

Fillmore Soil and Water Conservation District Annual Report



Turkeys and fall leaves on a country road

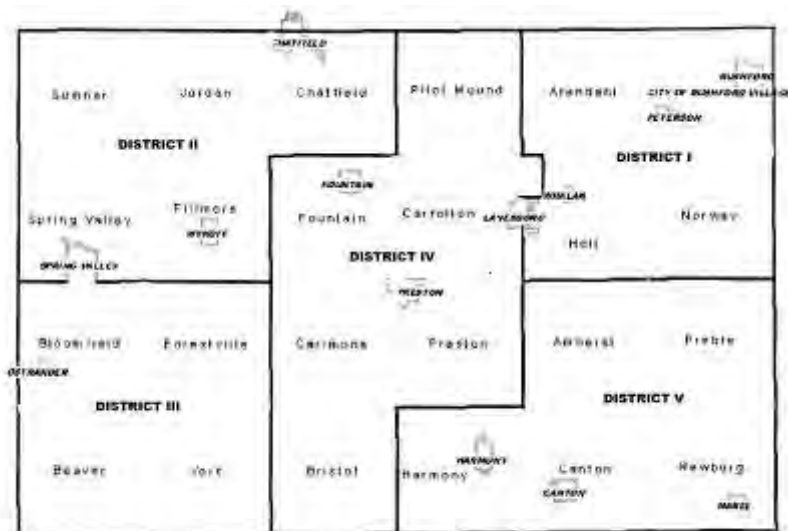
2011

Personnel Resources



Board of Supervisors

Back Row: Travis Willford – Vice Chair; Leonard Leutink – Chair; Timothy Gossman - Treasurer
Front Row: Pamela Mensink, Brian Hazel – Secretary



Board Meetings are held the Thursday after the second Monday of each month at 4:30 p.m.

District I – Brian Hazel
District II – Tim Gossman
District III – Leonard Leutink
District IV – Pamela Mensink
District V – Travis Willford

District I – Arendahl, Rushford Village, Norway and Holt townships plus the City of Lanesboro
District II – Sumner, Jordan, Spring Valley (excluding the City of Spring Valley), and Chatfield Townships

District III – Fillmore, Bloomfield, Forestville, Beaver and York townships

District IV – Pilot Mound, Fountain, Carrolton (excluding the City of Lanesboro), Carimona, Preston, and Bristol townships

District V – Amherst, Preble, Harmony, Canton and Newburg townships

Soil and Water Conservation District and Natural Resources Conservation Service Staff



Front Row: Steve Erickson, *NRCS Soil Conservation Aide*; Robert Joachim, *NRCS District Conservationist*; Donna Rasmussen, *SWCD District Administrator*; Ryan Thesing, *SWCD Conservation Planning Specialist*; Dean Thomas, *SWCD Grazing Management Specialist*; Joe Magee, *SWCD Water Planner/TMDL Coordinator*; Rick Grooters, *SWCD Resource Conservation Technician*; Jeanette Serfling, *SWCD Administrative Assistant*; Anne Koliha, *SWCD Engineering Technician*;

Back Row: Dawn Bernau, *SWCD Nutrient Management Specialist*; Doug Keene, *SWCD Resource Conservation Technician*; Jennifer Ronnenberg, *SWCD Conservation Technician*; Jackie Byam, *NRCS Soil Conservationist*; Angela White, *NRCS Conservation Technician*

COOPERATING AGENCIES

Basin Alliance for the Lower Mississippi in Minnesota (BALMM)
Bluff Country Hiking Club
City of Chatfield
City of Lanesboro
City of Mabel
City of Preston
City of Rushford
City of Rushford Village
City of Spring Valley
Conservation Technology Information Center (CTIC)
Eagle Bluff Environmental Learning Center
Fillmore County Association of Townships
Fillmore County Auditor/Treasurer
Fillmore County Commissioners
Fillmore County Emergency Management
Fillmore County Feedlot Office
Fillmore County GIS
Fillmore County Highway Department
Fillmore County Planning and Zoning Commission
Fillmore County Public Health
Fillmore County Recorder
Fillmore County Solid Waste
Fillmore County Zoning
Hiawatha Valley Resource Conservation and Development (RC&D)
Minnesota Association of Conservation District Employees (MACDE)
Minnesota Association of Soil and Water Conservation Districts (MASWCD)
Minnesota Board of Water and Soil Resources (BWSR)
Minnesota Department of Agriculture (MDA)
Minnesota Department of Health (MDH)
Minnesota Department of Natural Resources – Forestry Division (DNR)
Minnesota Department of Natural Resources – Waters Division (DNR)
Minnesota Department of Natural Resources – Fisheries Division (DNR)
Minnesota Pollution Control Agency (MPCA)
National Association of Conservation Districts (NACD)
National Trout Center, Preston, MN
Southeast Minnesota Water Resources Board
Southeast Minnesota Wastewater Initiative
Southeast SWCD Technical Support Joint Powers Board (JPB)
The Nature Conservancy (TNC)
University of Minnesota Extension (U of M)
Upper Iowa River Alliance
USDA Farm Service Agency (FSA)
USDA Natural Resources Conservation Service (NRCS)
Winona State University (WSU)

INTRODUCTION

The Fillmore Soil and Water Conservation District Board of Supervisors hereby submit the Annual Report for the calendar year of January 1, 2011 through December 31, 2011.

In 1940 the first soil and water conservation district was organized in Fillmore County. The District encompassed the eastern half of the county. Two years later, in 1942, the Western District was created. A line running north/south from the town of Preston separated the two Districts. In 1962 the East and West Districts were consolidated into one district by authority of the Minnesota Soil Conservation Committee. It was the opinion of both former boards of supervisors that consolidation would offer more efficient operation.

It has been through the work of many supervisors, district employees, partners and landowners that the rich but fragile resources of Fillmore County have been protected.

The ever constant goal of the Fillmore SWCD is to conserve our natural resources.

