MACROBENTHIC DIVERSITY AND WATER QUALITY ASSESSMENT OF CAÑAS RIVER IN THE MUNICIPALITY OF AMADEO, PROVINCE OF CAVITE, PHILIPPINES

A Master's Thesis Presented to the
Faculty of College of Science and Computer Studies Graduate Studies
De La Salle University-Dasmariñas
City of Dasmariñas, Cavite

In Partial Fulfilment of the Requirements for the Degree
Master of Science in Biology

LOUIS ALEXIZ C. URBINA

May 2018

ABSTRACT

This study of the Cañas River in the municipality of Amadeo, Cavite, Philippines from January 2018 to May 2018 was conducted to classify the river based on the DENR standards, examine the relationship between the physico-chemical parameters and macrobenthic diversity inhabiting the river and identify bioindicators for ecological conservation purposes. Mean values of water temperature 24.97°C, water transparency 0.26m, pH 6.99, salinity 0.1ppt, dissolved oxygen 7.65 mg/L, total dissolved solids 1991.47 mg/L, nitrates 3.88 mg/L, and phosphates 1.79 mg/L concentrations were recorded. All physico-chemical parameters, except for water transparency, pH, and nitrates, showed no significant differences ($p>0.05$) among the sampling stations. Findings characterize the Cañas River as Class C freshwater based on the DENR standards. A total of 176 species of macrobenthic invertebrates were collected having Insecta as the most abundant (69.23%) with eight families while the least abundant was Oligochaetes (7.69%). The CCA model showed the interactions of the 13 taxa and 8 physico-chemical parameters which is interpreted as a gradient of increasing levels of oxygen and nutrient enrichment. The increase of pollution tolerant indicators such as *Physa* and *Planorbis* found mostly in the midstream portion of the river indicates pollution and stress from anthropogenic sources. This study recommends frequent monitoring and proper regulation of this aquatic ecosystem to prevent further deterioration.

Keywords: Physico-chemical, Invertebrates, Biomonitoring, CCA, Cañas River