

# **Remote Sensing and GIS Based Modeling of Crop/Cover Management Factor (C) of USLE in Guravajipetta Watershed**

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## **ABSTRACT**

Soil erosion is one of the major environmental problems in terms of degradation. Soil loss due to erosion can be determined using Universal Soil Loss Equation (USLE). The key aspects influencing the quantity of soil erosion mainly rely on the vegetation cover, topography, soil type, and climate. One of the most influencing parameters used in USLE model is C factor that represents effects of vegetation and other ground covers. Estimating ground cover by analysis of Remote Sensing imagery involves Normalized Difference Vegetation Index (NDVI), an indicator that shows vigor of vegetation. Guravajipeta watershed lies in Guravajipeta Gram panchayat of Kanigiri Mandal in Prakasam district of Andhra Pradesh. The main objective of this study was to estimate crop/cover management factor (C) values for the study area with help of NDVI of the area. The NDVI map of the study area was derived from 8<sup>th</sup> December 2015 LANDSAT- 8 ETM+ imagery. The NDVI map of the area was prepared by using ERDAS IMAGINE 2011 software. The final crop/cover management factor (C) map was generated using the regression equation in Spatial Analyst tool of ArcGIS 10.3 software. It was found that C factor value of the study area varied between 0 and 1.

**Keywords:** *Erosion, USLE, C factor, LANDSAT- 8, ETM+, NDVI*