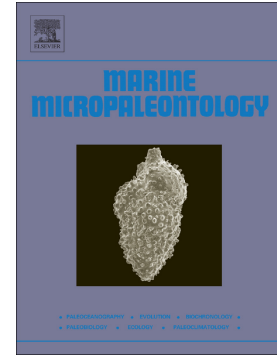


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## Micropalaeontological evidence for deglacial marine flooding of the ancient courses of the River Murray across the Lacepede Shelf, southern Australia

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### ABSTRACT

Previous sub-bottom profiling of the Lacepede Shelf, southern Australia, had inferred the course of the palaeo-River Murray during periods of low sea level. Micropalaeontological analysis of two cores taken during the SST-02-07 cruise, confirm these earlier observations, and reveal the past existence of permanently open, estuarine environments substantially larger than currently prevailing at the mouth of the terminal lakes of the River Murray, Australia's largest exorheic river. The characteristics of the sediment and contained microfossils provide substantial evidence for the repeated development of large, oxygen depleting algal blooms (sapropels).

Detailed analyses of the ostracod and foraminifer microfaunas, together with other fossil remains such as pteropods, bryozoan, sponge spicules and echinoid spines, combined with the dating of selected ostracods and bivalve molluscs (by AMS radiocarbon) and bivalve molluscs (by amino acid racemization) reveal rapid sediment accumulation within the ancient channels of the River Murray under estuarine conditions. The oldest

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