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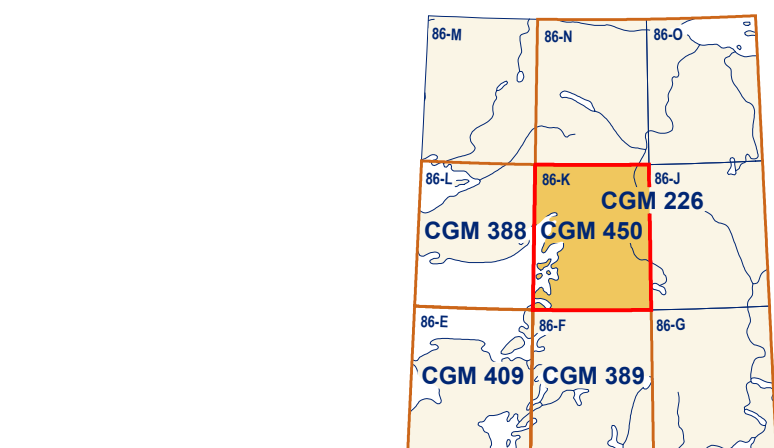
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Abstract

The glaciated landscape of the Sloan River map area records evidence of old southwesterly flow, followed by younger dominant northwesterly flow in northwestern areas, and westward to west-southwesterly flow in central and southern regions. Glacials and meltwater-scoured bedrock are widespread in the map area, with various till deposits discontinuously covering northern regions (Glaciers and other glaciofluvial sediments define a poorly developed meltwater system, ranging in orientation from westward to northwesterly. Meltwater channels show traces of paleoflow directions in topographic highs. During deglaciation, which began about 10.5 ka BP, discontinuous, north-south-trending, neotectonic moraines were formed, defining a former margin of glaciofluvial sediments associated with glacial Lake McConnell occur in the west, up to 300 m elevation. Other, unmet, isolated glaciofluvial sites, including those in the Copernice River valley, occur further east up to a 425 m elevation.

Résumé

Le paysage glaciaire de la région cartographique de Sloan River conserve les traces d'un ancien écoulement glaciaire dirigé vers le sud-ouest, qui a été suivi d'un écoulement dominant plus récent vers le nord-ouest dans les secteurs les plus au nord, et d'un écoulement de direction ouest à sud-ouest dans les régions centrale et sud. Un substratum rocheux affaibli par les glaces et le saut de fonte donne la région cartographique, avec divers dépôts de till recouverts de façon discontinue les régions du nord. Des canaux et d'autres sédiments fluvioglaciaires définissent un système d'eau de fonte peu développé, dont la direction varie de l'ouest au nord-ouest. Des chenaux d'eau de fonte morotés des directions de paléocourants plus variées sur les hauteurs topographiques. Au cours de la déglaciation, qui a commencé vers 10,5 ka BP, des moraines de retrait discontinues d'orientation nord-sud ont été formées, définissant une ancienne marge de glace stagnante. Des moraines dans le nord-est pourraient représenter le prolongement nord de la Moraine de Forcier. Des sédiments glaciofluviaux associés au Lac glaciaire McConnell sont présents dans l'ouest, jusqu'à 300 m d'altitude. D'autres sites glaciofluviaux isolés non apparentés, dont ceux de la vallée de la rivière Copernice, sont présents plus à l'est, jusqu'à 425 m d'altitude.

