

Conservation Insights

Promoting Water and Soil Conservation
in Ida County, Iowa

A quarterly publication of the Ida County Soil and Water Conservation District (SWCD)
and the Battle Creek Watershed Groundwater Protection Project

Spring 1998
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Phone (712) 364-2124

Introduction to Newsletter

Welcome to the first edition of "Ida Conservation Insights," a quarterly newsletter that provides information about current water quality and conservation efforts in Ida County.

The newsletter is a joint project of the Battle Creek Watershed Groundwater Protection Project and the Ida County Soil and Water Conservation District, including the Natural Resources Conservation Service (NRCS).

During the last several years, the term "conservation" has come to mean different things to people. Farmers, business people, environmentalists, and recreational enthusiasts may have different views about how to conserve natural resources, including water.

However, many of their goals are the same: an abundant food supply, clean water, clean air, and diversity in plants and animals. The goals of this newsletter are to inform residents of Ida County about conservation efforts that affect them, and to show how to **become involved in these efforts**.

The Battle Creek Watershed (BCWS) Project is housed next to the NRCS office at 104 Taylor St. in Ida Grove. The BCWS and NRCS will work together to improve water quality in the watershed, which is 34,000 acres in western Ida County.

Water Quality Study Is Focus in Battle Creek Watershed

By Chris Jennings, project coordinator

A safe, abundant source of water is often taken for granted in this country. As interest in Iowa's water quality grows, the need for preserving valuable drinking water resources becomes more evident.

Ida County has a five-year grant to improve water quality. The Battle Creek Watershed Groundwater Protection Project helps protect and improve groundwater resources affected by agricultural and residential nonpoint source pollutants. Nonpoint source pollutants are those that cannot be traced to one definite source. These include fertilizers, pesticides, and nitrogen from manure.

Located in Ida County, the Battle Creek Watershed covers 34,000 acres, extending between Battle Creek and Holstein. The water supply for farms, rural residents and these two communities comes primarily from "water table" wells. These wells are shallow by design and large in diameter, and promote seepage into the well from shallow, unconfined aquifers.

Ida County contains many shallow wells that are highly vulnerable to nonpoint source contamination by nutrients and chemicals leaching from the surface. Well water quality tests in 1997 and 1988-89 showed excessive levels of nitrate-nitrogen (nitrate-N), and frequent detections of coliform bacteria and pesticides.

Why are high nitrate and bacteria levels a concern? Both can cause serious health effects in humans and animals. High nitrate levels are a potential danger to infants. Through a series of chemical reactions, the nitrates reduce the amount of oxygen in the bloodstream. At high levels, this causes "blue baby syndrome," or methemoglobinemia. Severe cases may result in death. Most adults have enzymes that prevent this condition, but some adults lack these enzymes.

Animal and human waste are the primary causes of bacteria in groundwater. Coliform bacteria itself may not cause disease, but it can be an indicator of organisms that do cause disease (pathogens). This may lead to intestinal infections or hepatitis, among others. Since coliform bacteria and pathogens behave similarly, laboratories measure coliform to estimate the presence of pathogens. The EPA's Maximum Contaminant Level (MCL) for coliform bacteria in drinking water is zero total coliform per 100 ml of water.

Make Plans to Interseed into CRP Land

By Lorne B. Miller, NRCS district conservationist

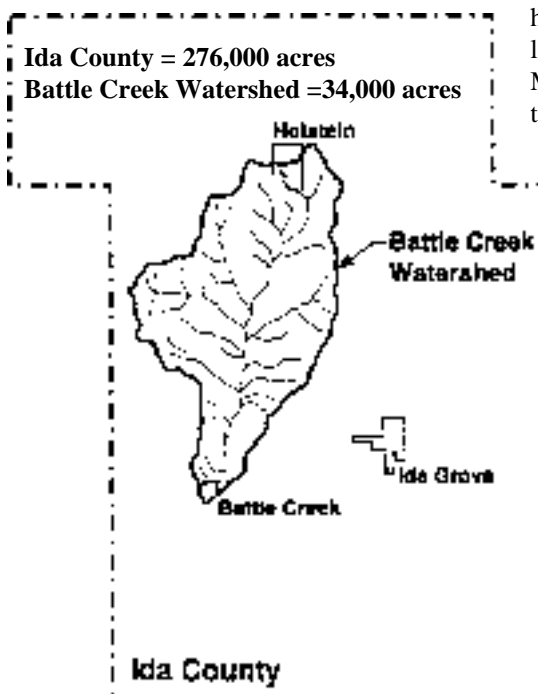
Most Ida County fields need a mixture of grasses and legumes in order to be accepted into the Conservation Reserve Program (CRP).

