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RIVER TALK

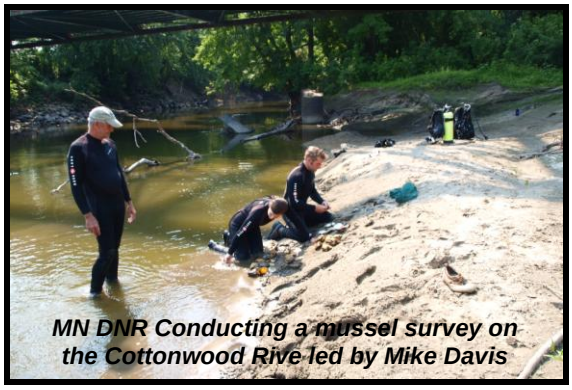
THE MINNESOTA RIVER CURRENT

Mussels in the Minnesota River Basin

"The Minnesota River had an outstanding mussel assemblage historically," points out Bernard Sietman, MN DNR mussel expert. "The Minnesota River had at least 40 species of mussels and that compares to our currently the best mussel river we have in the St. Croix which has 40 species of mussels except in that case they are still there."

Mussel experts or malacologists are able to piece together the story of mussels by looking at both the live species they find and the shells of what had been there. By following this path these experts - Sietman and Mike Davis - know close to 50% of the species that had been in the basin are gone. "In the lower Minnesota we've lost 2/3rds of species that once lived there," says Davis.

North America is what you would call the hot spot for mussel assemblage with close to 300 different species compared to only 10 or 15 in Europe. In Minnesota, a total of 48 species are considered native. They are part of the Mollusks, the second largest group of animals in the world and found in every continent except Antarctica.



MN DNR Conducting a mussel survey on the Cottonwood Rive led by Mike Davis

What is behind this drastic decline of mussel diversity and population? Davis and Sietman are working hard to discover why. "If we could figure that out we could figure out what to fix on the Minnesota River," says Davis. "I don't think there is a silver bullet other than the hydrology at this point. To me it's the water movement. These banks are falling in constantly. The river is bouncing up and down. It can go up 20 feet in a week and back down the next. I don't know how anything survives to tell you the truth."

A MN DNR Mussel Survey on the Chippewa River with Paul Wymar & Bernard Sietman

Mussels live on the riverbed, usually burrowed in the sand and gravel. They can move but only at small increments. As a result they can't hide from any problems occurring in the river. According to Mike Davis, "Mussels aren't able to escape like fish who can swim off. They have to sit here and take it. They can clam up for a few days to resist nasty water coming by but if it comes too frequently it kills them, particularly in their juvenile life stages."

Because of this mussels have been referred to as the "Canary in the Coalmine. "If the mussels aren't living in the river anymore it is like the canary dying in the coalmine," says Davis. "It's time to do something different.

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DID YOU KNOW?

Mussels have been valued and treasured by people for thousands of years. In addition to eating them, people used the shells to make tools, utensils and jewelry. On the banks of some rivers you can still find piles of shells near of what had been American Indian villages.

Some of the first Euro-American explorers remarked at the abundance of mussels in the waters of the Minnesota River Basin. One of those men George Featherstonhaugh in 1835 traveled up the Minnesota River to Lake Traverse near its headwaters. Sitting in a canoe, Featherstonhaugh wrote about a "great profusion of unios [mussels] lying on the sandy bottom" of the river.

A mussel harvesting boom hit the country at the end of the 19th century. This multi-million dollar industry killed hundreds of thousands of mussels to supply pearl buttons for clothing. In the Minnesota River Basin the industry centered on New Ulm as crews worked up and down the main stem.

Plastics destroyed the industry in the 1940s and 1950s when plastic buttons became more popular. Today, twenty-five out of the 48 native mussels in Minnesota have been listed as endangered, threatened or of special concern, and two are believed to be extirpated or gone.

Many threats still remain for mussels including the harvesting of some species for the cultured pearl industry in Japan and other environmental factors like too much erosion, an unstable river system, and the lack of habitat.

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The Minnesota River Watershed Alliance

Ask an Expert: About the Minnesota River is an on-line field trip featuring scientists and experts answering questions on the health of the Minnesota River. These experts from diverse backgrounds answered the questions: "What is the most fascinating thing you have seen in the Minnesota River Basin."

Kay and Annette Fernholz, Earthrise Farm: "What comes to my mind is this past summer I had the opportunity to go out on a canoe trip with the Clean Up the River Environment people. I remember the day so well it was perfect. The water was just as calm as it could be. It was like I had this chance to look along the shore and the hills around the river. I was taken by all of the birds, the life what was living out there. I would say just the calmness and being able to just go down the river. It wasn't hard to do and relaxing. I was in the middle of this wonderful beauty right out in the place near where I live and I didn't have to go far out of the way to find it. That was really a very special opportunity."

