# STAR LAKE - VICTORIA LAKE SURFICIAL AND GLACIAL MAPPING, NEWFOUNDLAND

by

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## INTRODUCTION

During 1980, mapping was conducted on the Star Lake (12A/11) and Victoria Lake (12A/6) map areas of Newfoundland (Map 1). This project was a continuation of the Surficial and Glacial Mapping Program in the Central Volcanic Belt designed to provide information as an aid to mineral exploration. (Vanderveer and Sparkes, 1979; Sparkes and Vanderveer, 1980). This area was chosen because of its recognized mineral potential, recent exploration activity, scattered occurrences of mineralized float, and thick and extensive cover of overburden. The area has limited access and relatively few till exposures or unweathered bedrock exposures exhibiting glacial flow indicators.

## FIELD PROGRAM

Mapping was started in June and continued until September. Information was obtained along existing roads, lake shorelines and streams. Fifty pits were dug to obtain samples and to provide suitable exposures to do till fabrics. During the summer, 385 sites were noted and 40 sets of striae recorded, with directions and/or relative ages assigned to most of these. There were 175 till samples taken for particle size analysis and geochemistry, and a representative pebble fraction was obtained to determine the lithologic composition of the tills. This lithologic study also included information on the silt/clay coating, weathering, staining, sphericity, fracturing, mineralogy and texture for the various lithologies present.

