

Pleistocene glacial history of the Petitcodiac area, southeastern New Brunswick

A. G. Pronk¹, G. M. Allaby², and B. E. Broster²

¹*New Brunswick Department of Natural Resources and Energy, Geological Surveys Branch,
P. O. Box 6000, Fredericton, New Brunswick E3B 5H1, Canada*

²*Quaternary and Environmental Studies Group (QUEST), Department of Geology, University of New Brunswick,
P.O. Box 4400, Fredericton, New Brunswick E3B 5A3, Canada*

Regional scale surficial mapping and till dispersion studies have helped increase the understanding of Late Wisconsinan stratigraphy and direction of ice movement in southeastern New Brunswick. Clast and matrix samples were collected from basal till at 2-km intervals across the

Petitcodiac map area. Only one till unit was recognized, suggesting that glacial sediments were deposited by a regional ice sheet during the Late Wisconsinan glaciation. Ice-flow directions were inferred from the till matrix geochemistry, till clast provenance, and the orientation of glacial landforms and

striae.

Ice-flow data and dispersal patterns indicate that the dominant ice flow direction fluctuated between south-southwest and southeast over the map area. No evidence supporting a previously suggested northward flow event was found, although multiple ice flow directions were recorded in the northern half of the map area.

In the northeastern part of the study area drumlinoid

features, rat-tail and nail head striations, and dispersal patterns record a late easterly flow event. It is likely that ice flow shifted toward a more easterly direction during deglaciation. As the ice sheet thinned it became confined by the regional topography and an ice divide developed in the study area as ice streamed around the eastern border of the Caledonian Highlands.