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Lake Leader

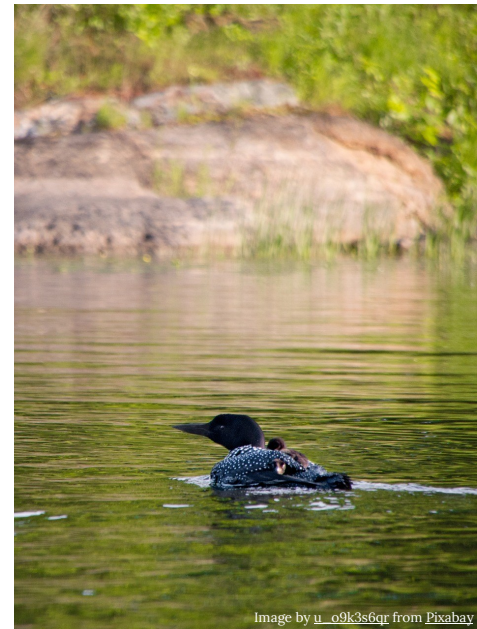


Image by u_o9k3s6qr from Pixabay



Image by East Polk SWCD



Image by Chris Heintz from Pixabay

Blue-Green Algae Monitoring

Since the discovery of blue-green algae, or algal toxins, in lakes and reservoirs during the summer of 2018, regular sampling and monitoring has been conducted by the Red Lake Watershed District (RLWD) to track toxins in algal blooms and learn more about the conditions that may lead to algal blooms. RLWD staff regularly sampled area lakes or known problem areas for algal toxins using Abraxis test strips and “jar tests”. Due to Maple Lake’s popularity for recreation and previous detections of high algal toxin concentrations samples are taken every two weeks. The RLWD have been targeting mid-July to begin algae testing. If measurable concentrations are found in Maple Lake, testing will be increased weekly. A single round of samples will be collected at nearby shallow lakes within the Red Lake Watershed District (Badger, Cameron, Hill River, and Oak Lakes). Shallow and/ or eutrophic (excess nutrients and algae) lakes are more susceptible to blue-green algae issues. Blue-green algae thrives in conditions of high nutrient concentrations, high temperatures, and stagnant water. Last year a high concentration (>10 mg/L) of algal toxins was detected at the Polk County Park marina on July 15, 2022. The blue green algae and toxins had cleared-up before the next sample on July 18, 2022. Hill River Lake, Cameron Lake, Oak Lake, and Badger Lake were also tested. Oak Lake had visual evidence of blue-green algae and detectable levels of algal toxins (1-2.5 mg/L) on July 18, 2022 while no algal toxins were found in the other lakes. The severity and duration of blue-green algae can vary from year-to-year based on temperature, precipitation, runoff events, disturbance of lakeshore and lake bottom, and other factors that we have yet to understand. There was an issue with high algal toxins during the summer of 2022, but it was short-lived.

Inside:

Blue Green Algae • p1

Aquatic Invasives • p2

Maple Lake Drainage • p4

Shoreline Restoration • p6

Rain Gardens • p7

2023 Lake Directory • p8

PROMOTING STEWARDSHIP OF POLK COUNTY'S NATURAL RESOURCES

Lake Leader

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East Polk SWCD



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Aquatic Invasive Species

Eurasian Watermilfoil

(*Myriophyllum spicatum*)

Keys to ID

- Feathery Looking with four leaves per whorl
- Leaves have central axis with 12-20 leaflet pairs
- Can grow up to 10 feet long
- Produces pink and white flowers on spike above surface
- Leaves become limp when taken out of water



Photos by Chris Evans, University of Illinois, Bugwood.org



Photos by Chris Evans, University of Illinois, Bugwood.org

Curly-leaf Pondweed

(*Potamogeton crispus*)

Keys to ID

- Thin, submerged leaves have distinct "teeth" and wavy edges
- Produces turions that look like small, greenish-brown pinecones
- Generally the first pondweed to come up in the spring; dies back in midsummer
- Leaves do not clasp around stem where they connect

Purple Loosestrife

(*Lythrum salicaria*)

Keys to ID

- Grows 3-7 feet tall
- Purple-pink flowers grow on tall spikes
- Multiple rings of flowers bloom at the same time from the bottom of the spike up
- Leaves are opposite or whorled with smooth edges
- Stems are typically square but can be up to six sided



Photos by John D. Byrd, Mississippi State University, Bugwood.org

How do these programs work?

The East Polk SWCD will assess your property by evaluating resource concerns that could potentially contribute to shoreline erosion or wastewater runoff. We review soil type, land elevations, impervious areas, water fetch and much more to ensure we conserve and stabilize your lake shore. Every property has different characteristics and with that comes different impact on their lakeshore. For Rain Garden and Shoreline Projects the East Polk SWCD partners with the Minnesota Native Landscaping Company (MNL). MNL is a full-service ecological restoration company with decades of experience and knowledge in native restoration projects. Their team consists of seasonal biologists, ecologists, and landscapers, who are all very passionate about protecting and restoring native landscaping. The East Polk SWCD has been partnering with MNL since 2021 and since then we have helped dozens of local landowner's plan and install native buffers and rain gardens around Union and Maple Lake.

Programs Benefits

Native buffers and rain gardens are not meant to have a dull presence, they can be vibrant and attractive. Requests for specific native plants, flower colors and types of seed used are able to be customized per your desired outcome. A diversity of tall and short grasses, flowers and shrubs will allow your lawn to look natural and radiant rather than the typical manicured turf grass. MNL's comprehensive plans include three years of maintenance; where a MNL crews will stop by every summer for the first three years to maintain your native buffer or rain garden to establish biodiversity and long-term growth. Their team has extensive experience with weed control and they have everything it takes to implement selective herbicide applications, mowing and prescribed burnings.



