

Water quality assessment of UPM lake and the impact of geographic information system

ABSTRACT

A study of the water quality changes of engineering lake was conducted for 3 months in March, August and September. A total of 8 water quality parameters were measured and their average monthly observations were recorded with consideration of both point source and non-point source (NPS) pollutants. The parameters measured were Biochemical Oxygen Demand (BOD), Dissolved Oxygen (DO), Chemical Oxygen Demand (COD), Ammonia-Nitrogen (NH₃-N), pH, Total Suspended Solids (TSS) and water temperature. This was done according to the guidelines of department of environment (DOE) Malaysia on water quality assessment with respect to Interim National Water Quality standards (INWQS). Based on INWQS and WQI Malaysia the lake was classified as polluted against class Iib. This shows the lake is not suitable for recreational activities such as fishing, canoeing. The level of pollution based on spatial resolution of two water quality parameters, BOD and water temperature was made possible using geographical information system (GIS). ARCMAP 10.1 software was used for this application to determine the concentration of the parameters at every position in the lake.

Keyword: Water Quality Index; Non-point source; GIS; ARCMAP 10.1