



Impact of Estuarine Environments on Benthic Foraminifera - A Case Study from Thamirabarani River Estuary, Tamilnadu

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Abstract

The present study revealed that maximum living foraminiferal number (LFN) is noticed in stations (4, 6, 9) nearer to the mouth of the Thamirabarani river estuary and this LFN gradually decreased towards the upper part of the estuary. The LFN and diversity are very less in station 1 because of lesser salinity and in station 10 due to sandy nature of the substrate and wave agitation in all the three collections. Salinity show a considerable variation spatially and temporally and is the main ecological parameter, which governs the living population of foraminifera. Organic matter content shows a positive relationship with the depth of the estuary and fineness of the substrate. Spatially, organic matter and calcium carbonate content of the substrate exhibiting a considerable variation and positively governs the living population. Seasonally, the distribution of the fauna reveals that the higher LFN observed during May (summer) is due to the higher salinity and higher temperature of the bottom water and higher CaCO₃ and higher organic matter content of the substrate. The LFN is abundant in silty-clay-sand type of substrate, followed by silty-sand. The optimum conditions for the abundance of this fauna in the study area are: Temperature > 32.5°C, Dissolved oxygen > 4.9 ml/l, Salinity > 24 ppt, CaCO₃ > 17% and Organic matter > 2.1%. In general, the LFN increases with increasing temperature, salinity and depth of the bottom water and CaCO₃ and Organic matter content of the substrate.

Keywords: Thamirabarani estuary, Estuarine environment, Sediment and bottom water parameters, Distribution of foraminifera.