

# Badger Creek Lake Watershed Project

Newsletter | Winter 2013

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## Kicking off the next phase of the watershed project

Chances are that if you're reading this, you're already familiar with the Badger Creek Lake Watershed Project. The Badger Creek Watershed Committee was formed in 1957 to address flooding and siltation issues. A lot of good work has been done to control water and soil erosion since then, thanks to many of you.

The watershed project is launching into its next phase thanks to a grant received by the Iowa Department of Natural Resources from Section 319 of the Clean Water Act. 319 funding supports the project coordinator position, biweekly water sampling from May to October, and boosts cost share on certain conservation practices.

The Badger Creek Watershed has also been designated by the NRCS as one of three priority watersheds in the state of Iowa to receive National Water Quality Initiative (NWQI) funds. We were able to use NWQI in 2012 and 2013 to provide cost share on terraces, ponds, and cover crops.

The renewed funding for this project underscores the commitment of our partnering agencies to improving water quality in the lake and the watershed. However, the funding for practices is only one part of the equation to solving the lake's water quality issues. The other integral part of the watershed project is landowner interest and cooperation.

By working together, we can improve our algae blooms and sediment-laden creeks. Many practices that are good for the lake also are beneficial for farms, acreages, backyards, and pocketbooks. Keeping our valuable topsoil and nutrients on the land and out of the water is good for everyone!



45 people attended September's kick-off event despite the storm that cancelled the lake plans and knocked out power! Thanks to Madison County Cattlemen's Association for providing dinner!



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## Meet Anna MacDonald, Watershed Project Coordinator

*"My mission is to build on the strong foundation of conservation in the watershed, and to work together with you to make strides toward getting Badger Creek Lake healthy!"*

Greetings! My name is Anna MacDonald, and I started my position as Project Coordinator in April. I grew up in Des Moines, but spent the past few years in Ames working on my M.S. in Wildlife Ecology at Iowa State University. My Master's work was part of the STRIPs project [[www.prairiestrips.org](http://www.prairiestrips.org)], an experiment set up to study the multifunctional benefits of prairie strips incorporated into row crop fields. My experience on that project is part of what fueled my interest in conservation on agricultural lands, and working with farmers and private landowners.

My responsibilities include working with people in the watershed to find the best ways to reduce the amount sediment (S) and phosphorus (P) leaving their land, informing project partners and the public about the importance of lake and watershed improvement activities, and monitoring S and P load reductions to Badger Creek Lake. This position requires me to be a "jack of all trades", and I have greatly enjoyed learning about the many facets of this project. I'm thankful for the warm welcome I have received, and for those who have taken the time to show me some of the ropes. I look forward to getting to know more of you in the future.

**Contact me!** Want to learn more? Got project ideas? Call, email, or stop by the office - that's what I'm here for! Let's work together to find win-win solutions for your land and the lake.

## Cover Crops & Soil Health

What do airplanes and soil have in common? This fall, the sight of a yellow plane flying over the watershed meant that cover crops were being seeded, and cover crops are a flagship practice for soil health! Several producers in the watershed signed up to plant cover crops this year, and many chose to have them seeded by airplane this fall.

Cover crops have been gaining a lot of attention lately, but they're not a new invention; farmers around the world have been using cover crops for centuries to provide nutrients to the soil. Today, cover crops are on the rise because farmers are recognizing the benefits they provide to their farm, and agencies and organizations are supporting the use of cover crops as a powerful conservation practice.



Mix of Cereal Rye, Radishes, and Turnips in early November (photo taken almost 2 months after they were aerially seeded).



Plane stopping at the airport to fill up with cover crop seed. Aerial seeding is one way to spread seeds before harvest so they have more time to grow.

## Benefits of Cover Crops

Living roots in the ground improve soil structure and health while cover protects soil from erosion!

- ↓ Compaction
- ↑ Pore space
- ↑ Infiltration
- ↑ Organic matter
- ↑ Water storage

- Forage for livestock
- Sustain soil microbes
- Weed suppression
- Scavenge and build nitrogen in your soil



Cover crops and lots of residue: ingredients for healthy soil!



Earthworm enjoying the benefits of cover crops.  
Photo credit: Amanda McNees

## What are cover crops?

A crop for soil protection or enrichment; a crop planted between main crops to prevent erosion or to enrich the soil.

At a glance, the most obvious benefit of cover crops may be that they cover the soil, prevent erosion, and provide extra forage for livestock; but that's just scratching the surface. Less obvious, but just as beneficial are their ability to suppress weeds, break up compaction, and improve soil organic matter.

Along with adding nutrients to the soil, we now know that cover crops also play an important role in *retaining* existing nutrients – like a nutrient savings bank! By scavenging leftover nitrogen, cover crops can prevent nitrates from leaching out of the soil during the “off-season”, which could help us avoid some of the water pollution issues we experienced this spring.

Finally, having **living roots** in the soil year-round sustains the soil microbial community, which serves the valuable function of making nutrients available to plants.

Diverse cover crop **mixes** = **more** benefits!

Healthy soil does more than just grow crops (which it does very well); it stores and filters water, acts as a buffer against floods (something this watershed is no stranger to), stores carbon, and recycles nutrients.

