The deglaciation of Atlantic Canada and the postglacial relative sea level record

G. Quinlan, Department of Earth Sciences,
Memorial University of Newfoundland, St. John's, Nfld. A1C 3X7

The mass of late Wisconsinan age ice sheets deformed the surface of the earth isostatically. At the same time this ice mass distorted the geoid and hence the surface of the glacial stage oceans. The volume of these oceans was of course reduced because much of the water that would normally be resident in the oceans was tied up in the continental ice sheets. The unloading of the oceans by removal of this water volume deformed the ocean floor isostatically. All of these effects were reversed following deglaciation. Relative sea level indicators provide the most direct observational record of the progress of these interactions.

A numerical model incorporating all of the above effects has been constructed and used to analyse the relative sea level record of Atlantic Canada. The model can be used to calculate the relative sea level record that would result from the melting of any arbitrary ice distribution according to any arbitrary timetable. The extent to which the calculated and observed relative sea level records agree is one measure of the validity of the ice reconstruction. The model for Atlantic Canada and its implications for the regional glacial history will be discussed.

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