Countermeasure of river bend scour using a combination of submerged vanes and riprap

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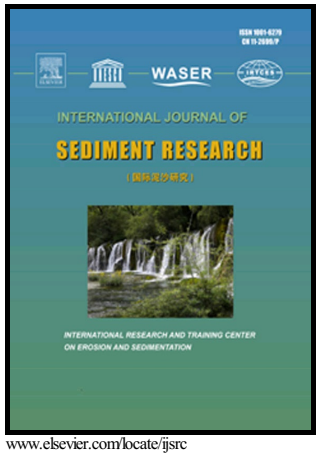

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PII: S1001-6279(17)30172-5
DOI: https://doi.org/10.1016/j.ijsrc.2018.04.002
Reference: IJSRC171

To appear in: *International Journal of Sediment Research*

Received date: 16 June 2017
Revised date: 7 February 2018
Accepted date: 9 April 2018

Cite this article as: Piya Biswas and Abdul Karim Barbhuiya, Countermeasure of river bend scour using a combination of submerged vanes and riprap, *International Journal of Sediment Research,* https://doi.org/10.1016/j.ijsrc.2018.04.002

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Abstract

A series of laboratory flume experiments were done in a large-scale 180° bend with non-cohesive sediment to find optimal or effective protection works at a bend. Detailed study of the scour and flow field dynamics with and without protection works was done. Spatially dense, high frequency velocity data were collected and analyzed to describe the pattern and magnitude of three-dimensional (3D) velocity throughout the bend. Characterizing the role of flow field dynamics on the pattern of deposition and erosion through experimental