

**Possible raised marine sediments on the east coast of the Avalon Peninsula, Newfoundland**Cody S. Garlie<sup>1</sup> and T. Bell<sup>2</sup><sup>1</sup>*Keyin Technical College, 81 LeMarchant Street, Carbonear, Newfoundland A1Y 1A9, Canada*<sup>2</sup>*Department of Geography, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X9, Canada*

This paper presents descriptions and preliminary interpretations of sedimentary sequences exposed in coastal sections near Tors Cove, 40 km south of St. John's, on the Avalon Peninsula, Newfoundland. Interbedded diamictos and pebbly mud, up to 20 m thick in places, outcrop discontinuously along the coast and on offshore islands. Diamictos, which comprise the bulk of the coastal deposits, have a sandy matrix and generally appear stratified with some evidence of inverse grading. Erratics and striated clasts are common. Individual clast fabrics display a range of azimuths in a girdle-type pattern. These characteristics suggest a debris flow origin for the diamictos, possibly in an ice-marginal environment, as glaciers retreated inland to local ice centres on the Avalon Peninsula.

Pebbly mud, up to 4 m thick and 15 m above sea level (asl), varies from structureless to finely laminated and is composed of 80% clay. Individual laminae, ranging in thickness from millimetres to centimetres, are laterally continuous and drape underlying structures. Vertically-oriented clasts that

deform underlying laminae are interpreted as dropstones. Preliminary interpretation of this unit suggests a subaqueous origin in a relatively low-energy environment. The occurrence of dropstones implies ice rafting and the close proximity of a calving glacier margin. Although marine fossils (e.g., foraminifers) were not identified during preliminary analysis, a marine origin for the mud is considered plausible given its areal extent and thickness. Former high sea levels in the area are also suggested by a gravel ridge at 13 m asl and discontinuous terraces up to 23 m asl.

If a marine origin can be verified for the pebbly mud near Tors Cove, then it would represent unequivocal evidence for a high sea level stand along the east coast of the Avalon Peninsula, where it was previously thought that sea level since the last glaciation was always below present. The sedimentary characteristics of the mud and its stratigraphic relationship with glacial deposits suggest that the high sea level stand occurred immediately upon deglaciation of the coast.