



USDA-CSREES 2006 National Water Quality Conference

[Integrated In-field, Edge-of-field and In-stream Conservation Management for Improving Watershed Conditions and Water Quality](#)

In order to improve productivity extensive agricultural areas in the Midwest require drainage systems consisting of subsurface drainage (tile) and open ditches. These drainage systems are known to transport particulate and dissolved phosphorus, nitrate-nitrogen, and sediment to streams and rivers. Decisions concerning soil and water resource management and conservation are often made that only address short-term or single goals, while ignoring the complexity of coupled terrestrial-aquatic ecosystems. As a result, low environmental benefit and unknown economic efficiency of management practices have usually been observed. Understanding the relationship between management and conservation of terrestrial and aquatic ecosystems is very important to the development and implementation of practices to improve water quality while maintaining farm productivity, profitability, and environmental quality. A combination of in-field production practices such as fertilizer and manure management, choice of cropping system, and use of cover crops; edge-of-field water management through the use of constructed wetlands; and in-stream (in-ditch) management practices should be coordinated to efficiently improve water quality in headwater watersheds. This paper presents the design and preliminary results of a small watershed research facility which integrates in-field, edge-of-field, and in-stream research objectives for improving watershed conditions and water quality.

Author: Jeff Strock