



CONSERVATION NEWS

2023

KANABEC SWCD

EMPOWERING CONSERVATION SINCE 1951

BOARD OF SUPERVISORS

Farmer Feature

You may have noticed a bit greener fall landscape along highway 23. This has been the planting of cover crops after the corn harvest. Cover crops are brassicas, small grains, legumes or grasses planted in the spring or fall. Cover crops are planted for various reasons, depending on the goals of the farmer. To name a few, they can help prevent erosion, provide additional livestock feed or help in retaining more nutrients and rainwater on the landscape. Over time, cover crops with other practices such as reduced tillage, can help improve the health of the soil and lead to more sustainability.



Multi-species cover crops are one of the newer practices implemented by Jacob Stegner, the newest manager of McVay Farms since 2019. Originally from Missouri and having moved from Michigan after living there for 12+ years, Stegner is happy to have found a new home just outside Mora. He and his family have settled into farm life working with Gelbvieh and Red Angus commercial beef cattle. He came from a cattle ranch and she came from a dairy background, so agriculture life has always been deeply engrained in their family. He studied animal science in Missouri. In talking with Stegner for only a few minutes it becomes clearly evident that he's a cattleman through and through as well as his love of the land and livestock. He admits there was a bit of a learning curve initially adjusting to a multi-enterprise operation in Minnesota, but he's learned on the fly.

Apart from cover crops Stegner has also been working to slowly incorporate rotational grazing throughout their grazing operation. Rotational grazing is just that; thoughtfully

rotating the cattle around the pastures for improved grass management and increased weight gain on the cattle. It's really a win-win type of practice. It may involve more grazing infrastructure set-up initially, such as interior fencing and watering facilities, but in the second year of the practice,

Stegner already noticed lowered feed costs and an extended grazing season, through better grass management. It's a trade-off of sorts. On his grazing management Stegner said, "God placed us here as stewards of the land, to care for the land. However, this is also a viable business, in that if it's not done right, you lose money." Rotational grazing does require more management, but it's worth it.

From first-hand experience, he said it works. Through the new conservation work on the farm, Stegner has valued partnering with the conservation office here in Mora and finds it mutually beneficial.



Stegner did find the drought of 2021 kept him on his toes working to seek out flexibility in the operation. He found the uncertainty unsettling but weathered it ok; in part, by being adaptable in his cattle stocking. His stocking rates were close to capacity but was able to adjust his custom grazing.

Stegner has found working with the local the Snake River Cattleman's Group very beneficial. It's a great venue for sharing cattle expertise and learning new skills. "It doesn't matter if you have 5 or 500 cattle, some of the same skill sets are needed. There's always something new to learn" said Stegner. Next for Stegner may be to look into alternative forage crops.

District 1
Kevin Belkholm
(320) 493-3825
Grass Lake Township
South Fork Township
Brunswick Township

District 2
Norma Heggernes
(320) 679-2854
City of Mora

District 3
Jon Sanford
(320) 237-6633
Kanabec Township
Arthur Township

District 4
Gene Carda
(320) 679-2408
Knife Lake Township
Whited Township
Comfort Township

District 5
Kim Johnson
(612) 390-0623
Peace Township
Pomroy Township
Ann Lake Township
Hillman Township
Haybrook Township
Ford Township
Kroschel Township

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Ann Lake:

Time Travel with Science

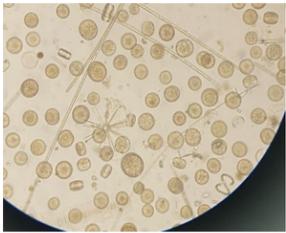
Ann Lake: Time Travel with Science

In June, we participated in deploying a monitoring buoy and sediment core sampling on Ann Lake. This was done in conjunction with the Ann Lake Watershed Alliance, Minnesota Pollution Control Agency, and Dr. Mark Edlund with the Science Museum of Minnesota. In addition to lakeshore owners and a drone operator on the shoreline, two high school students and a college freshman joined for observations.

The monitoring buoy tracked the lake temperature and oxygen levels every 30 minutes for the duration of its submersion near the deepest hole of the lake. The 157



This was the crew getting the monitoring sensors put on the buoy that was submerged under the water from June 7th through October 20th.



This is a microscopic view of the diatoms we found to look at under slides. You can see 4 different common types of diatoms and the S shaped one on the bottom left of the photo is a blue green algae. You can also find the "rogue" cell in the center of the blue green algae that fixes nitrogen.

cm core sample was excellent in terms of quality with an estimated main color change dating around 1850. Dr. Edlund will chunk the core into 2cm pieces and find the moisture content, burn it for organic matter content, and burn that even hotter to find the mineral content. Their research team will also be looking at the diatoms (algae with a



Here is the core sample that came from the sediment at lake bottom.

glass silica cell wall) throughout the sample as they don't break down like other materials over time. These diatoms will help to determine if blue green algae has always been an issue on Ann Lake or

if it developed over time (and if so, when). Preliminary results are leaning towards increased sedimentation rates that started in 1920 and have continued since then.

A little history of Ann Lake gathered from longtime resident, [Rich Anderson](#) :

- ◇ Logging took place in the lake 1880s through the early 1900's
- ◇ There was a co-op creamery (cheese factory) in the early 1900's-1930's across from where McBees is now
- ◇ The sportsmen's club treated algae blooms in the lake during the lake 50's/early 60's
- ◇ The first dam was built in the mid-60's and was updated in the late 90's/2000
- ◇ Ann lake had 30 potholes blasted in it with ammonium nitrate to improve water-fowl nesting areas and provide hunting grounds. The dam was added to flood around 900 acres
- ◇ There are reports of sturgeon being found in the lake during the 70's

For more information, check out these links:

Paleolimnology (sediment core details):

<https://www.queensu.ca/pearl/projects/low/index-2.html>

Diatoms (fossils found in sediment): diatoms.org

We look forward to hearing the results of Dr. Edlund's work later this summer!

