



Rangeland Analysis by LANDSAT TM and IRS-1C Image Fusion in Chihuahua, Mexico

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Information extracted from satellite images depend on their spatial and spectral resolution. Integration techniques combine a high spatial resolution with an adequate spectral resolution property to produce a synthetic image combining both image advantages as a promising alternative method for grassland analysis. The objective was to analyze the spectral capacity from fusion Landsat TM and IRS-1C satellite images to analyze primarily vegetation units in Chihuahua, Mexico. The study area comprised transition areas between oak-pine forests and bunchgrass and mid-grass prairies. Two medium spatial resolution visible bands from 2005 Landsat TM image were fusion with the high resolution IRS-1C satellite panchromatic band image. The false color generated map was used as a base to obtain the final supervised method map. The automatic based ISODATA process, identified and generated the six primarily vegetation units described previously by Perez in 1971. The error matrix showed precision ranges from 85 to 92% for the evaluated vegetation unit maps indicating that image fusion techniques are appropriated to evaluate and monitor rangelands.

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