

GRANULAR RESOURCE INVENTORY

- MACKENZIE -

CANOT LAKE NTS 106P

1:250,000

Produced for Indian and Northern Affairs
by Dept. of Energy, Mines and
Resources



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GRANULAR RESOURCE INVENTORY - MACKENZIE

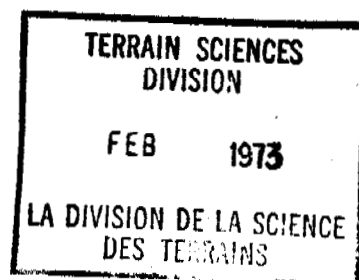
CANOT LAKE NTS 106 P SW $\frac{1}{4}$

Scale 1:250,000

D.E. Lawrence

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For: Department of Indian and
Northern Affairs



SUMMARY

Sand and gravel are found only in a few locations in the southwest corner of the Canot Lake map area. The deposits which contain the coarse granular material are glaciofluvial in origin. Ground ice content in these deposits is probably low and a large percentage of each deposit is available as a granular resource.

Bedrock consists of Devonian carbonates and shales, and Cretaceous sandstone. The Devonian carbonates consist of well bedded, competent limestone which would make good construction aggregate. The Devonian shales are fissile and not resistant to weathering but could be a source of subgrade material. The Cretaceous sandstone forms areas of higher topography. It is covered in part by a morainal till plain. This sandstone consists of loosely, cemented white quartz sand and is an excellent source of sand-sized construction material.

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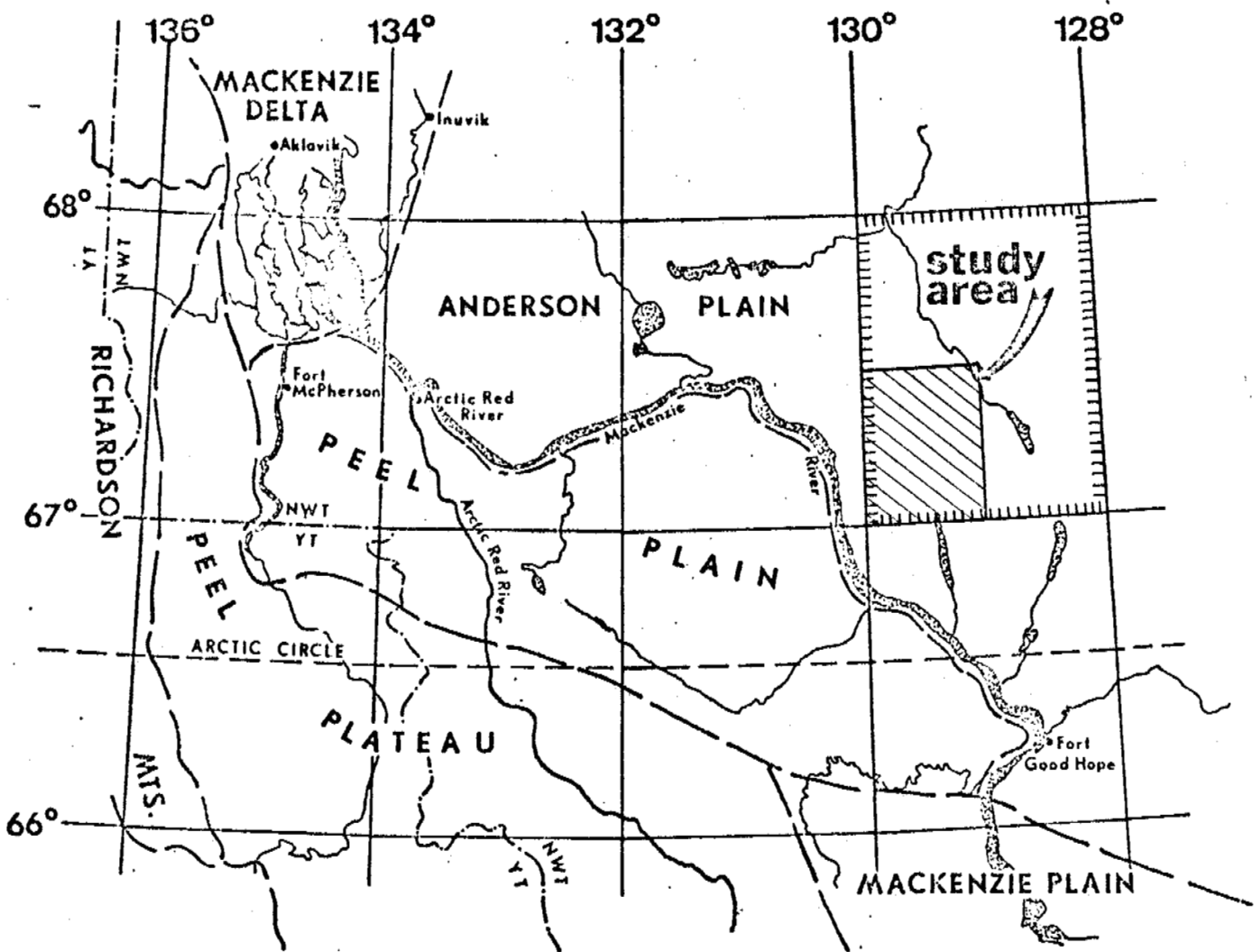
INTRODUCTION

