

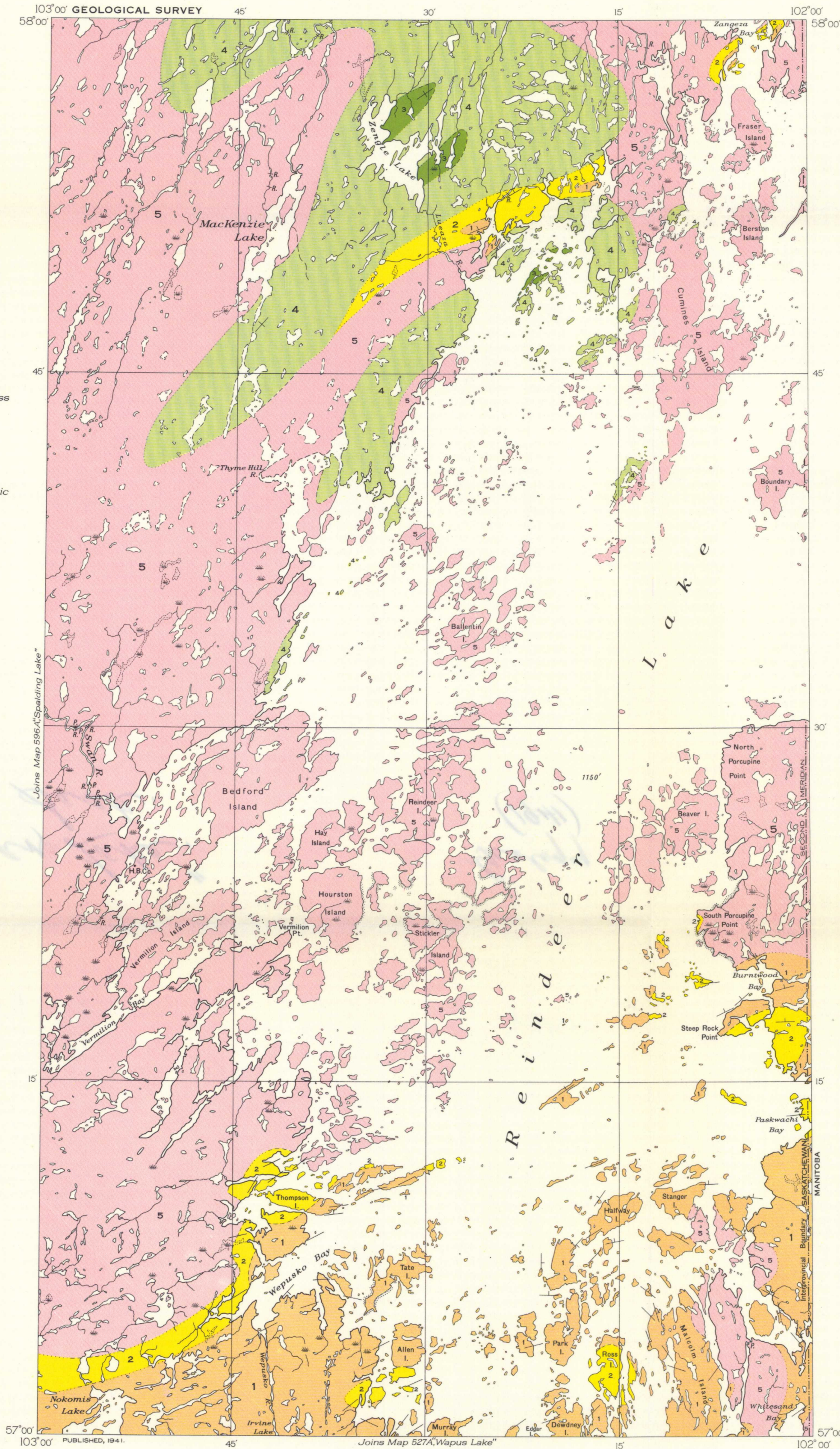
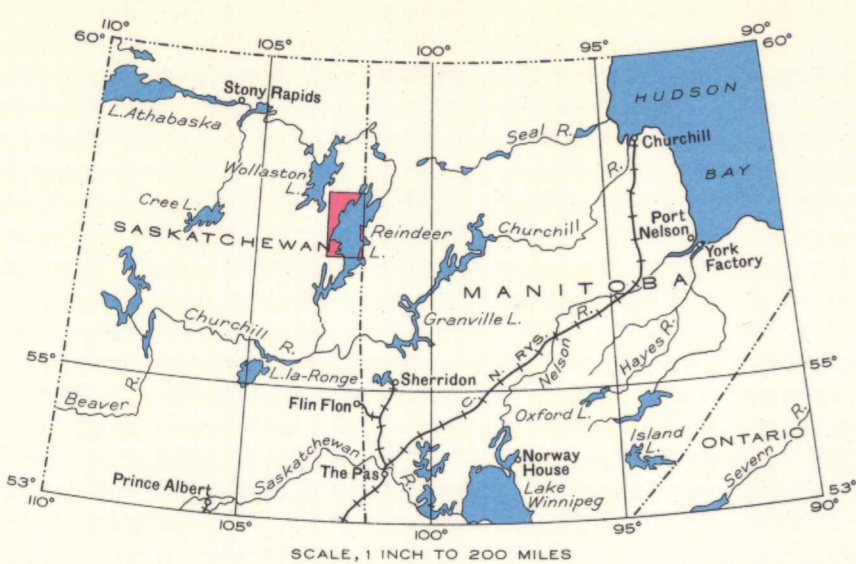
LEGEND

