

LEGEND

SURFICIAL DEPOSITS

QUATERNARY

HOLOCENE - LATE WISCONSINAN

IC ICE CONTACT DEPOSITS (IC): 2% aerial extent; silty sand, gravel and boulders, abrupt grain size transition between shallow to steeply dipping beds; faulting is common; clasts reflect provenance of surrounding till; may be inter-stratified with till; forms kames, ice contact deltas and eskers; thickness 1-20 m.

LATE - MIDDLE WISCONSINAN

GTC BEAVER RIVER TILL (BRT): Divided into ablation, ground moraine and drumlin derived moraine units.

GTC **GWC** Ablation moraine. Occurs as granite (GTC) and greywacke (GWC) lithofacies; approximate aerial extent 8%; loose, matrix supported till containing intrabeds of silt, sand and gravel; colour varies from very pale brown (10YR7/4) to yellowish-brown (10YR5/4); forms hummocks and ridges with associated ice contact deposits; locally derived or may exhibit extensive onlap of clasts and matrix down-ice onto adjacent rock types; renewal distance approximate 1.2 km; thickness 1-10 m; glacial transport is generally toward the southeast and south. However northward dispersal of Meguma Group metasediments was observed in the ablation moraine near the Medway River along the southern contact of the SMB on Highway #8 and along the northern contact of the SMB where Meguma Group metasediments have been identified north of the SMB granite - Halifax slate contact.

GTB Ground moraine (GTB): Granite lithofacies; approximate aerial extent 40%; structureless stony matrix though sandier varieties with minor washed zones around boulders are common; colour varies from light yellowish-brown (10YR6/4) to dark yellowish-brown (10YR4/4); generally forms a featureless ground moraine; exhibits rapid lithological change down-ice of bedrock contacts; >90% of clasts are transported less than 1 km; renewal distance approximate 200 m; thickness 1-6 m; glacial transport directions are difficult to determine due to glacial ice flow; however a strong southeast transport was inherited from older reworked southeast transported till(s); approximate aerial extent: 30%.

GTB(D) Drumlin derived moraine (GTB(D)): Loose, medium- to coarse-grained sandy matrix, moderately stony, minor washing; colour is brown (10YR5/3) to dark yellowish brown (10YR4/4); till mantles and forms a ground moraine between drumlins; nongranitic lithologies are incorporated from stratigraphically older till(s); matrix composition is in part dependent on composition of reworked older till; thickness 1-4 m; actual glacial transport directions are the same as those of the ground moraine unit, however a strong southeast transport was inherited from older reworked southeast transported till(s); approximate aerial extent: 30%.

LT LAWRENCETOWN TILL (LT): Muddy to sandy till, moderately compact, jointed, greenish mottling in the weathered zone; colour varies from dark reddish-brown (2.5YR3/4) to strong brown (7.5YR4/6); approximate aerial extent 12%; occurs as a ground moraine and drumlins; clast lithologies vary from 10-90 percent local bedrock to 10-90 percent non-granitic clasts derived from as far as 55 km; distal sources are the Meguma Group, meta-sedimentary and volcanic rocks of the White Rock, Torbrook Formations, the North Mountain basalt, and the Triassic sedimentary basins of the Annapolis Valley; renewal distances vary from hundreds of metres to tens of kilometres; thickness is 1-2 m as a ground moraine and 4-30 m as drumlins; dispersal directions vary from southward in the eastern SMB to southeastward in the western part of the SMB.

PRE-WISCONSINAN

D RESIDUUM (D): Chemically weathered bedrock; commonly develops a soil-like consistency due to insitu weathering followed by glacial mixing; may retain hydromorphic granular texture of parent granite, preservation of K-feldspar megacrysts and hydrothermally altered fracture zones; restricted to the topographically higher regions of the Southern Uplands; thickness varies from a thin veneer to >3 m; approximate aerial extent <1%.

R BEDROCK (R): Glacially scoured bedrock; areas of discontinuous till veneer and B horizon soil developed to bedrock; bedrock structure and large scale features of glacial erosion are easily discernible on aerial photographs; approximate aerial extent 8%.

