

# From Shore to Shore

A publication of the University of Minnesota Extension  
Water Resources Team

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## Small Town, Big Project: Reducing Pollutants Entering the Blue Earth River

By Michele Wigern, Nonpoint Pollution Specialist, Faribault SWCD, 507-526-2388,  
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The small town of Winnebago, population 1,437, is taking on a big project that will benefit the Blue Earth River. After seeking and securing funds from multiple different sources, the community is gearing up to start a large-scale infrastructure upgrade in Spring 2015. Winnebago plans to reconstruct streets within a 25-block area that makes up about 20 percent of the town, according to City Administrator Chris Ziegler.



The project will include disconnecting illegal connections to the municipal wastewater system, building a special pond to hold stormwater, as well as "green infrastructure" components like planting rain gardens and boulevard swales to capture and filter stormwater.

The Minnesota Pollution Control Agency (MPCA) recently approved a Clean Water

Partnership award for the project: \$1 million in loan funds and \$10,000 in grant funds. Winnebago, located in Faribault County along the southern Minnesota border, will use the award toward a \$5 million push to reduce the volume of water and pollutants going into the Blue Earth River. This river is one of the highest contributors of pollutants to the Minnesota River.

The Winnebago project follows a Faribault County Soil and Water Conservation District effort to educate communities about the need to reduce urban runoff, a major contributor of sediment, nutrients, toxic chemicals, bacteria, litter and other pollutants being introduced into lakes and rivers. The district also received a Clean Water Partnership grant of \$300,000 to implement practices that slow and filter runoff to reduce pollutants going to the Blue Earth and Le Sueur rivers. ■

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## Calendar of Events

For the most current calendar items and more details, visit [www.extension.umn.edu/environment/water/calendar/](http://www.extension.umn.edu/environment/water/calendar/).

### Flux32 – Introductory

Date: November 19, 2014

Location: Chanhassen, MN

Contact: Shahram Missaghi,  
952-221-1333, [miss0035@umn.edu](mailto:miss0035@umn.edu)

### Flux32 – Advanced

Date: January 14, 2015

Location: TBD

Contact: Shahram Missaghi,  
952-221-1333, [miss0035@umn.edu](mailto:miss0035@umn.edu)

### 32nd Annual Red River Basin Land & Water International Summit Conference

Date: January 20-22, 2015

Location: Winnipeg, Manitoba

Contact: Leah Thvedt,  
[leah@redriverbasincommission.org](mailto:leah@redriverbasincommission.org)

### Shoreland Buffer Basics

Date: February 5, 2015

Location: Windom, MN

Contact: Karen Terry, 218-770-9301,  
[kterry@umn.edu](mailto:kterry@umn.edu)

### Partnership for River Restoration and Science in the Upper Midwest Symposium

Date: February 8-11, 2015

Location: Dubuque, Iowa

Contact: Barbara Heitkamp,  
[blb0811@umn.edu](mailto:blb0811@umn.edu)

### Linking Land Use and Water Quality

Date: March 25 or 26, 2015

(same workshop each day)

Location: Fulda, MN

Contact: Karen Terry, 218-770-9301,  
[kterry@umn.edu](mailto:kterry@umn.edu)

### Let It Rain: Using Rain Gardens and Rain Barrels

Date: May 29, 2015

Location: Windom, MN

Contact: Karen Terry, 218-770-9301,  
[kterry@umn.edu](mailto:kterry@umn.edu)

## Green Infrastructure for Clean Water: Costs and Benefits to our Communities

John Bilotta, Extension Educator, 612-624-7708, jbilotta@umn.edu

Minnesota is fortunate to have many freshwater resources; we need to protect and improve these valuable assets. Using green infrastructure – including vegetation and soil – to manage runoff in the urban landscape plays an important role in cleaning our water and provides multiple benefits to our communities. Yet widespread use on public and private property still isn't the norm. How can we change that? Understanding the costs and benefits of green infrastructure, including the economic, social, and ecological factors, may be a solution, leading to more partnerships, more implementation, greater acceptance, and healthier, more livable communities. The 2014 Clean Water Summit held September 11th at the Minnesota Landscape Arboretum focused on answering these and other needs on the costs and benefits of green infrastructure.

