



From Shore to Shore

For Minnesota citizens promoting the health of our rivers & lakes

July-August 2005

#68

Calendar of Events

→ Aquatic Plant Identification Workshop

July 22-23, 2005 – Menahga, MN
Contact: Kari Tomperi, 218-631-3195,
kari.tomperi@mn.nacdn.net

→ Shoreland Volunteer Workshop

September 16, 2005 – Mankato, MN
Contact: Gary Wyatt, 507-389-6748, wyatt@umn.edu

→ Shoreland Volunteer Workshop

September 30, 2005 – Carlton, MN
Contact: Joan Weyandt, 218-862-3760 ext. 178,
Joan.Weyandt@co.carlton.mn.us

→ 4th Annual Nonpoint Source Education Programs Conference

October 17-20, 2005 Chicago, IL
The Shoreland Education program will be presented.
http://cfpub2.epa.gov/npdes/courses.cfm?program_id=0&outreach_id=238&o_type=1

→ Water Resources Conference

October 25-26, 2005 – Brooklyn Center, MN
<http://wrc.coafes.umn.edu/waterconf/>



Minnesota Revises State Nonpoint Source Management Plan

Barb Liukkonen, Water Resources Education Coordinator,
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The Minnesota Pollution Control Agency is leading revision of Minnesota's Nonpoint Source pollution Management Plan Program (NSMPP), which identifies needs; outlines technical, regulatory and educational responses; and guides grant funding priorities. This is a revision of the existing plan created five years ago. The goal is to bring it up-to-date, acknowledging new issues and needs, and incorporating advances in management techniques and opportunities. You can find the existing NSMPP on the MPCA Web site at: <http://www.pca.state.mn.us>.

Committees including state and regional agencies, the university, and local partners are working on different chapters in the document (e.g., lakes, rivers, groundwater, etc.), with a goal of having a review draft by late fall and a final draft that will be submitted to the Environmental Protection Agency (EPA) in early 2006. Hopefully, both the EPA and state will approve the plan by summer 2006 so it can be posted on the Web and available for guiding 319 grant funding in autumn 2006.

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Toxic Effects of Blue-Green Algae

An interagency task force, including veterinarians, has been developing materials about the causes and effects of toxic blue-green algae blooms that seem to be occurring more frequently in Minnesota. The materials aren't yet available, but should be soon. Within the next several weeks, a poster and brochure will be available on the MPCA's Web site and we'll have an update about how to get copies in the next *From Shore to Shore*. Meanwhile, you can visit the MPCA website, read or download a good article, and see photos of some blue-green algae blooms. Go to: www.pca.state.mn.us/water/clmp-toxicalgae.html.

Lawns, Lakes, and Laws

Ron Struss, Regional Extension Educator, Farmington, 651-480-7708, rsturss@umn.edu

Have you bought your first bag of phosphorus-free lawn fertilizer? Was it easy to find, or was the store clerk befuddled when asked for lawn fertilizer with a "zero in the middle?"

Since January 2004 in the Twin Cities metro area, and January 2005 in the rest of Minnesota, the use of phosphorus lawn fertilizer has been restricted. For everyone except sod farms and golf courses the law is straightforward: Do not use lawn fertilizers containing phosphorus unless your soil is low in phosphorus or you are seeding a new lawn. The law is for water quality protection; the nutrient phosphorus spurs growth of algae in lakes and rivers.

The new law presents two challenges for those caring for lawns: 1) Finding phosphorus-free lawn fertilizer, and, 2) knowing whether your lawn is low in soil phosphorus. The first challenge of finding phosphorus-free fertilizer has been solved in the Twin Cities metro area. It is difficult to find a store selling lawn fertilizer that does not offer a good selection of phosphorus-free products, including "weed &



feed" combinations. It is anticipated by next season the same will be true state-wide after old fertilizer stocks are depleted and new orders are adjusted for 2006.

