ABSTRACT

Sediment transport in rivers is an important and complex process. It is very important to know the nature and quantities of sediments transported in course of rivers to achieve prudent water management. Due to the presence of most of the important projects on or near the banks of the river in the study area, so there is always a fear that these projects will be affected by the processes of erosion, transport, and sedimentation among the decision makers. Therefore, there is a need to develop our knowledge of the suitable equations that can be applied with acceptable accuracy to obtain satisfactory results for monitoring the processes of erosion, sedimentation, and transport that occur in River path to monitor and anticipate the changes taking place in the areas of the riverbanks. This study was carried out to check the reliability of different sediment transport formulas using data collected from the Euphrates River at the thermal power station in Al Anbar province, Iraq. The study also aimed to select the best formula for this site. Hydrological data have been collected. These were used for computing the total sediment load in the river at a specified cross-section using common sediment transport formulas ascribed to Ackers-White, Bagnold, Yang, Colby, Shen and Hung, and Engelund-Hansen. The performance of these formulas was assessed based on the accuracy of the predictions of the observed sediment load within a limited discrepancy ratio. The evaluations showed that the Engelund-Hansen formula represented the best formula for this river reach.