

From Shore to Shore

For Minnesota citizens promoting the health of our rivers & lakes

July-August 2006

#74

Calendar of Events

→ Shoreland Vegetation and Invasive Species

July 1, 2006: 12-4 p.m. – Waterville, MN

Contact: Lauren Klement, LeSueur Environmental Services, 507-357-8540; lklement@co.lesueur.mn.us

→ Shoreland Maintenance

July 8, 2006: 9 a.m.-4 p.m. – Onamia, MN

Contact: Mille Lacs SWCD; 320-983-2154

→ Introduction to Shoreland Landscaping

July 14, 2006: 8:30 a.m.-4 p.m. – Cambridge, MN

Contact: Mike Mueller, DNR, 763-689-7105, mike.mueller@dnr.state.mn.us

→ Rain Garden Workshop, Northland Arboretum

July 15, 2006: 9 a.m.-12 p.m. – Brainerd, MN

Contact: Jackie Froeming, 218-824-1068, froem022@umn.edu

→ Introduction to Shoreland Landscaping

July 15, 2006: 8:30 a.m.-4 p.m. – Center City, MN

Contact: Mike Mueller, DNR, 763-689-7105, mike.mueller@dnr.state.mn.us

→ Wastewater Alternatives for Shoreland Areas

July 22, 2006: 12-4 p.m. – Waterville, MN

Contact: Lauren Klement, LeSueur Environmental Services, 507-357-8540; lklement@co.lesueur.mn.us

→ Aquatic Plant Identification

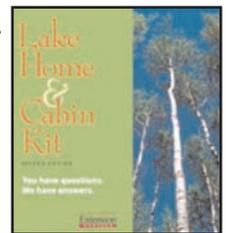
July 28, 2006: 6-9 p.m. AND 9 a.m.-2 p.m. – Location TBD

Contact: Mary Blickenderfer, 888-241-0885, blick002@umn.edu

Revised and Updated!

Renee Pardello, Minnesota Extension Service, 612-624-6479, pard0017@umn.edu

This attractive 3-ring binder is the second edition of the popular *Lake Home and Cabin Kit*. A table of contents and tabbed sections guides you to answers for common lake home and cabin questions. The kit contains over 50 cards with information on septic systems, trees, shoreland, water quality, and wildlife. No lake home or cabin owner should be without the University of Minnesota Extension Service's *Lake Home and Cabin Kit*. Sturdy cards are provided to keep pertinent personal information about the owner's property and other important contacts. The 3-ring binder is an attractive addition to any cabin owner's bookcase. The price is \$29.99 and it can be ordered online at <http://shop.extension.umn.edu/>.



→ Shoreland Management Best Practices

August 5, 2006: 8:30 a.m.-4 p.m. – Wyoming, MN

Contact: Mike Mueller, DNR, 763-689-7105, mike.mueller@dnr.state.mn.us

→ Shoreland Monitoring and Maintenance

August 16, 2006: 9 a.m.-4 p.m. – Melrose, MN

Contact: Sauk River Watershed District, 320-352-2231, info@srwdmn.org

For information on these and other workshops, please visit: www.extension.umn.edu/shoreland <<http://www.extension.umn.edu/shoreland>>. The Web site provides the most current details about where and when workshops will be offered, and announces any changes to the above schedule and locations.



Fish and Aquatic Plants – What’s the Connection?

Jeff Gunderson, Minnesota Sea Grant Program, 218-726-8715, jgunder1@umn.edu

Musky fishermen on Lake Vermillion pine for the “weed” beds that used to hold muskies, now gone because of hoards of plant-eating rusty crayfish. Some fishermen sing the praises of bass fishing along the edges of dense aquatic plant beds. Others recognize that many lakes’ fish populations have changed as aquatic plants have disappeared due to lakeshore development. What is the relationship between aquatic plants and fish populations? Sounds simple enough to answer until you sit down to consider the issue’s scope. There are so many species of plants and fish and variations in how they interact that it is an oversimplification to state that all fish depend on healthy native aquatic plant populations. Some fish species need aquatic plants sometime during their lives while others don’t.

