

CEAP RELEVANT RESEARCH WATERSHED STUDY

Name of Project

Effects of Best Management Practices in Otter Creek in the Sheboygan River Priority Watershed, Wisconsin, 1990-2002

Location (State, River, HUC)

Otter Creek, Wisconsin

Principal Investigator (Name, contact info)

Steven Corsi, U.S. Geological Survey
(608) 821-3835, srcorsi@usgs.gov

Website

report is available at

http://pubs.usgs.gov/sir/2005/5009/pdf/SIR_2005-5009.pdf

Purpose of Project (Goals and Objectives)

The purpose of this project was to evaluate the effectiveness of agricultural best management practices in several small watersheds located in geographically and hydrologically diverse areas of Wisconsin.

Description of Project (Landscape, Models, Practices)

Hydrologic, water-quality, habitat, and fish data were collected from 1990 to 2002. Three years of both pre- and post-best management practice (BMP) monitoring were included at the start and end of study period. BMPs installed included streambank protection and fencing, stream crossings, grade stabilization, buffer strips, various barnyard-runoff controls, nutrient management, and a low degree of upland BMPs. Reductions between pre- and post-BMP periods were detected in median concentrations of base-flow samples for total suspended solids and BOD₅, but not for total phosphorus or dissolved ammonia nitrogen. Fecal coliform concentrations in base-flow samples increased over the study period. There were significant decreases in storm loads during the non-vegetative season for total suspended solids, total phosphorus, and dissolved ammonia nitrogen. No differences were detected during the growing season. Habitat and fish data were collected each year. Final trend analysis showed that habitat was improved for stream segments that had natural riparian buffer or installed streambank fencing. The results also suggest that BMP implementation modified fish community structure, but the overall community quality was not improved.