

From Shore to Shore

A publication of the University of Minnesota
Shoreland Education Team

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www.shorelandmanagement.org

Extension's Water Resources Team

You have worked with us, attended workshops we have offered, read our articles, and visited our websites, but do you know who we are? We are the Extension Water Resources Team! The Water Resources Team is an umbrella group within the University of Minnesota Extension that encompasses the Shoreland Program, NEMO Program, and Stormwater-U.

Water, as it flows through a watershed, follows the rules of physics and topography. It doesn't care a whit about the administrative details of how we humans organize ourselves. In some ways, it makes sense for us to build our work around watersheds more than around particular facets of them. To accomplish this and to better integrate the work that we do, a new Watershed Education Program is taking form in Extension. This program will offer education and facilitate collaborations at the watershed level for stakeholders to increase their knowledge in local water resource planning, protection, and improvement and effectively provide input to meet clean water goals. The team will work with watershed groups to customize outreach efforts to meet their area's needs, addressing physical science and social science issues. Examples of groups that we can assist are watershed districts, total maximum daily load (TMDL) planning and implementation groups, Soil and Water Conservation Districts, local government officials and leaders, and other local decision makers.

What does it mean to address issues at the 'watershed level'? It means that we take a step back from each issue to see how it fits into the geographic boundaries of its watershed. If the issue is declining water quality in a lake, to thoroughly address the problem we need to look upstream and consider all of the potential contributing factors. It also means that we invite all of the affected people within the watershed to



Water Resources Team member John Bilotta working with a group of local leaders to address water-related issues.

participate in identifying solutions so that they can embrace ones that are well-informed and community driven.

In addition to the new Watershed Education offerings, Extension's Water Resources Team will continue to provide the excellent education that you have come to expect from NEMO and Stormwater-U. If you are interested in learning more or scheduling a program, please contact any of the Water Resources Extension Educators listed below.

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- Karen Terry, Fergus Falls, 218-998-5787, kterry@umn.edu ■



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

Invasive Plants Conference

Date: December 14-15

Locations: Milwaukee, Wisconsin

More Info: visit www.ncwss.org/meeting-page2.php

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There is more to trees than shade and swings: Trees, Roots, and Their Role in Stormwater Management

John Bilotta, Extension Educator, Water Resource Management, 651-480-7708, bilot002@umn.edu

- Intercept! A mature tree can intercept nearly 80% of a 1" rainfall event.
- Absorb! Trees absorb large amounts of water and time-release it.
- Infiltrate! Roots provide a pathway for stormwater infiltration and groundwater recharge.

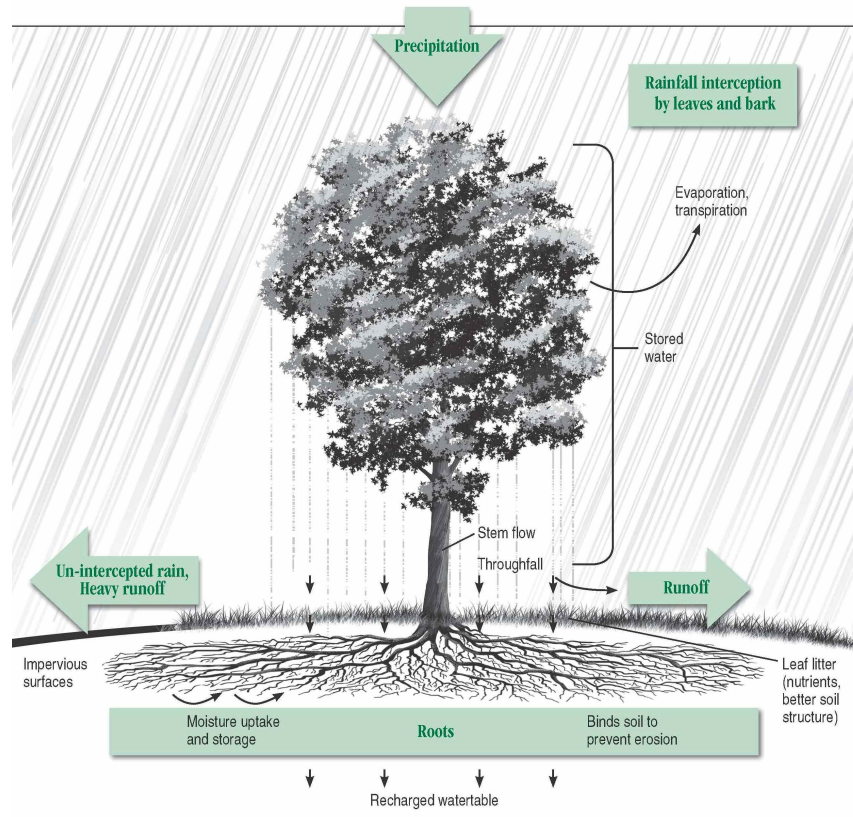
More than 225 water resource professionals, managers, city foresters, and local leaders gathered in September for the 2011 Clean Water Summit. This year's Summit focused on the multiple benefits that trees provide to Minnesota communities including the role they play in both protecting clean water resources and helping to curtail stormwater pollution.

