



Short Ears, Long Tales

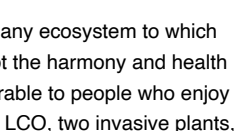
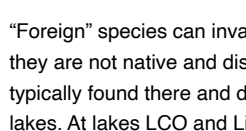
Courte Oreilles Lakes Association

A Short Lesson on the Ecology of Two Invasive Plants

By Allison Slavick
Contributing Writer

Freshwater aquatic ecosystems are complex. Replenished by rain and snow, lakes like Lac Courte Oreilles and Little Lac Courte Oreilles are part of a watershed comprising surrounding lakes and streams through which precipitation flows. Bodies of water in a watershed share water chemistry, including acidity or alkalinity, oxygen levels, and nutrients, and water temperature influences everything. A lake's fishery and the aquatic invertebrates that support it, the composition of its flora and fauna, and the activities of mammals like beavers and humans contribute to the intricacy of any watershed's ecosystem.

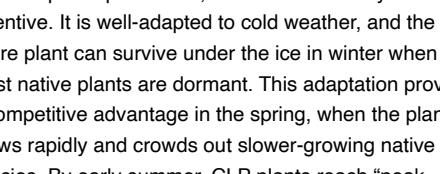
Aquatic plants are important to the big picture. As part of the food chain, they provide food for fish, waterfowl, and other animals. Plants offer spawning beds and a safe place to hide from predators. They stabilize sediments and absorb phosphorus and nitrogen, helping to keep algae in control. Aquatic plants along shores contribute to the beauty of a lake. They may be completely submerged, float under water or on the surface, like cherished floating water lilies, or emergent like cattails or the medieval-looking bur-reed. In a healthy ecosystem all the components work together (or simply co-exist) to support each other; indeed, many species – both plants and animals – evolved together (called co-evolution) over millennia, forming harmonious, beneficial relationships.



Native aquatic plants water lily (left) and bur-reed (right). Photos by John Hilty, Illinois Wildflowers.

"Foreign" species can invade any ecosystem to which they are not native and disrupt the harmony and health typically found there and desirable to people who enjoy lakes. At lakes LCO and Little LCO, two invasive plants, Eurasian watermilfoil and curly-leaf pondweed, are cause for concern. Learning the origin, habit, habitat, and ecology of these two harmful plants will help lake residents make good decisions about their control.

Curly-leaf pondweed (CLP) takes root on a lake's bottom and, except for its flower stalk, grows entirely underwater. The olive green to reddish brown leaves alternate along branching stalks and the leaves have ruffled edges: think of a narrow lasagna noodle. The species is native to Europe, Asia, Africa, and Australia, and records indicate that it was introduced in the mid-1800s in the northeast U.S. It is thought that its long-distance dispersal came about through transport of fish and fish eggs from hatcheries. Regional spread may occur by transport on boats and trailers or from bilge water.

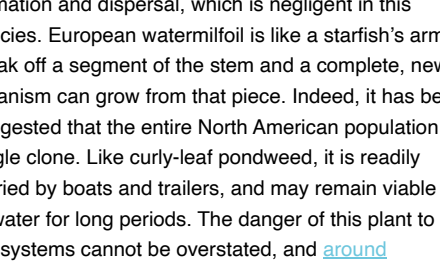


One of the most serious invasive species in big LCO is curly-leaf pondweed. Photo by Steve Umland.

In anthropomorphic terms, CLP is both sneaky and inventive. It is well-adapted to cold weather, and the entire plant can survive under the ice in winter when most native plants are dormant. This adaptation provides a competitive advantage in the spring, when the plant grows rapidly and crowds out slower-growing native species. By early summer, CLP plants reach "peak biomass," at which time they are producing opportunistic vegetative buds called turions like crazy. During turion production, roots begin to deteriorate and the plants form large floating mats. When the plants die back in summer's warmer water, the turions sink to the bottom. As the water cools in September and October, turions break dormancy and sprout into new plants, which can take root and grow, surviving another winter. Those turions that don't sprout in the fall are staged for early spring growth.

Curly-leaf pondweed thrives in nutrient-rich water. Lakes that have been disturbed through high levels of recreational activity or removal of native plants are vulnerable, too. A small patch may rapidly grow into a dense stand that can be difficult to bring under control. The invasion of a [lake in Iowa](#) illustrates curly-leaf pondweed at its worst.

