



LEGEND

GLACIO-FLUVIAL:
 Deposited by former streams of glacial meltwater; mainly located in existing river valleys, though above present river levels, and hence generally well drained.

1 GF outwash plain, usually occurring as nearly level terraced remnants on valley sides

1a GFF fan-shaped deposit spreading downslope from stream mouth, usually deeply entrenched by modern stream; well-drained but of poorer and variable sorting, decreasing downslope

5 GFv ("veneer"): less precisely definable areas in which deposits of sorted material are shallow and discontinuous

3 (small) Esker: sinuous ridge of variably sorted, lenticular-bedded sand and/or gravel; those identified as "large" are about 300 feet wide and up to 100 feet high and constitute significant individual sources of limited extent and thickness; "small" will likely prove uneconomic except perhaps for limited local use, and are best graded for road-beds; these latter are shown, mainly because other stratiform or hummocky gravel deposits may be located nearby.

4 GFr complex area of esker-like ridges and linear depressions, best exemplified by the deposit in the Harry's Brook - Black Duck area near Stephenville. Individually these are large, rich deposits, though few in number.

4a GFn irregular area of hummocks and closed depressions ("kame and kettle" topography) composed of variably sorted and sized gravel, of uneven thickness

TRANSITIONIAL

8 Th-GFh area of interspersed mounds of sorted material and unsorted glacial material (till). Limits and the precise distribution of gravel uncertain. Presence of gravel and sand inferred from soil and vegetation patterns, and topographic evidence of fluvial activity

FLUVIAL
 Deposits formed by modern streams.

10** Fp flood plain of existing stream; usually inundated only intermittently over a period of years; material well-sorted but finer than that of glacial streams (GFv); shallow water-table and commonly supporting forest or bog cover; higher, larger, interstream islands occasionally provide good gravel and sand. Generally these should be considered inviolable for ecologic reasons. In most cases, other deposits unimpeded by environmental restrictions occur in the vicinity

9** Ff fan- or cone-shaped deposits; includes modern deltas, subject to the same environmental restrictions as flood plains; or in areas of high relief, alluvial fans and talus cones, which can be effectively exploited for local application

MARINE
 Deposited in the marine environment, as beaches, deltas, terraces, etc.; includes both modern features and fossil emerged deposits.

2 Md delta, raised above present sea level by crustal uplift; formed during earlier period of higher sea level; well-drained; well sorted with optimal grading; transitional up-valley with outwash plain (GFp)

2a Mpr flat to undulating plain of raised beach ridges

2b Mtc fossil terrace fringing the modern coast and above sea level; except for smaller size and narrower configuration, as suitable as Md

11** Mr beach complexes of the present coast

6 Mv used to designate areas known to contain sorted marine deposits of former higher sea level, but which vary greatly in thickness, depending on bedrock relief. Fairly acceptable gravel deposits of limited extent and thickness can be encountered sporadically, although these are commonly interspersed or underlain by silt and clay

7 D designates extensive low- or tree-covered areas of low relief and poor drainage, underlain by generally finer-grained emerged marine materials

200 light above sea level to which additional deposits related to former higher sea levels may be found (data for the coast between White Bay and Trinity Bay courtesy of E.P. Henderson (G.S.C.), unpublished manuscript).

NOTE: Bulk lithologic composition can generally be inferred from the bedrock in the vicinity or inland from the gravel deposit (see for example, Geological Survey of Canada, Map 1231A).

* Rating based on relative thickness, uniformity of content, workability, predictability, and freedom from environmental complications.

**The position of these deposits in the rating scale is determined by their environmental sensitivity, rather than by their physical character.

EXPLANATORY NOTES

Introduction

As gravel and sand supplies in the eastern neopolis are being rapidly depleted, alternate sources are being sought offshore on the continental shelf, and in neighbouring areas within economic shipping distance. Newfoundland has abundant gravel deposits, many of which are extremely extensive, thick, and of excellent grade and composition. Ultimately the province may wish to promote the exploitation of that part of this largely unknown resource that is surplus to domestic needs. Recognizing this asset, this map has been prepared in anticipation of the need for a province-wide reconnaissance survey.

It is intended to serve not only as a guide to the location of deposits that are required currently, but also to aid in planning the development of the others, that is, those which 1) are involved in municipal groundwater supply and recharge, 2) should be preserved for future water supply, 3) should be conserved for domestic use, and 4) may be considered for export.

This preliminary map should be regarded only as an initial step. Even a general strategy of commodity planning will require only an initial step. Even a general strategy of commodity planning will require only an initial step. Even a general strategy of commodity planning will require only an initial step. Even a general strategy of commodity planning will require only an initial step.

Method

The deposits were mapped on aerial photographs at a scale of 1:50,000, compiled on base maps at a scale of 1:250,000, and optically reduced at this publication scale of 1:500,000. Field observations made in Newfoundland between 1969 and 1973 gave a general understanding of the deposit texture and lithology.

This map is essentially a generalized compilation of one specialized class of surface material in the complex of terrain units. All terrain units are currently being mapped, and multi-purpose surficial geology maps are being prepared at 1:50,000 scale.

This overview is thought to constitute a fairly accurate delineation of all the major deposits and most of the minor ones, and is believed to be a conservative statement of the total resource. Using only half the area of the deposits, and a thickness of 10 feet that are obscured by dense forest or thick muskeg or are complexly interspersed with other materials.

Summary

The thickest, most extensive and accessible deposits of suitable grade and composition are in the St. Georges Bay area. These are mainly coastal bodies ideally situated for direct shipping. Rankin second in importance as a general planning group is the complex in the Humber Bay area; these are somewhat confined in lateral extent by topography but nearly all are adjacent to road access. A third important group of deposits reached by or with convenient road access to townships, is in the Bonavista area, and those in the lower valleys leading to Bonavista Bay. Large inland deposits, best reserved for domestic needs, are located in the vicinity of Deer Lake, and in the region between the Exploits Valley and Grand Lake.

Important single deposits are located in the Codroy area and around Fortune Bay, with the largest being a broad coastal complex at Garrison on the Burin Peninsula. Massive deposits, not presently reached by road but ideally situated for direct ocean shipping are located in the Serpentine and Greogrey Rivers areas, although these may have an unsuitable lithologic composition. On the west side of the Northern Peninsula, gravelly marine deposits are widespread, but are generally shallow and discontinuous, or are low-lying, poorly drained, and covered. At the coast, however, a nearly continuous strip of low-relief raised beaches and terraces make possible construction of a first-class paved highway at minimal cost and complication.

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 GEOLOGICAL SURVEY
 OTTAWA

This map has been reproduced from a scanned version of the original map prepared on a computer using a laser plotter.

**GRANULAR RESOURCES INVENTORY
 NEWFOUNDLAND**

SCALE 1:500,000 or 1 inch equals 7.99 miles

geology and cartography by
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