10. GEOCHEMICAL RECONNAISSANCE SURVEY OVER THE ORDOVICIAN CARBONATE ROCKS OF WESTERN NEWFOUNDLAND

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Lake sediment samples were collected over a 2500 square mile region underlain by lower Palaeozoic carbonate rocks in Western Newfoundland. This belt of carbonate rocks contains a number of zinc and zinc-lead showings (Fig. 1. A pilot study over known zinc mineralization near Daniel's Harbour had indicated that the zinc distribution in lake sediments closely reflects the presence of zinc mineralization in the local bedrock (Hornbrook and Davenport, 1973).

Samples were collected to achieve an approximately uniform pattern at a density of at least one sample per square mile where lake distribution permitted. The preferred sample location was at the lake-centre-bottom where in most lakes the sediment is organic-rich. The samples were oven-dried, sieved to minus 80 mesh ($<177\mu$), and analyzed for Zn, Pb, Mn and Fe by atomic absorption spectrophotometer. The organic content was estimated from the loss on ignition.

Although interpretation of the data is incomplete, the lake sediment survey should permit an evaluation of the zinc-lead potential of the whole belt of lower Palaeozoic carbonate rocks. Areas of anomalous zinc values comparable to those associated with Newfoundland Zinc Mines' deposits at Daniel's Harbour have been delineated.

The data will be subjected to statistical analysis to determine the degree of correlation of the zinc and lead distributions with features of the surficial environment, such as coprecipitation with manganese and iron oxides and hydroxides, sorption by organic matter, and topographic relief. Where the zinc or lead distributions are found to be significantly controlled by any of these parameters related to the surficial environment, linear regression analysis will be carried out to remove these effects and residual zinc or lead distributions obtained.

The data will be released on open file as single element contour maps, and element residual maps, plotted on topographic base maps at a scale of 1:100,000. Explanatory notes outlining sampling and analytical procedures employed will also be available.

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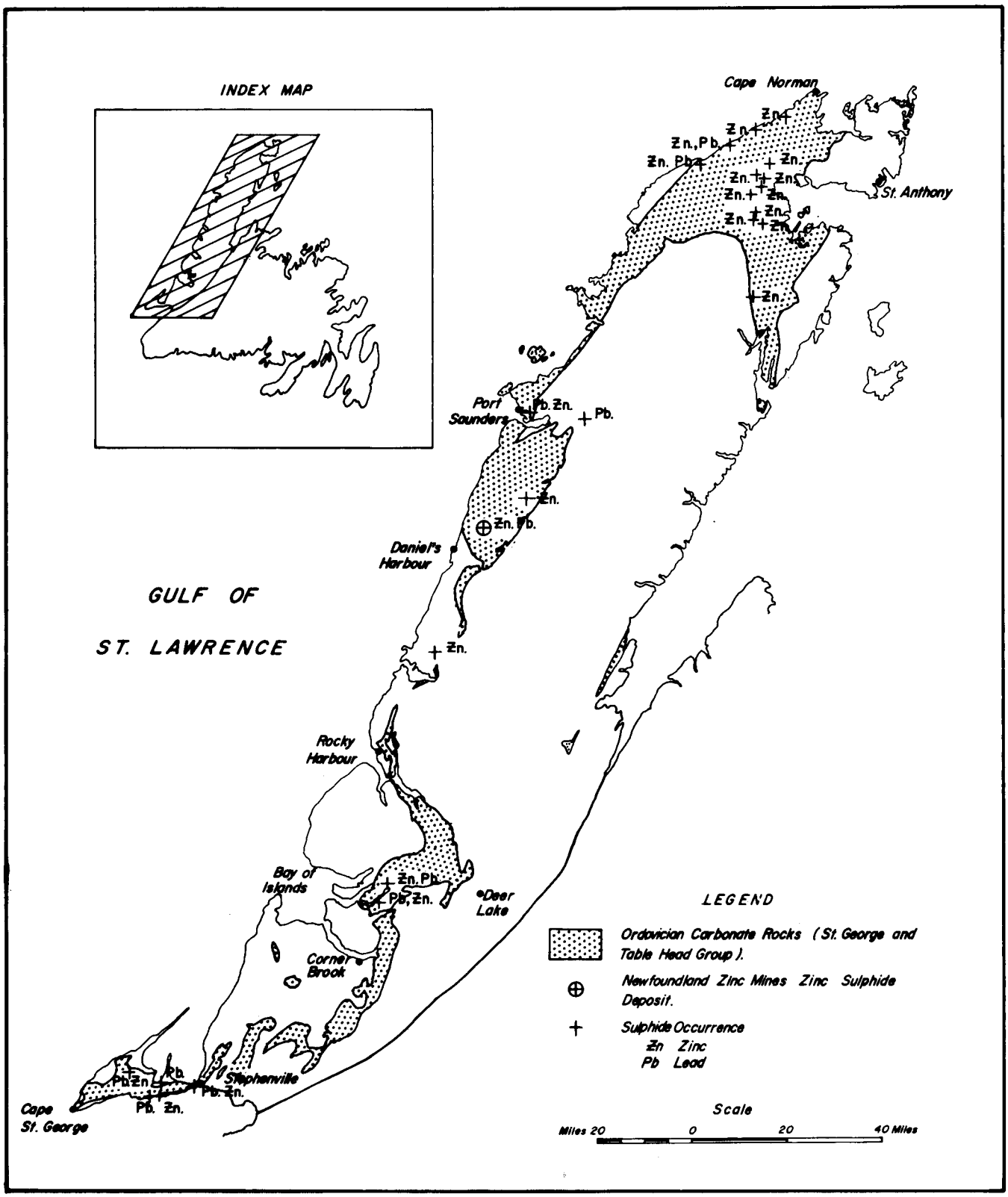

Reference

Hornbrook, E.H.W., and Davenport, P.H.
1973: Canada-Newfoundland Mineral Development Program, Project 6; Geochemical-Glacial-Geological Survey (Geochemical Phase); Geological Survey of Canada, Paper 73-1, pt. B, pp. 25-27.