



Geomorphological Impacts of an extreme Flood in Karoon River, Iran

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An extreme flood occurred on 14.04.2016 in Karoon River. Using the OLI Landsat images on 08.04.2016 (before flood) and 24.04.2016 (after flood) the morphological evolution in different land cover types by this flood event were detected. The results show that the event significantly affected the channel width. The main effect was the high mobilization of channel sediments and severe bank erosion in the studied meandering reach. According to field surveys, the flood occupied the whole channel corridor and even some of the flood plain parts, but the channel pattern was not markedly changed. Results show the average of active channel width increased from 192 m to 256 m respectively for before and after flood. Statistical results indicate a significant change for active channel width and sinuosity index at 99% confidence level for both indexes. Findings show that the channel morphological changes (channel widening) varied significantly in different land cover types along the Karoon River banks. Specifically, the channel has widened less in the residential areas than the other land cover types, which is the result of bank protection activities.

Keywords: Remote sensing, fluvial geomorphology, floodplain management, river evolution.