As many of us participate in the annual fall ritual of raking, it's easy to see how so many leaves provided shade on a hot summer day and provide us shelter from winter winds. In fact on the average, studies suggest we can save over 20% on annual air conditioning and heating costs. But the benefits go way beyond just shade and swings. What is the number one hobby of Americans? Gardening – and gardeners



John Bilotta

Important Ways a Tree Helps with Stormwater Management



Rosenow, J., Fazio, and J.R., Helm, K. 2010. How Trees Can Retain Stormwater Runoff. Tree City USA Bulletin no.55. Arbor Day Foundation

love their plants and trees. The aesthetic benefit is priceless and the investment into trees is significant for homeowners, businesses, and cities. Trees are the lungs of the planet, too, and play an important role in human health. Trees reduce carbon dioxide, remove harmful pollutants, foster more sociable and safer neighborhoods, and even have been shown to improve recovery times of hospital patients. Trees mean better business, too; they increase home values and provide more desirable places to shop.

Trees encourage cleaner water and they are a part of a community's stormwater infrastructure. For example, 100 mature trees have the ability to intercept more than 139,000 gallons of rain-

fall per year, reducing the need for stormwater pipes and ponds. More communities are relying on trees to manage stormwater in their urban centers. Tree trenches and engineered soils for highly urban areas are becoming common strategies; such practices insert more green into a gray landscape, too. It's about having the right plans, practices, and policies in place to support trees and community forests.

Trees play a unique role in clean water for Minnesota communities. Find more information at www.northlandnemo.org under the "Resources" section. The section includes fact sheets and the presentations from the 2011 Clean Water Summit: Trees, Roots, and Their Role in Stormwater Management. ■

Harvest Dinner 2011 — A Personal Experience

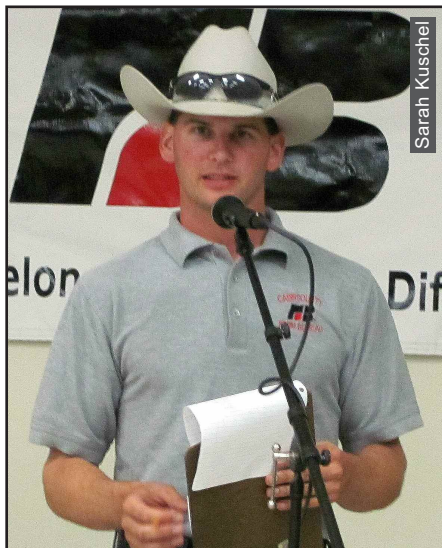
Judy Wallschlager, White Fish Area Property Owners Association, jwallsch@uslink.net

Not too many years ago, about the time of Paul and Babe, Minnesota settlers were logging, hunting, fishing and making moonshine (one would think). They may have had some differences but essential goals were the same — survival.

Eventually things became more sophisticated. Farmers planted crops and raised cattle to provide for themselves and those who had moved on to the towns and cities.

Soon, some of the town and city folk looked at the countryside and thought how great it would be to spend spare time recreating at “the lake.” Some of these city folk were not very respectful of the lakes and streams and habitat, and, as a result, the lakes began turning green and mossy. Habitat for wildlife became compromised or silted over and the rivers began eroding their banks. The farmers weren’t all being too respectful of the streams either.

The quest to maintain water quality began, and as we watched water quality decline, we wondered, “who done it” and started pointing fingers.



Four years ago, the Pine River Watershed Alliance (PRWA) was looking at the phosphorous entering the Pine River and therefore the Whitefish Chain of Lakes. Meanwhile farmers were looking at declining well water. Eventually, the farmers and lakeshore dwellers started talking to each other and recognized how their challenge — good water — was the same.

How to get a water conservation message heard by a larger group was a fundamental question. The first step seemed to be to get people talking to each other. How better than with food, drink, and conversation at the end of a day working in the field, in the office, or just working out?

The Harvest Dinner, brainchild of the PRWA, Crow Wing County Forage Basin Advisory Council, and the Cass Lake Farm Bureau, was born to celebrate the harvest and newfound friendships.

