



Dakota County Soil and Water Conservation District

with the Vermillion River Watershed Joint Powers Organization

News & Notes

Volume 30, Number 1, Spring/Summer 2011

To sign up for emailed notification when the SWCD newsletter is available online, go to www.dakotaswcd.org

High Water Demonstrates Need for Buffers & Filter Strips



Who needs riparian buffers? Every(water)body. From big rivers, to small streams; from agricultural ditches to intermittent trickles – they all benefit from a vegetated buffer running along their edge. When you picture a buffer “in action,” it’s easy to visualize pollutants being filtered from runoff, wildlife utilizing the cover, grasses stabilizing banks, and shade cooling the water.

This spring we all witnessed rivers and streams over-topping their banks, bringing water into riparian zones. Whether buffered or not, water rushed through these areas - often with force enough to scour and erode. If protective vegetation was absent, sediment and soil, and the pollutants they carry, were quickly picked up and moved downstream.

The ideal width of a buffer (also known as a filter strip) varies depending on factors like topography, soil types, and the buffer’s primary purpose. Sometimes establishing a buffer means setting aside existing natural areas, and sometimes a buffer actually needs to be created and installed. The SWCD has a variety of programs that offer technical and financial incentives for creating buffers or filter strips (see article on next page).

Whatever your reason for establishing or maintaining a buffer, you can rest in the knowledge you’re improving the waterbody along its edge!



High water in the Vermillion River this March.



Did you know?
District 1 of the SWCD Board of Supervisors is currently vacant. Supervisor applications are being sought. Call our office at 651-480-7777 for more information.

News & Notes

A semi-annual publication of the
Dakota County Soil and Water
Conservation District
4100 220th St. West, Suite 102
Farmington, MN 55024-8087
Ph: 651-480-7777; Fax 651-480-7775
www.dakotacountyswcd.org

Board of Supervisors

Joseph Meyers, Chair
Chris Nielsen, Vice Chair
Kevin Chamberlain, Treasurer
Jason Swenson, Public Relations
& Information Officer
Vacant Position

District Staff

Brian Watson, District Manager and Wetland Specialist
Jim Davidson, Senior Urban Conservationist
Brad Becker, Senior Resource Conservationist
Laura Jester, Watershed Conservationist
Todd Matzke, Resource Conservationist
David Holmen, Resource Conservationist and Information Technology Specialist
Mike Isensee, Urban Conservationist
Travis Bistodeau, Water Resource Specialist
Curt Coudron, Resource Conservationist
Lana Rotty, Finance and Accounting Specialist

Assisted by USDA Natural Resources Conservation Service

Michelle Wohlers, District Conservationist
Matthew Schaar, Soil Conservation Technician
Lucas Altwegg, Soil Conservation Technician
Leslie Diaz-Alvarez, Soil Conservationist

The Dakota County SWCD Board of Supervisors meets on the first Thursday of every month at 8:30 a.m. Meeting times are subject to change. Changes of address or subscription inquiries, call 651-480-7777.

All programs and services of the U.S. Department of Agriculture, Natural Resources Conservation Service, and the Dakota County Soil and Water Conservation District are offered on a nondiscriminatory basis without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

Get Paid for Installing Filter Strips

As the name implies, a “filter strip” is a narrow strip of vegetated land along a river, stream, ditch, or wetland that filters pollution from runoff before it reaches the waterbody. Filter strips (sometimes called buffers) are important tools for improving water quality in both urban and rural landscapes. In rural areas, the SWCD offers incentive payments to landowners who install filter strips. Most filter strips range from 33 to 350-feet wide and can contain various types of vegetation from native prairie to alfalfa to trees and shrubs.

The SWCD has several options for filter strip installations:

- Up to \$250 per acre, per year for 15 years for the establishment of filter strips through the USDA’s Continuous Conservation Reserve Program (CCRP). The filter strip must meet all USDA-CCRP crop history and program eligibility requirements.
- \$100 per acre, per year for a *harvestable* filter strip for either 10 or 15 years. These filter strips can be harvested annually, (with some restrictions) allowing landowners to improve water quality while maintaining the opportunity to use the land for production.



