

From Shore to Shore

A publication of the University of Minnesota
Shoreland Education Team

May - June 2011

Issue #103

www.shorelandmanagement.org

Beachcombers – an Excellent Idea!

Mary Blickenderfer, U of MN Extension, 218-244-7996, blick002@umn.edu

With a little training, some practice and a lot of enthusiasm, Lake Washburn shoreland owners have adapted an elegantly simple, yet effective way of monitoring the lake for Eurasian watermilfoil (EWM) – The Beachcomber Program! “I actually got the initial idea from a lake in New Hampshire (Lake Mascoma),” states Ted Johnson, president of the Lake Washburn Association.

In 2009, a very small infestation of EWM was detected in a relatively secluded bay of Lake Washburn. To help to prevent EWM from spreading to other parts of the lake, the Lake Washburn Beachcomber Program enlists lakeshore owners to “comb” the plant debris along their shore in search of EWM. If EWM fragments were ever reported, a more thorough search for its source would be conducted. Their goal is to monitor the entire perimeter of their lake.

Remember that EWM roots in lake bottoms and sends up stems that eventually reach the

water surface where they can spread to form a dense mat. Waves generated by storms and watercraft, as well as boats, water skiers, and swimmers can break off plant fragments that float to shore or root to form new plants.

After the first season, Johnson noted that “despite (past) training on aquatic invasive species, and passing out many (EWM identification) cards, people still do not seem to be able to identify EWM or feel comfortable that they will recognize it.” He worked with University of Minnesota Extension’s Shoreland Education program to create and host an intensive, hands-on training that will enable attendees to tell EWM from other look-alikes in their lake.

The Beachcomber Program can be used for early detection of new introductions as well as monitoring existing infestations of both EWM and curly-leaf pondweed, another aquatic invasive plant species that threatens the health of our lakes. ■

May Events

Introduction to Rain Gardens

Date: May 19

Location: Northland Arboretum, Brainerd

More Info: Northland Arboretum at 218-829-8770

The Water Summit

Date: May 20

Location: Itasca Community College

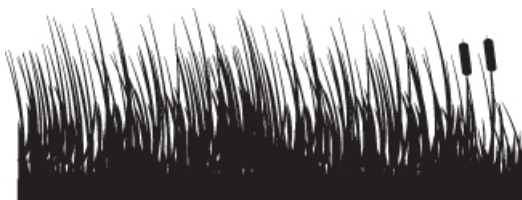
Web site: www.ItascaWaterLegacyPartnership.org

Introduction to Lakescaping

Date: May 26

Location: Northland Arboretum, Brainerd

More Info: Northland Arboretum at 218-829-8770



For the most current listing of Shoreland Education workshops, visit www.extension.umn.edu/shoreland.

June Events

Introduction to Lawn Care

Date: June 2

Location: Northland Arboretum, Brainerd

More Info: Northland Arboretum at 218-829-8770

Shoreline Restoration Social Night with the Whitefish Area Property Owners Association

Date: June 8

Location: Crosslake

More Info: www.wapoa.org; Martha Davidge at 218-543-4678

Planning Your Shoreline Gathering with the Whitefish Area Property Owners Association

Date: June 22

Location: Crosslake

Web site: www.wapoa.org; Martha Davidge at 218-543-4678

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Minnesota Ecoregions and Water Quality

