



Friends of the Mississippi River

Working to protect the Mississippi River and its watershed in the Twin Cities area

www.fmr.org

Spring 2010

Seizing the Opportunity to Address Runoff Pollution into the Mississippi River

By Trevor Russell

Zebulon Pike, an early explorer of the Mississippi River noted, "The water of the Mississippi, since we passed Lake Pepin has, been remarkably red; and where it is deep, appears as black as ink. The waters of the St. Croix and [Minnesota Rivers] appear blue and clear for a considerable distance below their confluence [with the Mississippi]." The colors were different shades of a healthy river.



Mississippi River

Minnesota River

Sadly, the Mississippi River is no longer blue and clear, and the impacts of pollution are impossible to ignore.

Fire on the Water

On June 22, 1969, a summer day is interrupted when a river – the Cuyahoga River in Cleveland Ohio - bursts into flames. It was at least the 10th time since 1868 that the river had caught fire. Subsequent political and cultural pressure to clean up the nation's waters resulted in the passage of the Water Pollution Control Act, commonly known as the Clean Water Act (CWA) of 1972.

Over the next three and half decades, the Mississippi River was the beneficiary of the CWA's limits on point-source pollution. Sewage treatment plants, chemical and industrial wastes, animal feedlots, and other major pollution sources were given strict pollution permits.

Yet, almost 38 years after Congress demanded the protection of the "chemical, biological and physical integrity of our nations waters," unregulated non-point pollution is impairing the Mississippi River from its headwaters to the Gulf of Mexico.

ABOVE: From its confluence with the Minnesota River to Lake Pepin, the Mighty Mississippi has too much sediment to meet state water quality standards. Photo courtesy of the Minnesota-Wisconsin Boundary Area Commission and Metropolitan Council

BELOW: An image of the November 1952 Cuyahoga River Fire, which burned for three days and did 1.5 million dollars in damage. (photo credit: James Thomas, from Cleveland Press Collection, Cleveland State University Library by way of www.EPA.gov)



Non-Point Pollution & the Mississippi River

The best place to witness the impacts of non-point pollution is at the confluence of the St. Croix and Mississippi Rivers near Prescott, Wisconsin.

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Mission

Friends of the Mississippi River engages citizens to protect, restore and enhance the Mississippi River and its watershed in the Twin Cities region.

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From the Director

Anyone who has paddled a canoe past the confluence of the Minnesota and Mississippi Rivers knows it. Citizen water quality monitors know it. The National Academy of Sciences knows it.



Whitney Clark,
Executive Director

It's like an ugly family secret that everyone knows but nobody dares openly discuss. It's the so-called "elephant in the room." Runoff pollution from agriculture is choking our rivers and until we admit that we have a problem, the Mississippi River will not meet state water quality standards and we will just pass this mess on to our children.

There, I said it.

Friends of the Mississippi River is confronting this issue directly as we work to influence Minnesota's plan to clean up Lake Pepin and the south metro portion of the Mississippi River (see cover story for more details). Since the Clean Water Act was signed into law by President Nixon in 1972 we've made good progress on cleaning up the nation's "point source" polluters. These are pollution sources that can be pin-pointed on a map or the pollution is clearly emitted from a pipe or a smokestack. What the Clean Water Act did not do a very good job of addressing is "non-point" pollution. These are numerous and widespread sources such as agricultural or urban runoff pollution.

These non-point sources now make up the bulk of our water pollution problem in the

Mississippi River and most of this is from agriculture. Lake Pepin is a case in point. About 56% of Minnesota drains to Lake Pepin including the Upper Mississippi, St. Croix and Minnesota River basins. Of all the sediment pollution to Lake Pepin, 74% comes from the Minnesota basin where the predominant land-use (78%) is agriculture. In the case of phosphorus, a nutrient that causes algae blooms and the dreaded green scum, in 2006 the Minnesota River dumped 3.2 metric tons per day into Lake Pepin making-up 52% of the total phosphorus pollution to Lake Pepin.

