

**Coalescence of Newfoundland and Labrador ice - evidence from land and sea,
west central Great Northern Peninsula, Newfoundland**

D.N. Proudfoot

*Newfoundland Department of Mines and Energy, St. John's, Newfoundland A1C 5T7, Canada
and*

Ali Aksu

Department of Earth Sciences, Memorial University of Newfoundland, St. John's, Newfoundland A1C 5S7, Canada

Results of independent land and marine Quaternary projects are combined to determine Late Wisconsinan (?) ice flow history in the area. Early post glacial sea levels reached elevations of about 150 m a.s.l. providing the opportunity to compare raised and submerged glacial geomorphology. Ice flow directions were interpreted on land from bedrock striations and oriented glacial landforms. The earliest ice flowed westward and southwestward from the Long Range Mountains (LRM) to beyond the modern coastline. During glacial retreat ice radiated from numerous valleys on the west side of the LRM, coalescing on the lowlands and flowing into the sea. There is no evidence of Labrador based ice advancing onto this coast.

Data from the seabed include Huntec DTS and 40 in³ seismic records. A prominent ridge trending northeast-southwest along the west side of the Esquiman Channel that is contiguous with diamicton to the west, and pinches out in the east, is interpreted to be the grounding line of a major Labrador ice stand. Similarly, a grounding line for LRM ice, contiguous with diamicton to the east, is interpreted for a westwardly convex arcing ridge along the east side of the Esquiman Channel. It is suggested that Labrador and Long Range ice formed ice shelves that met somewhere over Esquiman Channel. Labrador ice probably did not advance onto the west coast in this area, possibly because of a calving embayment open to the Laurentian Channel.