Get Help with Large Projects

Let our equipment help you with low rental rates and delivery to and from your work site!

No-till Drill: Seed native prairies, plant new pastures and hayfields, or rejuvenate old pastures and hayfields *without plowing up existing vegetation!* Separate seed boxes allow for simultaneous planting of multiple seed types at varying rates. 10.5-foot planting width. \$15/acre + \$100 setup fee

Tree Planter: Plant windbreaks and shelterbelts or other large (> 200) tree plantings in long straight lines. \$50/day.

Clean Water Fund: Protecting and restoring Minnesota's waters for generations to come.



When Opportunity Knocks



The parking lot at the Wakota Ice Arena in South St. Paul was due for a facelift last year - which provided the perfect opportunity to reduce its stormwater "footprint." With partial funding from a Clean Water Legacy grant, the SWCD worked with the City of South St. Paul to incorporate practices to reduce pollution from stormwater and snowmelt. For years, stormwater runoff from this site flowed straight to the Mississippi River less than a mile away. While overhauling the parking lot, the site was retrofitted with two bioretention cells and three snowmelt zones to filter out pollutants like sediment, salt, and oil from leaky cars - before they reach the River.

Stormwater from the 5.5 acres of parking lot and rooftop now runs into bioretention cells where it slowly seeps through a filtering mixture of sand and compost. The stormwater could not simply be infiltrated (allowed to seep into the soil) because the site sits along the river bluff. Saturated soils here could cause problems with the stability of the bluff and retaining walls. Therefore, the bioretention cells were lined with clay and a sub-drain system carries the filtered water into the storm sewer system and onto the River.

This project is an example of several similar projects completed through the SWCD's Stormwater Retrofit Partnership made possible through a Clean Water Legacy Grant from the Minnesota Board of Water and Soil Resources. Through the Partnership, the SWCD provides the funding and technical assistance to prioritize and install Best Management Practices (BMPs) at existing public facilities. This project uses mapping technology and pollutant load analyses to select, prioritize and install bioretention-type practices that have the most benefit, for the least cost, in the best location.





Spring 2011 Newsletter

Joint Powers Board

Commissioner Joseph Harris, Chair
Commissioner Tom Wolf, Vice-Chair
Commissioner Paul Krause, Treasurer

Meetings are held on the fourth Thursday of each month (except November), 1-3 p.m., at the Dakota County Western Service Center in Apple Valley.

Watershed Planning Commission

- Chuck Clanton, Chair
- Joe Beattie, Vice Chair
- Kyle Andes
- John Glynn
- Ron Mullenbach
- Pete Schaffer
- Lance Twedt
- (2 vacant seats)

Meetings are held on the second Wednesday of each month, 4-6 p.m., Dakota County Western Service Center in Apple Valley.

Vermillion River Watershed Staff

- Mark Zabel, Administrator (Dakota Co.)
- Melissa Bokman, Co-administrator (Scott Co.)
- Travis Thiel, Watershed Specialist
- Katherine Carlson, Water Resources Specialist

Vermillion River Watershed Joint Powers Organization

14955 Galaxie Ave.
Apple Valley, MN 55124
952-891-7000

www.vermillionriverwatershed.org

Restoration puts the bends back in the stream

A Vermillion River stream channel re-meander and stream bank restoration project on a state-owned Aquatic Management Area (AMA) in Empire Township has many benefits. Brian Nerbonne, Minnesota Department of Natural Resources (DNR) fish biologist, says, "The project will improve habitat for fish, including brown trout, and will create a more natural and stable channel."

