



Lake Leader

PROMOTING STEWARDSHIP OF POLK COUNTY'S NATURAL RESOURCES

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Fish Passage for the Sandhill Lake Dam

In 2003, the Sand Hill River Watershed began preliminary investigations to address alternatives that could make the Sand Hill River a viable fishery. The project team's analysis showed four impediments to fish passage on the Sand Hill River and include:

- The four drop structures on the United States Army Corps of Engineers (USACE) Project.
- Downstream of the last drop structure to a point west of the county bridge, a distance of 500 to 1000 feet.
- The Texas crossing west of Highway No. 9.
- The box culverts west of Fertile

The United States Corps of Engineers (USCOE) requested funding (which was not received) for a Section 1135 study focusing on modifying the old Corps' project to restore fish passage. A Preliminary Restoration Plan was devised. A DNR fisheries grant was awarded to the district to begin the project. It was decided to begin with the Texas Crossing (West of Beltrami) and the West Mill site (West of Fertile). In September of 2006, the project was awarded to Davidson Construction and Ready Mix of Newfolden, MN. The two sites were completed and ready for seeding in the spring of 2007. In 2015 the district was awarded the Lessard-Sams Outdoor Heritage Council LSOHC) Funding Opportunity grant for \$1,451,900.



Drop Structure Before



Drop Structure After

SPECIAL POINTS OF INTEREST

- Fish friendly passages constructed in hopes of restoring fish habitat to increase fish spawning, number of juveniles, and year round deep cover for fish communities.
- One Watershed, One Plan: combining multiple water planning efforts into one effort
- WRAPS—Watershed protection and Strategy reports on restoration steps for areas that don't meet water quality standards
- Mystery Snails established in Lake Sarah and preventative tips from transporting these invasive species to other lakes.
- Learn about our Rain Garden Program and current projects.
- Updated lake Directory—contains new information on current contacts

Collaboration With Different Entities

The SHRWD worked closely with all project partners. Each individual project presented its own unique constraints when dealing with funding, permitting, and construction. For example, the installation of riffles in the Sand Hill Ditch was funded by both the Board of Water and Soil Resources (BWSR) Clean Water Fund and the Lessard Sams Outdoor Heritage Council. Each of these grants have differing objectives of reducing channel ero-

sion and enhancing fish passage, respectively. Collaboration that occurred through the West Polk SWCD, SHRWD, funding entities, and regulatory agencies resulted in a collaborative project that accomplished objectives within each funding source, all while preserving the Sand Hill Ditch channel which had been a long term issue for the District.

KITTLESON AND SANDHILL LAKE DAM

Construction for the original fish passage restoration portion of this grant was completed and costs were well below estimates. The district continues to move forward and fish passage will be restored at two additional sites in the Sand Hill River watershed with the unspent funds. The first barrier is the road crossing on Kittleson Creek, a tributary to the Sand Hill River (West of Fertile, MN).

Continued on page 2.



KITTLESON AND SANDHILL LAKE DAM CONTINUED

This culvert is nearly perched and velocities exceed the swimming limits for most species at normal flows. This restoration would replace the culvert with a structure more appropriately sized for the creek and at a lower elevation to accommodate fish passage. The second barrier is a dam on Sand Hill Lake. The dam will be removed and replaced with rock arch rapids to allow fish passage upstream into Sand Hill Lake. Both of these crossings are upstream of the dams that were modified for fish passage in 2017.

Restoration of fish passage at these two sites would expand the number of restored acres and river miles in the watershed. Numerous fish passage restoration projects have been conducted in the Red River basin, with almost immediate positive impacts to fish communities. A fish passage project similar to the one proposed for the Sand Hill River was conducted on the Wild Rice River, another major tributary to the Red River. Fisheries surveys found a low head dam on the Wild Rice River blocked fish passage and impacted populations. Similar to findings on the Sand Hill River, large river fish

species such as Channel Catfish, Freshwater Drum, Goldeye, Sauger, Smallmouth Bass, and Walleye were common below but rarely captured above the dam. Within one year of passage restoration at this dam in the Wild Rice, these large river species were common upstream of the dam, with channel catfish captured 70 river miles above the previous barrier. Restoration of fish passage on the Sand Hill River would likely yield similar results. A second component of this project will enhance stream habitat within a channelized segment of the Sand Hill River downstream of the four drop structures (West of Fertile, MN). The river channel in this reach is unstable and has down cut significantly, creating a simplified habitat lacking in diverse substrate and depth. Habitat will be enhanced by constructing rock riffles in the channel to reduce velocities, increase pool/riffle habitat and provide more diverse substrate. The enhanced habitat would likely be used by many fish species for

