

Effects of land use on river water quality of Awat-Awat Lawas Mangrove Forest Limbang Sarawak Malaysia

ABSTRACT

Water quality and trace elements of river water of Awat-Awat, Sundar and Trusan river from Awat-Awat Lawas Mangrove Forest Limbang (AALMFL) Sarawak, Malaysia were investigated in the current research. This study used the application of Water Quality Index (WQI) and National Water Quality Standards (NWQS) provided by Department of Environment (DOE) Malaysia in evaluating the quality of the river. Fifty two different sampling points were selected from upstream, middle stream and downstream of river. Monitoring, sampling and water analysis was conducted from November 2012 until May 2014. The analysis of water samples were performed according to Standard Methods for the Examination of Water and Wastewater APHA 2005. Based on Malaysian Water Quality Index (WQI) by DOE Malaysia, overall water quality status at the study area was found categorized under Class III which represents moderate water quality status. The main concern of water quality in this river is high level of suspended solids and turbidity. The present data of the physico-chemical analysis of river water is very useful for assessment of the mangrove forest ecosystem. It's also important as a baseline data and a reference for government, NGO and other sector or institution in maintaining and preserving the water resources at the area. The results finding in this present research suggest proper water management, conservation and preservation to restore the water quality of this river and its tributary for a productive ecosystem and aquatic resources.

Keyword: Water Quality Index (WQI); Water quality parameters; Mangrove forest; Sarawak; Malaysia