

# **Impact of water quality changes of riverine macrozoobenthic diversity: a case study of river Gatharaini, Kiambu district, Kenya**

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## **Abstract:**

This study investigated the impact of water quality changes on the ecological structure of macro invertebrates in a tropical river. The macro-fauna was expected to change with changes in water characteristics. River Gatharaini was selected as the study area and several sampling stations were selected along its gradient. Selection of the sampling stations was based on the prominent land use immediately upstream which could discharge pollutants into the river either directly or indirectly through erosion. Major land use systems considered are arable/mixed farming, coffee plantations, industry (Kamiti Tannery factory) and housing estates. The water parameters studied include TDS, EC, pH, DO, temperature and turbidity. A core sampler was used in sampling of macro invertebrates. This study was carried out for 7 months at a sampling interval of 28 days. The results indicated significant seasonal and station variations in all the water quality parameters except temperature. Macrozoobenthic diversity trends also showed significant spatial temporal variation in water quality characteristics shows extreme pollution making it void of fauna life. With decreased pollution levels, the river showed signs of recovery several kilometers downstream where pollution tolerant species predominate. This suggests that a self-purification process was in place.