

Pobporn Tharapoom 2014: Macrobenthic Communities in Relation to Environmental Variables: Case Study of Bang Taboon Mangrove Estuary, Phetchaburi Province. Master of Science (Environmental Science and Technology), Major Field: Environmental Science and Technology, Division of Science. Thesis Advisor: Assistant Professor Siraprapha Premcharoen, Ph.D. 168 pages.

Macrobenthic communities at Bang Taboon mangrove estuary, Phetchaburi Province were studied seasonally within eight different stations between November 2012 and September 2013. It dealt with the composition, density and biomass of macrobenthos in the area and also characterized environmental variables in the assemblage. Totally 53 species representing crustaceans (16 species, 30.19%), gastropods (14 species, 26.42%), bivalves (12 species, 22.64%), polychaetes (6 species, 11.32%), with 1 species of oligochaete, nemertean, sipunculid, enteropneusta and pisces were collected. Total density of overall macrobenthos was 1486 individuals per square meter, with gastropods and bivalves formed the highest (1,134 individuals per square meter), while total biomass was 188.79 g per square meter, with crustaceans formed the largest (106.24 g per square meter). Two dominant species, *Assiminea brevicula* and *Metaplax elegans* were found in all seasons and at every stations. Shannon-Wiener index was averaged 1.22 ± 0.46 , ranged from 0.40-2.44 and evenness index was averaged 0.56 ± 0.15 , ranged from 0.18- 0.77. Significant differences were found in relative abundance and species richness among stations ($p < 0.05$) based on cluster and nonmetric multidimensional scaling (nMDS) analysis.

A correlation between some dominant species, viz., *Assiminea brevicula*, *Stenothyra glabra*, *Cerithidea cingulata*, *Tegillarca granosa*, *Tellina* sp., *Metaplax elegans* and *Uca forcipata*, and environmental variables was observed among survey trips. There were significant differences of density in those species with respect to temperature, dissolved oxygen, pH, salinity, phosphate, nitrate, ammonia, sediment grain size and soil-pH. Although the Bang Taboon estuary is impacted by human activities, the habitats remain an important nursery ground for numerous macrobenthos including many commercial species.

Student's signature

Thesis Advisor's signature