

THREE MILE WATERSHED

POLLUTION PREVENTION PROJECT

IOWA

Project Summary

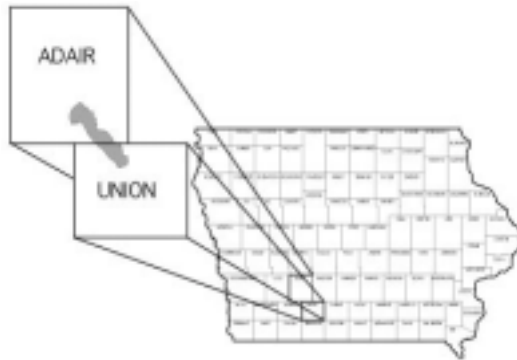
Contacts

Gerald A. Miller, Associate Dean for Extension and Industry Programs

Susan S. Brown, Extension Program Specialist
Iowa State University and University Extension

Phone: 515-294-4333, Internet: x1wqqual@exnet.iastate.edu

Web Site: <http://extension.agron.iastate.edu/waterquality/>



Project Partners and Allocations

- * USDA Water Quality Initiative (WQI) Co-operative State Research, Extension and Education Service (CSREES) Project No. 95-EHUA-1-0125, \$445,000, 1991-99
- * USDA WQI Natural Resources Conservation Service (NRCS), \$825,000, 1991-98
- * USDA WQI Farm Service Agency (FSA), \$322,000, 1991-93
- * USDA FSA Water Quality Incentive & special Ag. Conservation Program funding, \$196,000, 1992, 1994-95
- * US EPA 319 Program through Iowa Department of Natural Resources (DNR), \$190,452, 1995-99
- * NRCS-Iowa, \$30,000, 1992-93
- * Iowa Department of Agriculture and Land Stewardship (DALS), Water Protection Fund and Publicly-Owned Lakes, \$635,734, 1990-99
- * Iowa State University Extension, \$192,500, 1991-99
- * Cooperating farmers
- * Project Advisory Council
- * Union and Adair Extension Councils, Soil and Water Conservation District Commissioners and FSA Committees
- * Three Mile Reservoir Agency
- * Creston Chamber of Commerce
- * Union County Conservation Board
- * Union County Farm Bureau, IA Farm Bureau
- * Union and Adair Counties Pork Producers and Beef Producers
- * Tri-State EcoRegion Study (US EPA 319)
- * MASTER Project (US EPA 319)
- * Southern Iowa Grazing Project (US EPA 319-IDNR)

Background

Three Mile Lake reservoir was completed in 1995-96. It serves as a primary drinking water source for a seven-county area, provides crucial flood control, and has rapidly become a popular recreation site in southwest Iowa. Like all southern Iowa reservoirs, Three Mile is highly vulnerable to impairment by agricultural nonpoint source pollutants. Row crop and beef cattle operations in the 23,230-acre watershed threaten its long term capacity and water quality.

The lake was in the final planning stages when this Hydrologic Unit Area project was initiated in 1991, making it one of the first preemptive watershed protection projects ever undertaken with USDA support. An associated Iowa Water Protection Fund Project began in 1990. From FY91-99 about \$2.8 million was allocated for watershed protection from state and federal programs, and many local organizations have contributed to project activities. NRCS, Iowa State University Extension and the ISU Department of Agronomy provide leadership for the project.

This preemptive watershed protection effort provided farmers and landowners with cost share funds, technical assistance, education and communications assistance to promote voluntary adoption of best management practices (BMPs) that reduce sediment, nutrient and pesticide movement into Three Mile Lake. Project communications efforts also promoted support and appreciation by townspeople and recreationists for the producers whose voluntary actions will help protect lake water quality over the long term.