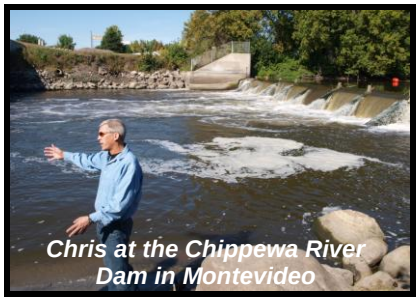

Annette & Kay Fernholz

"Kind of attached to your experience I have to almost say the trip down the river. It's like the river itself became a vehicle for the mobility that we were experiencing but it seems like I forgot to look at the water because of the attending environment of the trees, the birds, the fallen trees that had actually got into the water. The other was the other canoeist who were jostling with each other, tipping each other and just one canoe had a dog with is just gliding. The water became the vehicle we were riding in. It was just a really fun experience with water as a vehicle."

Dave Beregson, Lac qui Parle County: "The most fascinating thing I have seen is the fog as it moves into the river bottoms. It moves just like you would see a cloud go across the sky and you can actually watch it come through the trees. If you are actually going for a walk by the trees you can walk in and out of the cloud so to speak. That has been kind of a cool thing."


David next to the Lac qui Parle River.

Chris Domeier, MN DNR Fisheries: "I have seen a couple of neat things. The funny thing is that they have occurred between the two dams – the Minnesota Falls and the Granite Falls Dam where it is hard for fish to get. They can get around the Minnesota Falls but it's not easy. The neatest thing I think I saw the first time was an eel. An American eel came up and were collecting fish for the fair. When it came up I just yelled right away to get the eel and he missed it. I said we're never going to see that thing again because they are just like a snake. It's just gone and it comes up again and he grabs it quick. We put it in the oxygenate tank and we actually took it to the fair in Madison, MN. That was cool. That was the biggest hit you can imagine for the fair. It was an eel that was good size you know. That was really cool to see that.


Chris at the Chippewa River Dam in Montevideo

Pat Baskfield, MPCA Hydrologist: "It is hard to describe one thing. What I love about the rivers is every time you go down it is a different river. Every time I go down the river I see something new be it flow wise, be it water chemistry or wildlife. The wildlife you see on the river is so different than what you see on a lake. Every time I go down a river I come back with stories. I really do. To me that's the most interesting thing I see on the river. I live on the Watonwan River and I went down on a Saturday. I was fishing with a friend of mine and there was a little raccoon on the bank. For some reason he didn't see me and I was about ten feet away from him. He was watching the guy I was fishing with who was upstream of me and he was dragging his kayak through a riffle. The raccoon was popping his head up over the edge of the tree and he would put it back down. It was so fascinating. It was so cute. You know stories like that you come back with every time you go down a river."


Pat at the Blue Earth and Minnesota rivers confluence

The story of the Minnesota River Basin is one of sorrow, hope, and great patience. *Ask an Expert* uses video, fact sheets, and educational modules to help clarify what is happening to this state and national significant resource. Experts answer questions about a host of issues organized in 20 major themes. Ultimately, Ask an Expert: About the Minnesota River highlights the dedicated scientists and citizens working hard to better understand our impact on the resource.

Wetlands: the Kidneys of the Landscape

"Wetlands are the kidneys of our landscape," says Mary Mueller, conservationist and farmer from western Sibley County, "when it comes to water quality. "It is an area of depressional lands that hold water and is just alive with plants and animals. They are home to a lot of animals, insects and birds."


A restored wetland on the Mueller Farm

What did the MN River Basin look like 150 years ago?

"Picture in your mind what southern Minnesota," offers Brad Cook, Minnesota State University Mankato Professor, and "the Minnesota


MSUM Professor Dr. Brad Cook

Valley looked like pre-settlement - many wetlands, many depressional wetlands, pothole wetlands, many sizes. Small ones, large ones, every shape and size you can imagine in your mind. Streams, rivers, lakes my gosh it is Minnesota land of 10,000 lakes right, many, great diverse of habitat, great diversity of organisms, virtually a paradise. Since European colonization of Minnesota we have lost 90% of our wetlands."

Why were wetlands drained?

"In urban areas there is drainage for development," states Mary Mueller. "In agricultural areas the drainage was primary done for crop production. In agricultural which I am most familiar with, these soils are very productive as long as the wetness is reduced. That is why we see so much drainage."