For more information visit:
http://www.sandhillwatershed.org/Projects_Fish_Passage.html

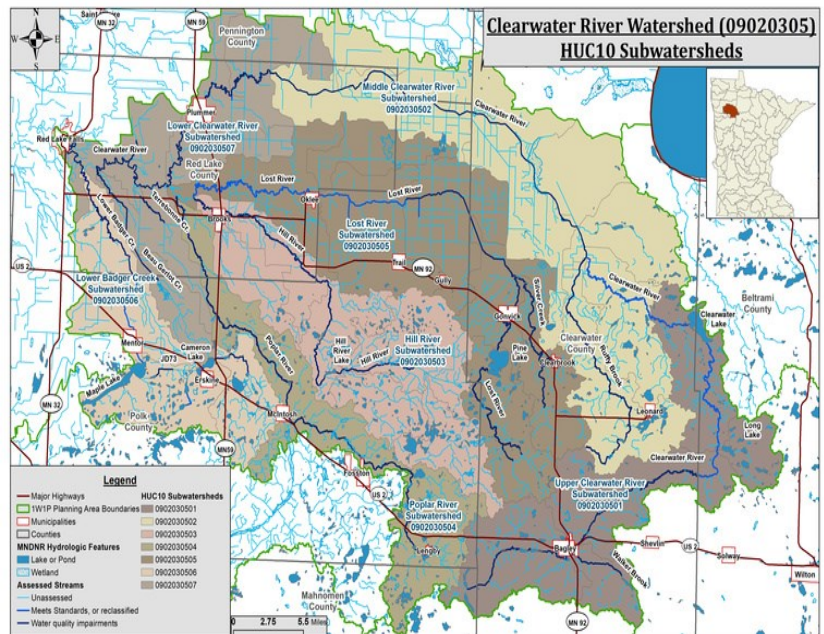
Sand Hill Watershed District Future Goals

While we have come a long way in the District, we are looking forward to completing the 1 Watershed 1 Plan effort soon. There are still several issues related to channel incision, sediment and nutrient loading, and flood concerns in the District. We are fortunate in the District to have such a strong working relationship with our county SWCDs, and the 1 Watershed 1 Plan will allow us to formalize the working relationship and prioritize our efforts for the benefit of our taxpayers -April Swenby, Administrator, SHWD.

CLEARWATER RIVER ONE WATERSHED, ONE PLAN

On August 27, 2020, local project partners were informed that the Minnesota Board of Water and Soil Resources (BWSR) selected the Clearwater River Watershed planning area for a planning grant through the One Watershed, One Plan (1W1P) program at its August 26, 2020 meeting. BWSR must approve a formal agreement for planning and a work plan before the grant can be executed.

The 1W1P will establish clear implementation timelines, milestones and cost estimates for restoration and protection activities. Combining multiple water planning efforts into one effort will create a more efficient and cooperative plan for water management. Plans will include goals and implementation actions that are prioritized and targeted on a watershed basis with measurable results, instead of a bunch of individual plans that are restricted to political boundaries.



THE CLEARWATER RIVER

The Clearwater River watershed drains an area of 886,600 acres in the Red River of the North basin. The Clearwater River begins its course in western Clearwater County near the town of Ebro. The river flows to the northwest and southwest, eventually emptying into Red Lake River near Red Lake Falls. The watershed occurs in the Glacial Lake Agassiz Plain, North Central Hardwoods, Northern Lakes and Forests, and Northern Minnesota Wetlands Level III Ecoregions.

The Clearwater River watershed characteristically has a poorly defined floodplain and low gradient that combine with extensive drainage, widespread conversion of tallgrass prairie to farmland, and urban/suburban development to leave the basin subject to frequent floods that affect urban and rural infrastructure and agricultural production. Precipitation in the watershed ranges from 21 to 25 inches annually. Above-normal amounts of precipitation in the late fall of the year or from May to October lead to high levels of soil moisture, periodically producing the snow-melt and summer floods that are known to affect the further reaches of the overall Red River Basin.



Predominate land uses / land covers are row crops (33%), forest (24%), grass/pasture/hay (21%), wetlands (14%), and residential/commercial Development (4%). Agricultural land use in the basin accounts for approximately 54% of the overall watershed acres. Development pressure is moderate in most areas, with occasional farms, timberland, and lakeshore being parceled out for recreation, lake or country homes.

The main resource concerns in the watershed are wind and water erosion, nutrient management, wetland management, surface water quality, flood damage reduction, and wildlife habitat. Many of the resource concerns relate directly to flooding and increased sediment and pollutant loadings to surface waters.

