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Hawk Creek Headlines

Hawk Creek Watershed Project

Summer 2023

How's the Water?

Finding Local Water Quality Information

Locating water quality information about a nearby stream or lake can be daunting. Here's some resources that can provide water quality information on waterbodies in Minnesota.

Watershed Pollutant Load Monitoring

The Hawk Creek Watershed Project (HCWP) contracts with the Minnesota Pollution Control Agency (MPCA) to conduct water quality monitoring as part of the MPCA's Watershed Pollutant Load Monitoring Network, which is a long-term program that collects water quality data from streams and rivers throughout Minnesota and tracks water quality trends. HCWP collects water quality samples at three sites in the Hawk Creek Watershed (Hawk Creek near Maynard, Hawk Creek near Granite Falls before it enters the Minnesota River, and Beaver Creek near Beaver Falls and Redwood Falls before it enters the Minnesota River) and at three sites in the Yellow Medicine River Watershed (Spring Creek near Hanley Falls, Yellow Medicine River near Hanley Falls, and Yellow Medicine River near Granite Falls before it enters the Minnesota River).

A sample of water from Hawk Creek near Maynard, MN taken by HCWP staff on May 18, 2019 after a rain event.

The Hawk Creek Watershed has some of the highest concentrations of water pollutants (total suspended solids (TSS), phosphorus, and nitrogen) in the State, with TSS and phosphorus levels over two times greater than water quality standards. To view water quality data, search for "MPCA Data Viewer" through an internet search engine or visit the MPCA's website https://public.tableau.com/app/profile/mpca.data.services/viz/WatershedPollutantLoadMonitoringNetworkWPLMNDataViewer/ProgramOverview.

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Water Quality
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Pesticide Monitoring

HCWP also contracts with the Minnesota Department of Agriculture (MDA) to collect agricultural chemical monitoring samples at three locations: Hawk Creek near Granite Falls before it enters the Minnesota River, Yellow Medicine River near Granite Falls before it enters the Minnesota River, and South Fork Crow River near Cosmos. MDA conducts comprehensive surface water monitoring for agricultural chemicals, including pesticides and fertilizers, each year in lakes, rivers, and streams throughout Minnesota as directed by the Minnesota Pesticide Control Law. In 2020, 1,074 samples were collected from 60 rivers, streams, and lakes throughout Minnesota and analyzed for 178 pesticide compounds. Seventy-three pesticide compounds were detected, with 2,4-D, metolachlor, and atrazine the three most detected pesticide parent compounds. In addition to surface water monitoring, MDA also monitors groundwater and private wells. More information is available on the MDA's Agricultural Chemical Monitoring and Assessment page https://www.mda.state.mn.us/pesticide-fertilizer/agricultural-chemical-monitoring-assessment.

Field Scale Water Quality Monitoring

HCWP also contracts with Discovery Farms Minnesota to monitor and maintain an intensive in-field monitoring site year-round near Brownton in McLeod County monitoring both sub-surface tile drainage and overland flow within a grassed waterway. Discovery Farms is a farmer-led effort to gather water quality information from farming systems under real-world conditions and is funded by the Minnesota Agricultural Water Resources Center, Minnesota Corn Research and Promotion Council, Minnesota Soybean Research and Promotion Council, MDA, and Natural Resources Conservation Service. Real-time data is available at discoveryfarmsmn.org.

Stream Flows

The Minnesota Department of Natural Resources (DNR) collects stream flow data (how high the water is and how fast the water is flowing), which is essential in calculating pollutant levels in our waterways, managing streams, dams, and flooding, and ensuring public safety (is the water level too high to safely kayak or swim?). Real-time data can be found at the DNR's Cooperative Stream Gaging page https://www.dnr.state.mn.us/waters/csg/index.html.

Your Generosity Can Change Our Community

Have you considered making a contribution to HCWP?

Have you considered making a financial donation to HCWP? Your generosity will help improve not only our local water quality, but will also leave a lasting legacy in making Chippewa, Kandiyohi, and Renville Counties an even better place to live. Your local dollars will improve our local community. For donation options, contact heidi@hawkcreekwatershed.org or (320) 523-3666.

HCWP Facts

Helping watershed residents for over 25 years.

HCWP **originally started in 1997** when concerned citizens saw the need for a watershed entity to work across the watershed and across multiple counties based on how the water flows, not on political boundaries. The HCWP was solidified as a local government unit in 2013 when Chippewa, Kandiyohi, and Renville Counties made it a joint powers entity.