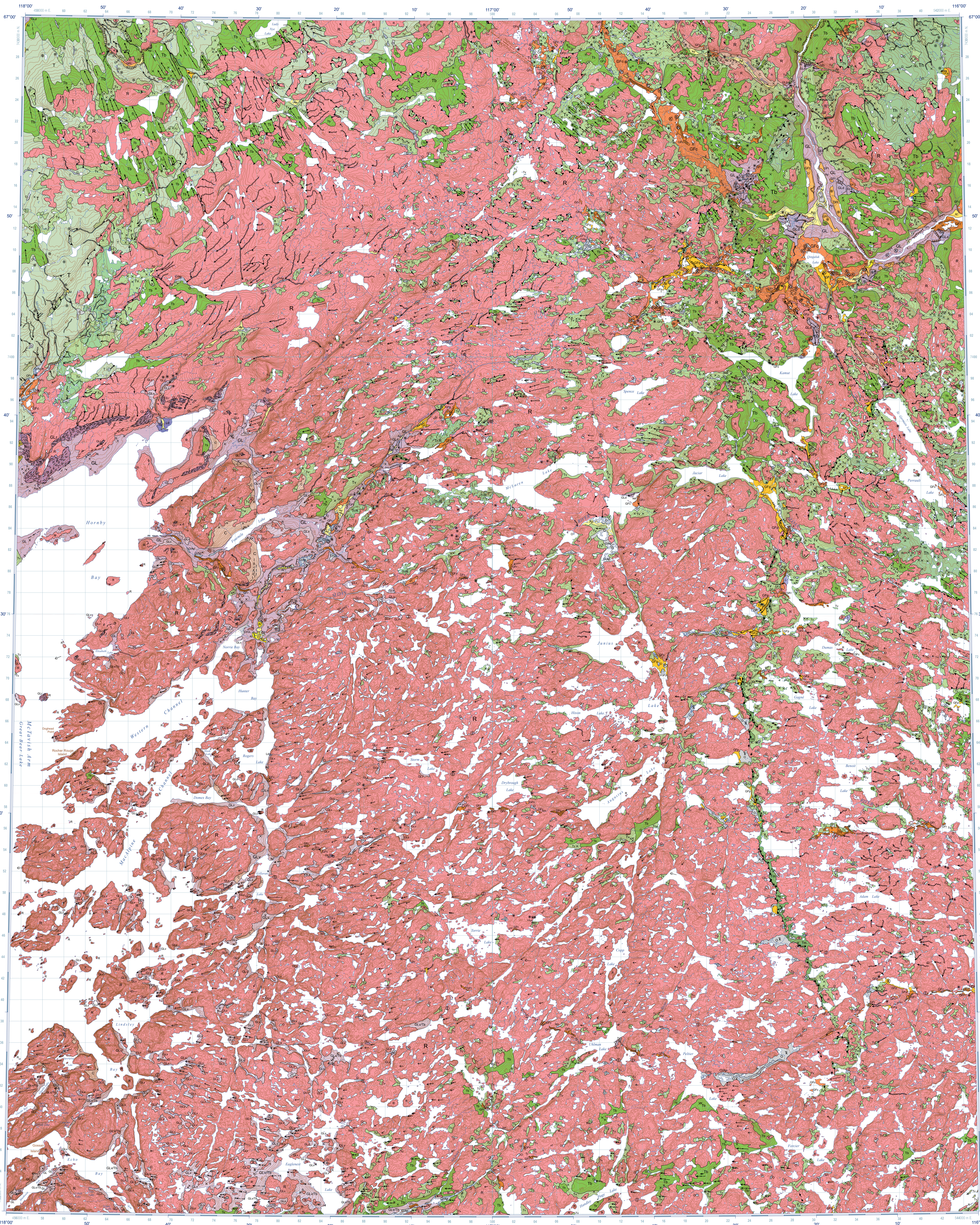


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CANADIAN GEOSCIENCE MAP 450
RECONNAISSANCE SURFICIAL GEOLOGY
SLOAN RIVER
Northwest Territories-Nunavut
NTS 86-K
1:125 000