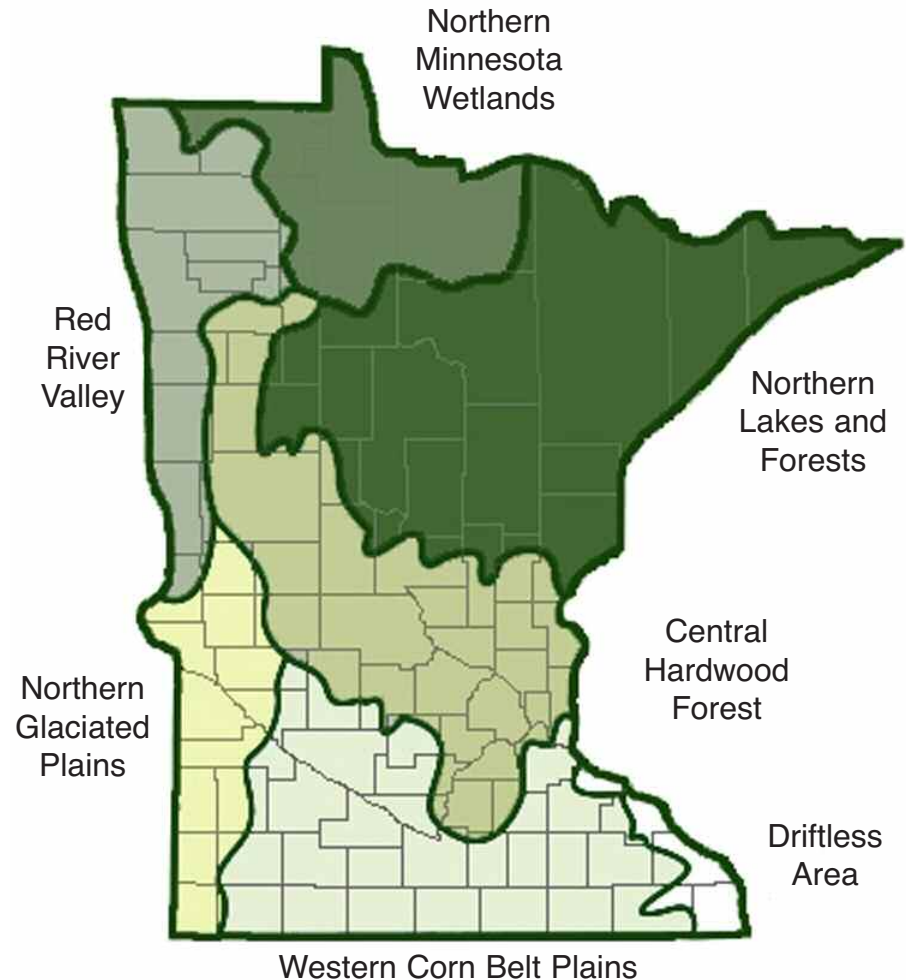
Moriya Rufer, RMB Environmental Laboratories, 218-846-1465, moriyar@rmbel.info

Have you ever wondered why the lakes in southern Minnesota are generally shallower and "greener" than the lakes in northern Minnesota? This difference is mainly based on ecoregion. An ecoregion is a geographical area where land use (agriculture, forest, prairie, etc.), underlying geology, potential native plant community, and soils are relatively similar.

Many of these differences in soil fertility and underlying geology reflect glacial activity, such as where they advanced, and where they scraped and deposited till. Glaciers scraped Northern Minnesota down to the bedrock then left boulders, sand and clay behind as they retreated. Glaciers in the last Ice Age didn't reach Southern Minnesota, where the land remains covered by a rich, fine prairie (now agricultural) soil.

Minnesota is divided into seven ecoregions, but most of our lakes are in four of them. Minnesota Pollution Control Agency (MPCA) researchers have developed a way to compare lakes within and between ecoregions. They studied the watershed characteristics, land use, and water quality of reference lakes in each of the ecoregions and derived an average range of water quality for each ecoregion. Although these reference lakes are not pristine, they are considered to be relatively natural and representative of the typical lakes within the ecoregion.

For example, the lakes in the Northern Lakes and Forests Ecoregion (Hubbard County and east to Lake Superior) have characteristically low phosphorus and algae concentrations due to the abundance of forests, and sandy, relatively infertile soil. Lakes in the Western Corn Belt Plains Ecoregion (southern Minnesota) tend to have higher phosphorus and algae concentrations due to



the fertile black soil, agriculture and the Minnesota River Valley.

The MPCA discovered through lake-user surveys that user perception of water quality varied by ecoregions. This has led to ecoregion-specific criteria for phosphorus, and helped to clarify expectations and goals for protecting lakes in Minnesota.

