



Short Ears, Long Tales

Courte Oreilles Lakes Association

Issue #50 September 29, 2021

Milfoil(ed) Again

By Allison Slavick, Kevin Horrocks, and Jim Coors

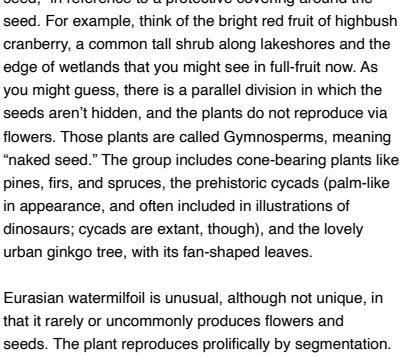
This article is a bit longer than usual. Eurasian watermilfoil has become firmly established in both big and little Lac Courte Oreilles, and the plant is extremely difficult to control. We need to understand all we can about this invasive beast.

Allison Slavick provides the essential biological facts about Eurasian watermilfoil in Part I. Kevin Horrocks then describes in Part II how COLA, the LCO Conservation Department, and many volunteers confronted the challenge this year using the EcoBeast.

Jim Coors concludes in Part III with a few words about what is in store for the future.

Part I: Botany and Ecology of Eurasian Water Milfoil

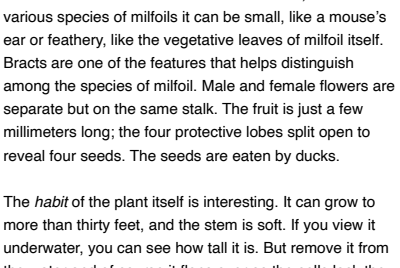
When you think of the word fitness, what probably comes to mind is being "in shape" – the ability to climb stairs or exercise without losing your breath, or being fast and strong. The word has different meanings to evolutionary biologists: it's used in connection with reproductive success, and also to describe adaptation to an environment. Thus, a dandelion that produces many seeds that disperse in the wind and germinate across a dry, gravelly vacant lot would be considered "fit." A mallard duck that successfully lays and hatches nine eggs would likewise be fit. Darwin didn't coin the phrase "survival of the fittest," but used it in later editions of his "On the Origin of Species" after it was penned by his peer, the English biologist Herbert Spencer.



Eurasian watermilfoil.

Eurasian watermilfoil (*Myriophyllum spicatum* L.), then, is an extremely fit aquatic plant. It belongs to a division of plants called Angiospermae (the "angiosperms"), which comprises flowering plants. The word means "hidden seed," in reference to a protective covering around the seed. For example, think of the bright red fruit of highbush cranberry, a common tall shrub along lakeshores and the edge of wetlands that you might see in full-fruit now. As you might guess, there is a parallel division in which the seeds aren't hidden, and the plants do not reproduce via flowers. Those plants are called Gymnosperms, meaning "naked seed." The group includes cone-bearing plants like pines, firs, and spruces, the prehistoric cycads (palm-like in appearance, and often included in illustrations of dinosaurs; cycads are extant, though), and the lovely urban ginkgo tree, with its fan-shaped leaves.

Eurasian watermilfoil is unusual, although not unique, in that it rarely or uncommonly produces flowers and seeds. The plant reproduces prolifically by segmentation. Break off a piece, and that small segment will grow a whole new plant. Probably through an evolutionary process that selected (favored) the feature of maximizing its fitness, the plant has almost abandoned sexual reproduction in favor of vegetative reproduction. Another form of vegetative reproduction is by horizontal underground stems called rhizomes, a method also employed by milfoil. If milfoil had a brain it might think, "Hey, I can be more fit if I skip the hard work of reproducing with flowers and seeds; I'll just reproduce by fragmentation and rhizomes and easily produce entire colonies of myself." It's something like skipping putting in the hours at the gym in favor of pumping yourself up on steroids.



Myriophyllum spicatum might be confused with a number of other submersed plants, including other watermilfoils and other submersed plants. Native northern watermilfoil (*Myriophyllum sibiricum* = *M. exalbenscens*) has fewer than 12 leaf segments on each side of the leaf axis, whereas Eurasian watermilfoil leaves have 14 or more leaf segments on each side of the leaf axis; and has somewhat stouter stems than does Eurasian watermilfoil.

Native coontail (*Ceratophyllum demersum*) has leaves that are toothed and the plant feels rough when pulled through the hand, whereas Eurasian watermilfoil leaves are not toothed and the plant does not feel rough. (More).

