

LEGEND

Uncoloured areas are drift-covered areas in which the character of the underlying rocks is uncertain

- PENNSYLVANIAN**
- 11 Sandstone, shale, conglomerate; 11a, Riversdale group: sandstone, shale
- MISSISSIPPIAN (?)**
- 10 Gabbro, diabasic gabbro
- MISSISSIPPIAN**
- WINDSOR GROUP (8,9)
- 9 Marginal basin beds: conglomerate, limestone, sandstone, shale, gypsum; includes undifferentiated Granitire formation; 9a, Granitire formation: conglomerate, sandstone
  - 8 Central basin beds: limestone, siltstone, sandstone, shale, gypsum
- HORTON GROUP**
- 7 Conglomerate, sandstone, siltstone, shale
- DEVONIAN**
- 6 Diorite, quartz diorite, andesite; 6a, andesite
  - 5 Granitic rocks
- CAMBRIAN**
- MIDDLE CAMBRIAN BOURINOT GROUP
- 4 Greywacke, volcanic tuff and breccia, shale, lavas, conglomerate
- LOWER CAMBRIAN
- 3 MACCORMUR AND CANOE BROOK (?) FORMATIONS: shale, claystone
  - 2 MORRISON RIVER FORMATION: conglomerate, sandstone; minor white quartzite, grey shale
- PROTEROZOIC**
- 1 FOURCHU GROUP  
Volcanic breccia, tuff, lavas, chlorite schist; 1a, chlorite schist, altered sedimentary rocks

- Rock outcrop, gypsum outcrop
- Bedding (horizontal, inclined, vertical, overturned)
- Bedding (direction of dip known, upper side of bed unknown)
- Lineation
- Schistosity (inclined, dip unknown)
- Fault (defined, approximate, assumed)
- Anticlinal axis (approximate)
- Synclinal axis (approximate)
- Fossil locality
- Mineral prospect or occurrence

Geology by L. J. Weeks, 1948, 1949

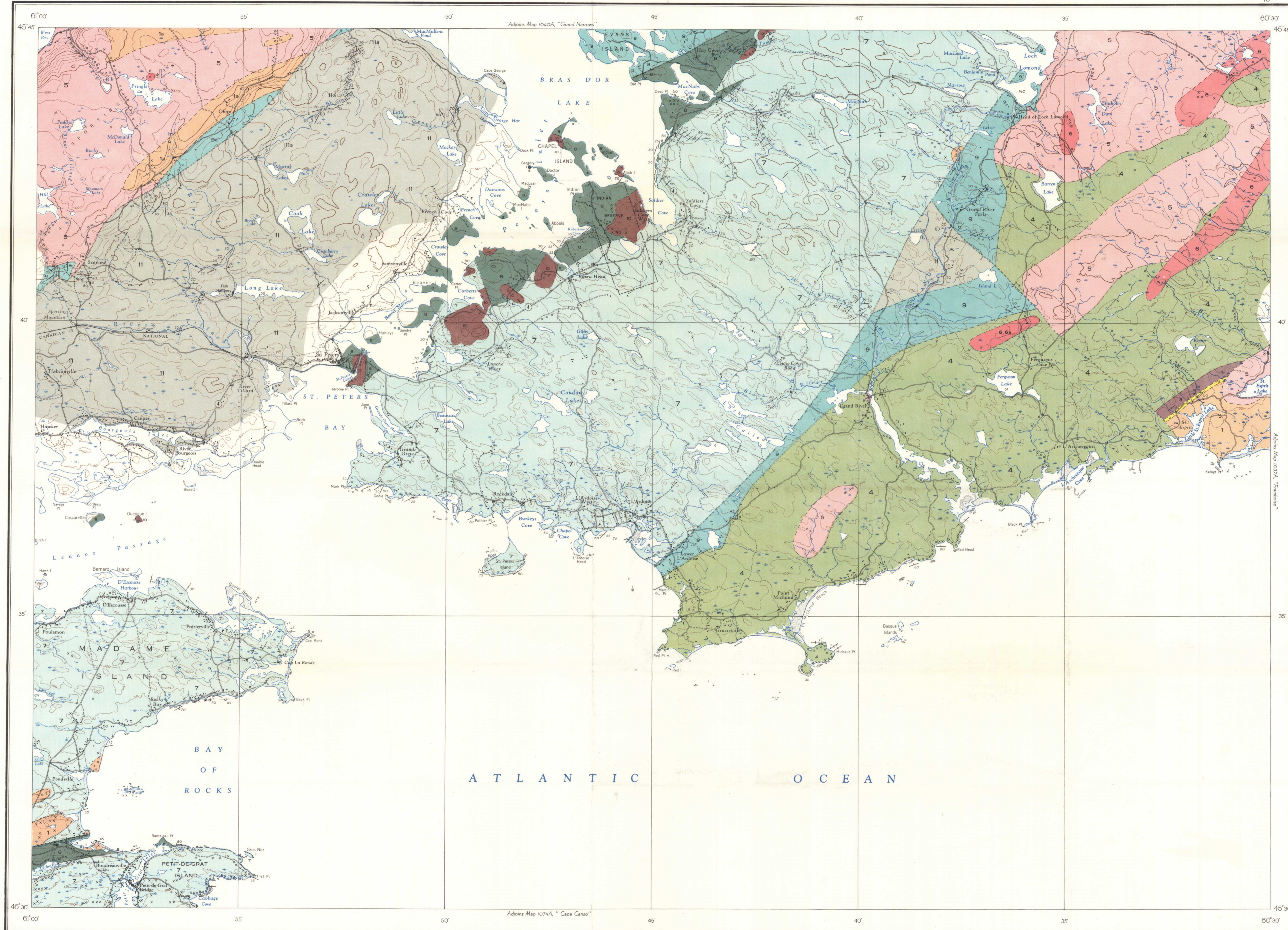
Cartography by the Geological Survey of Canada

- Main highway
- Road and buildings
- Road not well travelled
- Cart track, trail
- Railway
- Power transmission line
- Telephone line
- Church, cemetery
- School
- Post Office
- Sawmill
- Lighthouse
- Wharf or pier
- Bridge
- Horizontal control point
- Indian Reserve boundary
- Intermittent stream
- Canal and locks
- Marsh
- Sand or gravel
- Contours (interval 50 feet)
- Reef, rock or small island
- Height in feet above mean sea-level

Base-map surveyed and drawn by the Surveys and Mapping Branch

All photographs covering this map-area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario.