Involved in implementing over 1,700 projects.

HCWP has been involved with getting more than 1,700 projects on the ground that have improved water quality in the Hawk Creek Watershed. HCWP has brought in **more than $16 million in Federal and State grants** to our local economy. HCWP often works with several offices in the three counties to get projects done.

Longtime staff bring experience and knowledge.

HCWP has three full-time staff. **Heidi Rauenhorst** is the Coordinator and has been with HCWP for over 11 years. She secures the grant funding and oversees all of the HCWP operations. **Dean Dambroten** has been the Planner/Field Technician for over 22 years. He is in charge of getting projects implemented and has been involved with most of the projects we've implemented. **Jordan Austin** has been with HCWP for over 11 years as the Water Quality/Outreach Technician and is responsible for water quality monitoring and education/outreach activities.

How to contact us.

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Buffering Eagle Lake

Doug and Sue Lovander's lakeshore buffer brings beauty and protection to Eagle Lake

Heidi Rauenhorst, HCWP Coordinator

On a beautiful, sunny mid-September day last fall, I visited Doug and Sue Lovander to check in on how their shoreline restoration and buffer project was holding up. Four years earlier, Doug and Sue called the Hawk Creek Watershed Project (HCWP) office wondering if we could help them with the erosion that was occurring on the shoreline of their four-acre property on the western side of Eagle Lake north of Willmar. Their property has been in the family for 150 years and once included a dairy operation, a barn, and a chicken house. The original house is still intact and lived in by Doug and Sue, thanks to their thoughtful preservation and maintenance of the house.

Doug is one of the founders of Pheasants Forever over forty years ago. He recognized the importance of preserving upland habitat since it is the first in line to filter water that eventually makes its way to our lakes and streams. With such a rich personal history of their property and of conserving habitat, their sense of duty to maintain the property and be good stewards of their land is undeniable. They've seen the shorelines erode and the water turn green in Eagle Lake. The Lovanders try to use minimal lawn chemicals. "What makes your lawn green will make the water green," Doug explained about why he tries to use chemicals sparingly.

Eagle Lake is considered the headwaters for Hawk Creek, a major tributary to the Minnesota River. Hawk Creek flows for approximately 65 miles through Willmar, Raymond, Clara City, and Maynard before flowing into the Minnesota River east of Granite Falls. It makes sense to the Lovanders to begin making improvements at Eagle Lake since it is the headwaters of Hawk Creek and the water flowing out of Eagle Lake affects everything downstream.

Along with fixing the erosion on their shoreline, Doug and Sue also wanted a way to filter the water coming off their property into the lake. A buffer planted with native flowers and grasses is an excellent way to catch rain runoff and filter it before it goes into the lake. In the fall of 2018, Doug and Sue began working with Dean Dambroten, the HCWP planner/field technician, to figure out how to design and install the shoreline restoration and buffer. "The process was enjoyable and there were no hassles," Doug recalled of the experience of working with Dean and Prairie Restorations, Inc., the company that installed the plants for the buffer. "They both did a good job," he added.

In September and October 2018, the project site was cleared of debris and old growth, leveled out, and the shoreline was reinforced.

Shoreline Buffer
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Above: Goldenrods are on full display in Doug and Sue Lovander's buffer in September 2022.

Left: In June 2021, Sue Lovander stands in her buffer of native flowers that are continually changing and blooming throughout the season.

Pollinators, like bees in the Lovander's shoreline buffer in the photo above, monarch butterflies, and hummingbirds, are drawn to the Lovander's buffer for food, shelter, and ultimately, survival.

Shoreline Buffer
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Native grass seed and native flower seed were spread and then an erosion control blanket was put down. In the spring of 2019, native flowers and native grass plugs were manually installed through the erosion control blanket. Using native plants is important in establishing a buffer because native plants tend to have longer and more elaborate root systems than nonnatives and therefore are superior at locking the soil in place to create more underground stability and armor the shoreline better. By early summer 2019, the seed had germinated and the plugs were becoming established. Since the project started so late in 2018, some of the planting had to wait until spring, but often times if a project is started earlier in the growing season, the project site can be prepared, plants can be seeded and planted, and the buffer can start to become established all in that first year. By 2020, the Lovander's buffer was producing beautiful blooms and starting to attract many beneficial species.