...until we admit that we have a problem, the Mississippi River will not meet state water quality standards and we will just pass this mess on to our children.

Agriculture is a critical part of our State's economy and as we address this problem we'll have to make sure this sector remains strong and competitive. But at the same time it is clear that voluntary best management practices and lack of accountability that have characterized our approach to the problem for the past 40 years aren't getting the job done. State policymakers need to take a new and more aggressive approach to ensuring that the buck stops here and the rivers and streams we pass on to our children are clean and healthy.

Help FMR Make a Bigger Impact!

By Heather Haynes

More than ever YOUR support is what makes Friends of the Mississippi River (FMR) successful and effective! If you're not a member yet, please consider joining today with the enclosed reply envelope or via the web site at www.fmr.org/support. If you are already a member, please consider our Monthly Giving Program to save resources and make your gifts really add up, giving a Gift Membership, including FMR in your estate plans and leaving River Legacy, or simply making an additional gift today.



Please visit the web site or call Heather at 651-222-2193 x20 to find out more about how YOU can help FMR have a greater impact for the river and for your community. Thank you!

Program Highlights

Summer of Stewardship: A preview

By Karen Solas

Each year, Friends of the Mississippi River's (FMR) volunteers play a vital role in protecting, enhancing, and restoring the river—2010 will be no exception. Those of you looking to get your hands dirty for the river will find plenty of opportunities to remove invasive species like garlic mustard, buckthorn, and spotted knapweed, as well as seed collections, clean-ups, and plantings. Here are some exciting new developments for the 2010 stewardship season:

- ♦ FMR has been working on a management plan for Riverside Park in the Minneapolis river gorge, and coordinating with the West Bank Community Coalition and Minneapolis Park & Recreation Board to begin restoration efforts this spring. There will likely be opportunities for volunteers to participate in this exciting new restoration project in the heart of the city.
- ♦ In addition to continuing work on the prairie restoration that begun at St. Paul's Crosby Park in 2008, FMR volunteers will also implement the beginning phases of a shoreline restoration project along Upper Lake at the park, thanks to support from Capitol Region Watershed District.
- ♦ The Gorge Leadership Team is entering its third season, and for the first time will expand their reach to the St. Paul side of the river gorge. This team of trained super-volunteers will tend a high quality area of Hidden Falls Park in St. Paul where native spring ephemeral wildflowers are threatened by invasive garlic mustard, and will also assist with the continued management of the prairie restoration at Crosby Park.
- ♦ Vermillion Stewards volunteers will continue working on a streambank stabilization project at an Aquatic Management Area along the Vermillion River, in partnership with the Minnesota Department of Natural Resources



TOP: Members of the Gorge Leadership Team wielding weed wrenches prepare to pull buckthorn at the maple basswood forest in the Minneapolis river gorge. Photo courtesy of Carolyn Carr.

LEFT: Volunteers remove invasive buckthorn from the Willmar property, now part of a protected area along the Vermillion River. Photo courtesy of Karen Schik.

RIGHT: Volunteer Sara Muchowski plants a native fern into a steep bank as part of a slope stabilization project along the river in St. Paul. Photo: Karen Solas/FMR.

and the University of Minnesota Extension. These efforts will improve water quality and wildlife habitat along this trophy trout stream.

Check our events calendar at www.fmr.org/participate/events for details and registration information as the events season unfolds, and we'll see you on the river!

