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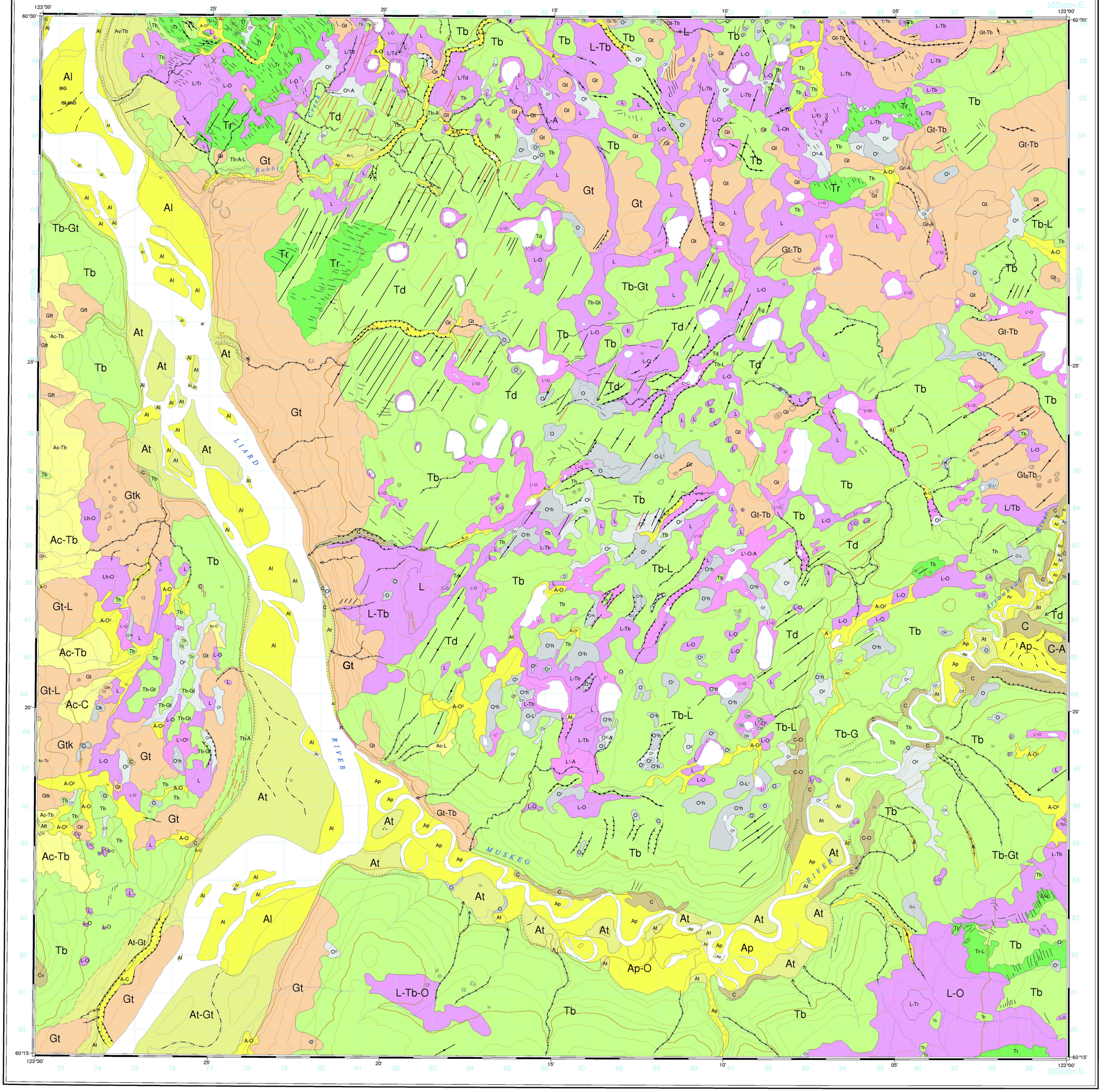
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA

