

# From Shore to Shore

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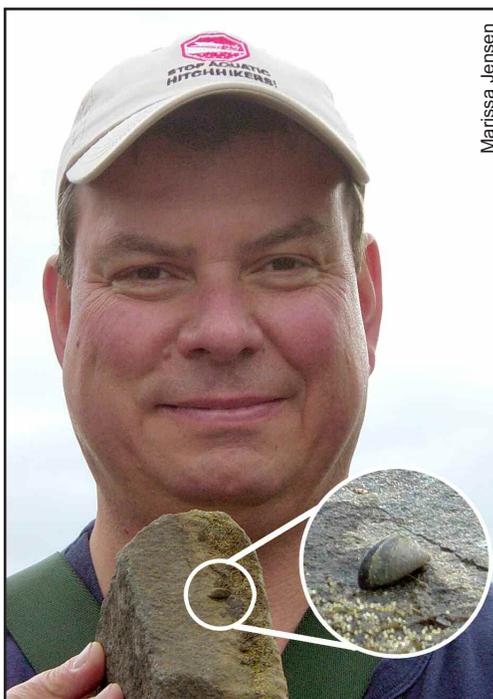
## New Statewide Invasive Species Plan: Looking Forward

By Doug Jensen, U of M Sea Grant Program, 218-726-8712, [djensen1@umn.edu](mailto:djensen1@umn.edu)

"Good things often come to those who wait..." and, though it's been in development for five years, Minnesota's new comprehensive statewide plan to prevent, reduce spread, and promote management of invasive species is indeed a good thing. While state, federal, tribal, and local governments and businesses have been working to address invasive species for nearly two decades, this plan coordinates and guides those efforts over the long-term. It is one of the first in the country to cover the full range of species—aquatic *and* terrestrial plants and animals and pathogens.

Developed by a workgroup of the Minnesota Invasive Species Advisory Council, A *Minnesota State Management Plan for Invasive Species* was approved by the national Aquatic Nuisance Species Task Force late last year. It is regarded as a forward-looking effort to prevent, detect, respond to, and manage invasive species. Some funding for the plan to address aquatic invaders could come from a federal grant through the Great Lakes Restoration Initiative.

Timing for funding couldn't be better. Unfortunately, aquatic invaders like zebra mussels, spiny waterfleas, and Eurasian watermilfoil spread to a couple of new lakes and rivers each year, each slipping through the cracks despite aggressive efforts to prevent that from happening. With more resources and people working on these and other invasive species threats, Minnesota can get ahead of the curve in avoiding the devastating impacts of invasive species on our waters and shorelands.



Marissa Jensen

*Doug Jensen holds a rock from Pike Lake with a single zebra mussel attached (July 2009).*

For a copy of the plan, visit: [www.anstaskforce.gov/Meetings/2009\\_November/MN\\_ANSTF\\_Draft\\_10-20.pdf](http://www.anstaskforce.gov/Meetings/2009_November/MN_ANSTF_Draft_10-20.pdf).

For more information about Aquatic Invasive Species, visit [www.seagrant.umn.edu/ais/](http://www.seagrant.umn.edu/ais/). ■



For the most current listing of Shoreland Education workshops, visit [www.extension.umn.edu/shoreland](http://www.extension.umn.edu/shoreland).

### Clean Water and Climate Adaptation Summit 2010

**Date:** September 16th & 17th

**Location:** Minnesota Landscape Arboretum, Chaska, MN

Join local government officials and staff, industry leaders, natural resource professionals, scientists, and citizens to learn how climate trends might affect Minnesota and the region, how green infrastructure will be a key water-management strategy, and how to make informed decisions and enhance the economic viability of your community.

**Registration:** You may register for Thursday only, Friday only, or for both days.

For more information, visit [www.arboretum.umn.edu/cleanwaterclimatechangeadaptationsummit.aspx](http://www.arboretum.umn.edu/cleanwaterclimatechangeadaptationsummit.aspx) or call 952-443-1422.

### Inside...

- 2 Monitoring Nutrients in a Small Watershed
- 3 Itasca Natural Shoreline Buffer Incentives Project: Phase Two
- 4 Is it Buckthorn or is it???

