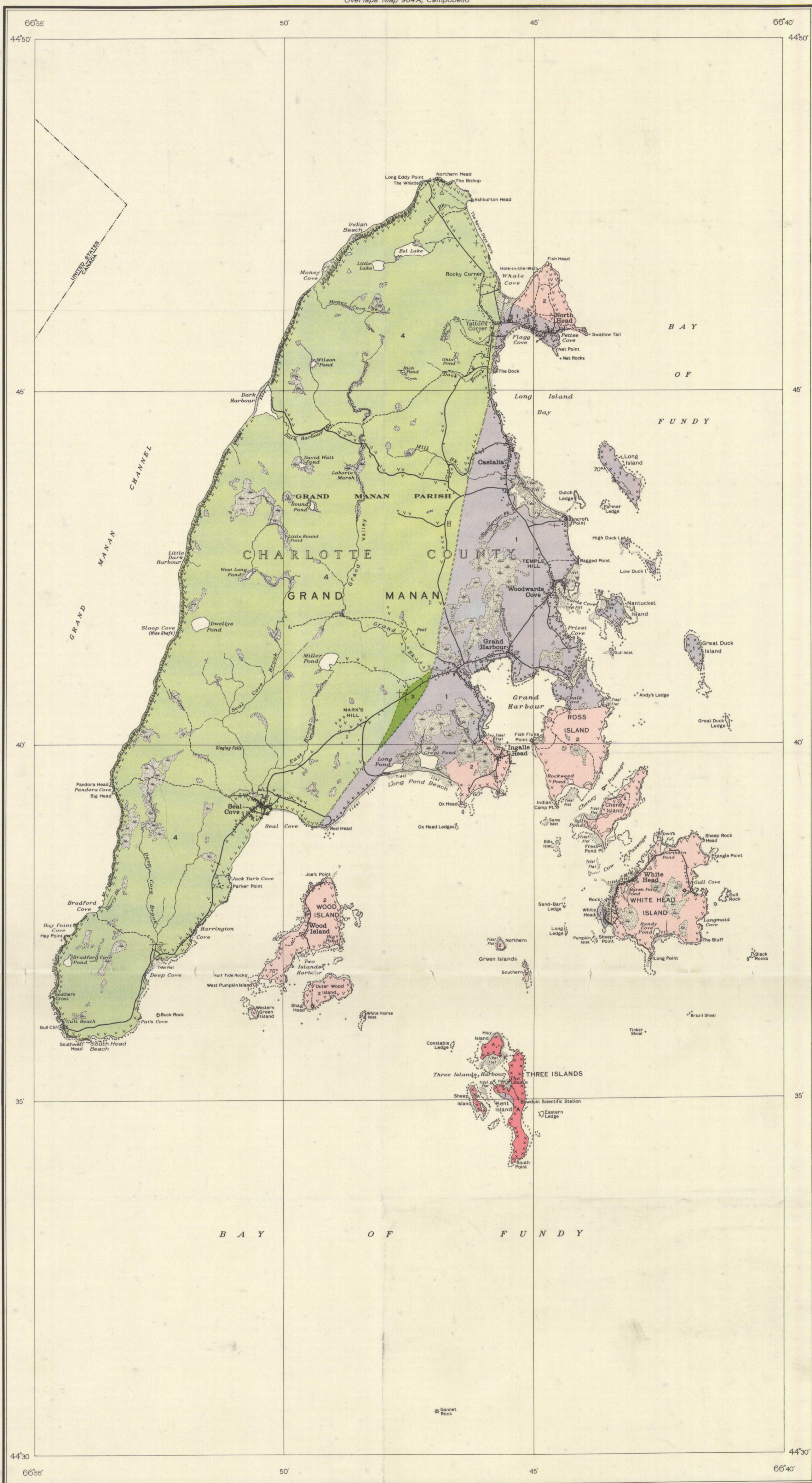


Overlaps Map 964 A, "Campobello"



LEGEND

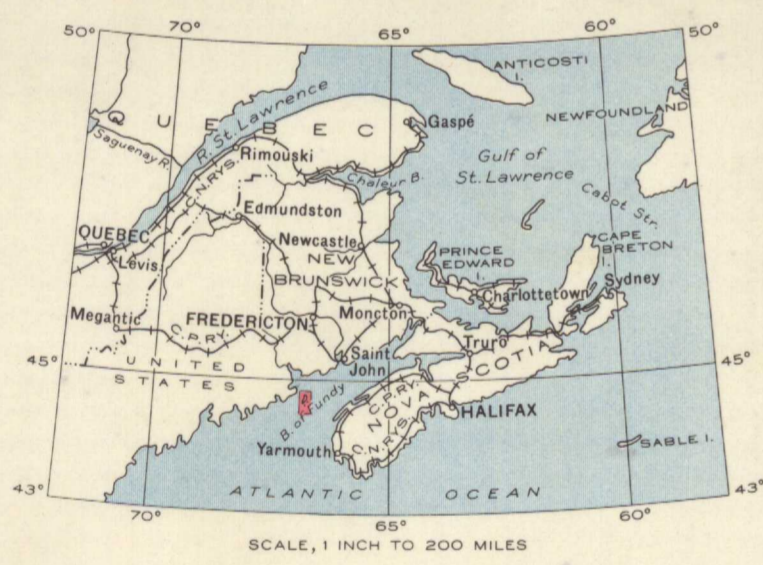
- MESOZOIC**
- 4 Basalt
 - 3 Conglomerate, sandstone
- PROTEROZOIC (?)**
- 2 COLDBROOK GROUP (?)
Rhyolite, andesite, basalt, diabase; tuffs and breccias; minor clastic sedimentary rocks
- ARCHEAN**
- 1 GREEN HEAD GROUP
Quartzite, argillite, schist, limestone
 - A Granite, Precambrian