As for knowing whether a lawn is low in soil phosphorus and in need of phosphorus fertilization, soil testing provides the best answer. Both private laboratories and the University of Minnesota offer soil testing for lawns. Contact your local agricultural supply store for laboratory names, or the University of Minnesota Soil Test Lab at 612-625-3101 or <http://soil.test.coafes.umn.edu>. A soil test costs about \$15.



For additional information on the Minnesota Phosphorus Lawn Fertilizer Law, go to the Minnesota Department of Agriculture's Web site at <http://www.mda.state.mn.us/waterland.htm> and look under "Lawn Care and Water Quality." Also, educational material on lawn care and water quality is available in the "Tools" section of <http://www.cleanwatermn.org>.

Shoreland Education Program Presented at International Meeting

Barb Liukkonen, Water Resources Education Coordinator, 612-625-9256, liukk001@umn.edu

Our Shoreland Education Program was presented as part of a special session on Great Lakes outreach at the International Association of Great Lakes Research conference held in Ann Arbor, MI, May 23-27. Our talk entitled, "University of Minnesota Shoreland Education Program - Creating Shoreland Stewards," summarized our workshop offerings, educational materials, research and demonstration sites, highlighted the work of shoreland volunteers, and summarized the accomplishments and impacts of the program over the past several years. Cindy Hagley submitted the abstract and Barb Liukkonen prepared and gave the presentation; Eleanor Burkett and Mary Blickenderfer were co-authors.

While at the conference, Barb and Cindy attended many talks that gave us new insights and ideas for shoreland work in Minnesota. There were concurrent sessions on toxics, aquatic invasive species, bacteria monitoring and contamination, cormorants, blue-green algae and botulism, land use impacts, remote-sensing, and other outreach programs. It was an educational and energizing three days!

Connecting Our Backyards to Lakes and Streams through Water Quality Education

Nate Meyer, Regional Extension Educator, Cloquet, 218-726-6473, meyer179@umn.edu

Minnesotans have a strong tradition of celebrating their lakes and streams—ice-fishing and skiing in the winter, swimming, boating, fishing, and visiting the family cabin in the summer. So, it is not surprising that 1,000 residents, who responded to the statewide *2nd Minnesota Report Card on Environmental Literacy* survey, considered “water pollution to be extremely important and an area not safeguarded enough.”

However, raising Minnesotan's knowledge of water issues is still a concern. About half (45 percent) of respondents to the *2nd Minnesota Report Card on Environmental Literacy* correctly answered three to five of five questions about water quality issues—receiving a passing grade. These results equate well nationally, but they leave plenty of room for increased success. Nearly a quarter (23 percent) of those surveyed answered zero to one correct—receiving a failing grade.

To increase the effectiveness of water quality education, staff from the University of Minnesota Extension Service, Minnesota Sea Grant, Minnesota Department of Natural Resources, Minnesota Office of Environmental Assistance, Fond du Lac Tribal and Community College, and the Great Lakes Aquarium collaborated on a July workshop for educators. Called *Backyards to the Big Lake*, this Duluth-based workshop engaged educators in three days of exploring streams, storm drains, lakes, resources, and methods to teach about water issues. Through funding from Minnesota's Lake Superior Coastal Program and Minnesota Sea Grant's successful View From the Lake program, the workshop culminated in a lake-tour aboard the *L.L. Smith Jr.*, a Great Lakes research vessel, where educators investigated how changing land use impacts Lake Superior's water quality.

A specific goal of *Backyards to the Big Lake* was to form partnerships between classroom and non-classroom educators,



Credit: Nate Meyer

interested citizens, state and regional professionals to strengthen water quality education. Using research, educational standards and personal experience, participants explored the questions: “What is important to know about water quality?” and “How and where can people learn about water quality?” They met with regional water quality professionals and identified ways to cooperate inside and outside of the classroom to increase Minnesotan's access to education and understanding of water quality issues.

The *Backyards to the Big Lake* workshop served K-8 classroom teachers, non-classroom teachers, citizens and professionals interested in water quality education. It was held July 11–July 13 at the Great Lakes Aquarium in Duluth, MN. Contact Nate Meyer at 1-888-241-0724 for more details.