- ARCHEAN (EARLY PRECAMBRIAN)
- 5 Granite, granite-gneiss, porphyritic granite and gneiss, granodiorite, quartz diorite, alaskite, pegmatite
 - 4 Granitic rocks associated with abundant hornblende schist and hornblende gneiss
 - 3 Mainly hornblende schist and hornblende gneiss
 - 2 Gneissic complex of granitic rocks and sediments
 - 1 Sedimentary gneiss and schist, quartzite, pegmatite

- Geological boundary.....
Bedding (inclined, vertical, dip unknown).....
Building.....
Portage.....
Interprovincial boundary.....
Lake and stream (position approximate).....
Rapids.....
Marsh.....
Sand or gravel.....
Height in feet above Mean sea-level..... 1150'

Geology by L.J. Weeks, 1938.

Base-map prepared by the Topographical Survey, 1939, from Federal Government map published in 1939. Cartography by the Drafting and Reproducing Division, 1940.



MAP 595A
REINDEER LAKE
NORTHERN SASKATCHEWAN

Scale, 253,140 or 1 Inch to 4 Miles

Approximate magnetic declination, 17° 00' East.

DESCRIPTIVE NOTES

The area is most conveniently reached from Flin Flon, the northern terminus of the Flin Flon branch of the Canadian National Railways. The water route begins at Beaver lake, 12 miles southwest of Flin Flon, and follows Sturgeon-weir river and Pelican lake to Frog portage, then Churchill and Reindeer rivers to Southend at the outlet of Reindeer lake. By air, the distance from Flin Flon to Halfway island, Reindeer lake, is 160 miles.

Most of the map-area is characterized by rolling, glaciated hills of bedrock between which the depressions are filled with boulder drift or occupied by swamps or lakes. Reindeer lake lies at 1,150 feet above sea-level, and the highest hills do not stand more than 250 feet above it.

The oldest formations in this region, consisting of sediments and volcanic rocks, were first intruded by basic sills, dykes and stocks. These rock groups were then invaded, highly metamorphosed, and partly assimilated by widespread granitic intrusions which show their effects in all parts of the map-area and may be of different ages. The youngest rocks in the region are dykes and sills of gabbro but none occur in the map-area.

