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Morphometric analysis for prioritization of watershed using GIS technique

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ABSTRACT : GIS technique can serve as vital tool in generating water resources action plan, drainage pattern and geomorphic indicator for location of recharge and discharge area analysis. The study has been undertaken in Kawali river watershed which is located at Giri river, in district Sirmaur and Solan of Himachal Pradesh. Kawali river is situated between $77^0$03'12'' to $77^0$39'10''E longitude and $30^0$36'51'' to $31^0$15'23''N latitude covering total area of 157.92 sq km. The altitude of the district Sirmaur varied from 630 to 3626 m above mean sea level. The present study area has been divided in 5 sub-watersheds. The maximum and minimum drainage density (D_d) has been found as 3.72 and 2.77 km/km^2 for sub-watershed 5 and 4, respectively, which confirms the recognition that the study area is underlain by impermeable sub-surface material having sparse vegetation and mountainous relief. This was the result of weak or impermeable subsurface material, sparse vegetation and mountain's relief. It leads to fine drainage texture. The top priority should be given to sub-watershed 5 and least to sub-watershed 4 to take up the soil and water conservation work in Kawali river watershed.

KEY WORDS : Watershed, Morphometry, Prioritization, GIS

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