MISSION STATEMENT

The mission of the Fillmore Soil and Water Conservation District is to promote natural resource stewardship by providing educational, technical and financial assistance.

SERVICES AND PROGRAMS

Technical assistance to landowners for the implementation of conservation practices

- Two Conservation Specialists
 - Assist landowners with planning and design of practices, such as grassed waterways, terraces, grade stabilization structures, ponds, windbreaks, etc.
- Feedlot Engineering Technician
 - Assists livestock producers with planning and design of feedlot runoff control practices, such as freshwater diversions, filter strips, picket fences, etc.
- Nutrient Management Specialist
 - Assists livestock producers with developing nutrient management plans to meet standards for NRCS and state feedlot rules including annual updates of plans, manure spreader calibrations and other information needed to complete the plans
- Grazing Lands Management Specialist
 - Assists livestock producers with developing and implementing prescribed grazing plans that meet NRCS standards, such as fencing, pipeline, and interseeding, as well as helping to find financial assistance for implementing the practices
- Conservation Technician
 - Assists landowners with enrolling in the Conservation Reserve Program (CRP) and similar programs that establish permanent vegetation including conservation buffers
- Conservation Planning Specialist
 - Assists landowners with updating their conservation plans to ensure that soil productivity is maintained and that eligibility for the farm program is maintained
- Wetland Conservation Act Administration
 - Assists landowners with complying with the rules of the Wetland Conservation Act related to filling, excavating or draining of wetlands

Financial assistance to landowners for implementing conservation practices

- State Cost Share Program: provides up to 75% cost share up to a maximum of \$4,000 for grassed waterways, terraces, grade stabilization structures, windbreaks, well sealing and other practices on the state cost share docket
- Feedlot Water Quality Management Cost Share Program and Clean Water Fund Grants: provides 75% cost share for runoff control practices and manure storage for feedlots in riparian areas or within 300 feet of a sensitive feature
- Low Cost Feedlot Fix Cost Share Grants: provides 50% cost share with the maximum determined by the particular grant program for non-engineered runoff control practices such as rain gutters, freshwater diversions, filter strips, fencing, etc.
- Ag Best Management Practices (BMP) Low Interest Loan Program: provides 3% loans for implementing water quality practices, such as ag waste systems, manure handling equipment, septic system upgrades, no till planters, well replacement, variable rate technology, and erosion control structures; loans are processed through local lenders

Other products and services

- Trees and tree supplies: potted and bare root stock are available for sale from December to the end of February with proceeds going to support SWCD programs

- 2011 Fillmore County Plat Books: available for sale for \$30
- 2005 Fillmore County Plat Books: \$10
- Tree planters: two planters are available to rent for \$25/half day (min.) or \$50/day
- Gopher machine: one available for rent for \$25/half day (min.) or \$50/day
- Bacteria testing: \$20/sample
- Map sales: GIS maps created and printed; rates are dependent on the size and complexity of the map produced plus any printing costs
- Survey flags: available for sale at \$.10/each or \$10.00/bundle of 100
- Conservation Building conference room rent: \$25/half day, \$50.00/day
- Decorah Shale site investigation: \$20/hr in office research, \$25/hr out of office research
- Rain barrels: \$30 for kit; \$50 for assembled rain barrel

Partnerships

- Fillmore County
 - The SWCD has delegation agreements with the county for the administration of the Wetland Conservation Act and coordination of the Local Water Management Plan
 - Two staff are licensed inspectors who assist the Zoning Office with the inspection of newly installed septic systems
 - The Conservation Specialists provide assistance on soil erosion complaints made to the Zoning Office to determine the extent of the erosion and how to remediate it
 - The SWCD staff provides assistance to the Zoning Office with wetland determinations in the Decorah Shale Overlay District and with landowner requests related to the county's sinkhole ordinance.
- USDA
 - SWCD technical staff provide assistance for planning, designing, and implementing practices funded through federal Farm Bill programs such as EQIP, WHIP and CRP
 - The SWCD submitted two applications for the Mississippi River Basin Initiative (MRBI) for additional EQIP and WHIP funding in Watson Creek and the Upper South Fork Root River/Wisel Creek watersheds for practices that reduce sediment and nutrient runoff. Over \$500,000 of funding was available in FY2011. Two more years of funding remain for these watersheds.
 - The Conservation Technician is partially funded with a BWSR Farm Bill Assistance grant to assist landowners with completing CRP Conservation Plans; 24 CRP plans were completed for sign up #41 for general CRP plus 28 Continuous CRP re-enrollments. Combined with ten new enrollments, 931 acres were enrolled in all.
- MN Pollution Control Agency
 - The SWCD is the lead agency for the Root River Turbidity TMDL and staff is completing the final report for that 3-year study. The Root River Comprehensive Strategy began in March 2011. The SWCD administers subcontracts and provides staff for water quality monitoring, equipment maintenance, and leading civic engagement efforts.
- MN Department of Agriculture
 - The SWCD has a Joint Powers Agreement for the MDA Field to Stream Partnership in which subcontracts and payments are administered by the SWCD, staff assist with edge-of-field and in stream monitoring activities and with landowner farm practice surveys.
- SE Technical Support Joint Powers Board
 - Membership dues paid annually in return for engineering support for feedlot projects