One of the many highlights was Charles Fishman, journalist and author of *The Big Thirst: The Secret Life and Turbulent Future of Water*. His presentation **The Big Picture: How We Think About Water, And Why We Need to Change** addressed ideas such as looking at the value of water differently, “waking up” to the smart use of water, changing our thinking of water as a commodity and focusing on water use and availability.

In his book *The Big Thirst*, Fishman writes “*Everything about water is about to change - how we use water, how we share it, how we think about it. That makes it a vital moment to understand where we've been and to imagine how our water future might be different, and why. Our water problems are real. Our approach to water must change, and we'd be happier if we realize that, and handle that change with creativity and forethought rather than confront it as a crisis. It's water we are talking about, so there will be no avoiding the change. What we can choose is the time and the approach and the level of panic.*”



Small private business owners and representatives discuss their use of green infrastructure practices on their sites, including the costs and benefits. Pictured: Koby Jeschkeit-Hagen and Kim Bartmann of the Tiny Diner and Farm and Judy Van Cleve, 7-Sigma Corporation.

Multiple other presentations provided an examination of the cost, benefits and motivations for projects ranging across a number of scales including:

- The Charles City, Iowa, story: Community change using green infrastructure.
- Large private developments and their historical perspective towards low impact development.
- Green infrastructure on small private business sites featuring the Tiny Diner and 7 Sigma Corporation, both in Minneapolis.
- Aiming out of the ball park for sustainable management featuring stormwater management at the new St. Paul Saints Ballpark.

The Summit brought together more than 200 participants from the public and private sector who are interested in learning not only why, but how they can promote and implement green infrastructure in their work.

Extension Educators from the Water Resources Team are knowledgeable about green infrastructure and can present information during programs and workshops. Contact a member of the team if you would like to learn more about green infrastructure or to schedule a presentation: [www.extension.umn.edu/environment/water/program-team](http://www.extension.umn.edu/environment/water/program-team).

Presentations and resources from the Clean Water Summit can be found at [www.arboretum.umn.edu/2014CleanWaterSummit.aspx](http://www.arboretum.umn.edu/2014CleanWaterSummit.aspx). ■

## What's being done about Asian Carp?

Titus Seilheimer, Fisheries Specialist, University of Wisconsin Sea Grant, 920-683-4697, [tseilheimer@aqu.wisc.edu](mailto:tseilheimer@aqu.wisc.edu)

News reports of new sightings of Asian carp in the waters of Minnesota and other Midwestern states raise concern for the public and resource managers alike. Invasive species are a concern because of the ecological and economic impacts they have on native species and ecosystems. Some species, like zebra mussels, can be transported in water left in boats while larger species, like fish, swim into new habitats. Minnesota is already plagued with common carp. Two other species of carp are currently swimming toward Minnesota: bighead and silver.

Asian carp are actually members of a group of four species that were brought intentionally and accidentally to North America from Asia. The famous jumping fish from YouTube videos is the silver carp. The bighead carp is not a jumper but is moving with the silver carp up the Mississippi River toward Minnesota and via the Illinois River toward the Great Lakes. These two

species filter feed on the plankton in the water and can cause shifts in food webs, resulting in less food for fish. The two other carp invaders are the grass carp and black carp, which could also become established in this part of the country. Grass carp are used to control aquatic plants in ponds and were found to be successfully spawning in a Lake Erie tributary river in 2013. The black carp eats mollusks and is currently in the Mississippi River near the Missouri/Iowa border.

The risk to native ecosystems from Asian carp has led to research funding being spent to better understand and control them. Researchers are using technology to track the movement of silver and bighead carp to help identify what cues spawning and where spawning happens. Other studies are focused on identifying the Asian carps' specific impacts on food webs. Working in small enclosures or research ponds, researchers can manipulate the species

that are there and then look at how Asian carp change water quality, the composition of algae and zooplankton, and even predator behavior. Better understanding the ecology of Asian carp will help to develop effective control programs.

