

Preliminary assessment of zooplankton assemblages in Puttalam Lagoon, Sri Lanka

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Puttalam Lagoon is located in the North-Western Province of Sri Lanka and it is the second largest lagoon in the country. Zooplankton is a sensitive tool for assessing environmental conditions in coastal lagoons. The objective of this preliminary study was to assess the diversity and composition of the zooplankton in the lagoon. Zooplankton samples were collected at randomly selected fifteen sampling sites once in July, 2017. Samples were collected hauling method using 100 µm nylon plankton net one-meter depth from surface of the lagoon and concentrated plankton samples (100 mL) were preserved using 5% formalin until analysis. In the laboratory, quantitative analysis was carried out through sub-sampling techniques using a Sedgwick rafter cell. Observations of the zooplankton were carried out under mid-power (×400) of the compound microscope. Species were identified to the nearest possible taxonomic level using the standard taxonomic guides and diversity index of zooplankton was calculated. Altogether 37 zooplankton species were identified covering eight phyla (Arthropoda, Annelida, Chordata, Ciliophora, Mollusca, Nematoda, Protozoa, and Rotifera). Maxillopod a is the most abundant class (18 species) which included Copepods and Branchiopoda. The highest abundance (1388 total individuals/ml) of zooplankton was observed at the Western part of the lagoon where less human disturbances were seen. The lowest abundance (172 total individuals/ml) of zooplankton was recorded at the sampling sites of the Eastern part of the lagoon adjacent to upper Puttalam town area. The Shannon diversity index of 1.47 indicates lower species diversity in the lagoon during the study period. Further study should be carried out simultaneously with water quality and seasonal changes to correlate with alterations in the surrounding environment.

Keywords: diversity index, coastal lagoon, environmental conditions, zooplankton

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