

**ACCESS**

Two well-travelled canoe routes give access to the area; the first, from Prince Albert by motor road to Montreal lake, thence down Montreal river to Lac la-Ronge, a distance of 180 miles; the second, from Flin Flon by way of Amisk lake, ascending the Sturgeon-weir and Churchill rivers to Stanley, likewise a distance of 180 miles. A well-organized drainage pattern makes most points in the area easily accessible.

**PHYSICAL FEATURES**

Elevation of the drainage system varies from approximately 1,150 feet on Keg lake to 1,250 feet on Lac la-Ronge. On Nistowiak lake and north and east of Guncoke bay relief attains a maximum of 400 feet above the level of the waterways. Hills and ridges of granite and gneiss reach heights of 200 to 300 feet west of Hunt lake and southwest of Otter lake. Relatively flat topography with low ridges is characteristic of the area surrounding Lac la-Ronge and of the southeast part of the map-area. No large swamps and muskegs are found; the map-area is rocky and poorly forested, the trees being second and later growth, rarely attain a diameter greater than 15 inches.

**GENERAL GEOLOGY**

Volcanic rocks (1), rhyolite, trachyte, andesite, dacite, basalt, tuff, greenstone and derived chlorite and hornblende schists are believed to be the oldest rocks in the area. Some outcrops are massive but the volcanics are more commonly laminated chlorite schists, dark hornblende schists, and glistening mica schists. On the irregularly-shaped lake 4 miles northeast of Waden bay, volcanic rocks are mainly andesites with smaller amounts of basalt and some rhyolite; in the northeast part of this U-shaped area of volcanics, rhyolite and acid lavas predominate; near MacKay lake, andesites, rhyolites, and bands of fragmental volcanic material with some quartz-mica gneiss, occur.

A group of banded slate, greywacke, argillaceous quartzite and andesite (2) is present on Drinking lake, living lake, and Keg lake. These rocks normally have a vertical or very steep dip. They have been altered to fine-grained quartz-biotite schists, micaceous quartzite schists and chlorite schists and in many cases consist of alternate bands of dark and light coloured material.

The arenaceous sediments (4) occurring north of Nistowiak lake and around Hunter bay consist of angular, sub-angular, and less commonly rounded fragments of quartz and feldspar up to 1 inch in diameter, in a medium to coarse quartz-feldspar-mica matrix. These rocks commonly are metamorphosed to coarse-grained, feldspathic quartz-biotite gneiss. Numerous bands of fine-grained, dark greywacke, impure micaceous quartzite, and derived quartz-mica and quartz-hornblende schists occur with the arkosic rocks. A narrow band of arkose 100 to 150 feet in width overlain by impure quartzite and greywacke may be traced from Lac la-Ronge, northeast along the Four Portage route through Hunt lake to the Churchill river. On Forbes and Laroque lakes and east of Hepburn lake andesites and rhyolites are interbanded with impure quartzite, greywacke, and derived quartz-mica schists and gneisses (4a). Impure crystalline limestone (3) occurs along the northwest shore of Montreal river between Lac la-Ronge and Iskwtikan lake. This rock is white to grey, dips gently northwest, and is overlain conformably by arkose. Another small area of limestone was found at the northwest corner of Nistowiak lake.

Diorite, gabbro, pyroxenite, hornblende, peridotite and basic dykes (5), are sparingly developed throughout the area invading the volcanic and sedimentary rocks in the form of small, irregularly-shaped masses and narrow dykes. These rocks vary widely in composition, are commonly massive, black or mottled grey, and in places show signs of granitization by later acid intrusive material.

The volcanic and sedimentary rocks are extensively and intimately invaded by acid intrusives (6). Many varieties are represented, which irrespective of composition are commonly coarse-grained and massive. On the irregularly-shaped lake south of MacKay lake, rock types ranging from diorite to syenite and granite are encountered. West of the long, southerly trending bay on Otter lake, pink to dull orange-red pegmatitic granite forms hills 300 feet in height. On Mountain lake coarse, pink, acid granite is present. The acid intrusives in the southeast corner of the map-area consist of medium-grained, massive, pale pink to grey granite and granodiorite. Near Forbes lake the acid intrusive is a medium-grained, grey to white rock having a very low ferromagnesian mineral content. Comparatively large areas of pegmatite are present east of Mountain lake and east of Whitmoose river. Pegmatite and apite dykes and sills are numerous and widely distributed throughout the area. A slightly sheared, grey, quartz-feldspar porphyry is found intruding the volcanics on the narrow lake northeast of Waden bay.

