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ABSTRACT BOOK

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Planktonic Ciliates of Hooghly estuary: perspectives of hourly variability

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Abstract

Planktonic ciliates are micro-heterotrophs that transfer energy from microbial to higher trophic levels of coastal-marine ecosystems. A study on the hourly variability of planktonic ciliates is rare in Indian estuaries. The abundance, diversity and distribution of the ciliate community over 24 hrs. were assessed in relation to water depth, salinity, water temperature, pH, dissolved oxygen and the planktonic ciliate community of the Hooghly estuary was sampled on an hourly basis (from 15:30 hrs. on 10th to 14:30 hrs. on 11th February 2024). It was hypothesized that hourly changes would impact estuarine habitat as well as the abundance, diversity and distribution of planktonic ciliates. Water depth ranged from 6.2 to 1.6 m (median \pm standard error: 3.8 ± 0.34), salinity 14.7 to 7.7 (12.6 ± 0.28), water temperature 23.1 to 21°C (21.9 ± 0.10), pH 7.34 to 6.76 (7.1 ± 0.03), and dissolved oxygen 11.79 to 8.05 mg/L (8.94 ± 0.16), but those parameters did not vary significantly on hourly basis. A total of 24 species under 7 genera have been recorded, among them, *Tintinnopsis parvula* (280 ind/L), *T. rotundata* (240 ind/L), and *T. lohmani* (210 ind/L) were abundant, whereas *T. urnula*, *T. fimbriata*, *T. orientalis* and *T. gracilis* were the least (10 ind/L) abundant. A total of 4 species (*Stenosemella nevalis*, *Stenosemella oliva*, *Tintinnopsis cylindrata*, and *Tintinnopsis ovalis*) were newly reported from West Bengal. Diversity indices did not vary significantly over the course of the study period. Shannon-Wiener diversity, Simpson dominance, and Pielou's evenness indices varied significantly with water depth and water temperature. Only Pielou's evenness index varied significantly with salinity. Results suggested the need of high-resolution short-term temporal sampling for extracting supplementary knowledge of the complex structural changes of estuarine planktonic communities of India.