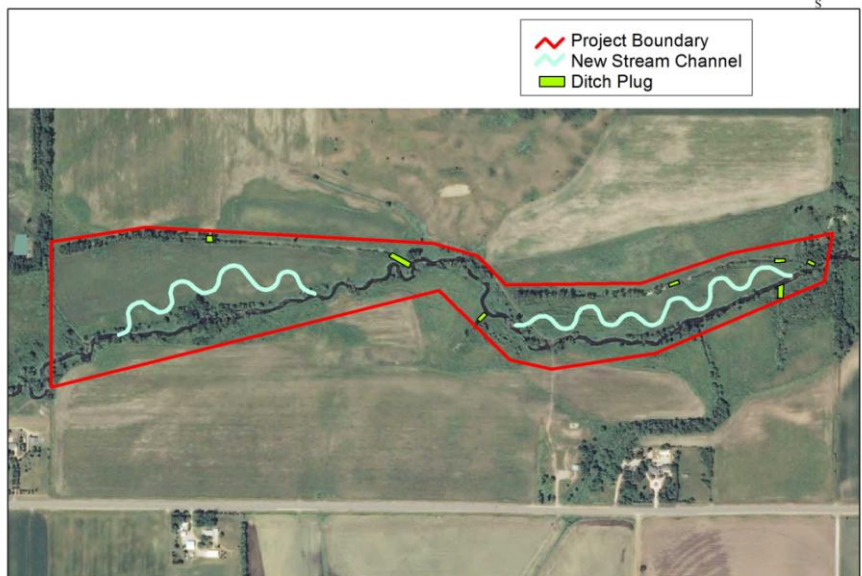
Two constructed meandering stream channels will replace about 3,450 feet of stream that was straightened years ago. The new meandering stream channels will be approximately 4,450 feet in length. The project also involves re-grading stream banks to improve stream stability and allow increased flood flows to the floodplain.

The DNR is leading the project, which began last summer. The first phase of the project included digging the new stream channel disconnected from the present channel, stockpiling and stabilizing excavated material, and installing habitat elements in the new channel. The stream banks of the new channel were planted with native vegetation. Phase 2 occurs this summer and involves connecting the new meandering channels to the stream's flow, filling the old stream channel with the stockpiled material, and planting the disturbed areas with native vegetation.

Vermillion River Watershed Joint Powers Organization (VRWJPO) is contributing \$100,000 cost share to the project. DNR and Trout Unlimited provided a combined \$300,000 funding.

Vermillion River Stream Habitat Project and 2008 Air Photo

0 250 500 1,000 1,500 2,000 Feet



Fixing Etter Creek water and erosion problems will require inter-agency, landowner cooperation

Historic flooding problems and poor land use have caused significant erosion in the Etter Creek Subwatershed. This subwatershed is in the southeastern portion of Dakota County in Ravenna Township and the northeastern portion of Goodhue County in Welch Township.

The subwatershed consists of intermittently flowing waterways draining to the Lower Vermillion and Mississippi Rivers. The erosion puts roads, culverts, and bridges at risk and impairs the water quality of the Lower Vermillion and Mississippi Rivers. A 2010 assessment of this subwatershed, conducted by the Vermillion River Watershed Joint Powers Organization (VRWJPO), found that projects with the highest potential to stop erosion and improve water quality will require a significant amount of cooperation with Goodhue County and local landowners.

