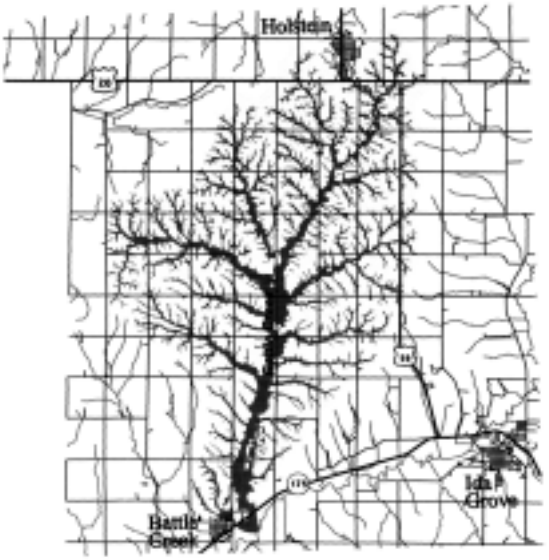
Battle Creek Watershed Groundwater Protection Project

Ida County, Iowa
1996-2001



Area of High Groundwater Contamination Potential
Battle Creek Watershed

Results

"The number of requests from county residents for water testing services has more than doubled during the past three years. When I discuss the results of their water tests with them, residents show a more comprehensive knowledge of the factors that contribute to water quality problems. This knowledge reflects the information that you have been providing in your (news) releases."

-Richard Madsen, former Ida County public health sanitarian

"I'm glad I did it (attended the workshop). It confirms what I was doing. It was a good refresher course. The NPM approach helps me when dealing with fertilizer and pesticide dealers--better soil testing techniques. I'm testing by soil types and in smaller areas."

-David Forbes, participant in farmers' nutrient and pest management workshop

*"*As students of the Galva-Holstein area, we think that it was a very good project..... It shows people around our community that our generation **does** care about the way people act, such as polluting and dumping chemicals in the storm drains plus the people that do care and clean out the storm drains....."

-Beth Willson and Jessica Wurr, middle school students

Background

In 1995, the Ida County Soil and Water Conservation District initiated a groundwater protection project in the Battle Creek watershed. The goal of the five-year project was to help the watershed community take action to protect and improve the source of their drinking water.

Citizens of the towns of Battle Creek and Holstein, along with 200 farm operators/owners, live in the 34,000-acre watershed. Their water supply comes primarily from shallow water table wells, which are susceptible to surface contamination. Thirty-eight percent of wells tested in the region showed high levels of nitrate-nitrogen. Seventy-three percent showed presence of coliform bacteria.

Land use in the watershed is mainly agricultural. Crop nutrients and animal manure are principal threats to water quality, along with inadequate septic systems. From 1996-2001 the project focused on these water quality issues, providing information, education and evaluation to landowners, students and other citizens in the community.

The project received monies from federal, state and local funds. Landowner cost-share and staff salaries were provided from the Iowa Department of Agriculture and Land Stewardship (IDALS) Water Protection Fund, and the U.S. EPA 319 Nonpoint Source Program through the Iowa Department of Natural Resources. An Iowa State University Extension information specialist was co-located with the IDALS project coordinator in the Conservation District office. The Natural Resources Conservation Service in Iowa contributed to development of the project's GIS (geographic information system) capability. Many other local organizations also contributed to the project.

Partners

Project Advisory Board
Ida County Soil and Water Conservation District
Ida County Public Health Sanitarian
Ida County Farm Services Agency
USDA-Natural Resources Conservation District
Iowa Department of Agriculture and Land Stewardship, Division of Soil Conservation
Iowa Department of Natural Resources
US Environmental Protection Agency
Iowa State University Extension
Ida County Farm Bureau
Ida County Conservation Board
City of Battle Creek
City of Holstein
Pheasants Forever, Ida County Chapter
Cooperating farmers
ABC Ag, crop consulting

Project Impacts

This was one of the first applications of GIS (geographic information systems) in Iowa to develop water quality decision tools. Areas most susceptible to groundwater contamination were mapped and used to target land along streams for buffer promotions (see map on front).

The GIS database developed by the project was also used by the Conservation District to streamline the planning process for Conservation Reserve Program contracts.

Twelve producers enrolled 2,232 acres in nutrient and pest management (NPM) workshops sponsored by the project. They included some of the leading producers in the watershed. At the end of the three-year program, eight estimated changes in N application that saved an average of $15 an acre during that crop year. Average P and K rates decreased by 50 percent or more.

In a final survey, all NPM participants named themselves as responsible for their soil testing and nutrient management. Only about a quarter had this level of confidence at the beginning of the program.

Over 1,100 students in Ida County schools and 65 home-schooled children attended classes and field days led by project staff. They learned about water protection through hands-on activities, including storm-drain stenciling, the "EnviroScape" model, streamwalks and water sampling.

Students from Battle Creek-Ida Grove Middle School show off 'critters' during a streamwalk in the Battle Creek in Ida County.

Information and Education Programs

- 2 town meetings attended by 80 people. Meetings requested by watershed's advisory board, which met semi-annually to help focus project activities
- 12 newsletters sent to 1,800 Ida County farmers, residents and others
- Farmers attended workshops to learn to refine their nutrient management to protect water and maintain a profitable operation
- 13 brochures designed and distributed to county residents, promoting water quality protection
- 8 field days/demonstration sites open to the public
- Project news releases resulted in 4,649 column inches coverage in newspaper articles
- 93 major news stories and 154 major photographs printed in newspapers
- 82 percent of watershed residents and landowners surveyed were aware of project, primarily citing local newspapers, followed by project newsletter, as sources of information
- 17 new wells drilled in 2000 and 52 in 2001, compared to an average of 7.6 new wells per year in previous 10 years
- GIS maps of areas of groundwater vulnerability used in public presentations at fairs, Extension meetings and at USDA office
- Six septic systems were installed with project cost-share as demonstration sites

Contacts

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