

## ABSTRACT

Macroinvertebrate assemblages were sampled at various stations along Laikipia Rivers using 0.5 mm mesh size scoop net in the riffles, pools and runs from February 2010-January 2013. The overall objective of the study was to assess the structure and composition of macroinvertebrate assemblages as indicators of water quality and ecological integrity of the rivers. Sampled stations were chosen to correspond to different land-uses in the catchments. Sampled macroinvertebrates were identified, and taxon diversity, richness, evenness and dominance estimated for each station. Minitab for Windows version 14.0 and Microsoft Excel computer packages were used for statistical analyses. A total of 45 macroinvertebrate genera for River Nanyuki, Ewaso Nyiro and Ewaso Narok dominated by the Ephemeroptera, Plecoptera and Trichoptera (EPT). Other orders like Hemiptera, Coleoptera, Diptera, Pulmonata and Odonata besides EPT also registered a greater percentage in all the rivers sampled. Some orders such as Annelida, Amphipoda, Pelecypoda, Decapoda, Prosobranchiata and Lamellibranchiata did not dominate the rivers but their abundance were felt in some rivers like R. Ngare Narok, R. Gobit, R. Pesi, R. Burguret and R. Sirmon. Significant differences in the mean abundance ( $F= 16.371$ ;  $p = 0.000$ ) and diversity ( $H=7$ ;  $p=0.0032$ ) between the rivers were found that indicated differences in water quality. The results indicated that ecological integrity of Laikipia Rivers were experiencing intermediate levels of disturbance that influenced taxon composition, distribution, abundance and diversity. The study recommends that habitat quality should be maintained along the rivers. Macroinvertebrate assemblages in Rivers should also be used as indicators of ecological integrity to aid in management of the rivers.