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**STUDIES ON BLOOM-FORMING PHYTOPLANKTON IN THE KOTTAPUZHA
ESTUARY, SOUTHWEST COAST OF INDIA**

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Abstract

In the Kottapuzha Estuary, located in the Kozhikode Coastline, Western India, phytoplankton samples were collected over the hydrographical period from July 2018 to July 2019. Different types of diatoms (12), dinoflagellates (2), and blue-green algae (2) make up the bloom-forming plankton. There were several dominating blooms identified, including *Thalassionena nitzschioides*, *Ceratium furca*, *Thalassiothrix frauenfeldii*, and *Trichodesmium erythraeum*. In comparison to the monsoon and post-monsoon seasons, the surface water's temperature, salinity, pH, and dissolved oxygen remained rather steady during the winter months. In general, when the phytoplankton density was at its highest, the nutrient concentration displayed lower values. The phytoplankton's dominant index varied from 49.20% to 99.63%. The greater salinity (33‰) and dissolved oxygen (6.18 ml l⁻¹) levels might be the cause of the high population density of phytoplankton, which was reported to be 199.60 cells per ml.

Keywords: Kottapuzha Estuary; diatoms; phytoplankton; dissolved oxygen; salinity