



- QUATERNARY**  
Sand and gravel overburden / Esker with pattern indicating probable direction of water flow
- PROTEROZOIC**
- 15 MACKENZIE DIABASE dykes (early Neohelikian)
  - 14 Gabbro sill
  - 13 ELLICE FORMATION: undifferentiated; 13a, conglomerate, arkose; 13b, shale, sandstone, carbonate rock; 13c
  - 12 TINNEY COVE FORMATION: sandstone, conglomerate
- ARCHEAN**
- 11 BURNSIDE RIVER FORMATION: pink quartzite, conglomerate, sandstone, shale, slate
  - 10 WESTERN RIVER FORMATION
    - 10a Upper Argillite Member: greywacke, grey argillite, some white to pink quartzite and red siltstone
    - 10b Quartzite Member: sandstone, dolomitic rocks, calcareous sandstones
    - 10c Red siltstone and argillite with white quartzite, 10c-1; with carbonate rocks, 10c-2; with sandstone, 10c-3.
    - 10d Lower Argillite Member: basal conglomerate and regolith, 10d-1; greywacke and grey argillite, 10d-2; white quartzite, 10d-3; red siltstone argillite, 10d-4; carbonate rocks, 10d-5.
- DIABASE DYKES AND THEIR METAMORPHOSED EQUIVALENTS**
- 9 Dykes of uncertain age
  - 9m MALLEY DIABASE: northeast trending dykes
  - 9p Northwest trending dykes, metamorphosed and locally sheared
  - 9ew East-west dykes, metamorphosed and sheared
  - 9s North-south trending dykes, metamorphosed and sheared
- (AGE UNCERTAIN)**
- 8 COARSE GRAINED MUSCOVITE GRANITE
    - 8p Pegmatite ± muscovite
  - 7 GNEISS AND MIGMATITE OF UNCERTAIN ORIGIN
    - 7m Mylonitic and/or highly sheared granitized rocks
    - 7mk Mixed granitoid rocks derived in part from unit 3.
    - 7tr Trondhjemitic rocks ± sillimanite, garnet
    - 7gt Rocks of granitic or aplitic composition
    - 7gd Granodioritic rocks with hornblende ± biotite.
    - 7dt Dioritic rocks with hornblende ± biotite.
    - 7gb Amphibolite with hornblende ± plagioclase, garnet, unit 8
- ARCHEAN**
- 6 AEGEN OR FLASHERED POTASSIUM FELDSPAR GNEISS
    - 6gt Granodioritic composition
    - 6dt Dioritic composition
    - 6mt Migmatitic gneiss
    - 6pr With remnant paragneiss (unit 1-3)
  - 5a MEGMATITIC GNEISS AND MIGMATITE (probably derived from unit 1)
    - 5a Biotite gneiss with 10-50% leucosome
    - 5b Migmatite with 50-75% leucosome
    - 5c Migmatite with more than 75% leucosome
  - 4 BIOTITE-MUSCOVITE GRANITE, ± TOURMALINE
- REGAN INTRUSIVE SUITE - granodiorite**
- 3a Leucocratic granodiorite with biotite
  - 3b Melanocratic granodiorite with biotite ± hornblende
- YELLOWKNIFE SUPERGROUP (EQUIVALENTS IN QUEEN MAID BLOCK)**
- 2 VOLCANIC ROCKS AND THEIR METAMORPHOSED EQUIVALENTS
    - 2a Felsic to intermediate composition
    - 2b Intermediate to basic composition
    - 2c Volcanogenic paragneiss
- BEECHY LAKE GROUP**
- 1a GREYWACKE - MUDSTONE AND THEIR METAMORPHOSED EQUIVALENTS
    - 1a Biotite and sub-biotite grade rocks
    - 1b Porphyroblastic schist, gneiss ± cordierite andalusite, sillimanite, staurolite
    - 1c Biotite gneiss and schist with no porphyroblasts, ± unit 8.

- SYMBOLS**
- Geological boundary (defined, approximate, assumed)
- Bedding: tops certain, tops probable, tops unknown  
tops overturned and certain, tops probably overturned
- Bedding cleavage-S<sub>1</sub>: tops certain, tops probable  
tops overturned, tops unknown, vertical dip
- Foliation: S<sub>1</sub> and undifferentiated  
S<sub>1</sub> wavy  
S<sub>2</sub> crenulation cleavage  
S<sub>3</sub>
- Shear foliation
- Shear zone including mylonitic zones
- Air photograph linears
- Lineations: Includes mineral lineations,  
minor fold axes for L<sub>1</sub> and undifferentiated  
L<sub>2</sub>
- Antiform, Synform
- Fault (defined, approximate, assumed)
- Archean isograds: Biotite, cordierite-staurolite, granite melt
- Potassium Feldspar megacrysts.
- MINERAL OCCURRENCES**
- |            |    |                       |     |
|------------|----|-----------------------|-----|
| Andalusite | AN | Microlite             | MC  |
| Annemysite | AS | Orthopyroxene         | OP  |
| Biotite    | BO | Pyrite                | PY  |
| Calcite    | CC | Pyroxene              | PX  |
| Cordierite | CD | Sillimanite           | SL  |
| Garnet     | GR | Staurolite            | ST  |
| Kyanite    | KY | Gossan                | +   |
| Tourmaline | TR | Banded iron formation | BIF |

**NOTES**

This map was compiled by a R.A. Frith from sixteen 1:50 000 field maps produced during 1980 and 1981 based on foot traverses spaced about 3 km apart. The map incorporates previous work by L.P. Tremblay (1971) who mapped the Proterozoic successions and parts of the basal granitoid and G.M. Wright (1967) who compiled data for 8 miles to the inch helicopter reconnaissance maps.

Royald Lapointe was the senior geological assistant during 1980 and 1981. Joachim Kosiato and Kenneth Ellison assisted during the summer of 1980 and Donald James, Jazeta Lisowski, Robert MacPhee and Michael Bradford for six weeks during 1981.

Map units in parentheses signify local abundance only. Minerals indicated on the map were only identified in hand specimen and only selected occurrences are noted. Due to the intensity of the mafic dykes in some areas, not all dykes or unit 9 notations are included. This map complies with preliminary reports on the geology of the area (Frith, 1981, 1982).

**REFERENCES**

Frith, R.A. (1981) Preliminary Account of the Geology of the Beechy Lake-Duggan Lake map areas, District of Mackenzie, in Current Research, Geological Survey of Canada, Paper 81-1A.

Frith, R.A. (1982) Second Preliminary Report on the Geology of the Beechy Lake-Duggan Lake map areas, District of Mackenzie, in Current Research, Geological Survey of Canada, Paper 82-1A.

Tremblay, L.P. (1971) Geology of Beechy Lake map area, District of Mackenzie; Geological Survey of Canada, Memoir 363, 36 p.

Wright, G.M. (1967) Geology of the Southeastern Barren grounds, parts of the Districts of Mackenzie and Keewatin (Operation Keewatin, Baker, Thelon); Geological Survey of Canada, Memoir 350.

