

Sutida Tabjak 2011: Relation between Aquatic Insects and Water Quality in a Natural Water Bodies Receiving Sewage Effluent: Response to Environmental Parameters.

Master of Science (Environmental Science and Technology), Major Field: Environmental Science and Technology, Division of Science. Thesis Advisor: Miss Taeng-On Prommi, Ph.D. 131 pages.

The biodiversity of aquatic insects in natural water bodies receiving sewage effluent was studied from 16 sites were during June 2010 to May 2011. Three replicates of each site was sampled by an aquatic D net. Seven orders and 28 families of aquatic insects were found in this study. The order Hemiptera had the highest number of family (9 family), followed by order Odonata (6 families), Coleoptera (4 families), Diptera and Ephemeroptera (3 families), Trichoptera (2 families) and Megaloptera (1 families). Most of physico-chemical water quality parameter in natural water bodies receiving sewage effluent values was in class 3 to 5 of the Classification and Standards of Water of Thailand. The correlation between the biodiversity of aquatic insects and physico-chemical water quality parameters was also analyzed. The Polymitarciidae, Caenidae, Libellulidae, Sialidae, Gerridae, Belostomatidae, Notonectidae, Hydrometridae, Dytiscidae, Spercheidae, Hydropsychidae, Ecnomidae, Stratiomyidae and Culicidae were significantly correlated with air and water temperature, pH, dissolved oxygen, conductivity, total dissolved solids, turbidity, alkalinity, ammonia-nitrogen, orthrophosphate, nitrate nitrogen and sulfate ($p<0.01$, $p<0.05$). Assessment of water quality could lead to the planning, administration and management of water resources in the Kasetsart University, Kamphaeng Saen Campus. The water treatment is necessary before releasing sewage into the water. Promoting conservation of water may be conducted by planting and maintaining trees. Also, reinforce awareness of conservation of water resources should be performed.

Student's signature

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