Financing Solutions for Clean Water

Agricultural Best Management Practices Loans

(AgBMP)

Each year \$10 million is available for loans in Minnesota. The AgBMP Loan Program is funded by the Minnesota State Legislature, the Minnesota Public Facilities Authority, and the U.S. Environmental Protection Agency and is administered through the Minnesota Department of Agriculture. No grants are given by this program. The AgBMP Loan Program provides financing at below-market interest rates.

These 3% low-interest loans save you money, making it more economical to implement practices that improve and protect water quality.

| Loan Years | Loan Amount | Interest Paid | | Interest Savings |
|------------|-------------|---------------|----------|------------------|
| | | 3% | 9% | |
| 5 | \$10,000 | \$781 | \$2,455 | \$1,674 |
| 5 | \$30,000 | \$2,344 | \$7,365 | \$5,021 |
| 7 | \$50,000 | \$5,496 | \$17,574 | \$12,078 |
| 10 | \$100,000 | \$15,873 | \$52,011 | \$36,138 |



Loans for:

- Feedlot improvements, manure storage basins, and spreading equipment
- Conservation tillage equipment
- Terraces, waterways, sediment basins
- Shore and river stabilization
- Septic systems
- Other projects

Loan Terms:

- Maximum loan amount is \$200,000
- Maximum loan length is 10 years
- Maximum interest rate is 3%
- Lender may charge customary fees
- Lender may require collateral
- Borrower must meet lending criteria

For additional questions or to apply contact:

Jerah@KanabecSWCD.org or (320) 679-1391

WASTE PESTICIDE DISPOSAL

Dispose of up to 300lb of waste pesticides for free during Kanabec County Household Hazardous Waste and Clean Up Day.

Keep an eye out in the paper for a drop off date in October.

Pre-registration & labeling of pesticides is MANDATORY.

Contact Environmental Services with questions:
env@co.kanabec.mn.us
 320-679-6456

Plat Books COMING SOON

FALL 2023



MAWQCP: Are You Certified Yet?

The Minnesota Agricultural Water Quality Certification Program offers many opportunities to farmers in our area, whether you specialize in crop, livestock production, or both. The program is voluntary for farmers and agricultural landowners and once implemented, farm management practices have regulatory certainty for a period of 10 years. Certified producers can use their certification to promote being protective of water quality and can have their farm added to the online state storyboard. Consumers who prioritize environmentally friendly farm practices can scroll the storyboard to see area producers who have products they may be interested in (note: not all producers choose to be highlighted on this public platform, but can still hold the certification).

[View the story map and see the certified producers:](#)

In addition to previous certifications, recent [qualifying farms](#) in Kanabec County include:

Darrin & Kristin Lee, Linden Grange: Quamba

Travis and Stephanie Paulsen: Isle



Pictured left is a frost free waterer and concrete pad that was installed to make rotational grazing viable in 4 different paddocks. This constant supply of fresh water encourages cattle to drink from it more often versus drinking out of a stagnant pond- a win, win for the wetland and cattle! This project was made possible through MAWQCP grant funding.

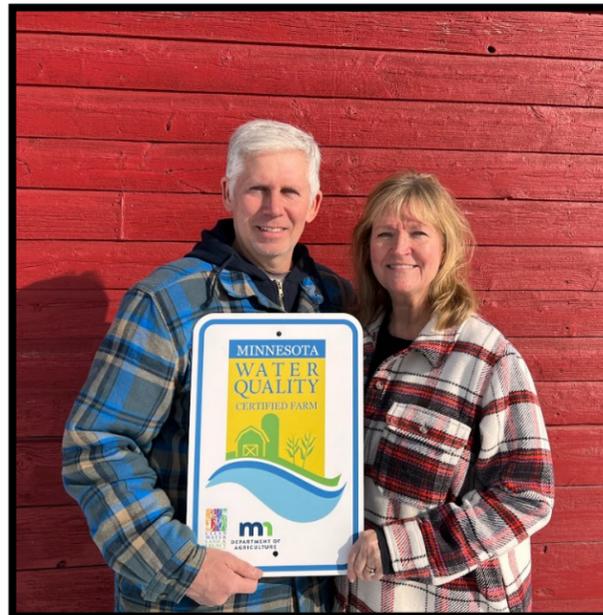


Funding Opportunities:

There are grants available for producers who are currently certified or actively seeking certification through MAWQCP. This is a 75% cost share up to \$5,000.

Climate Smart Endorsed farms are eligible for payments to help bridge working with the evolving climate marketplaces and public programs.

A Farm Business Management Scholarship is also available to certified producers to advance meeting business and personal goals using quality records for management decisions.



Darrin & Kristin Lee

Visit <https://www.mda.state.mn.us/environment-sustainability/financial-assistance> for more information.

Ann Lake Treatment Update

Ann Lake stakeholders are currently seeking funding for a pilot Aluminum Sulfate (Alum) treatment to address the high phosphorus release from the deep lake sediment. The phosphorus release is in-part contributing toward excessive algae growths, especially in mid-summer. If funding and state agencies approve, the treatment is planned for 2024. According to the Ann Lake Assessment study completed in 2018, a full Alum treatment would be composed of 7 treatments over 14 years. So, this pilot treatment would only be the start to addressing the high nutrient levels in the lake. The seven treatments are separated out to prevent any large spike in sulfate, which could impact wild rice growth. This is partially why only the first pilot treatment is being sought now.

