

Siriporn Boondao 2006: Relationship between Species Composition and Abundance of
Phytoplankton with Zooplankton in Maeklong Estuary, Samut Songkhram Province. Master of
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The relationship between species composition and abundance of phytoplankton with zooplankton was studied at Maeklong Estuary, Samut Songkhram Province. Monthly field visit was conducted during June 2004 and May 2005 to collect water and plankton samples from 6 study sites. Phytoplankton was collected from 2 different water levels; about one foot below water surface and about one foot above the bottom. Phytoplankton was pre-screened into 3 groups according to its size by filtering 20 liters of water sample through plankton net with mesh size of 20, 74 and 330 micrometers. Zooplankton was studied by filtering 100 liters of water sample collected from water surface through plankton net with mesh size of 74 micrometers. Some physical and chemical parameters of water qualities were also investigated during this period.

The total number of 342 plankton species was found and can be categorized into 259 species of phytoplankton and 83 species zooplankton. Bacillariophyceae was the predominant group throughout the study period, followed by Chlorophyceae. Protozoa was the predominant group of zooplankton and was followed by Rotifera. Diversity of plankton was highest in May 2005 and the lowest was in April 2005. The maximum diversity of plankton was found at transitional zone of fresh and brackish water. The abundance of plankton varied accordingly with areas and time. Bacillariophyceae has the highest average number both at the subsurface and at the bottom. *Chaetoceros pseudocurvisetus*, *Thalassiosira* spp., *Skeletonema costatum* and *Cylindrotheca closterium* were the dominant species of Bacillariophyceae. Cyanophyceae was second only Bacillariophyceae and the dominant species of this class were *Microcystis aeruginosa*, *Oscillatoria limnetica* and *Spirulina platensis*. The most abundance of zooplankton was Arthropoda especially copepod nauplii and was followed by Mollusca.

Seasonal variation played an important role on water qualities especially salinity which influenced on species composition and the abundance of phytoplankton and zooplankton. The relationship between species composition and abundance of phytoplankton with zooplankton was mainly relevant to food chain aspect and environmental factors especially salinity.

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