

From Shore to Shore

A publication of the University of Minnesota
Shoreland Education Team



Stop Aquatic
Hitchhikers

2



Landscaping your
Septic System

3



A Secchi Story

4

July - August 2009

Issue #92

www.shorelandmanagement.org

Streamside Ecology: Exploring the Parts to Understand the Whole

Karen Terry, U of M Extension, 218-998-3927, kterry@umn.edu

In June, the University of Minnesota Extension's Shoreland Education Team debuted a new pilot project called Streamside Ecology: Exploring the Parts to Understand the Whole. Funded by the Renewable Resources Extension Act, two workshops were offered in west-central Minnesota, each lasting two days. The intent of this effort was to raise the level of understanding of how river systems work. The target audience included local decision makers like county commissioners, boards of adjustment, planning commissions, county staff involved with land use decisions, Soil and Water Conservation District staff, watershed district staff, Master Naturalist volunteers, and others with an interest in river ecology.

The first day of the workshops was classroom style and provided a framework for understanding the interrelated components of riverine systems based on five broad categories: hydrology, geomorphology, water quality, biology, and connectivity. The multimedia-rich CD *Healthy Rivers: A Water Course* was used during the class. It is available online at www.dnr.state.mn.us/healthyivers.

The second day was held streamside and was spent reinforcing the lessons learned on Day One. In addition to the 'real' river, an Emriver model stream was used to demonstrate processes such as sedimentation and sediment sorting as well as the potential impacts of stream activities like dam removal.

The workshops will be evaluated and modified based on the feedback received, and the project will be expanded to statewide within a year. For more information about Streamside Ecology, contact Karen Terry, U of MN Extension, kterry@umn.edu. ■



This model stream will be used in teaching the Streamside Ecology Workshops."

Calendar



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

Waterosity, 'Go Green with a Splash Party' Weekend

July 11 - 12; Chaska, MN
www.arboretum.umn.edu/waterosity.aspx

Shoreland Buffers

July 17; Alexandria, MN
Contact: Emily Siira, Douglas SWCD, 320-763-3191 ext. 3,
Emily.Siira@mn.nacdn.net

Backyard Landscaping with Native Plants; for beauty, function, and sustainability

July 17; 3:00 - 4:00 PM; Cass County Fair Grounds - Eco Fair Building

Shoreland Workshop & Buffers Tour

August 1; Hackensack, MN
Contact: Paula West;
westcom@brainerd.net

Rain Gardens

August 28 - 29; Park Rapids, MN
Contact: Barb Kimer;
t-bkimer@msn.com

Landscaping your Septic System

Jessica Wittwer, U of M Onsite Sewage Treatment Program, 612-624-7460, wittw001@umn.edu

Having a septic system in your yard does not have to be an eyesore. Plants such as turf grasses, perennials, wildflowers, and native grasses are suitable cover for septic systems in Minnesota.

The State of Minnesota mandates that a vegetative cover must be established as soon as the topsoil has been placed over the drainfield. Cover establishment can be done by a Subsurface Sewage Treatment System Professional, a homeowner, or a landscaping company; the agreement should be in writing so all parties understand who is responsible for each aspect of the project.



Jessica Wittwer

A vegetative cover keeps the soil in place, helps the septic system function by removing moisture and nutrients from the soil, provides an insulating layer for winter protection, and makes the area more attractive. Turf grasses have fibrous root systems that hold soil in place, require maintenance similar to a lawn, and are available in numerous varieties including shade-tolerant to suit site conditions. Perennials, wildflowers and native grasses are an attractive alternative to turf grass, while providing many of the same benefits including fibrous roots, low maintenance (once established), and tolerance of dry soil conditions. Know your site conditions; such as amount of daily sunlight, your USDA Plant Hardiness Zone and percent slope of the system before choosing plants to help ensure plant longevity and vigor.

Planting the wrong cover can damage the area. Avoid annuals as they need to be planted yearly, increasing the traffic over the system. Do not plant edible plants on or near the system (a system failure will contaminate the surrounding area). Trees, shrubs, or plants that have woody root systems should not be placed on or near the system. These roots can interfere with and possibly destroy your septic system. Your septic system should not be irrigated, therefore using plants that thrive on natural rainfall is ideal. The topsoil should not be tilled before planting. Keep traffic over the drainfield to a minimum when planting and weeding.

While the plants are establishing (1-3 years), use mulch or an erosion control blanket to reduce soil runoff. If you are considering an erosion control blanket, know that once it is staked in place covering the entire surface of the drainfield, holes can be cut through the layers to create spots for the plants. The blanket is biodegradable, so it can be left in place. Geotextile fabric should not be used as it may prohibit the exchange of



Carrie Mack

Pasque flowers are one of the many native flower species that can be used in septic system landscaping.

oxygen, which both the system and the plants need.

Since the septic system will need to be serviced about every 3 years, access covers need to be easily reached. Do not block them. A pot filled with flowers or other impermanent yard decorations may be placed over the covers. Annually inspect your system for animal damage such as burrowing and tunneling before damage becomes extensive.