Keeping these invasive carp out of the Great Lakes has been a national, state and local goal, being achieved by an electrical barrier outside of Chicago. Fortunately, commercial capture has had an impact on the population levels in the Illinois River, and the front of the invading carp population is still 25 miles downstream from the barrier. A diverse set of tools is being developed by multiple state and federal agencies and universities to fight Asian carp when they arrive in new locations (examples here <http://bit.ly/CarpIPMpodcast>). Carbon dioxide, sound and light are among the tools being tested to prevent movement by these species. Peter Sorensen from the University of Minnesota is investigating sound for control, as well as increasing the velocity of water flows in areas to prevent movement. New methods that could be used to kill these invasive carp are also being developed and could target only the Asian carp and not native species. Nick Phelps of the University of Minnesota is conducting a study on the baseline health of Asian carp to find out what pathogens might already be influencing populations or could impact native fishes.

The work reported on in this article was part of an education and outreach project by the Great Lakes Sea Grant Network funded by the Great Lakes Restoration Initiative. For more information on Asian carp or the project, contact Dr. Titus Seilheimer at [tseilheimer@aqu.wisc.edu](mailto:tseilheimer@aqu.wisc.edu) or follow him on Twitter @DrFishSG. ■



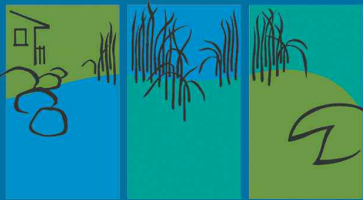
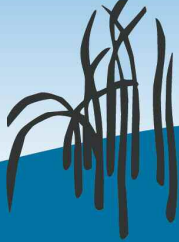
Dr. Titus Seilheimer

Commercial fisher lifts gill nets in Illinois River near Starved Rock. Some Silver Carp and Bighead Carp were implanted with acoustic tags to help track future movements.



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*A publication of the Water Resources Team, dedicated to educating Minnesota citizens about water resources issues to improve water quality, habitat, and aesthetics of our lakes and rivers.*

From Shore to Shore is a free quarterly electronic newsletter. Archived issues are available online at [www.shorelandmanagement.org](http://www.shorelandmanagement.org)

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## Low Salt Diet: What is Nine Mile Creek Doing?

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Nine Mile Creek is on a low-salt diet. Salt that we use on our sidewalks and roads in the winter dissolves as it melts, but it never actually disappears. Instead, the salt ends up in lakes and creeks as the meltwater runs into storm drains and to local water bodies. There is no cost-effective way to remove salt once it gets into lakes and creeks, so we must focus on preventing the pollution.

You can help keep salt out of the creek! Only apply salt after shoveling or snowblowing and only in areas where it is needed. Apply less than four pounds of salt per 1,000 square feet. One pound of

salt is about a heaping coffee mug full. If there are salt crystals left on the pavement after the snow has melted, you have over-applied. Sweep up the extra and reuse it or throw it in the trash. Remember, most salts don't work below 15° F (pavement temperature), so don't bother applying salt in truly cold weather. Instead, use a small amount of sand for traction. If you hire someone to do snow removal, make sure they are certified by the Minnesota Pollution Control Agency in Snow and Ice Control Best Practices. For more information, visit: <http://ninemilecreek.org/EDUCATION/Salt.asp>. ■

## SNAPSHOTS: Water Resources Team Programming and Research – Recent Past and Upcoming Opportunities

### September workshops:

Team member Eleanor Burkett held a workshop called "Land Use Decisions and Their Impact on Clean Water" in the watershed surrounding the headwaters of the Mississippi River in Bemidji. The workshop provided participants with an opportunity to enhance their knowledge of the impacts of land use on water and natural resources and provided a variety of tools, including plans, practices, and policies to protect and improve clean water resources. Tailored to the issues and resources in the watershed, it also offered opportunity for a dialogue between local leaders, residents, and water resource professionals about the value and challenges of clean water in our communities.

Team member Shahram Missaghi collaborated on a P8 workshop for stormwater professionals. This workshop was designed to teach participants the funda-

mentals of water quality modeling with a focus on the P8 Urban Catchment Model, a water quality model for simulating pollutant generation and treatment in urban areas. The course provided presentations and hands-on exercises to introduce participants to the Windows version of the model, covering model assumptions, limitations, and application.

Team member John Bilotta hosted the 4th in a series of NEMO workshop called "Streambanks and Stormwater - A Workshop and Tour of Practices in Communities." This workshop focused on providing local leaders from the West Metro Region an opportunity to build their knowledge and skills related to streambank protection and restoration and the importance of municipal good housekeeping for stormwater management in their communities. ■