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Geomorphometric Characterization of Upper South Koel Basin, Jharkhand: A Remote Sensing & GIS Approach

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ABSTRACT

The quantitative analysis of drainage system is an important aspect of characterization of watersheds. Morphometry is measurement and mathematical analysis of landforms. The present study is an attempt to evaluate the drainage morphometrics of Upper South Koel Basin using Remote Sensing and GIS approach. A morphometric analysis was carried out to describe the topography and drainage characteristics of Upper South Koel watershed. The stream numbers, orders, lengths and other morphometric parameters like bifurcation ratio, drainage density, stream frequency, shape parameters etc. were measured. The drainage area of Upper South Koel watershed is 942.4 sq km and the drainage pattern is dentritic. The watershed was classified as 6^{th} order drainage basin. The low values of bifurcation ratio and drainage density suggest that the area has not been much affected by structural disturbances. The study reveals that the different geomorphic units in the study area *i.e.* Structural hills, Pediments, Valley fills, Pediplains formed under the influence of permeable geology, are moderate to nearly level plains, with medium to low drainage density (<2.0) & low cumulative length of higher order streams . Such studies can be of immense help in planning and management of river basins.

KEYWORDS

Morphometry; Watershed; Remote Sensing; GIS

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