Landowner Steps Up to Help the River

By Tom Lewanski

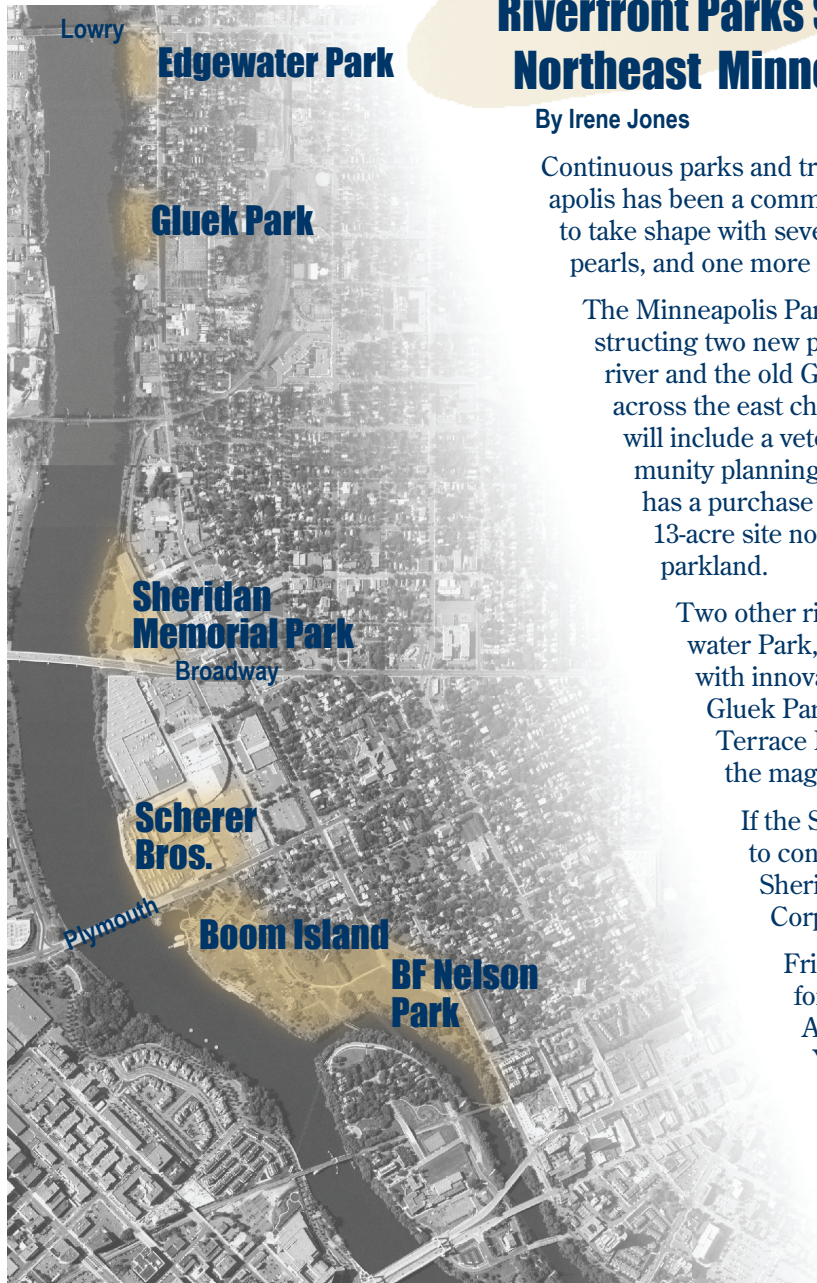
Ms Bonnie Wilmar is one of those landowners that Friends of the Mississippi River (FMR) loves to help. Bonnie owns land along the Vermillion River in a rural part of Dakota County. She demonstrated her commitment to conserving her land by enrolling it in FMR's Heritage Land Registry. In 2005, she submitted an application to the Dakota County's land protection program to begin the process of legally and permanently protecting the land. We are happy to say that the conservation easement was finalized in 2008.

Guided by a Natural Resource Management Plan, developed by FMR's Ecologist Karen Schik, Bonnie and FMR have been busy removing exotic invasive woody plants in the woodland area along the river and restoring a large area of agricultural land to prairie. Last October, a group of volun-

teers converged on Bonnie's property to remove and stack buckthorn and honeysuckle, all in the effort to improve the habitat of the land and improve the water in the river. The restoration activities are being funded by Dakota County FNAP, the Dakota County Soil and Water Conservation District, Bonnie herself, and Metro Conservation Corridors (funding provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources).

