Environmental SCENE

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Lake quality threatened by invasive species

My greatest memory as a kid growing up in Minnesota was our family's annual summer trip up north to stay on one of the state's crystal clear lakes. The house was chaos the night before we left -- packing food and supplies, my dad getting all of the fishing rods ready at the kitchen table -- and I remember helping by holding the pencil that ran through the line spool so he could rethread the reels. At the crack of dawn, the kids would pile into the back of Dad's truck under the camper with all our bags and boxes and go back to sleep for the six hour drive up (today, that would be illegal since there were no seatbelts back there). The only thing on our minds was playing in the water, listening to the loons day and night, and imitating their calls (which I got very good at), and fishing every day. I definitely grew a great appreciation for nature and natural resources by spending my summers in such a pristine place.

Back then, you never heard of anything being wrong with the lakes. The Clean Water Act -- as well as the Minnesota Pollution Control Agency -- was relatively new, so surface waters hadn't been assessed for impairments or invasive species in the water. But today it's a much different story. Minnesota's natural resources are threatened by a number of aquatic invasive species such as zebra mussels, Eurasian watermilfoil, Curlyleaf pondweed, common carp, and terrestrial invasive species such as common buckthorn emerald ash borer, just to name a few. Invasive species can occur in the water or on land.

So what's the problem? Invasive species hurt our native plants and animals. In the case of our lakes and streams, aquatic invasive species harm our native fish populations, water quality, and water recreation. Once introduced into a lake, stream, or wetland, they can do irreparable damage to the water body and its native fish, bug, and plant populations. Also, once they move in, it's nearly impossible to get them out. They spread uncontrollably, can cost millions of dollars to manage, and cost millions more in lost revenue for business and recreation. Unfortunately, we have all the invasive species I named above in our lakes here in Scott County.

So how did they get here? There are many pathways of introduction and spread of invasive species. Most species introductions are the result of people's actions. Some introductions -- such as common carp, European buckthorn, and purple loosestrife -- were intentional and caused unexpected harm. But many other introductions are unintentional.

Invasive species are often unknowingly carried in or on animals, vehicles, ships, commercial goods, produce, wood, water, and even clothing. Ballast water discharge from ships continues to be a pathway of introduction for aquatic species, such as zebra mussels and round gobies, into the Duluth harbor and other Minnesota ports on Lake Superior. But other pathways include intentional introductions of potentially invasive non-native species from the stocking of fish and game, as well as forage for these species; releases of live bait, pets, plants, and animals from aquariums and garden ponds; research subjects, biological control agents, and food fish. Another pathway of introduction we don't think about is when you purchase docks, boats, lifts, or other water-related equipment from another lake infested with an invasive species, such as zebra mussels.

What can you do? We need everyone who enjoys our water resources to get on board and help stop the spread of AIS.

- **Clean** all visible aquatic plants, zebra mussels, and other prohibited invasive species from watercraft, trailers, and water-related equipment before leaving any water access or shoreland.
- **Drain** water-related equipment (boats, ballast tanks, portable bait containers, motors) *and* drain bilge, livewells, and baitwells by removing drain plugs before leaving a water access or shoreline property. **Keep drain plugs out** and water-draining devices open while transporting watercraft.
- **Dispose** of unwanted bait, including minnows, leeches, and worms, in the trash. It is illegal to release bait into a waterbody or release aquatic animals from one waterbody to another. If you want to keep your bait, you must refill the bait container with bottled or tap water.
- If you are purchasing a **dock, boat lift, swim raft, or associated watercraft equipment** from another lake, you need to inspect it for aquatic invasive species. If you find any attached to the watercraft, it must be cleaned thoroughly **at the site where it was removed** from the lake and left to sit clean and out of the water for up to five days before transporting it on a public road. **After transport to your property, the watercraft such as a dock, boat lift, swim raft or associated equipment must not be places in another waterbody until a minimum of 21 days have passed** to ensure any zebra mussels that you couldn't see and didn't get cleaned off will be dead before you put the equipment in the non-infested lake.

Two lakes in Scott County are infested with zebra mussels: Upper and Lower Prior Lakes. If you hire a business to install or remove your boat, dock, lift, or other water-related equipment, make sure they have completed AIS training and are on the DNR's list of Permitted Service Providers (see https://webapps11.dnr.state.mn.us/aquatic_invasive_species_training/lake_service_provider_permits/public_website_list).

You'll be seeing more information about preventing the spread of AIS, and we

INVASIVE SPECIES to right

Healthy lakes need the right balance of aquatic plants

Minnesota has nearly 150 species of aquatic plants, most of which are native species. Maybe you have encountered some of them while enjoying nearby lakes. To some, aquatic vegetation is a nuisance: plants that brush your legs while swimming or catch your fishing line sure don't seem helpful at the time. But did you know that these same plants can actually help create conditions suitable for recreation?

