



## **Benthic foraminifera baseline assemblages from a coastal nearshore reef complex on the central Great Barrier Reef**

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Declining water quality due to river catchment modification since European settlement (c. 1850 A.D.) represents a major threat to the health of coral reefs on Australia's Great Barrier Reef (GBR), particularly for those located in the coastal waters of the GBR's inner-shelf. These nearshore reefs are widely perceived to be most susceptible to declining water quality owing to their close proximity to river point sources. Despite this, nearshore reefs have been relatively poorly studied with the impacts and magnitudes of environmental degradation still remaining unclear. This is largely due to ongoing debates concerning the significance of increased sediment yields against naturally high background sedimentary regimes. Benthic foraminifera are increasingly used as tools for monitoring environmental and ecological change on coral reefs. On the GBR, the majority of studies have focussed on the spatial distributions of contemporary benthic foraminiferal assemblages. While baseline assemblages from other environments (e.g. inshore reefs and mangroves) have been described, very few records exist for nearshore reefs. Here, we present preliminary results from the first palaeoecological study of foraminiferal assemblages of nearshore reefs on the central GBR. Cores were recovered from the nearshore reef complex at Paluma Shoals using percussion techniques. Recovery was 100%, capturing the entire Holocene reef sequence of the selected reef structures. Radiocarbon dating and subsequent age-depth modelling techniques were used to identify reef sequences pre-dating European settlement. Benthic foraminifera assemblages were reconstructed from the identified sequences to establish pre-European ecological baselines with the aim of providing a record of foraminiferal distribution during vertical reef accretion and against which contemporary ecological change may be assessed.