How does this work?

Aluminum sulfate would be applied to the deepest part of the lake on the western side. It is applied as a slurry form and will precipitate through the water column. The treatment is expected to take 1-2 days. As it settles to the bottom it will bind with phosphorus and form a layer at the lakes' bottom. This process protects the phosphorus from releasing into the lakes' water column contributing to excess algae growth. The life expectancy of an Alum treatment ranges from 15-35 years.

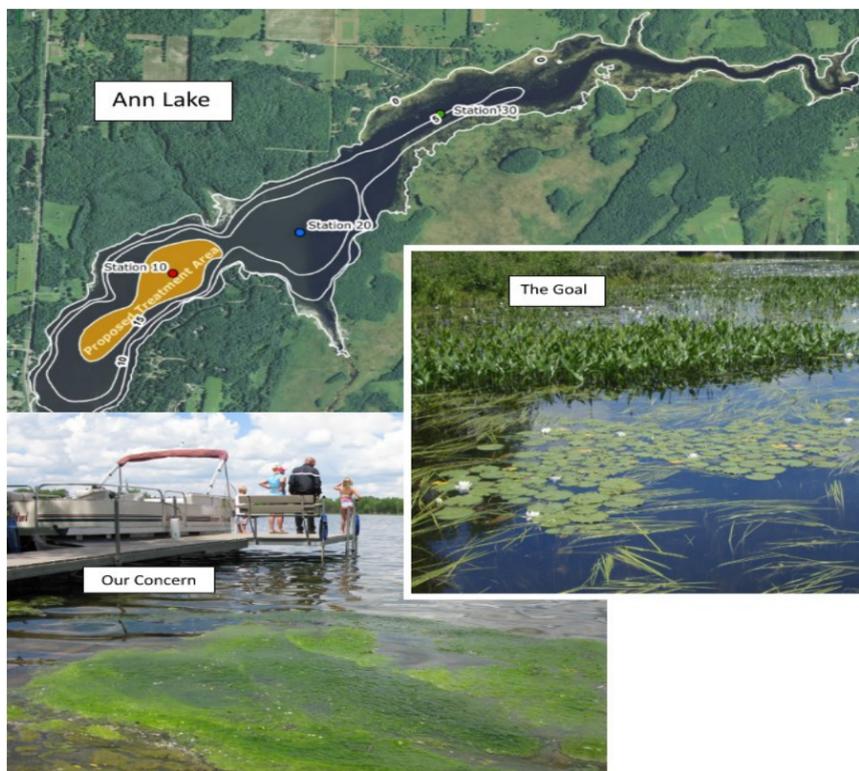
Is Alum safe?

Alum or aluminum sulfate is safe and has historically been used for lake management. It will not cause harm to humans, marine life or pets. Fish caught in Ann Lake will still be safe to eat. In fact, the application of alum often improves fisheries because of better habitat. Aluminum can be found in aluminum cans, as a food additive and the average person eating 7-9 milligrams per day.

Sulfate, a form of sulfur can be found in nature or man-made. It's also a plant nutrient. Monitoring will be done during and after the application to help ensure the correct pH levels are maintained for the health of the lake.

Expected Results:

We are calculating about a 700-pound reduction in phosphorus with one Alum treatment. It is uncertain whether this first of seven treatments will show a visible response in the lake. However, the anticipated result to the full seven treatments is expected to result in clearer waters with less algae. Then with clearer waters we do predict more plant growth as Ann Lake is 92% littoral. Meaning that 92% of the lake is shallow enough to naturally support aquatic vegetation. As you have questions, please feel free to reach out to the Kanabec SWCD (320) 679-1391 or the Ann Lake Watershed Alliance (ALWA) for continued updates. ALWA: annlakewatershedalliance.org or Sharon Smith, President (763-291-4197 or 763-441-5282)



HELPING PEOPLE HELP THE LAND

NATURAL RESOURCES CONSERVATION SERVICE

Five Questions Non-Operator Landowners Should Ask Their Farmers about Soil Health

More than half of all cropland is rented. This means the person who owns the land – a non-operator landowner – is often separate from the farmer making daily management decisions that have long-term impacts on the land.

If you are one of those landowners, you may not be thinking about your soil and how it is managed. Your soil is your most valuable asset and building soil health is a capital improvement. It is an investment – in your land’s long-term productivity and resiliency.

How can non-operator landowners and tenant farmers work together to build land that’s healthy, resilient, and productive?

The Natural Resources Conservation Service recommends that non-operator landowners ask their farming partners these five questions.

1. Do you build organic matter in the soil?

Organic matter – carbon – may be the most important indicator of a farm’s productivity. The amount of soil organic matter often determines the price farmers will pay to rent or buy land.

2. Do you test the soil at least once every four years?

Optimizing fertility and pH levels is important to your farm’s productivity. Regular soil testing can give an indication of trends in soil fertility, pH, and levels of organic matter in a field. These tests help determine the amount of fertilizer each field needs and potentially saves money for farmers on fields with adequate or high fertility.

New soil tests that indicate active carbon levels and populations of important soil biology are also available to help monitor soil health. If a field has a history of manure application and very high fertility, for instance, a farmer could potentially plant cover crops to keep those nutrients in place rather than applying more nutrients that may not be needed.

3. Do you use no-till practices?

Not tilling the fields after harvest and before planting has multiple benefits including building organic matter, improving soil structure, reducing soil compaction and erosion.

It also helps the farmer directly by reducing fuel, labor and equipment costs.

4. Do you plant cover crops?

Cover crops provide a green, protective blanket through the winter months or fallow times.

