

Late Wisconsinan glacial movement in the Petitcodiac map area, southeastern New BrunswickG. M. Allaby¹, B. E. Broster¹, and A. G. Pronk²¹ *Quaternary and Environmental Studies Group (QUEST), Department of Geology, University of New Brunswick, PO Box 4400, Fredericton, New Brunswick E3B 5A3, Canada*² *New Brunswick Department of Natural Resources and Energy, Minerals Resources Division, P. O. Box 6000, Fredericton, New Brunswick E3B 5H1, Canada*

Mapping of surficial deposits and till analyses have contributed to an understanding of the Late Wisconsinan stratigraphy and directions of ice movement for the Petitcodiac (21H/14) map area. Clast and matrix samples were collected from the C-horizon of basal till at 2 km intervals across the map area. Ice flow directions were identified from the dispersal patterns of the till matrix geochemistry, clast provenance, and the orientation of glacial landforms and striae.

Known mineral occurrences are reflected by geochemical anomalies in the till matrix. Generally, the topological position of the occurrence determined the shape of the anomaly. Source occurrences on topographic highs produced long dispersal trains as opposed to "bulls-eye anomalies" originating from sources located in valleys. The striae data and the dispersal patterns both indicate that the dominant ice flow direction varied between south-southwest and southeast over

the entire map area. However, dispersal trains found in the northern half of the map area are indicative of multiple ice flow directions. This is particularly evident in the northeastern region of the study area where drumlinoid features, rat-tails, and dispersal patterns of chromium, beryllium, vanadium, and scandium record a late easterly flow event. During the early part of this glacial event southward flowing ice moved into the northwest corner of the study area. It is likely that portions of this ice flow were diverted toward a more easterly, and possibly a northeasterly direction.

Dispersal patterns of till clasts and geochemistry suggest the occurrence of unmapped volcanic units located in the northwestern section of the map area. Similar units found elsewhere in the region contain mineralization. Therefore, the new bedrock sources implied by the surficial mapping represent potential prospecting targets.