LEGEND

Till Clast Lithologies

la Biotite granodiorite (1a) / monzogranite (1): whitish-grey to grey; texture varies: fine to coarse-grained; moderately equigranular to megacrystic (K-feldspar); 5-25% biotite; bedrock sources are the Lequille Granodiorite, Scrag Lake Granodiorite, Little Round Lake Monzogranite, and West Dalhousie Monzogranite.

3 Porphyry: grey; fine- to medium-grained porphyritic texture; 3-5% biotite; bedrock sources are derived from textural variations of the Scrag Lake Monzogranite.

4 Biotite muscovite leucomonzogranite: colour varies: light pink to buff; texture varies: fine to medium-grained moderately equigranular, porphyritic or slightly megacrystic; 2-7% biotite; 1-4% muscovite; bedrock sources are the Mickey Hill Leucomonzogranite, East Dalhousie Leucomonzogranite, undefined leucomonzogranite bodies, and fine grained dyke rocks.

5 Leucocratic rocks: white, orange and pink; texture varies: aplitic, to pegmatitic; trace-2% biotite; 0-5% muscovite; bedrock sources are dyke rocks hosted by the Scrag Lake Leucomonzogranite.

6 Meguma Group grey-green wacke, grey-greenish black and rusty slate; clasts are derived predominantly from Meguma Group country rocks; sources may also include grey-greenish black slate and shale from the White Rock and Torbrook Formations.

7 Foreign: amygdaloidal basalt, non-amygdaloidal basalt, sandstone, variously coloured slate, quartzite and rhyolitic tuff; bedrock sources are the North Mountain basalt, Triassic sedimentary basins, White Rock Formation and Torbrook Formation.

