



PRELIMINARY SURVEY ON THE DIVERSITY AND COMMUNITY ASSEMBLY OF MACROINVERTEBRATES ALONG THE DAKIL RIVER, UNIVERSITY OF THE PHILIPPINES LAGUNA LAND GRANT, PAETE, LAGUNA, PHILIPPINES

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ABSTRACT – Benthic macroinvertebrates are important components of running water because many of its members are fundamental connectors among the different trophic levels as integral parts of aquatic food webs, effective surrogates of ecosystem attributes and functional groups abundance can be used to assess stream health. This study aimed to determine the water physico-chemical characters of the river system, determine the diversity and community assembly patterns of macroinvertebrates and to correlate the species richness and abundance with selected environmental variables in the Dakil River system of Laguna Land Grant, Paete, Laguna, Philippines. A total of 572 individuals (7 classes, 15 orders, and 29 families) were collected from the all stations. Hexapods (16 families) constituted 55% of total abundance, followed by gastropods (21%) with five families. UPLLG had high diversity index ($H'=2.64$), taxon evenness ($E=0.48$) and taxon dominance ($E=0.11$). Species accumulation curve exhibited β -dominated diversity pattern with having completeness ratio of 0.75. Macroinvertebrates in the Dakil River system in the UP Laguna Land Grant have preferred microhabitat within the site as supported by Canonical Correspondence Analysis (CCA). The Generalized Linear Mixed Model (GLMM) revealed that species richness was highly predicted by pH while abundance predicted by the river velocity, canopy cover, and conductivity. The present study suggested that environmental variables highly influence macroinvertebrates diversity in streams and can be good ecological indicators of the health of ecosystem.

Keywords: abundance, Dakil River, macroinvertebrates diversity, streams



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