When milfoils reproduce sexually, the small flowers are borne in spikes that stick up above the water, nestled above a bract. A bract is a leaf-like structure, and in the various species of milfoils it can be small, like a mouse's ear or feathery, like the vegetative leaves of milfoil itself. Bracts are one of the features that helps distinguish among the species of milfoil. Male and female flowers are separate but on the same stalk. The fruit is just a few millimeters long; the four protective lobes split open to reveal four seeds. The seeds are eaten by ducks.

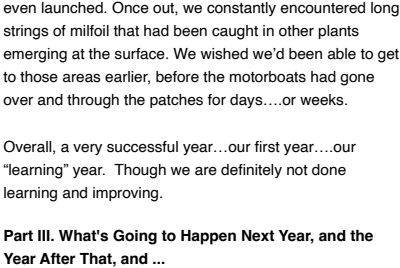
The habit of the plant itself is interesting. It can grow to more than thirty feet, and the stem is soft. If you view it underwater, you can see how tall it is. But remove it from the water and of course it flops over as the cells lack the cellulose fiber and lignin found in the cells of woody plants. The long stems intertwine underwater, and more plants grow up from the lakebed as pieces break off and grow into new long plants. All those stems together form dense mats that can be nearly impossible to penetrate with a vessel of any kind. The mats, underwater and floating at the surface, provide an attractive breeding and resting stop-over to all kinds of aquatic or semi-aquatic insects, including mosquitoes.

The reproductive success of Eurasian watermilfoil is matched by its opportunistic adaptation to its habitat. Those thick mats block sunlight needed for competing native aquatic plants that contribute to the overall health of a lake. Eurasian watermilfoil can rapidly colonize disturbed areas of a lake. Another thought that Eurasian watermilfoil might have: "Look over here, fellow fragments – someone has removed all the native plants. Let's go forth and prosper." And prosper it has, in Lac Courte Oreilles and Little Lac Courte Oreilles.

Part II: Eurasian Watermilfoil Versus the EcoBeast

COLA has been trying to control curly-leaf pondweed and Eurasian watermilfoil for years, primarily using herbicides with some hand-pulling where appropriate. Those efforts have been very successful on some applications, poor to pointless on others.

The first time we took the EcoBeast out this year to pull curly-leaf pondweed, our primary aquatic invasive species expert stated that we'd had a better result for that same area than years of herbicide efforts.

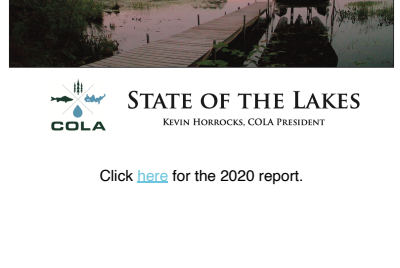


The EcoBeast at work.

There are five of us currently practiced enough to operate the EcoBeast. As time went on, the more effective we were at removing of both curly-leaf pondweed and Eurasian watermilfoil. However, there are a number of factors that influence success with the EcoBeast. For example, water depth seems to make a big difference for Eurasian watermilfoil. Then add in the relative age and maturity of the plants...then the density of the patch... then the specific sediment holding the root system; soft, sandy, mucky.

Segmentation is less of a problem with curly-leaf pondweed as that plant is not noted for sinking and re-rooting. But, segmentation is a major concern for Eurasian watermilfoil as it is biologically designed to break up and spread.

The EcoBeast can effectively remove Eurasian watermilfoil leaving few fragments, but the stars need to be aligned just right. Wind and weather/visibility are very important. But, we need up to four satellite boats, each with a driver (who can also net) and a "netter". We ruined several nets, figured out better nets...bought more... pushed for volunteers near the area being dealt with, had others who showed up a lot. And we had a couple "netters" who were good at observing and planning more effective methods of gathering up fragments in the area. After some experience, our netters came in with very large piles of plants because they became better at it.



Two great "netters" with their catch. The LCO Conservation Department and COLA volunteers became very experienced with collecting loose fragments of Eurasian watermilfoil.

The amount of plant growth this year (number and size of patches, density of patches) was worse than any of us could remember. So, the fragments were not just a function of the EcoBeast. Shorelines had piles of plants and fragments sloshing about at the shore before we even launched. Once out, we constantly encountered long strings of milfoil that had been caught in other plants emerging at the surface. We wished we'd been able to get to those areas earlier, before the motorboats had gone over and through the patches for days...or weeks.

