrix. Nfg(s) denotes silt or predominantly ultrabasic composition

----- intrus. contact -----

**SHALER SUPERGROUP (Rainbird et al., 1994)**

- Nw Wynnie Formation: divisible into three intergradational members, in ascending stratigraphic order: 1) interstratified dolomite and dolomite with desiccation features. An overlying unit contains metre-scale cycles consisting of rhythmically laminated dolomite overlain by oolitic dolomite, interstratified dolomite and stromatolitic dolomite. Nw2: thin to thin-laminated black, curvy-weathering micaceous siltstone with minor quartzite and dolomite interbeds at top. Desiccation cracks near top and base. Nw3: coarsening upward sequence of dolomite siltstone and sandstone, overlain by a stromatolitic dolomite. Fine-grained microbial laminae and carbonaceous limestones occur at the top of the member.
- Nmi Minto Inlier Formation: five cyclically alternating informal members: lower evaporite (Nmi1), lower carbonate (Nmi2), middle evaporite (Nmi3), upper carbonate (Nmi4) and upper evaporite (Nmi5). Evaporite members overlain by thin bedded and cross-laminated with pyrite and grey anhydrite, red opalescent siltstone and buff to grey calcilite. Calcilite nodules and stringers common in upper carbonate. Interbedded in upper carbonate siltstone units. Rip-ups and intralac beds are common. Rare halite nodules and desiccation cracks in calcilite. Carbonate members: grey to buff-grey laminated to thin bedded to massive dolomite and fine dolomite. Hummocky cross-bedding

**Reynolds Point Group**

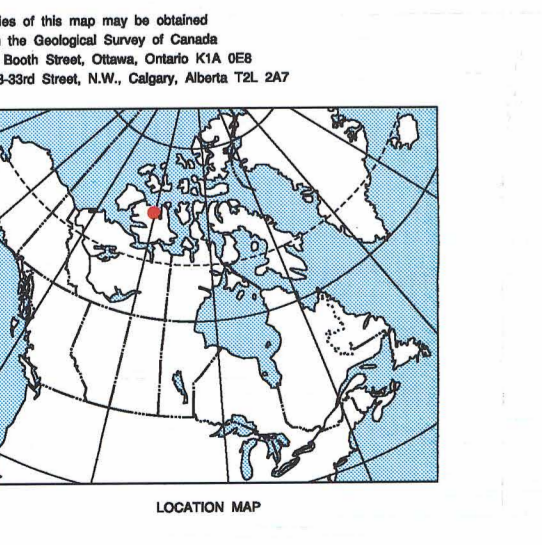
- Nj Jago Bay Formation: interbedded yellow-weathering, cross-bedded quartzite, parallel-laminated dolomite and dolomite with desiccation features. Dolomite yellow-weathering stromatolite composed of both laterally-bedded and dip-forms with abundant inter-columnar quartz occurs within 10 m of base of formation
- Nf Fort Collier Formation: medium-bedded, fine- to medium-grained quartzite and dolomite quartzite with common tempestite cross-bedding and subordinate sub horizontal planar stratification to low angle cross-bedding. Locally glauconitic
- Nb Boot Inlet Formation: cyclically alternating cold gravels, stromatolitic dolomite and dolomite quartzite with common tempestite cross-bedding and subordinate sub horizontal planar stratification to low angle cross-bedding. Quartzite absent from base of formation (by definition) but becomes gradually more abundant toward top; in place include Ngb at base
- Ngb Grassy Bay Formation: basal mudstone unit of variable thickness (increasing westward), which coarsens slightly upward to fine- to medium-grained, parallel-bedded cross-bedded quartzite. Top defined by sporadic erosional unconformity overlain by fine upward succession of hummocky cross-bedded quartzite, parallel-bedded dolomite and parallel-laminated dolomite

**Rae Group**

- Na Ask Formation: cream-coloured and orange-brown-weathering siltstone to siltstone dolomite composed of groups to faning dolomite columns (dolomite in place) stromatolite. In some areas comprises two dolomites of similar thickness that are separated by very laminated dolomite and dolomite. Quartz sand common in intercolumnar areas of lower dolomite.
- Nnh Nelson Head Formation: base is thin laminated black carbonaceous and pyritic mudstone developed in paleogeographic level grading upward into thick-laminated red siltstone and fine ripple cross-laminated quartzite. Middle 2/3 (approx.) is fine- to medium-grained, small- to medium-scale parallel cross-bedded, white to light pink quartzite interbedded with thin (<1m) intercalations of red ripple cross-laminated to parallel-bedded siltstone and very fine quartzite. Top is very- to lenticle-bedded very fine sandstone and parallel laminated green siltstone and fine quartzite overlain by grey ripple cross-laminated calcilite with black mudstone and interstratified dolomite interbeds. Maximum age from dental zones: 1077Ma (U-Pb, unpublished data of R.H. Rainbird and V.J. McNeil)

**SYMBOLS**

- Geological boundary (defined, approximate) .....
- Marine limit .....
- Fault trace (defined, inferred, solid circle indicates downthrown side) .....
- Linsament (from air photograph) .....
- Synclinal axial surface trace (arrow indicates plunge) .....
- Anticlinal axial surface trace (arrow indicates plunge) .....
- Measured stratigraphic section (referenced) .....
- Stratigraphic section line .....
- Bedding orientation with dip .....
- Joint orientation with dip .....
- Strike .....



Location map

Bedrock geology compilation by R.H. Rainbird and C.W. Jefferson.  
 Surficial geology compilation by D.A. Hodgson.  
 Digitization by R. Wylie and S. Mills. Additional mapping and field assistance by A. Cony, G. Green, L.J. Hubbert, J. Kimbrell, W. Macdonald, J. Morris, K. Mouton, S. Phares, K. Taitner, and G.M. Young. Logistical support provided by Polar Continental Shelf Project, Aber Resources and their operators.

Digital cartography by Louis P. Renaud, Geological Survey of Canada.

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

Digital base map from Surveys, Mapping and Remote Sensing Branch published at 1:250 000 scale. Generalized and modified by the Geological Survey of Canada.

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Natural Resources Canada, Ottawa, Ontario, K1A 0E8.

Mean magnetic declination 1994, 41°32' E, increasing 36.1' annually. Readings vary from 40°37' E in the SE corner to 42°21' E in the NW corner of the map. The proximity of the North Magnetic Pole causes the magnetic compass to be erratic in this area.

Elevations in feet above mean sea level

OPEN FILE 2920  
**BEDROCK AND SURFICIAL GEOLOGY**  
**WASHINGTON ISLANDS**  
 DISTRICT OF FRANKLIN  
 NORTHWEST TERRITORIES



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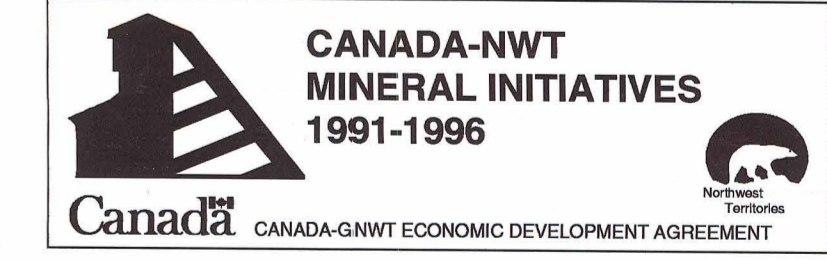
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