

## Arid zone mangrove macrofaunal assemblages in Gulf of Kachchh, Gujarat, West coast of India

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### Abstract

The present study was carried out to determine the physico-chemical characteristics of water and sediment, textural aspects of sediments and associated faunal resources in western mangroves of Kachchh-Gujarat, west coast of India, for a period of two years during 2008-2009. Surface water and sediment temperatures varied from 17°C to 37°C and from 18.4°C to 37°C respectively. Tidal amplitude varied from 0.03m to 3.78 m. Salinity varied from 34.0 to 44 ‰ and the pH in water and sediment ranged between 7.0 and 8.9 and 6.29 and 8.45 respectively. Variation in dissolved oxygen content was from 3.42 to 5.85 ml l<sup>-1</sup>. On concentrations of nutrients viz. nitrate (0.23 to 7.26 4M), nitrite (0.04 to 0.874M), phosphate (0.13 to 3.12 4M) and reactive silicate (4.23 to 19.02 4M) also varied independently. Total organic carbon varied from 0.29% to 2.56% and the total inorganic phosphorus ranged between 0.12 mg g<sup>-1</sup> and 1.97 mg g<sup>-1</sup>. Total nitrogen varied from 0.02 mg g<sup>-1</sup> to 1.95 mg g<sup>-1</sup> respectively in all the 3 stations. In total one hundred and four species of phytoplankton were identified. Among them 82 species diatoms (Bacillariophyceae), 16 species dinoflagellates (Dinophyceae), 3 species blue greens (Cyanophyceae) and 2 species were green algae. The density in all the three sites varied from 94,166.67 to 2,44,500 cells l<sup>-1</sup>. The total benthic macrofauna consisting of 62 species in 5 groups, viz. crustaceans (18), gastropods (17), bivalves (16), polychaetes (9) and fishes (2), was recorded in western Kachchh mangroves near Gujarat. The population densities of benthic macrofauna ranged from 424 to 2393 ind.m<sup>-2</sup>, the diversity ranged from 1.84 to 2.45 bits ind.<sup>-1</sup>, the richness varied between 0.82 and 0.98, and the evenness varied between 0.64 and 0.81. Two maximum diversity values were recorded during winter and summer.

### Keywords

Gulf of Kachchh, macrofauna