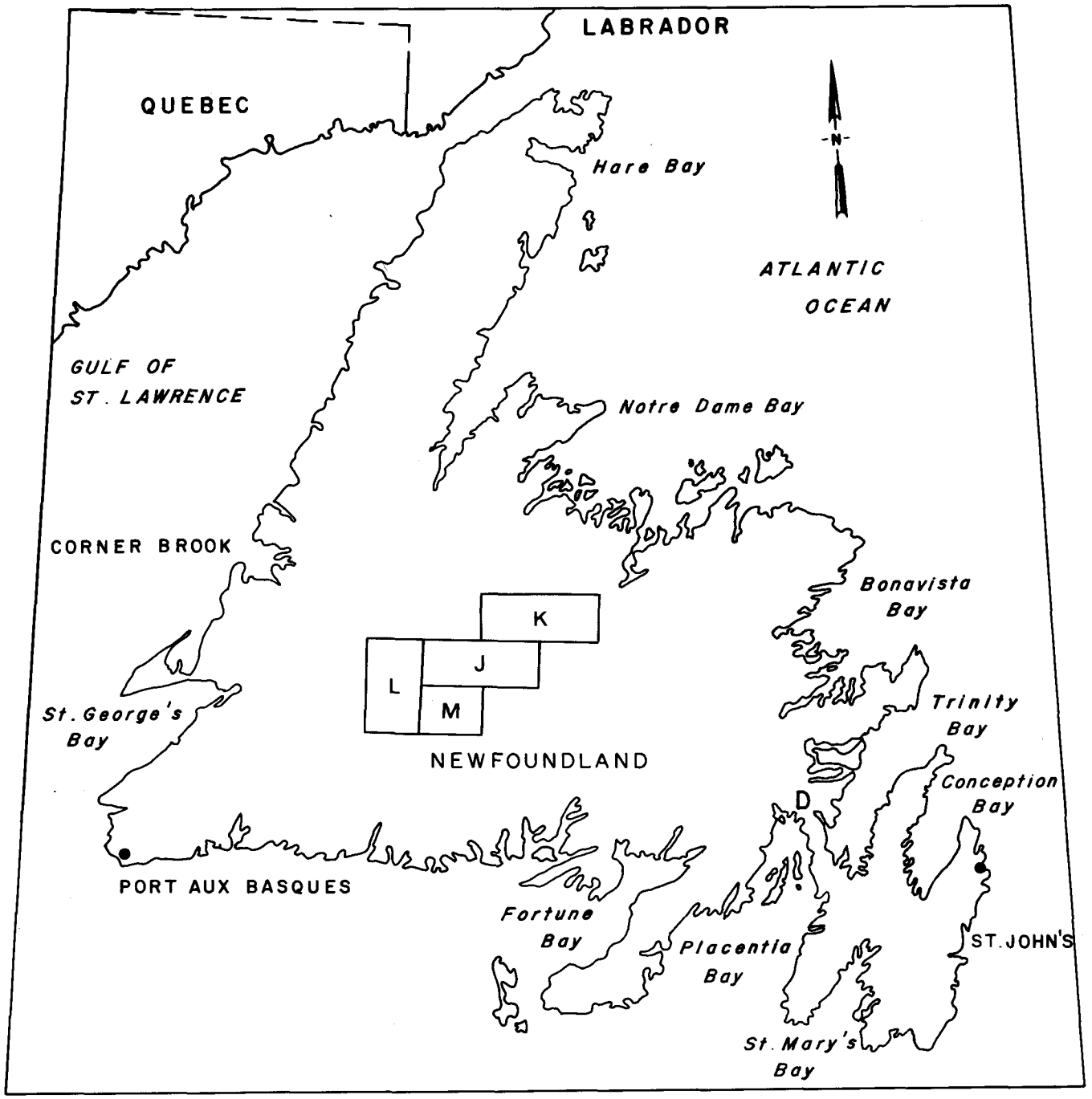
## GLACIAL STRIAE

Throughout the area, two major sets of striae have been recorded, one set at 160-195 and a second set at 220-270. In all cases, where directions have been assigned to these striae, one or more of the following indicators have been used: (a) miniature crag and tail, (b) crescentic or lunate fractures or gouges, (c) nail head features, and (d) miniature stoss and lee forms.

## Stratigraphy

A limited number of exposures of glacial stratigraphy are located in the Lloyds River and Tulk's River Valley areas and on the Victoria Lake shoreline. Elsewhere the exposures reveal only a single stratigraphic unit usually overlying bedrock.

Approximately 3 km down river from Lloyd's Lake, till overlies coarse outwash gravel which in turn overlies gently dipping silt/clay rhythmites. Further down river, a very blocky local till overlies sand. Another exposure reveals gravel overlying till which in turn overlies interbedded gravel and sand. Near the mouth of Lloyd's River a sandy loose till overlies sand and gravel, which in turn overlies silt/clay rhythmites underlain by a very compact or 'cemented' clay-rich, red to gray, till. Near the mouth of Tulk's River a silty gray-brown till overlies silt/clay rhythmites with minor folds. This same sequence is repeated at several localities along the Tulk's River Valley. On the north shore of Victoria Lake, near the western edge of the map