Why should you restore with us?

The East Polk SWCD offers up to **50% cost share**. Funding will cover any approved expenses of your shoreline restoration or rain garden project. Proposed projects will receive a project plans, and cost estimates prior to installation. The shoreline restoration and rain garden program provides technical assistance to meet your satisfactory needs. Our projects are intended to minimize cost, reduce ecological impacts and guarantee an aesthetically pleasing restoration area for you.



To get your free consultation book now with the East Polk SWCD.

Call: 218-563-2777

Email: schommer.eastpolk@gmail.com



Shoreline Restorations & Rain Gardens

Information below provided by MN DNR and University of Minnesota

Shoreline Restoration Program

The Shoreline Restoration Program is designed to protect the quality of our lakes while preserving your lake property. Each plan is catered to a property's unique characteristics and issues. Shoreline Restoration can help minimize the impacts of erosion due to wave action and runoff. Depending on elevation, soils, and the level of erosion, a 10-30ft native buffer would be installed.

The native plants that we install are visually appealing as well as are fibrous and deep-rooted to keep your soil intact and help prevent erosion from the undercutting wave action. Native buffers are also fundamental for water quality as they do a great job filtering hazardous runoff from entering the lakes.



Image by East Polk SWCD



Image by East Polk SWCD

Rain Garden Program

The Rain Garden Program is dedicated to improving lawns, filtering runoff, and providing pollinator habitat for butterflies, bees, and humming birds. These projects can also help improve the quality of our lakes by collecting excess water and filtering it. Rain gardens are effective in removing up to 90% of nutrients and chemicals and up to 80% of sediments from the rainwater runoff. Compared to a conventional lawn, rain gardens allow for 30% more water to soak into the ground and native plants absorb the water within 12-24 hours. Many landowners encounter areas in their yard that already have standing water or temporary flooding on their lawn that won't allow vegetation to grow. Rain Gardens are intended for over-saturated areas and can help turn that low spot in your yard from an eye sore to an aesthetically appealing area.



Photo Courtesy of Becker SWCD



Photo Courtesy of Becker SWCD

Chinese Mystery Snail

(*Cipangopaludina chinensis*)



Photos by Vanessa Howard, Portland State University, Bugwood.org & Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Keys to ID

- Grow up to 2 inches long and 3 inches tall
- Coiled spiral shell
- Ranging in color from olive to light - dark brown
- Have an operculum ("trapdoor") covering opening, which is missing when dead

Zebra Mussels

(*Dreissena polymorpha*)

Keys to ID

- Stripes are generally in a zigzag pattern
- Pattern is variable; some may lack striping altogether and can be solid tan or brown
- D-shaped shell composed of two hinged valves joined by a ligament
- Have a flat edge and won't topple over when set on it
- Shells form straight line when closed
- Range from 1/5 of an inch to 2 inches



Photos by Amy Benson, U.S. Geological Survey, Bugwood.org

What can I do?

You can help stop the spread of aquatic invasive species. Take three steps every time you leave a lake or river - whether or not it's infested:

- **Clean** all aquatic plants, zebra mussels, and other invasive species from boats, trailers, and water-related equipment.
- **Drain** water from your boat, ballast tanks, motor, live well and bait container. Remove drain plugs and keep drain plugs out while transporting equipment.
- **Dispose** of unwanted bait in the trash. To keep live bait, drain the water and refill the bait container with bottled or tap water.

If you want to harvest bait or transport water from an infested water body, you may need to apply for a permit with MN DNR.

Maple Lake Watershed Map

Maple Lake's Watershed

Attendees of the 2022 Maple Lake Improvement District annual meeting expressed curiosity about where Maple Lake gets its water. Most of Maple Lake's water comes from areas east of the lake. The land that drains from the east to Maple Lake (its watershed) begins on the west side of McIntosh and includes lakes like Oak Lake, Badger Lake, and Cameron Lake. The most significant surface water inlet to Maple Lake is the outlet of the Judicial Ditch 73 Drainage System. This ditch, which flows west along the northern boundary of the watershed, receives drainage from the network of lakes and wetlands that are drained and connected by the Poplar River Diversion Project. The Poplar River Diversion Project was constructed in 1937 to divert water to Maple Lake from Badger Lake, Mitchell Lake, and (if needed) the Poplar River during times of extended drought. The channel begins at a water control structure along the west bank of the Poplar River and flows through a drained Tamarack Lake (east of Highway 59), Badger Lake, and Mitchell Lake to Judicial Ditch 73. Drainage from Judicial Ditch 73 flows through Rydell National Wildlife Refuge (through the refuge's Tamarack Lake) and into Maple Lake near the northeast public access and beach. Maple Lake is also likely connected to the many other lakes and wetlands throughout its watershed via subsurface movement of groundwater. The drainage area for Maple Lake is bordered by the Poplar River subwatershed to the east, Lower Clearwater River subwatershed (Lower Badger Creek and Beau Gerlot Creek) to the north, Burnham Creek subwatershed to the west, and the Upper Sand Hill River (Union Lake and Kittleson Creek) to the south. A major watershed divide along the southern boundary of Maple Lake's watershed splits flow between the Clearwater River Watershed and the Sand Hill River Watershed (which includes Union Lake and Lake Sarah).

Water flows out of the Maple Lake outlet (through a water control structure/dam) into Polk County Ditch 14 (a tributary of Lower Badger Creek) near Roadside Park. Maple Lake can also be connected to Cable Lake via a water control structure and a connection channel that passes under Polk County Highway 12.

