**Application of frequency analysis on peak river discharge toward the cumulative floatable litter load at log boom Sungai Batu**

ABSTRACT

The accumulation of floatable litter in the river is mainly influenced by the increasing number of human population, rapid urbanization and development which indirectly lead to the changes of hydrological processes in river discharge, decreasing the water quality and aesthetical value of the river. The main objective of this paper is to determine the cumulative floatable litter load captured at the log boom during the extreme events by using the Gumbel distribution method for frequency analysis in river discharge of Sungai Batu. The annual maximum river discharge for a period of 35 years (1982 to 2016) was used in Gumbel distribution method to obtain the discharge for different return period (2, 5, 10, 25, 50, 100, and 200). The result shows that the estimated discharge (103.17 m³/s) can estimate the cumulative floatable litter load (53267.27 kg/day) at 50 years return period. The $R^2$ value obtained from non – linear regression analysis is 0.9986 indicate that Gumbel distribution is suitable to predict the expected discharge of the river. This study is very crucial for the related agencies in highlighting this environmental issues for their future references which can be used as a guidelines during the decision making process in making better improvement.