For additional recommendations on specific plants and proper maintenance of septic systems, please refer to Landscaping Septic Systems #06986 (www.extension.umn.edu/distribution/horticulture/DG6986.html) or the University of Minnesota Onsite Sewage Treatment Program Web site: <http://septic.umn.edu>. ■

Stop Aquatic Hitchhikers - It Makes Dollars and Sense

Doug Jensen, U of M Sea Grant, 218-726-8712, djensen1@umn.edu

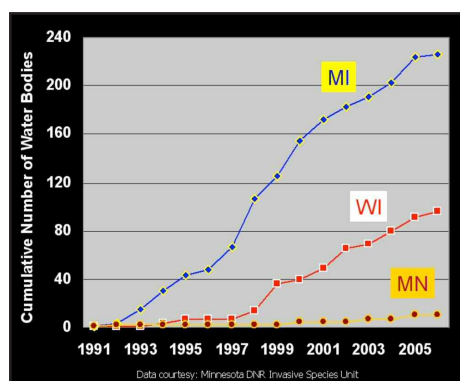
People love lakes and rivers. They also tend to favor the exotic. So why doesn't a lake with exotic species generate waves of affection?

Harmful aquatic invasive species (AIS) can tarnish water quality, clog waterways, and impact fishing. AIS are non-native plants, animals and pathogens that cause environmental damage, economic loss, and harm to human health. Because we want Minnesota's waters to remain untarnished, it's important to keep species like zebra mussels, spiny waterfleas, and Eurasian watermilfoil in the news and out of the water.

With each media story about AIS, it may seem as though the invaders are gaining on us. In reality, Minnesota is doing an exemplary job of stopping aquatic hitchhikers from spreading. AIS can spread when people empty aquaria into lakes or streams, allow aquatic plants and animals to escape from water gardens, or travel as "hitchhikers" on commercial plant shipments. They can also "hitchhike" with boaters, anglers, waterfowl hunters, or recreational divers who don't inspect, clean and drain their equipment. Our challenge is to block AIS from spreading along these pathways.

At the forefront

Many states point to Minnesota as a model in addressing AIS pathways.



Cumulative number of water bodies infested with zebra mussels in three states.

In the early 1990s, Minnesota responded to the threats of AIS by emphasizing public education, watercraft inspection, monitoring, regulations and enforcement. Authorized by the Minnesota Legislature, the Minnesota DNR established a program to prevent introductions of new harmful AIS, control the spread of existing AIS, and reduce their impacts on our environment, society and economy. Today, the successes of these efforts continue to rely on collaborations with many partners, including Minnesota Sea Grant, University of Minnesota Extension, U.S. Fish and Wildlife Service, and Minnesota Waters.

For nearly two decades, Minnesota has worked with recreational boaters and anglers, encouraging them to act in ways that will prevent aquatic "hitchhikers" from spreading. We understand how boaters and anglers get their information. We also have insights into their risks for spreading AIS, their attitudes, motivations, and behavior. We know boaters and anglers are willing to take action because they truly value our lakes and streams.

Surveys show that the percent of respondents who said they took action to prevent the spread of AIS in Minnesota increased from 70 percent in 1994 to over 90 percent in 2000. This increase eclipsed the rate of change reported in other states, where less emphasis was placed on AIS prevention messages. Possibly, the vigilance of Minnesotans has kept zebra mussels from rapidly spreading to inland lakes and rivers like they have in Michigan and Wisconsin. In fairness, there are more water accesses from which zebra mussels could have spread in those two states. However, Minnesota has invested more effort in public awareness and prevention regarding AIS.

Dollars and sense

Minnesota has a \$9 billion tourism industry, which supports 230,000 related jobs, annually. Over 28.6 million people visit Minnesota each year of which about one-third purchase fishing licenses.



Of course, residents fish, too; about 19 percent of them. Retail sales related to fishing are valued at \$1.42 billion. With more than 866,000 registered watercrafts, Minnesota ranks the third "boatiest" state in the nation. Lakes and rivers help define Minnesota; proactively working to keep AIS from spreading makes sense. To help, consider joining the Stop Aquatic Hitchhikers! campaign.

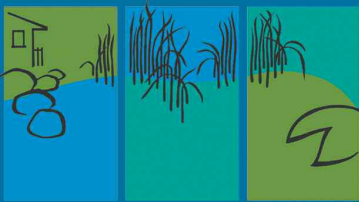
Based on exposure to the campaign, 99 percent of Minnesota boaters and anglers said it WILL influence them into taking precautionary action to prevent the spread. This summer, Stop Aquatic Hitchhikers! messages will be on TV, radio, billboards, and in newspapers. Maybe you'll see them at rest areas, retail and other outlets, or on gas pumps. Maybe you'll see them on lawn banners at water accesses, at water festivals or fairs, in regulation booklets, or as windshield fliers and stickers.

To find out how you can Stop Aquatic Hitchhikers! in your community, visit www.protectyourwaters.net or e-mail lakewaves@state.mn.us.