This report presents preliminary qualitative information on the distribution of granular materials available for construction from unconsolidated deposits and bedrock sources found in the southwest corner of Canot Lake map area.

The information in this report has been compiled from unpublished information of the Geological Survey and from personal communication with officers of the Geological Survey of Canada. No tabular summary has been included because there is only minimal information on the deposit thicknesses, texture of material, and quantity of ground ice.

The surficial geology map of the southwest corner of Canot Lake map area (scale 1:250,000) is a portion of G.S.C. Open File 21 (R.J. Fulton, 1970). The units of this map were subdivided principally on the basis of airphoto interpretation. This map may be viewed at Geological Survey of Canada offices in Ottawa, Calgary, and Vancouver. Ozalid copies may be obtained commercially at nominal cost.

The bedrock geology map has been prepared from a Geological Survey unpublished manuscript map (D.G. Cook, 1972). The rock units of this prepared map are grouped according to gross lithology and age. The map indicates the availability of bedrock for construction purposes as an alternative to unconsolidated material.



CANOT LAKE

PHYSIOGRAPHIC REGIONS

0 M.I. 80

FIGURE #1

after BOSTOCK 1967

GENERAL GEOLOGY AND PHYSIOGRAPHY

The Canot Lake map area lies entirely within the Anderson Plain (see figure 1). Most of the surficial geology of the southwest portion of the map area is a till plain overlying Cretaceous sandstone. Other unconsolidated deposits include morainal and glaciofluvial hummocks, glaciofluvial terraces, colluvium and alluvial deposits. Besides the Cretaceous sandstone, bedrock of the area consists of Devonian shale and carbonate exposed in the valleys of the major rivers.

Unconsolidated Granular Deposits

Hummocky Gravel, H, gravel and sand

Gravel and sand of glaciofluvial origin occur as hummocky kame deposits in the southwest corner of the study area. The deposits are probably dry and are likely to contain only a small quantity of ground ice.

Terraces and Outwash trains, To, gravel and sand.

Sand and gravel from the terrace and outwash deposits are found in abandoned outwash channels. The deposits vary in thickness and size. Quantity of ground ice is probably variable depending upon the topography, texture and drainage of the deposits.

Other Unconsolidated Deposits

The other unconsolidated deposits contain a variable but, in general, small amount of sand and gravel and a large percentage of silt and clay material. The ground ice content in these deposits is likely to be relatively greater than that of the hummocky gravels, terraces or outwash deposits.