Eurasian watermilfoil (EWM) came to the U.S. late in the 19th century from its native home in Europe, Asia, and north Africa, although its mode of transport is unknown. As an aggressive weed, it became problematic in the 1950s. The plant has profuse underwater branches with finely dissected, feathery leaves near the surface of the water. Flowers emerge above the surface on a small stalk. Like CLP, EWM flourishes in cool, nutrient-rich water where it forms a dense mat of tangled plants that shade the native plants below, inhibiting their growth and reproduction.

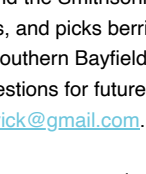


Eurasian watermilfoil was discovered in little LCO in 2015. Photo by Elizabeth J. Czarapata.

European watermilfoil, too, has a unique annual pattern of growth: after flowering, the plant may "auto-fragment," meaning stem fragments break apart and spread vegetatively. Forget flowering, fertilization, and seed formation and dispersal, which is negligent in this species. European watermilfoil is like a starfish's arm: break off a segment of the stem and a complete, new organism can grow from that piece. Indeed, it has been suggested that the entire North American population is a single clone. Like curly-leaf pondweed, it is readily carried by boats and trailers, and may remain viable out of water for long periods. The danger of this plant to lake ecosystems cannot be overstated, and [around the country](#), communities struggle with its control.

While both of these are biologically interesting plants, the monotypic mats they form threaten healthy lakes by limiting the diversity of habitats. As you know, everything is connected in a complex aquatic ecosystem. The summer die-off of CLP releases nutrients into the lake, resulting in algal blooms and murky water conditions. The decay of plants reduces oxygen levels, which can and has resulted in large-scale fish kills in LCO. Native plants may become completely choked off – crowded out by these invaders, giving the appearance of a "dead" lake that has lost all aesthetic appeal. In this condition the predator-prey relationships of fish are disrupted and food sources for birds and mammals are reduced or eliminated. A permanent pool of mosquitos may result. For the human species, the experiences of swimming, boating, and fishing are diminished and less appealing.

Eurasian watermilfoil was discovered in Little LCO in 2015. Hand-pulling is not recommended for this species, due to fragmentation. A small, dense patch of curly-leaf pondweed was discovered in Lac Courte Oreilles near the entrance to Musky Bay in July 2006. From there it spread throughout the lake, where it has been problematic. In recent years CLP has been brought under moderate control using both herbicides and hand-pulling. A number of lakes in Wisconsin and Minnesota are moving away from the use of herbicides and instead use mechanical harvesting and safe disposal, which has become the method of choice to control both species.

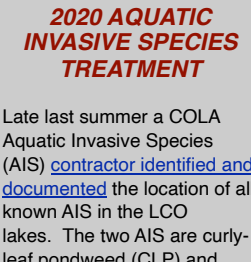


Allison Slavick works as a consultant to nonprofits all over the country, especially museums. For fifteen years she directed the Cable Natural History Museum, and previously worked as a scientist at the New York Botanical Garden and the Smithsonian Institution. She mountain bikes, skis, and picks berries 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.

Questions, comments, or suggestions for future articles may be sent to communications@cola-wi.org.

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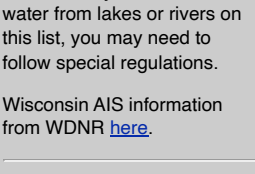


2020 AQUATIC INVASIVE SPECIES TREATMENT

Late last summer a COLA Aquatic Invasive Species (AIS) contractor identified and documented the location of all known AIS in the LCO lakes. The two AIS are curly-leaf pondweed (CLP) and Eurasian watermilfoil (EWM) ([more](#)). While some of the locations are small and can be controlled by volunteers doing hand pulling of the plants, five locations are too large or the plants so dense that herbicide treatment is the only feasible option to manage the spread of these infestations.

COLA has applied for a [WDNR permit](#) to apply herbicide at the [five locations](#) this mid-spring for CLP and mid-summer for EWM. COLA is hopeful that by treating these five locations with herbicide this season we will reduce the arial extent and density at each location, reduce the risk of spreading CLP and EWM to other part of the lake(s).

Next year we hope to deploy the Eco-Harvester to control AIS without herbicides ([see related sidebar](#)).



UPDATED LIST OF INFESTED WATERS IN MINNESOTA

The Minnesota Department of Natural Resources regularly updates the state [infested waters list](#), which includes Minnesota lakes and rivers containing certain aquatic invasive species.

If you harvest bait, fish commercially, or divert or take water from lakes or rivers on this list, you may need to follow special regulations.

Wisconsin AIS information from WDNR [here](#).

