

Spacio-Temporal Variation of the Zooplanktonic Community of Esa-Odo Reservoir, Esa-Odo, Osun State, Nigeria

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Abstract : This study of the biodiversity, community structure, and production capacity of the zooplankton community is an aspect of bio-monitoring of the aquatic ecosystem. Samples were selected horizontally and vertically from Esa-Odo Reservoir using improvised Meyer's water sampler. Planktonic samples were collected at two months intervals for two years. Net and total plankton were sampled by filtration and sedimentation methods. Planktonic samples were preserved as 5% formalin and 1% Lugol's solution. Measurement, enumeration, and scaled pictures of the recorded zooplankton were taken using a photomicrograph. The taxonomic composition of zooplankton biota was determined using identification keys. Eighty three (83) species of zooplankton recorded in this study belong to 4 groups: Rotifera, Cladocera, Copepoda, and Insecta. Rotifera was the most represented group (61.21%). Horizontally, 24 species with the highest mean abundance characterized the lacustrine; while 12 species and 10 species were unique to the transition and riverine zones, respectively. Vertically, most species had their mean abundance decreased from the surface to the bottom of the reservoir. A total of nine (9), two (2), and one (1) species were peculiar to the surface, bottom and mid-depth, respectively. Zooplankton was most abundant during the dry season. In conclusion, Esa-Odo Reservoir comprised highly diversified zooplankton fauna with great potential to support a rich aquatic community and fishery production. The reservoir can be classified as fairly clean based on the abundance of the rotifer group. However, the lake should be subjected to regular proper monitoring because of the presence of some pollution tolerant copepod species identified among the zooplankton fauna.

Keywords : zooplankton, spatial, temporal, abundance, biodiversity, reservoir

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