

Association of Photosynthetic Pigment with Oceanic Physical Parameters in the North-eastern Bay of Bengal

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Abstract : This study presents the association of photosynthetic pigment: chlorophyll-a (chl-a) and physical parameters: sea surface temperature (SST), dissolved oxygen (DO), sea surface salinity (SSS), and total dissolved solids (TDS) in the northeastern Bay of Bengal. At 15 sampling stations in the bay near the eastern coast of Teknaf, photosynthetic pigment and environmental variables were measured for surface water where acetone extraction was used for chl-a. Samples of seawater were taken in March 2021, where chlorophyll-a content varies from 0.554 to 9.696 mg/m³ in surface water over the sampling site. Higher concentrations may be attributable to the nutrient supply of hatcheries and the delivery of fluvial input. The observed SST, DO, SSS, and TDS in the north-eastern Bay of Bengal are 26.65 to 28.6 °C, 6.26 to 8.03 mg/l, 29.3 to 33.1 PSU, and 22.4 to 25.3 ppm, respectively. Temperature and chl-a had a positive association (0.18), according to an analysis of the cross-correlation matrix. Again, a negative correlation (0.34) between dissolved oxygen and temperature is significant at $p < 0.05$. Total dissolved solids and dissolved oxygen have a significant negative correlation (0.70) where p is < 0.001 .

Keywords : photosynthetic pigment, nutrient supply, chlorophyll, physical parameters

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