Project Impacts

- Virtually every farm in the watershed has implemented cost-shared soil and water conservation practices, reducing erosion on 84% of the land to "T" or below.
- A third of the watershed's 80+ producers voluntarily participated in nutrient and pest management assistance offered by the Extension coordinator. As a result they increased fertility credits taken for manure and legumes, and reduced purchased fertilizer use.
- Long term demonstrations and project publicity have also increased producers' use of refined pasture and forage management practices.
- In 1999, Three Mile was selected to exemplify outstanding accomplishments in watershed protection for Iowa's "Conservation Milestones at the Millennium" tour.

Audience

Watershed crop and livestock producers received cost share, technical assistance, information and education for BMPs related to management of soils, crop nutrients and manure, pesticides, forage crops, pasture and streambanks.

Urban residents, business owners, and recreationists were targeted by project public information to promote links between agricultural conservation and water quality.

Area schools and FFA chapters participated in annual field trips and presentations by project staff. An annual Youth Water Festival sponsored by twelve local organizations and agencies has become a popular event for grade school students in southwest Iowa.

Publications

The Lakes of Union County color brochure combines outdoor recreation information with coverage of agricultural conservation practices featuring Three Mile watershed. The project obtained information and funding for co-sponsorship of the brochure from 8 local organizations and two state agencies. Over 15,000 copies have been distributed by co-sponsors to area visitors and other interested groups since 1998.

The Water Link bimonthly project newsletter was published from 1995-1999. The newsletter and other project communications were supported in part by a grant from the U.S. EPA Section 319 Nonpoint Source Program through IDNR.

Self guided tour brochure and map were produced each summer to introduce watershed visitors to BMP demonstrations and sites of important conservation practices. Demonstration details were provided in rural mailboxes at each site. Hundreds of visitors picked up site brochures each season.

Biweekly news releases generated over 1,000 column-inches' coverage of the project in state and local newspapers each year.

Fact sheets summarizing demonstration results continue to be requested by watershed producers, and also by Extension Field Specialists for use in crop, manure and forage management educational programs throughout southwest Iowa.

Educational Programs

One-on-one assistance with refined nutrient, pest and forage management was provided by Extension specialists to 38 watershed producers.

Planned grazing systems established with project assistance served as educational sites for pasture walks and field demonstration of forage improvement practices. Increased profitability encourages producers to maintain pastures, rather than convert them to more erosive row crop uses.

Tours and field days held each year introduced local farmers, students and city residents to BMPs in the watershed. An annual "Farm City Tour" hosted by the project, community and farm organizations, used antique trolleys to tour groups of visitors through the water quality practices and recreational opportunities of Three Mile watershed.

Community Improvements

- The preemptive nature of the Three Mile Watershed project is unique. Assisted by the project, producers have taken action to protect a new regional drinking water and recreational resource, rather than wait until costly remediation measures are needed. Siltation has been slowed. Delivery of nutrients, pesticides and coliform bacteria has been reduced.
- Rural water customers benefit through increased supply and avoided treatment costs. Residents, visitors and area businesses benefit from increased recreation opportunities of a high quality environmental resource. The Youth Water Festival has brought increased environmental education resources to local schools.
- In addition to individual cost-shared structures and management practice incentives, the project also funded relocation of a 500-head beef feedlot near the upper end of Three Mile Lake in 1995 to avoid direct delivery of pollutants to the water supply.

Participants' Response

"With the acres we farm, it's not hard to pay for the time spent on sprayer calibration. And you rest easier knowing a lot of excess isn't ending up in water downstream somewhere." - **Mark Maeder, farmer and nutrient and pest management program participant, Greenfield, IA**

"Legumes not only gave our grass pastures a nitrogen boost, they also improved forage quality and animal performance... Subdividing with electric fence has allowed us to move stock more frequently... and increased the carrying capacity of my pastures by 25%... while reducing erosion due to overgrazing." - **Ron Brownlee - farmer and demonstration cooperator, Orient, IA**

"My research shows that recreational use of Three Mile Lake generated nearly half a million dollars' profit for the community in 1999, its first full year of use. Visitors all talk about how clear the water is. We have to protect water quality to protect this community asset." - **Clark Bredahl, Extension communications specialist, Creston, IA**