It usually takes a buffer a few growing seasons to become fully established, but it is ever changing with new natives changing roles every year, as some become the dominant species one year and the next year another species. At the time of my visit in early fall, the buffer was filled with the bright yellow blooms of goldenrods and the buzzing of bees feeding on the flowers. Sue commented on how much she enjoys all of the many benefits of the buffer. "The buffer has beautiful flowers all summer long, all the way into fall. There are lots of pollinator species in there that attract butterflies and lots of good insects. It smells incredible." With some milkweed sprinkled in, the buffer serves as a big stopover spot for monarchs. Monarchs only lay their eggs on milkweed and rely on milkweed as their primary food source. With the increased use of herbicides to eradicate "weeds" (a subjective term) such as milkweed, we've seen a decline in monarchs. Habitats like the Lovander's buffer play an important role in increasing monarch numbers, now more than ever as monarchs are now classified as endangered with the monarch population decreasing by more than 80% in the last 30 years. Along with pollinator species such as monarchs, Doug and Sue's buffer also provides feeding, resting, and nesting habitat for ducks and other birds.

I asked Sue and Doug what their neighbors and fellow lake residents think of their buffer. They said they've had many positive responses. "The neighbors think it's beautiful. Some have asked to come and look at it," Sue said.

Through the years, we at HCWP have talked with several lakeshore owners concerned about the erosion on their shoreline and sometimes they have been hesitant to plant a buffer on their property because they think it will look like a bunch of weeds, look unkempt, or be a lot of work to maintain. Choosing the right plant species makes a big difference in how it looks and there are several native species that look very nice and not weedy and can make your buffer look like a flower garden rather than a patch of weeds. Thanks to the good establishment of the buffer, Doug and Sue say their buffer is pretty much maintenance free. It doesn't require watering thanks to the native species' drought tolerance. Burning or mowing it every few years is recommended to keep plant litter/debris down and increase plant productivity.

The Lovanders are happy with their shoreline restoration and buffer and fully enjoy their property with get-togethers with family and friends, hosting fish fries, and having volleyball tournaments. Their property is somewhat unique on Eagle Lake in that it is mostly grass and trees and not a whole lot of non-pervious pavement. Over the years, a bigger footprint on the lakeshore landscape has developed with bigger houses being built with more non-pervious pavement and surfaces, which increases runoff to the lake, runoff that hasn't gone through a filter like a shoreline buffer or natural filters like wetlands that used to be more prevalent on the lakeshore landscape. Part of the equation to improve the water quality of Eagle Lake is to improve what is going into the lake and shoreline buffers provide a great opportunity to remove some of the pollutants before they end up in the lake. Rain barrels are also an excellent way to capture runoff before it makes it way to the lake. The rain water, which beats water from the tap any day for watering your plants, can then be used to water your garden and flowers.

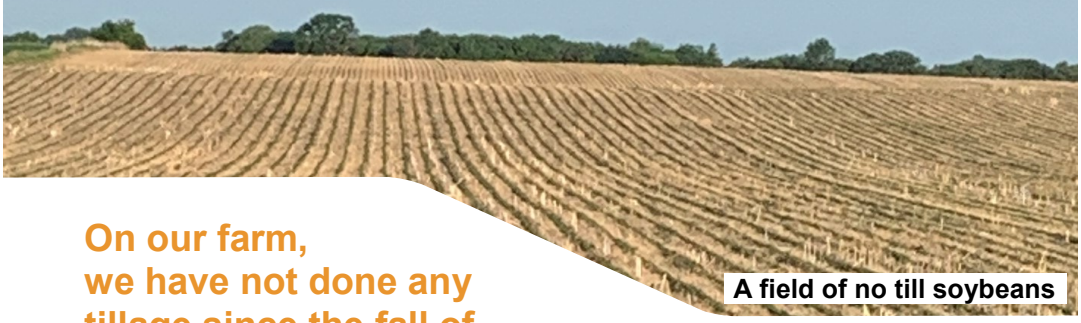
HCWP can help with planning and paying for projects that reduce erosion and improve water quality, like the Lovander's project. Every project is unique and we can help you every step of the way.

From Dean's Desk

Soil Health.

