

Chapter 28

Bed Load and River Bed Pattern at Lebir River After Extreme Flood Event in 2014

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ABSTRACT

Lebir River is the main river that joins Sungai Galas to form Sungai Kelantan at Kuala Krai. In December 2014, it had faced extreme flood event. The situation has led to the introduction of changes and movement of sediment along Lebir River. This study was done to determine a bed load discharge and deposition of bed load at river bed after this flooding. Five locations have been identified to be used as the sampling location. Three different methods were used to determine the bed load discharge; Meyer Peter Muller, Schoklitsch, and Duboys. Results of the study shows, the size of the sediment in Lebir River is between 0.75 to 5.0 mm and an average velocity is 0.224 up to 0.599 m/s. From the analysis, it shows that Meyer Peter Muller is suitable to predict bed load in Lebir River. The Meyer Peter and Muller formula obtained from experiments with relatively sediment and formula has been used frequently to estimate rates of bed load discharge. It is suitable for uniform sediments with specific gravity that are varying from 1.25 to 4. The particle size range for the Meyer Peter and Muller is between 0.4 and 28.65 mm. This method gives better prediction compared to other two methods and it is suitable for coarse sands and gravel. The river profile in selected point was identified to determine the river bed pattern cause by deposition of sediment at Lebir River after facing an extreme flood event in 2014.

Keywords: Bed load; Extreme flood; Lebir River; Meyer Peter Muller River pattern