Current CRP sign-ups emphasize wildlife benefits. In the past, single species seedings (such as brome grass) emphasized erosion control and crop base reduction. Older CRP guidelines usually do not score high enough for current enrollment.

Interseeding is a way to improve existing stands of single species grasses on fields that already are enrolled in CRP. This achieves the correct mixture of grasses and legumes to give the fullest benefit to wildlife.

In Ida County, most farm producers agree to interseed switchgrass (warm-season grass) as a block seeding. This creates a better winter cover and protection for wildlife.

Many plans exist, so contact the Natural Resources Conservation Service (NRCS) to get the facts and discuss the options. Stop by the office at 104 Taylor St. in Ida Grove, or call (712) 364-2124.



Look at One Field as a Watershed

Changes in conservation planning have affected Ida County. Conservationists and farmers are beginning to focus on field-size watersheds, which will be the model for the future.

Watersheds can range from a few dozen acres to hundreds of thousands of acres. A watershed is land that water flows across or under on its way to a stream, river, or lake.

In the past, conservation was directed toward individual farmers and their farms. By focusing on the role of watersheds in soil and water management, each farmer can have a bigger impact on the environment beyond his farm fence.

Lorne Miller, Ida County district conservationist, says there are three goals for Ida county:

- improve water quality,
- improve soil productivity, and
- help farmers maintain profitability.

He says, "If we start thinking about whole-watershed management, then farmers can have a greater impact on the environment. Many opportunities exist with current (conservation) programs offered to farmers."

Miller urges everyone to "change the way we look at current resource problems and turn them into manageable resource protection for the future."

Plug That Old Well On Your Farm

Spring is the time to think health and safety around rural residences. Is there an old, abandoned water well near the farmstead? Consider plugging old wells so they won't be a danger to either people or livestock. At the same time, protect active wells from possible contamination from pollutants.

Landowners in Ida County are eligible for a cost-share program where the county pays up to 80% of the cost to plug a well (with a \$200 maximum). The cost to plug a well depends upon the depth, diameter, geology of the area, and location, according to Richard Madsen, Ida County sanitarian.

In 1900, Ida County had an estimated 2,000 wells in fields and on farmsteads. Madsen says 192 wells have been plugged in the county since 1989. The remaining abandoned wells can be a safety hazard. They can allow pollutants to enter the groundwater supply and affect nearby wells.

Spring is the season to take action on an old well, before fieldwork begins. Those interested in closing a well can contact Madsen's office at (712) 364-2533. A well closure application form must be filed with the sanitarian **before** the closing takes place. The sanitarian's staff will inspect the well to make sure it is properly plugged.



As a demonstration project, a new septic system was installed on the Ervin Miesner farmstead last summer. Cost-share funds were provided under the Battle Creek Watershed Project.

Battle Creek Watershed Project Provides Assistance

The Battle Creek Watershed includes 34,000 acres in northwest Ida County.

Farmers and rural residents living in the watershed **may be eligible for cost-share** projects to improve their well water and groundwater (water that is in the earth).

This watershed is the focus of a five-year grant to protect and improve groundwater and well water resources. The goal is to use educational methods to improve water in this area, which is shown to be affected by agricultural non-point source pollutants. The grant also directs the use of a computer system to evaluate water quality risks in the watershed.

The towns of Battle Creek and Holstein, along with five townships of farmland make up the watershed. It includes approximately 133 farmsteads where people live, and 79 are livestock operations. More than 75% of these farms are individually owned, and farming is the main occupation of the operator.

This project provides information and, sometimes, monetary assistance for well site protection and septic system renovation. Also offered in the Battle Creek Watershed Project are demonstrations on nutrient/pest management plans for crops, manure management for livestock operations, streambank stabilization, and filter strip plantings.

Demonstration sites give the public a firsthand look at how these practices work and how they will affect water quality. Last summer, the project demonstrated a septic system installation from start to finish. **This summer, many more demonstrations are planned, so stay tuned!** The project emphasizes voluntary involvement from landowners, and is unique to Iowa because it uses a computerized Geographic Information System (GIS) for prioritizing groundwater quality risks.

Call **Chris Jennings** at the Battle Creek Watershed Project for more information about cost-share projects. He is located next to the NRCS office at 104 Taylor, Ida Grove, or phone (712) 364-2124.

New Building To Open This Summer

A new building east of Ida Grove will open this summer to house several farm agencies. This USDA Service Center also will be the home of the Ida County Soil and Water Conservation District (SWCD).

Located next to the North West Rural Electric Cooperative (REC) building, the center will host several agencies, including the Farm Service Agency (FSA) and the Natural Resources Conservation Service (NRCS). The Battle Creek Watershed Project (BCWS) also will have an office.

The building, which is being built by private investors, will be rented to the USDA agencies. The move will be early this summer. Watch for opening announcements!

