

Water quality and phytoplankton distribution of the Lower Kinabatangan River Catchment, Sabah

ABSTRACT

A study on water quality and phytoplankton distribution was carried out at the Lower Kinabatangan River Catchment, Sabah in November 2013, January 2014 and March 2014. The objectives were to study the surface water quality of the Lower Kinabatangan River Catchment; to identify the composition of phytoplankton in three different types of land use in Sukau, Kinabatangan; and to determine spatial and temporal variations of water quality in Sukau, Kinabatangan. Three sampling stations were selected to represent different types of land use, consisting of oil palm plantation (OP), secondary forests (SF) and oxbow lake (OB). Based on Interim National Water Quality Standards (INWQS) for Malaysia, the parameters were categorized within Class I to Class IV. Statistical analyses ANOVA one-way, paired sample t-test and discriminant analysis have been carried out to both water quality and total monthly precipitation data sets. The distribution of phytoplankton in Kinabatangan River consisted of 5 divisions: the Bacillariophyta, Chlorophyta, Cyanophyta, Cryptophyta and Euglenophyta. Chlorophyta recorded the highest diversity, with 10 species recorded out of 17 species found of the Lower Kinabatangan River Catchment. Discriminant analysis suggested that UV-visible absorption coefficients at 254 and 340 nm were dominant in samples from OP and SF. Temporal variations showed that parameters suspended sediment, UV-visible absorption coefficients at 254 and 340 nm were dominant in samples from collected in January 2014.