Cover crops hold onto nutrients left from the previous crop and release them to the next crop. The solar rays these plants collect are powering photosynthesis, taking in carbon dioxide from the atmosphere to produce food for organisms living in the root zone. Cover crops also build nutrient-rich organic matter in the soil and improve the soil’s ability to take in water.

5. What can we do together to improve soil health on my land?

To improve soil health, landowners and tenants have to think in terms of the long-term. Don’t be afraid to talk to your farmer about how you want your land managed. You own the land and together, you can make decisions that will benefit you both!

If you would like ideas on how to conserve, maintain and improve your soil and water resources on your land, contact the Natural Resources Conservation Service at 320-674-3024. We develop conservation plans free of charge to help you manage your land to boost productivity, while conserving your most valuable asset: Healthy Soil.

USDA Announces Availability of Inflation Reduction Act Funding for Climate-Smart Agriculture

USDA is making funding available for agricultural producers and forest landowners nationwide to participate in voluntary conservation programs and adopt climate-smart practices. The Inflation Reduction Act (IRA) provided an additional \$19.5 billion over five years for climate smart agriculture through several of the conservation programs that USDA’s Natural Resources Conservation Service (NRCS) implements. NRCS is making available \$850 million in fiscal year 2023 for its oversubscribed conservation programs: the Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Agricultural Conservation Easement Program (ACEP) and Regional Conservation Partnership Program (RCPP). The IRA funding includes an additional \$8.45 billion for EQIP, \$4.95 billion for RCPP, \$3.25 billion for CSP, and \$1.4 billion for ACEP. The increased funding levels begin in fiscal year 2023 and rapidly build over four years. These additional investments are estimated to help hundreds of thousands of farmers and ranchers apply conservation to millions of acres of land. Additionally, the IRA provides \$300 million to quantify carbon sequestration and greenhouse gases (GHG) through the

collection and use of field-based data to assess conservation outcomes. Information gained through this effort will be used to improve practices and technical assistance to customers. Further guidance on this important work will be provided as the implementation of this portion of the IRA continues. These funds will provide direct climate mitigation benefits and will expand access to financial and technical assistance for producers to advance conservation on their farm, ranch or forest land through practices like cover cropping, conservation tillage, wetland restoration, prescribed grazing, nutrient management, tree planting and more. To ensure we can quantify the benefits of these IRA investments, NRCS is working to support Department-wide work on Measurement, Monitoring, Reporting and Verification (MMRV). The IRA provided targeted funding to support this effort. In administering the Inflation Reduction Act climate investments, USDA will also support other environmental co-benefits, including – among other things – water conservation, wildlife habitat improvements, and reducing runoff.

How to Apply :

NRCS accepts producer applications for its conservation programs year-round. Funding is provided through a competitive process and will include an opportunity to address the unmet demand from producers who have previously sought funding for climate-smart conservation activities. NRCS plans to roll out the next RCPP funding opportunity in early spring, which will include IRA funds from fiscal year 2023. Other opportunities for agreements and partnerships at the state level will be announced for fiscal year 2023 in the coming months. The IRA provides funding to support those strategic partnerships with local, regional and national organizations. This will include outreach to underserved producers to ensure IRA climate funding is reaching those who have been previously unable to access conservation assistance. Contact the Natural Resources Conservation Service at 320-674-3024 or ShannonBodle1@usda.gov.

Completed Natural Resources Conservation Service (NRCS) Projects in 2022
Mora Field Office



Kanabec SWCD Staff



Deanna Pomije

District Manager

Deanna has been working in the conservation field for 23 years, here in MN and throughout WI. She went to school in Stevens Point, WI studying natural resources, soils and biology, but is a native to MN. She's been in Kanabec Co. now for eight years enjoying her time working in lake country. Of her job with the SWCD, she relishes most, her time talking with landowners. Walking their land with them discussing their objectives. In her spare time she volunteers with the Prairie Enthusiasts and takes pleasure in gardening and canning.



Jerah Mattson

Administrative Assistant

Graduating from Minneapolis Business College, Jerah came to the District in the fall of 2019 with 15+ years of Administrative experience. She likes all the admin duties that come with the job but also enjoys going out to monitor the wells throughout the county, working on conservation easements and meeting residents during the annual tree pick up. While not in the office, she is spending time with her two boys, Marshall and Brayden, family and friends. She enjoys hunting, fishing, camping, riding ATV and snowmobiling.



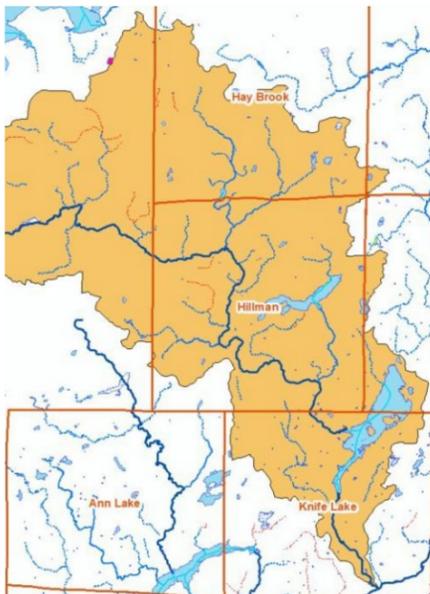
Stephanie Paulsen

Conservation Technician

Steph is a graduate of Mora High School and the University of Minnesota-Twin Cities with a degree in Agricultural Education. Over the past 7 years she has taught agriculture and industrial technology classes around the state and finally moved back "home." She raises beef cattle and chickens with her husband, Travis, on a small farm in Isle and serves on the Haybrook Township board and Snake River Valley Cattlemen's Association board of directors. She transitioned to working with the district in June 2022 and looks forward to working with more landowners in the area to improve any land concerns they have on their properties, especially with components of water quality improvement, forestry, and livestock management practices.

