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Quaternary Ostracode and Foraminiferal Biostratigraphy and Paleoceanography in the Western Arctic Ocean

T. M. Cronin^a, L. H. DeNinno, L. Polyak^b, E. K. Caverly^a, R. Z. Poore^c, A. Brenner^a, J. Rodriguez-Lazaro^d, R. E. Marzen^e

^aMS 926A U.S. Geological Survey, Reston, Virginia 20192, USA

^bByrd Polar Research Center, Ohio State University, Columbus, Ohio 43210, USA

^cUS Geological Survey, St. Petersburg, Florida, USA

^dDept. Estratigrafia y Paleontologia, Facultad de Ciencia y Tecnologia,
Univ. Pais Vasco, UPV/EHU, Apartado 644, 48080 Bilbao, Spain

^eDepartment of Earth Science, Rice University, Houston, Texas 77005, USA

Abstract

The stratigraphic distributions of ostracodes and selected calcareous benthic and planktic foraminiferal species were studied in sediment cores from ~700 to 2700 meters water depth on the Northwind, Mendeleev, and Lomonosov Ridges in the western Arctic Ocean. Microfaunal records in most cores cover mid-to late Quaternary sediments deposited in the last ~600 ka, with one record covering the last ~1.5 Ma. Results show a progressive faunal turnover during the Mid-Pleistocene Transition (MPT, ~1.2 to 0.7 Ma) and around the Mid-Brunhes Event (MBE, ~0.4 Ma) reflecting major changes in Arctic Ocean temperature, circulation and sea-ice cover. The observed MPT shift is characterized by the extinction of species that today inhabit the sea-ice free subpolar North Atlantic and/or seasonally sea-ice free Nordic Seas (*Echinocythereis* sp.,

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