NATMAP / CARTNAT
Canada's National Geoscience Mapping Program
Le Programme national de cartographie géoscientifique du Canada



LEGEND

Coloured legend blocks indicate map units that appear on this map

QUATERNARY

SURFICIAL DEPOSITS

POST LAST GLACIATION

NONGLACIAL ENVIRONMENTS

ORGANIC DEPOSITS: *peat; 1 to 2 m thick; formed by the accumulation of vegetation in poorly drained depressions (swamps and bogs); produces flat, wet terrain*

O¹ — ***Bog peat:*** *Sphagnum or forest peat formed in an ombrotrophic environment; may be treed or treeless with a cover of ericaceous shrubs; hummocky, wet terrain, in places underlain by ground ice,* **O'h**; *undifferentiated bog and fen deposits,* **O**; *undifferentiated hummocky bog and fen deposits,* **Oh**

O² — ***Fen peat:*** *peat derived from sedges and partially decayed shrubs in a eutrophic environment; forms relatively open peatlands with a mineral rich water table that persists seasonally near the surface; often covered with low shrubs and sometimes a sparse tree cover*

COLLUVIAL DEPOSITS: *mass wasting debris <1-100 m thick; nonsorted to poorly sorted, massive to stratified debris deposited by direct, gravity-induced movement*

C — ***Landslide and slump debris*** *: active and inactive landslides; hummocky terrain,* **Ch**; *inactive* ***rock glaciers***; *rock debris deformed by the flow of buried or interstitial ice, forming ridges and furrows,* **C$_{RG}$**

Cv — ***Colluvial veneer:*** *thin cover of rock debris <1 m; usually the product of solifluction acting on lower slopes*

ALLUVIAL DEPOSITS: *sorted gravel, sand, and organic detritus deposited by flowing water*

A — ***Fluvial deposits:*** *sorted gravel and sand >1 m thick; forming active flood plains with meander channels and scroll marks,* **Ap**; *alluvial fan deposits, poorly sorted gravel and sand >1 m thick,* **At**; *large, low terraces with meander scars and active and inactive channels, primarily along the Liard River,* **Al**; *undifferentiated,* **A**

Ac — ***Fluvial deposits, channelled:*** *numerous subparallel alluvial channels covering gentle to moderate slopes;* ***Alluvial veneer:*** *deposits too thin to mask the underlying surface, <1 m thick,* **Av**

At — ***Fluvial deposits, terraced:*** *low, inactive terraces immediately above active floodplains*

L¹ — ***LACUSTRINE DEPOSITS:*** *sand, silt and minor clay deposited in a former lake; generally overlain by organic deposits; exposed by recent fluctuations in lake levels*

POSTGLACIAL OR LATE WISCONSINAN

PROGLACIAL AND GLACIAL ENVIRONMENTS

L — ***GLACIOLACUSTRINE DEPOSITS:*** *fine sand, silt, and clay, deposited in glacier-dammed lakes in valleys or along margins of the retreating Laurentide Ice Sheet; > 1 m thick; level topography; usually overlain by organic deposits in lowlands; hummocky topography,* **Lh**; *kettled topography,* **Lk**

G — ***GLACIOFLUVIAL DEPOSITS*** *: proglacial outwash, gravel and sand with minor diamictons deposited in front of the ice margin, usually 1-10 m thick; forming distal outwash terraces,* **Gt**; *delta terraces,* **Gtd**; *ice-contact ridges,* **Gr**; *undifferentiated,* **G**

TILL: *nonsorted debris deposited directly by glaciers; matrix is sandy to clayey and contains striated clasts of various lithologies, including many Canadian Shield erratics in the lowlands*

Tb — ***Till blanket:*** *> 1 m thick; forming undulating topography; hummocky moraine,* **Th**; *rolling topography,* **Tm**

Tr — ***Ridged moraine:*** *moraines or crevasse fillings forming a ridged topography*

PRE-QUATERNARY

BEDROCK

R — *SEDIMENTARY BEDROCK; Paleozoic to Mesozoic rocks exposed along steep mountain ridges of the Liard Range*