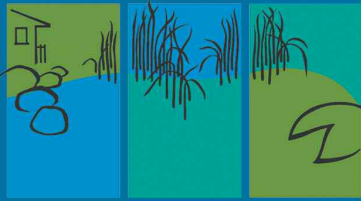
For the past three years, we have enjoyed wonderful sustainably produced food provided by our local farmers and prepared by either of our executive chefs — Matt Annand or Tom Kavanaugh. Music by local, old time, blues, folk playing bands and programs demonstrating our efforts to preserve the quality of ground and surface water accompany the dinner.

This city girl has gained a new understanding and vocabulary through the harvest dinner.

My new awareness became particularly sharp this year as I was bringing in the crops (that would be my tomatoes and herbs in pots). I realized how much I have learned; I know what a heifer is; I know and I appreciate a new set of wonderful people; I understand the way water can connect us as friends to solve a common problem. ■

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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.

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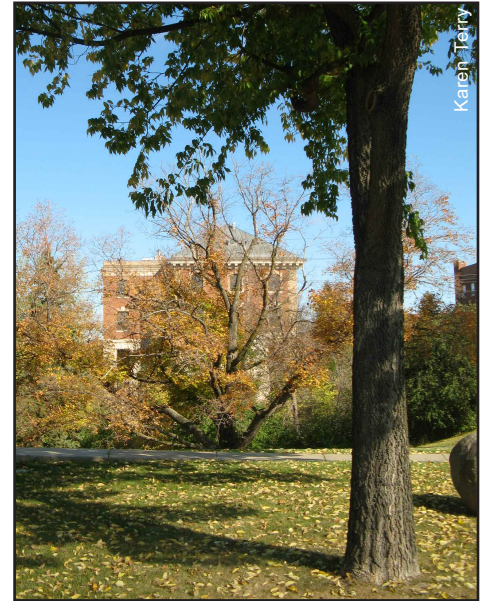
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Composting Fall Leaves

Eleanor Burkett, UofM Extension Water Resources, 218-828-2326, burke044@umn.edu

Fall leaves are valuable to gardeners. Composted leaves keep soil in prime condition for most gardening projects. Follow these tips to optimize leaf composting:

- Use large compost bins, 5 to 6 feet across. This size allows for rapid internal heating of the compost pile, which drives decomposition. Smaller bins will be slow to heat and will not be able to maintain processing temperatures through the cold Minnesota winter. Bins larger than 6 feet across may restrict oxygen flow into the leaf pile, slowing decomposition.
 - Mix nitrogen into the leaves as you pile them. Leaves are rich in carbon (which makes for great compost) but are comparatively low in nitrogen (needed to feed decomposing bacteria). Nitrogen could be added as a nitrogen fertilizer or fresh organic matter. For example, for every four bushels of leaves, add 1 – 2 cups of lawn fertilizer without any weed killers (such as 34-0-0 or 21-0-0). Alternatively, add 1 part leaves with 2 parts fresh grass clippings or similar green garden debris (although it is recommended to leave clippings on the lawn to provide nutrients). You can also apply composted manure as a nitrogen source. A simple compost recipe is: 8 inches of leaves then 1 – 2 inches of composted manure, sprinkle with water, repeat as necessary. Do not use dog or cat droppings as they may carry disease.
 - Other organic materials such as kitchen and garden fruit and vegetable debris, coffee grounds and filters, eggshells and lake plants may be added to your compost pile. Avoid meat scraps, large sticks and pieces of wood, and plant materials that have been treated with herbicides or pesticides. Avoid diseased plants and weeds with seeds. A compost pile needs to reach 130 – 150 degrees Fahrenheit for 15 days to kill seeds and disease organisms. This temperature can be difficult to reach and maintain with many composting methods used at home.
 - Moisten the leaves as they are piled. Rains will be slow to wet a leaf pile throughout, and moisture is essential for decomposition.
- Do not turn compost piles in the fall. This allows heat to escape and heat drives decomposition through the winter. Turn compost piles in the spring. On its own, a pile of leaves may take 2 to 3 years to decompose.
 - Leaves can be easily picked up with lawn mowers. However, shredded leaves may over-pack in the compost bin, restricting the oxygen flow needed for decomposition. If you live in an area with pine trees, it is best not to rake them up and compost them. Pine needles left on the ground protect the soil and tree roots where it is difficult to grow other plants, including ground covers.



With attention to these guidelines, a homeowner can produce usable compost by the following late spring/summer. Finished compost smells earthy and is crumbly without distinguishable leaves or chunks of vegetable matter.

For more information on composting and making composting bins see: *Composting and Mulching: A Guide to Managing Organic Yard Wastes* available at: www.extension.umn.edu/distribution/horticulture/components/3296-02.html. ■