USDA-CSREES 2007 National Water Quality Conference

Monitoring Water Quality and Modeling Nutrients Dynamics for the Tallapoosa Watershed Using Remote Systems

The Tallapoosa Watershed Project is a 3-year, CSREES-funded, Integrated Water Project that evaluated a variety of technologies for estimating nutrient and sediment loading within a large river system in east-central Alabama. One component of the research was to monitor water quality and model the nutrients dynamics using remote sensing and geographic information systems (GIS). Remote sensing included close-range hyperspectral sensing and Landsat TM data application on two, large reservoirs in the watershed. Remote sensing and in situ water sampling were conducted during the growing season over a two-year period. The regression models of estimating chlorophyll a using spectral reflectance were established. Chlorophyll a maps were derived from the Landsat TM imagery. Results suggest that there is a large potential for using remote sensing to determine lake trophic state and to source nutrients for reservoir management.

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