What are the impacts of wetland drainage?

"We are putting more water in and we are putting it there faster because it is running over the flow in those systems earlier and we get greater peak floods," states Brad Cook. "More water is in there it is getting there faster. Those wetlands acted like a buffer to slow that water down to tentatively to temporary store it so it infiltrates the soil, the ground water more slowly and feeds the stream at a more stabilized rate. Fewer wetlands that have to do the job of a great many wetlands we have lost that."

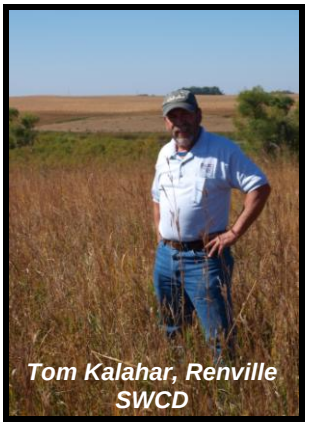
What are the benefits of wetlands?

"There are a lot of processes that happen in a wetland that benefit water quality," reports Mary Mueller. "The storage itself benefits water quality because less fast the water enters our rivers the less chance there is of huge flows causing bank erosion. They even need to be that close to the river to affect it. The runoff from wetlands is much cleaner in studies where there are buffers around them but also cleaner going out than coming in where there are controls. That again is the functioning that is happening in the plant community that is helping the water. Even just settling out of sediments can be a benefit. The benefit goes way beyond just settling out there is a lot of purification happening as well."


Mary Mueller, Conservationist

What is the future of wetlands in the MN River Basin?

"Wetland restoration is absolutely the key to restoring water quality in most watersheds," Tom Kalahar, Renville Soil and Water Conservation District points out. "Because, if you look at a map of Renville County there were hundreds thousands of wetlands at one time. Those were actually the kidneys of the landscape. And you know how long that people live if you remove their kidneys. Not very long. That is the same thing happening with the Minnesota River, with the Gulf of Mexico. We are killing it. We need to restore some of those kidneys because we can't afford the dialysis that we're doing now. So just good farm programs is what we need and we can get the job done everywhere in Minnesota."


Tom Kalahar, Renville SWCD

"Some of the benefits of prairie restorations especially in this project is pollinator habitat," relates Randy Schindle, a prairie expert with the Minnesota Department of Natural Resources (DNR). Randy plays an integral role in a partnership of nonprofit organizations, business and government agencies. They are working to restore native prairie as a benefit for all types of wildlife and water quality.

"With the loss of habitat of native prairies and wildflowers and other nectar pollen sources their populations have been crashing in recent years. Benefits of prairies also include holding soil in place, increasing water quality, water percolates through native prairies a lot faster than other cool season grasses and introduced grasses. Very valuable wildlife habitat, many of the native grassland birds are really being diminished in increasing numbers due to the lack of habitat and many other game and nongame species benefit from native prairie restorations."

As a child living on his family's farm along the Le Sueur River, Randy developed a great love for the outdoors like fishing and hunting. "I witnessed a major fish kill and major flooding during my childhood," relates Schindle. "Even in the early 60s fish from the river were not suitable to eat." His family was very outdoor orientated and it showed in how they improved a wetland, managed walnut trees, and raised bees, along with camping at many parks across the country. "I couldn't see myself working indoors for any length of time," says Schindle. "I don't even own a suit."

Today, Randy Schindle works as a Private Lands Specialist for the Minnesota DNR Division of Wildlife assisting landowners with habitat installation and management. In this position he provides education to landowners and government agencies on grassland management, exotic species control and woodland habitats.

In a 32-year career with the DNR, Schindle has worked in a variety of positions including as an Area Forester in Mankato. Some of the more successful projects Randy has being involved include the planning and establishing 3,000 acres of prairie restorations and tree plantings on Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP) easements. Randy also assisted government agencies and private organizations with establishing and managing buffers on the Lura Lake Restoration Project, a major success story in the basin.

A few years ago Randy helped form the Many Rivers Chapter of the Prairie Enthusiasts. This non-profit organization goes back to the 1970s when people began to recognize the importance of native prairie and how little still remain. More endangered than the rainforest, volunteer groups like Many Rivers Chapter come together to educate the public about what makes native prairies special and what can be done to identify, protect, restore and manage these fire-dependent ecosystems.


Randy Schindle spreading prairie seeds on a prairie restoration

Randy is extremely hopefully the steps being taken now will lead to an improvement of water quality and quantity in the Minnesota River and other southern Minnesota rivers. "I am greatly concerned with the political polarization among the entities involved with the problems and the solutions to water quality in the Minnesota River," states Schindle. "The many environmental agencies involved with water quality issues need to become one central clearinghouse for water quality issues. Until all of the population of Minnesota and affected people downstream realize that water quality issues are important to the environment and economics, progress will be slow."

