

ESTIMATION OF SURFACE RUNOFF IN TIMMAPUR

WATERSHED USING SCS-CN METHOD

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ABSTRACT

The development of watershed aims at productive utilization of all the available natural resources in the entire area extending from ridge line to stream outlet. The per capita availability of land for cultivation has been decreasing over the years. Therefore, water and the related land resources must be developed, utilized and managed in an integrated and comprehensive manner. Remote sensing and GIS techniques are being increasingly used for planning, management and development of natural resources. The study area, Timmapur watershed geographically lies between 16°15' and 16°30' N latitude and 77° 15' and 77° 30' E longitude with an area of 101.34 Sq. km. The thematic layers such as land use/land cover and soil maps were derived from remotely sensed data and overlaid through Arc GIS software to assign the curve number. The daily rainfall data of nearby rain gauge station (2001-2011) was used to estimate the daily runoff from the watershed using Soil Conservation Service - Curve Number (SCS-CN) method. The runoff estimated from the SCS-CN model was then used to know the variation of runoff potential with different land use/land cover and with different soil conditions.

KEYWORDS: GIS, Rainfall-Runoff, Remote Sensing, SCS-CN, Surface Runoff, Watershed