- o The SWCD is a subcontractor with the JPB for Clean Water Fund for a Nutrient Management Specialist position which serves five southeastern counties.
- SE MN Water Resources Board and Water Resources Advisory Committee
 - o The Water Plan Coordinator is the staff liaison to these organizations.
 - o The SWCD is a sub-recipient of 319 grant funds for feedlot fixes and technical assistance.
- Basin Alliance for the Lower Mississippi in Minnesota
 - o The SWCD is an active participant in BALMM, a locally led ad hoc organization dedicated to protecting water quality in the Basin; the administrator serves as Chair.
- MASWCD State and Area organizations
 - o Membership is maintained; Board members and staff attend Area meetings and the statewide annual meeting.
- Hiawatha Valley Resource Conservation and Development (RC&D)
 - o Two Board members are assigned as representatives to the RC&D Council.
- Root River watershed
 - o The SWCD is the lead agency for the Root River Turbidity TMDL Final Report and the Root River Comprehensive Strategy
 - o The SWCD houses the Grazing Management Specialist who works throughout the watershed as well as in the Whitewater watershed and adjoining watersheds in Winona County
- Upper Iowa watershed
 - o SWCD staff assist with water quality sampling at three sites from April to October
- MN DNR
 - o Observation Well Network: staff monitor water levels every month in one well in the network
 - o Dye trace studies: staff assist with placing and collecting charcoal bugs in the springs and with collecting water samples that are analyzed for nitrate concentration
- The Nature Conservancy
 - o Grant funds awarded to the SWCD were used to fund a \$20/acre incentive for planting cover crops in the Root River watershed including in the MRBI watersheds.
 - o Grant funds awarded to the SWCD for targeting landowner outreach to restore hydrology in the TNC priority watersheds in the headwaters of the Root (Bear, Deer, Spring Valley, Forestville, and Canfield creeks and the Middle Branch of the Root)

DISTRICT PROGRAMS, ACTIVITIES AND ACCOMPLISHMENTS

State Cost Share Program

In 2011, a total of \$29,075 in state cost share funds were paid out to install

- 5 grassed waterways totaling 6,660 feet;
- 3 acres of native buffer;
- 1 well decommissioning;
- 2 terraces totaling 1,950 feet; and
- 9 windbreaks

The SWCD's state cost share allocation was reduced from \$43,432 in FY09 to \$23,520 in FY11 due to state budget cuts. The FY12 allocation is \$31,576.



Farmstead Windbreak

2011 Outstanding Conservationists

The Minnesota Association of Soil and Water Conservation Districts (MASWCD) named Larry and Irene Mathison and Loren and Carrie Mathison as one of eight Area Finalists in the 2011 Outstanding Conservationist Award Program.

The Mathisons were recognized at a Dec. 6 luncheon at MASWCD's 75th annual convention in Bloomington. The awards program recognizes farm families, individuals, conservation organizations, and other groups for their accomplishments in implementing conservation practices and improving Minnesota's natural resources.

The Mathisons are carrying on a tradition of conservation through three generations. Loren operates his grandfather's farm. Although they have been participants in both federal and state programs to install conservation practices, they have also done many things on their own as exemplified in the many grassed waterways and hay strips on their farms. Their commitment to maintaining conservation on their rented land has earned them a reputation with their neighbors who have sought out the Mathisons to be their renters because of their conservation ethic.



**Carrie, Loren, Irene and Larry Mathison
with Paula Mohr of The Farmer Magazine**

The Mathisons' corn/soybean/hay/oats rotation on 880 acres of owned and rented cropland has 170 acres of hay, including 43 acres in contour strips installed 25 years ago. They maintain 41,990 feet of waterways. Tillage is adapted to their rotation and to the landscape to retain adequate residue. They rotationally graze 90 beef cows on 190 acres of pasture, and finish 70 head of crossbred cattle on lots utilizing several runoff control practices. Windbreaks, woodland management, buffers, grid sampling, manure and pest management and CRP are among the many conservation practices spanning a three-generation conservation tradition in the Mathison family.

MASWCD, with support from *The Farmer* magazine, sponsors the Outstanding Conservationist Award Program. The SWCD hosts a local recognition event in January to honor the recipients.

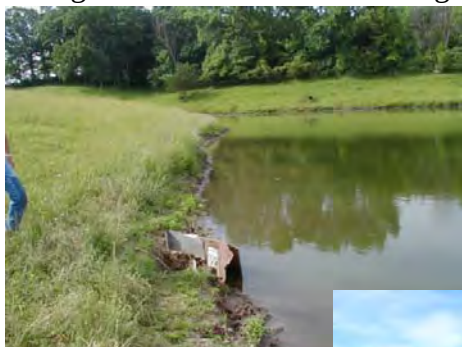
2010 Tree Program

The District sells a variety of bare root trees and shrubs and bare root and potted conifers. 2011 sales included 11,495 bare root stock and 1,291 potted stock sold to approximately 200 individuals, municipalities, and organizations in and around Fillmore County. For Earth Day, 500 free conifer seedlings were given to eight churches/cemeteries and two schools through the generous donation of one of the SWCD Board members.



Flood Relief Cost Share Grants

Five cost share projects were completed in 2011 related to the flood relief grants for the August 2007 floods totaling \$21,646. Several contracts were cancelled by landowners resulting in over \$45,000 being sent back to the state. All grant funds had to be expended by December 31, 2011.



Sinkhole opens in waterway after 2007 flood



Sinkhole is dug out to the "eye", filled with rock, lined with fabric and covered with soil



Project complete

Feedlot Water Quality Management

Eight feedlot projects funded with Feedlot Water Quality Grants and Clean Water Fund grants from FY06, FY08, FY09, FY10 and FY11 were completed in 2011 totaling \$482,967 in cost share. In addition, three projects utilized \$37,762 in grants from the county Feedlot Base Grant and 319 grants from the SE MN Water Resources Board for small to medium feedlot fixes. One project used \$299,997 in EQIP funds in combination with the state cost share funding. Four additional projects used only EQIP funding of \$864,944. Ag BMP Loans totaling \$300,000 were used for four of the projects. A FY12 Clean Water Fund Grant for two feedlot projects was approved for \$180,882.



