

## **Water quality monitoring in Sugut River and its tributaries**

### **Abstract**

WWF-Malaysia initiated the water quality monitoring using physico-chemical and biological parameters along the lower Sugut River and its tributaries to monitor the status of water quality in the area, especially in areas surrounded by oil palm plantations. A total of 12 sampling stations were selected at four tributaries of Sugut River based on agreement with WWF staff members and Sabah Forestry Department (SFD) officer. The four tributaries were Sabang river (next to oil palm mill), Sugut river (next to oil palm plantation), Wansayan river (next to secondary forest) and Kepilatan river (next to Nipah forest). Fieldwork started in August 2015 and ended in November 2015, with a total of four samplings. The results showed that the Water Quality Index (WQI) classified Sg. Sabang as very polluted, while Sg. Sugut, Sg. Wansayan and Sg. Kepilatan were slightly polluted. In accordance to INWQS, parameters TSS, DO and BOD for all tributaries were classified in Class III and IV. Table 3 summarizes the mean concentrations for each physico-chemical parameter at each tributary. Parameters TSS, TDS, COD, ammonia nitrogen, conductivity and salinity were found the highest at Sg. Sabang, followed by Sg. Kepilatan, which could be due to salinity effect. It also possibly caused by accumulation of sediments and nutrients, as estuary area has been reported constantly receives organic matter from inflowing tributaries (Day et al., 2007). COD was the highest at Sg. Sabang, and this parameter is known to represent total organic matter in water bodies (Hur & Cho, 2012). The monitoring work presented in this report represents a baseline data on the water quality of Sugut River basin by using physico-chemical and biological parameters. It is recommended that development in the upper reaches of the Sugut river should be monitored to ensure that the quality of the river does not get worse. The next step would also be to engage with the oil palm plantation companies along the river to look at ways to mitigate river pollution.