

Chronology of wetland sediments of Central Kerala in the south west coast of India

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Coastal wetlands occurring at the central part of Kerala forms the northern end of the South Kerala Sedimentary Basin. The wetlands occurs upto ~15 km towards inland and are sheltered by beach ridges in the west and lateritic uplands to the east between 10°15`-10°30`N; 76°05`-76°20`E. The study aims to determine the sedimentation history and palaeo sea-level of the area, constrain chronology using optically stimulated luminescence (OSL) as well as ¹⁴C dating.

The general stratigraphy comprised of aeolian sediments in the upper part, followed by fluvial/ alluvial sand, inter-tidal deposits and marine- marginal marine sediments. Samples were collected from the trenches excavated up to ~4-5 m below ground level (bgl) and from well sections between 6 and 11 m bgl. The sections displays lenticular bedding within the mudflat sediments at 3 m depth and fossil shells (e.g., cerithium, pelecypods and other mollusks etc.) within the grey sandy clay to clayey stratum at variable depth (between 6- 11m). OSL dating at various depth yielded two sets of ages; 3.2±0.2 and 10.2±1.2 ka and 40.4±4.7 and 44.3±3.2 ka. Radiocarbon dating of fossil shells collected from the well section yielded ¹⁴C age of 4800 +-80 yr (PRL-3382), 31,000+- 500 yr (PRL-3383) and >40 ka BP (PRL No.3363). DGPS studies shows that the strata at the lower part of well section occurs at a depth of 2-3m below present MSL. The shell samples are being studied for their facies association to identify the depositional environment and sea-level.