

Lake plants: Intriguing survivors

BY FRANK ZUFALL

A good candidate for something we know exists but which rarely causes our cerebral synapses to get excited are the plants in our lakes.

But spend an hour with Dr. Susan Knight and you'll want to inspect the nearest body of water with a camera, pickle jar, and notepad, and then start spreading the news – lake plants are awesome!

Knight, who works for the University of Wisconsin-Madison's Center for Limnology at Trout Lake Station in Boulder Junction, spoke on the subject "Lake plants we all love" at the annual meeting of the Washburn County Lakes & Rivers Association (WCLRA) on Saturday, Aug. 24, at the Wisconsin Department of Natural Resources regional headquarters in Spooner.

Talking to one of the most well-informed crowd on lakes, when she asked about the benefits of lake plants, hands shot up with suggestions: they harbor food, absorb nutrients, filter water, create diversity and habitat for small fish, provide prowling grounds for larger fish, create oxygen for the water, offer food for some species (such as the canvasback duck), protect shores from wave action, slow runoff, and add beauty.

"Let's not forget that lake plants can be plain beautiful," said Knight, showing a photo of a blossoming purple bladderwort.

Lake plant problems, strategies

Knight's enthusiasm met by a receptive audience made the next hour fly by as she talked about six problems lake plants face and the multiple strategies they use to survive.

We all know that plants use photosynthesis to create oxygen and sugar, but to do that they need carbon. Land plants obtain carbon via CO₂ in the air, and that is good because CO₂ is the leading cause of global warming and oxygen is needed to survive. Fish and all the little creatures in the lake also need oxygen or dissolved oxygen.

But pulling carbon out of the water in any form, said Knight, is hard for

aquatic plants, and they can quickly exhaust the local carbon supply.

Plants have adjusted by having floating leaves, like cabbage plants and pond lilies, that snatch CO₂ from the air, and some have roots that take dissolved CO₂ near the substrate. Another adaptation is lacy, thin leaves, essentially the veins of the leaves, like northern millfoil, that move vibrantly in the water for maximum exposure to carbon. Also some plants will locate in flowing water to have more carbon exposure over their surface.

Lake plants acquire nutrients via roots like land plants but also can take nutrients over the plant surface because most lake plants lack that tough outer surface, or cuticle, of land plants, and that allows nutrient absorption.

Some lake plants have no roots and rely entirely on absorbing nutrients through their skin as they float through the water.

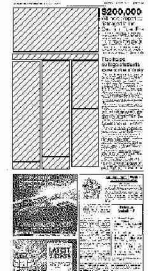
The bladderwort is carnivorous and obtains nutrients by capturing microscopic zooplankton and tiny insects in its multiple bladders. Knight explained how the bladderwort creates a low pressure in the little bladders and when tendrils sense movement, they open up just a bit, allowing water to rush in with the unsuspecting critter that is then trapped in the bladder to decompose.

The pitcher plant, another carnivorous plant, lives in bogs with low nutrients in the substrate. The plant relies on attracting bugs into its red, pitcher-shaped structure where downward pointing whisker-like appendages allow insects to walk down but not up.

Lake plants need light to grow, but algae growing over their surface prevents light from touching the plants.

One lake plant strategy is, to grow faster than the algae can cover, said Knight. The tip of a bladderwort can grow two centimeters a day, outdistancing the algae on its surface.

Another way to deal with light is just grow taller in the water column with an exposed end on or near the surface, like northern millfoil, or keep a leaf at the surface, like cabbage



plants and pond lilies.

Lake plants are mostly perennials that have reserves of nutrients to extend growth in darkness in the spring until the plant is exposed to light.

Lake plants also can reproduce sexually like land plants with flowers on the surface where pollen is taken by wind and insects to other plants. But pollen also can be disturbed in the water, said Knight.

Many lake plants are able to reproduce asexually by growing from a system of spreading rhizomes or by breaking in fragments that survive as a separate plant, or collecting in tight nodules/buds called turions that survive the winter and in the spring expand to become a whole new plant.

Some lake plants, like watershields, are protected from being eaten by bugs by producing a jelly over their surface leaves at critical stages.

Knight said a tiny insect called a weevil eats the invasive species Eurasian millfoil, and studies are being conducted on what impact placing the weevils can have. But, she said, the weevils never will entirely eliminate the invasive.

Roundtable

After Knight's presentation, mem-

bers of WCLRA held a roundtable addressing or raising a number of issues:

- A culvert placed during Cty. Hwy. H construction in the town of Spooner is taking water from the Spooner Golf Course to Spooner Lake via a small ditch filled with gravel dug to and into the lake.
- Presence of E. Coli in a Douglas County lake.
- Monitoring boat landings on different lakes for invasive species and how to obtain grants to pay for monitoring.
- An introduction of the Namekagon River Partnership and its initiatives, including an upcoming river cleanup and family-friendly paddle to be announced.
- Decease in walleye numbers on lakes while largemouth numbers increase.
- Destruction of a beaver dam leading in to Big Casey Lake that lowered the lake level and questions over who authorized the dam's destruction.
- Expansion of birch growth along Spider Lake in the town of Birchwood as the lake level has fallen.
- Successful removal of purple loosestrife along stretches of the Yellow River using beetles. ■

Susan Knight shows samples of lake plants during the Washburn County Lakes & River Association annual meeting on August 24. The WCLRA held its business meeting before Knight's presentation and then conducted a roundtable discussion after her talk. Photo by Frank Zufall

