INTRODUCTION

We explore the applicability of stable isotopic ratios of four foraminiferal epifaunal species: Pseudononion atlanticum, Cibicides fletcheri, Hoeglundina elegans, Hanzawaia boueana; and of five infaunal foraminiferal species: Bulimina marginata, Cassidulina subglobosa, Buccella peruviana, Uvigerina peregrina, Angulogenera angulosa to identify bottom water masses along the Argentinean-Uruguayan and Brazilian Atlantic Coast during the winter 2003 and summer 2004.

STUDY AREA

RESULTS

Specifically, the d18O data from Uvigerina peregrina, Hoeglundina elegans and Pseudononion atlanticum follow meridional temperature gradients with the presence of relatively warm Subtropical Shelf Water indicated by lower d18O values at the northernmore sites (27°S) and colder Subantarctic Shelf Water with higher d18O values toward the southern sites (to 37°S). Angulogenera angulosa and Pseudononion atlanticum d18O values correlated better with salinity than temperature. Positive correlation of d13C and depth in the epifaunal foraminiferal species of Cibicides fletcheri seems to be consistent (R²=1 in both winter and summer), followed by Pseudononion atlanticum (winter, R²=0.2849; summer, R²=0.4966). The positive correlation of d13C and depth in the Infaunal foraminiferal species are best expressed by Buccella peruviana (winter, R²=0.6797; summer, R²=0.4672), and Angulogenera angulosa (winter, R²=1).

CONCLUSIONS

These results suggest that it may be possible to use the d18O values of U. peregrina and P. atlanticum to reconstruct meridional temperature gradients and freshwater mixing, respectively. It may be possible to use this proxy to reconstruct changes in the mixing proportion of Subtropical Shelf Water, Subantarctic Shelf Water, and the Plata River outflow in the geologic record.

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