Citizens Hope to Block Proposed Quarry

Minnesota Public Radio

Citizens are organizing to try to block a proposed quarry on the western edge of Minnesota, fearing it will spoil a scenic landscape of rock outcroppings and prairie.

Strata Corporation of Grand Forks, ND, wants to develop a 104-acre quarry adjacent to the Big Stone National Wildlife Refuge between Ortonville and Odessa. The quarry would be part of a 478-acre property that hosts nine species of rare and endangered plants, including ball cacti found nowhere else in Minnesota, the West Central Tribune of Willmar reported Thursday.

The area is home to Clark Mastel, his family and their 400-head, beef cattle operation. He and other residents gathered in Clinton on Sunday to discuss plans for trying to persuade the Big Stone County Board of Commissioners to reject the conditional use permit Strata is seeking.

"We've went to bed more than once with tears in our eyes worried about what is going to happen here," Mastel said.

Project manager Bill La Fond said Strata is committed to limiting the environmental damage as much as possible and to reducing the impact on the rare plants and the Mastels' neighboring farm. But he says the regional construction needs the crushed rock the quarry will provide.

"At this point in time we have to develop our natural resources in a wise fashion," La Fond told the newspaper.

The ancient glacier that carved the Minnesota River Valley scoured away the soil and left the high-quality, granite bedrock visible - and accessible to mine.

"This is special," said Don Felton, who pointed out where bison once rubbed off their winter coats on the protruding rocks; the buffing still shows as a lichen-free shine on selected rocks.

Felton was joined by Kathy Longhenry and Nancy Aune, sisters who grew up across from the site along U.S. Highway 75. They have memories of horseback rides and adventures on the open landscape. The sisters said the views and outdoor opportunities support tourism and a way of life worth fighting for.

Lodging and hospitality industry revenues in 2010 in Big Stone County totaled $4.1 million, with tax revenues to all sources of $282,000, according to the Minnesota Department of Revenue.

Mastel hosts an annual trail ride on his property that attracts well over a hundred guests. He said people always tell him: "I didn't know this was down here. It's absolutely beautiful."

The quarry would pay a projected $20,000 a year in taxes to Big Stone County and Ortonville Township and would create six to eight jobs.

La Fond said Strata conducted an extensive site study that identified more than 20,000 ball cacti. Quarry operations would take 130 of them, he said. The company offered to place 59 acres in a protected parcel for plants and give it to the wildlife refuge, which declined it. The parcel's jagged boundary and lack of a buffer means a high likelihood that dust would adversely affect the protected plants, according to refuge officials.

The area is already home to two large quarries. Cold Spring-based Cold Spring Granite Co, has an architectural stone and aggregate quarry nearby. Sioux Falls, SD-based L.G. Everest Inc. has a larger aggregate quarry adjacent to Strata's site. The site is also adjacent to a BNSF Railway Co. line, which La Fond said was a major decision in its selection.

Strata intends to develop the quarry in three phases over a projected lifespan of 130 years. It says the first of the three sites would be located the farthest from the refuge and from the Mastels' home and cattle operation. The rock would be crushed and conveyed directly to trains to minimize trucking and other noise and dust-generating activity.

Gayle Hedge, who owns the 478-acre site and leases it to Strata, said he rejected another company but was assured by Strata that it would do all it could to minimize the impacts.

Hedge, a farmer and businessman with a trucking company and other operations in the Ortonville area, said he was motivated by a desire for economic development in the county. He's seen too many young people leave the area for lack of opportunity. He's well-aware of the opposition, but said a lot of people support it.

Others say there's too much to lose. Rusty Dinberg, an Ortonville Township supervisor and farmer who grew up near the site, said there are plenty of other aggregate resources available, and he vowed to protect the site.

"It's something that I have been with all my life and I want it to be here after I leave, when I'm dead and gone," he said.

Prickly Pear Cactus

Annette and Kay Fernholz grew up with a large family on the former prairie of southwestern Minnesota. They left the family farm as teenagers to devote their lives to the service of the Mankato School Sisters of Notre Dame community.

"We were a teaching order in the classroom," says Kay "the traditional classroom. Our community is dedicated to education and also building a community. We were founded especially to help women and children."

Forty years later in 1996, the Fernholz sisters came back to their roots to establish Earthrise Farm and take care of their 80-year-old parents. Their first endeavor was the development of a Community Supported Agriculture (CSA) program.