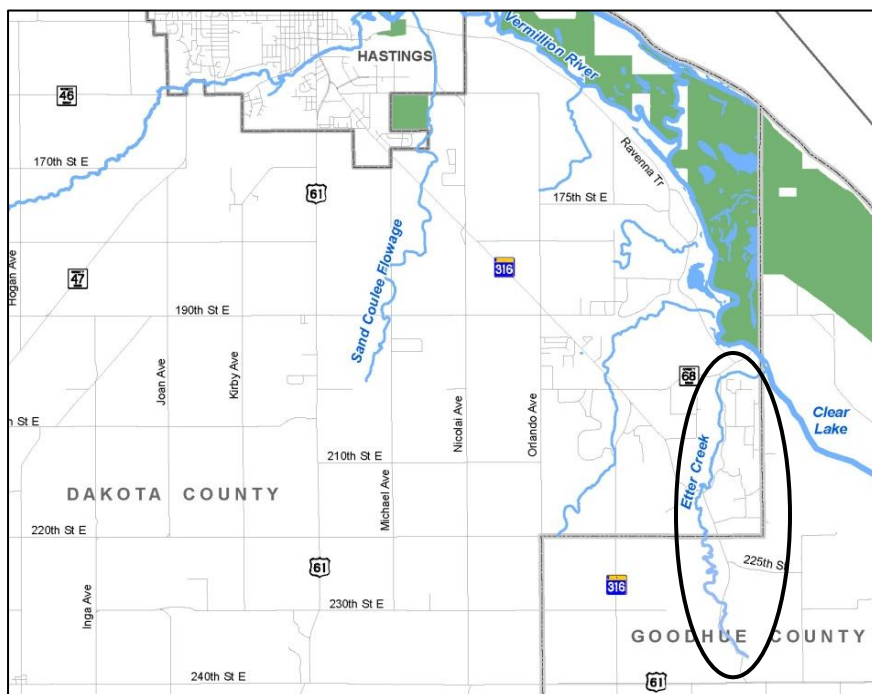
The assessment identified four daunting challenges:

- Steep topography and erodible soils increase erosion;
- Most problem areas are outside the political boundaries of Dakota County and the VRWJPO – runoff drains from Goodhue County into Dakota County;



- Number of projects and project size, with initial estimates in the millions of dollars to complete all of the projects; and
- Private ownership of many areas where projects are needed requires the VRWJPO and counties to obtain landowner support to implement improvements.

VRWJPO, Dakota County Soil and Water Conservation District (SWCD), and Goodhue County SWCD staff are interested in starting projects in the subwatershed as soon as possible. Projects such as sediment control basins, grassed waterways, grade-control structures, and alternative farming practices are desired. Landowners interested in implementing projects using cost-share funding and technical assistance should email Travis Thiel (travis.thiel@co.dakota.mn.us) or call 952-891-7546.



Etter Creek area in Dakota and Goodhue counties.

Finding a fix for hot stormwater ponds

Some like it hot. Trout do not.

When land is converted from prairie, woodland, or agriculture to urban development, the increase in roofs, roads, and parking lots (impervious surfaces) generates more stormwater runoff and pollutants. Since the early 1980s, urban development typically manages runoff with stormwater pipes and ponds to carry and temporarily retain runoff during rain storms. This system reduces flooding, and allows pollutants to settle to the bottom of the pond instead of entering our wetlands, streams, rivers, and lakes.

During the balmy months of July and August, these impervious surfaces and stormwater ponds heat up. Stormwater ponds can fill up when it rains and discharge water as hot as 90 degrees F. This can be a big problem for brown trout in any of the Vermillion River's designated trout streams. Stream temperatures exceeding 66 degrees F cause trout to lose their appetites, become lethargic, and stop growing. Additional warm water decreases available oxygen, making it hard for trout to breathe. Temperatures exceeding 72 degrees F for a few hours or more can prove fatal.

Based on the findings of its 2006 U.S. Environmental Protection Agency (EPA) Targeted Watersheds Grant, the Vermillion River Watershed Joint Powers Organization (VRWJPO) is concerned about warm water from stormwater ponds and impervious surfaces flowing into the Vermillion River and affecting the unique self-sustaining brown trout population. In 2009, the VRWJPO received an EPA Section 319 Grant to install demonstration practices that can cool warm water before it enters the stream. The project includes monitoring the demonstration practices to determine which practices are most effective.

The VRWJPO funded the Dakota County Soil and Water Conservation District (SWCD) to evaluate 27 ponds near the watershed's trout streams and identify which ponds regularly discharge warm water. Based on that identification, 13 of those ponds were intensively monitored to determine where practices could be installed to reduce the temperature of the discharges.

