



USDA-CSREES 2007 National Water Quality Conference

The Applications of GIS and Remote Sensing In The Conservation of Watershed: The Case of PRWMS

This study analyzes the impact to water bodies from land use changes by integrating Geographic Information System (GIS) and Remote sensing technologies in assessing the decline of water bodies and factors fuelling change along the Pearl River watershed in the state of Mississippi. Notwithstanding the problems, the conservation of water bodies along watersheds ranks as an essential component of ecosystem management. Water bodies are not only vital for agriculture, but they provide natural habitats for biodiversity. In the last several years, increased pressure prompted by land development in the study area has altered the landuse pattern along the watershed with major threat to the hydrology. Even though efforts were made in past studies to examine this issue, very little had been done to analyze the relationship between pressures from landuse patterns mounted by human activities in agriculture, development and water conservation capacity in the Pearl River watershed through an integrated GIS and remote sensing approach. Considering that growing number of resource managers, depend on GIS mapping and remote sensing for reliable measurements and information on resource degradation. Geospatial technologies of remote sensing and GIS continue to play vital roles in supporting the data and information needs of decision makers. Recent technological advances have brought geospatial technologies to the forefront as tools for assisting decision makers in the adoption of conservation measures in watershed management. In terms of methods, the paper adopts GIS and remote sensing to design a digital database for the study area and to process hydrological and environmental change and to extract and classify information on surface vegetation and landuse changes. The paper has five sections consisting of methods, environmental analysis, factors, mitigation efforts, findings and policy recommendations. The results show changes in water bodies and land cover due to pressures mounted on the riverine ecosystem.

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