

SURFICIAL AND GLACIAL MAPPING-GRAVEL RESOURCE INVENTORY

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INTRODUCTION

Mapping has been conducted in six areas of insular Newfoundland (Fig. 1) and one area of Labrador (Fig. 2) since 1974. To date field work has been done on twenty-three 1:50,000 map sheets on the Island (Vanderveer, 1975 and 1976) and three in Labrador.

The purpose of the mapping is to describe the surficial deposits, particularly those deposits of aggregate potential; to map the glacial features; and to gather information concerning the geotechnical properties of the various surficial deposits in each studied area.

Airphoto studies were conducted in each area prior to field work in order to classify the various surficial landforms and to map major glacial flow features.

FIELD PROGRAM

In general the field program consisted of (1) vehicular traverses along all roads and trails; (2) foot traverses along inland trails and along coastal areas; and (3) boat, canoe or helicopter traverses along coastal sections and rivers. The density of observation averages one per quarter mile of traverse.

Observations include exposure thickness and type of overburden, types of landforms, bedrock types, and the types of glacial erratics.

Sieve analyses and moisture tests were conducted on deposits of gravel and glacial till. The weights retained on the field sieves (sizes 63mm, 31.5mm, 16mm, 8mm and 4mm) were recorded and a 200-500 gram split of the -4mm fraction and a split of the +8mm retained fraction of each sample were saved for further laboratory analyses. Representative samples of sand, silt and/or clay deposits and of the various bedrock types were also collected for each study area.

A preliminary assessment of the surficial interpretation was conducted during the course of the field work.

LABORATORY PROGRAM

The laboratory program consisted of drying, sieving and recording the weight retained on the 2mm, 1mm, 0.5mm, 0.25mm, 0.125mm and 0.062mm sieves for each sample of gravel or sand. Glacial tills and other samples of a high silt and/or clay content were deflourcated, wet sieved, and the dried weights of each sieve fraction recorded. The -0.062mm fraction was coagulated, allowed to settle, dried and weighed.

Sample number, location, percents gravel, sand, and silt-clay, moisture content, cumulative curve and histogram were plotted for each sample (Fig. 3).

POST-FIELD OFFICE PROGRAM

The surficial and glacial airphoto interpretations were checked against the field observations

