

# SNY MAGILL COLDWATER STREAM

## WATER QUALITY IMPROVEMENT PROJECT

### IOWA

### Project Summary

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#### Project Partners and Allocations

- \* USDA Water Quality Initiative (WQI) Cooperative State Extension and Education Service (CSREES), Project No. 95-EHUA-1-0124, \$445,000, 1991-99
- \* USDA WQI Natural Resources Conservation Service (NRCS), \$874,000, 1991-99
- \* USDA WQI Farm Service Agency (FSA), \$374,000, 1991-93
- \* US EPA 319 Monitoring Program to Iowa Department of Natural Resources Geological Survey Bureau (DNR-GSB), \$888,928, 1991-99
- \* US EPA 319 through DNR, Incentive Education Project, \$11,050, 1996-98
- \* Iowa Department of Agriculture and Land Stewardship (DALIS), Water Protection Fund, \$310,967, 1995-99
- \* US EPA 319 through DNR, streambank and manure incentives, \$22,667, 1996-98
- \* Iowa State University Extension, \$222,500, 1991-99
- \* Cooperating farmers' cost share contribution, \$229,915, 1991-99
- \* Project Advisory Council
- \* Clayton County Extension Council, Soil and Water Conservation District Commissioners and FSA Committee
- \* US Forest Service
- \* US Fish and Wildlife Service

#### Background

Sny Magill Creek is a cold water stream located in Clayton County in north-east Iowa. It is managed for "put and take" trout fishing. A USDA Hydrologic Unit Area (HUA) project was initiated in the 22,780-acre watershed in 1991. Over \$3.1 million has been allocated for watershed protection and monitoring from state and federal programs.

There are over 10,000 acres of Highly Erodible Land in the watershed, including most cropland and some pastures. The multi-agency project, which involves NRCS, Iowa State University Extension and many other partners, provides technical assistance, information and education, and cost-share assistance to help producers implement their conservation plans and make additional voluntary changes in farm management practices to protect water quality. A 10-year US EPA 319 water quality monitoring program is being conducted under the leadership of the DNR-GSB in association with the Sny Magill HUA project. The adjacent Bloody Run Creek serves as the paired watershed for the monitoring protocol.

#### Project Impacts

- Eighty-one percent of the watershed's 98 landowners have participated in the project.
- Pesticide and nutrient loading have been reduced on 45% of cropland acres in the watershed through the delivery of nutrient and pest management assistance and education programs by ISU Extension.
- The NRCS estimates that structures and crop management BMPs have reduced sediment delivery to the stream over 50%, 35,031 T/yr, compared to pre-project practices.
- Streambank bioengineering practices established by the project have become a laboratory for study of innovative, lower-cost stream protection measures in Iowa.

## Audience

**Watershed producers** receive cost share, technical assistance, information and education for best management practices (BMPs) related to management of soils, crop nutrients and manure, pesticides, forage crops, pasture and streambank protection.

**Cooperating agencies' technical and special project staff** have benefited from the project's pioneering demonstrations of bioengineering practices for streambank stabilization.

## Publications

*Water Watch*, the project newsletter, has been published bimonthly since 1992 in cooperation with the USDA Northeast Iowa Demonstration (NEIDP) and has a total circulation of over 1,700. An extension water quality information specialist funded by an EPA 319 grant through DNR is responsible for the newsletter and other water quality information marketing for Northeast Iowa. Subscriptions are free upon request.

*Nutrient and Pest Management Incentive Program Newsletter* was also published in cooperation with the NEIDP. Ten to twelve biweekly issues written each growing season by extension project specialists contain timely information for integrated pest management of area crops and forages. Distribution is to NPM incentive education program participants, including about 10 producers in Sny Magill. The newsletter was requested by many other local producers and agronomists, and distributed by four other northeast Iowa watershed projects.

*Research Reports* on progress of the EPA-funded water quality monitoring and benthic biomonitoring programs in Sny Magill watershed are published by the University of Iowa State Hygienic Laboratory.

## Educational Programs

The **Nutrient and Pest Management Incentive Education program** (NPMI) was a local initiative of the Northeast Iowa Demonstration and Sny Magill projects, which were served by the same extension NPM specialist. The program provided NPM assistance with a specific educational component, to enhance long-term adoption of refined crop and manure management practices. Participants used their own farm records to learn to write and evaluate NPM plans over a 3 year period.

Surveys of participants show the program increases confidence in their ability to manage their own fertility programs (rather than relying on suppliers), reduces use of purchased fertilizers, and improves manure management.

State agencies have sanctioned use of the incentive education model in other Iowa water quality projects. NRCS has recommended an NPM program on the same model for producers with EQIP contracts.

## Community Improvements

**Affordable streambank protection.** Recent studies indicate that up to 60% of the sediment in streams like Sny Magill comes from streambank erosion. The project made significant progress in demonstrating alternative bioengineering approaches to streambank stabilization that may be practical and cost-effective for landowners in the watershed. Handicap access has also been developed. The monitoring program has found improved water quality trends in pesticide detections and benthic macroinvertebrates.

**Increased profitability.** Watershed producers have reduced potential delivery of nutrients and pesticides to the stream, improved their field record keeping, and refined their nutrient and pest management plans. The NPM practices promoted by the project are profitable as well as resource-conserving.

## BMPs Applied in the Sny Magill Watershed 1991-1998

Practice	Amount
Conservation Cover	877 A.
Conservation Cropping (Rotations)	3,293 A.
Conservation Tillage	3,117 A.
Contour Farming	1,907 A.
Grade Stabilization Structures	90 structures
Integrated Crop Mgmt.	3,095 A.
Nutrient & Pest Mgmt.	2,639 A.
Pasture and Hayland Mgmt.	554 A.
Planned Grazing Systems	451 A.
Streambank Protection	1,140 ft.
Terraces	269,585 ft.
Timber management plans	705 A.
Water & sediment control basins	61 basins