WHATS BEING DONE

Data gathered from the Clearwater River Watershed and documented in the watershed's Total Maximum Daily Load (TMDL) and Watershed Protection and Strategy (WRAPS) reports reflect similar findings recorded in ten years' worth of in-depth studies conducted throughout the [broader Red River Basin](#). A TMDL report determines the levels of pollutants that water bodies can receive and still meet water-quality standards. WRAPS reports recommend steps for restoring waters that don't meet standards and protecting waters that are in good condition.

The reports are part of the MPCA's approach to gauging the health of Minnesota's 80 major watersheds and will inform projects by local, regional, and even international partners to restore and protect lakes and streams.

The Clearwater River Watershed TMDL and WRAPS reports (see links below) describe excess sediment and degraded habitat for fish and aquatic insects, and 15 stream segments with recreational safety concerns due to high levels of *E. coli* bacteria. Barriers to fish passage such as improperly installed or sized culverts are also causing impairments to aquatic communities. Too many nutrients are causing algal blooms in lakes.

The Clearwater River Watershed falls within the Red Lake Watershed District (RLWD), a primary author of both reports. The RLWD and its partners (including soil and water conservations districts and landowners) have completed many projects and assisted in implementing strategies to improve or protect water quality for several years. For example, many wild rice farmers have adopted a different approach to draining wild rice paddies, changing from surface drainage to main-line tile drainage to reduce sediment in drainage water after harvest. Protection strategies for a trout stream reach of the upper Clearwater River include repairing damaged riparian areas to keep the stream healthy. Trout streams are not common in the Red River Basin and this reach is at risk for becoming impaired by *E. coli*.

Many water-quality issues are linked to artificial drainage and stream alterations. These human-made changes have led to inconsistent stream flows — high flows during spring runoff and summer rains, and low flows in much of the rest of the year — which damage aquatic habitat and contribute to erosion. Climate change is bringing more frequent and intense storms that also adds to runoff.





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CHINESE MYSTERY SNAILS CONFIRMED IN POLK COUNTY LAKE SARAH

The Chinese mystery snail is a snail that has been shipped over to California from Asia in the 1800's for Asian seafood markets. These different shades of brown snails grow up to two inches long and are normally referenced as being the size of a golf ball. Lake and ponds that have these snails will often find the shorelines lined with dead or empty shells. The reason the CMS (Chinese Mystery Snail) got its name is due the fact how it gives birth in the spring, to young fully developed snails suddenly and mysteriously appear. CMS was likely released into the Niagara river in the 1930's from aquaria enthusiasts who accidentally released them. This invasive species can form dense populations and outcompete native species for food and habitat in ponds, lakes and streams. These snails can carry parasitic worms and can transmit trematodes that can kill waterfowl. There is currently no threat to human well-being with this infestation

and it is believed that Lake Sarah has had them for many years as they are quite prevalent with a thick adult population this past summer. There is no evidence to support this theory but some believe that young CMS can be transferred from lake to lake by hitchhiking in bait buckets and boat bilges. What also doesn't help us is they can survive out of water for days by just tightly shutting their trap door to hold in their moisture. It's nearly impossible to get rid of mystery snails. The only way you can help is by making sure you are not transferring the snails and water out of the lake and report all new infestations in other lakes near you, for awareness is vital for preventing spreading them.

WHAT CAN YOU DO.....

1. **Don't Transport!**

It is legal to have in your possession, BUT it is illegal to transport to another lake!

2. **Remove Snails**

Remove the snails that wash up on shore and dispose of them into the trash!

3. **Spread the Word**

If you find out that the lake you are on or near you has not only Mystery Chinese Snail, but any other type of invasive specie in it. Let other people know and remind them to be careful not to transport them to another body of water.

WHAT TO KNOW ABOUT: CHINESE MYSTERY SNAILS?

- Native to Asia, spread due to being released by consumers and aquarists who purchased them from live food markets in the 1930's
- These different shades of brown snails grow up to two inches long and are normally referenced as being the size of a golf ball
- Dead CMS (Chinese Mystery Snails) can litter shorelines and clog screens of water intakes in lakes and slow moving rivers • CMS can survive out of water for days by tightly shutting their trap door to hold in their moisture
- CMS pose a danger to native waterfowl as they can be hosts for parasitic worms •
- CMS got its name is due the fact how it gives birth in the spring, to young fully developed snails suddenly and mysteriously appear
- CMS are impossible to eradicate once introduced to a new waterbody
- The only way you can help is by making sure you are not transferring the snails and water out of the lake and report all new infestations in other lakes near you, for awareness is vital for preventing spreading them.



RAIN GARDEN PROGRAM UPDATE

About the Program

In 2019, East Polk SWCD's new Rain Garden Program launched. We are partnered with Prairie Restorations, located in Hawley, MN, to help design and install the best rain garden catered to you.

