

PROTEROZOIC

ARCHAEO

LEGEND

- 10** Gabbro, diabasic gabbro, porphyritic gabbro;
minor meta-gabbro and amphibolitic rocks
- 9a-9c** 9a, coarse-grained gabbro; 9b, gabbro, hornblende, and
amphibolitic rocks; 9c, hornblende, meta-pyroxenite.
Age relationships to 8 unknown
- 8** Coarse-grained, porphyritic (microcline) biotite granite
- 7** Biotite granite and granodiorite, diorite, alaskite;
largely gneissic and impure; in part pseudo-stratified;
7a, gneissic granodiorite; 7b, gneissic diorite; 7c, pegmatite
(G, garnet-bearing)
- 6** Mixed rocks: gneissic granite, granodiorite, and diorite,
with 25 to 75 per cent volcanic or sedimentary schist
and gneiss; injection gneiss (migmatite); 'granitized'
paragneiss and amphibolite, irregular inclusions in
granitic rocks; 6a, granitic rocks, quartz-mica schist
and paragneiss; 'granitized' paragneiss; 6b, granitic rocks,
amphibolite, 'granitized' amphibolite (G, garnet-bearing)
- 5** YELLOWKNIFE GROUP (1-5)
Nodular feldspar-quartz-biotite schist and paragneiss;
minor hornfels (A, andalusite-bearing; C, cordierite-bearing;
G, garnet-bearing; S, sillimanite-bearing)
- 3** 3. Greywacke, argillite, phyllite, slate; minor, impure arkose
and sandstone
- 4** 4. Spotted biotite phyllite, greywacke, quartz-mica schist
- 2** Acidic volcanic rocks and derived schists; minor basic
volcanic rocks; 2a, porphyritic (quartz and/or feldspar)
rhyolite, in part intrusive; 2b, rhyolite and porphyritic
(quartz) rhyolite; 2c, muscovite-feldspar-quartz schist
- 1** Intermediate to basic volcanic rocks and derived schists
and gneisses; andesite, dacite, minor basalt; amygdaloidal
in part; minor agglomerate, andesite breccia, and rhyolite;
undifferentiated gabbroic and dioritic rocks; 1a, greenstone,
chlorite and hornblende schist, and amphibolite schist
derived from basalt, andesite, and dacite; 1b, well-banded
amphibolite, and amphibolite schist and gneiss; 1c, volcanic
schists of intermediate composition; 1d, acidic and basic
volcanic schists and gneisses, micaceous quartz-plagioclase
schists and granules, granitic rocks (G, garnet-bearing)

Isograd line of metamorphism
Bedding (inclined, vertical, overturned, dip unknown)
Bedding (direction of dip known, upper side of bed unknown)
Bedding (upper side of bed faces as indicated, direction of dip unknown)
Schistosity, gneissosity, or foliation (inclined, vertical, dip unknown)
Fault
Anticline
Syncline
Glacial striae
Esker
Mineral prospect or occurrence (gold) X Au