# Monitoring Nutrients in a Small Watershed

By Karen L. Terry, U of MN Extension, 218-998-5787, [kterry@umn.edu](mailto:kterry@umn.edu)

We all know that nutrients entering our lakes and rivers can lower water quality, but it's often difficult to get a handle on where the nutrients are coming from, exactly what nutrients are present, and what effect they ultimately will have on the water. We also know that while we may be concerned about the water quality of 'our' lake or 'our' river, to be able to adequately address any impacts – or to plan any improvements – we need to consider the lake or river in terms of how it is situated within its watershed. The project *Nutrient Pathways to Stocking Lake: Investigating Phosphorus Sources from Septic Systems, Shorelands, and Agricultural Fields from a Sub-watershed Perspective* looked at ways to work with the citizens of the sub-watershed, located in Wadena County near Menahga, to identify and address phosphorus sources within that drainage area. The project focused on five main components: septic system surveys, landowner surveys, water samples, soil samples, and shoreland property assessments.

The septic systems on the properties surrounding Stocking Lake (the only lake in this small sub-watershed) were grouped into those that needed to be surveyed and those that did not. Of the 99 septic systems, 45 were surveyed, and about half of those were deemed to be noncompliant. Property owners and county staff are working to get those systems brought up to code as soon as possible.

Surveys were mailed to each of the 402 property owners within the sub-watershed to learn about their level of understanding and their perceptions of water quality issues in the area. More than half of the surveys were completed and returned. Respondents indicated that the water quality of Stocking Lake is very important to them (65%), despite the fact that nearly 41% stated that they never use the lake for recreation. When asked if the water quality in the lake is improving, declining, or staying the same, a strong majority (56%) said that they didn't know, indicating a need for data collection and/or outreach.

Water samples were collected by citizens six times this spring at 11 sites,

including at the lake inlets as well as further up in the sub-watershed in incoming creeks. The samples were professionally analyzed for orthophosphates and total phosphorus. Four samples were at least 0.1 mg/L above the recommended maximum level of 0.115; three of those were all collected at the same site, indicating the need for further monitoring and possibly land use changes.

To determine how much phosphorus is present in the local soils, samples were collected in five locations, representing various land use categories, such as lakefront residential property, forested, and a row-crop farm field. All of the average values were in the very high soil test phosphorus range for the existing land use based on U of MN recommendations. This indicates that all land-uses have the potential to be acting as phosphorus sources within the watershed if soil erosion occurs or if soluble phosphorus is moving in soil-water to a water table that discharges into a lake, river or stream.

To assess the shoreline properties around Stocking Lake, each site was visually inspected from the water and scored on the basis of factors affecting how much runoff from the lot is likely to reach the lake. These factors include 1) density and variety of vegetation in the upland and shoreline areas, and 2) percentage of impervious/mowed/bare surface on the lot. Based on these factors, 84 properties were categorized as 'poor' or 'fair', while only 17 were categorized as 'moderate' or 'good'. The 'poor' or 'fair' categories indicate properties where phosphorus is likely moving overland to the lake. Many of the lots on Stocking Lake are small (many are only 50' wide), which often results in a high percentage of impervious surface area, but in many cases there are opportunities to create filter strips between the house/lawn and the lake and to divert water from flowing toward the lake, decreasing the phosphorus in Stocking Lake.

So what's next? The citizens, local decision makers, and natural resource professionals will meet to discuss the results and make decisions about how to collectively address the phosphorus

sources identified by this project. They might consider setting up monitoring regimes for other nutrients, too. If the project is successful, they will continue working together to detect water quality changes (positive or negative) and proactively manage nutrients and water quality into the future.

See another article about this project in the January/February 2010 issue of *From Shore to Shore* ([http://shorelandmanagement.org/shore\\_shore/newsletter\\_archive.html](http://shorelandmanagement.org/shore_shore/newsletter_archive.html)). ■

## Learn more about watersheds:

### Watershed Basics:

[www.sustland.umn.edu/related/water1.html](http://www.sustland.umn.edu/related/water1.html)

### Minnesota's Watersheds (map):

[www.dnr.state.mn.us/watersheds/map.html](http://www.dnr.state.mn.us/watersheds/map.html)

### The Center for Watershed Protection: [www.cwp.org](http://www.cwp.org)

### The Lakeshed Project:

[www.dnr.state.mn.us/watersheds/lakeshed\\_project.html#lakeshed\\_status](http://www.dnr.state.mn.us/watersheds/lakeshed_project.html#lakeshed_status)

