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Long-Term Water Quality Responses to Conservation Practices in Nested Coastal Plain Watersheds: CEAP Project

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Abstract:

We have studied water quality and hydrology in the Little River Experimental Watershed (LREW), in the headwaters of the Suwannee River, for the past 32 years. LREW consists of 8 nested watersheds totaling 334 km². We have also developed GIS data sets that describe land use, crops, and conservation practices in LREW for most of the 32-year record period. The most important question to be answered in this project is this: Are water quality changes discernible over the last 32 years of changes in conservation practices? To answer this question we have been using the SWAT model to perform the following three analyses:

1. evaluate cause and effect relationships between measured water quality trends and documented conservation practice and land use changes;
2. evaluate the potential of recent conservation practices and programs to improve water quality; and
3. evaluate alternative scenarios for implementation of conservation practices based on prioritization of areas for conservation practice application.

This paper will provide a summary of the results obtained from these analyses as well as briefly describe the techniques used to identify alternative scenarios for implementation of conservation practices.

Impact Statement:

The results of these analyses will allow us to determine cause and effect relationships between conservation practice and water quality trends. Findings will be reported to the appropriate agencies and will be incorporated into the CEAP Synthesis projects.

Category: CEAP

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