Habitat vise fish species richness in Negombo Lagoon

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Abstract

Lagoon environments are very rich ecosystems having greater species diversity in different types of habitats. The increase of anthropogenic activities in and surrounding areas exerted different types of threats to both biotic and abiotic factors in lagoonal environments. Fish species are one of the most impacted biotic components in these ecosystems. Negombo lagoon is located in an area where the anthropogenic activities are high. Thus the influence of human activities in the area is rapidly increasing and fish species receive great threats. Therefore, an attempt was made to study the richness and diversity of the fish species in the Negombo lagoon. A field survey was performed to collect primary data based on habitat heterogeneity. A total of twenty-three (23) samples were strategically selected; eleven (11) from natural habitats, eight (08) from artificial habitats and (04) from semi-natural habitats. Cast net with the mesh size of 1.25 inches was used to catch the fish for counting and observations were carried out three consecutive times in each sample. Margalef richness index and Shannon-Wiener diversity index were used to calculate the richness and diversity of fish species. SPSS and Arc GIS soft wares were interactively used for data analysis. A total of 16 fish species were enumerated belonging to 7 orders, 15 families and 16 genera. According to the findings, the highest species richness was found in semi-natural habitats, with 1.6423 Margalef richness index. While the second highest species richness was found in natural habitats with the value of 1.6029 Margalef index. The lowest richness value was reported in artificial habitats (1.5984). The highest diversity was recorded in semi-natural habitats with 1.2688 Shannon-Wiener index. While 1.0148 and 0.7511 diversity indexes were found in natural and artificial habitats respectively. The highest richness and diversity could be identified to inform the Semi-natural habitats.

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