Knife River: Bugs, Water, E. coli, oh my!

We are rounding out the last year for the Knife River watershed area funding in 2023. Knife River watershed, upstream of our popular Knife Lake has a water quality impairment for aquatic macroinvertebrates (water bugs) and a recent E. coli impairment. We are still looking for landowners who would like to start Best Management Practices (BMPs) on the river. Projects targeted for implementation include pasture management practices like fencing exclusions and alternative watering systems, and stream bank erosion control practices which may include vegetative filter strips or general erosion control. Our goal is to reduce sedimentation sources to help remove the aquatic macroinvertebrate impairment.



Mayfly Larva

Macroinvertebrates are not only important if you enjoy fishing, but they also help us understand the health of our ecosystem as well. There are a handful of "indicator" species that love oxygen rich environments and when those waterways become impaired, you will no longer find them.



Caddisfly and Damselfly Larvae

Mayfly larva and caddisfly larva are considered indicator species due to their sensitivity to pollution. As pollution increases, their numbers will dramatically decrease. The damselfly larva is more tolerant to pollution.



If you think you have a project that would help us meet this goal, please contact us! (320) 679-1391 or stephanie@kanabecswcd.org

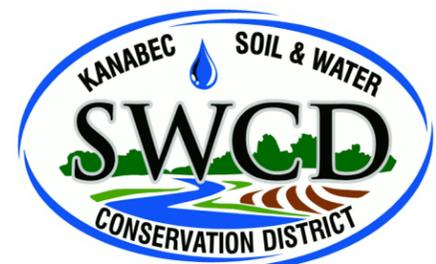
Pictured left is a heavy use area protection pad that helps reduce erosion near watering sources. This project was implemented in the Knife watershed in 2022 with the help of other partner practices to help make rotational grazing more viable and decrease cattle impacts along the river.



Pays \$18.00 per acre

Enroll by May 1st.

Scan the QR code for more information



Office Hours Monday-Friday 8:00am-4:30pm
After hours appointments available by request.

(320) 679-1391

Deanna@KanabecSWCD.org

Jerah@KanabecSWCD.org

Stephanie@KanabecSWCD.org

Snake River Planning

Snake River Watershed Plan

The Snake River Comprehensive Watershed Management Plan has been finalized and approved. This watershed plan is projected to replace each of the partner's county water plans for this area. Currently the eight partners are considering formal adoption of the plan. Our next steps are to set-up the partnership infrastructure to prepare for plan implementation. We are anticipating the arrival of implementation funds later this fall, 2023.

Funding for the planning process has been provided by our Clean Water Land & Legacy Amendment Funds, administered through the MN Board of Water & Soil Resources.

The partnership working on this planning endeavor include your local units of government (SWCD & County) from Aitkin, Mille Lacs, Kanabec & Pine Counties. State agency staff have also been contributing their knowledge and resources.



The large end goal is to clean up our waters and prevent our clean waters from becoming polluted.

The existing multi-county Snake River Watershed Management Board is considering their role in plan implementation. These organizational details have yet to be worked through and finalized.

Local staff are currently drafting our first two-year work plan in anticipation for plan implementation. The work plan lists out the specific details of what, who, where and with what funds we plan to put into place with everyone playing a role, leading to cleaner waters for the Snake Watershed.

Non-competitive state funds (~\$318,000 annually) are anticipated to arrive in the fall of 2023 to implement this 10-year plan at the local level. The planning group will transform into a re-designed partnership set-up for plan implementation.

The Plan is based on Science and Contains:

- ✓ **Priority Issues & Concerns**
- ✓ **Targeted Implementation Schedules**
- ✓ **Measurable Goals**

A coordinated multi-county effort to implement the plan will work to ensure we have clean waters within the Snake River Watershed. Great work is ahead of us!

Snake River Watershed Plan Highlights

Priority Issues (in order of priority)

1. Surface Water Quality

- Phosphorus reduction Best Management Practices (shoreland restoration,
- Priority Lake Tier 1 (early in 10-yr.) & Tier 2 (later in 10-yr.)
- Two possible lake treatments preventing Phosphorus release (Ann & Cross Lakes)
- Pokegama Lake – focus on watershed conservation work to reduce nutrient and sediment runoff
- Decrease E. coli bacteria through upgrading septic's and improving livestock feedlot runoff concerns

2. Land Cover / Land Use

- Increase protection efforts (voluntary conservation easements, forest stewardship planning) in 3 focus areas

3. Surface Water Quantity

- Conduct a study on flooding impacts/cause from Mora down to the St. Croix outlet
- No net increase in the flow of the Snake River by increasing water storage

4. Drinking Water / Groundwater

- Increase understanding on groundwater trends and contamination issues
- Continue nitrate well testing and monitor trends for increased focus