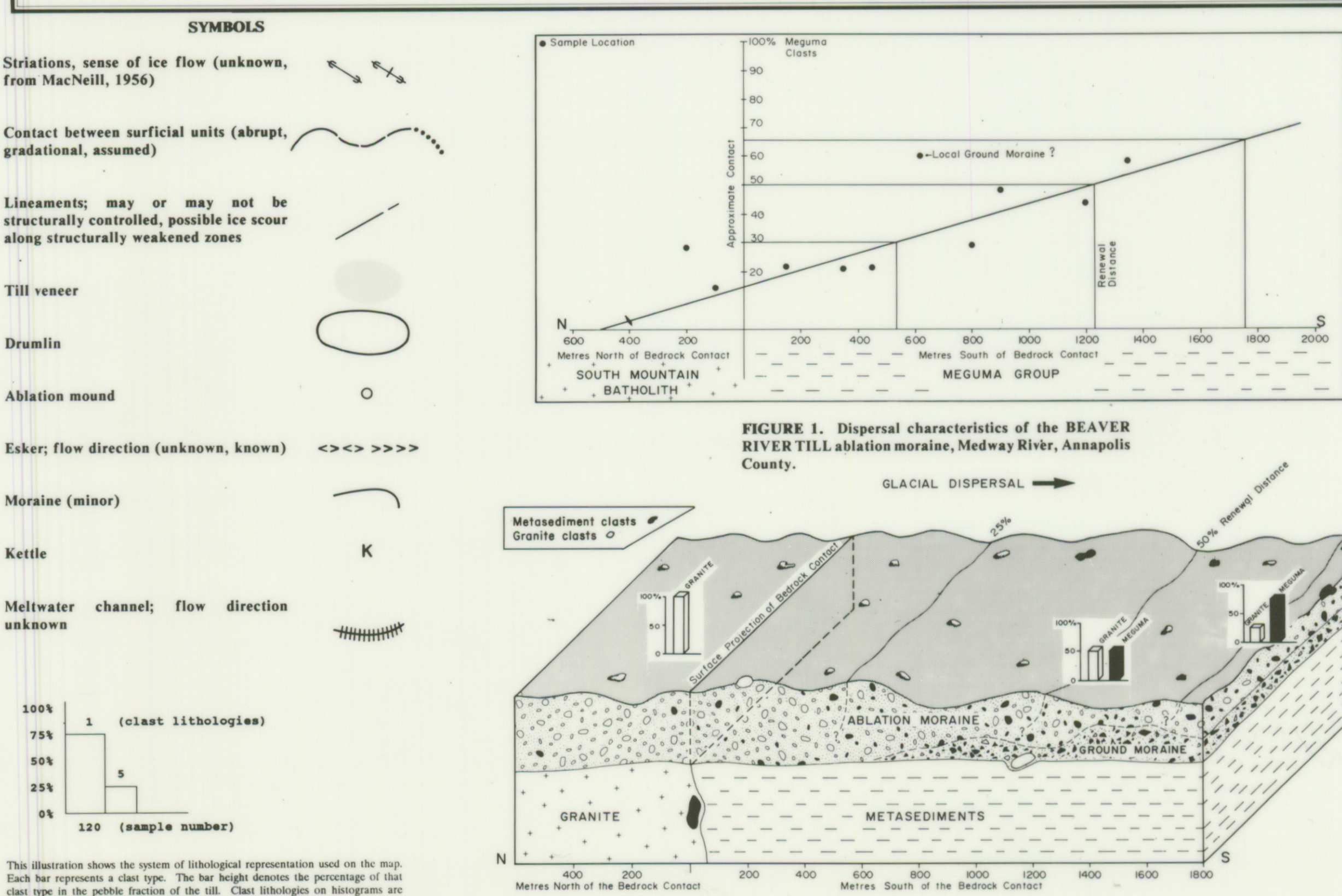


FIGURE 2. Up-take of Meguma Group metasedimentary clasts south of the granite - metasediment contact in the BEAVER RIVER TILL ablation moraine, Medway River, Annapolis County.

