

Late Wisconsinan and Holocene events on the northeast Newfoundland coast and inner shelf

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Grounded glacial ice in Notre Dame Bay formed deposits of acoustically incoherent glacial diamicton up to several tens of metres thick. By 13,000 B.P. the ice had retreated beyond the present coastline, and meltwater plumes were depositing acoustically stratified, glacio-marine, gravelly sandy mud. On the inner shelf the mud was deposited in a draped style and averages 5 m thick. In fjords the mud occurs as a thick, ponded, basin-fill deposit which contain acoustically transparent intervals interpreted as debris flows. The tops of these fjord sediments date to about 11,500 B.P. In the early- to mid-Holocene, relative sea level dropped to a minimum of about -17 m in the east, but probably remained above the present level in White Bay. During and after the

low stand, glacial and early postglacial deposits were re-worked by waves, currents, and icebergs. Ponded mud was deposited in deep basins, but in the shallow, wave-dominated zone which fringes the outer coast the seabed has a veneer of mobile sand and gravel. This zone is most extensive off the Straight Shore, in the east of the study area, where sheets of gravel ripples occur on the seabed. A large prograded foreland which dates to earlier than 3000 B.P., and a transgressive barrier which stabilised just after 2000 B.P., occur on the Straight Shore. The age and structure of these coastal landforms is related to both inner shelf topography and the pattern of relative sea-level change.