5. Erosion / Soil Health / Soil Loss

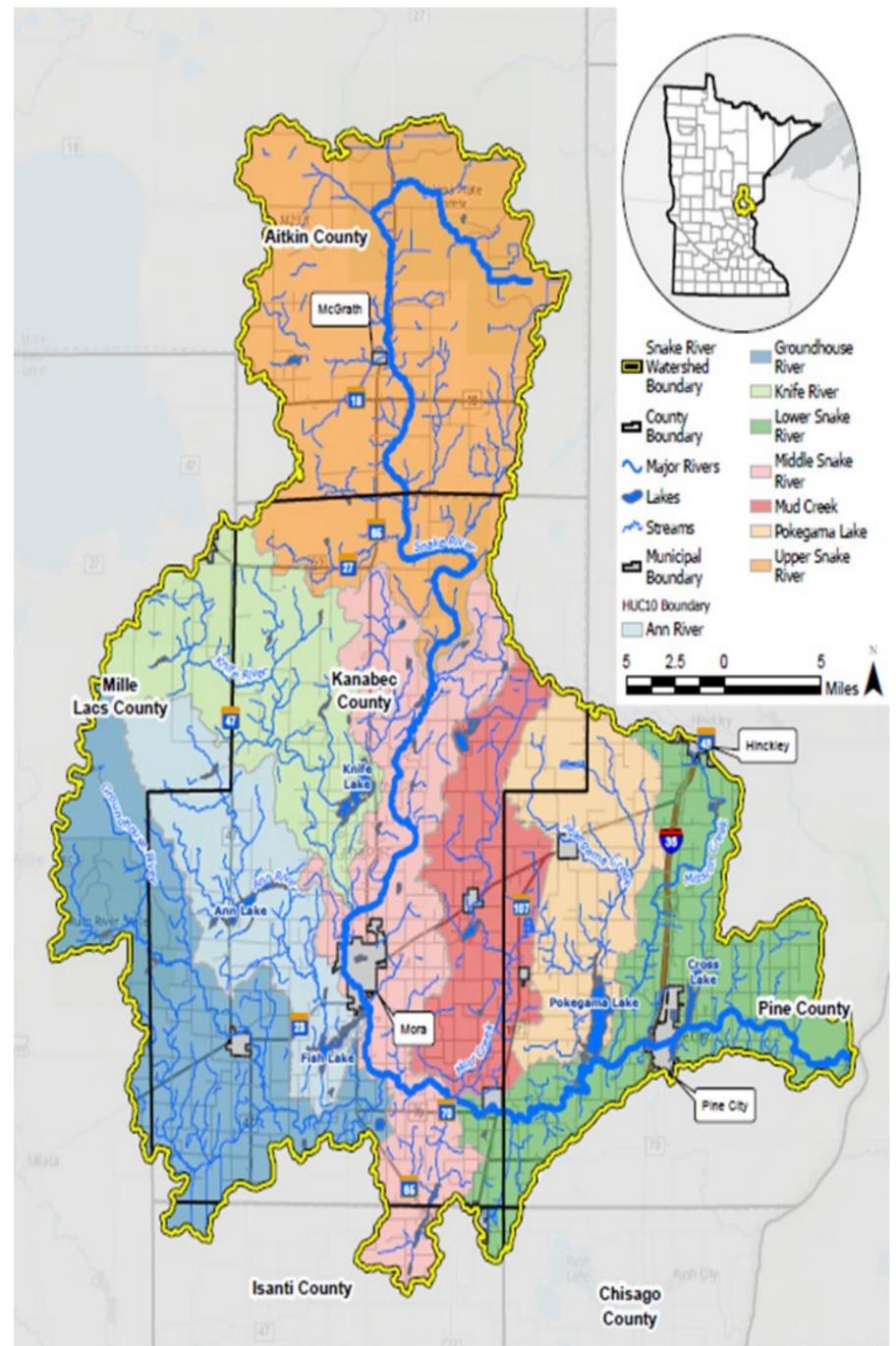
- Soil Health practice (cover crops, reduced tillage) promotion & implementation
- Decrease erosion through installation of conservation practices
- Peer to peer learning opportunities
- Long term goal – develop a landowner led council supporting water quality work

6. Habitat

- Continue invasive species awareness, education and control efforts
- Culvert inventory for improved channel connectivity and stream restoration projects

7. Extreme Weather

- Educate ourselves and the public for future policy or action implementations



Implementation Organizational Structure – revision of the existing Snake River Watershed Management Board

Outreach Core Values: Relationship building, Partnering, one-on-one conversations, inclusivity, improve efficacy and adapt, promoting active participation – we all have a role to play for cleaner water

Promote Do It Yourself (DIY) Conservation Projects – in part due to limited staff capacity in watershed

Proposed New Employees: Watershed Project Manager / Coordinator, part-time Forester, to evaluate added technical needs in the first few years

Continue the citizen involvement for public input on our activities

If you have questions, please contact the Kanabec SWCD at (320)-679-1391 or Deanna@KanabecSWCD.org

Help Stop Aquatic Hitchhikers!

You can help stop the spread of aquatic invasive species (AIS)

Minnesota Law requires you to:

CD³

Clean watercraft of all aquatic plants and prohibited invasive species.

Drain all water (including your livewell, bilge and ballast water) by removing drain plugs and keeping them out during transport. Drain lake water from the bait bucket. It may contain invasive species. To keep bait, add bottle or tap water.

Dispose of unwanted bait in the trash. Do not dispose of bait in our lakes / rivers. Bait can carry diseases and AIS.

Dry docks, lifts, swim rafts and other equipment for at least 21 days before placing equipment into another water body.

If you suspect you have AIS on your boat or equipment – To remove or kill them, take one or more of the following precautions before moving to another waterbody, especially after leaving after leaving zebra mussel infested waters. Some invasive species are small and difficult to see.:

Spray with high-pressure water

Rinse with very hot water

Or **Dry** for at least 5 days.

Help Stop Aquatic Hitchhikers!



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◆ **Spray** with high-pressure water

◆ **Rinse** with very hot water

◆ **Or Dry** for at least 5 days.

Identify Aquatic Plants - Guide to Aquatic Invasive Species (AIS):

<https://www.dnr.state.mn.us/invasives/ais/id.html>

Scan the QR code to take the Pledge to Protect MN Waters:



In Kanabec County, Knife is the only lake listed with aquatic invasive species; Eurasian watermilfoil in 1995 and faucet snails in 2016.

