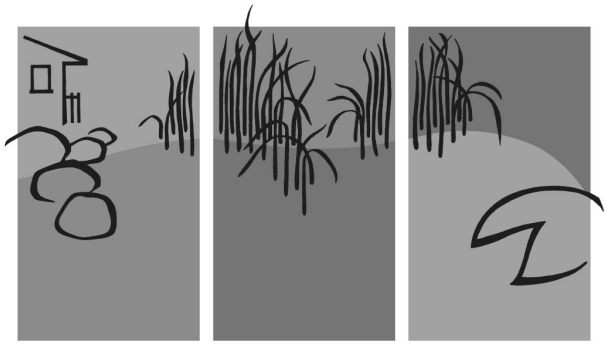


From Shore to Shore

"For Minnesota citizens promoting the health of our rivers and lakes"

Newsletter 50
August 2003

Calendar of Events

One-Day Shoreland Revegetation Workshop
August 22 ~ 9:00am - 3:00pm
Crosslake
Contact Eleanor Burkett at 218-587-8280

September workshops on funding & grant opportunities. A possible sequel session on writing successful grant proposals.
Warner Lake Nature Center.
Dates to be announced.
Contact the University of Minnesota Extension Service Sherburne County at 800-433-5236 or 763-241-2720.

"Coming together is a beginning, staying together is progress, and working together is success."
Henry Ford

This may be your last issue!

Thanks to those of you who returned the yellow postcard from the June issue of *From Shore to Shore* news. If you haven't yet replied, you can still ensure that you will continue to receive this newsletter, by returning the post card, sending an email to Mary Blickenderfer (blick002@umn.edu), or calling Ron Struss (651-215-1950). Please note that Mary's email address was wrong on the original postcard.

As of July 16, about 40% of you had responded. 100 indicated that you'll access the newsletter electronically in the future. 114 people need to continue to receive the newsletter in hard copy via US mail. Only 14 replied that they don't wish to continue to receive the newsletter, which says to us that you find the newsletter useful and we should continue to produce it as a way to provide timely shoreland education and information.

Everyone on the mailing list will receive this August issue in hard copy, but those of you who can access it electronically will also get an email announcement so you can check it out online. Beginning in September, we'll transition to mailing the newsletter only to those people who replied that they want to continue to receive it in hard copy. In the future, if you want to read the newsletter online, you can visit www.shorelandmanagement.org/citizen

This change will allow us to save money, natural resources, and staff time, while maintaining communications and coordination with people like you who are committed to protecting our lakes and rivers. Thanks for your continued interest and support.

When it rains it pollutes – a short history of stormwater pollution

By: Ron Struss, University of Minnesota Extension Educator

"When it rains it pollutes" is an easy shorthand for stormwater pollution. It is what happens when rain and snowmelt washes pollutants from streets, parking lots, yards, and storage areas and into lakes, rivers, and wetlands. Stormwater pollution, along with agricultural runoff pollution, are two main reasons we are not meeting "fishable and swimable" goals for our nation's rivers and lakes.

Stormwater problems dates back to the earliest cities. The basic structures of cities, roofs and paving, prevents rain from soaking into the ground and leads to flooding during storms. The Indus city of Mohenjo-Daro (now West Pakistan) dealt with this problem in 3000 B.C. by building drains into their streets. The Romans built drainage systems in 1000 B.C. that not only handled stormwater runoff, but also overflows from public baths and fountains.

Stormwater drainage systems soon led to sanitary sewers. Once it was noted that a good rainfall would flush a storm drain clean, people started putting household waste in them in anticipation of the next rain. However, when rains were infrequent, unsanitary and repulsive conditions would result. The solution was to cover over the drainage ways and create what the Romans called *cloacae* and we call sewers. Initially, sewers dumped untreated waste directly into receiving waters. By the 1930s wastewater treatment became common in developed countries.

When North American cities were built, combining stormwater runoff and sanitary waste into one sewer was common practice - a practice stopped in the 1960s in the interest of water pollution control. Combined sewers ended up at wastewater treatment plants. Runoff from small storms would be treated along with sanitary waste – a good thing. But runoff from large storms would overwhelm treatment plants, causing raw sewage to be dumped into rivers and lakes – a bad thing.

Now for the most part, storm sewers are separate from sanitary sewers. This means stormwater and the pollutants it picks up are routed largely untreated into surface water, resulting in:

- sediment from road sand and construction sites clogging waterways;
- nutrients from leaves, grass clippings, and fertilizer causing algae blooms;
- bacteria from pet waste, urban wildlife, and illegal sanitary connections causing beach closing; and
- toxics entering our water when people dispose of wastes down storm drains.

"Best management practices" are being promoted to reduce stormwater pollution. Included are innovative designs for new developments, "good housekeeping" practices to keep pollutants from being washed away by rain, education to keep people from using stormwater drains as disposal sites, and constructed practices such as ponds and wetlands to provide a degree of stormwater cleanup before it is released into lakes and rivers. A good basic publication on yard care practices can be found at: www.moea.state.mn.us/campaign/garden/.

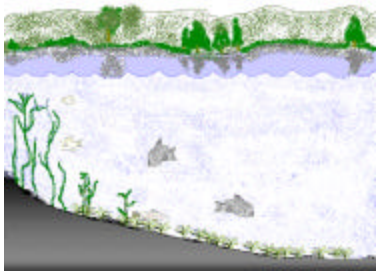
Stormwater is piped largely untreated to lakes and rivers – what washes off the land goes into the water!