- Drift-covered area (chiefly swamps and tidal flats)
Observed rock outcrop (undifferentiated, volcanic)
Bedding (horizontal, inclined, vertical)
Fault
Glacial striae
- Road and buildings
Trail or wagon road
Church with spire
Church with tower
Church without spire or tower
School
Post Office
Cemetery
Wharf
Lighthouse
Triangulation station
International boundary
Stream (position approximate)
Marsh
Tidal flats or sand
Reef
Cliff
Rock or small island

Geology by F.J. Alcock, 1946.

Base map from surveys by the Topographical Survey in 1945. Compiled 1947 from air photographs taken in 1945 by the Royal Canadian Air Force. Cartography by the Geological Mapping Division, 1948.

Approximate magnetic declination, 21°05' West.



DESCRIPTIVE NOTES

The oldest rocks of the map-area (1) have so many features in common with the rocks of the Green Head group of the Saint John area that they can safely be identified with them. They consist of massive white quartzites; reddish, grey, and greenish quartzites; argillites; argillaceous, sandy, and locally conglomeratic beds; mica schists, and limestone. In many of the quartzitic rocks a well developed cleavage intersects the bedding planes, and the weaker argillaceous rocks are contorted and drag-folded. The rocks are cut by many small quartz veins and stringers, and on Kent Island limestone and quartzite are cut by red granite (A), which composes most of that island and also Sheep and Hay Islands. The granite is cut in turn by dark diabase dykes.

The Green Head group is overlain by an assemblage (2) composed largely of volcanic rocks, but containing also some interbedded sedimentary strata. The volcanic members, including both massive flows and fragmental types, consist largely of greenish andesites, locally amygdaloidal, but light-colored rhyolites are abundant in places. Sedimentary rocks are well exposed on Wood Island, Ross Island, and at Ox Head; on Wood Island they consist of reddish and purplish clastic beds; and, on Ross Island, they include a conglomerate band containing well rounded boulders of quartz, quartzite, and granite as much as a foot or more in diameter. The series apparently rests unconformably on the Green Head group; on Ross Island the volcanic rocks dip away from the older, sedimentary strata, and on White Head Island the contact of the volcanic rocks, which compose most of the island, with the Green Head quartzites, which forms the peninsula at the southwest end of the island, bevels the bedding planes of the quartzites. No fossils were found in any of the sedimentary material associated with the volcanic rocks, but lithologically the assemblage appears to resemble the Coldbrook volcanic group of the Saint John area more than the Silurian volcanic rocks of the St. George and Campobello areas. The area of volcanic rocks at Fish Head, near the northern end of Grand Manan Island, is separated from the adjacent Green Head sedimentary beds by a fault. It comprises acidic to basic types, and has also been mapped as Coldbrook.

The larger part of Grand Manan Island is underlain by massive basaltic rock (4) with which are associated minor amounts of reddish and brownish sandstone and conglomerate (3). On the west side of the island the volcanic rocks form cliffs up to 400 feet high. The rocks form a series of flows with coarsely amygdaloidal tops, the amygdaloids consisting of quartz, calcite, and zeolites. On the west side of Whale Cove at least one flow shows ellipsoidal structure. The rocks are very fresh, and are similar to others of known Triassic age in the Bay of Fundy region.

The formations of the map-area are intersected by several faults. A major fault traverses Grand Manan Island in a northerly direction, bringing Green Head rocks alongside others of Triassic age. At Red Head these two series are to be seen in knife-edge contact.

The area was glaciated. Smoothed and striated surfaces are exposed on the coast and on the highest part of Grand Manan Island, and numerous foreign erratics were also observed at these higher elevations. Some, apparently old, striae trend from north 70 degrees east to east; others trend about south 50 degrees east; and the youngest strike south to south 15 degrees east.

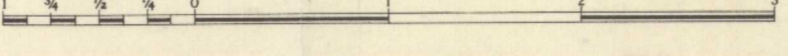
Grand Manan Island has produced a little peat from a bog near Grand Harbour. The large masses of clean white quartzite on White Head, Ross, and Nantucket Islands, etc., may some day be of value as a source of silica.

S.114
A. Geol.
Grand Manan, N.B.
Map 965 A.

A596

MAP 965A
GRAND MANAN
NEW BRUNSWICK

Scale: One Inch to One Mile = 1/63360 Miles



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