Hypsometric Analysis of Selected Subwatersheds of Ag2 Watershed in Krishna River Subcatchment

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ABSTRACT

Hypsometric analysis aims at developing a relationship between horizontal cross section area of the subwatershed and its elevation in a dimensionless form. In the present study hypsometric curve is obtained by plotting the relative area (a/A) along the abscissa and relative height (h/H) along the ordinate. The hypsometric integral is obtained from the hypsometric curve and is equivalent to the ratio of area under the curve to the area of the entire square formed by covering it. It is expressed in percentage units and is obtained from the percentage hypsometric curve by measuring the area the curve. The hypsometric integral of 11 subwatersheds i.e., Ag2k, Ag2m, Ag2n, Ag2p, Ag2q, Ag2s, Ag2t and Ag2w were found to be 0.413, 0.50, 0.532, 0.485, 0.461, 0.531, 0.55 and 0.469. The eight subwatersheds have hypsometric integral value in the range of 0.413 to 0.582 and accordingly have geological stage of development of equilibrium (mature stage). These 8 subwatersheds were susceptible to less erosion. The hypsometric integral of Ag2r, Ag2u and Ag2v were found to be 0.628, 0.918 and 0.772. The 3 subwatersheds have hypsometric integral value in the range of 0.628 to 0.918 and accordingly have geological stage of development of inequilibrium (young stage). These three subwatersheds were susceptible to severe erosion.

Key words : Geologic Stage, Hypsometric Analysis,Subwatershed.