

## HYDROMORPHOMETRIC ANALYSIS AND PRIORITIZATION OF SAVITRI BASIN OF MAHARASHTRA, INDIA USING GIS

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### ABSTRACT

*Hydromorphometric properties of the river catchment helps in estimation of hydrologic response (runoff and sediment) from catchment and their management on watershed basis. Remote Sensing (RS) and Geographic Information System (GIS) are most appropriate, cost effective and quick technique for estimation of hydromorphometric properties over traditional methods. In Present study, linear, aerial and relief hydromorphometric properties were estimated using ASTERGEOM DEM data in GIS environment (using ARC GIS 10.1 software) for prioritization of the Savitri basin in Konkan region of Maharashtra, India. The Savitri basin has total of 994 Sq Km and four sub catchments viz Ganhdari, Savitri, Kal and Bhaovira with runoff contributing area of each 137, 354, 332 and 47 Sq Km respectively. The time series analysis of rainfall and stream discharge from 1992 to 2011 shows increasing trends. The time of concentration of runoff of the Savitri basin was 6.7 hr for stream length of 57 Km. The drainage pattern was dendrites with VII<sup>th</sup> highest drainage order. The drainage density is high and texture is observed as course in nature. The relief of the basin is high to moderate. The basin was found to be highly runoff producing and with moderate recharge capacity. The hypsometric analysis of basin indicates basin is mature in erosion process.*

**KEYWORDS:** Savitri Basin, Hydromorphometry, Drainage, Relief, Aerial Hypsometric

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