Overall, a very successful year...our first year...our "learning" year. Though we are definitely not done learning and improving.

Part III. What's Going to Happen Next Year, and the Year After That, and ...

Simply put, no one knows what the future holds, but the outlook is not good. We are barely coping right now. COLA is strained to its limits because of time and lack of volunteers. Eurasian watermilfoil has been called "curly-leaf pondweed on steroids," and 2021 shows why. From just a few scattered spots in little LCO last year, Eurasian watermilfoil has spread to more than 50 acres this year. The increase in big LCO is just as dramatic, and it has been very hard to get to all the patches.

We will need to use any and all resources for control in 2022 and beyond. This includes enrolling a greater number of volunteers for effective screening, pulling, and netting. And we may well have to resort to spot treatment with herbicides again. Fortunately, there is a species-specific herbicide under development (*Procollacor*) that only targets *Myriophyllum spicatum* and not the native species or other aquatic plant species. But it is not certain that COLA will have access to this or similar herbicides in the near future.

It's up to us. Everyone needs to be aware of the issue so talk with your friends and neighbors. Limit boat traffic in infested waters. Inspect your boat for aquatic invasive plants when entering or exiting Lac Courte Oreilles. Become a COLA volunteer and help scout/pull/net Eurasian watermilfoil even if for just a day or so each month.

The ultimate driver to profligate plant growth is excessive phosphorus. The phosphorus concentration in LCO has increased by nearly 50% over the past several decades. Cranberry discharges, fertilized and manicured lawns extending to the shoreline, impervious surfaces, inattention to building setbacks, shoreline erosion ... all are causes of what we now see in LCO. There's so much that we could do with just some thought a little extra personal effort. If we all step up, we will make a difference.

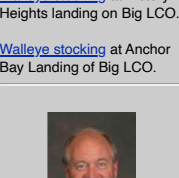
STATE OF THE LAKES
KEVIN HORROCKS, COLA PRESIDENT

Click [here](#) for the 2020 report.

[View this email in your browser](#)

COLA NEEDS YOUR ONGOING SUPPORT

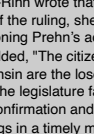
Please consider a tax-deductible donation today!



WALLEYE STOCKING IN LCO
The LCO Fish Hatchery stocked approximately 6,500 walleye at various landings on Big LCO. Thank you LCO Conservation Department!

[Walleye stocking](#) at Victory Heights landing on Big LCO.

[Walleye stocking](#) at Anchor Bay Landing of Big LCO.



FRED PREHN STILL CHAIR OF NATURAL RESOURCES BOARD

Judge dismisses lawsuit seeking removal of DNR chairman

Dane County Circuit Judge Valerie Bailey-Rihn rejected a lawsuit seeking to remove the state Department of Natural Resources policy board's leader from his post even though his term has ended.

Bailey-Rihn wrote that in spite of the ruling, she is not "condoning Prehn's actions," and added, "The citizens of Wisconsin are the losers when the legislature fails to hold confirmation and other hearings in a timely manner." (More)

How to reach the public officials involved:

Senate Majority Leader Devin LeMahieu - [email](#) or 608-266-2056

Frederick Prehn - [email](#) (via NRB liaison Laurie Ross)

Also see articles by:..

[Tim Eisele](#) in Sept 17, 2021 Wisconsin Outdoor News.

[Laura Schulte](#), Sept. 23, 2021, Milwaukee Journal Sentinel



NATURAL RESOURCES BOARD MEETING CANCELED

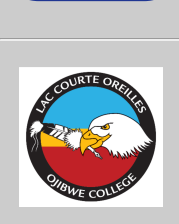
COLA's and the LCO Tribe's petition for a more protective phosphorus standard for LCO was once again derailed.

Chairman Prehn canceled the September Natural Resources Board meeting after the WDNR offered no agenda items. (More)

WDNR ADDS ALMOST 100 NEW BODIES OF WATER TO IMPAIRED LIST

The Wisconsin Department of Natural Resources recently declared 92 bodies of water as "impaired," and underscored the state's continued issues with water quality even as the WDNR says water is getting cleaner throughout the state.

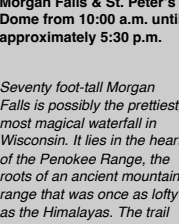
[More information.](#)



WISCALM ASSESSMENT AND GUIDANCE UPDATED FOR LAC COURTE OREILLES

Wisconsin's Consolidated Assessment and Listing Methodology (WisCALM), from the WDNR, provides guidance on assessment of water-quality data against surface water-quality standards and for Clean Water Act reporting on surface water-quality status and trends.