Once you have the average phosphorus, chlorophyll-a and secchi disk readings for your lake, you can compare your lake to the other lakes in the ecoregion using the table below. Look up a lake's phosphorus, chlorophyll-a and secchi disk data online at the RMBEL Lakes website: <http://rmbel.info/Reports/ReportsQuery.aspx> or the DNR Lakefinder site: www.dnr.state.mn.us/lakefind/index.html. ■

Minnesota's Wetland Program Plan

Mark Gernes, Minnesota Pollution Control Agency, 651-757-2387, mark.gernes@state.mn.us

The Importance of Wetlands

Minnesotans love their lakes, which offer abundant opportunities for recreation plus some truly inspiring images. Rivers, with their winding ways, connect local interests and reach from the heart of Minnesota to places beyond the state borders. Wetlands, which are by far a more common surface water in Minnesota, do not support the same recreational appeal and thus fewer people have had meaningful personal experiences in them.

Wetlands are complex systems that provide homes to many types of plants, birds, frogs and toads, and invertebrates. They can exhibit water regimes that vary greatly. Once extensively drained for development or agricultural interests, wetlands are now better protected by laws and regulations such as the Minnesota Wetland Conservation Act. These laws were passed in part due to the understanding of the water quality benefits that wetlands provide, leading to acceptance of the concept of 'no net loss' and mitigation for lost or degraded wetlands.

Wetland Status

A recent Minnesota Department of Natural Resources report* found that the number of acres of wetlands in Minnesota in 2009 was similar to the number of wetland acres that existed in the 1980's. This suggests that efforts to restore wetlands are making a difference and that Minnesota may be meeting the goal of no net loss in terms of wetland acres. However, many of today's wetlands are degraded. The next wetland challenge is to measure success by acres AND by wetland quality.

The State Wetland Program Plan

The Minnesota Board of Water and Soil Resources, Departments of Natural Resources and Agriculture, and Minnesota Pollution Control Agency are responding to a request from the U.S. Environmental Protection Agency (EPA) to develop a State Wetland Program Plan, with the goal of examin-



ing the status of existing wetland programs in Minnesota. The plan will also include recommendations for key wetland program areas to improve conservation and watershed program effectiveness. Broad public input for the wetland plan was collected through an online survey conducted from December 2010 through January 2011. The survey consisted of ranking the relative importance of 32 topics representing existing or potential needs within Minnesota's wetland programs. A total of 270 survey responses were received; nearly half (120) of the respondents were local government staff. State government and agricultural industry representatives submitted 40 and 32 responses, respectively. Survey results indicated 11 high-priority items. Most of these are related to wetland restoration or to wetland regulatory oversight by local, state and federal units of government. The top three items were:

- 1) Improve wetland permitting programs, to reduce complexity and duplication, to improve resource protection and administrative burden,
- 2) Improve coordination between local, state, and federal wetland protection programs; and
- 3) Actively restore wetlands to establish or enhance wetland habitat complexes.

In part from this input, the plan will feature two initiatives:

- 1) Develop an online wetland accounting system for permit applicants to submit and track the status of permit

decisions. The accounting system would make submitting permit materials, including restoration plans, more efficient.

- 2) Improve the science of wetland restoration as a means to revitalize the state's water resources. Wetland and watershed restoration will feature prominently in the future of Minnesota's water resources.

