

CAN REMOTE SENSING VEGETATION INDICES BE USED IN IDENTIFYING EROSION-PRONE AREAS?

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Abstract

In this study six vegetation indices were analyzed for Tutova Hills, years 2014-2023, highlighting spatio-temporal variations in the health of vegetation, soil moisture and surface temperatures, parameters directly correlated with land susceptibility to erosion.

Of the six indices, the one with the highest accuracy in detecting water stress and implicit areas with moisture deficit was NDII. This index correlates very well with high soil water content and the health of the vegetation, which makes it accurate in estimating the risk of erosion.

The conclusion is that such indices can be highly useful in predicting erosion-prone areas, because vegetation cover plays a major role in stabilizing soil and reducing erosion risk, being frequently integrated in erosion prediction models, from estimating RUSLE C-factor to temporal analyses or machine learning programs. Still, there are limitations related to data accuracy, but mostly to the need for an extensive field validation.

Keywords: vegetation indices, erosion, Landsat - 8 OLI/TIRS