The data showed that ponds were consistently warm during July and August, and warm water was discharged during and after heavy rain. However, the ponds varied greatly in how often and for how long they discharged the warm water.

The surface, outlet, and air temperatures at a pond in Lakeville (pictured) were recorded continuously from June through September 2010. The highest discharge temperature was recorded on July 15, when a half-inch rainfall pushed 82 degree F water out of this pond toward the trout stream.

On approximately 10 occasions, water at or above 72 degrees F left the pond during the June through September research period. Warm water from the pond's surface may cool on its way to the stream and mix once it arrives there, but these regular discharges of warm water from ponds clearly play a role in increasing stream temperature.

Dakota County SWCD selected four of the 13 ponds, including the Lakeville pond, to use for thermal best management practices (BMP) demonstrations, all of which will be implemented this spring and summer. Read more about the project at www.vermillionriverwatershed.org, search *Section 319* or call 952-891-7086.





WPC Commissioner Glynn has ‘passion for water ecology and habitat’

John Glynn was inspired to join the Vermillion River Watershed Planning Commission (WPC) because he has “a passion for water ecology and habitat” and enjoys the outdoors (hockey, golf, fishing, riding motorcycle).

As the WPC’s sole representative from Scott County, John is a concerned, involved, and educated voice for the area surrounding the Vermillion River headwaters. The headwaters of the Vermillion River is “something very significant, right here in our back yards.”

His advice to prospective WPC members: “Don’t think you’re not eligible to be involved. If you have a passion for water ecology and habitat, this is a great place to invest your time and energy. There is information available to get you up to speed and become justifiably involved in a short time if you are genuinely interested.”

John enjoys applying critical thinking skills to each topic or project brought before the WPC. His advice for new WPC members is to attend each monthly WPC meeting and observe the Technical Advisory Group (TAG) meetings that are held every other month prior to the WPC meetings. “Technical and scientific information is presented in a friendly, understandable manner,” he says.

John was appointed to a three-year term as WPC commissioner in 2009 and his first term ends in December 2011. John and his youngest two children reside in Elko New Market.

Want to get this newsletter by email?

Send an email to water@co.dakota.mn.us and write subscribe to VRWJPO newsletter in the subject line.

Watershed invites capital improvement project proposals

Cities, townships, and other public and private entities in the Vermillion River Watershed are invited to submit capital improvement project (CIP) proposals for cost-share assistance from the Vermillion River Watershed Joint Powers Organization (VRWJPO). While cities receive the most cost-share assistance, the VRWJPO has also supported watershed improvement projects proposed by business entities and other public agencies. All CIP proposals planned for 2012 construction (or later) must be submitted to the VRWJPO by June 24, 2011.

Among the highest priorities for watershed projects are protecting the conveyance capacity of the Vermillion River and its primary tributaries; completing total maximum daily load (TMDL) analysis on impaired waters in the watershed; reducing pollutant loads required by a TMDL study; establishing buffers for water quality improvement; correcting erosion; reducing flooding; preserving and improving habitat; and restoring native vegetation. See a list of water quality improvement priorities in Section 8.1 of the VRWJPO *Watershed Plan* (www.vermillionriverwatershed.org, search *watershed plan*) or request a printed copy of Section 8.1 by calling 952-891-7000.

See the VRWJPO policy for CIP cost-share project submittal, consideration, and funding requests (www.vermillionriverwatershed.org, search *capital improvement projects*). This web page also includes examples of projects that the VRWJPO has previously funded. Projects will be submitted to the Vermillion River Watershed Joint Powers Board for approval and funding decisions. If cost-share assistance is approved, it will be provided as reimbursement after successful completion of the project.

For more information or to discuss a potential project idea, call 952-891-7546 or email Travis Thiel (travis.thiel@co.dakota.mn.us), VRWJPO Watershed Specialist.