Geology by G.M. Wright, 1949

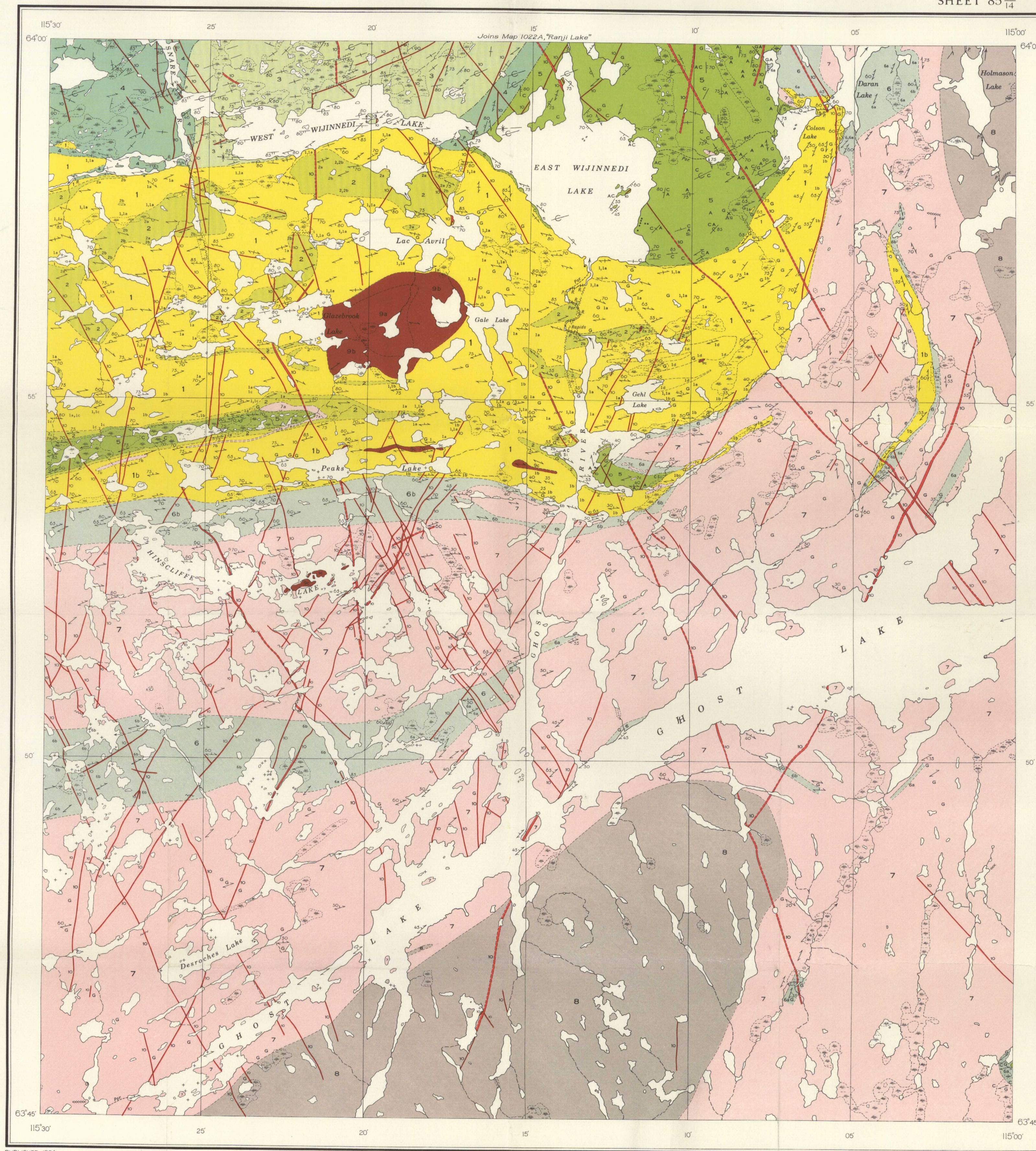
Cartography by the Geological Cartography Division, 1953

Building
Portage
Survey monument
Intermittent stream
Fall and rapid
Marsh or swamp
Reef or small island

Base map surveyed by the Topographical Survey in 1946 and
1948. Compiled by the Topographical Survey in 1949, from air
photographs taken in 1946 by the Royal Canadian Air Force

Air photographs covering this map-area may be
obtained through the National Air Photographic
Library, Topographical Survey, Ottawa, Ontario

Approximate magnetic declination, 36° 54' East



DESCRIPTIVE NOTES

The map-area is most readily accessible by chartered aircraft
from Yellowknife, 100 miles to the south. Good canoe routes are
restricted to the Ghost Lake - Ghost River - Wijnndi Lakes -
Snare River system; other than this, the drainage is sluggish,
and for practical purposes most of the lakes have no connecting
waterways. From high vantage points the country seems monotonously
flat, but in detail the topography is rugged, with a
maximum relief of about 400 feet. Areas underlain by volcanic
and granitic rocks are generally higher and rougher than those
underlain by sedimentary rocks. Bedrock is exposed over much
of the map-area, but east of East Wijnndi Lake is partly ob-
scured by glacial sand and gravel. Timber, for the most part, is
of poor quality.

