

Prabsuek Sritipsak 2014: Utilization of Both Benthic Macroinvertebrates and Physicochemical Parameters for Evaluating Water Quality of Khao Sam Roi Yod Wetland, Prachaup Khiri Khan Province. Master of Science (Entomology), Major Field: Entomology, Department of Entomology. Thesis Advisor: Mr. Akekawat Vitheepradit, Ph.D. 125 pages.

The study of macroinvertebrate diversity and water quality was conducted to evaluate the effect of three types of adjacent landuse (i.e., national park area, shrimp farm area, urban area) to the Khao Sam Roy Yod Wetland, Prachaup Khiri Khan Province. The data collections were made every other month from May 2013 to June 2014. In total, 9,843 individuals of macroinvertebrates were collected from the Khao Sam Roy Yod Wetland , which represent 96 species, 43 families, and 13 orders. The most speciose order was Hemiptera with 27 species representing 12 families. Whereas, The least speciose orders were Ephemeroptera, Orthoptera, Aciculata, Anomalodesmata, Isopoda, and Veneroida with a single species of each. Overall, the values of physio–chemical characters of water quality at collecting sites adjacent to urban areas were higher than those of adjacent to national park area and shrimp farm area, especially turbidity, salinity, conductivity, nitrate–nitrogen, and ammonia–nitrate. The analysis of Canonical Correspondence Analysis (CCA) was conducted to determine the association of macroinvertebrate diversity and water quality. The results showed that temperature, turbidity, conductivity, pH, salinity, nitrate–nitrogen, and ammonia–nitrate were associated with collecting sites adjacent to urban areas, where *Hydrophilidae* sp.2, *Hydrophilidae* sp.4, *Hydrophilidae* sp.5, *Ceratopogonidae* sp.2, *Stratimyidae* sp.3, *Latermulidae* sp.1, *Melanoides* sp.6, and *Melanoides* sp.8 were commonly found. The Correlation Analysis of 11 physio–chemical characters and water quality indicator macroinvertebrates showed significantly the reverse relationship between alkaline and water quality indicator macroinvertebrates. ($p < 0.05$).

Student's signature

Thesis Advisor's signature