Watershed-wide study of impaired waters may begin in July

Impaired waters are rivers, lakes, and streams that do not meet one or more water quality standards and are considered too polluted for their intended uses, according to the U.S. Environmental Protection Agency and the Minnesota Pollution Control Agency (MPCA). Several Vermillion River stream reaches and lakes are listed as impaired, and the first step in improving or restoring impaired waters is a Total Maximum Daily Load (TMDL) study to find out how pollutants are getting into the water bodies and how to reduce those pollutant loads. The MPCA asked the VRWJPO to conduct a watershed-wide TMDL study beginning in 2011, and will provide funding for the effort. Currently, portions of the Vermillion River and tributaries do not meet water quality standards for fecal coliform and *E.coli* bacteria, turbidity (cloudy or mucky water), and dissolved oxygen (not enough to support aquatic life). A meeting to discuss the watershed-wide TMDL will take place in early summer. Read an impaired waters fact sheet at www.vermillionriverwatershed.org, search *impaired waters*, or call 952-891-7546 for more information.

Year in review: annual report is online

Each year, the Vermillion River Watershed Joint Powers Organization (VRWJPO) submits an Annual Activity and Financial Report to the Minnesota Board of Water and Soil Resources to document implementation of the Watershed Plan. The 2010 report includes highlights of projects, policies, and research findings, plans for 2011, and an overview of how the VRWJPO spent public dollars in the previous year. After May 1, view the Activity Report and Financial Statement at www.vermillionriverwatershed.org, search *annual report*, or call 952-891-7086 for a printed copy.

Want to read this newsletter on your computer instead?

We'll save on the number of newsletters we print, and you'll reduce the amount of mail you receive.

Send an email to water@co.dakota.mn.us and write *subscribe VRWJPO newsletter* in the subject line, or call 952-891-7000. Instead of mailing a newsletter to you, we'll let you know by email when the next issue of the newsletter is posted on our website, www.vermillionriverwatershed.org.



Spring into exciting stewardship events

- Plant Trees for the Vermillion River, June 4, Saturday, 9 a.m. – Noon, Vermillion River Aquatic Management Area, call Friends of the Mississippi River (651-222-2193 x23) to register – plant trees to stabilize streambanks, improve habitat, and shade the river's cold water trout habitat.
- Birding at the Vermillion River Wildlife Management Area, May 21, Saturday, 7-9 a.m., Vermillion River Wildlife Management Area (WMA) in Empire Township, call Friends of the Mississippi River (651-222-2193 x23) to register – see indigo buntings, yellow warblers, and Baltimore orioles in restored wet meadow and prairie habitat.
- Saturday, June 11 is National Get Outdoors Day at Dakota County Parks (*Forever Wild*), free events at Lebanon Hills Visitor Center include "Take a Kid Fishing" (10 a.m.), "Geocaching for Boy Scouts" (2 p.m.), and a fleet of canoes, kayaks, and stand-up paddles for visitors to try out from 1-4 p.m. Thompson Park also offers "Take a Kid Fishing" at noon. No pre-registration is required. Find out more at www.co.dakota.mn.us, search *County Parks calendar* or call 952-891-7000 for more information.

Get your feet wet – as a Watershed Planning Commissioner

The Vermillion River Watershed Joint Powers Board currently seeks applicants for two WPC positions.

The Vermillion River Watershed Planning Commission (WPC) consists of nine commissioners who represent citizens in their communities and advise the Vermillion River Watershed Joint Powers Board about water quality and quantity issues, policies, and projects in the watershed. Commissioners serve a three-year term and attend a monthly meeting.

To apply for a vacant position, complete an application form for advisory groups. Download the form at www.vermillionriverwatershed.org, search *planning commission*, or request an application form by calling 952-891-7000.