QUATERNARY	
HOLOCENE	
Is	Isings and snowpicks: accumulations of annual or perennial ice along rivers, 1 to 3 m thick, identified on airphotos dating to July, 1952.
O	Organic deposits, unfossilized: peat and muck, up to 2 m thick, formed continuously by peat and muck, deposited by wind, active and stabilized areas, contain dunes and blowouts, derived primarily from glaciofluvial and glaciofluvial sediments.
Ei	Recent dune sediments: fine to medium sand, variable thickness from 1 to 3 m or more, deposited by wind, active and stabilized areas, contain dunes and blowouts, derived primarily from glaciofluvial and glaciofluvial sediments.
E	Eolian sediments, unfossilized: fine to medium sand, variable thickness from 1 to 3 m or more, deposited by wind, active and stabilized areas, derived primarily from glaciofluvial or glaciofluvial sediments.
C	Colluvial deposits, unfossilized: sand and gravel to angular and rounded cobbles and boulders, composition depends on parent material, variable thickness from 1 to 3 m or more, deposited by gravity-induced movement, forming scree and talus slope deposits along steeply inclined bedrock and overburden surfaces; may include small areas of bedrock.
Ap	Alluvial sediments: silt to gravel, variable thickness, deposited by postglacial rivers and streams.
At	Floodplain sediments: silt to gravel, 1 to 3 m or more thick, deposited by rivers and streams, include inactive and seasonally flooded terraces along modern meandering streams and rivers, may be overlain by organics.
Al	Fan sediments: silt to gravel, 1 to 3 m or more thick, forming a fan-shaped deposit by past and present intermittent streams, include active and inactive vegetated surfaces.
Al	Terraced sediments: silt to gravel, 1 to 3 m or more thick, deposited by rivers and streams, forming terraces above modern meandering streams and rivers, may be overlain by organics.
A	Alluvial sediments, unfossilized: silt to gravel, 1 to 3 m or more thick, deposited by modern streams and rivers, may include various alluvial deposits, including braided stream channels, meltwater channels, and be terraced.
Ld	Lacustrine sediments: silt and sand, deposited in modern lakes and ponds.
L	Lacustrine sediments, unfossilized: silt and sand, variable thickness from 2 to 5 m or more, associated with small drained or partially refilled lakes, generally overlying till, may be vegetated.
HOLOCENE AND LATE PLEISTOCENE	
PROGLACIAL AND GLACIAL ENVIRONMENT	
GL	GLACIOFLUVIAL SEDIMENTS: generally silt and sand, deposited in, or along the margins of glacial Lake McConnell and other smaller, isolated, short-lived glacial lakes, may have been channelized and formed following drainage impoundment by a combination of ice and sediments.
GLd	Beach sediments: sandy gravel, may contain cobbles and boulders, variable thickness; derived mainly from reworked glaciofluvial sediments and till, forming raised beaches and terraces, include active and inactive vegetated surfaces.
GLV	Deltic sediments: silt to gravel, variable thickness, forming a gently sloping surface with steep slopes, deposited as proglacial or ice-contact sediments by glacial meltwater entering lakes of variable extent, include high-level perched deltas in areas of hummocky till (engorged lake), may contain ground ice.
GL	Glaciofluvial veneer: silt to gravel, less than 2 m thick, may be overlain by organics, generally overlies till and bedrock in areas submerged by glacial Lake McConnell, colluvial or steep slopes, may include thermokarst features and reworked till surfaces.
GL	Glaciofluvial sediments, unfossilized: silt and sand, variable thickness, deposited in temporary glacially formed lakes in meadows and offshore environments, sediments in valleys may be reworked by fluvial processes and include some alluvial sediments, may be overlain by till on steeper slopes, may contain ground ice.
GL	GLACIOFLUVIAL SEDIMENTS: sand, gravel, and river silt, ranging from good to poor, and stratification from massive or cross-stratified to planar bedded, up to 20 m or more thick, deposited by meltwater flowing from, or in contact with, glacier ice; may contain ground ice.
GLP	Outwash plain sediments: rounded gravel and sand, variable thickness, occur as proglacial outwash plains, locally down to former ridges, may exhibit braided stream channels, meltwater channels, and be terraced.
GLP	Terraced sediments: sand and gravel, variable thickness; forming terraces incised by glacial meltwater or postglacial rivers.
GLP	Ice-contact sediments: sand and gravel, variable thickness; form mounds, ridges, deposited at or behind the ice margin, formed subglacially or in subglacially exposed ice-walled channels, may include kettles, zones of washed bedrock, and small transverse ridges.
GLP	Esker sediments: sand and gravel to cobbles, variable thickness, deposited by glacial meltwater, form both sharp crested and flat topped ridges, locally reworked by glacial Lake McConnell; deposited in barrens or openings in glacier, may contain kettles and hummocks.