Approximate magnetic declination 25°14' West



PUBLISHED, 1964  
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MAP 1083A

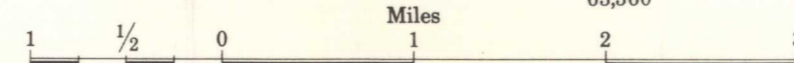
GEOLOGY

AUG 19 1964

**ST. PETERS**  
RICHMOND COUNTY  
CAPE BRETON ISLAND  
NOVA SCOTIA

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NE PAS SORTIR DE LA BIBLIOTHEQUE

Scale: One Inch to One Mile =  $\frac{1}{63,360}$  Miles



Library  
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DESCRIPTIVE NOTES

Most of the area is low and rolling. The relatively flat top of Sporting Mountain and areas underlain by Cambrian rocks and granite east of Grand River are remnants of a tilted and warped plateau that dips beneath the Atlantic Ocean on the southeast and attains elevations of about 500 feet to the northwest.

The oldest rocks in the area, those of the Fourchu group (1), comprise pyroclastic and sedimentary rocks, and are probably of late Proterozoic age. On Sporting Mountain, chlorite schists are associated with rather more sedimentary rocks than are usually found in the Fourchu, and it is possible that these rocks (1a) are equivalent to the Archaean George River group, which is exposed some 6 miles to the northwest on North Mountain.

The Morrison River formation (2) conformably overlies the Fourchu group, and is mainly a red, poorly sorted conglomerate, with micaceous sandstone interbeds, overlain by a thin shale member, which in turn is succeeded by a greyish white quartzite member. Although farther east this formation attains a thickness of more than 2,000 feet, in the one section exposed in this map-area it is only 130 feet thick and its occurrence there has had to be exaggerated on the map in order to indicate it. The rocks are unfossiliferous, and have been considered to represent the lowermost Cambrian of the district, but may equally well be, wholly or in part, of latest Proterozoic age.

Lower Cambrian marine shale and claystone (3) conformably succeed the Morrison River formation. Farther east these beds comprise the MacCormur formation, mainly of shale, and the Canoe Brook formation of red and grey claystone. Only shale is exposed above the Morrison River within the map-area, but, inasmuch as limiting outcrops permit space for the Canoe Brook formation, it is assumed that the latter is present but not exposed.

The Middle Cambrian Bourinot group (4) overlies, with apparent conformity, the Lower Cambrian beds and comprises sedimentary and pyroclastic rocks together with minor lavas. The sedimentary facies are mainly greywacke, with some conglomerate and shale, and the group as a whole is considered to have been deposited under tectonic conditions. These rocks, although unfossiliferous, are correlated with the fossiliferous Bourinot of Indian River Valley, some 30 miles to the north.

Granitic rocks (5) intrude all the pre-Cambrian formations of the map-area. The dioritic rocks (6) and their fine-grained equivalents (6a) are probably relatively younger than the granitic rocks, but together with them are believed to be related genetically to the Acadian orogeny of early Devonian time.

Separated from all of the previously mentioned rocks by a great erosional unconformity are beds of the Horton group (7), comprising continental beds that are mainly conglomerate and sandstone in the south, and sandstone, siltstone, and shale in the north. The group probably accumulated in large, land-locked basins, which at the close of Horton time were quietly entered by the Windsor sea, and marine Windsor central basin beds (8) laid down in conformable succession to the Horton strata. Later in Windsor time, the sea transgressed from these basins, and marginal basin beds (9) were laid down on pre-Horton basement rocks. The basal member of this latter succession is a coarse, ill-sorted conglomerate that varies in thickness from a few feet to some thousands of feet, and is termed the Granitire formation (9a). Both Horton and Windsor beds are intruded by small, irregular bodies of gabbro (10), one of which is diabasic in texture. As such rocks are not known to intrude Pennsylvanian rocks, they are assumed to be of late Mississippian age.

Pennsylvanian rocks (11) northwest of St. Peter's have been in part correlated with the Riversdale group (11a), and possibly are wholly Riversdale. Beds east of Grand River are regarded as Pennsylvanian because they overlie Windsor strata and are continental in origin. They are probably equivalent to the other Pennsylvanian strata.

The principal structural feature of the area is the so-called L'Ardoise thrust block, which extends from Madame Island northeast to beyond the limits of the area and is bounded on the northwest by a thrust fault and on the southeast by a later, normal fault. The rocks involved in the movement comprise Horton and central basin Windsor beds, together with small areas of pre-Horton basement rocks. By means of the thrust fault, rocks of the central basin and marginal basin Windsor successions, normally quite separate sedimentary facies, are brought into juxtaposition.

Lead and zinc minerals are said to have been mined in Windsor limestone at the head of Arichat Harbour. Manganese minerals are reported to have been found on River Tom.

1083A

5.16  
A. Head.  
ST. PETERS, N.S.  
Scale - 1 mi - 1" map 2

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