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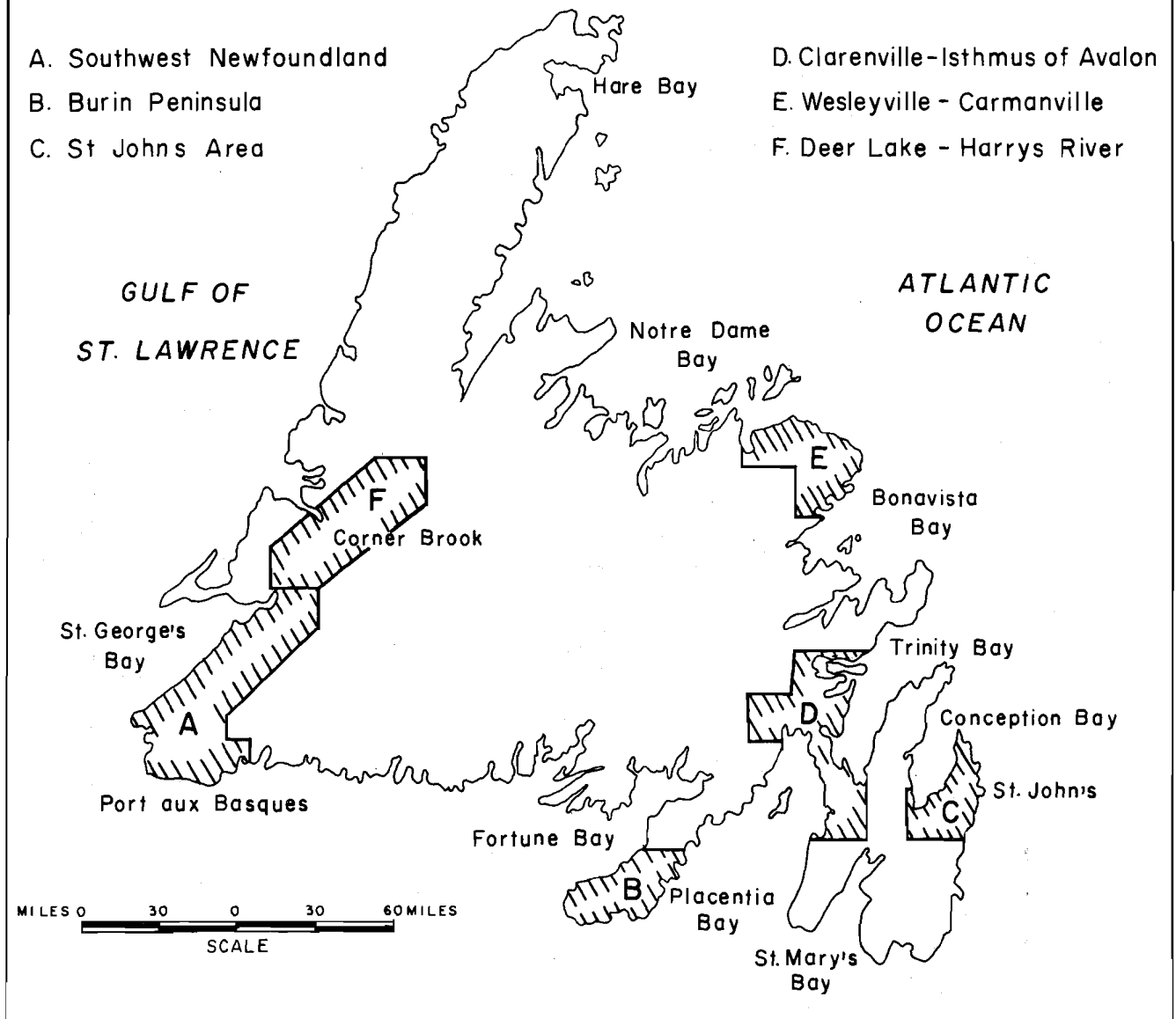
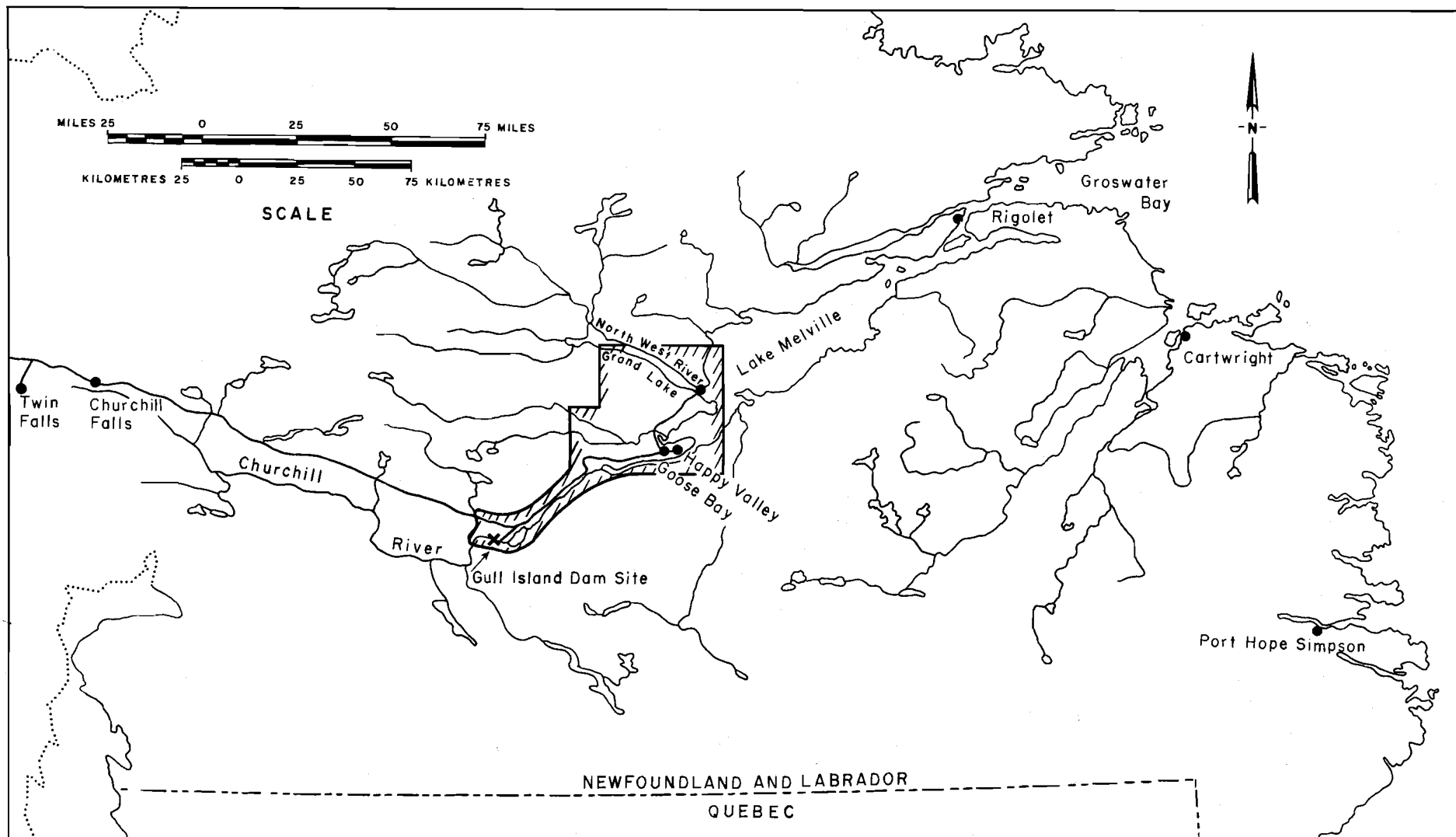


