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Hourly variation of Ciliates at Sajnekhali, Indian Sundarbans

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Ciliates are a major component of the microzooplankton community, play a major role in transferring energy from the microbial to higher trophic levels including economically important fishes, and act as a key component in estuarine and marine ecosystems. The influence of hourly tidal effects on the ciliate community has been studied to understand their changes in terms of abundance with the physical water quality parameters. The sampling was carried out in month of December 2022 at Sajnekhali from 20:00 hrs. to 8:00 hrs. Along with the microzooplankton water samples were also collected for nutrients. Regression analysis showed that measured water quality parameters did not change significantly over the course of time. Species richness, Shannon diversity, dominance, and evenness did not vary significantly during the study. Among the total of 27 species of ciliates were recorded during the study, *Tintinnopsis karajacensis* and *Tps. ovalis* were found as most dominant species throughout the study period. Canonical Correspondence Analysis revealed that temperature and nutrient concentration played a major role in the abundance of ciliates during the study. The obtained result revealed that there is no significant hourly variation in water quality parameters due to the lesser tidal influence in the study area, which leads to uniform species distribution in the area. As the community has direct effect on the fisheries the findings of the study will help to design the sustainable Sundarbans Fisheries management.

Key words: Abundance, Ciliates, Diversity, Indian Sundarbans.