

NOTICE OF PUBLICATION



AQUACULTURE & FISHERIES INNOVATION LAB

RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Macroinvertebrate assemblages as biological indicators of water quality in the Moiben River, Kenya

Author(s): F.O. Masese, M. Muchiri, and P.O. Raburu

Department of Fisheries and Aquatic Sciences
Moi University
PO Box 1125, Eldoret, Kenya

Date: 26 July 2017

Publication Number: AquaFish Research Report **09-A16**

AquaFish will not be distributing this publication. Copies may be obtained by writing to the authors.

Abstract: Benthic macroinvertebrate assemblages at eight stations in the Moiben River, corresponding to different catchment land uses, were assessed in 2006 as indicators of water quality. The relative abundance per taxon, diversity index, richness index, evenness, dominance, percentage of five dominant taxa and percentage Ephemeroptera + Plecoptera + Trichoptera (EPT) individuals were determined per sampling period per station. Significant spatio-temporal variation was observed in relative abundance, with Diptera dominating the study area. Ephemeroptera, Plecoptera and Trichoptera dominated the headwater stations, whereas Coleoptera, Oligochaeta and Chironomidae dominated further downstream. Significant relationships were recorded between physico-chemical parameters — conductivity, BOD, temperature, and discharge — and the occurrence of specific taxa, mainly *Heptagenia*, *Caenis*, *Baetis*, *Branchiobdella*, *Potamon*, *Ilyocoris*, *Elmis* and *Chironomus*. Significant changes in macroinvertebrate assemblages were primarily due to changes in water quality. As elsewhere, macroinvertebrate communities proved to be good indicators of water quality and should be used as bioindicators in long-term monitoring of this river.

This abstract was excerpted from the original paper, which was in the *African Journal of Aquatic Science* (2009), 34(1): 15-25.

AQUAFISH RESEARCH REPORTS are published as occasional papers by the Management Entity, AquaFish Innovation Lab, Oregon State University, Corvallis, Oregon 97331-1643 USA. The AquaFish Innovation Lab is supported by the US Agency for International Development under Grant No. EPP-A-00-06-00012-00. See the website at <aquafishcrsp.oregonstate.edu>.