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# Geoarchaeological approaches to understanding human-environment interactions in Australia's tropical north: the Weipa shell mounds revisited.

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Western Cape York Peninsula, particularly the Weipa region, has seen sustained archaeological investigation since the 1960s. These studies primarily concentrated on the shell mounds associated with coastal environments first observed at the beginning of the 20th century. Despite claims that the shell mounds were of natural origin, archaeological investigations convincingly demonstrated that they are primarily cultural deposits. Geomorphological studies indicate that chenier (beach ridge) formation occurred after sea-level stabilisation in the mid- to late Holocene, and is connected to the formation of estuaries at the mouths of the Mission, Pine, Hey and Embley Rivers. Anadara shell bed formation is in turn connected with the evolution of the estuaries. However, the relationship between shell mound age and location relative to the coastline at Weipa is neither well defined, nor tested at multiple locations. Given that the coast is susceptible to the effects of sea-level fluctuations and environmental change, and the Anadara beds can become depleted as a result of environmental shifts, the shell mounds provide a datable record of human reaction to coastal landscape and environmental change. Here, we report preliminary results of a new investigation of the shell mounds of the Weipa region. Radiocarbon and OSL-based age determinations from samples of shell, charcoal and sediment collected from trenches excavated into shell mounds on the northern shore of the Embley River indicate a relationship between the time of initial accumulation of shell and the age of the landform features upon which they were built, which in turn are a result of coastline evolution during the mid to late Holocene. These mounds are the oldest yet recorded for the Weipa region, with accumulation in one case commencing around 3500 cal BP. Accumulation appears to be more or less continuous, and abruptly ceases after 400-650 yrs. We discuss implications for understanding human-environment interactions in the past, and our strategy for further research.