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# Morphometric Analysis of Nagjhari Watershed of Pedhi River, Amravati District, Maharashtra

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## Abstract

Morphometric characteristics of a river basin reflect its hydrological behavior and are determined through measurement of linear, aerial and relief aspects of the watershed. Such studies are vital in understanding the drainage development, surface run-off generation, infiltration capacity of the ground and groundwater potentials, *etc*. In view of this, an attempt has been made here to analyze the drainage characteristics of Nagjhari watershed of Pedhi river, Amravati district, Maharashtra. The study has confirmed prevalence of dendritic drainage pattern, a highest of 4$^{th}$ order stream and a linear relationship between stream order and stream numbers in the watershed. It is evident that, the 3$^{nd}$ order streams have a strong structural control over them (high bifurcation ratio value of 9.50). Low to moderate surface runoff and medium erosion characteristics are interpreted on the basis of medium overland flow length of the streams. High infiltration capacity and recharging of groundwater in the area is attributed to permeable subsurface material, moderately dense vegetation cover, low relief, coarse drainage texture, *etc*. The well inventory detail corroborates medium to deep (>5m bgl) depth to water level conditions in the pre-monsoon seasons, implying a scope for artificial recharge to groundwater. The overall work stands significant in planning and designing the artificial recharge sites and also in formulating the watershed management plans for harnessing surface and groundwater resources.

*Keywords:* Morphometric Analysis, Nagjhari Watershed, Pedhi River, Amravati, Maharashtra.