

Pairin Sudthung 2012: Diversity of Algae and Water Quality Assessment in Sediment Areas at Bueng Boraphet, Nakhon Sawan Province. Master of Science (Botany), Major Field: Botany, Department of Botany. Thesis Advisor: Miss Nuttha Sanevas, Ph.D. 152 pages.

The composition, diversity of algae and water qualities in sediment areas at Bueng Boraphet, (Nakhon Sawan Province, Thailand), were investigated to assess its status from September 2009 to July 2010. Algal samples were collected from 16 sites by dragging a plankton net through the water surface for 60 seconds. The physical factors of water in Bueng Boraphet were also determined at all sampling sites. A total of 8 divisions and 66 genera of algae were identified. They were Chlorophyta (32 genera), Cyanophyta (14 genera), Bacillariophyta (9 genera), Euglenophyta (4 genera), Chrysophyta (3 genera), Pyrrophyta (2 genera), Cryptophyta (1 genus) and Charophyta (1 genus). The largest distribution of algae in the study area was *Anabaena*, *Dinobryon* and *Closterium* respectively. The cell abundance of algae varied from 63,895 units per liter in January to 221,168 unit per liter in May. The algal biomass production by quantifying chlorophyll a varied from 3.99-7.57 $\mu\text{g/l}$ and also the biomass production was relatively high in May.

The physical factors of water showed that the transparency of water in Bueng Boraphet was 44-102 cm. The water's pH level, temperature, dissolved solids, salinity, dissolved oxygen and electrical conductivity was 8-8.9, 29-34.3°C, 114.9-269.9 ppm, 114.1-209 ppm, 7.2-9.3 mg/l and 212-267 $\mu\text{S cm}^{-1}$, respectively. However, the water quality in the sediment areas was classified to be in the normal range of the standard general water quality based on the result of physical factors of water. And the water quality in Bueng Boraphet was classified to be in the mesotrophic status by using the AARL-PP Score assessment.

Student's signature

Thesis Advisor's signature