

## **Water quality assessment at Royal Belum State Park, Perak, Malaysia**

### **ABSTRACT**

This study demonstrated water quality study at the Royal Belum State Park, Perak. The Royal Belum State Park is one the major reservoir for water resource in Perak and under National Heritage Site UNESCO. The lake is surrounded by the reserved forest and rich with flora and fauna. The Royal Belum State Park is considered as one of the oldest, protected, undisturbed and pristine land mass in Peninsular Malaysia of more that 130 million years old. This lake provides biodiversity education, research, and ecotourism to the public. One of the major attractions is the houseboat. There are more than ten (10) houseboats operated every day due to the high demand from the local and international tourists. Due to this activity, water quality of the lake has been deteriorated and required short and long-term mitigation measures. Water quality study (ex-situ and in-situ measurements) was conducted at selected six (6) sampling locations (e.g., Royal Belum registration point, Sungai Tiang, Kg. Orang Asli, houseboat docking area, Kem Sg. Tiang and houseboat parking area). The water quality index (WQI) measurement of all sampling points is in the range of 60-80, indicating that the WQI value is under class II and III. The WQI values are significantly deteriorated by the concentrations of dissolved oxygen (DO), biological oxygen demand (BOD), and chemical oxygen demand (COD). The water quality at Kg.Orang Asli, Sg. Tiang and houseboat parking area slightly deteriorated compared to other sampling points. This is probably due the leakage of petrol from the houseboat, stagnant water at certain area of the lake (e.g., Kem. Sg. Tiang), discharge of wastewater and sullage water from the houseboat and unknown non-point source nearby the lake. Therefore, the Perak State Government, State Parks Corporation, and other relevant authority (e.g., NGOs) should play an important role to preserve and sustain the water quality at the Royal Belum State Park, Perak because this lake is one of significant source of clean water supply in Perak.