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SCS CURVE NUMBER ESTIMATION USING REMOTE SENSING NDVI IN A GIS ENVIRONMENT

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ABSTRACT

The Soil Conservation Service Curve Number (SCS-CN) method is a simple, widely used and efficient procedure for determining the expected amount of runoff from rainfall in a particular area. Its use, however, requires a detailed knowledge of several important properties of the watershed namely soil permeability, land use and antecedent soil water conditions, which may not be readily available. The large amount of spatially detailed information derived from digital images offers new opportunities for SCS-CN estimates, particularly those parameters related to land use and vegetation coverage. This paper addresses the use of the Normalized Difference Vegetation Index (NDVI) and its combination with land use classes as well as soil type data to derive SCS-CN estimates within a GIS environment. The results are quite encouraging in terms of providing refined spatial information for input to rainfall-runoff models currently used for flood forecasting in the Azul River Basin, Argentina.

Reference: *Gandini, M.L. and E.J Usunoff; SCS Curve Number Estimation using Remote Sensing NDVI in a GIS Environment, Journal of Environmental Hydrology, Vol. 12, Paper 16, August 2004.*

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