The rocks of dominantly sedimentary origin (1) have been highly metamorphosed but original bedding structures are generally preserved as bands differing in colour and mineral composition. Variations in the appearance and composition of these rocks are due both to inherent diversities in the sediments from which they were derived, and to the degree with which they have been permeated, injected, and assimilated by granitic intrusions. Where granitization has been least pronounced, the rocks are usually dark grey, distinctly banded and composed essentially of quartz, mica, and feldspar. The grain size is usually less, and often much less than 1 mm. Pegmatitic stringers composed of intergrowths of quartz and feldspar are common even where the sediments are least altered. Local quartzitic beds, with small amounts of muscovite, are almost white on fresh surfaces. Garnets are common accessory minerals in all types of sedimentary schists.

Mixtures of granitic rocks and sediments (2) are extremely common throughout the area. In places both classes of rocks may be readily distinguished though they may be too intimately associated to be mapped separately. Elsewhere all gradations may be recognized from altered sediments, with little or no granitic material, to pure granite, and, in such places, it has been found necessary to adopt a quantitative system for their classification and mapping. Where the estimated percentage of granitic material in a locality is less than 40, the rocks are mapped as sediments; where the percentage is between 40 and 90, the term 'gneissic complex' is used; and where it exceeds 90, the rocks are classed as granite.

Probably the most common type of mixed rock in this complex is formed by lit-par-lit injection with partial to complete granitic assimilation of the adjoining sedimentary material. Bands of coarse granite several inches wide, often pinkish, and in places pegmatitic, commonly separate grey, micaceous sedimentary layers, and grade into them. Where granitization of the injected rocks has been more complete, the entire rock takes on a granitic appearance, with, however, the original banding of the sediments still discernible on the weathered surface. In places where the mixtures of granitic and sedimentary materials are more distinct, numerous masses of gray, often pegmatitic and only a few feet across, invade the sediments and, in part, follow the bedding planes. In such places the relative proportions of granite to sediments may be such that the latter are represented only by isolated, small inclusions in the granitic mass.

Hornblende schist and hornblende gneiss (3), the latter in places resembling diorite, are generally so intimately associated with granitic rocks (4) that they cannot be mapped separately. The schists commonly occur as numerous lenticular inclusions, a few feet wide, in greyish granite or gneiss. Shiny black hornblende crystals, uniformly oriented, give the rock a distinctive appearance. Recognizable, sedimentary schists were rarely observed but at numerous localities the presence of much mica in the surrounding greyish banded granitic rocks is suggestive of assimilated sediments. On Thyme Hill river, below MacKenzie lake, a body of coarse amphibolite is intruded by granitic rocks. It consists of coarse crystals of amphibole, up to 15 mm. long, set in a greenish-grey groundmass consisting essentially of chlorite, but containing smaller crystals of amphibole up to 7/8 mm. long. The body is less than 1 mile across and is probably a stock. Hornblende-rich rocks, some gneissic and evidently of intrusive origin, occur on islands and points on the mainland in and around the bay northeast of Lueza river. These are equigranular rocks composed mainly of dark minerals, chiefly hornblende. They resemble diorites with a grain size of about 6 mm. Small areas of these rocks are so fresh-looking as to suggest that they may be as young or even younger than the main granitic mass.

Granitic rocks (5) underlie about 70 per cent of the area. They vary from pink and red, to grey and dark grey; from fine-grained to coarsely porphyritic; and from massive to quite gneissoid. In composition they range from aplitic and normal granite to granodiorite and quartz diorite, with normal granitic types predominating.

A body of pink, aplitic granite consisting essentially of orthoclase and quartz, and about 1 mile across, cuts granitized sediments and injection gneiss near the mouth of Lueza river. It is fresh, massive and undeformed and may be younger than most of the granitic rocks of the area.

A sulphide deposit, on Paskwachi bay, just west of the Saskatchewan-Manitoba boundary, was staked in 1927. The rocks are chiefly grey gneiss and schists with a few narrow bands of hornblende schist, the whole intruded by white, pegmatitic granite. The metallic minerals are pyrrhotite, pyrite, sphalerite, chalcocopyrite and galena, and occur in the hornblende schist, or in the gneisses adjacent to it. No other deposits are known in the district.

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