According to Annette, "we put a tiny ad in the newspaper: 'Are you too tired, too old, too young to do your own gardening.' We got one family, kind of an extended family. That got the ball rolling." For the first season they had seven members.

Kay Fernholz ringing the dinner bell

The Fernholz sisters worked full-time off the farm with most of that they earned going to the School Sisters of Notre Dame. They only kept enough to live on and didn't even have a checking account. Kay bought the first seeds by bringing all their pennies and nickels to the post office.

After a few years they got into the poultry business starting out with ten old hens their Mom had. They now sell organic and free-range broilers and eggs as part of a program started at Southwest Research and Outreach Center, Lamberton. Some of the eggs are sold at the grocery store in Madison.

Kay and Annette Fernholz chose the name of their farm from a quote at the first moon landing - "We have seen the splendor of Earth rise above the horizon of the moon." According to the sisters, "we feel it announces the coming of a new paradigm. We hope that people will gradually discover that we have no existence apart from this Living Earth."

Over the years, the Fernholz sisters have moved Earthrise Farm beyond the CSA to fulfill a mission of renewing connections to the Earth. "The Earthrise Farm Foundation provides educational programs and spiritual opportunities pertaining to cosmogenesis, Earth literacy, organic farming, food and nutrition. Earthrise Farm seeks to be the holy ground where radical hospitality, ecological agriculture and the new origin story meet."


Annette Fernholz collecting eggs

One of the major projects initiated by Kay and Annette saw the remodeling of the old chicken barn into a canning kitchen and vegetable preparation area. Inside this cozy spot on the farm named for the environmentalist Rachel Carson you can usually find the goodies of the garden to prepare and munch on.

In addition to the Rachel Carson House, visitors will find the Earth Trade Center next door and a place to purchase produce, books and other educational materials. They also can spend the night at Earthrise Farm at the Honeycomb Center Peace Yurt tucked among the trees and a new interpretive trail built by the sisters and their staff.

Change is constant at Earthrise Farm with a foundation formed in 2004 leading to becoming a nonprofit organization. As they move away from the CSA operation by contracting with the local Easy Bean Farm to supply the produce to their customers, they are focusing on education and community involvement. Part of this effort resulted in the moving and restoration of a 1917 Country School.

Today, Kay and Annette along with their young staff of Louie and Kat bring the local community together by offering a wide range of classes taught by local artisans and teachers. People can learn the art of bread making, pottery, solar oven operation and much more. Visitors of all ages come out to Earthrise Farm to learn about the world around them and how we can all make it a better place.

By Troy Krause, Redwood Gazette

For years experts have addressed the water quality issues of the Minnesota River by stating it is not where it needs to be.

While one would consider much of that expertise anecdotal, the reality of the river's water quality is closer to becoming officially determined. In 1972 when the federal clean water act was adopted, it mandated all states do what it could to clean up the bodies of water (lakes, streams and rivers), and since that time much research has been done to determine how that is possible in Minnesota.

After all, the Land of 10,000 Lakes, which relies heavily on its waters as a major part of its economy, has a vested interest in making sure the water in the state is of high quality.

A study conducted by the Minnesota Pollution Control Agency (MPCA), with various stakeholders representing the entire river valley providing input, was presented this past Wednesday in Redwood Falls.

According to Bob Finely, who works out of the MPCA office in Mankato, presented the fundamentals of the report to a group of 30-plus individuals representing a variety of agencies and groups with an interest in the impact such a study could have on future planning in the river valley.


Monitoring station on the Redwood River

The study looked at the turbidity (the amount of suspended sediment in the water as it flows) and the total maximum daily load (TMDL) of that sediment coming downstream toward where it meets the Mississippi River. The report is now open for public comment.

"This is a very important document," said Finley. "It is going to set the tone and direction for the future."

Goals established in terms of implementation are going to be based on this study, and Finley said that is why it is so important the public take the time to look at the report and make comments about it.

Thome comments can be made by getting a form from the MPCA. Those forms are available online at its Web site, at www.pca.state.mn.us..

The data in the report, said Finley, shows there are a number of reasons for increased TMDLs, with the amount of sediment increasing during the high flows of the river.

Finley said during low to moderate flow periods of time the Minnesota River is well within the standard of 100 milligrams per liter of sediment, but in the high flow times it is over.

So, one of the challenges the study is likely going to recommend is to find ways to hold water back upriver.

Both Doug Goodrich, executive director of the Redwood-Cottonwood Rivers Control Area (RCRCA) and Marilyn Bernhardson, executive director of the Redwood County Soil and Water Conservation District (SWCD) agree reducing the amount of water coming down the river is key to reducing the river's turbidity.

