

Application of HEC-RAS Model to Predict Sediment Transport for Euphrates River from Haditha to Heet 2016

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Abstract

The aim of this study is to evaluate the sediment transport and to assess the quality of water for a reach of Euphrates River with a length of (124.4 km), begins from downstream of Haditha dam which represents the upstream of study, and ends at Heet station in Heet city which represents the downstream. There are 196 cross-sections which were distributed along the study area by using the model of one-dimensional HEC-RAS version 4.1. Calibration and Verification processes from (01-Sep-2013) to (30-Nov2013) and (01- DEC-2013) to (28-FEB-2014) respectively, show that the optimal Manning Roughness Coefficient (n) is equal to (0.033) which gives the less error ratio between the observed and calculated water surface elevations. By comparing the results of sediment transport “mass accumulated” for this study which equal to (237.38ton/day) was larger than the value of the previous study which equal to (165ton/day, measured in 2010). But the value of sediment load of this study at Heet station was equal to (551.76 ton/day) which was less than the value of previous study (189.041×10³ ton/day, measured in 1988), due to increasing in the rates of discharge that was arrived the reach of study area.