



USDA-CSREES 2006 National Water Quality Conference

Economic and Water Quality Effects of Multiple Conservation Practices in Three Midwest Watersheds

This presentation will summarize results from this CEAP-funded research project whose overall goal is to integrate economic and water quality modeling capability to study the effects of conservation practices at the watershed scale. A biophysical water quality model - SWAT- will be applied to each of three target watersheds using field-level expertise from an interdisciplinary team of conservation specialists.

The target watersheds are in the state of Iowa, and include Bloody Run/Sny Magill in the northeast corner of the state, and Walnut/Squaw creek and the South Fork in central Iowa. A variety of data sources will be combined with detailed information on conservation practices in the process of calibrating the water quality model to each of the three watersheds. Once this calibration is complete, economic data and models will be combined with the physical model to assess cost-effective patterns of conservation practice implementation.

In the first year of the project, data sets completely describing the extent and location of numerous conservation practices for each of the three target watersheds have been collected at the CLU scale. The set of practices include contour farming, field buffers, contour buffers, terraces, reduced tillage, and land retirement (CRP). This extensive data set has been digitized and summary statistics are now available. The step of combining this detailed practice data with other sources of data concerning crop rotation, tile drains, etc. in each of the watersheds is nearing completion. Once done, the watershed teams will begin the process of calibrating the SWAT model to establish a baseline from which a variety of scenarios can be run where the location and types of conservation practices are varied on the landscape.

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