Rocks of the Yellowknife group are essentially similar to such
rocks found elsewhere in the region north and east of Yellow-
knife. The oldest are intermediate to basic volcanic rocks (1),
which weather dark green, greenish grey, or in shades of
brown. On the south shore of East Wijnndi Lake are well-
formed pillows, but to the south and east such structures have
been obliterated by advancing metamorphism, and the pre-
dominant type of rock is a banded amphibolitic schist, com-
monly garnetiferous. Minor lenses of agglomerate, breccia,
rhyolite, and intercalated sedimentary rocks were observed
within the main basic volcanic band. Porphyritic rhyolite and
other rhyolitic rocks (2) are common within this band. They
weather white, pink, buff, or pale grey, and in places seem
gradational into the basic volcanic rocks. In some places they
occur as narrow bands parallel with the trend of the enclosing
rocks and are probably extrusive, but elsewhere they form
bodies of irregular shape some of which may be intrusive.
Fine-grained muscovite-feldspar-quartz schists are apparently
metamorphic derivatives of the acidic volcanic rocks.

Sedimentary rocks of the Yellowknife group (3-5) are sub-
divided into gradational map-units on the basis of megascopic
metamorphic effects. The relatively unmetamorphosed sedi-
mentary rocks (3) are largely well-bedded argillites and grey-
wackes, although they include massive beds of impure sand-
stone and arkose. Grain-gradation is common in the fine-grained
sediments; neither ripple-marks nor crossbedding was ob-
served. The appearance of small 'spots' of biotite and chlorite
in the phyllites marks the outer boundary of the biotite zone (4);
fine-grained quartz-mica schists also occur in this zone, but
many of the sandy rock types are relatively unchanged. Near the
granitic contacts 'knots' of garnet, cordierite, and andalusite,
and finally sillimanite make their appearance, and these minerals
generally mark the zone of nodular schists (5), which, adjacent
to the granitic masses, become coarser and more gneissic.

Bands of migmatite (6) are prominent at most contacts be-
tween rocks of the Yellowknife group and those of the granitic
complex (7). Most of them are concordant with the surrounding
rocks, and are clearly derived from interaction between granitic
magma or emanations and the invaded rock. Granitic to dioritic
rocks (7) of various types occupy large areas and may be of
widely different ages. Rocks of this group are medium to coarse
grained, white, pink, or grey in colour, and predominantly
gneissic; the most common type is a biotite or hornblende
leuco-granodiorite (oligoclase granite). Very coarse-grained,
porphyritic, biotite granite (8) appears to be younger than the
gneissic granites; for the most part it is red, massive, and free
of inclusions.

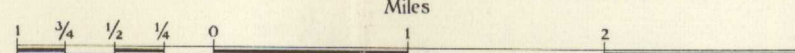
Basic intrusive rocks are of common occurrence within the
map-area. East of Glazebrook Lake, a core of coarse-grained
gabbro (9a), with crystals of hornblende and plagioclase up to
1 inch in length, is surrounded by a hybrid zone (9b) composed
of gabbroic and altered volcanic rocks. Hornblende and meta-
pyroxenite (9c) form several small bodies in, and northeast of,
Hinscliffe Lake. These rocks are coarse grained, green, and
massive. Gabbro and diabasic gabbro (10) occur in well-defined
vertical or steeply dipping dykes up to 300 feet wide. These
rocks are dark green to black on fresh fractures, and brownish
red to greenish grey on the weathered surface. They consist of
about equal amounts of labradorite and pigeonite, with a
little magnetite.

Economic interest in the map-area has been confined to scat-
tered gold prospects, on some of which considerable work has
been done. Areas underlain by volcanic rocks appear to be the
most favourable for prospecting. The contact zone between
sedimentary and volcanic rocks along the south shores of the
Wijnndi Lakes is, in places, highly sheared, carbonatized,
and iron stained, and scattered surface work and diamond-drill-
ing have been done along it. Around the nose of the canoe-
shaped syncline between Glazebrook and Hinscliffe Lakes are
several bands of highly garnetiferous schist mineralized with
pyrrhotite, and pyrrhotite-bearing amphibolites occur near the
east end of the north shore of Peaks Lake. Some work has been
done in both areas. A group of claims to the east of East Wijn-
ndi Lake has been investigated by surface work and diamond-
drilling. Near the sedimentary-volcanic contact about 2 miles
east of the lake, several narrow bands of crumpled garnet-
amphibole rock, in garnetiferous quartz-mica schist, are cut by
irregular veins and patches of quartz mineralized with pyrite
and pyrrhotite.

MAP 1021A

GHOST LAKE
DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

Scale: One Inch to One Mile = $\frac{1}{63,360}$



NOT TO BE TAKEN FROM LIBRARY
NE PAS SORTIR DE LA BIBLIOTHÈQUE

1021A