Newburg Twp Feedlot BEFORE



Newburg Twp Feedlot AFTER

Nutrient Management

The Nutrient Management Specialist works in five counties and is funded by Clean Water Legacy/Fund grants awarded to the SE SWCD Technical Support Joint Powers Board. She has a total of 155 NMP contacts (completed plans: 16 for 2012, 33 for 2011, 25 for 2010 plans, 8 for 2009, 10 for 2008, 2 for 2007, 1 for 2006; 21 plans are in the beginning planning stages for 2012, 32 are prospective plans, and 7 plans are being done by other TSPs or by the producer). Total acres for the NMP plan contacts equals approximately 60,965 acres. As of January 1, 2011, there is a charge for the plans--\$300 for a new plan and \$100 for an updated plan. The fees help to meet match requirements for the Clean Water Fund grant that was awarded to continue the Nutrient Management position until the end of 2012. A FY12 Clean Water Fund Grant application was approved which will extend the position to the end of 2014.

CTIC grant project update:

2011 Replicated Nitrogen Rate Strip Trial Results: Do my manure management plan recommendations work?

The objective of this project is to validate U of M Extension nitrogen rate recommendations for corn following corn with recently applied solid-pack dairy steer finishing manure.

1. Compare the UM recommended rate of **156 lbs.N/acre** to 186 lbs N/acre and 216 lbs N/acre rates.
2. Validate manure nitrogen availability correction factors as affected by broadcast manure incorporation timing (within 12 hours and greater than 4 days)

Project will also *demonstrate* the effect of side dressing after fall applied manure using the pre-side dress soil nitrate test. This is a cooperative project with Fillmore SWCD and Minnesota Department of Agriculture, and UM Extension.

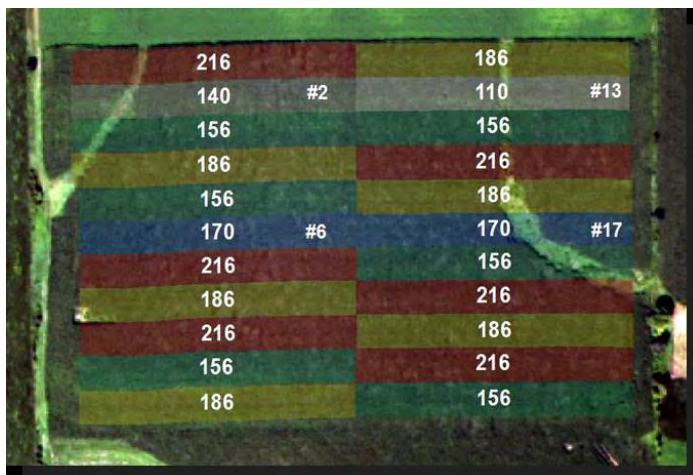
Key Findings

Corn yield and profit were optimized when manure credits were taken, and total N rates were consistent with U of M Extension guidelines.

Summary

Corn grain yield differences across all replicated N rate treatments were found to be small with yields ranging between 191-196 bu/ac. Generally, it did not pay to apply at rates above 156 lb N/ac and net profits were optimized when dairy steer bedding manure was uniformly applied and incorporated within 12 hours.

When manure N credits were not taken and rates of commercial N were applied above the guideline rate of 156 lb N/ac, profits decreased by up to \$32/ac. Results from the one-year study indicate that U of M recommendations were appropriate and when combined with good manure management practices can help optimize profit potential and nutrient-use efficiencies. Future studies are planned to further evaluate water quality, second year manure N credits and split N applications.



Manure plot map showing N application rates

For additional information

- U of M extension Manure Management <http://www.manure.umn.edu/>
- Corn N Rate Calculator <http://extension.agron.iastate.edu/soilfertility/nrate.aspx>
- Kevin Kuehner-Minnesota Department of Agriculture-507-765-4530
- Dawn Bernau-Fillmore SWCD-507-765-3878

Nutrient Management Articles

1. Nutrient Management, the 4R Approach and a Manure Application Study
2. Nitrogen Cycle and Nitrogen Movement
3. 2011 fall SWCD online news article “Nutrient Management Research Updates”
4. CTIC manure plot results article by Kevin Kuehner and Dawn Bernau “Nutrient Management Focus, Are my manure management plan recommendations working?” This article was also published in the SWCD newspaper insert for Jan 2012.

Workshops and Field days attended:

1. Grant Writing 101 Workshop
2. U of M Extension Winter Crops Days
3. Nutrient Efficiency Conference
4. Current Issues in Manure Management MPCA
5. Attended the TMDL/TAG meeting
6. U of M Agronomy Field Tour day at Waseca
7. U of M Institute of Ag Professionals Field School, Waseca MN
8. NMP Software Meeting, St. Peter, MN (discussed the future of the NMP software)
9. Rick & Dick Jahns’ field day, Strip till and Vertical till demonstration along with different fertilizer rates.

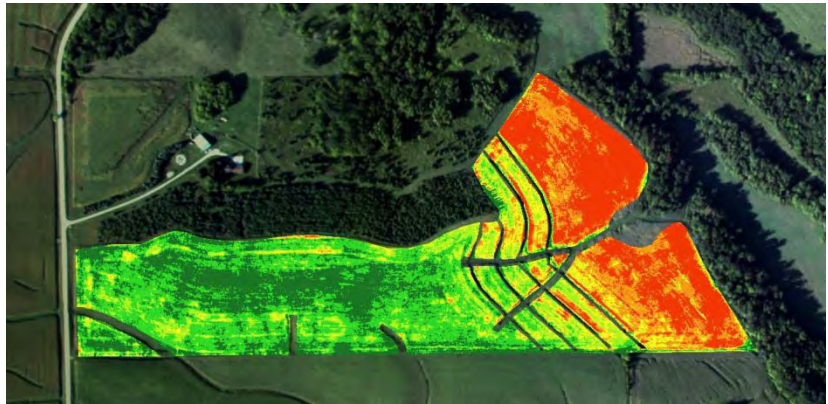
10. IA State Integrated Crop Management Conference, Ames, IA
11. Attended 8 Nitrogen Fertilizer Management Planning advisory committee meetings

Presentations:

1. Six Whitewater Watershed meetings on nutrient management
2. Mower Co. MRBI meeting,
3. SE SWCD Technical JPB meeting,
4. MASWCD Area meeting
5. BALMM--the Nitrogen Fertilizer Management Plan advisory committee
6. Manure Application Demonstration Day, Winona Co. (coordinated by Jerry Hildebrandt; Nutrient Management Specialist was the main speaker on nutrient management)
7. BSNT Whitewater Watershed group meeting (helped Kevin Keuhner discuss preliminary results from our manure plot)

Watson Creek Watershed BSNT farmer group:

This is a group of farmers that were selected in the Watson Creek Watershed to do Basal Stalk Nitrogen Testing with. We took BSNT tests this fall and have received the results. Currently, one-on-one surveys are being conducted with these farmers and to collect their field records and practices. The BSNT results are also being reviewed with them. By late winter 2012, these farmers will get together as a group to discuss the BSNT results and spark some conversation between the farmers on what worked for them or didn't work for them this year concerning nutrients. This could open up the door for the SWCD to help with any other conservation needs the farmers may have.



Aerial imagery used to identify stalk nitrate locations

Southeastern Minnesota Soil Water Monitoring Network:

The network is comprised of sites in SE MN where soil water nutrient concentration are measured throughout the spring, summer, and fall. A soil water sampler, also known as a lysimeter, is buried in the soil. A vacuum created inside the sampler draws water into an internal chamber through a porous ceramic tip. The water is retrieved through a small sampling line at the surface of the soil. The network will evaluate the amount of N leaching below the root zone under various land uses. The Nutrient Management Specialist and Grazing Specialist were the main contact people to find producers willing to install the lysimeters. They also helped with the equipment installation and sampling. Field specific information is being gathered to help understand the results.

Root River MPCA project:

Nutrient management information was provided to Kahlil Ahmad (Hydrologist – Watershed Modeler) from MPCA to help establish realistic numbers for the watershed model for the Root River. The information included animal units, manure type, analysis, application method and application timing.

Since starting this position in March of 2007, 155 contacts with producers have been made with 101 plan contacts in Fillmore County, 1 in Mower County, 14 in Houston County, 5 in Olmsted County, 26 in Winona County, and 1 plan assisted with in Rice County. There are 7 plans that are now with private TSPs or the farmer is doing them. This is progress when the farmer wants to do his own plan. These plans consist of dairy, hogs and beef. Some plans include purchased turkey or chicken manure. A few of the plans in Fillmore and Winona County are organic. Their main source of nutrients comes from legume credits, green manure plow down, manure and organic fertilizers.

Grazing Management

The Grazing Specialist provides free assistance to livestock producers in the Root River and Whitewater River watersheds plus the adjacent watersheds in Winona County. The position is funded through Clean Water Legacy grants awarded to the Fillmore SWCD with support from the other counties in the watershed. There has been a grazing specialist on staff since March 2007 with the current person in that position since April 2009. Three new managed grazing plans were completed in 2011 and another 21 producers received assistance with installing fence, pipeline and heavy use area protection utilizing federal EQIP funding. Several were older EQIP plans that are just beginning to be implemented. He did presentations at five producer group meetings in the Whitewater. He helped organize and spoke at three grazing field days in July and August. He provided assistance to NRCS with reviewing the grazing standards, 512 job sheets for seeding, and with training for the pasture NRI. He participated in about a dozen teleconferences with other NRCS grazing specialists in Minnesota. He worked with MDA and NRCS to organize and attended the 2011 Grazing Videoconference in Rochester. In cooperation with NRCS and Extension, the first edition of the Grazing Gazette newsletter was published. The Gazette will be distributed six times per year to over 900 producers in seven counties in southeast Minnesota plus adjacent areas in Wisconsin and Iowa.

He completed work on a MDA Sustainable Ag Grant studying the use of cover crops and delayed haying for grazing purposes. Additional forage and soil samples were collected in April for analysis.



A field day was held in April for about 25 attendees (see picture below) to compare cover crop establishment where rye was aerially seeded into soybeans and where it was drilled following corn silage harvest. Funds for the field day were provided by the Hiawatha Valley RC&D through the Driftless Area Initiative. The final report can be found in the 2010 Greenbook.

[Cover Crop Field Day April 11, 2011](#)

SWCD Cover Crop Program

Utilizing SWCD funds and funds from The Nature Conservancy, a \$20 per acre incentive payment to plant cover crops following corn silage or soybean harvest was offered for producers in the Root River watershed, TNC funds targeted the MRBI watersheds where the maximum EQIP payment was \$16/acre. The MRBI



[Cattle grazing on winter rye cover crop](#)

incentive was \$4/acre to get the total payment to \$20/acre. A total of 361 acres of cover crops were planted utilizing the incentive payment. About 60% of the acres were harvested for corn silage. Program costs included \$2,873 from TNC funds and \$1,849 from SWCD funds.

Volunteer Nitrate Monitoring Grant

A network of volunteers was established to monitor nitrate in drinking water wells in Fillmore County and eight other southeast Minnesota counties. The network of 675 wells includes 110 in Fillmore County. Samples were collected by the volunteers in August 2012 and sent to the SWCD office for analysis. MDA provides Hach spectrophotometers to analyze the samples. Of the 81 samples returned, 13 samples (16%) had nitrate levels above 10 parts per million (ppm); 10 ppm is the safe drinking water standard. All 13 wells were pre-code wells. The project was funded initially for two years from a 319 grant to the SE MN Water Resources Board. A Clean Water Partnership grant was awarded to the Water Resources Board to continue the project until 2013.

Root River Turbidity TMDL Project/Comprehensive Strategy Project

The Fillmore SWCD is the lead agency for the Root River Turbidity TMDL project. The three-year study was funded by a \$300,000 grant from the MPCA for the years 2008-2010. The third and final year of water quality monitoring was completed in 2010. The final report has been drafted and will be submitted to the MPCA and EPA for review pending some final revisions to be worked out with MPCA. The goals of the project are to calculate the amount of sediment being transported in the impaired reaches in the watershed and to determine the sources of the sediment.