Bedrock

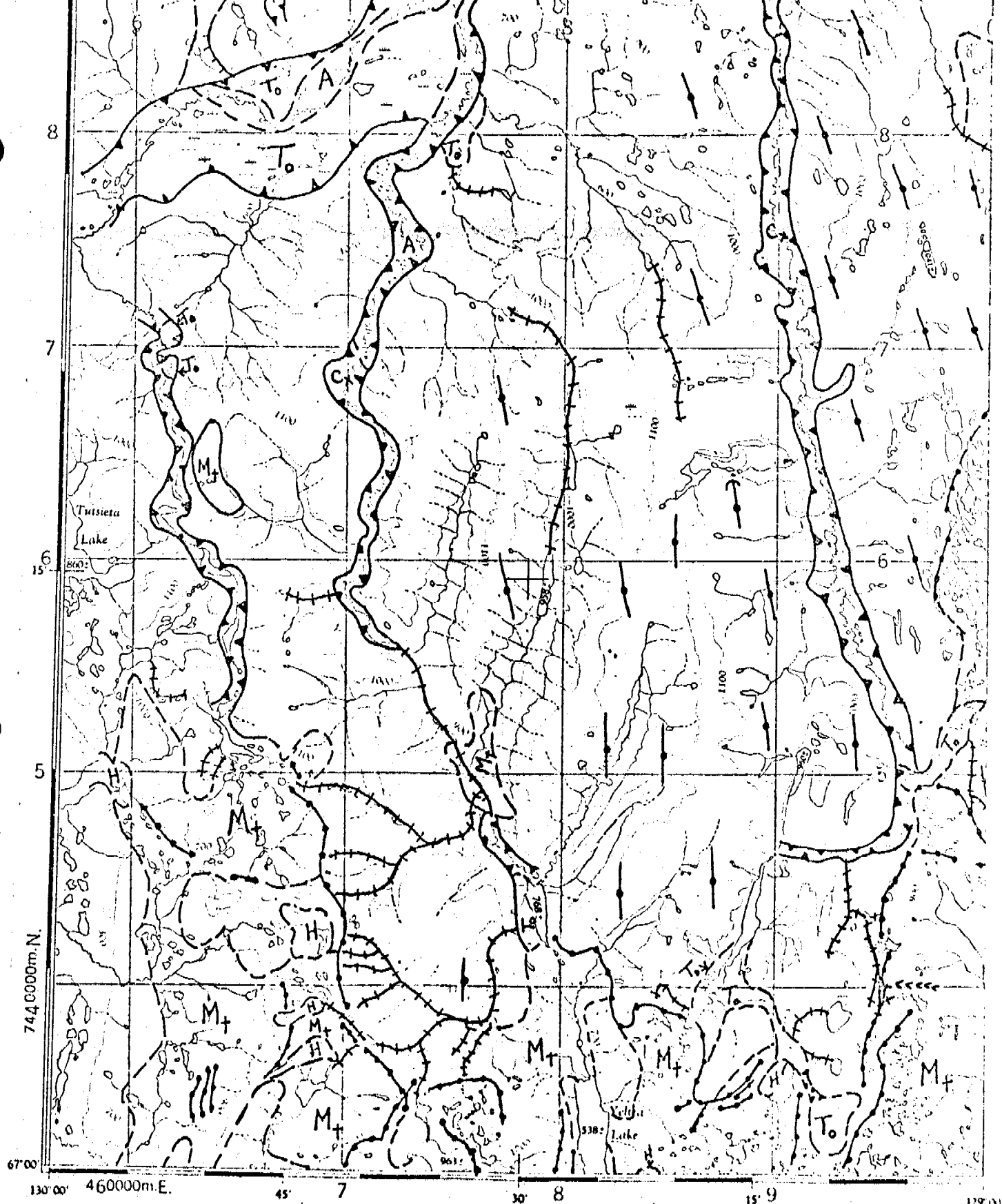
Most of the study area is underlain by Cretaceous sandstone. This rock forms the areas of higher topography. The sandstone is weakly

cemented, coarse-grained and porous. Many of the outcrops consist of unconsolidated coarse to fine white quartz.

Devonian shales and carbonates are found in the river valleys. The shales comprise the Canol and Hare Indian Formations. They are fissile and are not resistant to weathering. The carbonates consist of limestone from the Ramparts and Kee Scarp Formations. The rock is well bedded, competent and would make good construction aggregate.

