

Theme 13: Open source GIS, Application of Geoinformatics in conservation and management

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SPATIAL AND TEMPORAL DISTRIBUTION OF SURFACE WATER TEMPERATURE, CHLOROPHYLL AND PHYTOPLANKTON IN BAHUDA ESTUARY, EAST COAST OF INDIA

S.K Baliarsingh, S. Srichandan, S. Naik, & K.C Sahu

Department of Marine Sciences, Berhampur University, Orissa-760007

sanjibakumar@gmail.com

The present study investigates spatial and temporal distributions of Chlorophyll (Chl-a), Surface water Temperatures (ST) and other oceanographic data obtained in the year 2008 & 2009 of Bahuda Estuary. The results show there is a seasonal variation of Chl-a, ST and phytoplankton population density during the study period. In summer, Chl-a concentration was relatively low (0.48 mg/m^3) and distributed uniformly throughout most of the area, and the higher phytoplankton population in the estuary, while Chl-a concentrations reached high levels (2.45 mg/m^3) during the monsoon season in the year. ST was high ($29.2 - 31.6 \text{ }^\circ\text{C}$) and distributed uniformly in summer, but lower with a large gradient from ($18.3 - 25.5^\circ\text{C}$) in winter. The seasonal variation of Chl-a concentrations and ST distribution were associated with the seasonally reversing monsoon. Phytoplankton taxonomic composition, abundance and spatial distribution were examined. A total of 93 species belonging to 29 genera were investigated. Diatoms were the most dominant group making up 75 species from 17 genera followed by Dinoflagellate with 14 species from 8 genera, Cyanophyceae with 4 species from 2 genera, Chrysophyta with 2 species from 1 genera were recorded.

Key words: Chl-a, Phytoplankton, ST, Bahuda Estuary.