

Southern New Brunswick compilation and correlation project by the New Brunswick Department of Natural Resources and Energy

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The first phase of the geological compilation and correlation project, which is jointly funded by the Canada-New Brunswick Cooperation Agreement on Mineral Development and the New Brunswick Department of Natural Resources and Energy, is nearing completion. By mid 1993, two

coloured geological maps at a scale of 1:250 000 covering New Brunswick south of latitude 46° 00' will be published. Twenty-seven preliminary geological maps at a scale of 1:50 000 will also be published.

Field and laboratory work for the project during 1992 has

revealed the following noteworthy points: (1) The Paleozoic rocks on Grand Manan and surrounding islands comprise three main sequences that can be correlated directly with units on mainland New Brunswick. The mafic volcanics and interbedded cherts on White Head Island and parts of Ross Island are identical to those in fault-bound slices that occur along the Fundy shore near Martin Head in the Avalon Zone. These rocks are likely Late Hadrynian to Early Cambrian in age. Sedimentary sequences comprised of quartzite, conglomerate, arenaceous sandstone and siltstone and carbonaceous shale, which occur on the northern part of Ross Island and on Grand Manan, are similar to Cambro-Ordovician units in the Avalon Zone north and west of Saint John. A unit composed of volcanogenic sandstone interbedded with siliceous siltstone occurs on the southern part of Grand Manan and forms the western-most Paleozoic package to the north-

east. These rocks have likely correlatives with the Queen Brook Formation that crops out north of Saint John along the Avalon Zone/Dunnage-Gander Zone boundary. (2) A Silurian age for the bulk of the Kingston Dyke Complex has been confirmed by radiometric dating. A U-Pb (zircon) date from granite that forms a large part of the complex on the Kingston Peninsula yields a date of ca. 438 Ma (T. Krogh, written communication). (3) Volcanic rocks in the Castine area in Maine, which contain the Harborside base metal deposit, have been successfully correlated with similar rocks in the Annidale Group in New Brunswick. The correlation of the schists in the Ellsworth area in Maine with the Queen Brook Formation in New Brunswick has been confirmed. The Ellsworth hosts a large base metal deposit at Blue Hill. The economic potential of units in southern New Brunswick has, therefore, been greatly enhanced by these correlations.