My Personal Experience and Opinions

Dean Dambroten,
Renville County Farmer and
HCWP Planner/Field Technician



A field of no till soybeans

On our farm, we have not done any tillage since the fall of 2016, except for strip tilling soybean ground going to corn. So far, I don't see any reason not to continue. I have had my eyes open and have had the fear of some unforeseen issue popping up. I have heard comments more than once, like "that might work for a few years." We have six crops behind us and so far, so good! I think some of those comments may have been influenced by past experience with ridge till that got popular in the '70s and '80s and didn't prove to be sustainable and eventually died out. From what I know now, I believe that the building of the ridges and cultivating was too much tillage and didn't allow the biology to grow. Cover crops were not even on the radar, which could have possibly helped it work.

After six crops, we have maintained or increased yields while significantly reducing input costs. We no longer own a four-wheel drive tractor and tillage equipment. We don't buy shovels and points. We burn a lot less fuel. We spend a lot less time per acre. We used to spend several days picking rocks every spring; now it's very minimal. We do replace some of those costs buying and seeding cover crops.

We have not been very successful inter-seeding multi species cover crops in corn. A profitable and sustainable third crop with an earlier harvest to introduce into the rotation is on my wish list. Our farm is too far west for canning crops. There is a real benefit in multi species cover crops if you can get enough growing time. The only thing that consistently works the best for us is seeding winter rye after harvest on all of the acres. This mostly ends up being a dormant seeding (although we do sometimes get some fall growth on the earlier harvested soybean ground) that starts growing early in the spring. We plant into the green standing rye with no spring tillage, including the corn going in on the fall prepared strips. The rye is terminated after planting. A benefit of the growing rye is to dry out the residue mat and warm up the soil. In a dry spring, we may decide to terminate the rye early to conserve moisture.

> **"With 40 plus years of farming experience, I never would have believed that I would buy into thinking about the possibility of no till production and being able to sustain it."**
>
> **Dean Dambroten, Renville County farmer and HCWP planner/field technician**

One thing that I worried about in the first years was that the corn residue would build up over time and become unmanageable. The biology, including the earthworms, are taking care of it. There doesn't seem to be any difference in the amount of corn residue between year one and year six. This year (2023), we planted 40 acres of corn on corn. We will see how that goes!

The benefits of strip till/no till that we have seen so far:

- Less herbicide use (tillage germinates weeds, cover crops choke/shade out weeds).

- Better water infiltration and capacity to hold water in the soil profile, which has been a real benefit when the rains have been scarce the last two years.

- The residue from the previous crop and the cover crop keeps the soil cooler in the hot summer and conserves moisture, reducing crop stress.

- Our organic matter has increase from 0.6% to 1% which helps in mineralization and fertilizer efficiency and holds more water in the soil profile.

- Machinery carries better when it's wet.

Buying Into Soil Health
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Buying Into Soil Health
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Our goal is to get our soils in a healthy enough condition to eventually eliminate the strip till pass. We have local growers that are doing it. Our challenge with that is to tool up and manage a way to get the fertility on (we are doing that with the strip till machine now).

Extreme environmental groups seem to be driving politics and policy in this country. It looks like we will eventually be forced to change the way we farm. I think we as farmers need to be proactive in portraying a positive public perception of what we do and to justify opposition to rules and regulations that will be coming our way. In my opinion, why would we buy into things like carbon pipelines that will take a portion of our market price forever to build and maintain when we could work towards the same goal of reducing carbon by changing the way we farm to focus more on soil health?

If you are at all interested or curious about strip till/no till, you need to attend our soil health meetings and field days that HCWP hosts along with the Renville County Soil and Water Conservation District. The annual soil health meeting is usually held in February and the annual field day is usually held in September. You can get on our email list to receive notifications of our upcoming events by contacting jordan@hawkcreekwatershed.org.

Fixing erosion problems like this gully can make water flow more efficiently and reduce soil loss in farm fields.

Got Gullies?

HCWP can help fix erosion and runoff problems and increase conservation benefits on your land

Do you have gullies, washouts, runoff problems, or erosion problems on your property? Are you interested in finding out what you can do to increase conservation practices on your property? Don't know where to start or what the process is to fix water quality problems on your land? HCWP has funding available for the design and installation of Best Management Practices (BMPs) to fix erosion and water quality issues on your property and to help reduce the amount of pollutants entering our streams and lakes.

Since 1999, HCWP has worked with over 1,000 landowners on over 1,700 projects aimed to reduce erosion and improve water quality. Let HCWP help find a solution to your erosion and water quality issues.

Contact HCWP at (320) 523-3666 or dean@hawkcreekwatershed.org for assistance with your erosion and runoff problems and conservation needs.