NOTE: *In areas where the surficial cover forms a complex pattern, the area is coloured according to the dominant unit and labelled in descending order of cover; slash between two units indicates that the former unit overlies the latter*

Geological boundary (defined, gradational)

River meander scar

Beach ridges

Small swamp or bog

Abandoned meltwater channel or channel occupied by an underfit stream (large, small and direction of flow inferred, small and direction of flow not inferred)

Escarpment

Kettle

End moraine

Minor moraine or crevasse filling

Ice moulded form in till (direction of flow inferred, not inferred; broader forms have middle dots)

Furrows and troughs related to glacial flow, likely formed subglacially

Gravel pit

NOTES:

During the Late Wisconsinan glaciation (ca. 25 000-10 000 years ago), Rabbit Creek map area was glaciated by the Laurentide Ice Sheet as it flowed into the area from the northeast. The last glacial flows in the area were recorded by glacial flutings that show two confluent flows near the central part of the map area. One flow came from the north-northeast, along the Liard River valley, and the other came from the northeast, over the uplands. Local deglaciation occurred sometime before 12 ka ^{14}C BP (Dyke and Prest, 1987). Large parts of the map area were subsequently mantled by glaciolacustrine sediments deposited into glacial Lake Liard, an ice-dammed lake that formed when the Laurentide Ice Sheet stood northeast of the map area and blocked regional drainage into the Mackenzie River.

Auger data from seismic surveys in the map area show that the central part, ca.10 kilometres north of the Muskeg River, is underlain by at least 15 metres of drift. The drift is composed of clay and rock underlain by up to 10 metres of gravel and sand. Similar stratigraphy is exposed along 75 metre high cliffs near the confluence of the Arrowhead and Muskeg rivers where gravel and sand underlies till. The till, is usually intercalated with discontinuous layers of sand and gravel and shows deformation structures. It is possible that this sequence records a fluctuating glacier margin into the glacial lake. Cliff exposures near the mouth of Rabbit Creek (incorrectly (?) named Big Island Creek on road signs) show over 4 metres of sand and stratified gravels overlying 20 metres of Cretaceous shale. These gravels were probably part of a glaciofluvial system draining into glacial Lake Liard.

REFERENCES

Dyke, A.S. and Prest, V.K.
1987: Late Wisconsinan and Holocene Retreat of the Laurentide Ice Sheet; Geological Survey of Canada, Map 1702-A, scale 1: 5 000 000

CONTOUR INTERVAL 50 FEET
Elevations in Feet above Mean Sea Level

Digital Topographic Data provided by Geomatics Canada, Natural Resources Canada adjusted to conform to Landsat Geocover Image (Landsat-5 Image mosaic, August 1991), including an updated course of the Liard River, by the author

OPEN FILE 4486

SURFICIAL GEOLOGY

RABBIT CREEK

NORTHWEST TERRITORIES

Scale 1:50 000 Échelle

kilometres 1 0 1 2 3 4 5 kilométres

Universal Tranverse Mercator Projection
North American Datum 1983

Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983

Geology by J. Bednarski, 2000, 2001, 2002
Geological compilation and digital cartography by J. Bednarski, 2002

This is a product of the Central Foreland NATMAP Project

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

95 B/12 Mount Flett GSC OF 4481	95 B/11 Denedothada Creek GSC OF 4480	95 B/10 Arrowhead River GSC OF 4483
95 B/5 Fisherman Lake GSC OF 4360	95 B/6 Rabbit Creek GSC OF 4486	95 B/7 Tourbière River GSC OF 4487
95 B/4 Betalamea Lake GSC OF XXXX	95 B/3 Fort Liard GSC OF 1760	95 B/2 Lake Bovie GSC OF 1761

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

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4486
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
2003

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Recommended citation:
Bednarski, J.M.
2003: Surficial geology, Rabbit Creek, Northwest Territories, (NTS 95B/06); Geological Survey of Canada, Open File 4486, 1 map, scale 1:50 000.

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