In the 1960's, one farmer supplied food and fiber for 25.8 people. Thanks to modern production techniques, one farmer now supplies food for 129 people in the U.S. and abroad.

Applications Accepted Now

Cost-Share Rates Rise in Ida for Terraces, Control Basins

By Lorne B. Miller, NRCS district conservationist

Cost-share rates recently were raised for terraces and control basins built during the **regular** construction season in Ida County.

The Ida County Soil and Water Conservation District commissioners raised the rates for terraces, as well as water and sediment control basins in conjunction with the Little Sioux Watershed Flood Prevention Program in Ida County.

These rate increases, from 50% to 65%, affect terraces and control basins built during the **regular** construction season (before June 15th or after Sept. 15th).



Plant A Windbreak This Spring

By Carol Thomson, NRCS Soil Tech.

With the mild winter this year, you may not be thinking about windbreaks for your farm or home. But **NOW** is the time to plan for windbreak protection.

A windbreak conserves energy, controls snow deposits, prevents wind damage to farmsteads, and provides shelter for livestock. It also beautifies an area and can improve habitat for wildlife.

You can sign up today for 75% cost-share assistance from Natural Resources Conservation Service (NRCS). Also, Pheasants Forever may have funds available to help pay for the cost of the trees. Call Carl or Carol at (712) 364-2124 at the NRCS office to learn more details.

Spring is the time to plan windbreaks. Windbreaks are three rows of conifers on the northwest side of the area to be protected. Also, other options (such as secondary windbreaks and renovation of current windbreaks) are available in the NRCS specifications.

Decide what your objective is: beauty, protection of the farm, or improvement of wildlife habitat. Then give NRCS a call at (712) 364-2124.

Annual Report

Ida County Soil and Water Conservation District's annual report is included in this mailing. It profiles the SWCD's activities for the fiscal year July 1996 to June 1997.

The cost-share rate for these conservation practices built during the **summer** construction season (June 15th to Sept. 15th) was raised from 65% to 75%.

Some restrictions on these rates apply.

Applications are being taken now. Contact the Natural Resources Conservation Service at 104 Taylor Street, Ida Grove, for more information. Or call (712) 364-2124.

NRCS Staff Wins Area Award

Ida County conservation employees were honored Tuesday, March 10, at a Natural Resources Conservation Service (NRCS) area meeting in Cherokee. They included Lorne Miller, Jerry Sindt, Randy Sohm, Carl Lee, Arlis Bahnsen, Chris Jennings, Carol Thomson, and Barbara Knudsen.

All eight employees from the Ida Grove field office were cited for their "superior accomplishments in natural resource management in the Ida Soil and Water Conservation District," according to Dave Beck, area conservationist from Sioux City. Miller, Sindt, Sohm, Thomson and Knudsen are NRCS employees. Lee, Bahnsen, and Jennings are Iowa Department of Agriculture and Land Stewardship (IDALS) employees.

Ida County was one of four counties in northwest Iowa to earn the award. There are 19 counties in the northwest area. The staff was cited for their work to "accomplish a complex erosion control and water quality program." The award stated that, "Major accomplishments included over 200,000 feet of terraces, five major grade stabilization structures, and significant progress in the Battle Creek Water Quality project."

THANK YOU

We want to say "thank you" to all our board members and special advisors who contribute their ideas and time to attend our meetings.

Battle Creek Watershed Advisory Board:

- Chris Clark, ABC Ag, crop consultant
- Richard Madsen, Ida County sanitarian
- Ed Campbell, Battle Creek landowner
- Win Schramm, Battle Creek mayor
- Bret Warnke, Ida County Extension director
- Lorne Miller, Ida County NRCS district conservationist
- Nancy Rydberg, Ida County Sanitarian's environmental technician
- Lon Juelfs, Battle Creek city maintenance superintendent
- Rhett Leonard, Ida County conservation director

Ida Conservation Insights

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This newsletter is free of charge. To get on the mailing list, send name and address to: Peggy Peters, Battle Creek Watershed Project, 104 Taylor St., Ida Grove, IA 51445. Or call (712) 364-2124.

NRCS Staff:

- Lorne Miller.....District Conservationist
- Jerry G. Sindt.....Soil Conservationist
- Randall F. Sohm.....Soil Conservation Technician
- Carl S. Lee.....State Soil Conservation Technician
- Arlis Bahnsen.....State Secretary
- Carol Thomson.....Soil Conservation Technician
- Barb Knudsen.....Soil Conservation Technician

Battle Creek Watershed Groundwater Protection Project:

- Chris Jennings.....State Environmental Specialist
- Peggy Peters..ISU Extension Information Specialist

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- Iowa Department of Natural Resources.
- U.S. Environmental Protection Agency.
- Iowa State University's Cooperative Extension Service.
- Ida County Public Health Sanitarian.
- Ida County Farm Service Agency.
- Iowa Farm Bureau Federation.
- ABC Ag, crop consulting.
- Cities of Battle Creek and Holstein.
- U.S. Department of Agriculture, Natural Resources Conservation Service.
- Ida County Soil & Water Conservation District.
- Battle Creek Watershed Groundwater Protection Project.