I’ve spent most of my career focused on Great Lakes fishes. Many of those species don’t ever see a rooted aquatic plant and they do just fine, such as lake whitefish, lake trout, coaster brook trout, lake herring, deepwater chubs and sculpins. Other fish like largemouth bass thrive with more aquatic vegetation and have increased dramatically in some areas of the Great Lakes. Take Lake Erie for example – prior to the 1990s, poor water clarity in that very productive lake limited plant growth. But when the invasive zebra mussels and quagga mussels populations grew in the lake, they filtered the water and improved clarity to the point that aquatic plants began growing in areas that hadn’t seen them in close to 100 years. As a result, largemouth bass and sunfish increased in numbers and size in those areas where the plants began growing again.

What does this have to do with inland Minnesota? It reminds us that different fish species have different habitat requirements and that loss of critical habitat will result in loss of fish. As with Lake Erie, we may not know what we’re missing because the habitat has been altered for so long that we’ve forgotten how it was. Or a gradual decline in aquatic plant communities results in an almost imperceptible change in the fish community that is difficult to detect during a single generation. Changes may only become clear when you look through old photo albums at your cabin and realize your grandfather caught more of a particular fish species than you do.

One thing is sure – many fish species and other animals depend on healthy native aquatic plant communities for food, habitat, cover, and spawning or nesting sites. What we don’t know is how our individual actions add up to impact a lake. How many individual shoreland property owners (or rusty crayfish for that matter) each removing the aquatic plants on their shoreline does it take to change the lake’s habitat enough to impact its fish?

Without careful consideration about how our individual choices add up to impact lakes, pretty soon we are going to sound like our grandfathers talking about the good old days. New fishery management tools and regulations and the catch and release practices of many anglers, combined with taking care of fish habitat could help ensure that the good old days of fishing in Minnesota are still ahead of us. ■

Legislative Happenings Affect Water Resources

Barb Liukkonen, Water Resources Center and Minnesota Sea Grant Program, 612-625-9256, liukk001@umn.edu

[The following is adapted from the Minnesota Environmental Action Network, May 30, 2006 Legislative Update.]

The Minnesota legislature took a step forward in cleaning up and protecting our lakes, rivers, and streams, but has failed to create a legacy yet. This year, the legislature allocated almost \$25 million in one-time money to begin cleanup programs. Environmental and conservation groups have been working with business, agricultural, and local government representatives to secure the needed \$80 to \$100 million a year in ongoing funding, which the legislature failed to address this year.

Legislators made environmental and conservation projects a significant component of this year’s capital investment bill, which borrows money for long-term investments. The 2006 Protect Our Water package supported projects that invested in clean water, protected lands, healthy communities, and transportation alternatives. Protect Our Water projects received over \$230 million in the final bill, which included

\$14 million for Wildlife Management Areas acquisition (WMAs), \$7 million for forest conservation easements, and \$60 million for the Northstar Corridor. The \$230 million represents a significant commitment to Minnesota’s Great Outdoors in this \$1 billion bonding bill.

The greatest accomplishment this year to protect Minnesota’s waters is the state’s new mercury emissions reduction act, which was signed into law in early May. The law requires the state’s largest coal-burning power plants to reduce mercury emissions by 90 percent between 2009 and 2014. Currently, coal-burning power plants account for approximately half of Minnesota’s mercury emissions. This law will reduce mercury emissions approximately 1,200 pounds a year – roughly one-third of Minnesota’s 2005 emissions – and is one of the strongest laws in the country. ■

Shoring up Minnesota's Shores

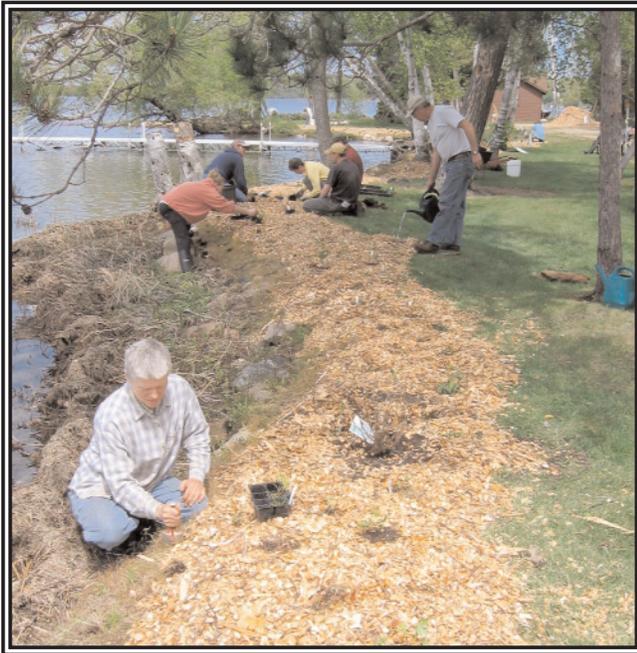
Mary Blickenderfer, University of Minnesota Extension Service, 888-241-0885, blick002@umn.edu