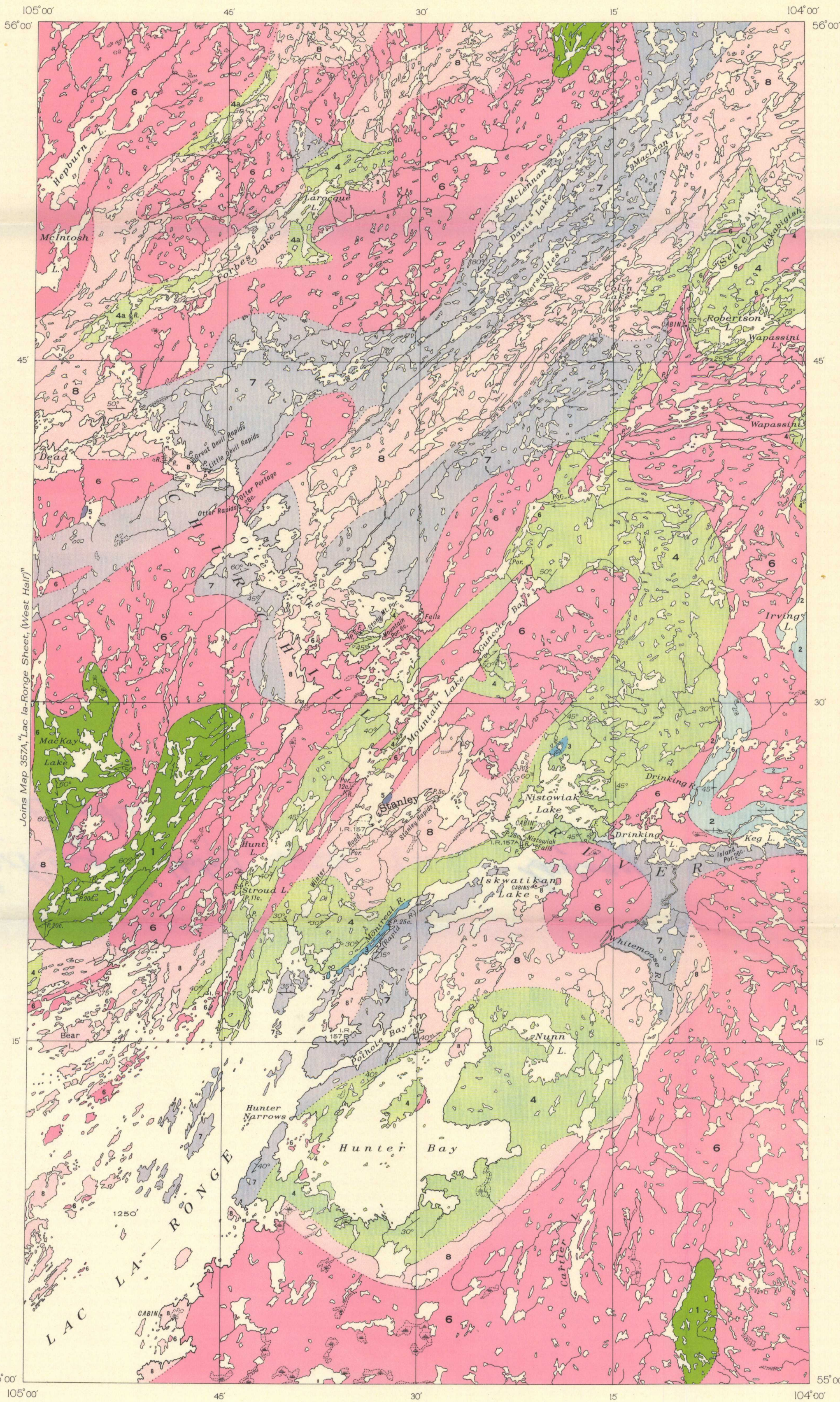
Large areas are occupied by schists and gneisses (7) of various compositions and uncertain origin, probably however derived from the sediments and volcanics of the Wekusko group (1 to 4). These are commonly finely laminated, quartz-biotite schists, medium and coarse-grained feldspathic quartz-biotite gneisses, and to a lesser extent quartz-hornblende schists and gneisses. Garnets occur commonly. These schists and gneisses are light grey to black and, for the most part occur in alternate bands of fine-grained (usually dark) and coarser-grained (light) material.

Other large areas are underlain by schist and gneiss intimately mixed with granite material (8). Quartz-mica schists and gneisses have been extensively injected in a lit-par-lit manner by granite, pegmatite, and apite. Feldspathization and granitization of the gneiss and schists has also taken place. The amount of granite present varies between 10 and 90 per cent, and the changes in proportion are so rapid, and the mixtures so intimate and complex, that this group may not be readily subdivided.

**ECONOMIC GEOLOGY**

The presence of copper-bearing sulphide deposits in various localities had been known for some time prior to 1929, but not until that year did prospecting in the Lac la-Ronge area attain prominence. At the north end of the northeast arm of Forbes lake a mineralized zone containing chalcocite, pyrite, pyrrhotite, arsenopyrite and magnetite disseminated in impure quartzite is found. Along the east shore of Forbes lake, sulphide bodies, heavily mineralized with pyrite and pyrrhotite, occur in interbanded, altered, impure quartzites and volcanics striking north 45° east and dipping between 45° northwest and vertical. At Drinking falls trenching has revealed a mineralized zone 30 feet wide containing disseminated pyrite, chalcocite, pyrrhotite, and arsenopyrite associated with calcite, quartz, and siderite forming a replacement deposit in altered volcanic and interbanded altered argillaceous sedimentary rocks.