In March 2011, a contract was signed between the SWCD and the MPCA to begin work on the Root River Comprehensive Strategy. This will address all impairments in the watershed under one plan, including newly listed stream segments with nitrate impairments. Under this contract, the SWCD is responsible for administering subcontracts, collecting water quality samples, and leading civic engagement efforts. One of the subcontracts is with Winona State University for electromagnetic resistivity imaging (ERI) and lysimeter



Installing a lysimeter in an ag field

studies to aid in understanding nitrate transport through karst. A network of more than 50 lysimeters has been installed on 18 sites under a variety of ag and non-ag land uses. Samples were collected every 1-2 weeks depending on soil moisture conditions. The ERI studies will begin in 2012. The MN Geological Survey is working with MPCA to do more intensive study of the geology in heavily karsted areas. A springshed tour was organized in November to show MGS staff outcrop sites that could be used to study the geology in the watersheds showing nitrate impairments. A second subcontract is with University of Minnesota Extension for civic engagement activities to form a watershed citizens' group that will guide strategies for better public awareness of water resource issues in the watershed and increased adoption of BMPs. Recruitment of volunteers for the citizens' group began in May with presentations to organizations in the 8 communities in the watershed (Lions, Rotary, Kiwanis, etc.) by

the end of the year. Presentations will continue into the first part of 2012 until the first citizens' group meeting is held sometime in April.

Continuous monitoring equipment (turbidity and stage) remains at the South Fork Root River at Amherst, Trout Run, Money Creek, Pilot Mound, Lanesboro and Carimona. These sites are maintained by several agencies. Fillmore SWCD staff collected grab samples during base flow and storm events at the Amherst and Trout Run sites. From July to December, because of lack of precipitation, only base flow samples were collected. Grab samples are analyzed at the Minnesota Department of Health (MDH) lab for Total Suspended Solids (TSS), Total Volatile Solids (TVS), Turbidity, Total Nitrite-Nitrate Nitrogen, and Total Phosphorus (TP). Winona State University (WSU) also ran tests for Suspended Sediment Concentration (SSC). Field measurements at each site included tape down, wire weight, staff gauge, and transparency tube readings. Temperature and pH readings were taken when possible. Data downloading at Trout Run was handled by the DNR–Division of Fisheries staff. Preliminary results from the sediment fingerprinting samples were received; however, due to delays from the lab, not all the results were made available by the end of the year in order to draw conclusions about the sources of sediment. Initial results indicate a much larger percentage of the sediment coming from the uplands than was expected. Percentages from stream bank erosion were lower than anticipated. A portion of the South Fork upstream and downstream from Amherst was walked and surveyed to try to determine the cause of high turbidity levels in that reach.

A Technical Advisory Group (TAG) meeting was held June 9 to review the data. Continuous updates are given to the Local Water Management Citizens' Advisory and Technical Advisory Committees of Fillmore County.

MDA “From Field to Stream” Project

The MDA has established two of its three edge-of-field monitoring sites in Fillmore County. The third is in Mower County. The sites in Fillmore County are located in Crystal Creek southwest of Preston and Bridge Creek near Bratsberg. The monitoring stations have automated samplers which collect runoff from fields where detailed information is collected about management of the fields draining to the station. Samples are analyzed for TSS, turbidity, TP, PO₄, and nitrate-N. An in-stream monitoring station is located downstream from each of the edge-of-field sites. Grab samples and sediment fingerprinting samples are collected at the in-stream sites and at the edge-of-field sites, whenever possible. Once baseline data is established for the sites, various conservation practices will be implemented and any changes to water quality will be monitored. The Crystal Creek site is in an area with many sinkholes and streams, so dye trace studies are being conducted there to better understand the interaction between surface water and ground water. Nitrate samples are collected and analyzed from the springs. Lysimeters have also been installed to evaluate nitrate movement below the root zone.

The project is funded for three years. The SWCD has a contract with MDA to fund staff to administer subcontracts, collect samples and maintain equipment and to work one-on-one with the farmers in the watershed.

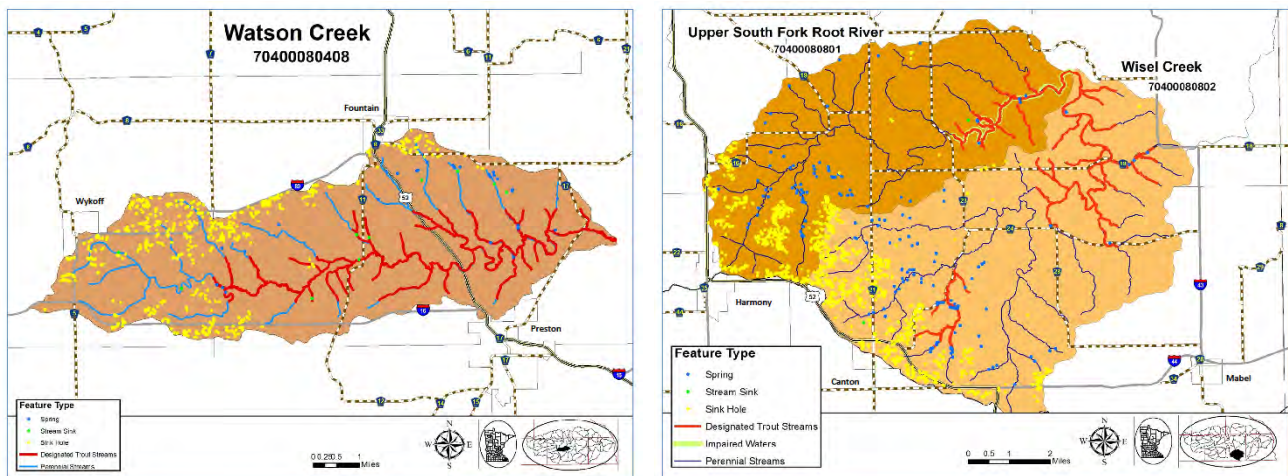
A video about the Field to Stream Project was made using footage shot at all three sites. The video was presented at a tour on September 9 attended by about 60 people including legislators and state

agency heads. SWCD staff were among the presenters for the tour which highlighted how the data collected for this project is helping to connect how ag land is managed with water quality data.

