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Benthic Foraminifera from the Surface Sediments of Mudflats, Gulf of Kachchh, Gujarat, India

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Abstract

A detailed study on intertidal surface sediments was carried out to analyze the foraminifera in the area. This study is first of its kind, as there are very fewer researchers have worked on intertidal areas of the Gulf of Kachchh. A total of 98 species of benthic foraminifera have been identified from surface sediments of mudflats, the Gulf of Kachchh. The agglutinated foraminifera though rare but are fairly preserved, indicating low energy conditions. The investigation of the total foraminiferal number (TFN) in various locations across the Gulf of Kachchh and the total number of intact and broken fossils in the TFN suggest high values indicating a fairly good amount of rate of sedimentation in area. Based on the external morphology, the benthic foraminiferal morpho-groups were studied and were categorized into rounded symmetrical benthic foraminifera (RSBF) and elongated oval benthic foraminifera (EOBF). The relative abundance of EOBF morpho-group results in dominance of low energy environment. The cluster analysis was carried out for the foraminiferal data and were subjected to both R-mode and Q-mode which resulted into two distinct clusters, one exhibiting dominance of genera *Ammonia* and *Bolivina*. Both these genera are indicative of oxygen deficient environment in sample site 1 (below low tide) and 3 (between mid and high tide) and other cluster resembling mixed environment. The Simpson's Diversity Index shows very low diversity of foraminiferal species in the surface sediments of the Gulf of Kachchh.

Keywords: Benthic Foraminifera, RTM, Morpho-groups, Mudflats, Cluster analysis, Species diversity.