The Second Minnesota Report Card on Environmental Literacy: A Survey of Adult Environmental Knowledge, Attitudes and Behavior by Dr. Tony P. Murphy and others is available from the Minnesota Office of Environmental Assistance or online at <http://www.seek.state.mn.us>.



Credit: Nate Meyer

Is Your Lake Looking as Green as the Golf Course?

Julie Klocker, Sauk River Watershed District, julie@mail.srwdmn.org, 320-352-2231

In late summer, people can become disenchanted with lake living when they see smelly green scum, called "blue-green algae," taking over their lake. There are many types of blue-green algae. Some are a food staple in parts of the world while others are poisonous to livestock, pets, and humans. They have adapted to live in nearly any type of environment from the hot sulfur springs in Yellowstone to the glaciers in Alaska. They can occur as free-floating individuals or attach to rocks and docks in long strings or thick mats. The free-floating algae commonly produce the green scum we see on lakes, but a similar scum can result from large colonies of mat- or string-forming blue-green algae becoming dislodged and floating to the water's surface.

What's blooming?

If these blue-green algae occur in all our lakes, why do they become a problem in only some lakes? And why during the warmest part of the summer? To answer the first question, you need to know that phosphorus and water temperature are usually the main factors influencing algae growth in Minnesota's lakes. Water bodies having the greatest blue-green algae growth include lakes that contain high amounts of phosphorus (1 pound of phosphorus can produce up to 500 pounds of algae) and/or shallow lakes and bays in which water warms earlier and reaches greater temperatures than in deeper lakes and open water.

To answer the second question, note that algae blooms occur on calm days during the heat of the summer when algae numbers are greatest. In the absence of turbulence

that normally keeps free-floating algae at depth, large numbers of algae float to the water surface and create a green scum. Once at the water's surface the intense solar radiation kills the algae. This die-off is followed by a rapid increase in bacteria that consume dead algae - a process that depletes oxygen in the water and results in a nasty, rotten-egg smell. In addition, low-oxygen water makes it difficult for fish to "breathe."

What can we do?

We can't control the water temperature or the wind, but everyone has a part to play in reducing phosphorus entering the lakes. You can help by eliminating phosphorus fertilizer use (it's now Minnesota law), preventing soil erosion, and keeping leaves, grass clippings, and pet wastes from washing into lakes. These are small steps that can help control the smelly, green scum that we see so often on lakes in late summer.

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Steve Heiskary and Pam Skon are leading revision of the lakes chapter. I am serving on that committee, together with Dave Wright, Department of Natural Resources; Dan Steward, Board of Water and Soil Resources; Pat McCann, Minnesota Department of Health; Paula West, Minnesota Lakes Association; Randy Anhorn, Metropolitan Council; Mark Zabel, Minnesota Department of Agriculture; and others. In addition to updating existing sections, we'll be adding material on nutrient standards, advances in remote sensing techniques, toxic algal blooms, volunteer monitoring, bacteria, phosphorus fertilizer requirements, and several case studies. Our Big Sandy shoreline revegetation project will be included as a case study. It was originally funded with 319 funds and has been in place for nearly eight years, so offers a good opportunity to assess the longer-term success of revegetation projects.

From 2002-2004, Mary Blickenderfer and I received 319 funds to train volunteers to initiate and maintain revegetation projects; we were able to apply for those funds because the need for increased shoreline revegetation was prioritized in the NSMPP. With the \$48,000 grant, 1,128 people from 41 different Minnesota counties attended 51 workshops during the three-years. Over 65,080 square feet of shoreland were revegetated through local projects or as part of a hands-on planting workshop.



Cladophora glomerata

All issues of *From Shore to Shore* are available online at www.shorelandmanagement.org/shore_shore/

wrc.coafes.umn.edu

www.seagrants.umn.edu

www.extension.umn.edu

www.shorelandmanagement.org



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