A MESSAGE FROM MAX WOLTER, WDNR FISHERIES BIOLOGIST, ABOUT HOW COVID-19 MIGHT AFFECT FISHING

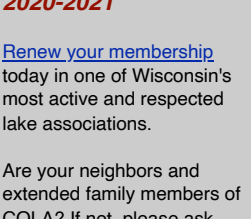
Hey folks,

Lots of questions about how COVID might impact fishing this season. Please see the [attached FAQ](#), as it might answer a lot of questions people have. If you have questions beyond what is covered here, I would be happy to help track down that answer.

The basic message is one you are likely used to hearing by now in other aspects of life with COVID: be smart, be safe, practice social distancing. Fortunately, fishing is designated as an essential activity and it's one where social distancing is very possible. It may require some changes to how we move about and socialize while fishing, at least for the time being.

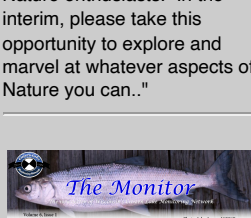
I hope everyone has a great opener weekend. The weather is going to be fantastic and the fish have no idea there's a pandemic going on. I think you'll find them to be just as cooperative as normal if you are able to get out. Take care,

Max H. Wolter
715) 634-7429
Max.wolter@wisconsin.gov



LCO WATER QUALITY SUMMARY FOR 2019

Here's a quick glance at the state of [LCO's water quality in 2019](#).



IS THIS ECO-HARVESTER IN COLA'S FUTURE?

COLA's getting closer, but there are several details remaining. Funding will be difficult, especially in the current economic climate. More updates in future issues. More about the Eco-Harvester [here](#) and [here](#).

OAK WILT HAS BEEN FOUND ON LCO

In 2019 there were two confirmed cases of the disease on private properties on LCO; it is highly likely there are more cases on other properties ([more](#)).

[Oak wilt video](#)

PLEASE RENEW YOUR COLA MEMBERSHIP FOR 2020-2021

[Renew your membership](#) today in one of Wisconsin's most active and respected lake associations.

Are your neighbors and extended family members of COLA? If not, please ask them to [join](#).

2020 NATURAL HISTORY FIELD TRIPS SUSPENDED

From Mike Heim: "Sadly, the natural history field trips sponsored by the LCO Ojibwe College Extension Program will need to be suspended until it is once again safe to get together with our fellow Nature enthusiasts. In the interim, please take this opportunity to explore and marvel at whatever aspects of Nature you can..."



CITIZEN LAKE MONITORING NETWORK

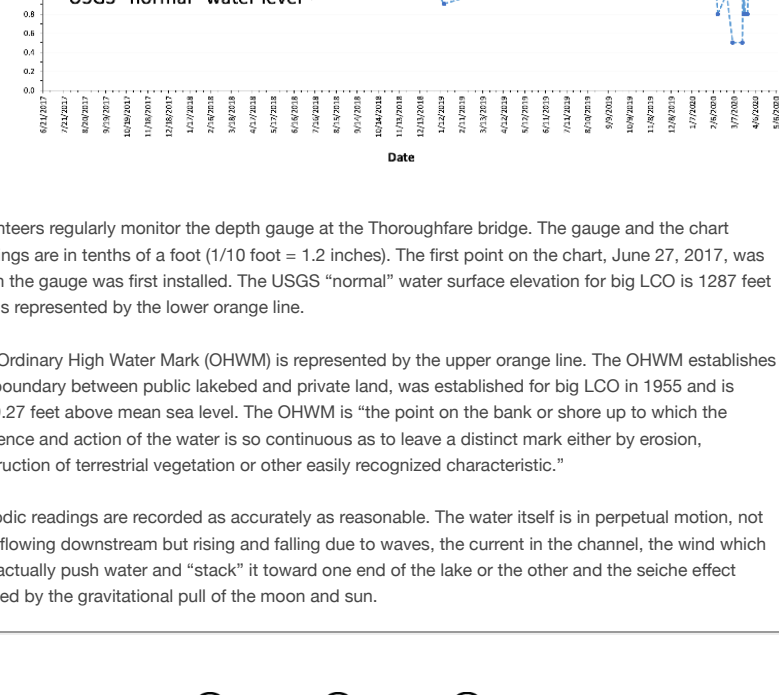
Take a look at the Spring issue of [Citizen Lake Monitoring Network](#). The feature article is about cold water fish lakes and how important the monitoring is to understanding what's going on in WI regarding cold water fish habitat.

700 FT SETBACK REQUIREMENTS FOR ENHANCED BOAT WAKES

An enhanced boat wake ordinance became effective on November 12, 2018. To view the ordinance [click here](#).

A higher resolution map of the 700 ft setback requirements for enhanced boat wakes is provided [here](#).

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



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 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.

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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 private 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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