

**Delineation of Flooded Area in Mayurakshi Basin Using Remote Sensing and Conventional Techniques**

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**ABSTRACT**

Remote sensing image analysis system is considerably a good substitute to conventional ground survey methods for flood inundated and flood affected area mapping and monitoring. Near real time, repetitive, spatial and temporal information of flood plain area could be monitored and mapped using remote sensing techniques with less time, low cost and minimum efforts. But, the integrated approach of remote sensing technique and conventional ground survey methods provide more accurate and precise informations of flood plains. The informations not obtainable by conventional ground survey methods could be obtained by remote sensing techniques and vice-versa. The integrated approach is, thus, of utmost importance to obtain: (a) landuse pattern, soil types, geology, drainage pattern, topography, historical rainfall and discharge data of the basin and their temporal & spatial variation; (b) flood control and management activities of the basin and their affect on the floods and ; (c) periodical changes in flood inundated and flood affected area of the basin.

The present study utilizes integrated approach of both the techniques for delineation of flood inundated area and flood affected area map of Mayurakshi river basin. The remote sensing data (IRS-IA-LISS II imageries) and conventional ground survey data used for the study were collected form various central and state govt. departments and agencies. In the study, the remote sensing data obtained for the periods of April 6,1989 (pre-monsoon) and December 4, 1989 (post-monsoon) were used to develop (i) Landuse map of the basin,(ii) flood inundated area map for the year 1989 and, (iii) flood affected area map of the basin, by visual interpretation technique, whereas the conventional ground survey data were used to develop (i) flood inundation map for different years and,(ii) flood affected area of the basin.

Further, an integrated flood affected area map was delineated using flood affected area maps developed by remote sensing and conventional techniques for flood forecasting and assessment of possible flood damages. The developed map shows the maximum possible flood affected area for frequent severe and moderate floods in the basin. The flood affected area maps and flood inundated area maps developed for the year 1989 were compared too.