

GEOCHEMICAL EVIDENCE OF HUMAN-ENVIRONMENT INTERACTIONS IN SOUTHERN COASTAL AREA OF SRI LANKA FROM MID TO LATE HOLOCENE EPOCH

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The effects of coastal changes associated with sea-level fluctuations on past human behaviour during the Holocene Epoch in Sri Lanka is poorly understood. The main hindrance is the lack of multidisciplinary studies. Sediment samples collected from Pallemalala, Mini-Athiliya, Bundala, Kalamatiya, and Henagahapugala were used to investigate the paleoenvironmental evolution and anthropogenic impact on the littoral area. Sediments from recent lagoonal and beach environments were also collected. Vertical variations of major and trace elements, paleo salinity levels, and organic matter content of sediments were used as geochemical tracers to interpret paleoenvironmental changes. The downcore variations of Sr/Ba ratios, paleo-salinity levels, Ga, V and PO₄⁻³ in Pallemalala, Mini-Athiliya and Kalamatiya depicted an increasing trend except for Ga, which declined in Kalamatiya. In contrast, Sr/Ba ratios, Ga and V displayed a decreasing trend while PO₄⁻³ exhibited an increasing pattern in Henagahapugala. Conversely, in Bundala, Sr/Ba ratios, paleo-salinity levels and V increased downwards instead of the decreasing trend of PO₄⁻³ and Ga. These geochemical parameters indicate that Pallemalala, Mini-Athiliya and Kalamatiya experienced mixed marine and fluvial/terrestrial influence. Henagahapugala displays comparatively strong marine influence. The persistent anthropogenic geochemical signals suggest that prehistoric populations frequented these sites despite the elevated marine influence. However, Bundala was less favoured. The findings indicate that the prehistoric communities successfully exploited a diverse range of coastal habitats during the Holocene.

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