State Wetland Plan of Action

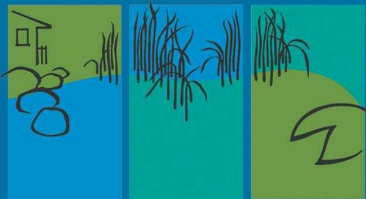
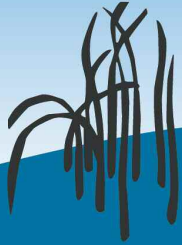
Based on the survey results and cooperating state agency recommendations, Minnesota's Wetland Program Plan will be made up of two sections. The first section will discuss and make recommendations about existing wetland program elements. Many of the comments received in the survey referred to suggestions about the existing wetland program. For example one of the business-affiliated respondents stated, "The use of accurate information, based on true scientific evidence, hasn't been nearly enough of a priority in the development of wetland programs." An environmental consultant offered, "...The avoidance part of the rule is taken too far when there are small wetlands that have been greatly compromised already by agriculture and then a development plan has to be changed and devalued substantially to avoid this wetland. Monies could then be required from the developer for a restoration or buffer or some other enhancement in the watershed that will improve water quality tenfold compared to saving the little isolated degraded wetland".

The second part of the plan will feature the two program initiatives mentioned above, while recognizing funding limitations in light of the current budget deficit. Resources for program actions will come from cost-saving measures and/or from federal grants from sources such as the EPA. ■

**Status and Trends of Wetlands in Minnesota: Wetland Quantity Baseline. December 2010* http://files.dnr.state.mn.us/eco/wetlands/wstmp_report_final_121410.pdf

Contact

Karen Terry
University of Minnesota Extension
From Shore to Shore Editor
218-998-5787
kterry@umn.edu



From Shore to Shore

www.shorelandmanagement.org

A publication of the Shoreland Education Team, dedicated to educating Minnesota citizens about shoreland management to improve water quality, habitat, and aesthetics of our lakes and rivers.

From Shore to Shore is available in hard copy and electronic formats. Archived issues are available online at www.shorelandmanagement.org

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Minnesota's Native Fishes: Darters

Karen Terry, U of M Extension, 218-998-5787, kterry@umn.edu



Quick: think of a fish. Chances are you thought of walleye, northern pike, bluegill, or even eelpout. Or maybe — just maybe — you thought of one of Minnesota's beautiful darter species: rainbow darter, slenderhead darter, banded darter, to name a few. These minnow-sized gems are common in Minnesota rivers but are not often seen or used by people so they tend to be overlooked.

Some of Minnesota's darter species display vibrant colors that can rival the brightest of saltwater fishes, especially the males in breeding season. The rainbow darter (*Etheostoma caeruleum*) is a great example of this; the males have brilliant blue, orange, and teal markings. Darters are small (generally 2-6" long), but they are not minnows. They are in the Family *Percidae*, the same as walleye and perch, and in the genus *Etheostoma*, *Percina*, or *Crystallaria*. Darters generally prefer streams and rivers, primarily the shallow fast-water rocky sections, but some can be found in lakes or slow-moving streams as well.

They tend to move quickly from one place to another, hence the name 'darter', and they are often found between rocks or boulders. Darters lack or have very small air bladders compared to other fish, which enables them to stay close to the bottom of streams and lakes. Their streamlined body shape helps them hold their position in fast water without expending undue amounts of energy.

Darters eat tiny animals (mostly copepods, waterfleas, and midge larvae) and other

fishes' eggs, and they are eaten by larger fish and fish-eating birds like herons and kingfishers. Their reproductive strategies are varied. In many of the darter species, males are territorial, and a few actually tend the eggs after spawning. In most of the species, females attach their eggs to either vegetation or hard surfaces like rocks or logs. Spawning occurs in the spring.

Interested in learning more about darters and other Minnesota fishes? Check out *The Great Minnesota Fish Book* or grab your snorkeling equipment and the kids and head out to your local stream. Look closely in the crevices between the boulders in the fast-water areas, and maybe — just maybe — you will be able to see some of our darters in action.

Note: A field-based, hands-on workshop about Minnesota's native fishes will be offered to Master Naturalists in August. Check the Master Naturalist website for details. <http://www.minnesotamasternaturalist.org/>

For online photos and more information, see:

Fishes of Minnesota:

Information About the Distribution and Ecology of Native and Introduced Species <http://hatch.cehd.umn.edu/research/fish/fishes/>

Fish Identification Database:

www.wiscfish.org/fishid/ ■