

Evidence of Ice Rafted Debris Suggests Icebergs Reached as far as the Subtropical North Atlantic Ocean During the Last Deglaciation

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Paleoclimate research into the mechanisms of rapid climate change is inhibited by the absence of high resolution reconstructions of sea surface temperature (SST), ocean circulation and ice rafted debris (IRD) records from a single marine sediment core. Specifically, these records play a pivotal role in comparing the timing of the discharge of IRD with changes in the Atlantic Meridional Overturning Circulation (AMOC) and SST to determine the most likely causal relationships based on which event occurred first. The Bermuda Rise, located in the center of the western subtropical North Atlantic Ocean, offers the potential for high-resolution reconstruction of SST, ocean circulation and IRD records. Ocean circulation and SST data already exists from a Bermuda Rise piston core, KNR191-CDH19 (33 41.194 N, 57 36.907 W ~ 4579). This study entailed the construction of a detailed IRD record, which indicated that icebergs reached as far south as the Bermuda Rise during the last deglaciation, specifically during the catastrophic iceberg discharge event Heinrich 1. In addition, different detrital sediments and planktonic foraminifera faunal assemblages were deposited during the oscillation of stadial and interstadial intervals during the last deglaciation.