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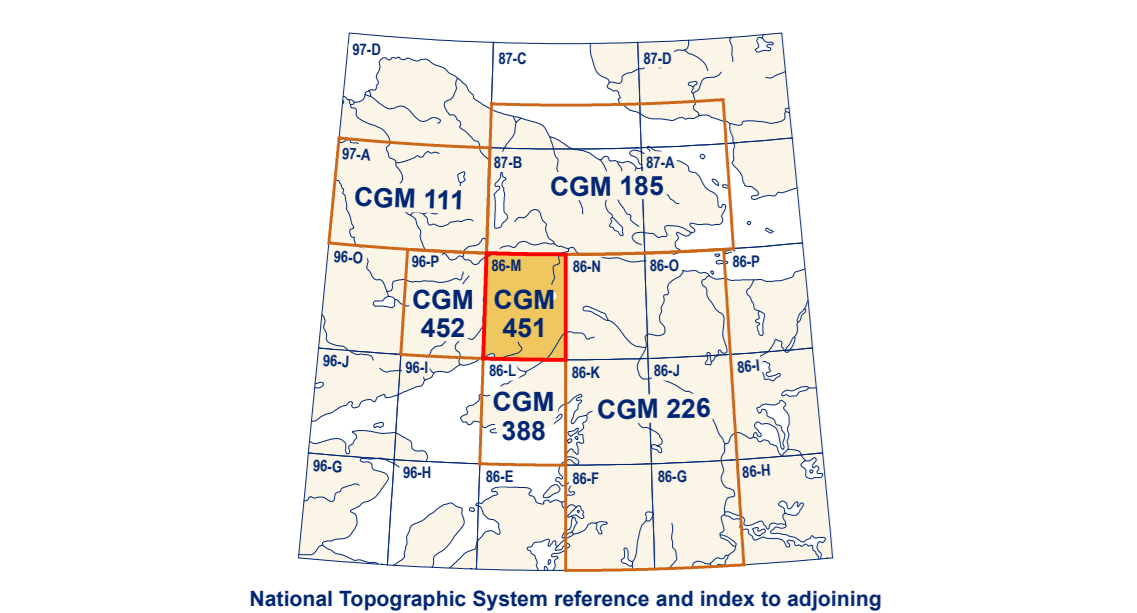
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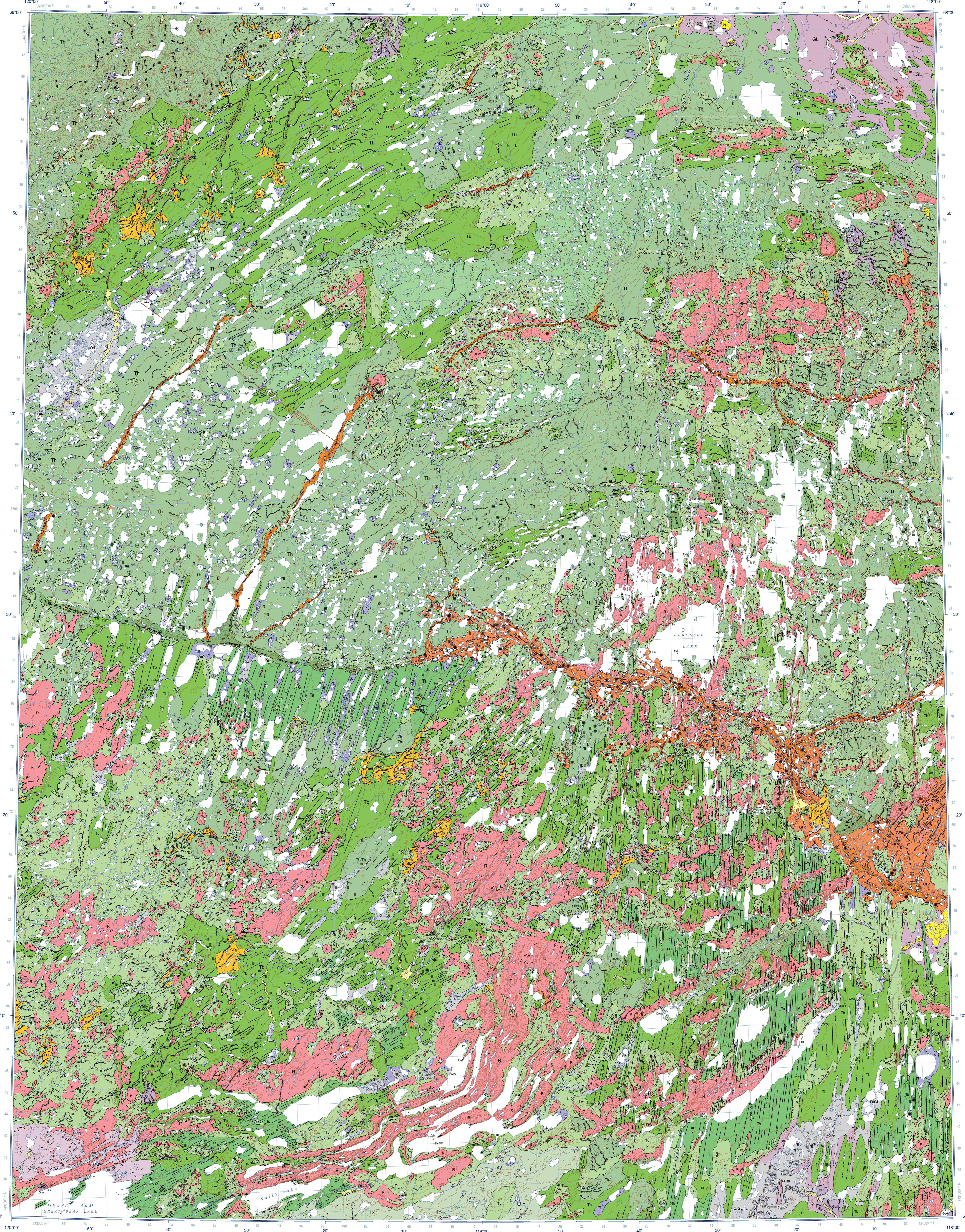
Abstract
Preliminary surficial geology, based on airphoto interpretation and limited field data of the Bebersee Lake map area, records a complex glacial landscape. Highly dissected till, till blanket, hummocky till, moraine complex, and ridged till are dominant units. Subglacial sand and gravel from eskers, subglacial meltwater channels, ice-contact fans, and glacial plains. Fine-grained glaciolacustrine sediments in the south occur prominently in sectors below 200 m elevation, relating to glacial Lake McConnell. Multiple lobes of Laurentian ice glacial ice areas. Relief glacial landforms record older westward to west-southwestward ice flow. In the southeast, these are strongly overprinted by subsequent north-oriented flow, originating from a lobe south of the map area. Dissected till sediments, relating to a third lobe originating east and northeast of the map region, indicate the last ice flow was dominantly westward in the east-central region, and southward in the north and west. During deglaciation, widespread hummocky till was deposited, and major moraines and esker complexes formed along the margins of two ice lobes.



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CANADIAN GEOSCIENCE MAP 451
RECONNAISSANCE SURFICIAL GEOLOGY
BEBENSEE LAKE
Northwest Territories-Nunavut
NTS 86-M
1:125 000



- HOLOCENE
POSTGLACIAL ENVIRONMENT
Organic deposits, undifferentiated: fen, bog, and muck; 0.5 to 2 m thick of fine, poor surface drainage, widespread, and commonly overlies glaciolacustrine sediments and till.
Eolian sediments, undifferentiated: fine to medium sand; varied thickness; may contain active and stabilized dunes and blowouts; sediments reworked or deposited by wind action; derived primarily from glaciolacustrine and glaciolacustrine sediments.
