

Holocene records of palaeoenvironmental and deposition change from the East Coast - Tamil Nadu, India.

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**Abstract:**

Holocene environmental shifts have long been the subject of speculation. Along the East Coast, Tamil Nadu, Holocene records are punctuated by lithological and stratigraphic gaps, poor resolution and dating uncertainties. In this paper, radiocarbon dates and results are reported from four insitu core sections (1.5 m deep), collected in the estuary and tidal zones studied from the south of Chennai (Adyar to Markanam). Alternate oyster beds (each nearly a metre thick) intervened by tidal clay unit of nearly 1.5 m thick represent channel shift, and probable change in the sediment source area. The lower oyster bed Unit II is dated to more than 5000 yr. BP that reflects predominantly dry conditions and probable shift in the tidal channels. Subsequent Middle to late Holocene period was dominated by warm and humid climate replacing dry conditions resulting in widespread aeolian deposition in the region. Several trenches dug within the bordering dunes reveal a dominant Bt horizons with mild clay illuviation. The recurrence of wetter conditions and corresponding pedogenic development of profiles within the bordering dunes probably took place around 3000 yr. BP. Multi proxy analysis including mineral and textural studies supplemented with radiocarbon dates indicate aeolian contribution from the beach sand into the tidal zone during the cyclone (winter rains). Along the East coast, Holocene neotectonism has played a major role in carving out the landscape.

\* Abstract submitted to the 31st International Geological Congress.

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