
Morphometric Analysis of PGW-1 Watershed of Ghatanji Area, Yavatmal District, Maharashtra

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Abstract

Morphometric analysis of PGW-1 watershed is carried out to understand the different quantitative parameters of the basin. It includes linear, aerial and relief aspects of the drainage basin through which a general perception about the physiography, evolution of the drainage basin, geology and other aspects can be developed. The drainage system of the watershed exhibits dendritic to sub-dendritic drainage pattern with 5th order stream. The elongated shape of the basin is indicated by values of form factor, elongation ratio and circulatory ratio. The highest stream segments in the lower order and irregular stream length values reflected that the area is confined to irregular erosional activity. Whereas, bifurcation ratio, stream length ratio and constant channel maintenance clearly indicated that drainage pattern of the area is not affected by geology and is influenced by slope and lithology. Low degree of slope and resistant basement rock in the area is attributed by stream frequency, basin relief and relief ratio. Drainage density, texture ratio and infiltration number suggested that area is covered with highly permeable subsoil with dense vegetation cover responsible for low run-off. The results of the present study will be helpful in developing the sustainable water resource management in the area.

Keywords: Morphometric analysis, Drainage basin, PGW-1 watershed, Ghatanji area, Maharashtra.