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Enroll CRP Acres At Any Time

By Lorne B. Miller,
NRCS district conservationist

If you have land under an expiring Conservation Reserve Program (CRP) contract, you may want to consider enrolling selected acres in the continuous CRP sign-up. There is no competitive bidding in the continuous CRP sign-up. Eligible acres can be enrolled at any time. Rental payments are based on soil type.

In the continuous CRP program, you can enroll the eligible portion of an expiring contract into buffer strips. This helps meet conservation compliance rules and provides an annual rental payment on these acres.

The following practices also are eligible for consideration, if they meet requirements:

- filter strips.....along streams and rivers
- riparian buffers along streams (riparian buffers are the vegetative corridors between the stream and the land, planted with trees, shrubs, and grasses)
- shelterbelts
- living snow fences
- grassed waterways
- shallow water areas for wildlife
- field windbreaks

Contracts between the Natural Resources Conservation Service (NRCS) and the farmer vary in length, but are not less than 10 years nor more than 15 years in duration.

The NRCS office in Ida Grove can answer your questions about the continuous CRP sign-up; call (712) 364-2124.

Soil and Water Conservation District Commissioners:

This board advises Ida County's NRCS office:

Rodney Jensen, Ida Grove
Wally Johnson, Washta
Dennis Lindgren, Ida Grove
Lloyd L. Rickers, Kiron
Alan Van Houten, Battle Creek.

Ida County SWCD
104 Taylor Street
Ida Grove, Iowa 51445

Geographic Information Systems (GIS)

Focus on Technology

By Chris Jennings, Battle Creek Watershed Groundwater Protection Project

A Geographic Information System (GIS) is a computer system for mapping and analyzing things that exist and events that happen on earth. These maps allow decision-makers to explain past events and plan for the future.

Generally, a GIS refers to the hardware, software, and data necessary for its application. How is it different from an ordinary paper map or atlas? Maps only *display* spatial data (e.g. locations of towns, rivers, and buildings).

However, GIS can attach *descriptive* (non-spatial) data to these locations and analyze their relationships. For example, a GIS can analyze information about the *populations* of towns, the *water quality* of rivers, or the *ages* of buildings. A GIS works by storing the spatial data in "layers" or "themes," and attaching tables of non-spatial "attributes" to each theme (see Figure 1 below).

The key feature of a GIS is the database that stores the shapes, locations, attributes, and relationships of the data. This technology can help answer many questions. For example, which drinking water wells are most at risk to contamination when considering well depth, soil types, topography, and land use?

The Battle Creek Watershed project uses a GIS to analyze and prioritize groundwater resources at risk in the 34,000-acre watershed. Since nonpoint source pollutants travel along many different pathways, several variables must be considered in an assessment (see Figure 2 below).

This may include comparing soils and land uses to determine which Best Management Practices (BMPs) can slow the infiltration rate of runoff. GIS technology provides some of the tools necessary to analyze the complex data required for this risk assessment.

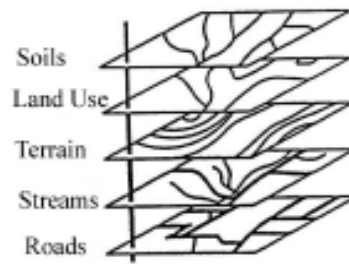


Figure 1. This diagram describes the concept of a GIS.

Ida County Groundwater Vulnerability Map

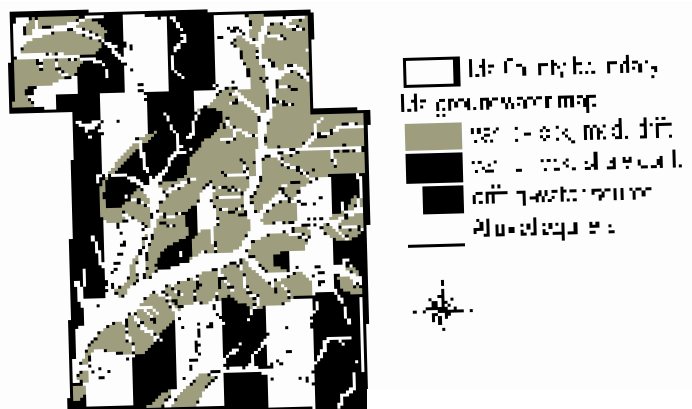


Figure 2. Example map of our GIS.

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