

From Shore to Shore

For Minnesota citizens promoting the health of our rivers & lakes

January-February 2005

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Calendar of Events

It is time to start planning for next spring & summer!

The University of Minnesota Extension 2005 workshop schedule is final, with the first workshops coming up in January! A full schedule can be obtained from www.extension.umn.edu/water/shore.

Workshops for January through March are listed below. Additional contact information, agendas, and driving directions for all the workshops will be added to the website as they are available, so keep checking!

→ Curly Leaf Pondweed Management Workshops

January 29, 2005 – 8:30-1:30, Mora, MN
Contact Val Prax: 320-225-5054/Malmq002@umn.edu

February 5, 2005 – 8:30-12:30, Osakis, MN
Contact Emily Wolf: 218-998-5790/Wolfx22@umn.edu

February 19, 2005 – 8:30-12:30, Little Falls, MN
Contact Chuck Forss: 320-632-0170/
chuckf@co.morrison.mn.us

→ Shoreland Volunteer Workshops

March 12, 2005 – 8:30-12:30 Maple Lake, MN
Contact Dale Gustafson: 763-544-4215/
dalegus@earthlink.net

→ Shoreland Revegetation Workshops

Introductory class – March 5, 9:00-12:30, Lichfield, MN
Contact Dave Resch: 320-234-0431/Resch003@umn.edu

In-depth class – Feb. 12 & March 19, 8:30-4:30
Clear Lake, MN

Contact Mark Basiletti: 763-241-1170 x132/
mark.basiletti@mn.nacdnet.net

Introducing Emily

We want to welcome Emily Wolf, the new Regional Extension Educator in Water Resource Management and Policy for the University of Minnesota Extension Service Regional Center in Fergus Falls. Emily most recently worked as Douglas County's Local Water Manager for three years where she gained experience in water quality, zoning, and septic systems. She has a Bachelors degree in Environmental Science and is completing a Masters in Environmental Ecology. Emily will be working on the Shoreland Education Program and developing additional programming focusing on other regional issues. She may be reached at wolfx222@umn.edu or by phone at (218) 998-5790. ■



Emily Wolf

Educating the Minds of Tomorrow...The World of Water and Wetlands Education Program

Submitted by: John Bilotta, University of Minnesota Extension Educator, Carlton County, (952) 361-1828, bilot002@umn.edu

It is not surprising that in today's classroom there is an integration of science, math, chemistry and other principles into teaching around the topics of the environment and natural resource communities we live and interact in. Education in these areas is often supported by experiences outside the traditional classroom. In fact, over 75% of the counties in Minnesota support environmental field day programs involving students in grades 4-6. The impact to thousands of students has led to a new initiative in developing these programs around the Best Practices for Environment Field Days.

One such program is the "World of Wetlands and Water Education Program" developed in Carver County. This program debuted this past fall with an entirely new focus on wetlands and water. Using the Best Practices as a guide, a program and curriculum was developed that provided education and experience for students related to the interactions of wetlands and water.

The Program had four education modules developed around the following areas:

- Wetland Functions and Values
- Wetland Plant Inventories & Identification
- Water Quality Monitoring
- Wetland Plant Adaptation and Traditional Uses

Each module had unique learning goals and objectives and interactive learning activities for the students to perform. The program was held on and around the Green Heron Bog at the Minnesota Landscape Arboretum. One of the overriding ideas was that, as students spent the day circumnavigating the bog, they learned more and more about the interactions and elements of this wetland and its hydrology. By the end of their experience, it was hoped they would have a greater understanding not only of water, but of how the system works and functions, as well as the importance of this system to almost all walks of life.

Over 420 sixth-graders participated in the journey from September 20-24, 2004. Many of the students continued their experience back in the classroom through a variety of methods, including designing wetland puzzle posters, writing essays, and the standard classroom testing procedure.

The program is coordinated by the University of Minnesota Extension Service with an extensive list of local and state partners. If you would like more information about this program, you can contact John Bilotta at the contact address information listed above. There are many



Students participating in the program.

programs like this one all over the state. To find out if programs like this are available in your watershed or local area – contact your Extension Regional Center. If you are a part of lake or watershed association – there may be ways for you to support activities like these or get involved yourself.

