

## Quantification of Pollution Loads for the Rehabilitation of Pusu River

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**Abstract :** Identification of pollution sources and determination of pollution loads from all areas are very important for sustainable rehabilitation of any contaminated river. Pusu is a small river which, flows through the main campus of International Islamic University Malaysia (IIUM) at Gombak. Poor aesthetics of the river, which is flowing through the entrance of the campus, gives negative impression to the local and international visitors. As such, this study is being conducted to find ways to rehabilitate the river in a sustainable manner. The point and non-point pollution sources of the river basin are identified. Upper part of the 12.6 km<sup>2</sup> river basin is covered with secondary forest. However, it is the lower-middle reaches of the river basin which is being cleared for residential development and source of high sediment load. Flow and concentrations of the common pollutants, important for a healthy river, such as Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Suspended Solids (SS), Turbidity, pH, Ammoniacal Nitrogen (AN), Total Nitrogen (TN) and Total Phosphorus (TP) are determined. Annual pollution loading to the river was calculated based on the primary and secondary data. Concentrations of SS were high during the rainy day due to contribution from the non-point sources. There are 7 ponds along the river system within the campus, which are severely affected by high sediment load from the land clearing activities. On the other hand, concentrations of other pollutants were high during the non-rainy days. The main sources of point pollution are the hostels, cafeterias, sewage treatment plants located in the campus. Therefore, both pollution sources need to be controlled in order to rehabilitate the river in a sustainable manner.

**Keywords :** river pollution, rehabilitation, point pollution source, non-point pollution sources, pollution loading

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