

South Branch Root River Watershed Project
November 9, 2006 Meeting Notes

In attendance: Adam Birr, Matt Drewitz (MDA), Lee Ganske (MPCA), Keith Voorhees (Clayton Twp), Bill Sweetser (Bennington Twp), Jerrold Tesmer (Fillmore Extension), Fred Beier (property owner), Jeff Green (DNR), Jeff Weiss (DNR Fisheries), Rich Biske (The Nature Conservancy), Stafford Hanson (Co. Commissioner), Mark White (Forestville/Mystery Cave SP), Donna Rasmussen (Fillmore SWCD)

Analyses of recent water quality data for the South Branch Root River: Crop residue transect survey data and pesticide monitoring data were reviewed by Donna. The crop residue transect survey has been completed for three years in the watershed on 264 fields (132 stops approximately 1 mile apart). These fields represent 15,622 acres, or 21% of the project area. There are five categories in the survey: no till (>30% residue, no tillage; includes strip till), ridge till (>30% residue, only the ridge is tilled), mulch till (>30% residue with minimal tillage), reduced till (15-30% residue), conventional till (<15% residue), and other (hay, pasture, woods). From 2004 to 2006, the percentage of fields with more than 30% residue went from 66% to 73% which represents over 4100 acres watershed-wide. Conventional till and reduced till combined decreased by about 9%. No-till acres increased from 15% to 19% with more no-till corn.

Pesticide samples have been collected at the Historic Forestville bridge since 2002 in cooperation with the MN Department of Ag. Winter baseflow and late spring runoff samples are collected each year. The spring runoff samples are collected every two weeks between May 15 and July 15. In the past two years, there have been no significant runoff events during that time period. This has resulted in very low concentrations of atrazine, metolachlor and acetochlor in these samples. Past years data when high flow events have occurred have shown elevated levels of all three compounds, with two of them (atrazine and acetochlor) exceeding the water quality standard at least once during the monitoring period. Atrazine is always detected in the winter base flow samples, although at concentrations well below the water quality standard of 3.4 ppb. Acetochlor has not been detected in any of the winter base flow samples. The relationship of the higher concentrations to runoff events emphasizes the need to reducing runoff to prevent pollutants from moving into the streams. This past year, the Root River sites were moved to a Tier 2 sampling system. This means that if a sample is collected during a runoff event, a second sample is taken within 24-96 hours as a follow-up to help determine the duration of the elevated concentrations.

Lee provided a summary of the water quality data for the past 8 years in an effort to determine if we are seeing water quality improvements. Different precipitation and flow patterns in the more recent years have shown the variability that can occur. Monitoring began in 1998 with grab samples. A continuous flow record began in 1999. In 2004, probes were added at the permanent station for continuous recording of dissolved oxygen, turbidity, temperature, conductivity and pH. Transparency readings have been taken whenever grab samples are collected. The lowest (poorest) transparencies were seen in 2005 and 2006. Longer durations of low transparency can affect fish and invertebrates. Transparency usually reflects sediment load. The continuous turbidity measurements indicate lower turbidity peaks from 2004 to 2006. This could be a trend, but may also be a function of weather and the timing of the rains falling within normal variability. This information could be compared to fish data (20 years at Vreeman's), which indicated lower reproduction in 2004 and 2005. If runoff events occur in late March/early April during hatching, reproduction can be impacted. Nitrate-nitrogen represents losses of N from ag fields. Although no clear trend, concentrations are consistently "high" (~10 ppm) in 2005/2006 if the drinking water standard is used as a measure. The typical pattern is more like that of 2001 where the majority of N is transported in April, May, and June, then tapers off. In order to reduce impacts to the Gulf of Mexico Dead Zone, more must be done than just reduce N application rates. More land use changes incorporating perennial vegetation is needed to have a substantial effect. Fillmore SWCD's data from 25 subwatersheds shows a clear relationship between the percent of cultivated land in a watershed and nitrate concentrations. Bacteria data show no clear trend since that is a parameter heavily influenced by flow. Overall, year-to-year natural variability might be in the 50 to 100% range, so reductions of 10 to 20% could get lost in the natural variability. It is difficult to know if enough change is taking place to

achieve a 10 to 20% reduction. We must recognize that there is a time lag in water quality response to BMP implementation even with targeting of BMPs to a particular watershed. The longer we monitor, the greater the probability that we see a change that is lasting. Monitoring is also a gamble to be in the right place at the right time to actually document water quality changes that coincide with big shifts in land use, such as CREP or CSP. We are still at the mercy of storm events, so reducing pollutants without reducing runoff is not enough. Attempts need to be made to reduce peak flows and reduce their frequency. One study showed that just 12% of a trout stream watershed in CRP produced improvements in water quality.

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Aerial Seeding of Winter Rye for a Cover Crop: Follow-up: The Fillmore SWCD designated funds for this practice, so buffer bonus funds from the watershed grant were utilized to take advantage of the coordination already happening within the SWCD office. The purpose of the practice is to get a 4-6 week jump on cover crop growth before the cash crop is harvested. The cost of the helicopter was paid from the grant, and the farmer provided the seed and paid for any additional acres of seeding over 40 acres. A cover crop provides multiple benefits: residue cover to reduce soil erosion, fall and early spring forage or grazing for livestock, increased soil organic matter, reduced soil compaction, tie-up of nutrients, and retention of soil moisture. There were 249 acres seeded in the watershed with 129 acres paid by the project at a cost of \$1349 to the grant. The results were mixed. At the 50 lb. seeding rate, some mechanical problems with the seeder created alternating strips of heavy growth and no growth. At 70-75 lbs. per acre, this problem wasn't evident, and growth was even and well-established. Some concerns need to be addressed before farmers will readily adopt this practice. The seeding should be done in mid-August rather than early September requiring a commitment from the helicopter service for that timeframe. The spread pattern must be uniform, and can be accomplished by overlapping the seeding passes and fixing the mechanical problems with the seeder. Headlands should be cross seeded for better growth to withstand wheel traffic. Soybean fields should be seeded before the leaves fall off to assure good seed to soil contact.

Fall Newsletter Topics: Additional topics were suggested for this newsletter and for spring: announce the December 11th nitrogen meeting in Rochester, include the summary of water quality data by Lee, provide information about the MN Forest Resources Council meeting in Winona in March (Rich), and an article about the wind generators in Mower County, also perennial crops for energy (spring?). An article by Jeff Green about hidden springs will be included in the spring newsletter.

Updates: Potential sites for a riparian wetland restoration are being discussed with Mower SWCD staff. Two sites have been identified and the landowners will be contacted. The owners of one site own land in northern MN and have maxed out their CRP so the Wetland Reserve Program is another option for funds.

A winter workshop called "Considering Conservation in Estate Planning" is set for February 8th in the Fillmore County Office Building conference room in Preston. Topics include options for conservation (private and government easements), who can provide assistance, and what are the legal issues affecting estate planning if conservation easements are established.

Jeff Green attempted a triple dye trace at the end of October, but due to dry conditions, could only complete one. This was on the northern boundary of Forestville Creek watershed again to better delineate that springshed boundary. A large amount of dye was used, but it has not been detected yet.

Free nitrate clinics are being arranged with Public Health along with their radon clinics. Clinics are planned for Wykoff, Spring Valley, and Ostrander sometime during the next few months.

A question was raised about River Friendly Farmer awards for the SWCD's annual awards dinner. If there is anyone who might be interested in nominating someone or you know of someone who you think should fill out an application, please consider it. Applications were distributed to the group.

The meeting adjourned at 8:40 p.m.