Bernhardson said studies have shown a change in the approach to sediment discovery, as at one time most believe 60 percent of the runoff was coming from the land, while the other 40 percent was from streambank erosion. Those numbers have flipped, she said, but that does not let landowners off the hook.

Goodrich said this entire process has been an interesting one, as he knows there are a lot of people on both sides of this issue, and the problem at times is those on the extremes do not have the right information.

Goodrich said RCRCA has been monitoring TMDLs on the Redwood and Cottonwood rivers for a number of years, and he said he see the issue.

There is more water and it is moving faster," he said.

That high flow water then leads to more streambank erosion in the river. Both Bernhardson and Goodrich know there is no simple answer. What they both believe is the state needs to continue its focus on improving water quality which is really a never ending task.

Mussels in the MN River Basin *continued from page 1*

Although it's not time for me to get out of the river it might suggest it's time to do something about the health of the river because you can't support the mussels."

The lower portion of the basin has been particularly hammered including the Greater Blue Earth River Basin. This isn't the case of what is called headwater watersheds in the upper basin. Both the Chippewa and Pomme de Terre rivers have managed to maintain most of their mussel assemblage and sport some of the rarer mussel species like the spike, elktoe and black sandshell.

"Mussels are more abundant everywhere we looked in the Chippewa and Pomme de Terre rivers," states Mike Davis. "We find species in the Chippewa that are absent all over the rest of the Minnesota River drainage like the spike mussel. It is kind of interesting those rivers seemed to have retained a few species that have been lost elsewhere. That is really important because that could be the seed source for recolonizing the rest of the river system at some point some day when things get better."

A mussel hike on the Chippewa River

What is happening in those two watersheds compared to others in the Minnesota River Basin? "What we may think is going on is the stability is important," relates Bernard Sietman. "Those [rivers} maybe more stable, there is not as much erosion going on. Even though the Chippewa has been channelized in areas there are still reaches that have a good mussel assemblage and there doesn't seem to have as excessive erosion. The flows aren't as variable and flashy as in other parts of the system."

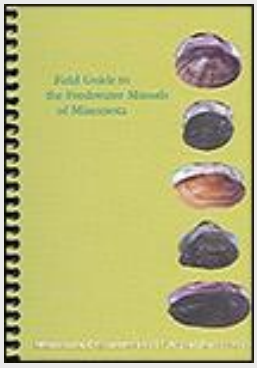
Today, mussels are threatened in the Minnesota River Basin and across the earth. "Mussels are among the most endangered group of animals in the world," says Sietman. "Several of them are extinct and we can't find them." At least 70% of mussels in North America are extinct, imperiled or in need of special protection, according to The Nature Conservancy compared to 16.5% of mammals and 14.6% of bird species.

Book Review: Field Guide to the Freshwater Mussels of Minnesota by Bernard E. Sietman

Freshwater mussels are mollusks, and are relatives of snails, slugs, octopuses, and other members of the Phylum Mollusca. More specifically, they are bivalves, members of the Class Bivalvia, a very large group of marine and freshwater mollusks that have two shells or "valves" held together by an elastic hinge. Freshwater mussels are commonly referred to as "clams" but are also known as "naiads" or "unionids." They are similar in many ways to better-known saltwater mollusks, such as oysters and scallops.

Mussels are long-lived animals. Members of many species may live for several decades and in some instances a century or more. They spend most of their lives buried in the bottom of sediments of permanent streams and lakes, and often live in multi-species communities called mussel beds. In some areas, beds support 30 species or more and reach a density of more than 100 individuals per square meter. Although specific habitat preferences differ among species, mussels can be found in almost any permanent aquatic habitat. Mussel communities are generally more diverse in creeks and rivers than in rivers.

A malacologist for the MN DNR, Bernard E. Sietman conducts mussel surveys across the state and one of the Ask an Experts. Sietman received his Master of Science degree in Biology from Emporia State University where he studied the ecology and genetics of freshwater mussels in two local rivers.



Humans have used mussels for millennia. Archaeological excavations have unearthed shell material in eastern North America from sites dating back 10,000 years. Prehistoric peoples used mussels for food and used the shells to make tools, jewelry, and temper pottery. By the mid-1800's, European Americans in the eastern United States had discovered that natural pearls form within mussel shells. Pearl hunting spread throughout the United States, and "pearlers" were collecting mussels from as far west as the Mississippi River by the end of the 1800s.

