

Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 20/1	Graz 2014
PANGEO AUSTRIA 2014	Graz, 14. September 2014 – 19. September 2014		

A benthic foraminifers' perspective on paleoceanographic changes in the eastern North Atlantic at glacial/interglacial transitions (IODP Expedition 339, Site U1385)

GRUNERT, P.¹, HODELL, D.², SKINNER, L.²

¹ University of Graz, Institute of Earth Sciences, NAWI Graz, Heinrichstraße 26, 8010 Graz, Austria
email: patrick.grunert@uni-graz.at

² University of Cambridge, Department of Earth Sciences, Downing Street, Cambridge, Cambridgeshire CB2 3EQ, United Kingdom

Deep-sea foraminifera are sensitive recorders of environmental conditions, and the actualistic interpretation of their fossil assemblages has become a valuable tool for paleoceanographic reconstruction. Herein, a quantitative data-set of benthic foraminifera >125µm is evaluated to understand paleoceanographic changes (AMOC, ventilation, productivity) in the eastern North Atlantic associated with glacial/interglacial transitions in more detail. The data-set from IODP Site U1385 spans Terminations I, II and IV and includes several short-term events like the Younger Dryas (YD), Heinrich (H) 1, and H 11.

On the family and generic levels, a characteristic succession of foraminiferal assemblages is recognized across all terminations: a glacial fauna with abundant cassidulinids (*Cassidulina*, *Globocassidulina*); high abundances of buliminds (*Bulimina*, *Globobulimina*) and/or bolivinellids (*Bolivinita*) associated with the beginning of each termination; high abundances of miliolids (mainly *Pyrgo*) and cibicidids at the end of each termination; an interglacial fauna with buliminds (*Bulimina*) and gavellinellids (*Gyroidinoides*). For the glacial and interglacial endmembers a moderately ventilated, mesotrophic seafloor is suggested. The high abundances of deep infaunal taxa during the early terminations indicate high export productivity and poor ventilation. Conversely, the absence of these taxa and the presence of miliolids suggest a well-ventilated environment and decreasing export productivity during the later phase of the terminations.

Repetitive patterns are also recognized on the species level; significant differences in species composition are only observed for H-and IR-events. These faunal differences reflect a fairly diverse nature of these short-term events and an individual perspective should be put on each them. E.g., in the case of H 1, increased primary productivity and/or severely reduced AMOC compared to other such events might provide explanations.