### The Watershed Assessment Tool:

[www.dnr.state.mn.us/watershed\\_tool/index.html](http://www.dnr.state.mn.us/watershed_tool/index.html)

### Surf Your Watershed:

<http://cfpub.epa.gov/surf/location/index.cfm>

### Watershed Protection:

<http://water.epa.gov/type/watersheds/index.cfm>

### Northland NEMO:

<http://northlandnemo.org/>

## Itasca Natural Shoreline Buffer Incentives Project: Phase Two

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The first phase of the Itasca Natural Shoreline Buffer Incentives Project – a shoreland property owner survey and shore assessments of five lakes conducted in summer 2009 – was summarized in the November/December 2009 issue of this newsletter ([http://shorelandmanagement.org/shore\\_shore/new\\_sletter\\_archive.html](http://shorelandmanagement.org/shore_shore/new_sletter_archive.html)). Now in the second phase, our goal is to use the information gleaned in 2009 to create an effective shoreland buffer program that will sustain itself beyond the lifetime of the grants\*.

*The Itasca County Lake Challenge* is a user-friendly, educational, and shoreland assessment tool and the starting point from which the rest of the incentives program unfolds. It guides the owner on a tour of their property, focusing their attention on often-overlooked aspects of their shoreland use by asking simple questions. If an owner scores low on a question there is a specific corrective measure, or Challenge, they can choose to take to raise their score (e.g., create **A Smaller Footprint**, **Green Armor Your Shore**, **No Mow-Let it Grow**, **Set Your (mower) Blade High**, plant a **Super Filter**, etc.). Also provided are the benefits to the lake, as well as the relative financial cost and time/effort involved in taking the Challenge. In addition, there are several *Extra Credit Challenges* to involve shoreland owners in a citizen science research project or promote the *Lake Challenge* among their neighbors on the lake.

**The Challenge hits the road...** We chose the most powerful delivery medium to present the Challenge message and information to shoreland property owners: person-to-person dialogue. While a very time- and labor-intensive undertaking, we intend to find out how effective it is in attaining our project goal. Student interns and local volunteers were trained by a communications professional on delivery strategies and by an Extension educator on shoreland ecology and revegetation – as they relate to the Challenge. These trained shoreland messengers have been busy this summer, calling and visiting shoreland property owners on the five research lakes. Their biggest hurdle has



Student intern measures the slope of a citizen research site. The owners will monitor rainwater run-off from their property prior to installing a shoreland buffer.

been connecting with shoreland owners while at the lake (two-thirds of the owners are seasonal). When they have succeeded in meeting with them for the no-cost, no-strings-attached evaluation of their property using the Challenge tool, the results have been worth the effort. Of the sixteen shoreland properties visited so far, property owners have signed up to take an average of five Challenges each. Many are interested in reestablishing native buffers and learning more about the rainwater run-off from their property via the extra credit, citizen research Challenge.

Ongoing trainings are being held for local student interns, landscapers, Master Gardeners, and citizen volunteers who will be assisting with the buffer installations and rainwater run-off research projects now under way.

**The next step** is to promote the program to other lake associations and shoreland owners in the county. We will begin with radio and newspaper interviews of the participants on the research lakes.

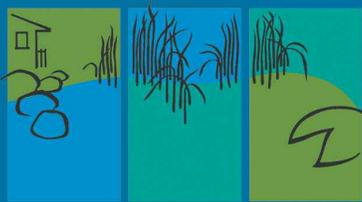
**Stay Tuned...** Look for additional updates in this newsletter about the Itasca County buffer program and a similar program in Otter Tail County. These are pilot programs that may be useful to other lakes, counties, and states in our region.

\* Funding for this project was provided by the Minnesota Environmental and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR) and by the Itasca County Environmental Trust Fund.

Cooperating agencies include: University of MN, MN Department of Natural Resources, Itasca Soil and Water Conservation District, Itasca County Environmental Services, Itasca Water Legacy Partnership, Action Media, Master Gardeners, Itasca Community College, Itasca Coalition of Lakes Association, and Itasca Water Plan Implementation Committee. ■

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## From Shore to Shore

[www.shorelandmanagement.org](http://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](http://www.shorelandmanagement.org)

To subscribe or unsubscribe, please contact Barb Anderson at [bj@umn.edu](mailto:bj@umn.edu) or 218-998-5787.