Enriching the science curriculum of K-12 education will lead to better educated citizens of tomorrow. Programs like this also complement the adult education opportunities the Extension Service provides through its Shoreland Education Program. Combined, the impacts will be better informed citizens and hopefully more responsible use of the natural environment around us, including the shores of Minnesota's lakes and rivers. ■

It Started Out A Simple Shoreland Restoration...

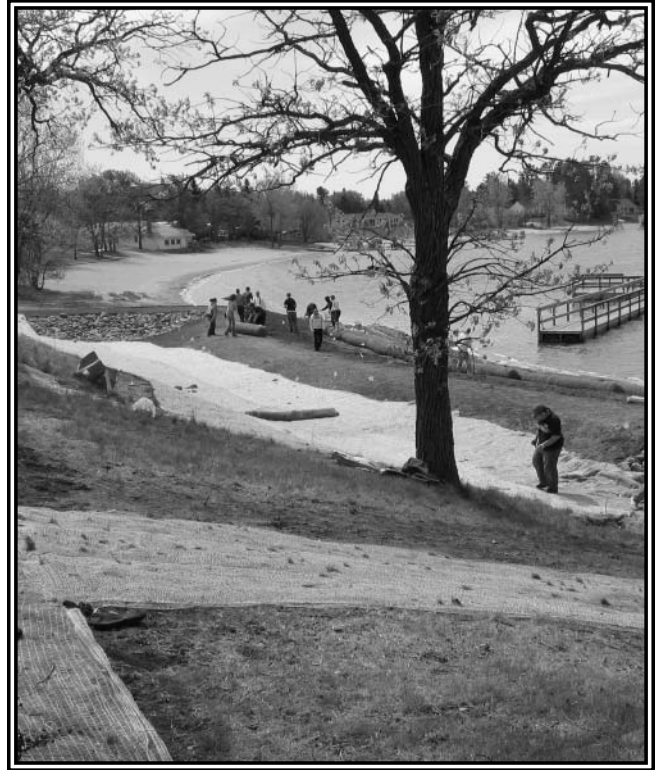
Submitted by: Mary Blickenderfer, University of Minnesota Extension Educator, Grand Rapids, (218) 327-4616, blick002@umn.edu

The city park along Spirit Lake in Menahga is the site of a shoreland revegetation project that started in 2001. During the first two years, berms were installed at the top of the steep lakeshore bluff to keep run-off from the adjacent road from further eroding the bank, and the existing gullies were filled. These areas were seeded with native plant species, covered with erosion blanket, and planted with additional native plants. Mowing of the hillside had ceased a few years prior to the project and native grasses and flowers typically found in oak savannas were already covering much of the bank. The stair/ramp access to the fishing pier was planted with a showy mix of natives. The once-vegetated wet transition area near the shore was also planted and remains a challenge due to low water.

However, for the Spirit Lake Association this was not enough. They had their attention focused on the two storm water pipes draining into their small lake – obvious sources of sediment, unknown pollutants, and trash that affect water quality. The solution: create a stormwater filtration area that is appropriate for a city park. With the leadership of Kari Tomperi (Wadena Soil and Water Conservation District); technical design provided by the Joint Powers Board and University of Minnesota Extension; financial support from the Department of Natural Resources and Spirit Lake Association; plants grown by Sunshine Gardens and Ramsey County Correctional Facility; and the assistance of the City of Menahga, lake association members, other community citizens, students from two local high schools, the DNR, Wadena SWCD, and University of Minnesota Extension, a stormwater filtration area was created. The filtration system involved major reconstruction of the shore area and was designed to allow sediment to settle into a deep pool near the drain outlet and to allow stormwater to flow through and/or soak into the soil along a narrow 200-foot long shallow channel planted with native wetland species. The native plants slow the water flow, promote water infiltration, absorb nutrients, trap solid material, and provide color and wildlife habitat. After the project was completed, the filtration area, full after a storm event, drained completely within a few hours. Success!

...and became an award winner!