We know that cover crops are beneficial, but we still have a lot to learn about farming with them. It may take some trial and error to figure out what works best for each field, but that's just farming!

Cover crops are taking conservation to the next level in the watershed; they can keep soil and nutrients in the field, and that's the first step to keeping them out of the lake!



## Practices planned for state land

The success of the Badger Creek Lake Watershed Project depends on everyone doing their part, and that includes the state land surrounding the lake. The Watershed Management Plan includes potential sites for grade stabilization structures, water and sediment control basins, wetlands, and shoreline stabilization, and our current 319 grant has funds set aside for those projects on public land.

On October 31, a team of watershed project partners conducted a “groundtruthing” tour of state land. We verified the location and severity of gullies and other erosion features, and we were able to identify priority areas for conservation practices. We will start the planning process for the first grade stabilization structures this winter.



Above: DNR and IDALS staff evaluate an active gully on state land.  
Below: An example of shoreline erosion caused by wave action.

## Nutrient Management Plans

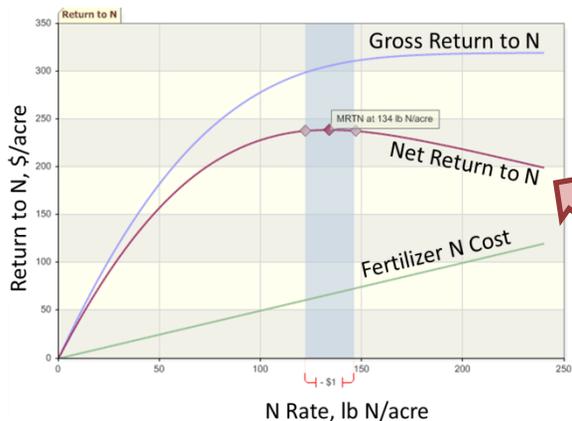
“He who fails to plan is planning to fail,” according to Winston Churchill. Plans identify goals and provide a roadmap for reaching them. The Badger Creek Lake Watershed Project is guided by our Watershed Management Plan, which includes practices that will help us meet our goal of reducing sediment loads by 1087 tons/year and phosphorus loads by 1413 lbs/year.

Of course, Badger Creek Lake isn’t the only impaired water body in Iowa. In May, the state of Iowa released the updated version of the Nutrient Reduction Strategy (NRS), with the goal of reducing nitrogen (N) and phosphorus (P) loads by 45% to significantly improve water quality in Iowa and downstream. The NRS includes information on practices which will make the biggest impact on N and P load reductions, and Iowa is backing up the NRS by appropriating unprecedented funds for Iowa’s Water Quality Initiative and other state cost share programs.



Governor Branstad visited the Martens CREP wetland in July to reenact the signing of a bill that provides funds for water quality practices.  
*Photo Credit: Gary Fandel, Iowa Farm Bureau Spokesman*

[www.NutrientStrategy.iastate.edu](http://www.NutrientStrategy.iastate.edu)  
[www.CleanWaterIowa.org](http://www.CleanWaterIowa.org)



There is a wealth of information and funding available in the name of nutrient management; the next step is for farmers to **take advantage of those resources!** Think of it this way: *you can get paid to maximize your nutrient efficiency!*

**Example NRS Practice:**  
Applying fertilizer at the Maximum Return to Nitrogen (MRTN) rate makes good economic sense, and the NRS estimates a 10% nitrate reduction for this practice!

This winter is a perfect time to start developing a nutrient management plan for your own farm, and we’re here to provide technical and funding assistance.

Source: Eric Hurley, NRCS, from data available from Iowa State University’s [Corn Nitrogen Rate Calculator](http://extension.agron.iastate.edu/soilfertility/nrate.asp) at <http://extension.agron.iastate.edu/soilfertility/nrate.asp>



# Badger Creek Lake Watershed Project

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## Watershed Project Partners



Madison & Dallas  
Soil & Water  
Conservation Districts



Iowa Dept. of Agriculture and  
Land Stewardship:  
Division of Soil Conservation



Iowa Dept. of Natural Resources:  
Watershed Improvement,  
Lake Restoration,  
Fisheries, and Wildlife



U.S. Environmental  
Protection Agency  
Section 319 of the Clean Water Act



USDA  
Natural Resources  
Conservation Service

*an equal opportunity  
provider and employer*

## Buffers

### Keys to Conservation

What are buffers? They include filter strips, contour buffer strips, and field borders, which play different roles in the field, but are all proven conservation **practices that take a minimal amount of land out of production, while providing an array of benefits.**

Why buffers? With farmland prices at an all-time high, more extreme storms predicted in the future, an increasing focus on keeping nutrients and sediment out of streams, and financial incentives for this practice, the better question might be *'why not buffers?'*

There are financial incentives for buffers for a reason; they're an effective practice for improving water quality, but buffers can provide a number of additional services, depending on where they are and what they're planted to. Buffers can prevent erosion in end-rows, slow down runoff water and give it a chance to infiltrate, and provide habitat for pollinators, natural enemies of crop pests, and other wildlife.

### ***Protect your investment!***

We can work together with you to make your land more resistant to the erosive forces of Mother Nature.



#### Types of Buffers:

- **Contour buffer strips**  
(in field)
- **Field borders**  
(headlands)
- **Filter strips**  
(protect creeks)