Parcel by parcel, those organizations, landowners, and community members working to improve the Vermillion and Mississippi Rivers are making positive changes on the land—and Bonnie Wilmar is one of the landowners who is leading the way. Thanks, Bonnie!

Program Updates



United States Geologic Survey; Bob Spaulding/FMR

Riverfront Parks Sprout Up in Northeast Minneapolis

By Irene Jones

Continuous parks and trails along the Mississippi River in Northeast Minneapolis has been a community vision for decades. Now that vision has begun to take shape with seven parks stretched out along the river like a string of pearls, and one more is in the works.

The Minneapolis Park and Recreation Board (MPRB) is presently constructing two new parks. Sheridan Memorial Park, located between the river and the old Grainbelt Brewery, and parkland at the B.F. Nelson site across the east channel from Nicollet Island. Sheridan Memorial Park will include a veterans memorial and public art – the result of community planning that brought diverse interests together. MPRB also has a purchase agreement with Scherer Bros. Lumber to purchase a 13-acre site north of the Plymouth Bridge, and develop some of it as parkland.

Two other riverfront pearls recently underwent renovation: Edgewater Park, south of Lowry, was constructed to treat stormwater with innovations such as porous pavers and rain gardens, and Gluek Park had polluted soil removed and replaced. Marshall Terrace Park, Boom Island and St. Anthony Parkway round out the magnificent seven parks.

If the Scherer Bros. site becomes a park, MPRB will be able to connect the trails from St. Anthony Falls all the way up to Sheridan Memorial Park. A trail easement between Graco Corp. and the river provides the key connection.

Friends of the Mississippi River is supporting these efforts through our work with the Above the Falls Citizen Advisory Committee and other community partners. You can support expanding riverfront parks too, by asking the legislature and the governor to support the bonding request for Sheridan Memorial Park, and by thanking the MPRB staff and board for their leadership in expanding riverfront parks. Funding from the Mississippi Watershed Management Organization and the Metropolitan Council has also been instrumental to the success of these efforts.

Critical Area Rulemaking Process Commences

By Irene Jones

The Mississippi River Critical Area, a protected corridor from Dayton to Hastings will be getting new state rules. The Minnesota Department of Natural Resources (DNR) has been directed by the state legislature to conduct rulemaking for the corridor, which will include identification of significant river resources, bluff mapping, delineation of new land use districts, and minimum development standards for each district.

There will be opportunities for public involvement. The DNR

has published a request for comments due by March 22, 2010 and they will also ask for comments on the draft rule in late 2010 or early 2011. The DNR is organizing stakeholder advisory groups for each geographic reach of the river to participate in drafting the rules. Once the draft rule is published in the state register, formal review, and public hearings will be conducted by an administrative law judge.

The best way to track the DNR rulemaking process is to visit their website: http://www.dnr.state.mn.us/waters/watermgmt_section/critical_area/rulemaking.html.

Restoring a Woodland: One Stem at a Time

By Karen Schik

On a recent balmy January day, crews from the Minnesota Conservation Corps, hired by Friends of the Mississippi River (FMR), began the process of transforming a degraded woods to oak woodland.* This property was degraded by decades of grazing, which resulted in an abundance of thorny plants distasteful to cows - prickly ash and gooseberry – and creating conditions conducive to non-native invasive shrubs – commonly buckthorn and tartarian honeysuckle. While no cows have seen the site in nearly 40 years, the plants remained and proliferated. Restoration will focus initially on removing the invasive shrubs and re-opening prairie nodes and savanna areas. Re-introducing natural processes such as fire will also be a primary method for allowing the plant community to recover. If needed, native plants or seed may later be established.

Located in Ravenna Township, in the southeast corner of Dakota County, this property is important for its context in the landscape. Owners of this and two adjacent parcels, totaling about 170 acres, enrolled in the Dakota County Farmland and Natural Areas Program, providing permanent protec-

tion for the expanse of rolling grassland, savanna, and oak forest. These properties are within a designated greenway corridor, contain relict native plant populations, and harbor drainageways that lead to the Vermillion River. The cover of native vegetation is critical for stability of the highly erodible soils and protecting downstream water quality. FMR developed ecological management plans for all the properties, and hopes to work with the landowners on the restorations.



