THE EAST GREENLAND CONTINENTAL MARGIN (65°N): ICE SHEET DECAY AND SEDIMENT FLUXES SINCE THE LAST DEGLACIATION

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The sedimentary processes on the East Greenland Continental Margin and the magnitude of sediment fluxes are strongly influenced by meltwater inflow and interactions between ice sheets, fjords and shelf environments. This, in turn, depends largely upon the oceanographic and corresponding meteorologic climates. Past meltwater flow changes may be indicated by an oxygen isotope record measured on the planktonic foraminifera (*N. pachyderma*, left-coiling) that corresponds to a record from the Arctic Ocean. This record is indicative of a low salinity layer possibly caused by meltwater. The records will be compared to sediment fluxes of the East Greenland Margin off Kangerdlugssuaq Fjord (65°N). Here, one of the most prominent cross-shelf troughs on the East Greenland continental margin may act as a major conduit for sediment transport and meltwater. Based on radio-carbon ^{14}C-ages, sediment fluxes appear to cluster in two environmental periods: ice sheet decays with extremely high rates of sedimentation within short periods of time (tens to hundreds of years) and modern sediment influxes with relatively low transport rates over a long period of time. The results reveal three main patterns: (1) A massive event of sediment discharge (up to AR bulk 290 g/cm^2/kyr) occurs at about 13,300 yrs. B.P. in the trough at the middle shelf (Core V) suggestive of substantial increases in meltwater and terrigenous supply rates. (2) At the inner shelf an increase in sediment discharge (up to AR bulk 90 g/cm^2/kyr) occurs at about 9,000 yrs. B.P. (3) Sediment fluxes on the exposed shelf and upper continental slope exhibit significantly lower rates (< 10 g/cm^2/kyr). Changes in sediment fluxes and sea-floor properties have been integrated into a descriptive box model showing the decay of the ice sheet during the last deglaciation.

ICEHOUSE SEA-LEVEL CHANGES, DEPOSITIONAL SEQUENCES, AND THE NEW JERSEY MARGIN

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The "New Jersey sea-level/mid-Atlantic Transect" (NJ/MAT) is an integrated program of ODP (Leg 150) offshore, supplementary nearshore, and onshore drilling designed to address the sequence stratigraphic record of the Oligocene-Recent interval. The primary goals of the NJ/MAT are: 1) to place constraints on the ages of major unconformities (sequence boundaries); 2) to compare the timing of these unconformities with ages predicted from the deep-sea $\delta^{18}O$ record; 3) to assess the amplitude of sea-level changes that may have caused these unconformable sequence boundaries; and 4) to evaluate the response of sequence architecture to glacio-eustatic forcing.

The $\delta^{18}O$ record provides a proxy for glacio-eustatic changes during the Oligocene-Recent "Icehouse World." We have interpreted 12 Oligocene-Miocene benthic foraminiferal $\delta^{18}O$ increases (= base of Zones Oi1-Oi2, Oi2a, Mi1, Mi1a, Mi1b, and Mi2-Mi7) as glacio-eustatic lowerings and hypothesized that they correlate with 12 sequence boundaries (= inferred eustatic lowerings) of Haq et al. (1987). If this is true, then the increases should be observable in