More information can be found at the DNR 'Clean In Clean Out' website or call the DNR Information Center (651) 296-6157:

https://www.dnr.state.mn.us/invasives/preventsread_watercraft.html

Identify Aquatic Plants - Guide to Aquatic Invasive Species (AIS):

<https://www.dnr.state.mn.us/invasives/ais/id.html>

Your Forest, Your Choice

If you're like many other woodland owners, you enjoy peace and quiet, observing new life pop up in your woods, or watching birds return in the spring. A couple things that are often overlooked in many woodlands are: the increase in over-mature and dying trees, the quick spread of invasive species such as buckthorn, and the economic benefit private forests provide to you and the local and state forest industry. With over 40% of Kanabec County covered in forests, it's important to maintain and protect forested cover for many reasons.

Environmental Benefits:

- Forests deliver clean drinking water for residents of Kanabec County.
- Wildlife species are dependent upon the forest for food, water, cover, and space.
- A single tree will absorb an average of 50 pounds of carbon from the atmosphere each year.



Healthy Forest = Healthy Waters, Wildlife, and Society

Societal Benefits:

- Recreation trails can be used for bird watching, cross country skiing, walking, snowshoeing, hunting, ATVing or snowmobiling.
- Forests provide excellent educational opportunities and health benefits for people of all ages.
- Cultural and spiritual importance such as maple sap gathering, balsam bough harvestings, berry picking, and much more!

Economic Benefits:

- The forest products industry ranks fifth overall in Minnesota's manufacturing sector.
- The direct, indirect, and induced economic effects of Minnesota's forestry-related sectors have a total economic impact of \$17.8 billion industry output, \$8.0 billion value added (contribution to gross state product), and 64,000 jobs.
- Over 43% of Minnesota's forestland is under private ownership. Timber harvesting on private lands has dramatically decreased over the years.

Start with a Woodland Stewardship Plan

A woodland stewardship plan is prepared for your land by a DNR-approved plan writer of your choice. The natural resource professional will walk with you through your woods, conduct an inventory while assessing the health of your forest, recommend best management practices, come up with a list of projects to meet your land ownership goals, and answer questions you may have. Landowners with a woodland stewardship plan may be eligible for a financial incentive program that provides a property tax reduction or annual incentive payments. Actively managing your woods helps ensure that future generations inherit a sustainable family forestland.



Timber harvesting creates excellent wildlife habitat and supports the long-term health of your woodlands.

Cost Share Assistance Now Available for Private Landowners

Do you own a woodlot and want to practice good stewardship? Well, you're in luck - money is now available to help share the cost of projects including reforestation, forest health improvement, control of invasive species, soil and water protection and improvement, and enhancement of wildlife habitat, forest recreation, and timber quality.

Kanabec SWCD now has staff to aid in Forest Stewardship Planning and woodland practice planning. For more information contact your local MN DNR Forestry Office at 320-679-3683 or the Kanabec Soil and Water Conservation District at 320-679-1391.

Receive upcoming Kanabec SWCD events and future e-Newsletters by signing up at:

Jerah@KanabecSWCD.org

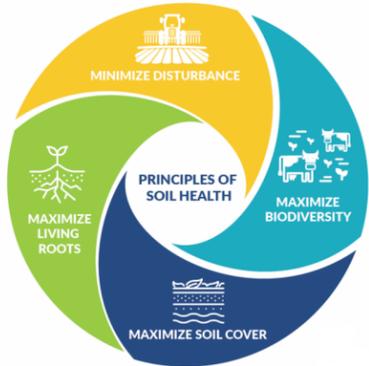
Please include your full name and email address.

SOIL HEALTH - Intentional Practices with Progressive Results

You've probably heard of some of these terms: soil health, regenerative, or sustainable agriculture. Now there's even a MN Institute for Sustainable Agriculture and a MN Soil Health Coalition. Consumers are entering into this equation more every day by demanding products from farms that are practicing sustainable agriculture.

So what is this exactly? I tend to think of sustainable agriculture as taking a step back in time, to the suite of agricultural practices that our forefathers used. This includes such things as adding a third crop into your rotation (such as wheat or alfalfa) or incorporating manure into your fields. Take a look at the Principles of Soil Health circle. These are four of the principles that help improve soil's health. Practices that aid in promoting these principles include: planting cover crops in the fall to maximize living roots in the soil and reducing tillage disturbance or adding manure to increase biodiversity.

Another way to remember the soil health principles involves thinking about what soil organisms need to survive and thrive. Soil organisms include things such as worms, fungi, springtails or spiders, to name a few. Generally when these organisms' needs are met, their numbers will increase and hopefully become a more diverse group of organisms. Providing organisms with some of the same things we need to survive and thrive such as food (living roots in the soil), shelter (residue on the soil surface) or protection (less tillage) will help them grow and thrive.



When a soil is truly healthy, the organisms in the soil actually work in our favor to provide nutrients, to retain moisture for the plant, to battle against disease and insect attacks. (Jerah - call this sentence out somehow.)



Living roots in the soil provide a network of connectivity in the soil for improved nutrient and water uptake.

Here in the Mora Conservation Office, we have been and continue to promote various soil health practices meant to improve soil health. We may have incentive payments available to encourage farmers new to these practices to give it a try and see how it works in their operation. In the SWCD office, we're able to offer up to \$3,000 per farmer through:

- Cover Crops \$20 - 41 per acre
- Reduced Tillage \$8 per acre

To ensure the benefits of soil health can be observed, farmers are required to continue these same practices for 3 consecutive years on the same piece of ground. Why three years? To really see the beneficial changes in the soil over time requires anywhere from 3-5 years depending on your soil's initial condition and how many practices you incorporate into your operation.

