

Aquatic insect communities in and around the tropical streams of Kinabalu Park, Sabah, Malaysia

Abstract

This study aimed to evaluate the effects of land use on aquatic insect communities in and around the streams of Kinabalu Park, Sabah, Malaysia. Five sampling stations were selected from pristine streams (S1 and S2) and streams in the vicinity of human activities (S3, S4, and S5). Aquatic insects were sampled using Surber net from June 2012 to January 2013. A total of 10360 individuals of aquatic insects from nine orders, 49 families, and 67 genera were collected. Order Coleoptera (27%), Ephemeroptera (26%), Trichoptera (24%) were the common orders found in the streams of Kinabalu Park. *Stenelmis* spp. (12%) was the dominant taxa, followed by *Psephenus* spp. (10%) and *Hydropsyche* spp. (8%). Pristine streams generally had higher total abundance, genera richness and diversity of aquatic insects. Based on the water parameters, all stations were classified as Class I. Biotic indices rated most stations were not impacted, but lower values were found in S3, S4, and S5. Canonical Correspondence Analysis (CCA) showed that water temperature, canopy cover, water velocity and stream width were the most influential environmental parameters on aquatic insect assemblages in the streams of Kinabalu Park.