For its support of and participation in this project, the Spirit Lake Association won the Area 2 Minnesota Association of Soil and Water Conservation Districts “Outstanding Conservationists Award.” Congratulations to the Lake Association and all those who made this project a success! ■



Filtration pond installation.



Filtration pond during first rain event. (just after planting!)

Sedges have edges, but do restored wetland edges have sedges?

Submitted by: Karin Kettenring, Ph.D. candidate, Applied Plant Sciences, Applied Ecology Lab of Dr. Susan Galatowitsch, University of Minnesota, St. Paul, 612-624-0779, kett0044@umn.edu

When the last glaciers retreated from this region 20,000 years ago, they scoured out thousands of "potholes" across the landscape. These potholes filled with water from the melting glaciers and the prairie pothole wetlands were born. Prairie wetlands are unique to the Midwestern part of the United States and are significant to the millions of waterfowl that make their annual migrations along this major flyway. Also, the glacial soil in this region was rich and desirable, giving birth to a thriving agricultural economy. There has been a continual struggle between these land uses as waterfowl populations declined drastically during the 1800s and 1900s because of wetland drainage. Since the mid-1980s, there has been an interest in directing the predominantly agricultural landscape back towards its prairie wetland roots. Significant federal and state legislation in the 1980s provided impetus (including funding) for wetlands to be restored.

Thousands of wetlands were restored by farmers with help from conservation organizations and government agencies on farmland throughout the prairie pothole region. Ditches and drainage tiles that drained wetlands were dismantled, and former wetlands were reflooded. Were these efforts successful in reestablishing wetland flora and fauna? Over the past 15 years, ecologists have looked at everything from plant to bird communities to determine if the restorations were successful. Their findings were striking. They found that some species return quickly to restored wetlands, but the characteristic plant species that live around the periphery of wetlands in the seasonally flooded zone, especially sedges, were almost entirely absent from restorations. Sedges may have edges (i.e., triangular stems) but wetland edges are missing their sedges.

These grass-like plants are important to wetlands for a number of reasons. Some scientists think that the seeds may be an important food source for certain birds like sedge wrens and common yellowthroats, and that some upland nesting waterfowl require sedges for nesting. Thus, the lack of sedges could potentially be a big loss for wildlife. Another thing to consider is the plant diversity of the wetland ecosystem. We now know that 5-10 years after a wetland is restored the space where sedges would

have grown becomes dominated by reed canary grass. Native species can't compete with this invasive species and the end result is a wetland with low plant diversity.

In the fall of 2000, as I began my graduate research, I sought to determine why the sedges have not returned to wetland edges by focusing on two questions. First, I wanted to know if the sedges were not returning because the seeds were not getting to the restoration sites. Seeds move by wind, water, and animals. I wanted to determine which seeds were getting to restorations and if any of them were sedges. To answer this question, I placed hundreds of seed traps (craft foam coated with a sticky substance), in wetlands throughout my research site. Thus far, I have found no sedges in my seed traps.

I had a second idea that perhaps the sedges were reaching the restored wetlands but that the conditions were not suitable for them to grow. Some seeds require very specific conditions for growth. Bare mud in a new restoration is quite different from what a seed would experience in a natural wetland. Perhaps that perfect concoction of light, nutrients, and water required for seed growth doesn't exist in a restored wetland. To determine whether sedges grow in restorations, I placed seeds of 5 different sedge species in plots in restored wetlands. I have found lots of little sedge plants popping up in my pots in the restorations. This is good news to restorationists because it means that if sedge seeds are sown into restorations, they stand a chance of becoming established.

Now that I know that sedge seed will grow in restorations, I am investigating the optimal conditions for seed growth. I am conducting experiments in growth chambers – setting temperature, light, and moisture conditions under a range of conditions to figure out what leads to the best seed growth, so I can determine the best time to put seeds in wetlands to maximize the establishment of this plant. In the end, I hope that the information from my research will result in successful sedge establishment in restored wetlands. Then, we would be one step closer to restoring the edges of wetlands with sedges and creating a diverse plant community. ■

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www.shorelandmanagement.org



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