

River hydro morphology characteristic influenced by seasonal changes: a case study in Galas River, Kelantan

ABSTRACT

Hydro morphology is the field that deals with the structure, evolution and dynamic morphology of hydrological systems over time. Hydrological systems evolve due to variety of both natural and anthropogenic influences such as changes in land and water use caused by urbanization, agriculture, climate change, modifications to water infrastructure and water use. Natural functioning river ecosystems for each environmental driver have a natural range of variability that depends on the geomorphic character of catchment, climatic regime and local factors. The purpose of this study is to elucidate river hydro morphology characteristic in different season of Galas River, Kelantan. Three different types of season were collected to get full hydrological regime properties for complete water year cycle. Results show that, in low flow period, a shallow and narrow channel was observed compare to high flow period which record has a deeper and wider channel. Hence, a liner relationship between discharge against sampling station is $R^2 = 0.9152$ for the high flow and the low flow is $R^2 = 0.7522$. In conclusion, the results indicate that factors influence the channel morphology changes in different season was significant due to the discharge, erosion, sedimentation and enlargement.

Keyword: Hydromorphology; Seasonal changes; River profiling; Channel morphology; Galas river