Itasca Soil and Water Conservation District is sponsoring University of Minnesota Extension Shoreland workshops and buffer project cost-share over the next two years to promote shoreland stewardship in Itasca County. Pictured are several participants of the September 2005 Introduction to Shoreland Landscaping Workshop learning to install a



Planting bulrush for wave break and fish habitat.

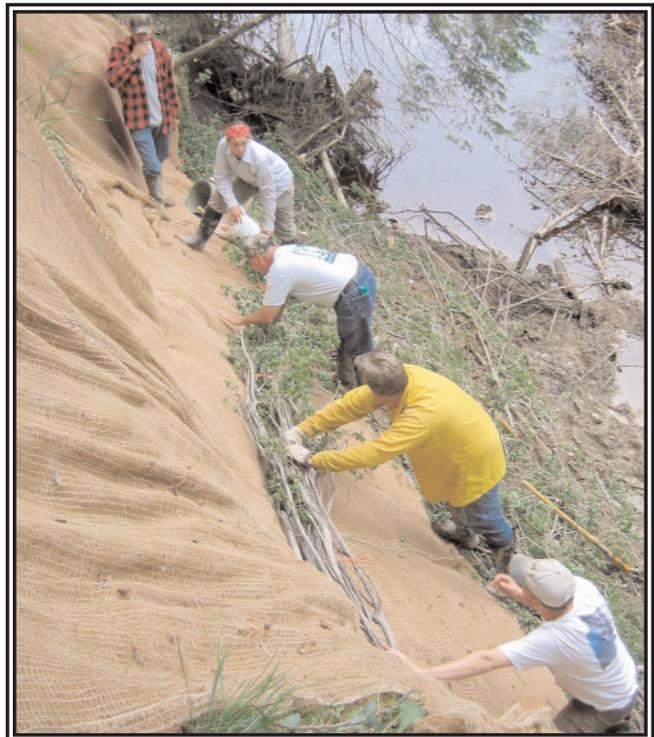
in the northwestern part of the state, offered challenges to the participants installing "brush mattresses" and "live fascines." This one-day workshop was sponsored by the Lake of the Woods and Koochiching Soil and Water Conservation Districts. ■



Installing native plants for wetland and upland buffer at Wildwood Resort.

200-foot shoreland buffer at Wildwood Resort during a May 2006 **Shoreland Planting Workshop** near Grand Rapids. These "graduates" went on to install six additional buffer projects on their own properties by the end of May. They will attend the Shoreland Maintenance Workshop later this summer to learn how to fine-tune their projects.

Participants of Extension's May 24, 2006 **Erosion Control Workshop** take their knowledge of bioengineering gleaned in the morning classroom session into the field to stabilize failing slopes of the Rapid River near Baudette. The steep and slippery clay slopes and fluctuating water level, common



Installing erosion control blanket and live fascines.

Plan to Attend "The Changing Landscapes of Minnesota's Lakes and Rivers"

Molly Zins, Minnesota Waters, 800-515-5253, mollyz@minnesotawaters.org

Join lake and river advocates from around the state on September 7-9 for the 2006 Lakes and Rivers Conference being held at the Duluth Entertainment and Convention Center (DECC). Networking, excellent speakers, new program opportunities, and fun are guaranteed in beautiful Duluth, the world's largest inland seaport, surrounded by

dramatic hills and a breathtaking historic waterfront. Take a couple of extra days and wander up the North Shore as the colors begin to turn. Don't miss this opportunity to learn and play atop Lake Superior, the largest freshwater lake in North America.