GLP	Glaciofluvial sediments, unfossilized: sand and gravel, variable thickness, a complex that may contain ridges, mounds, and outwash fans; deposited at or behind the ice margin, formed subglacially or in subglacially exposed ice-walled channels; may include kettles, zones of washed bedrock, and small transverse ridges.
GL	GLACIAL SEDIMENTS (TILL): unsorted glacial debris (clastite), consisting of a till and matrix containing pebbles, cobbles, and boulders; deposited in a till and matrix containing pebbles, cobbles, and boulders; deposited beneath glacier ice, or along the margin of retreating or stagnating glacier ice.
Th	Hummocky till: dimension: 2 to 10 m or more thick, gently rolling terrain with a few isolated mounds, locally include small irregular hummocks associated with minor ridges, primarily in the northeast map area; deglaciation moraine, may contain massive ground ice.
Th	Moraine complex: dimension: 2 to 10 m or more thick, forming interlobate or retreating moraine ridges, extending discontinuously for 100 m or more, representing the Forcier moraine in the southwest map area, deposited over bedrock and other till deposits, may contain unmetamorphosed ice-contact sediments.
Tr	Ridged till: dimension: variable thickness; forming narrow, discontinuous, minor moraine ridges or various orientations, that may be associated with veneer and areas of meltwater scour.
Tv	Till veneer: dimension: less than 2 m thick but may be thicker when associated with clog-and-fall, may include patches of bedrock, till blanket, glaciofluvial sediments (below 300 m elevation) and colluvial deposits on steeper slopes, rock structure is generally stable on airphoto.
Tb	Till blanket: dimension: greater than 2 m thick; generally lightly to moderately bedded with clog-and-fall, discontinuous, and pre-creag ridges; commonly minor bedrock topography; small rock outcrops in this unit are shown by symbols.
T	Till, unfossilized: dimension: variable thickness but greater than 2 m; featureless to gently rolling surface, locally with subdued rounded hills, in the northeast map area, may exhibit large ice-wedge polygons.
PRE-QUATERNARY	
R	BEDROCK: various bedrock lithologies, may include patches of till veneer or glaciofluvial or glaciofluvial sediments (below 300 m), may exhibit frost heaving or be glacially streamlined, polished, or meltwater scoured locally.
R	Bedrock, unfossilized: granitic, gneissic, metasedimentary, metamorphic and sedimentary rocks, crosscut by mafic dikes.
Complex units: two map-unit designators separated by a dot (.) are used where the surficial cover forms a complex area and the units are too small to be mapped individually (e.g. T.R. designates an area of ridged till with bedrock). The map-unit polygon is coloured according to the dominant unit and labelled in descending order of cover.	
Stratigraphic units: two map-unit designators separated by a slash (/) are used where a stratigraphic relationship is observed or confidently inferred (e.g. T/R indicates ridge till overlying bedrock). The map-unit polygon is coloured according to the overlying unit.	
Geological contact, defined	
↖	Landslide scar, direction known
⌵	Thermokarst depression
#	Patterned ground, ice-wedges
Ⓜ	Ising, identified on airphotos dating to July, 1952
	Terrace scarp, escarpment
Ⓜ	Beach crest
Ⓜ	Kettle, small
—	Meltwater channel:
—	Minor, direction unknown
—	Minor, direction known
—	Major meltwater channel scarp, direction known
—	Meltwater erosional depression
—	Subglacial meltwater scarp or cordill margin
—	Moraine ridge:
—	Minor
—	Major, neotectonic
—	Ice-contact scarp
*	Kame
—	Esker ridge:
—	Direction unknown
—	Direction known or inferred
—	With beach ridges, direction known or inferred
—	Buried drumlinoid ridge
—	Drumlinoid ridge
—	Drumlin ridge
—	Buried clog-and-fall ridge
—	Crag-and-fall ridge, 1 = older, 2 = younger
—	Pre-creag ridge: streamlined drift ridge formed on up-ice side of bedrock knob; tall points up-ice and thickens towards clog
—	Fluted bedrock or drift
—	Fluted drift, poorly defined, direction unspecified
—	Fluted bedrock, poorly defined, direction known
—	Fluted bedrock, direction known, 1 = older, 2 = younger
—	Striation (see geodatabase):
—	Poorly defined, direction known
—	Well defined, direction unspecified
—	Well defined, direction known
—	Cross-cutting, 1 = older, 2 = younger
x	Small outcrop
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Author: D.E. Kerr
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Geological data conforms to Surficial Data Model v. 2.4.0 (Debono et al., 2018).
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Cartography by D. Viner
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Map projection: Universal Transverse Mercator, zone 11 North America Datum 1983.
Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications.
Elevations in metres above mean sea level.

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2 0 2 4 6 8 10 km

Mean magnetic declination 2022, 17°54'E, decreasing
Readings vary from 17°23'E in the SE corner to 17°23'E in the NW corner of the map.
This map is not to be used for navigational purposes.
Title photograph: Scoured outcrop, Sloan River map area, Northwest Territories. Photograph by P. Normandeau. NRC photo 2021-196.

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