Continuous Learning: Long-term Monitoring in Vermillion River

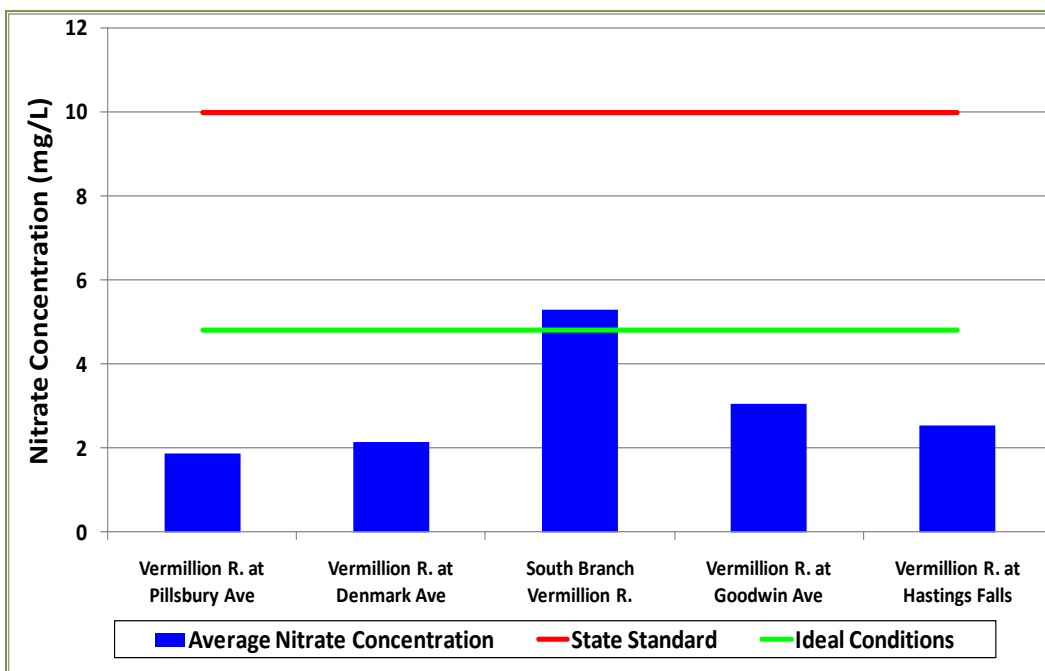


There's a long history of water quality and quantity monitoring in the Vermillion River watershed, and we continue to discover, learn, and track trends. Since 2000, the SWCD has been monitored in partnership with the Vermillion River Watershed Joint Powers Organization (VRWJPO). Water samples are collected bi-weekly and during runoff events such as rainstorms and snowmelts. Samples are analyzed for pollutants such as nutrients, bacteria, and sediment. Monitoring results are used to establish long-term data, provide trend analysis, estimate pollutant loading, and ensure that water quality standards are being met. Here are some results from 2010:

Temperature: The Vermillion River is home to a thriving trout population and is widely regarded as one of the best trout fishing locations near the Twin Cities. Trout can only survive in relatively cold, oxygen-rich waters, so summer water temperatures are continuously monitored at numerous locations in the watershed. In general, water temperatures in 2010 were within the tolerances of brown trout. However, at times during the hottest parts of the summer, water temperatures exceed the ideal range for adult brown trout. During these times, fish may seek out cool, deep pools until temperatures decrease. Water temperatures are influenced by many factors including air temperature, groundwater inputs, shading from vegetation, discharge from stormwater ponds, suspended materials in the water column, and precipitation.

Bacteria: In 1998, the Vermillion River was listed as impaired due to high bacteria levels. 2010 results indicate the River continues to exceed the state standard at many sites, under most conditions. There are many sources of bacteria pollution including failing septic systems, wildlife like geese and ducks, pet waste, feedlots, pastures, and land-applied manure. Bacteria may also live and grow in stream sediments. The SWCD and the VRWJPO continue to monitor bacteria, mitigate known sources, and investigate potential sources.

