



## Evolution of river geomorphology to water quality impact using remote sensing and GIS technique

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### ABSTRACT

River plan change is one of the river geomorphology change process. This study focuses on the processes of the river plan change using geographic information system (GIS), remote sensing, and water quality analysis using water quality index (WQI) parameters. Multiple linear regression (MLR) method was used to observe the relationship between river plan change and WQI. Spatial model method was applied along the mainstream of Terengganu River Basin, using GIS to further justify the impact of river plan change on water quality status. The results obtained shows that the Terengganu River Basin has been going through certain river plan changes due to increase and decrease of the river plan criteria. Based on WQI analysis, the classification of water quality is under class III. Based on MLR, there are strong relationships between dissolved oxygen and river plan change which has value of  $R^2$  0.995, total suspended solids (TSS) with  $R^2$  0.764, and WQI with  $R^2$  0.928 during wet season, whereas during dry season, TSS and WQI showed the strong linear relationship with  $R^2$  of 0.997 and 0.985, respectively. This study will appropriately act as an aid of the local enforcement to determine the problems of the river management.

*Keywords:* River geomorphology; River plan change; Water quality index (WQI); Remote sensing; Spatial model

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