City Fish, Country Fish – What Makes Good Fish Habitat?

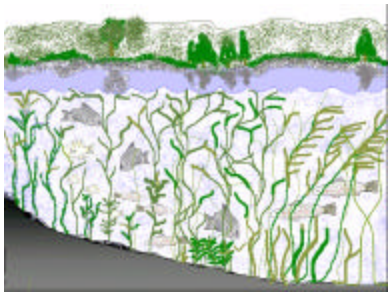
By: Cindy Hagley, Great Lakes Environmental Quality Educator, University of Minnesota Sea Grant

Some of us prefer country living, with its lack of crowding, clean air and water, and wide-open spaces. Because in the country people are sparsely distributed, we tend to have to drive much farther to obtain the services we need. Others of us prefer the city, where high rise buildings make it possible for large numbers of people to congregate in relatively small spaces. In the "more productive" environment of the city, services are also concentrated in a small area and can be more easily obtained nearer to our homes. These services include shelter, food, water, medical care, security, and other basic human needs.

Fish are not so very different from us in terms of their basic needs, and, just like us, the number and variety of fish that occur in a particular lake are determined by the availability of essential "services." In the case of fish, these include places to spawn and rear young fish, places for adults to feed, fish migration habitat, and vegetative cover for protection from predators.



The types of lakes we may enjoy most for swimming in are the least "productive." In other words, they are less nutrient-rich and support less algae and fewer aquatic plants, fish, and the small aquatic animals (zooplankton) that many fish feed on.



Though not as much fun for swimming, a healthy, productive lake like this one is somewhat like our "city" environment. It can support high and diverse populations of fish.

What can you do to encourage good habitat conditions for fish in your lake? One of the most important habitat requirements for fish is aquatic vegetation. The following excerpt from *Through the Looking Glass* says it well:

"Any angler knows how important plants are to fish. Habitat created by aquatic plants provides food and shelter for both young and adult fish. Invertebrates living on or beneath plants are a primary food source. Some fish, particularly bluegills, also graze directly on leaves and stems."

"Predatory fish cruise the shadowy plant beds in search of prey. The structure and density of the plant beds can determine whether predators will be well-fed or go hungry. Too few plants can limit the number of prey fish; plant growth that's too dense can fence predators out."

Through the Looking Glass... A Field Guide to Aquatic Plants
Susan Borman, Robert Korth and Jo Temte
1997, 248 pp.
http://www.wisc.edu/wisconsinpress/books/0519.htm

Just as in a city, where poor management can result in pollution, overloaded services, and a reduced quality of life, lakes receiving high concentrations of nutrients (phosphorus and nitrogen) from their watersheds can shift from being able to support high and diverse fish populations to a less stable, less diverse system. Excess nutrients can lead to the elimination of sensitive species, which are less able to cope with the adverse conditions that result from a lake becoming overly productive, or "eutrophic." Long-lived species that reproduce slowly and require extended periods of stable conditions are most negatively affected in unstable, eutrophic lakes. Often, as lakes become more eutrophic, populations of the top predator species that we enjoy catching, such as walleyes, are reduced, and smaller less desirable species of fish increase.

Just as we work hard in our cities to develop effective comprehensive plans that will ensure a high quality of life in the future, we should work together to plan a healthy future for our lakes. Two of the most important steps we can take to ensure healthy fish populations are to maintain a healthy aquatic plant population and control nutrient inputs from the watershed.

LEARN AND DO:
Master Gardeners from Ramsey and Washington Counties assist with revegetating the shore of Lake Phalen in St. Paul. The June 18th project was coordinated by the Ramsey Washington Metro Watershed District, which has revegetated a total of 1,700 feet of shoreland this season and a total of 4,000 feet since 1998. Engaging the community is key in the watershed district's projects. This season 20 adults and 550 classroom students have been involved in planting. Information on the Ramsey Washington Metro Watershed District's shoreland revegetation project can be found on their website, www.rwmwd.org, or by calling Bill Bartodziej at 651-704-2089.

Out and About ~ Getting To Know *Rose Puckett*

Rose lives on Crooked Lake in Crow Wing County and this is her first year as a Shoreland Volunteer. Rose truly believes that through education Shoreland Volunteers can make an impact on lakeshore owners. They are in the process of creating three buffer zone restoration projects on Crooked Lake to be used for demo sites.

What activities, research or program have you been doing to learn and address this interest?
I have taken Shoreline Design 1 and 2 and also have taken part in a planting. The Restore your Shore CD has been a good resource also. However, in true form and jumping in the with both feet, I have been leading the Buffer Zone Demo projects on Crooked and Portage Lakes. Nothing beats hands on learning!

What is your favorite experience with the Shoreland Volunteer Program?
I love the camaraderie of completing a project and also the opportunity to meet so many fun and interesting people.

What is the most important thing you have done with the program?
The most important thing I have done with this program is exposing people to the concept of preserving our lakes and wildlife and seeing the beauty in our natural surroundings.

What one person do you most admire in life and why?
No one person comes to mind as a most admired individual. Instead, I will say I admire certain qualities in people such as strength, commitment, honesty, and a true respect for all living things.

What is the best book you have ever read?
Someday I will have time to read more than three pages (the same three pages I read the night before) before I fall asleep. Ask me then!

What question would you like to have asked of you?
Q: What do you want to be when you grow up?
A: I'm still working on it!

Sea Grant Minnesota
Water Resources Center
University of Minnesota Extension Service