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Channel Dynamics along the Northern Bank of the Upper Brahmaputra River and Formation of a Larger Island with the Loss of the Majuli Island

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Abstract : This paper is an attempt to study the channel dynamics in the area bounded by the foothills of the eastern Himalayas in the north, the Brahmaputra in the south and southeast and eastern side and the Subansiri River in the west. There are many streams in this region and only a few are perennial. There are two major anabranches of the Brahmaputra called Kharkutia Xuti and Charikoria. All of these makes it a very dynamic area. The analysis done in this paper is based on the remote sensing data and mapping of the channel planforms in GIS environment. The temporal trend of the change in channel planform has been produced. This study shows that, during the period from 1973 to 2013, the streams/rivers originating in the north have experienced a reduction in the total length. The other most important result is that even though the western edge of Majuli Island is eroding faster there is a formation of a larger island in between Charikoria and Brahmaputra, that comprises of Majuli island and parts of Dhakuakhana subdivision of Lakhimpur District along the south of Charikoria river. The field study shows that the Kharkutia Xuti, that divides Majuli from Dhakuakhana, do not experience any flow from the Brahmaputra for the major portion of the year and Charikoria has developed as a major anabranch of the Brahmaputra.

Keywords : channel dynamics, Brahmaputra river, Majuli Island, sinuosity
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