***Black sandshell** - Elongate, valves moderately thick; periostracum smooth and shiny, greenish or black, often rayed. Beak sculpture: a few double-looped lines, usually obscure. Pseudocardinal and lateral teeth well developed, nacre white, purple, or combination of both. Length: up to 8 inches. Similar to: pondmussel, spectaclecase, spike, and yellow sandshell. Found statewide in medium and large rivers in soft or coarse substrate and flowing water. Rare to uncommon in the Minnesota River Drainage; possibly extirpated from some portions.*

What is next for the Minnesota River? A Total Maximum Daily Load (TMDL) Report on sediment or turbidity has been completed. This report addresses what needs to be done to reduce the amount of dirt and other related material in the surface water. Right now the Minnesota River is responsible for almost 90 percent of sediment filling up Lake Pepin.

Three public gatherings were held in Mankato, Owatonna and Red Wing to give citizens, farmers, government staff and others a chance to discuss what we have in common and what we want to see for the Minnesota River. From here the Minnesota Pollution Control Agency (MPCA) will lead the effort involving a wide range of conservation practices and partnerships in rural and urban areas.


Minnesota River at Upper Sioux Agency State Park

Why do we care how much sediment makes it way to our rivers and lakes? For those downstream the impacts can be ongoing like Lake Pepin. For aquatic organisms like fish, mussels and macroinvertebrates it can affect their habitat, lifecycle and their food sources. We all have a stake in this and have the resources to make a difference for the next generation.

Spring has come early this year after one of the warmest winters on record and not much for moisture unlike last year. I missed the cold temperatures and the snow. Winter just doesn't seem to be as fun when you only get out cross-country skiing three times.

After a really dry fall and winter with river levels dropping dramatically we finally received some much needed moisture over the last month. The grass has turned green again as the trees began to bud out. Water levels on the rivers in the Minnesota River Basin remain low but at the lower reaches still paddleable.

Next year the Minnesota River will celebrate its 50th year as part of the State Watertrail system. The Minnesota River Watershed Alliance is already discussing how it can highlight this unique anniversary. One way might involve organizing paddling events across the entire basin to showcase what we have to offer. As Tom Kalahar likes to say, we are the Boundary Waters of Southern Minnesota.


Scott Matteson paddling the Blue Earth River

For this year, the paddling committee of the Watershed Alliance will be hosting a paddle on the Minnesota River and either the Rush River or High Island Creek during Henderson's annual Sakaurut Days at the end of June. The idea is to put on a more family friendly paddle on the Minnesota from the City of Le Sueur to Henderson and a more challenging one either on High Island or the Rush.

At the Water Resources Center (WRC) we are busy finishing up the Ask an Expert: About the Minnesota River Project and will have it live on the Minnesota River Basin Data Center by June. We are excited of this product will deliver when it comes to examining the health of the Minnesota River through videos, educational materials and various fact sheets. People will have the opportunity to learn from experts in the field talking about what they know.

Finally, this will be the last edition of the River Talk newsletter for me. On May 7th I start as the Minneopa State Park Area Naturalist for the Minnesota Department of Natural Resources. I plan to continue being involved with what is happening in the basin!

CURE annual meeting attracts a crowd

Three hundred people came out to the Hollywood Theater in Montevideo to celebrate 20 years of Clean Up the River Environment (CURE). No one left disappointed by the passion of the speakers, great locally grown food, funky entertainment, and a chance to buy one of the many silent auction items.

Senator Gary Kubly of Granite Falls graciously accepted the Good Government Award, renamed in his honor. CURE also recognized the work of Jon Carlson and John Hickman for their "River Revival: Working Together to save the Minnesota River" documentary with the Good Media Award.

Two of the most dedicated volunteers and leaders of CURE were honored with the organization's prized River Keeper Award. John G. White , Editor of the Clara City Herald and Science Teacher Butch Halterman joined a long list of citizens that have made it a priority to improve and protect the MN River.

Green Corridor Project Highlights

Over 2,300 acres have been added to the DNR's outdoor lands recreation program through a wide ranging partnership of conservation organizations in the middle Minnesota River Basin. The acquisition of land through the Green Corridor Project has resulted in the creation and expansion of aquatic management areas, wildlife management areas and state parks. One of the most significant establishments is the 283-acre Whispering Ridge #1 and #2 aquatic management areas near Redwood Falls.

Pending Acquisitions for 2012-2013:

- Green Corridor has secured $5,400,000 in grant funding available for acquisitions.
- 9 additional landowners have stepped forward to sell their properties in the Whispering Ridge Corridor between Delhi and Gold Mine bridges on the MN River (over 1,000 acres).
- In the Cottonwood River Watershed: a new AMA west of Sanborn (73 acres); Dutch Charley Creek WMA (80) and east of Sanborn (in Brown County), and Badger Tract WMA (140 acres)
- Multiple projects pending in Brown, Cottonwood and Murray counties.