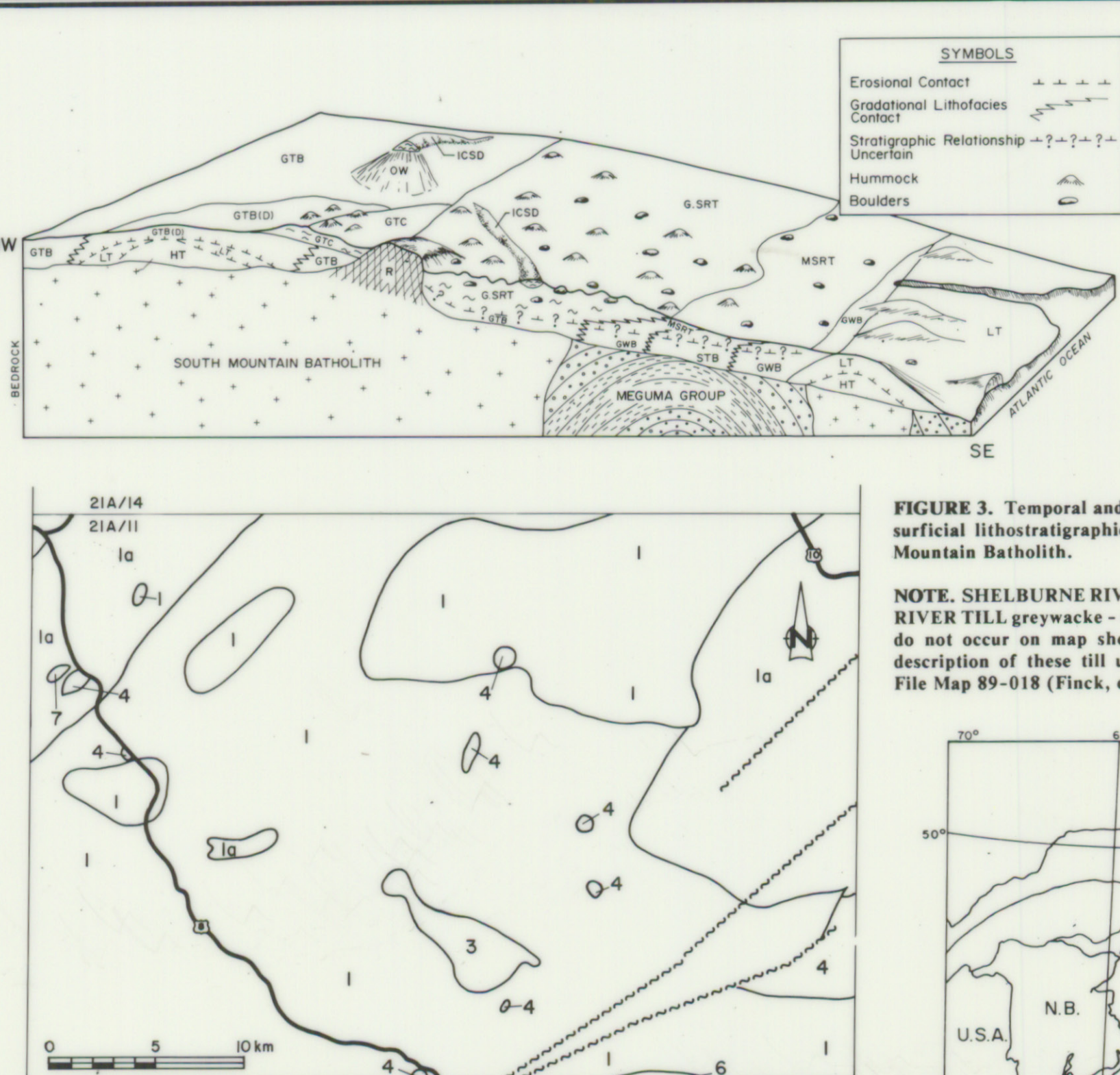
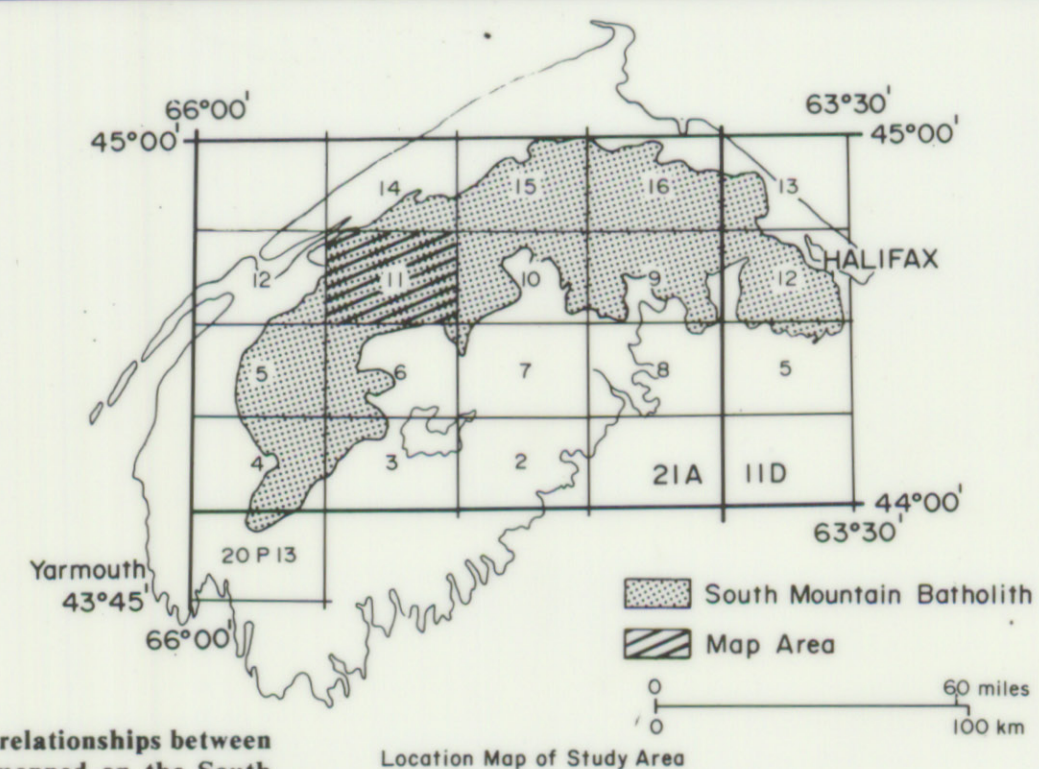
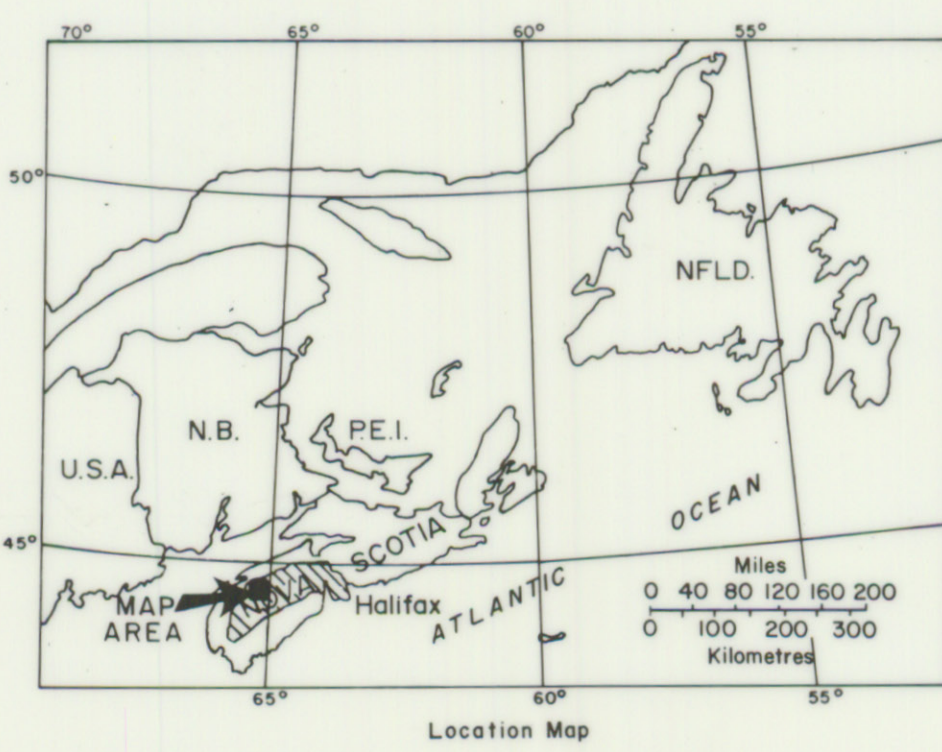