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Algae – Essential for a Healthy Lake

Mary Blickenderfer, University of Minnesota Extension Service, 888-241-0885, blick002@umn.edu

At the base of the food web, algae support nearly every aquatic creature. They are essential to a diverse and productive fishery and the overall health of our lakes. Many species of algae occur in lakes. The exact species and their population within a given lake reflect the available nutrients, water clarity, temperature, acidity, time of year, and abundance of algae grazers.

Many Minnesota lakes have algae “blooms” – the mats of vegetation or “pea soup” green water that occur on hot, calm days. On rare occasions blue-green algae blooms can produce toxins that are harmful to fish and other animals, including cattle and dogs.

Algae “blooms” occur under conditions that favor algae growth or when algae grazers are scarce. Turn up the water temperature and add some phosphorus and you have the perfect recipe for algae soup! The small amount of phosphorus that naturally occurs in our lakes is usually insufficient to support large algae blooms. However, phosphorus entering our lakes from the surrounding watershed (the large land area that drains to a lake) or resuspension of phosphorus that has settled on the lake bottom will fuel algae blooms – under optimal conditions, additions of only one pound of phosphorus can lead to 500 pounds of algae!

Fishing pressure on a lake can add to the problem. The saying, “tug on one part of the food web and you’ll affect all the other parts” holds true. Excessive removal of northern pike, walleye, bass, and other game fish from a lake affects populations of small fish and grazers and can ultimately lead to a greater abundance of algae.

The most cost-effective strategies that produce long-term results involve reduction of phosphorus inputs to a lake. Phosphorus commonly enters a lake attached to soil particles, dissolved in runoff, in seepage from failing septic systems and through resuspension of lake bottom sediments. On-land strategies to reduce phosphorus loading to your lake include maintaining septic systems, planting vegetative buffers along streams and lakes, and re-routing runoff into rain gardens and stormwater ponds. In-lake strategies to reduce phosphorus re-suspension include maintaining or restoring the native aquatic plant population, removing/controlling carp (if they exist in your lake), reducing motorboat speed in shallow water and eliminating other activities that “stir up” sediments.

Lakes with high phosphorus levels will benefit from the strategies listed above, but may also require additional efforts to reduce existing phosphorus. These are best

determined with the assistance of a limnologist or lake consultant (not a product sales representative). Your local Dept. of Natural Resources (DNR) office may provide direct assistance or help you find a consultant. Examples of treatments to consider are: phosphorus inactivation, sediment removal, artificial circulation, algae harvesting, food-web manipulation, and algicides. Keep in mind, implementation of these treatments will require planning, substantial funding, and may require a Minnesota DNR permit. Depending on the method used, repeated treatments are often necessary, some may have negative impacts on a lake, and none of them alone will be effective in the long-term restoration of your lake unless phosphorus inputs from watershed and in-lake activities are also controlled.

Want to know more?

Information on the Web:

<http://www.extension.umn.edu/water/>
<http://www.shorelandmanagement.org>
<http://www.extension.umn.edu/distribution/naturalresources/DD7040.html>

For permit information:

http://www.dnr.state.mn.us/ecological_services/pubs_regulations.html ■

Plan to Attend “The Changing...” *cont. from page 3*

- Over 35 concurrent sessions from Thur. through Sat.
- Special workshops on advanced topics
- 85 exhibitors of lake management services and products
- Field trips to view innovative projects in the Duluth area
- Local water planning track Thursday sponsored by the Minnesota Board of Water and Soil Resources
- Session tracks on citizen monitoring, building healthy organizations, watershed stewardship, shoreland development, river ecology and more
- Gala Minnesota Waters Celebration overlooking the harbor
- 1,200 hotel rooms within walking distance of the DECC. An extensive climate-controlled skywalk system connects attendees to lodging, attractions, restaurants, shopping and the DECC, or stay in historic Canal Park, just three minutes away.

For more information, registration, and program agenda, check out the conference Web site at:
<http://www.minnesotawaters.org/conference06.html>. ■

wrc.coafes.umn.edu

www.seagrants.umn.edu

www.extension.umn.edu

www.shorelandmanagement.org



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