Quartz veins mineralized sparingly with pyrite were observed in the volcanic rocks around MacKay lake and northeast of Waden bay.



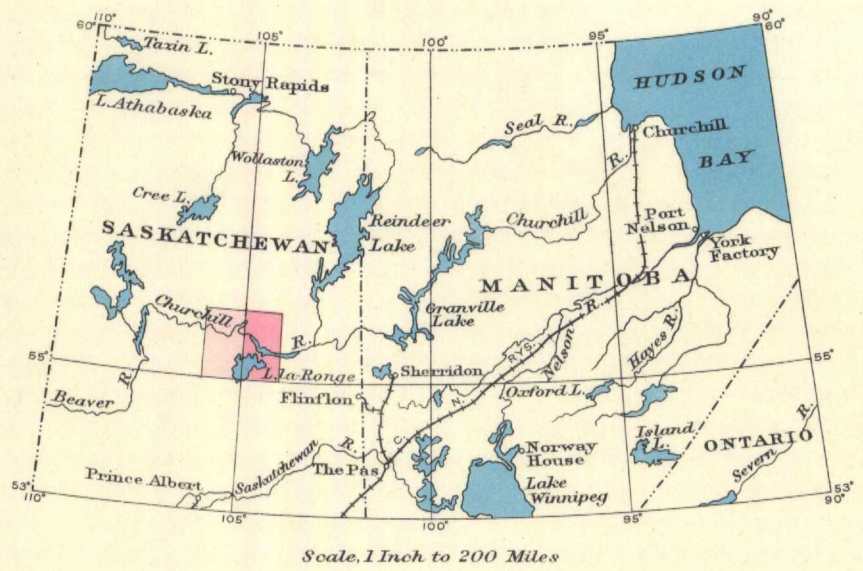
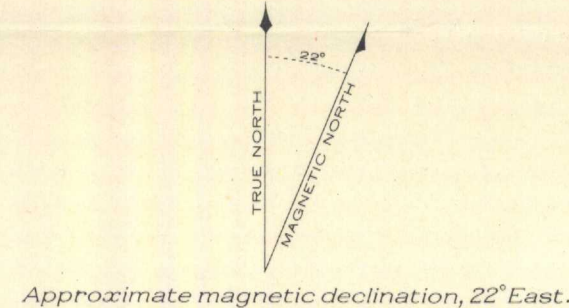
**LEGEND**

- |   |  |
|---|--|
| 6 | Pegmatitic granite, granite, syenite, granodiorite, diorite  |
| 5 | Diorite, gabbro, pyroxenite, peridotite  |
| 4 | Arkose (largely feldspar-quartz-biotite gneiss, micaceous quartzite (largely quartz-biotite schist), greywacke (largely quartz-mica or quartz-hornblende schist); 4a, andesite and rhyolite interbanded with quartzite and greywacke |
| 3 | Impure, crystalline limestone  |
| 2 | Slate, greywacke, argillaceous quartzite, andesite   |
| 1 | Rhyolite, trachyte, andesite, dacite, basalt, tuff; greenstone, chlorite schist, hornblende schist   |
| 8 | Schist and gneiss (probably altered Wekusko group strata) intimately invaded by granite, apite, pegmatite, etc.  |
| 7 | Quartz-biotite schist and gneiss, quartz-hornblende schist and gneiss, garnetiferous schist and gneiss; probably altered Wekusko group strata  |
- ARCHEAN (EARLY PRECAMBRIAN)** (Units 1-4)  
**WEKUSKO GROUP** (Units 5-8)

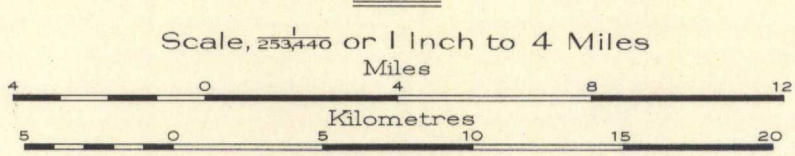
- Geological boundary (defined, approximate, assumed) .....  
 Bedding (inclined, vertical) .....  
 Schistosity (inclined, vertical) .....  
 Glacial striae .....  
 Trail or portage .....  
 Indian Reserve boundary .....  
 Fall or rapid .....  
 Marsh .....  
 Height in feet ..... 1250'

Geology by D. M. E. McLarty, 1935.

Base-map prepared from information supplied by the Topographical and Air Survey Bureau, Department of the Interior.



MAP 358A  
**LAC LA-RONGE SHEET**  
(EAST HALF)  
SASKATCHEWAN



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358A