Figure 1



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FIGURE 2

and corrected where necessary. The corrected data were placed on 1:50,000 scale croniflexes using the N.T.S. topographic maps as bases. The locations of all samples, glacial striae and other data were also plotted on this base. In addition to the 1:50,000 scale mapping, the glacial flow features, sample sites and areas of gravel potential were plotted onto 1:250,000 croniflex base maps.

MAP AREAS

A. Southwestern Newfoundland area

Work on surficial and glacial geology maps, scale 1:50,000, has been completed; 1:250,000 scale maps of the glacial flow features and areas of aggregate potential are in preparation. There will be an open file release containing eight 1:50,000 maps and two 1:250,000 maps.

B. Burin Peninsula area

The surficial and glacial geology maps, scale 1:50,000, the glacial flow feature map, scale 1:250,000, and the 1:250,000 scale map of the areas of aggregate potential have been completed. There will be an open file release comprising four 1:50,000 maps and two 1:250,000 maps.

C. St. John's area

The surficial and glacial geology maps, scale 1:50,000, previously released (Vanderveer, 1975) will be updated as the result of field work in 1976. Some field and laboratory sieve analyses were completed and more are planned. Maps at 1:250,000 scale of the glacial flow features, sieve sites and areas of aggregate potential are also in preparation.

D. Isthmus of Avalon area

The 1:50,000 surficial and glacial geology maps, the 1:250,000 glacial map, and the 1:250,000 sieve site map have been completed, as have laboratory sieve analyses and graphs. The 1:250,000 map of areas of aggregate potential is in preparation. There will be an open file release comprising five 1:50,000 maps, three 1:250,000 maps, and 51 graphs of sieve analyses data.

E. Wesleyville-Carmanville area

The 1:250,000 sieve site and glacial flow feature maps and the sieve analyses have been completed. Surficial and glacial geology maps (scale 1:50,000) and a 1:250,000 map of areas of aggregate potential are in preparation. There will be an open file release of three 1:50,000 maps, three 1:250,000 maps, and 51 graphs of sieve analysis data.

F. West-Central Newfoundland area

The 1:250,000 sieve site map and 87 sieve analyses have been completed. The 1:250,000 glacial geology and aggregate resource maps are in preparation, and work on the 1:50,000 surficial and glacial geology maps will begin shortly.