Crews work to remove exotic brush and other woody plants from a prairie opening in a degraded woodland. Photo: Karen Schik/FMR

*Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

The Mississippi Makeover

By Trevor Russell

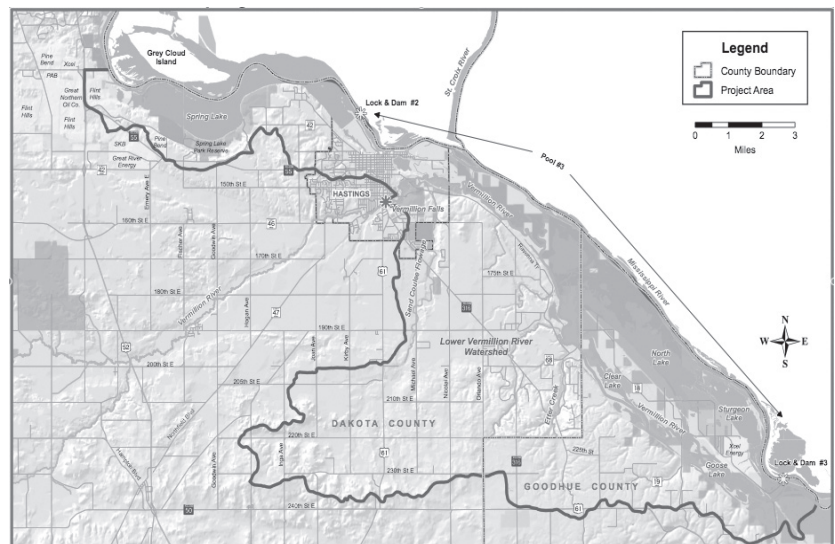
The Mississippi River above Lake Pepin, the Lower Vermillion River, and Spring Lake (near Hastings) are polluted with sediment and algae.

The Mississippi Makeover Project is aimed at restoring these waters to create a healthy ecosystem that attracts abundant wildlife, offers recreation opportunities for outdoor enthusiasts, and provides economic benefits to local communities.

To accomplish this, the Mississippi Makeover Project engaged a Citizen Advisory Group (CAG) that included Friends of the Mississippi River (FMR) along with a number of elected officials, citizens, and representatives from non-governmental organizations, industry, and commerce. After several years of work, the CAG has finalized a series of restoration targets, including goals for future water clarity, aquatic vegetation, sedimentation, and aquatic species.

In order to achieve these goals, the Mississippi Makeover calls for some exciting river restoration initiatives, including island building in Pool 2 (Spring Lake) and Pool 3, as well as restoration and river cleanups.

Additionally, the plan calls for ‘draw downs’ in both Pool 2 and Pool 3. A drawdown is designed to arti-



The Mississippi Makeover is working to restore Pools 2 & 3, along with the Lower Vermillion River in the southeastern portion of the metro area, outlined in black above. Diagram: Dakota County

ficially mimic seasonal variations in flow by lowering the pool’s water level by 1 to 2 feet for several months during the summer.

The drawdown exposes the river’s natural shoreline seed bank and allows those seeds to germinate. This vegetation helps provide aquatic habitat, reduced riverbank erosion, and absorb excess river nutrients as standard water levels are reestablished again in the fall.

For more information about the Mississippi Makeover, please visit: http://www.dakotaswcd.org/wshd_missmak.html.

The Clean Water Act

General Information

- Originally signed into law in 1972
- Major revisions and amendments in 1977 and 1987
- Goal: “protect the chemical, biological and physical integrity of our nations waters.”