FIGURE 4. Simplified bedrock geology of the Milford map sheet (21A/11) modified after Corey and Horne (1989). Bedrock units are keyed to the till clast legend and histograms on the glacial geology map.



NOTE. SHELBURNE RIVER TILL (SRT) and BEAVER RIVER TILL greywacke - slate (GWB - SLB) lithofacies do not occur on map sheet 21A/11. For a complete description of these till units reference NSDME Open File Map 89-018 (Finck, et al., 1989).



REFERENCES

- Corey, M. C. and Horne, R. J.
1989: Preliminary geological map of Milford (NTS sheet 21A/11); Nova Scotia Department of Mines and Energy, Open File Map 89-014, scale 1:50 000.
- Finck, P. W., Graves, R. M. and Boner, F. J.
1989: Preliminary glacial geology of the South Mountain Batholith; Nova Scotia Department of Mines and Energy, Open File Map 89-018, scale 1:250 000.
- MacNeill, R. H.
1956: Surficial geology maps of Nova Scotia; Nova Scotia Research Foundation Corporation, Dartmouth Nova Scotia, scale 1:50 000.
- Pettoniemi, H.
1985: Till lithology and glacial transportation Kuhmo, eastern Finland; Boreas, Vol. 14, p. 67 - 74.

OPEN FILE MAP 92-001

PRELIMINARY GLACIAL AND TILL CLAST GEOLOGY OF MILFORD

NTS SHEET 21A/11

SOUTH MOUNTAIN BATHOLITH PROJECT

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NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES

John G. Leefe, Minister

Scale 1:50 000

Kilometres

Miles

HALIFAX, NOVA SCOTIA 1992