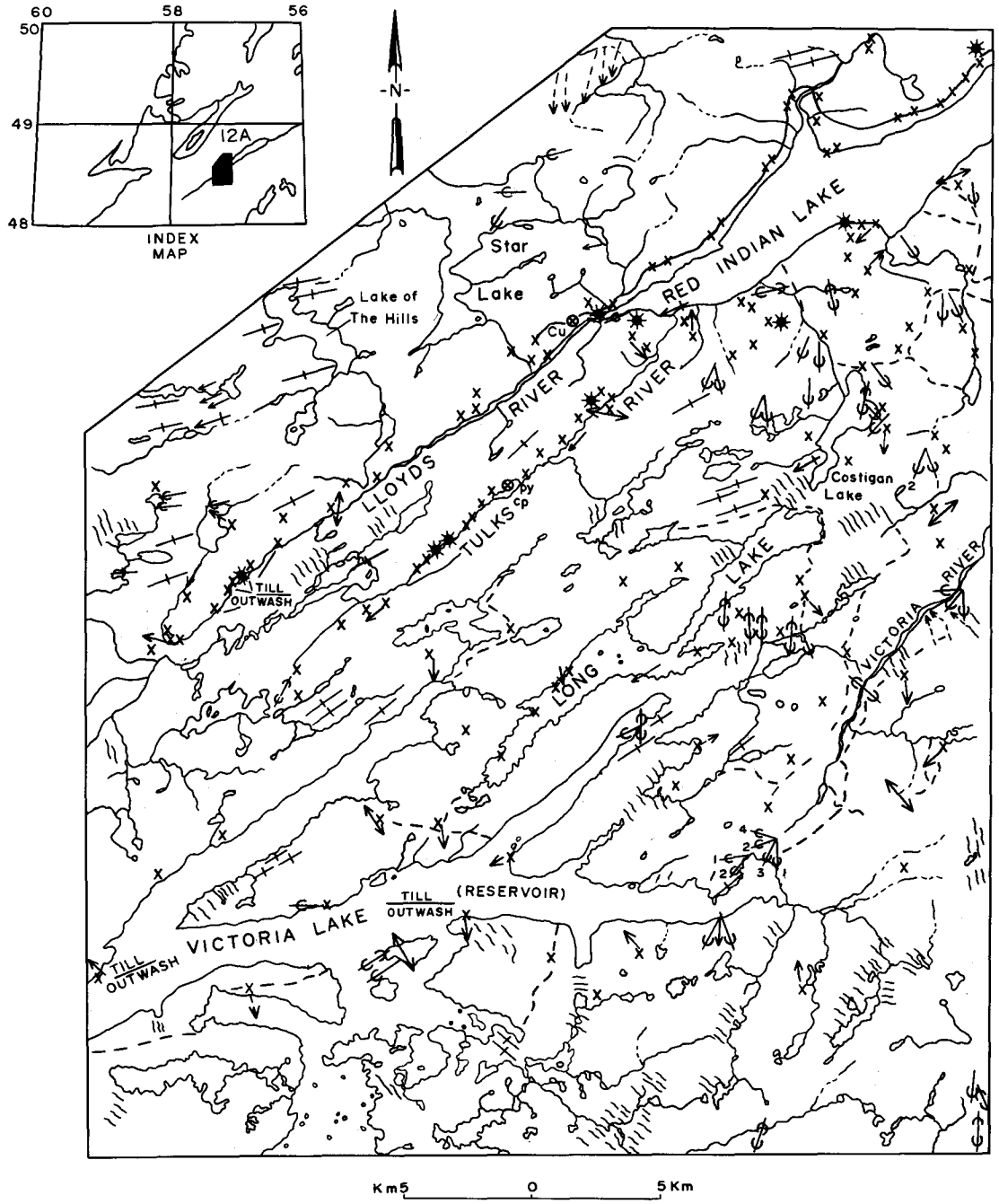



MAP 1

J. Lake Ambrose - Noel Paul's (1978) O.F. 12A (212)
K. Badger - Grand Falls (1979) O.F.NFLD (93)
L. Star Lake - Victoria Lake (1980)
M. Proposed Mapping (1981)

Star Lake - Victoria Lake, Surficial and Glacial Mapping

MAP 2




**LEGEND**

*Glacial striae (direction of ice movement known, unknown)* . . . . . .

*Number indicates relative age, 1 being the oldest.* . . . . . .

*Till fabrics (ice direction known, unknown* . . . . . .

*Esker (direction of flow known, unknown)* . . .

*Minor moraines, rib moraines, washboard moraines, annual moraines, till ridges transverse to ice flow (irregular, straight)* . . . . .

*Drumlins and drumlinoid ridges* . . . . . .

*Sample sites* . . . . . .

*Glacial linear feature* . . . . . .

*Glacial meltwater channel* . . . . . .

*Roche moutonnee* . . . . . .

*Rhythmite locations* . . . . . .

*Mineralized float occurrences.* . . . . . .

area, a gray-brown till overlies interbedded gravel, silt, and sand, and on the south shore, 15 km to the east, a similar till overlies a contorted silt/sand sequence.

## Glacial Interpretation

The glacial history of the area, based upon the information compiled, indicates as follows: (1) the southerly (160-195) flow of ice covered most or all of the area and was an early event (Map 2). This flow probably had its source in the area to the northwest of Red Indian Lake, and was related to the southerly flow of ice mapped in the Lake Ambrose area (Vanderveer and Sparkes, 1979). The 'cemented' clay-rich, red to gray till may have been deposited with the flow; (2) Subsequent to this, there was a regression of ice to the north of Red Indian Lake, and (3) there was deposition of glaciofluvial and glaciolacustrine sediments while the lake was dammed, possibly at some point along its length and the water was above its present level due to the influx and draining of meltwater. (4) The next recorded ice flow was to the west and southwest and is well expressed in striations, and a general stossing of outcrops, particularly in the areas of Long Lake, Victoria Lake, and Victoria River. Some of the till fabrics in these areas also indicate this ice movement. The till deposited from this advance, is quite variable in texture and color and is generally immature.

The till overlying some glaciofluvial deposits in the Lloyd's River Valley and the Victoria Lake area, may be the result of a late readvance, and not associated with the general southwest flow. Similarly it has not been possible to determine whether there was a significant time gap between the deposition of the 'cemented' till, the overlying sediments, and the youngest till unit. Further investigations of the pebble lithologies, till fabrics, and textural analysis of the tills are planned.

## ACKNOWLEDGEMENTS

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## REFERENCES

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