G. Goose Bay-Gull Island area

This area has been the subject of previous surficial mapping (Fulton, 1970). Present field work was conducted in July and August, 1976, and a total of 250 clay, silt and/or sand, gravel and glacial till samples were field sieved and collected. The laboratory sieve analyses will be completed

MAP 2E / 8
SITE 15.1
SAMPLE 64.
SAMPLE WEIGHT (LBS) 29.6

MIN H₂O 8.08
GRAVEL 13.67
SAND 84.67
SILT CLAY 1.66

> PERCENT

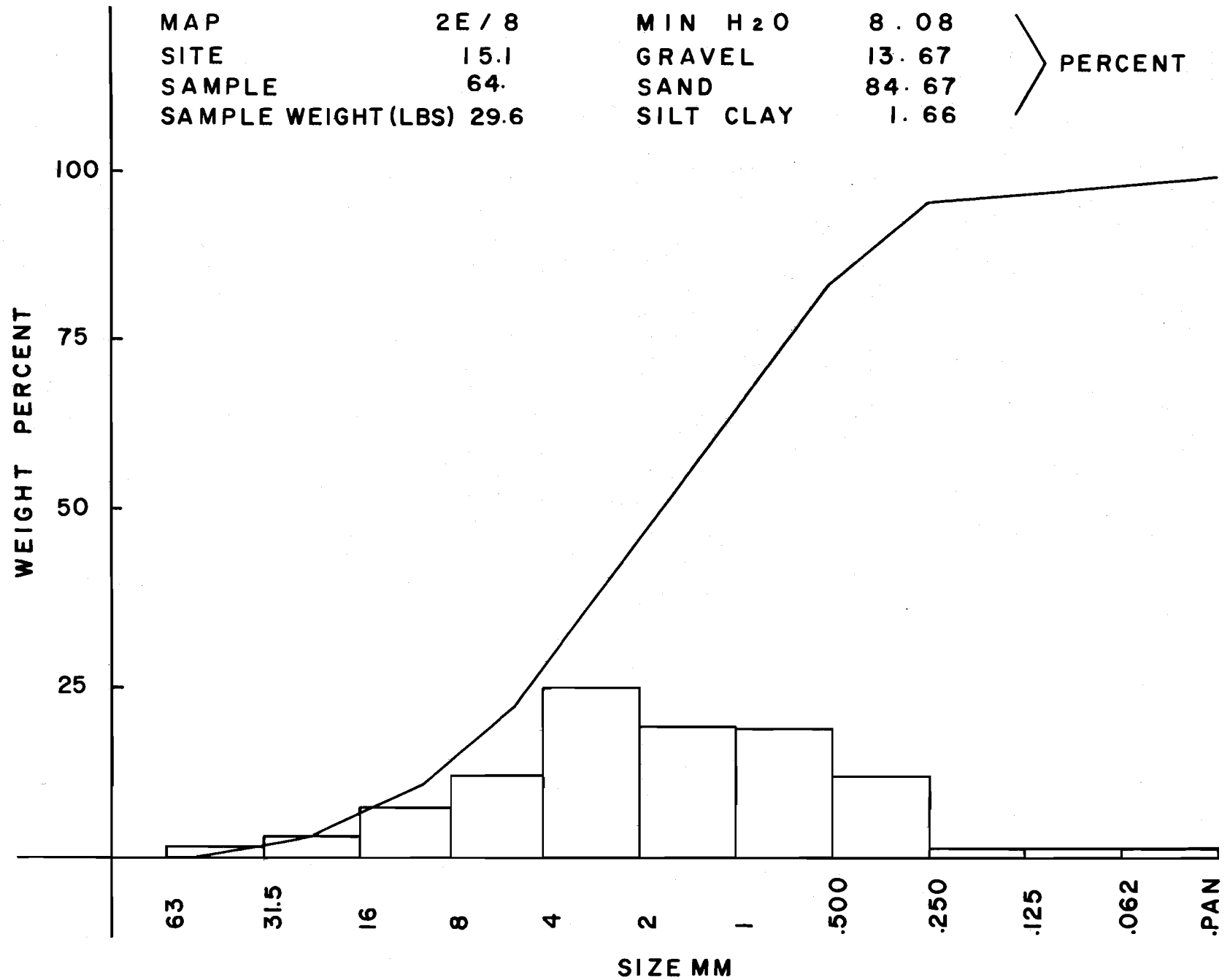


FIGURE 3

in 1977. Maps, scale 1:250,000, of the glacial flow features and of the sieve sites are in preparation. A 1:250,000 map outlining areas of aggregate potential is planned.

Preprints of any completed maps or sieve analysis data for any of the areas discussed above are available upon request.

REFERENCES

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