Clear water is also served by aquatic vegetation. Research has shown that lakes can naturally sustain water clarity when at least 40 percent of the lake bottom grows vegetation. In the Prior Lake Spring Lake Watershed District (PLSLWD), Lower Prior Lake is typically very clear and has 43 percent Plant Area Cover (PAC). Both Spring and Upper Prior Lakes, on the other hand, have poorer water clarity, and their PAC is 12 percent and 8 percent, respectively. Since Spring Lake has been treated with Alum in October 2013, the water clarity has increased, and so has the vegetation.

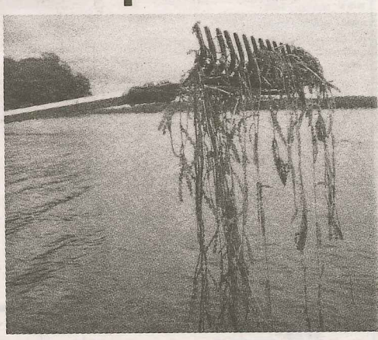
Aquatic plants provide habitat for wildlife. Whether you fish or watch birds, you owe some gratitude to aquatic plants. These plants provide food (insects), shade, and cover -- all of which are great for nesting and for young fish to grow. Waterfowl are also attracted to these areas, as they benefit from the abundance of fish and cover for themselves. Without areas of aquatic vegetation, many animal species would be unable to complete their life cycles.

Other benefits of aquatic plants include soil stabilization, absorption of undesirable nutrients, shade to keep the water cool, and beautification of the shoreline. All that being noted, there is a difference between "good" and "bad" plants. Undesirable plants that should be removed include those not originally from this area (non-native), and those which out-compete native plants (invasive). Curlyleaf pondweed is one plant to watch out for that is both non-native and invasive.

Curlyleaf pondweed was introduced to the United States in the mid-1800s and is still a popular aquarium plant. These days, it is found in many lakes throughout Minnesota primarily because of transmission from other infected areas or by people disposing it… including in Prior and Spring Lakes. It harms ecosystems by outcompeting native plants and contributing to algal blooms as it decays. It blooms early in the season, and will start to spread before most native plants can establish in the spring. Then it dies back during mid-summer, contributing nutrients to the water which algae use to grow.

All water users and the PLSLWD play a role in managing non-native and invasive species like curlyleaf pondweed. The District surveys for this invasive aquatic plant every spring and treats areas when plants disrupt recreation, out-compete native vegetation, and are further than 150 feet from shore. These treatments have proven successful on Spring Lake, eliminating the need for the District to treat curlyleaf pondweed from 2008 through 2015.

However, the District cannot manage invasive plants alone. Aquatic plants within 150 feet of shore are landowners' responsibilities. When managing for invasive species, individuals must take care to remove them during an appropriate time of year and to leave native plants alone, since the invasive species grow readily in disturbed areas. For curlyleaf pondweed, treatment must be completed in the spring before the lake temperature surpasses 60°F. Treatment methods can include application of herbicides or physical removal of plants by pulling, raking, or cutting. Each treatment option will have its own positives and negatives, so it is useful to research each to determine what best meets your objectives.



Curlyleaf pondweed is one of several aquatic invasive species found in some area lakes.

If you had curlyleaf pondweed in excess this spring, chances are it will be back next spring, so you should start planning early. Knowing whether you plan to use a contractor or treat the invasive species yourself should be decided in advance. Remember that no matter how close to shore, aquatic plants growing in public waters are owned by the state, which enforces strict regulations on vegetation removal. Before attempting to control or remove any aquatic plants, contact your local Minnesota Department of Natural Resources (MDNR) office at (952) 496-4141. MDNR staff can help identify plants, guide you through restrictions, and assist in identifying whether a permit will be required.

Aquatic plant management consists of balancing different needs. While many water users prefer lakes free of plants, they also desire recreational benefits which are only possible when plants are present in the ecosystem. Eradicating all aquatic plants is neither practical nor wise, but by taking informed action against problematic plant species, lake users can enjoy the lakes they desire and maintain a healthy ecosystem.

Resources:

- To learn more about the DNR's aquatic plant regulations and approved herbicides, visit its website at: http://www.dnr.state.mn.us/apm/index.html. Here you can also find a list of vendors which offer treatment options such as hand or mechanical pulling, cutting, raking, or herbicide application. (PLSLWD does not endorse any of these vendors.)
- For assistance identifying non-native and invasive species in our lakes, visit the DNR's Invasive Aquatic Plants page at: http://www.dnr.state.mn.us/invasives/aquaticplants/index.html.

INVASIVE SPECIES continued from left

hope to have your help in keeping our waters free of additional invasive species. Responding quickly to new AIS infestations is critical to help curb the spread into other waterbodies. If you find something you suspect is a zebra mussel, faucet snail or other aquatic invasive species, note the exact location, take a photo, keep the specimen, and contact a local DNR office at (952) 496-4141 (Fisheries, Shakopee), (651) 259-5828 (Keegan Lund, AIS Specialist), or (651) 259-5729 (Kylie Catoo AIS Specialist).