ALLUVIAL SEDIMENTS: silt, sand, and gravel deposited by modern streams and rivers since deglaciation; inactive surfaces may be vegetated.
Floodplain sediments: silt, sand, and gravel; varied thickness; seasonally flooded by active streams and rivers; may include small fans, more extensive inactive surfaces may exhibit paleochannels.
Fan sediments: silt, sand, and gravel; varied thickness; forming a fan deposited by past and present active or intermittent streams.
Terraced sediments: silt, sand, and gravel; varied thickness; deposited by streams and rivers forming raised terraces along active and inactive floodplains; surface may be vegetated.
Alluvial sediments, undifferentiated: silt, sand, and gravel; varied thickness; deposited by modern streams and rivers; may include various alluvial environments.
LACUSTRINE SEDIMENTS: silt and sand, deposited in modern lakes and ponds.
Lacustrine deltaic sediments: silt and sand; varied thickness; low-lying sediments infilling shoreline of modern lake at the mouth of a river.
Lacustrine sediments, undifferentiated: silt and sand; varied thickness; associated with small drains, partially drained, or infilled lakes; may be vegetated; may exhibit paleochannels.
LATE PLEISTOCENE (WISCONSIN GLACIATION)
PROGLACIAL AND GLACIAL ENVIRONMENT
GLACIOLACUSTRINE SEDIMENTS: sediments deposited at or beyond a retreating ice front by meltwater entering a glacial lake, including short-lived ice-dammed lakes, includes some lacustrine postglacial sediments associated with ancestral Great Bear Lake; may contain ground ice.
Beach sediments: sandy gravel; may contain cobbles and boulders; varied thickness; deposited mainly from retreating glacial lakes; may include raised beach terraces from 190 to 200 m elevation associated with glacial Lake McConnell in north-central map area; beaches occurring elsewhere at other elevations relate to smaller, isolated glacial lakes.
