

ASSESSMENT OF PHILIPPINE GROUNDWATER WITHIN AGRICULTURAL AREAS USING STYGOFAUNA AS BIOINDICATOR OF WATER QUALITY

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ABSTRACT

Groundwater accounts for about 30.1% of the available fresh water on Earth, making it one of the most utilized resources globally. However, anthropogenic activities have threatened its pristine condition. In the Philippines, agriculture has the second-highest groundwater consumption next to the domestic sector. The pollutants from different human activities have reached the subterranean systems as leachate. Consequently, groundwater-dependent organisms, particularly stygofauna, are mostly affected due to their sensitivity to the dwindling water quality. Despite the recent studies, groundwater ecosystems are still undervalued because of inadequate understanding. Thus, this study is imperative as it aims to determine the ecological aspects of groundwater invertebrates from springs and wells of agricultural areas in the Philippines. Groundwater biota will be collected through the netting and pumping of springs and wells and identified to the lowest possible taxonomic classification. Specifically, this study aims to (1) examine the stygofauna composition in the groundwater in the agricultural land areas of Ilocos Sur, Benguet, Nueva Ecija, Cebu and Davao del Norte provinces; (2) compare the size, abundance and richness of stygofauna in the groundwater within the above-mentioned agricultural areas; and (3) assess environmental factors that may influence water quality and diversity of stygofauna in groundwater ecosystems in the five localities.

Keywords: groundwater, stygofauna, water quality, agricultural lands, Philippines