K.K. Berge Exhibit

The newly saved and renovated K.K. Berge building in Granite Falls is hosting its second exhibit. Olga Krasovska immigrated here from Ukraine in 2004 after meeting her husband Gary Schoenberger. This will be her first exhibit in her new home town. Of her work, Olga says "I do like the impressionistic color palate, but don't want to stylize so much to the point where it's disappearing. I want to keep it modern and fresh, but not too modern to the point where it starts to look abstract or subjective."


K.K. Berge Building

Seven Mile Creek Conservation Drainage Project

Friends of the Minnesota Valley partnered with Nicollet Soil and Water Conservation Service to secure an $86,500 Legacy Clean Water grant. The latest technology will be used to install a managed drainage system on 40 acres. In addition, work will be done to restore and protect the top of a ravine where a nick point or cut causes the soil to erode into Seven Mile Creek. By controlling the flow of water off the upland and reseeding the vegetation the project will reduce the loss of sediment.


Ravine in Seven Mile Creek Watershed

Netland takes position with the DNR

Cory Netland, the coordinator of the Hawk Creek Watershed Project took a position with the MN DNR to primarily handle aquatic habitat (shoreland restoration) grants in the southern Minnesota. Netland will work with counties, cities, watershed districts and other local government units to conduct shoreline and watershed enhancement projects. Before spending three years with the Hawk Creek Watershed Project, Netland worked for the Renville and Lac qui Parle SWCDs enrolling land into conservation easements.

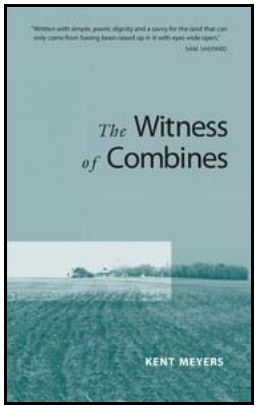

West Fork of Beaver Creek

Kent Meyers - "The Witness of Combines"

The alluvial soil on which I grew, one of the richest in the world, a Clarion-Webster silt-clay-loam, is formed from glacial winds and old waters and centuries of wetland grasses. Busted by German and Scandinavian settlers, the sod turned pitch black when the long grasses decomposed. Corn and soybean crops today grow from a reservoir of millions of plants that have fallen - prairie coneflower and swamp milkweed and phlox and false indigo and blazing star and purple loosestrife and bluestem grass and Indian grass and grama grass.

The soil itself of a virgin, long-grass prairie is nearly barren. All the nutrients are drawn into the blaze of flower and stem, flowing constantly through the plants, and things so interdependent and intertwined that nearly every molecule of nutrient is taken in by the tangled root system that hardens the oil and is itself merely the substrate of exchange. Only since the sod was turned, barely one hundred years ago, have we been able to speak of the "richness" of the soil itself, the nutrients now, even when the land is so green in the summer it stuns the eye, lying mostly within the soil, monoculture farming being unable to draw them all up, so that farmers spread fertilizers to encourage single crops and douse with the chemicals the weeds - and a weed is merely a plant that has lost its relationship to other plants - that attempt to use the remaining nutrients.

Still, the virgin prairie's way of being emerges in the communities that have shaped themselves upon it, through the tangled words that form those communities are dumb to what they form, like the roots of plants that cannot know the blossom.



Kent Meyers wrote this book "The Witness of Combines" to tell the story of growing up on the rural landscape of southern Minnesota near the town of Morgan. The book revolves around his father who died suddenly when Meyers was 16. Today, Kent Meyers is an English Professor at Black Hills State University in South Dakota and author of numerous novels and works of nonfiction and fiction.

Elderberries are inedible in their natural state, tiny bombs of juice that explode between your teeth and, even the roof of your mouth puckers. Cooked with sugar and pectin, however, elderberries produce a dark purple, glutinous mass that can be poured over an oatmeal crust, named "Elderberry Crunch," and foisted upon unsuspecting first graders as dessert.

The mission of the MINNESOTA RIVER WATERSHED ALLIANCE (Watershed Alliance):

The Watershed Alliance is a network of citizens, public agencies and private organizations that communicate the benefits of an ecologically healthy Minnesota River Watershed to others and who actively work towards its improvement and protection.

Questions and comments on the River Talk newsletter can be directed to: Scott Kudelka; Water Resources Center; 189 Trafton Science Center S; Mankato, MN 56001; 507-389-2304 or scott.kudelka@mnsu.edu