Our district will assess your property by evaluating resource concerns that could potentially contribute to land erosion, standing water and dead spots. We review soil type, rainfall retention, impervious areas and much more to ensure we conserve and stabilize your landscape for water retention.

The East Polk SWCD offers Cost Share up to **50%** for the rain garden program. For more information on our cost share guidelines visit our website.

Benefits include:

- Bioretention—natural retention of water
- Food and shelter for pollinators and song birds
- Adds native ornamental landscaping to yards
- Reduces runoff and flooding
- Filter pollutants

Planting a Rain Garden

These gardens are designed to soak up rainwater and runoff. Typically shaped like a saucer or shallow bowl the recessed plant bed allows for runoff to be collected and retained within the garden. The garden holds water for roughly 24-48 hours before infiltrating into the ground. Rain gardens are planted with hardy native plants that tolerate temporary standing water. Most have deep root systems, which along with the soil, work to filter the water and collect pollutants.

Rain Garden Tips:

- Worried about Mosquitos? Most rain Gardens will not hold water long enough for mosquitos to reproduce.
- When first planted, biweekly hand weeding may be needed until the native plants are well established. After they are established little to no maintenance is required.
- Don't fertilize around the rain garden, it will stimulate weed growth and create competition for the native plants. Most natives don't require any fertilizer as they are fully adapted to the soil type and climate.
- Most rain gardeners wait until early spring to cut back the prior year's growth. Leaving seed heads and spent foliage in place through the winter provides visual interest as well as cover and food for many kinds of wildlife. Once spring comes, burning off the dead material is the best way to knock back weeds and stimulate new growth. If burning is not an option, mow the dead plants or cut them back with a scythe or pruning shears.

For more information visit our website:

www.eastpolkswcd.org

Other resources:

<http://bluethumb.org/raingardens/>

Spotlight Project: Rain Garden Installation



Figure 1. Proposed Project Design



Figure 2. Proposed Rain Garden Location



Figure 3. Proposed Erosion Blanket Location

Summer 2021 Rain Garden Project

East Polk SWCD was contacted last summer by a landowner with concerns about a significant amount of water pooling in the yard near the house. A site visit was completed to determine where runoff could be minimized and standing water could be redirected to a rain garden for retention and ground absorption. Prairie Restorations was contacted to establish a plan for a native plant mix that will help eliminate the resource concern and be visually appealing. The final plan included installing a rain garden near the shore and away from the house to collect runoff from the house (Figure 1). A shallow trench was proposed as well to modify the landscape and direct runoff towards the rain garden. The proposed trench will stabilize the soil and act as a natural drain for runoff to properly drain into the rain garden. This will mitigate the landowners issue of having standing water in the yard, as all water from runoff will be directed towards the rain garden for retention. A wattle and erosion blanket were also suggested to minimize erosion on a steep slope next to the house (Figure 2) and prevent water from pooling in an undesired location (Figure 3). A mixed native shoreline buffer was also added to the plan to eliminate erosion and filter runoff that would travel towards the lake. This project will be completed this summer.

2021 LAKE DIRECTORY

East Polk Soil and Water Conservation District

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McIntosh, MN 56556

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District Technician– Marea Schommer–
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Summer Intern – Jenna Wiersma –
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Office: 218-563-2777

Website: <https://eastpolkswcd.org/>

Sandhill Watershed District

219 N Mill St
Fertile, Mn 56540

Administrator– April Swenby

Office: 218-945-3204

Website: <http://www.sandhillwatershed.org/index.html>

Red Lake Watershed District

1000 Pennington Ave S,
Thief River Falls, Mn 56701

Water Quality Coordinator– Corey Hanson -
Corey.Hanson@redlakewatershed.org

Office: 218-681-5800

Website: <http://www.redlakewatershed.org/>

Maple Lake Improvement District

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Mike Moore, Vice President– 218-687-3637

Loren Able– 701-741-1147

Jim Baune– 218-779-5295

Roger Behm– 218-574-2035

Dwight Kouba– 741-740-3639

Brian Wavra– 218-773-3083

Union Lake Sarah Improvement District

Po Box 61
Erskine, MN 56535

President– Shane Johnson– 218-289-3309

Vice President– Jodi Bachand– 218-280-7128

Secretary/Treasurer–Cynthia Hubbard–218-374-1102

Polk County Aquatic Invasive Species Taskforce (AIS)

320 Ingersoll Ave
Crookston, MN 56716

Jacob Snyder-
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Office: 218-281-5700

Website: <http://www.co.polk.mn.us/264/Polk-County-Aquatic-Invasive-Species-Tas>

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