

SURFICIAL AND GLACIAL MAPPING - GRANULAR RESOURCE INVENTORY

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Introduction

During the 1975 field season a program was conducted to map the surficial and glacial geology and to carry out a preliminary inventory of the granular resources of the following areas (Figure 1): (a) Clarenville - Isthmus of Avalon; (b) the Wesleyville - Carmanville area; and (c) the Deer Lake - Harrys River area. The mapping, conducted on a 1:50,000 scale, has the dual purpose of providing information: (a) on the surficial and glacial geology, of use to present or future mineral exploration programs and (b) to provide some basic data concerning the type and availability of aggregates for use in the construction industry.

Field Program

Information gathered included: the types of surficial deposits, e.g., till versus outwash; thicknesses of overburden; glacial flow indicators; landform or terrain types; and rock lithologies. The locations of active and abandoned quarries and pits were mapped and sieve analysis conducted on various deposits of gravel and borrow pit materials.

The field sieving was conducted using two canvas sheets and a set of 5 nesting screens (Lawrence and Van Dine, 1973), the largest having a 2" spacing and the smallest having a 5 mm. spacing. The weights of material retained on each screen and the canvas (used to catch the - 5 mm. size material) were recorded. The canvas fraction was coned and split (ASTM, C702) and one plastic bag full (5-15 lbs) of this material saved for laboratory analysis (after splitting if necessary). The material retained on the 10 mm. screen was saved for pebble lithology studies. One hundred thirty-three gravel samples and 75 glacial till samples were collected in this manner.

Laboratory Program

The laboratory analysis consists of (a) splitting the field sample down to approximately 100 to 200 grams using a "Riffle Box" (ASTM, C702) (b) calculating the minimum moisture content (ASTM C566) by oven drying (c) laboratory sieve analysis at whole ϕ units* between - 1 ϕ and 4 ϕ screen sizes. Wet sieving techniques will be used to analyze the glacial till samples.

* ϕ unit = -log of wire spacing, i.e., 2 mm = -1 ϕ , 1 mm = 0 ϕ , .5 mm = 1 ϕ , .25 mm. = 2 ϕ , etc.

Reports

Sample location maps and the sieve analysis data will be released on open file later in 1975. The final report, which will include the surficial and glacial maps, maps locating the granular resources and data points and an assessment of the granular resource potential in each area, is hoped to be ready for release in mid-1976.

References

ASTM C566 (American Society for Testing and Materials)

1967: Total moisture content of aggregate by drying; in Annual Book of ASTM Standards, Part 14, 1974.

ASTM C702 (American Society for Testing and Materials)

1971: Tentative methods for reducing field samples or aggregates to testing size; in Annual Book of ASTM Standards, Part 14, 1974.

Lawrence, D.E. and Van Dine, D.F.

1973: A field technique for sieving coarse granular material; unpub. Geol. Surv. Can. manuscript, in files of Nfld. Dept. of Mines and Energy.

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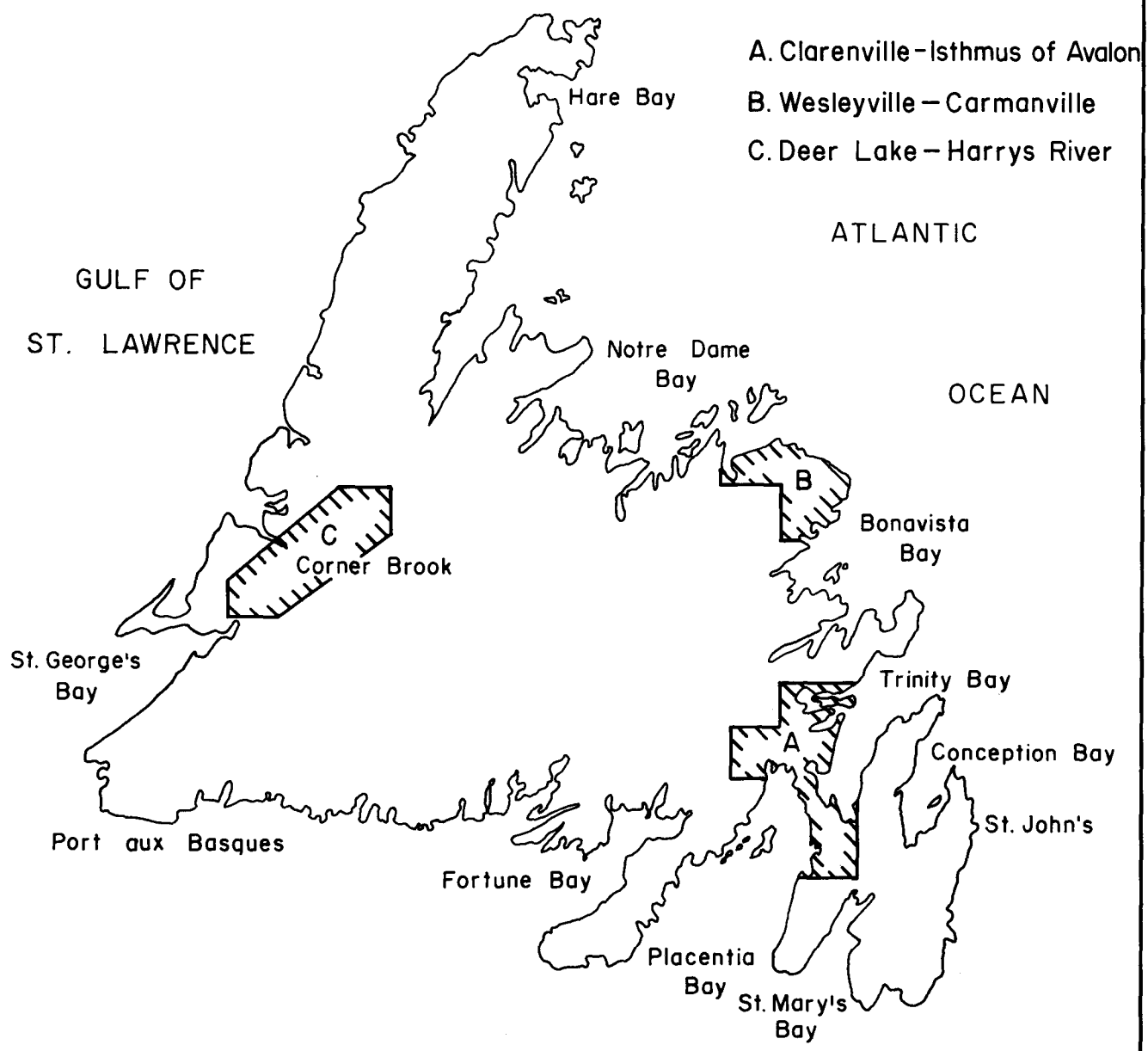


Fig. 1