Minnesota is one of three states participating in a Conservation Innovations Grant to design and evaluate simplified edge-of-field monitoring equipment. MDA is leading the project in Minnesota and has selected the Root River as one of the watersheds in which to install two sites. SWCD staff helped locate suitable sites and willing landowners and toured the potential sites with MDA and other cooperators in November.

Mississippi River Basin Initiative

The Fillmore SWCD submitted MRBI applications for two sub-watersheds in the Root River watershed: Watson Creek and the Upper South Fork Root River/Wisel Creek. Priority practices in these watersheds are ag waste storage for dairy and beef producers, nutrient management for operations utilizing manure, and grazing management. These priorities utilize the existing technical staff already housed in the SWCD office and benefit livestock production, which is crucial to maintaining hay and pasture acres in the steep terrain of the Root River watershed.



In August of 2011, agreements were signed with The Nature Conservancy and the USDA Natural Resources Conservation Service for technical assistance funds to hire staff to meet one-on-one with producers in MRBI watersheds and the rest of the Root River to update their conservation plans and identify conservation needs that could potentially be addressed with the MRBI EQIP and WHIP funding. In October, a Conservation Planning Specialist was hired and is housed in the Fillmore SWCD office. As of the end of the year, he had met the planning goals set in the funding agreement and is well on the way to meeting the goals for the next two quarters. By the end of the year, 27 contacts had been made, and 1815.3 planning acres were completed. The goals were 25 contacts and 833 acres planned.

The MRBI proposals requested funding from EQIP and WHIP for the livestock-related practices mentioned above, as well as management practices, such as cover crops and no till/strip till, and structural practices, such as streambank protection, grade stabilization structures and water and sediment basins. Since 2010, the total allocation to Watson Creek has been \$605,894. Six contracts have utilized \$527,488 over a two year period. The Upper South Fork has had \$710,775 allocated

since 2010. Three contracts have used \$600,784 in two years. Additional funds committed from Trout Unlimited and The Nature Conservancy are helping to implement streambank protection projects and cover crops.

Rush-Pine Creek watershed also received MRBI funding. About 13,000 acres of the watershed lies in Fillmore County with the remainder of the 86,000-acre watershed in Winona County. The project sponsor for the MRBI application is Hiawatha Valley RC&D. However, with federal funding no longer available to the RC&Ds to hire coordinators, the ability to continue as the project sponsor has been set back. Fillmore SWCD staff are working with landowners in the Fillmore County portion of the watershed to implement practices.

An offshoot of the MRBI is support from the Midwest Natural Resources Group (MNRG) which has representatives from the Midwest regional offices of 14 federal agencies. MNRG has committed support to the MRBI watersheds from the member agencies to enhance local conservation efforts in those watersheds to improve water quality. Among the requests to MNRG for the Root River made in 2010 were: 1) more technical and engineering assistance to promote and implement practices, especially streambank protection, 2) coordination of long-term monitoring, and 3) modifications to the Conservation Reserve Program to allow limited haying and grazing. In 2011, representatives for the Root River met with the MNRG at their June meeting in Peoria, IL, to acknowledge the support given to the watershed. That support included funding from EPA to the MPCA to contract with TetraTech to do hydrologic modeling in the watershed, funding from EPA to the U.S. Forest Service which gave the money to MN DNR to develop a landscape plan for the Root River, and funding from USDA NRCS for technical assistance in the MRBI watersheds in the Root, which is being used by the Fillmore and Winona SWCDs to hire staff to update conservation plans and implement conservation practices identified as needed in the planning process.

Farm Bill Assistance

The Fillmore SWCD has staff hired with Farm Bill Assistance funds from BWSR to promote the federal Conservation Reserve Program (CRP) and to assist landowners enrolled in CRP with completing their plans. General CRP sign up #41 resulted in 24 contracts for which plans were completed. An additional 28 Continuous CRP plans were completed. In all, plans were completed for 931 acres. In 2011, the work plans for Farm Bill Assistance grants were allowed to add projects that focus on clean water in addition to the wildlife and habitat projects. With that change, the SWCD added storm water projects to the work plan to build on the information collected by the summer intern who had interviewed all the cities in the county about their storm water management needs. Activities are in the works to promote rain barrels and rain gardens in the interested communities.

Bacteria Testing

In May 2009, the SWCD became a certified lab to test drinking water for total coliform and *E. coli* and surface water for *E. coli*. The equipment was purchased with flood relief grant funds from Fillmore County Public Health to assist well owners who have had their wells flooded. Three staff are trained to analyze samples. There were 280 samples analyzed in 2010. Of those, 216 were from stream samples, mostly from sites in the Whitewater Watershed. The SWCD contracted with the watershed project to collect and analyze the samples. Of the 64 drinking water samples analyzed, 31 tested positive for total coliform bacteria and seven tested positive for *E. coli*. MDH conducted an audit of the lab in 2010. All requirements and the post audit report were completed in 2011.

Education and Promotion Projects

Scholarships:

The Fillmore Soil and Water Conservation District sponsors a \$500.00 scholarship for a graduating Fillmore County high school student pursuing a degree in Natural Resources, Agriculture or related field. Tyler Spande of Mabel-Canton High School is the 2011 High School Scholarship recipient.

The District also offers a \$500.00 scholarship for Fillmore County college students who will be returning to school in the fall. To be eligible, students must be a returning college sophomore, junior or senior, pursuing a degree in Natural Resources, Agriculture, or a related field, be enrolled in classes for fall, and not a prior scholarship recipient. Abigail Stocker of Peterson is the 2011 Returning College Student Scholarship Award recipient.