The 2020 LCO water quality assessment based upon the WisCALM protocol is [now available](#).



2021 NATURAL HISTORY FIELD TRIPS

Saturday October 2nd:
Juniper Bluff from 10:00 a.m. until approximately 5:30 p.m.

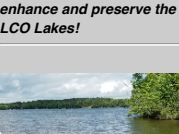
A high overlook along the Marengo River, this rock outcrop resembles an open mountaintop, with a spectacular view of the river canyon and its cliffs. The canyon is what is known as a "water gap", being originally carved by a river during the Precambrian... We will hike to the overlook through wildflower-rich mesic hardwood forest on the North Country Trail. This section is part of the Marengo Semi-primitive, Non-motorized Area. The hike to the overlook is 1.2 miles round-trip through hilly terrain.

Saturday October 16th:
Morgan Falls & St. Peter's Dome from 10:00 a.m. until approximately 5:30 p.m.

Seventy foot-tall Morgan Falls is possibly the prettiest, most magical waterfall in Wisconsin. It lies in the heart of the Penokee Range, the roots of an ancient mountain range that was once as lofty as the Himalayas. The trail to Morgan Falls is 1.2 mile long round-trip. Those who desire will hike up to St. Peter's Dome, with an elevation of around 1600 feet, on a clear day one can view Lake Superior's Chequamegon Bay and the Apostle Islands and see ravens flying below us from the overlook. The palette of autumn colors should be spectacular.

We will meet at the main entrance in front of the LCO College. The field trip programs are sponsored by the Extension Department at no cost to the participants. This includes registration, the tasty bag lunch, and transportation in the college's new touring van. Working closely with the college's Covid Coordinator, we have concluded that the field trips can proceed in a relatively safe manner, although there is of course always a slight element of risk to those who remain unvaccinated. Once the van fills, you can carpool or follow us in your own vehicle. Please feel free to bring the entire family to enjoy Nature and learn more about its wonders.

Please make sure that you register. Contact Cali Quaderer-Cuddy, LCO College Extension Program Coordinator, at cquaderer@lco.edu, phone 715-634-4790 ext. 137.



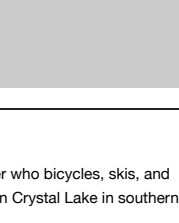
LAKE OBSERVATION FORMS

SEE ANYTHING WEIRD?

If you observe green water, algal mats on the surface or floating or dying fish - anything out of the ordinary - please take pictures and report this using COLA's [observation forms](#) immediately! COLA will alert the WDNR, the LCO Tribe, collect water samples, etc., to follow up.

Please, if you see something, do something.

Do your part to help enhance and preserve the LCO Lakes!



LCO NEEDS YOUR HELP
COLA is a **volunteer organization**. That means essential jobs don't get done unless someone steps up to help out. Contact communications@cola-wi.org if interested or you need more information.

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[ARCHIVED ISSUES OF SHORT EARS LONG TALES](#)

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COLA Mission: 1) to protect, preserve and enhance the quality of Lac Courte Oreilles and Little Lac Courte Oreilles, their shorelands and surrounding areas, while respecting the interests of property owners and the rights of the general public; and 2) to consider, study, survey and respond to issues deemed relevant by COLA's membership.

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Allison Slavick is a nature lover who bicycles, skis, and picks berries near her home on Crystal Lake in southern Bayfield County.
Questions, comments, or suggestions for future articles may be sent to her at allison.slavick@gmail.com.



Volunteers regularly monitor the depth gauge at the Thoroughfare bridge. The gauge and the chart readings are in tenths of a foot (1/10 foot = 1.2 inches). The first point on the chart, June 27, 2017, was when the gauge was first installed. The gauge was moved to the upper end of the bridge abutment on 4/15/21. The USGS "normal" water surface elevation for big LCO is 1287 feet and is represented by the lower orange line.

The Ordinary High Water Mark (OHWM) is represented by the upper orange line. The OHWM establishes the boundary between public lakebed and private land, was established for big LCO in 1955 and is 1289.27 feet above mean sea level. The OHWM is "the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation or other easily recognized characteristic."

Periodic readings are recorded as accurately as reasonable. The water itself is in perpetual motion, not only flowing downstream but rising and falling due to waves, the current in the channel, the wind which can actually push water and "stack" it toward one end of the lake or the other and the seiche effect caused by the gravitational pull of the moon and sun.