MAPS AND LEGENDS

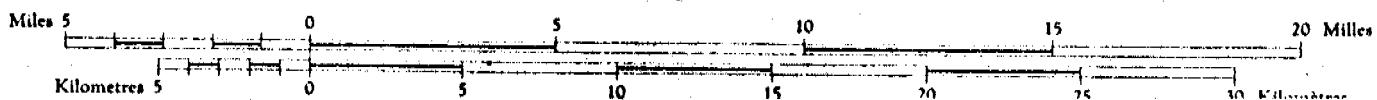
1. Canot Lake 106 P SW¹/₄ Surficial Geology and Legend
2. Canot Lake 106 P SW¹/₄ Bedrock Geology and Legend



CANOT LAKE

106P SW1/4 OPEN FILE 21- SURFICIAL GEOLOGY

Scale 1:250,000 Échelle













SURFICIAL GEOLOGY LEGEND*

- A Alluvium - generally mixed coarse and fine grained sediments - includes floodplains, low terraces, and fans.
- Cx Colluvial Complex - unstratified mixtures of gravel, sand, silt and clay sized particles - includes colluvial blankets, small fans, slope deposits.
- Eo Eolian Deposits - mainly medium to fine grained sand - generally occur as duned blankets.
- To High Terraces and outwash trains - dominantly gravel and sand - consist largely of flat surfaced, stream scrolled areas, raised ten or more feet above present day base levels.
- Tk Kettled Terraces and outwash trains - dominantly gravel and sand - consist of high terraces and outwash trains pocked with kettle holes.
- H Hummocky Gravel - generally gravel and sand - hummocky areas of "ice contact stratified drift".
- M_t Hummocky Terrain - dominantly glacial till but locally may be "ice contact stratified drift" - areas characterized by "morainal" hummocks.
- Mx Morainal Complex - dominantly glacial till but locally contains "ice contact stratified drift" - areas characterized by "morainal" ridges and hummocks.

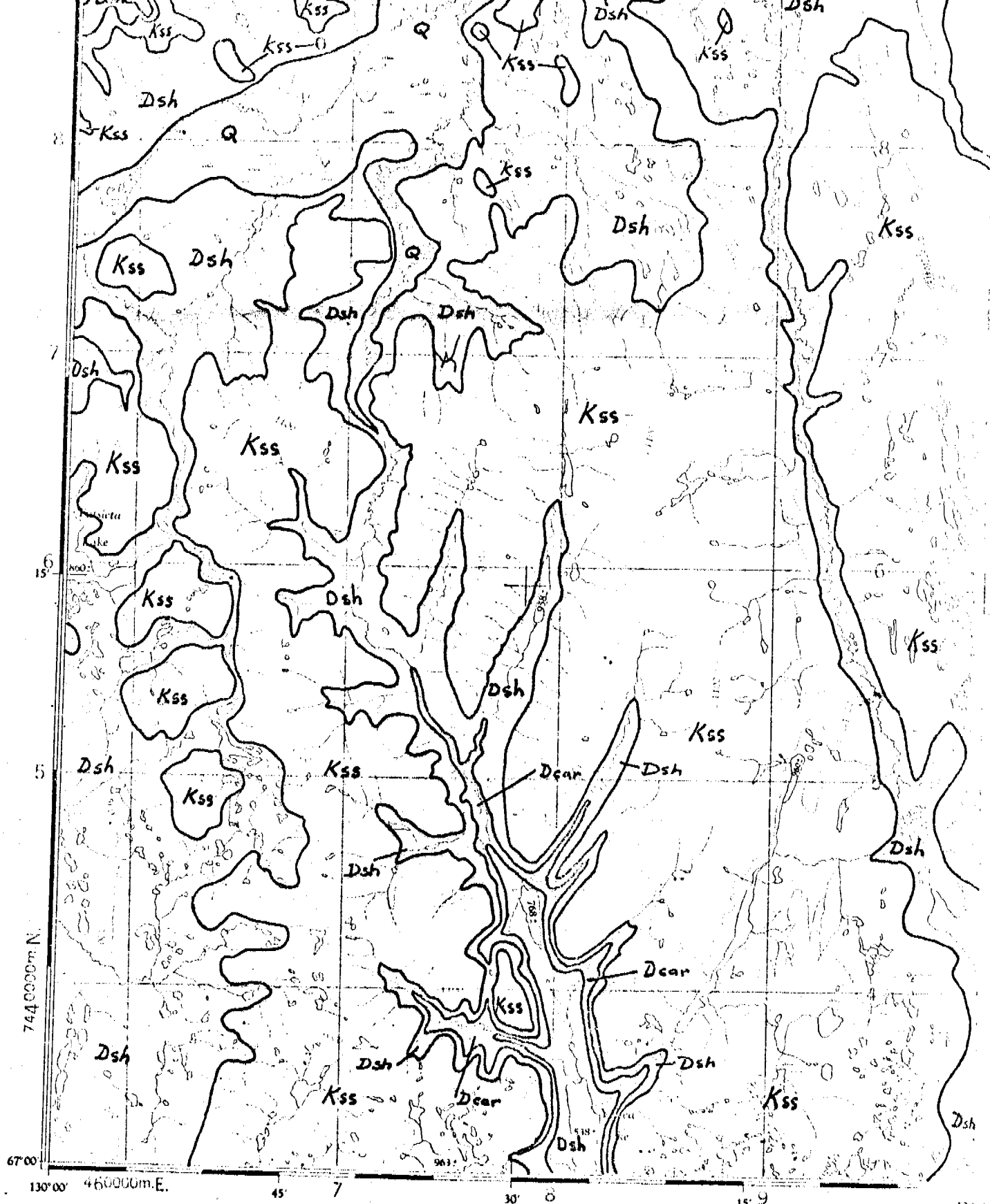
*Areas not designated as a legend unit are largely rock, near surface rock or till plains.