Reprinted and updated from Lake Waves Newsletter Summer 2008 ■

Contact

Karen Terry
University of Minnesota Extension
From Shore to Shore Editor
218-998-3927
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

To subscribe or unsubscribe, please contact Barb Anderson at bj@umn.edu or 218-998-5787.

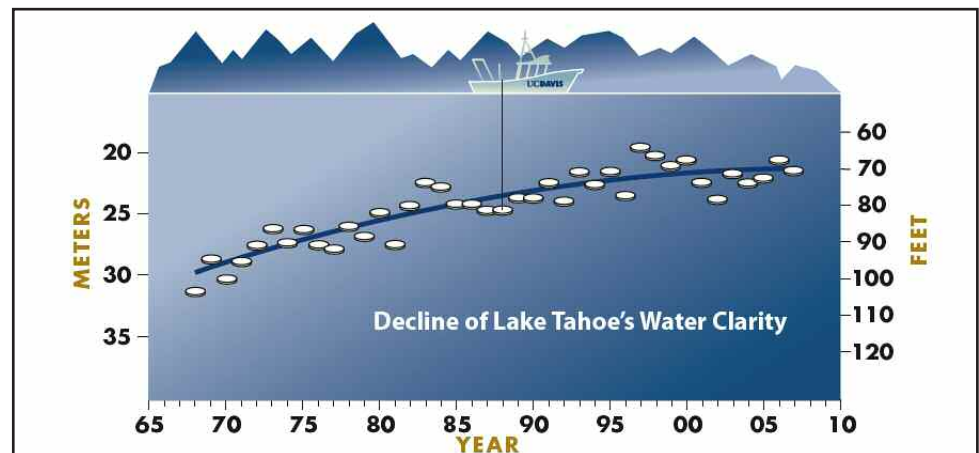
The University of Minnesota is an equal opportunity employer and educator.



UNIVERSITY OF MINNESOTA
EXTENSION

A Secchi Story

Cindy Hagley, U of M Sea Grant, 218-726-8713, chagley@umn.edu



Decline of Lake Tahoe's Water Clarity. Source: Tahoe State of the Lake Report, 2008 <http://terc.ucdavis.edu/stateofthelake/index.html>

Many From Shore to Shore readers have joined the "white disk" club, faithfully grabbing their Secchi disk every few weeks throughout the summer to measure the clarity of their lake as part of the Minnesota Pollution Control Agency's Citizen Lake Monitoring Program (CLMP). These lakeshore property owners send their results to the Pollution Control Agency where they are compiled along with data collected from other lakes in the state. Why is the simple act of lowering a dinner plate-sized disk into the water until it disappears and documenting the results important? Over enough time, Secchi disk readings indicate how a lake's water quality has changed.

The Secchi Story of beautiful Lake Tahoe validates the worth and elegance of this simple measurement. Lake Tahoe, perched in the mountains on the border between California and Nevada, is the second deepest lake in the U.S. (second only to Crater Lake), with a depth of 1,645 feet. Its small watershed coupled with thin, nutrient poor soils results in exceptionally clear water. In the 1960s, average annual Secchi depth readings of over 100 feet were typical. Occasionally the readings approached 140 feet! (Lakes in the Brainerd region customarily have average readings of 5-11 feet.) The popularity of Lake Tahoe (now roughly 66,000 residents and 3 million annual visitors) has taken a toll on the water. Thanks to the compilation of average annual Secchi depth readings, the story of Lake Tahoe is easily captured in one graph. The information generated by Dr. Charles Goldman and the Tahoe Research Group since monitoring began in 1968 shows that the lake's water clarity has declined about a foot a year. Measurements of algal growth,

as well as nutrient and sediment pollution collected over the same period of time at considerable expense, tell the same story – humans have degraded a fragile resource. Lake Tahoe's Secchi Story of declining water quality contributed to a groundswell of civic and governmental activity to protect the lake, including a growth moratorium in the 1980s that was challenged all the way to the Supreme Court (the lake won), stringent land use controls, and the pumping of wastewater to treatment facilities outside of the basin. These efforts to protect Lake Tahoe seem to be working. Over the last seven years, according to the Secchi depth readings, Lake Tahoe's clarity has declined more slowly than in the past.

Like many stories, the Lake Tahoe tale has a moral (several actually):

- The simple Secchi disk is a useful tool when measurements are taken frequently enough and over enough time to distinguish natural variability from long-term trends. (On the accompanying graph of Lake Tahoe's Secchi depth readings, note that if the readings had only been taken from 1983 to 1988 people might have concluded that water clarity was increasing – a very different story.)
- It doesn't take a degree in aquatic studies to get involved in monitoring the health of your lake. Volunteer lake monitors are important and they do make a difference! Check out the CLMP at www.pca.state.mn.us/water/clmp.html.
- Minimizing human impacts from the start is easier (and much cheaper) than restoring a lake impaired by human activity. Just ask the citizens of the Tahoe Basin – they can fill you in on the rest of the story. ■