As we continue to promote these practices, please let us know what else you'd like to see. Whether that be a soil health workshop to share experiences, or bringing in a speaker on a particular topic. Please drop us a line and share your thoughts - Stephanie@KanabecSWCD.org or (320) 679-1391.

Know Your Septic System — Components, Functions and Best Management Practices

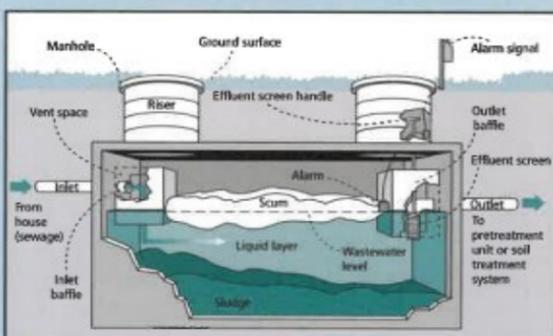
Household Plumbing

Functions

- Transports used water to septic system.
- Delivers wastewater to septic tank and soil treatment area.

Best Management Practices

- Control water use—repair leaks, use low-water-use appliances and fixtures.
- Don't overload the system—spread water usage throughout the day and week.
- Minimize use of harsh cleaners, bleach, antibacterial soaps and detergents.
- Do not dispose of paints, medications, or chemicals through your septic system.
- Keep grease, lint, food, feminine hygiene and plastic products out of your septic system.



Septic Tank

Functions

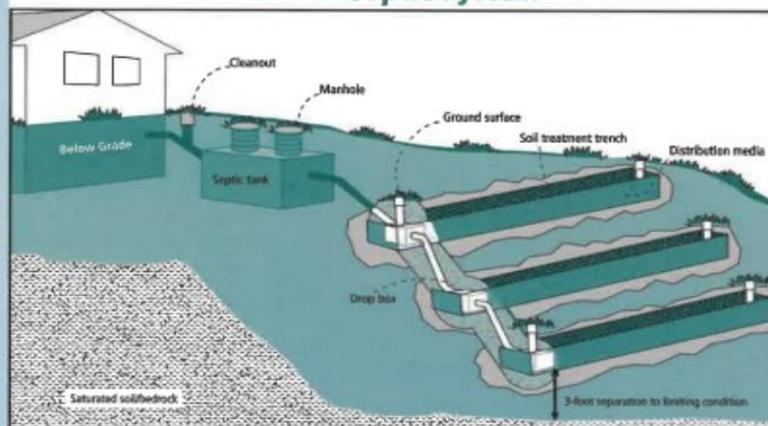
- Separates solids from liquid.
- Allows friendly bacteria to decompose organic solids.
- Stores solids until removed by pumping.
- Delivers liquid to soil treatment area.

Best Management Practices

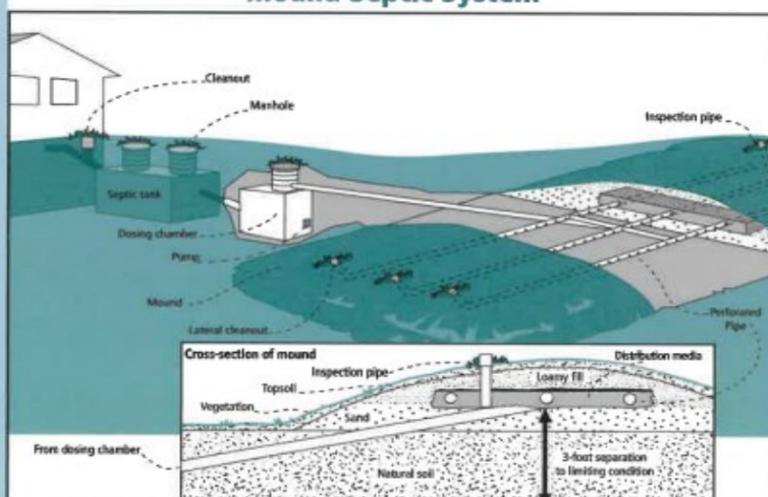
- Never enter the septic tank.
- Pump/clean solids from tank's manhole (not inspection pipes) regularly.
- Have baffles inspected at time of cleaning.
- Install and insulate risers to manhole access.
- Identify whether your tank has an effluent screen, and service as necessary.
- Do not use septic tank additives or cleaners.

Household wastewater contains bacteria, viruses, nutrients, solids, and cleaners that need to be treated by your onsite sewage treatment system!

Trench Septic System



Mound Septic System



Soil Treatment System

Functions

- Removes bacteria, viruses, and other disease-causing organisms.
- Removes phosphorus.
- Reduces nitrogen content.
- Recycles water and nutrients through evaporation, plant uptake and groundwater recharge.

Best Management Practices

- Maintain vegetative cover (turf grass, native grasses or flowers). Mow, but do not fertilize, water, or burn.
- Keep heavy vehicles off area (cars, tractors, snowmobiles, etc.).
- Do not plant trees, shrubs or deep rooted plants on or close to this area.
- Do not grow vegetables or situate play areas above soil treatment area.
- Help prevent system freezing:
 - Inspect for cracked or missing inspection pipe covers annually.
 - Place mulch, straw or other insulating cover above soil treatment area for winter.
 - Maintain normal daily water use over the course of the winter.
 - Consider insulating cold air access points.
 - If you are gone for extended periods, arrange for someone to use water in your home or have your tank pumped.

To order the Septic System Owner's Guide. Call (800) 322-8642 or email septic@umn.edu.

<http://septic.umn.edu>