
**Cosmogenic nuclide dating of
glaciomarine deltas in southern Maine**

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Widespread marine transgression and deposition of glaciomarine sediment occurred as the ice margin of the Laurentide Ice Sheet retreated from the eastern continental shelf of Maine beginning approximately 17000 years ago. Evidence for transgression is preserved in ice-proximal and esker-fed deltas deposited along the edge of the retreating ice margin. The topset-foreset contacts within these deltas provide excellent paleo-sea-level indicators. Precise age determinations for the topset-foreset contacts provide valuable information regarding the rate and style of deglaciation. Terrestrial cosmogenic nuclide exposure (TCN) dating provides a means to precisely date surface exposure durations. Using TCN dating, deltaic sediments from the topset-foreset contacts can be dated to provide a more precise age of the ice margin at its time of retreat from southern Coastal Maine. The present study aims to test the validity of using TCN exposure dating on glaciomarine deltas against the existing radiocarbon-based chronology. To date the topset-foreset contacts, three of the best studied glaciomarine deltas in southern Maine will be exposure dated using cosmogenic ^{10}Be . Eleven sand samples were collected in vertical profiles (1 to 3 m) under stones, “fences”, along gravel pit boundaries where soil profiles below the tree rooting depth show minimum disturbance in the delta sediments. The results will be compared to the existing radiocarbon dates to determine whether TCN dating can be applied to other deltas and contribute to the glacial chronology of the Laurentide Ice Sheet.