Deltaic sediments: silty clay to sand and gravel; varied thickness; associated with glacial Lake McConnell in the south, glacial Lake Copegemma in the northeast, and other smaller isolated lakes, forming a gently sloping delta deposited in proglacial outwash or ice-contact sediments; meltwater; between 190 and 600 m elevation; surface may exhibit paleochannels and patterned ground; may contain ground ice.
Littoral sediments: silt to sand with pebbles; 1 to 3 m or more thick; nearshore sediments; commonly draped over till; may include organic material.
Glaciolacustrine veneer: silt to gravel; less than 2 m thick; may be overlain by organic material; generally overlies till in areas submerged by glacial Lake McConnell; may include thermokarst features and reworked till surfaces.
Glaciolacustrine sediments, undifferentiated: silty clay to fine sand; varied thickness; deposited in nearshore to offshore environments; generally overlies till in areas submerged by glacial Lake McConnell and Copegemma; may be overlain by organic or lacustrine sediments.
GLACIOLACUSTRINE SEDIMENTS: sand and gravel; may include minor silt and clay, deposited by meltwater flowing from, or in contact with, glacial ice; may contain ground ice; may include thermokarst features and reworked till surfaces.
Outwash plain sediments: sand and gravel; varied thickness; generally flat to gently undulating plain; may include minor terraces and ice-contact sediments; surface exhibit meltwater paleochannels and patterned ground.
Terraced sediments: sand to cobbles; varied thickness; forming raised terraces above modern rivers; confined to valleys; surfaces may exhibit paleochannels and patterned ground.
Outwash fan sediments: sand and gravel; varied thickness; forming proglacial outwash fans sourced from eskers and meltwater channels; surfaces exhibit meltwater paleochannels.
Ice-contact sediments: sand and gravel to cobbles; varied thickness; flat to irregular, hummocky surface; may contain kettles, collapse features where supporting ice was removed, and short eskers; may include minor ridges and unmapped glaciolacustrine beaches southwest of Bebersee Lake.
Esker sediments: sand and gravel to cobbles; varied thickness; deposited by glacial meltwater, forming flat-topped to peaked ridges deposited in channels, channels, kames, and eskers; (bed moraine locally overlies till blankets in north-central map area).
Glaciolacustrine sediments, undifferentiated: sand and gravel to cobbles; varied thickness; deposited by glacial meltwater; may form pitted or flat-topped ice-contact deposits.
GLACIAL ENVIRONMENT
GLACIAL SEDIMENTS (TLL): unsorted glacial debris, diamictic; deposited beneath glacier on an lodgment till, meltout till, and gravity-flow deposits; may contain ground ice.
Hummocky till: diamictic; varied thickness but greater than 2 m; deposited directly by meltwater from a glacier; may include minor ridges, ridges, circular to irregular hummocks and hills, locally steep-sided moraine, associated by meltwater channels, and eskers; may include minor ridges in northwestern map area, surface may be pitted with small ponds; meltwater channels, kames, and eskers; (bed moraine locally overlies till blankets in north-central map area).
Moraine complex: diamictic, sand, and gravel; varied thickness; generally north-trending recessional moraine ridges, up to 4 km long; associated with hummocky till; locally overlying glacial flutes with westward flow northeast of Bebersee Lake.
Ridged till: diamictic; varied thickness; areas of minor, irregular to sinuous moraine and other undifferentiated ridges; orientations generally transverse to ice flow but varying to parallel to ice flow; may include scoured till, meltwater channels, kames, and eskers; (bed moraine locally overlies till blankets in north-central map area).
Stratified till: diamictic; varied thickness; strongly fluted till in the southern map area defined by narrow, parallel drumlins, crag-and-tails, kames, and eskers; (bed moraine locally overlies till blankets in north-central map area).
Till veneer: diamictic; less than 2 m thick but may be thicker locally; may be fluted and modified by glaciolacustrine or glaciolacustrine processes locally; underlying bedrock is discernible; may contain small bedrock outcrops; glaciolacustrine and glaciolacustrine veneer, and alluvial sediments in valleys.
Till blanket: diamictic; greater than 2 m thick; occurs as a continuous, gently rising to fluted surface; may include reworked cover or veneer of glaciolacustrine sediments in areas submerged by glacial lakes.
Till, undifferentiated: diamictic; varied thickness but generally greater than 2 m thick; subsoil to hilly topography with rare flutes; surface may be washed, and include glaciolacustrine silt and sand veneer below 200 m elevation.
PRE-QUATERNARY
Bedrock, undifferentiated: various lithologies; large areas of glacially fluted and meltwater-scoured bedrock; also exposed as smaller, isolated outcrops in all map units.