



## **USDA-CSREES 2006 National Water Quality Conference**

### **Conservation Practice Adoption and Water Quality Impacts in Two Northeast Iowa CEAP Watersheds**

The Sny Magill Creek watershed (SMCW) covers 9,126 ha of the Paleozoic Plateau region in Clayton County in northeast Iowa. Nearly 80% of the annual stream flow of the creek is attributable to baseflow, which results in cold water conditions. Both Sny Magill Creek and its tributary, North Cedar Creek, are managed as “put and take” trout fisheries by the Iowa Department of Natural Resources. Land use in the SMCW consists of forest (48.9%), pasture (23.9%), and cropland (25.9%). The primary shifts in land use during the 1990s were an increase in soybean acreage (from land previously planted in corn) and greater participation in the Conservation Reserve Program (CRP).

Three separate projects were carried out during the 1990s to improve water quality in the SMCW. The total levels of BMPs implemented through the HUA and Sny Magill Creek Watershed projects included over 82,000 m of terraces and 722 ha of contouring. A paired watershed approach was used to assess SMCW water quality improvements from 1992 to 2001. The 9,804 ha Bloody Run Creek Watershed (BRCW) was selected as the control watershed due to its proximity, similar size, and physical characteristics, relative to the SMCW; BMP implementation was not initially supported for the BRCW, but extensive conservation practice has since occurred. Analysis of SMCW water-quality data shows that BMPs installed during the 1990s did not improve water quality significantly. A longer lag time may be required to observe the effects of BMPs for a watershed of this size.

Land use shifts and conservation practice adoption trends between the early 1990s and 2005 will be reported for both the SMCW and BRCW. Key results will also be described for both watersheds for in-stream sediment and nutrient data measured during 1991-2001.

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