



# CHANGING ENVIRONMENTAL SYSTEMS AND EMERGING CHALLENGES

*Edited by*  
Ashok K. Bora & Madhushree Das

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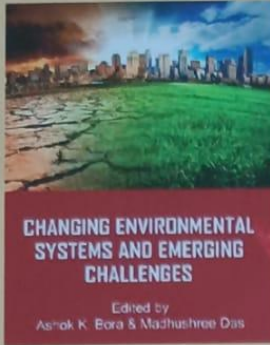
## Flood Frequency Analysis of Belsiri River, Assam

Nilotpal Kalita and Rana Sarmah

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### Introduction

Flood is a natural phenomenon which is frequently associated with riverine plains. It is a high magnitude of discharge of water of a river or streams that overflows the banks, which in turn brings about significant changes in the adjacent flood plains. Flood is a period of high discharge of a river caused by high rainfall, rapid snow melt, or the breaching of a barrier. It may exceed a channel's capacity and lead to inundation of adjacent low-lying land (Goudie, 2014). In many big and small river basins of the world this powerful geomorphic agent creates havoc and misery to the people. Therefore, it is extremely important to study and interpret the flood events for rational use and control. Flood frequency analysis is a direct measure of estimating the probability of occurrence of a particular flood event based on the available flood flow data of the catchment. The pioneering works of Fuller (1914), Foster (1924), Hazen (1930), Jarvis (1926), Gumbel (1941), Powell (1943), Chow (1951, 1956, 1964), Wolman *et al.*, (1957) etc. have suggested different methods for analysis and interpretation of flood events. Large number of exercises on flood frequency analysis have been carried out in the works of Langbein (1949), Leopold (1959, 1973), Mutreja (1986), Goswami (1972, 1988), Hammer (1972), Graf



### The Book

This volume contains twelve research articles contributed by a group of both senior and young geographers who participated in the 36<sup>th</sup> Indian Geographers' Meet along with an International Seminar held during February 25-28, 2015 at Gauhati University on the focal theme 'Environmental Changes and Challenges: Local, Regional and Global Perspectives'. The articles address a variety of aspects pertaining to the dynamic environmental systems and associated challenges covering local, regional and national environmental issues. The book will provide and help disseminate academic knowledge on changing environment and emerging challenges in the present day context.

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