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Morphodynamic Changes of Bhagirathi River at Murshidabad District Using Geoinformatics

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ABSTRACT

The channel of Bhagirathi River is the branches off from the Ganga at Nurpur (lower course of the Ganga). Bhagirathi River is one of the main rivers in Murshidabad district. Analyzing the image of the Bhagirathi River in Murshidabad district through the year 1970, 1977, 1990, 2000 and 2006, it is found that significant change has been occurred in southern part of the river and less change is found in the middle part which is close to the Berhampore town. Toposheet of the year 1970 is also compared with the image data to observe the change. Water discharge, soil types and transportation of sediment is the major contributing factor of morphological changes like bar or shoal, ox-bow Lake, meander etc. Maximum erosion takes place at Dear Balagachi and after Baidyanathpur. A cut-off has taken place at Baidyanathpur in 1984 [1]. It is found from the study that there is a possibility of natural meander cut-off at Dear Balagachi and near Majayampur. The traditional bank protection works, concrete walls, cemented stone and brick, play a significant role in the modification of the hydraulic aspect of the discharge values and in the interference in the water dynamics of erosive and depositional phenomena both upstream and downstream.

KEYWORDS

Ox-bow Lake, Meander Cut-off, Sinuosity Index (S. I), Meander Belt, Braiding Index Etc

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