

Abstract:

Comparative studies on the limnology, species diversity and standing stock biomass of phytoplankton and zooplankton in five freshwater lakes, Naivasha and Oloidien, Ruiru, Masinga and Nairobi reservoirs, were undertaken. Phytoplankton chlorophyll a, dissolved oxygen and temperature were also measured. *Thermocyclops oblongatus* (Copepoda) was dominant in all the lakes. *Ceriodaphnia cornuta* and *Diaphanosoma excisum* (Cladocera) dominated in lakes Naivasha and Oloidien, whereas in Ruiru, Masinga and Nairobi reservoirs, *Brachionus angularis* and *Hexarthra mira* (Rotifera) were the dominant zooplankters. Phytoplankton biomass as chlorophyll a was lowest in Ruiru dam $5.64 \pm 4.0 \mu\text{g l}^{-1}$ and highest in the eutrophic Nairobi dam $71.5 \pm 12.02 \mu\text{g l}^{-1}$. The endorheic lakes Naivasha and Oloidien showed medium values of $24.5 \pm 4.0 \mu\text{g l}^{-1}$