Water Quality Standards

- States set water quality standards that must meet or exceed federal guidelines.
- Standards define how much of any particular pollutant can be allowed in surface and ground waters.
- Standards for a water body depend on the designated use(s) of that water body. Most of our state’s waters are class 2b waters, protected for aquatic life and human recreation. Drinking water sources and other high-quality waters have stronger standards.
- Standards apply to a wide range of pollutants, including bacteria, chemicals, nutrients, turbidity, and mercury.
- For more information on Minnesota’s standards, visit the Water Quality Standards page at the Minnesota Pollution Control Agency’s web site.

Clean Water Act Section 303(d) in plain English:

- States must assess all waters and determine if they meet water quality standards.
- Waters that do not meet those standards must be added to the Impaired Waters List (the 303(d) list). The list is updated every other year.
- States must conduct “Total Maximum Daily Load” (TMDL) studies in order to set pollutant load reduction goals needed to restore the impaired waters.

Total Maximum Daily Load (TMDL):

Total Maximum Daily Load (Number):

- The maximum amount of a pollutant that a water body can receive and still meet water quality standards.

Total Maximum Daily Load (Study):

- An EPA approved study that identifies pollutant sources and assigns reductions from those sources sufficient to ensure that the water body will once again meet water quality standards.

Continued from cover

Here, the relatively clear St. Croix River stands in stark contrast to the turbid (cloudy) Mississippi. The vast majority of this turbidity is from sediment and nutrients washing into the system from the Minnesota River basin.

The largely agricultural Minnesota River Basin is a prime example of how the Clean Water Act is failing to meet the needs of today’s water resources. The Basin’s non-point sources like farm runoff, urban stormwater runoff, and other pollutants remain largely unregulated.

“The Clean Water Act has helped communities make great strides in cleaning up the Mississippi River,” says Whitney Clark, Friends of the Mississippi River’s (FMR) Executive Director, “but unregulated pollutants are continuing to degrade our waters. It is time for the state to address the largest sources of pollution, rather than just the ones that are the easiest to regulate.”

The Minnesota River represents the largest source of sediment to the South Metro Mississippi River — the human impacts of agriculture and engineered drainage are the primary causes.

From the latter part of the nineteenth century through the 1950s, Minnesota law encouraged expansion of public drainage ditches in agricultural areas. Ditches, stream channel modifications, and wetland losses combined to increase the volume of peak flows during spring thaws and rain events. Increased peak flows create a ‘fire hose’ effect, often flushing vast quantities of sediment (soil) downstream.

Crop fields are also non-point pollution sources. Heavy spring rains in unplanted fields wash topsoil into nearby waters. Row crops often require fertilizers, pesticides and herbicides that also contribute to polluted runoff. Minnesota’s 20-year-old rule that requires vegetated stream buffers on agricultural land was designed to prevent much of this agricultural runoff, but it is rarely enforced. According to a recent report by the Minnesota Board of Water and Soil Resources, at least 300,000 acres of crops are farmed in direct violation of stream buffer laws annually.

Unfortunately the Clean Water Act, for all its strengths, failed to include meaningful agricultural and rural non-point source regulation and enforcement. The consequences of non-point pollution are being felt just downstream from the St. Croix confluence, in Lake Pepin.

Lake Pepin, a natural lake on the Mississippi River, drains over 48,000 square miles (about half of Minnesota) and is home to world-class boating, fishing, and other water recreation activities. Though the lake covers more than 40 square miles, at present rates of sedimentation the predicted lifespan of the upper portion of the lake is just 90 years. The entire lake will be filled-in in roughly 300 years. The culprit: almost one million metric tons of upstream sediments washing into the lake each year.