Nitrate: Nitrate (NO₃) samples collected from the Vermillion River in 2010 indicate that nitrate concentrations are slightly higher in the eastern portion of the watershed and highest in the South Branch sub-watershed. Similar to previous years, levels are generally near or below the average for minimally impacted (ideal) streams in our ecoregion (see graph). Possible sources of nitrates include wastewater treatment plants, urban stormwater, failing septic systems, agricultural runoff, and groundwater inputs.



VOLUNTEER!

In 2011, the SWCD and the VRWJPO will continue monitoring throughout the Watershed. Citizen volunteers are encouraged to assist with additional water monitoring activities. Contact Travis Bistodeau at the SWCD (651) 480-7783 for more information on the Citizen Stream Monitoring Program.

Mississippi Makeover Update

The Mississippi Makeover Project, coordinated by the SWCD, continues to bring stakeholders and technical experts together to plan for restoration in Spring Lake near Hastings, the Lower Vermillion River, and Pool 3 of the Mississippi River. Currently, the biggest task is the completion of a written plan to guide restoration in this area. The Citizen Advisory Group (CAG) is weighing in the development of the plan, while technical experts drafted a long term plan for monitoring each of the indicators of restoration.

Through this project, we continue to collaborate with other groups like the Lake Pepin Legacy Alliance and the National Park Service to inform the public about water quality issues in the Mississippi River and the soon-to-be released study (Total Maximum Daily Load Study) outlining pollution sources and necessary reductions for the South Metro Mississippi River (from its confluence with Minnesota River to the upper portions of Lake Pepin).

Watch for more on this project as the SWCD recently signed an agreement with the Minnesota Pollution Control Agency to continue the Mississippi Makeover Project through the end of next year. More information at: www.dakotaswcd.org/wshd_missmak.html.

Driving Tour Available In the Lower Mississippi River WMO

The Lower Mississippi River Watershed Management Organization (LMRWMO) is working to better educate its residents and local officials – especially as it develops its next 10-year Watershed Management Plan. With a grant from Dakota County, the LMRWMO recently hired the SWCD to develop a tour of local projects and practices that help improve water resources or bring light to water resource issues within the watershed. Anyone interested can take the self-guided driving tour featuring 10 different practices including raingardens, shoreline restoration projects, bioswales, ponds, and others. Download the tour booklet from their website at www.dakotacountywcd.org/watersheds/lowermisswmo/.



A Win-Win Opportunity: Conservation Corpsmembers Coming to SWCD Office

The SWCD is pleased to announce the addition of two Minnesota Conservation Corpsmembers that will work in our office this summer. This extra help is coming to us through a program that matches Corpsmembers with SWCD offices across the state, while appropriations from the Minnesota Environmental and Natural Resources Trust Fund picks up the cost of their wages. The Corpsmembers will get started here near the end of May and will work with us through the summer. Not only will the SWCD benefit from the extra hands, the interns will gain valuable experience in a variety of areas like installing raingardens, performing water quality monitoring, surveying for agricultural best management practices, and some mapping exercises.

Nolan Craner is a student at the University of Wisconsin – River Falls where he will earn a Bachelor of Science in Conservation this fall. His areas of interest and knowledge include municipal waterworks engineering and ecology of lakes and streams.



Tracy Lawler will earn a Bachelor of Science degree in Environmental Sciences, Policy, and Management this December from the University of Minnesota. Her experience includes restoring native shorelines, using Geographic Information Systems and developing educational signage on the importance of buffers.

To sign up for emailed notification when the SWCD newsletter is available online, go to www.dakotaswcd.org

Printed on recycled paper 

- Seizing the Opportunity of Redevelopment
- Vermillion River Watershed News
- Cash Incentives for Filter Strips

INSIDE THIS ISSUE.....

Dakota County Extension and Conservation Center
4100 220th St. W. Suite 102
Farmington, Mn 55024-8087

DAKOTA COUNTY SOIL &
WATER CONSERVATION DISTRICT