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UNIVERSITY OF MINNESOTA  
EXTENSION

## Is it Buckthorn or is it???

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Common buckthorn (*Rhamnus cathartica*), also called European buckthorn, was listed as a restricted noxious weed by the Minnesota Department of Agriculture in 1999, and glossy buckthorn (*Rhamnus frangula*) followed suit in 2001. This means these plants are PROHIBITED and are not allowed to be imported, sold, or transported in the state. If you find you have either of these on your property you should take measures to eradicate it. The first step in buckthorn control is to properly identify it.

Both common and glossy buckthorn spread rapidly and out-compete native Minnesota plants. Both have small, insignificant flowers that develop into dark purple fruit clusters that ripen in late July and August. When fruits are eaten by birds, scattering of seeds occurs. Two native plant species that are easily confused with buckthorn are black chokeberry (*Aronia melanocarpa*) and gray dogwood (*Cornus foemina*).

**Common buckthorn** (*Rhamnus cathartica*) may grow into shrub or small tree forms with one or several upright stems, reaching up to 35 feet tall. The young bark of the common buckthorn is smooth and becomes rough as it matures. Bark is dark gray. They grow in both dry and moist areas. They can tolerate floods and drought conditions. Common buckthorn grows in open conditions as well as dense shade.

**Glossy buckthorn** (*Rhamnus frangula*) grows into shrub or tree forms reaching up to 20 feet tall with one to several upright stems. Its light gray bark is rough. Glossy buckthorn threatens swamps, wet meadows, and fens. It can grow into dense patches that shade out grasses, sedges, and shrub species.

**Black chokeberry** (*Aronia melanocarpa*) grows up to 3–6 feet tall with multiple stem colonies formed by rhizomes. Bark is gray when mature and smooth or slightly rough. Can be confused with choke cherry, but look for the tiny finger-like glands along the midrib of the leaves. Flowers are attractive and white in spring. Found in central and northern forested areas of Minnesota, but not usually found in great abundance. Native shrub.

**Gray dogwood** (*Cornus foemina*) grows 6–9 feet tall and has straight stems with short branches. Forms colonies as roots sucker. Found throughout Minnesota, prefers forest edges or forest canopies with openings. White flowers in the spring.

For information about buckthorn control see the following websites:

Dzuik, P. Buckthorn Control. (reviewed 2009) [www.extension.umn.edu/distribution/horticulture/00075.html](http://www.extension.umn.edu/distribution/horticulture/00075.html). Minnesota Department of Agriculture.

What Can You Do to Control Buckthorn? [www.dnr.state.mn.us/invasives/terrestrial\\_plants/woody/buckthorn/control.html](http://www.dnr.state.mn.us/invasives/terrestrial_plants/woody/buckthorn/control.html). Minnesota Department of Natural Resources. (2010).

Resources:

Dirr, M. A. 1990. Manual of Wood Landscape Plants: Their Identification, Ornamental Characteristics Culture, Propagation and Uses. Stipes Publishing Company.

Smith, W. R. 2008. Trees and Shrubs of Minnesota. Minnesota Department of Natural Resources.



- Leaves**
- 1-3.5" long, half as wide to nearly as wide, elliptical or ovate
  - Finely toothed edges, tip pointed
  - Lateral veins curve, 3-4 per side
  - Leaf surface dark green, underside pale green
  - Simple
  - Opposite on stem (may also be subalternate or alternate)
  - Leaves stay green after hard frost
- Branchlets**
- Thorn on tip of most branchlets



- Leaves**
- 1-4" long, half as wide, oval shape
  - Smooth leaf edge, point at tip
  - Lateral veins curve, 6-9 pairs
  - Dark green, glossy surface, glabrous, pale underside
  - Simple
  - Alternate on stem
  - Leaves green after hard frost
- Branchlets**
- No thorn at tip



- Leaves**
- 1-3" long, 3/4-2" wide
  - Finely toothed leaf edge
  - Leaves dark green with dark tiny finger-like glands on the midrib, underside light green
  - Hairless (glabrous), but sometimes with fine hairs on underside
- Branchlets**
- Smooth or hairy
- Fruit**
- Blackish purple



- Leaves**
- 2-4" long, narrow elliptical, base tapered
  - Smooth leaf edge, tip pointed
  - Lateral veins curved, 3-4 per side
  - Leaf color dark gray-green with stiff short hairs
  - Underside is similar, but pale green
  - Simple
- Fruit**
- Whitish to pale blue