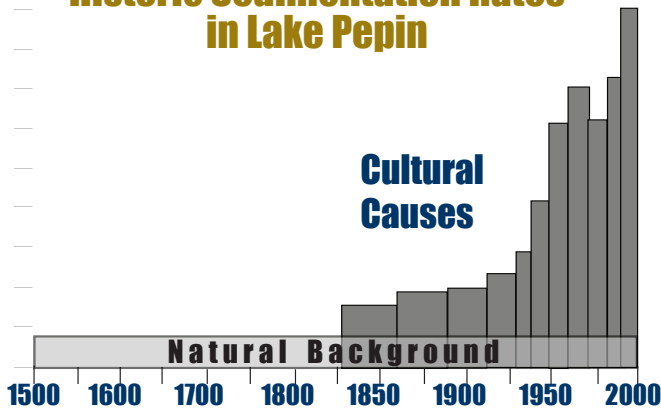
Mississippi River Turbidity Standard & TMDL

In 2004, Minnesota Pollution Control Agency (MPCA) monitoring results landed the South Metro Mississippi River on the state’s impaired waters list. Since then, Minnesota and Wisconsin along with a wide range of stakeholders (including FMR) have joined forces to chart a course for a cleaner Mississippi River. The process, called a Total Maximum Daily Load or TMDL, is designed to identify sources of Mississippi River turbidity and assign pollution reductions accordingly (see sidebar for more information on TMDLs).

FMR has been participating in the TMDL’s Stakeholder Advisory Group and has led the formation of a coalition of environmental groups working to ensure the state takes action to address unregulated non-point pollutants in our waters.

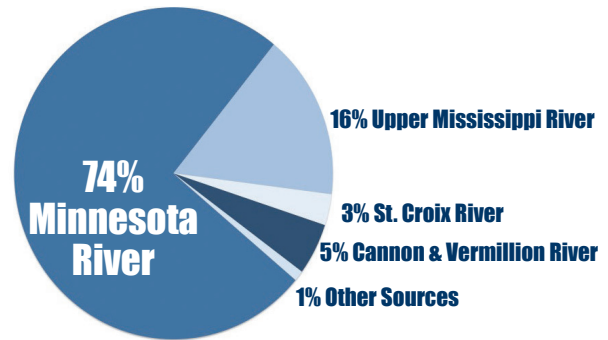
The draft TMDL, due for public hearing in late summer 2010, calls for 50% reductions in total suspended sediment flowing into the Mississippi River from the Minnesota and Cannon Rivers. The upper Mississippi River (above Lock & Dam #1), the St. Croix River, the Vermillion River, and other tributary streams will be required to meet 20% reductions. Many cities will need 25% reductions in turbidity from urban stormwater.

Historic Sedimentation Rates in Lake Pepin



Source: MPCA

Sediment Sources for the Mississippi River & Lake Pepin



Source: MPCA

While these goals may seem high, there are a number of simple steps that can make drastic improvements in water quality.

“Although the 50% reduction target in the Minnesota and Cannon Rivers may appear daunting to some,” says Norm Senjem of the Minnesota Pollution Control Agency, “we have actual monitoring evidence to show that it can be achieved with fairly modest land use changes – particularly if they are focused along rivers and streams.”

For the last decade, the MPCA and others have monitored the West Fork Beaver Creek, a small tributary of Hawk Creek near Renville, Minnesota. During this period, the watershed has seen a 50% reduction in suspended sediments and a 25% reduction in phosphorous. The progress was made through the targeted conversion of about 3% of the land area into perennial streambank vegetation, along with wetland restoration activity.

The vegetated stream buffers provide a protective zone between the riverbank and crop rows where plant roots help hold soils in place. Buffers also capture agricultural chemi-

cals flowing off fields before they reach nearby waters. When combined with other practices like new drainage techniques that encourage more infiltration, ravine restoration, and stream bank armoring, dramatic reductions in runoff pollution are a real possibility in rural watersheds.

Through the South Metro Mississippi River Turbidity TMDL, FMR is working to engage a broad range of agriculture, recreation, public health, and water quality stakeholders to encourage similar activities throughout the Minnesota River basin.

With a little patience, sound science, and targeted restoration, the days of a clean and healthy Mississippi River are once again visible on the horizon.

