

Spatial and Temporal Variations of Zooplankton in Relation to Some Environmental Factors in Lake Baringo, Kenya

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Abstract

The zooplankton community of Lake Baringo, a shallow and turbid lake in the eastern arm of the Great Rift Valley in Kenya, was studied between April 2008 and November 2009. This study focused on the spatial and temporal distribution, composition and abundance of zooplankton in the lake. Physicochemical variables measurements and triplicate zooplankton samples were taken monthly from five stations. The zooplankton community comprised 31 species. Only two Copepod species, *Thermocyclops consimilis* and *Thermodiaptomus galebi* were recorded in the orders Cyclopoida and Calanoida respectively. Cladocera was represented by 8 species, with *Diaphanosoma excisum* being the most common in all sampling stations. Rotifera, with five families, had a total of 21 species. Spatially, species diversity ranged from 0.649 in C2 to 0.695 in C1 while temporally these were 0.36 to 0.87 in September 2009 and June 2008 respectively. The mean zooplankton abundance per station varied from 27.46 ± 4.16 individuals l⁻¹ in December, 2008 to 120.13 ± 17.50 individuals l⁻¹ in November 2009. Among sampling sites, C3 had the highest abundance (79.09 ± 7.95 individuals l⁻¹) and the lowest abundance was recorded at C1 (56.37 ± 6.58 individuals l⁻¹). There was significant difference between the sampling stations ($P < 0.001$) and among the sampling months ($P < 0.001$). A number of environmental parameters were correlated with the abundance of different species of zooplankton.

Key words: Lake Baringo, Zooplankton, Distribution, Abundance, Environmental factors