Symbols

- | | |
|--|---|
| * Pingo |  Moraine ridge |
|  Submergence limit |  Sand dune area |
|  Abandoned or misfit channel |  Escarpment |
|  Esker |  Beach ridge |
|  Glacial grooving or drumlinoid feature |  Buried or filled valley |
| |  Sink hole |

all units and symbols do not necessarily appear on this map

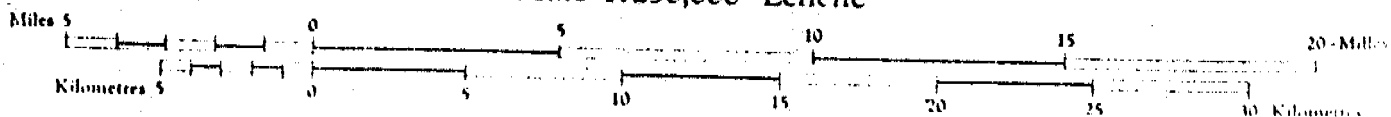
Geology from air photo interpretation supplemented by widely scattered field checks by R.J. Fulton, 1968.



CANOT LAKE

106 P SW 1/4 BEDROCK GEOLOGY

Scale 1:250,000 Échelle



Bedrock Geology Legend

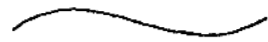
This rock units which appear on the accompanying overlay are a geological grouping according to gross lithology and age.

These units were derived from a more detailed geological map, whose units were subdivided largely on the basis of airphoto and stratigraphic interpretation. The units are identified by a two component code. The first component is upper case and designates age which is followed by a mnemonic designating gross lithology, e.g. Dls - Devonian limestone. When no lithology follows the age component, the unit is composed of many of the rock types listed below.

Legend

Age	Lithology
T - Tertiary	car - carbonate
K - Cretaceous	limestone and/or
JR - Jurassic	dolomite
TR - Triassic	ls - limestone
Pr - Permian	dol - dolomite
C - Carboniferous	ss - sandstone
D - Devonian	sh - shale
S - Silurian	no mnemonic component indicates
O - Ordovician	unit is composed of many of the
€ - Cambrian	above rock types
P - Precambrian	

Symbols



Boundary of bedrock unit (approximate)



Boundary of bedrock unit inferred in area of surficial cover



Limit of mapping

All units and symbols do not necessarily appear on this map.

SOURCES OF INFORMATION

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