For more information about the South Metro Mississippi River Turbidity TMDL, visit the Minnesota Pollution Control Agency’s website at: <http://www.pca.state.mn.us/water/tmdl/tmdl-lakepepin.html> or contact FMR’s Watershed Program Director, Trevor Russell at (651) 222-2193 extension 18, or by email at: trussell@fmr.org.

FMR welcomes new Board Chair Stewart Crosby

FMR is pleased to announce that Stewart Crosby, a member of the Board of Directors since 2002, assumed the duties of Board Chair in January. He takes the gavel from founding Board member Peter Gove who served as Chair since 2008. By day, Crosby is a landscape architect with SRF Consulting Group whose practice focuses on parks, trails and transportation design. In his volunteer hours he is a passionate advocate for establishing a sustainable relationship between our built environment and the natural world.

“When FMR was founded,” said Crosby, “a key goal was to restore respect for the river which had been historically neglected and mistreated. I think that goal has largely been met in the Twin Cities. Our challenge now is to secure the long-term health of the Mississippi River, whether through conserving important natural areas, passing protective water

quality policy or carefully regulating riverfront land use. I think we’re well on our way to accomplishing this. It is an exciting time for those of us who love the Mississippi River.”



In addition to his work for FMR, Crosby serves on the Boards of Directors of the Trust for Public Land and the Quetico-Superior Foundation. He also recently completed a term as Board Chair of the Carolyn Foundation.

Crosby is an avid outdoorsman and an enthusiastic paddler. This summer he plans to take part in FMR’s seventh annual Mississippi River Challenge event. He is one of only a handful of people who have participated in the event every year. “I wouldn’t miss it,” he said, “it is one of the highlights of my year and probably the coolest event of its kind anywhere. We’ve got to work hard to protect this great river, but we’ve got to remember to get out and enjoy it too.”



Friends of the Mississippi River

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Rice Creek Watershed SHEP

By Trevor Russell

Friends of the Mississippi River's 2009 Rice Creek Stream Health Evaluation Program (SHEP) results are in, and the program once again shows strong stream health scores in Rice Creek Watershed streams.

SHEP volunteers spent the fall monitoring aquatic insects that live in the stream bed (benthic macroinvertebrates) in Hardwood Creek, Clearwater Creek, and Rice Creek — the three major stream systems in the Rice Creek Watershed.

Benthic Macroinvertebrates are a collection of insects and crustaceans such as stoneflies, midges, snails, and crayfish that live along the streambed and act as living stream health indicators. Macroinvertebrates serve as good indicators of overall stream health for several reasons:

- ♦ They are relatively common and easy to collect.
- ♦ They occupy several levels in the food chain (trophic levels) within a lake or stream.
- ♦ They cannot move to avoid poor water quality conditions and are therefore susceptible to pollution over longer periods of time.
- ♦ Their diverse responses to stream health stressors offer a clear picture of stream conditions throughout their lifecycle.

Data shows that stream health remains strong in all three streams. In addition, the results show that recent restoration activities are having a continued positive effect on the stream health.

Congratulations to all our 2009 SHEP volunteers!
For more information of SHEP, visit <http://www.fmr.org/projects/shep>.

Join us for the 2010 Mississippi River Challenge!

By Kristin Nierengarten

To those of you who have paddled or volunteered for the Mississippi River Challenge in the past: Thank you for helping make this event such a great success! You have helped Friends of the Mississippi River raise vital funds to continue our work, all while enjoying this amazing local treasure. We certainly hope you will join us again this summer—and don't forget to bring a few friends (and check out our recruiter discounts)!



Save the date!
Mississippi River Challenge
July 24 & 25, 2010

For those of you who have never participated: Find out what you are missing, this summer at the 2010 Mississippi River Challenge, July 24 & 25! Experience the Twin Cities in a completely unique way. This adventure is a fully-supported paddling event that promotes a cleaner, healthier river.

Visit www.MississippiRiverChallenge.org or call Kristin at 651-222-2193 x19 for more information. Register early for the best discounts!



FMR is proud to be a member of the Minnesota Environmental Fund
(www.mnenvirofund.org)