Lost Creek Hiking Trail:



Counterclockwise from above: Cleanup crew in front of truck donated by Hammell Equipment; treasures included a not quite intact motorcycle; some of the 45 tires cleaned out of the ravine



Dumpsite Cleanup: Sixteen dedicated volunteers endured mud, bugs and animal bones to clean up an old dumpsite along Magnum Road west of Chatfield. The dumpsite was in the road right-of-way that adjoins property owned by the Fillmore County Historical Society. The new Lost Creek Hiking Trail passes through the property, so the cleanup beautifies the area for users of the trail. The workers represented Hammell Equipment, confirmation students from St. Mary's church in Chatfield, Jordan Township Board, neighbors, Bluff Country Hiking Club, and the Fillmore Soil and Water Conservation District (SWCD). The trucks and end loader were provided by Hammell Equipment. Bill Bailey provided the tractor and winch for pulling the garbage out of the ravine. Two volunteers also provided four-wheelers with winches. The SWCD and DNR supplied other small equipment. "No Dumping" signs will be posted by the township. Violators will be fined for dumping garbage there in the future.

Working from 5 pm to sunset, the hardy volunteers completed their task in one evening. The haul included 5820 pounds of landfill material, 45 tires, 6 appliances, and one TV, all of which were taken to the Fillmore County Resource Recovery Center in Preston. Toilets, toys, couches, recliners, mattresses, car seats, a motorcycle, and, yes, even the obligatory kitchen sink were among the discarded items along with the usual bottles, cans, and plastic bags. The volunteers confessed to a real feeling of accomplishment when the cleanup was completed made better by a hot shower and laundered clothes upon their return home.

Forestry Education: In 2011, the SWCD formed a Forestry Committee at the suggestion of the 2010 Outstanding Conservationists who actively manage the woodlands on their farm. They serve as members of the committee. Among the activities accomplished was the development of educational materials and activities centered around the Lost Creek Hiking Trail where several forestry BMPs had been implemented following damage to the walnut stand from a windstorm in 2010. A brochure was designed by the summer intern hired by the SWCD highlighting the locations along the trail where the BMPs could be observed. The brochures are accessible at each end of the trail for hikers to pick up. A map in the brochure shows where the BMPs are located, and marker signs were placed along the trail at these locations. The cost of the brochures and signs were paid by the SWCD. The intern also organized a landowner field day in August utilizing lists of landowners in three counties from the MN Forest Resources Council. She generated a mailing list to target landowners with DNR approved Forest Stewardship Plans. Over 60 people attended the field day.



Mitch Gilbert, forestry consultant, and Jim Edgar, DNR Forester, were among the forestry field day presenters.

6th Grade Field Day: About 180 students from four schools participated in the annual 6th Grade Field Day at Forestville/Mystery Cave State Park on September 27. Presentations were on the topics of recycling, snakes, native plant identification, forestry, electricity safety, aquatic insects, and the Forestville Historic site.

Learning about snakes at the 6th Grade Field Day



Area and State Envirothon:



Staff and a Board member from the SWCD assisted with planning and staffing the 2011 Area Envirothon, which was held at Chester Woods near Rochester on May 5th.

Board Supervisor Leonard Leutink, Jr. (left) was one of the oral presentation judges for the 2011 Area Envirothon.

Fillmore County Fair Display: Various posters providing information about SWCD programs and projects were on display at the county. The SWCD also purchases one half hour of air time on the local radio station during the fair to interview staff and Board members about current SWCD programs.

“Conservation Chronicles” Newsletter: On January 9, 2011, the Conservation Chronicles was published as an insert in the *Fillmore County Journal*, a free newspaper that goes to 12,000 residences in the county. The Journal sold advertising to offset most of the cost of the insert. Many positive comments were received about this publication. Due to increasing printing and postage costs, the summer and winter newsletters were posted on the SWCD website. An email notice of the posting was sent to those landowners providing their e-mail addresses. Information about programs, upcoming events, tree sales, and other topics are submitted by the staff from SWCD and NRCS as well as other agencies when needed.

Community and School Presentations and Education: The SWCD was one of the sponsors for the speaker at the Eagle Bluff Environmental Learning Center’s February Dinner on the Bluff event. The speaker was Chad Pegracke who started a non-profit organization that conducts clean-up projects on the Upper Mississippi River. Posters about the projects going on in the Root River watershed were on display in the dining area for participants to view after the main presentation. The Water Plan Coordinator conducted two nitrate clinics in Spring Valley and Rushford Village in February. In April, a presentation was given at Spring Valley for about 40 3rd grade students for the Ag in the Classroom program. The SWCD had a display and gave away tree seedlings at the Root River Valley Earth Day celebration in Lanesboro in April. The Water Plan Coordinator is on the Board for the National Trout Center in Preston and leads the Technical Advisory Group.

Observation Well Network

The SWCD measures water levels in a well near Chatfield as part of the DNR’s Observation Well Network. The water level is measured once a month in June to December plus two more times during the three-month period of March to May. No readings are taken in January or February.

Precipitation Monitor Program

The District has 11 precipitation monitoring volunteers, two of which have been monitoring rainfall for 33 years, one for 20 years, and five for more than ten years. Participants forward their rainfall information to the SWCD office which is recorded and sent on to the State Climatology Office in St. Paul.

District Website (www.fillmoreswcd.org)

The district’s first website was created in July, 1999. A new site was created in 2007, then was revamped in 2010. It receives regular updates with information regarding our services and programs, tree ordering, and current events as well as information about our supervisors and staff. Board meeting agendas and minutes are added monthly. A No-till Technology Information site was added in 2010. In 2011, information added to the website included information about how to incorporate conservation requirements into ag land rental agreements, and the forestry brochure for the Lost Creek Hiking Trail.