

Geochemical composition of Baltic benthic foraminifera collected and cultured over a large salinity gradient

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Some of the most significant challenges in paleoclimate research arise from the need to both understand and reduce the uncertainty associated with proxies for climate reconstructions. These challenges were further highlighted in connection with the IODP Exp. 347 Baltic Sea Paleoenvironment. We have investigated temperature and salinity proxies through a combination of field- and culture-based benthic foraminiferal samples from the Baltic (sal. 14)-Kattegat (sal. 32), together with genetic characterization. Two long-term experiments at two temperatures and three salinities were performed. We present foraminiferal assemblage, trace element (Mg/Ca, Ba/Ca, Mn/Ca), and stable O and C isotope results from these locations, including LA-ICP-MS data from cultured specimens. Furthermore, specimens of *Elphidium* and *Ammonia* were genetically characterized; the results indicate that the same genetic type of *Elphidium* is found in both salinity regimes, but that the *Ammonia* genetic types differ depending on the prevailing salinity regime.