

# A New Sedimentary Record of Heinrich Events in the Central North Atlantic Ocean since 170 ka

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Studies of deep-sea sediment cores from the North Atlantic Ocean document a series of catastrophic meltwater and iceberg discharges, known as Heinrich events, from the margins of nearby ice sheets during the last glacial period. In the marine sediment record, these events are marked by an abrupt increase in the abundance of ice-rafted debris (IRD): coarse terrigenous material released to the sea floor by passing icebergs. Across cores in the subpolar region of the North Atlantic, six IRD-rich layers, spanning the last 70 ka, mark the Heinrich events of the last glacial period. In this study, we present a high-resolution sedimentary record extending from 10-170 ka that documents the abundance of IRD and the polar foraminifera *N. pachyderma* from a core site in the central North Atlantic Ocean. We pair these proxies with radiocarbon dates and  $\delta^{18}\text{O}$  measurements previously taken from the core to construct a record of the prevailing climatic and oceanographic conditions during Heinrich events. We find that, despite likely sediment winnowing at the core location, our record reliably captures Heinrich events 1, 2, and 5 and supports the conclusion that Heinrich events occurred under cold climatic conditions. In the cases of Heinrich events 1-2 and 4-6, we attribute a coeval decrease in the  $\delta^{18}\text{O}$  record of *N. incompta* to the introduction of  $\delta^{18}\text{O}$ -depleted freshwater from melting icebergs to the surface of the North Atlantic Ocean.