

Public Abstract

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Title:DEVELOPMENT OF LAND-USE MAP FOR SALT RIVER BASIN USING SATELLITE IMAGERY

The Salt River Basin in northeastern Missouri is the major water supply source for people in the region. There is need to evaluate land-use management to validate the long term trends of pollutant concentrations in the basin. Remote sensing has potential to support land-use evaluation. In this study, satellite imagery was used to develop land-use management maps for a two-year period (2005 and 2006) for the Salt River Basin. Specifically, decision tree analysis was applied using Landsat 5 Thematic Mapper (TM) and MODIS NDVI threshold data to build crop type maps. Ground truth data in Goodwater creek and Greenley reference area were used to assess the accuracy of the procedure, along with crop acreage estimates compared to county-level statistics. This method showed good agreement with limited cloud-free Landsat images confirming that the decision tree hypotheses used in this study was capable of correct land-use identification.