

THE BOG HAUNTER

the newsletter of the Friends of the Cedarburg Bog
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Growing Tamaracks

While all the science is not done yet, and it probably won't be told like this when the final report is written, Jim Reinartz has uncovered a kind of morality lesson playing out in the Cedarburg Bog. And it involves what the director of the bog's UWM Field Station describes as "a lot of people's favorite tree."

Tamarack (*Larix laricina*) -- also known as larch -- is "a classy tree," Reinartz adds, a feathery deciduous evergreen whose needles turn vivid yellow after the first frost.

Tamarack, which is certainly a dominant species in the bog, has been a major focus of efforts to study just how much change has been going on in the 2,500-acre wetland.

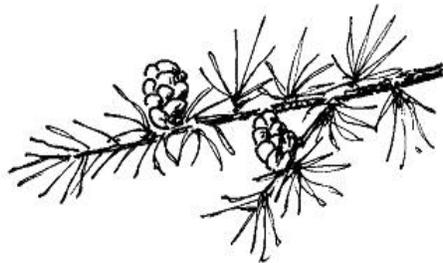
The lesson? It's the same one your mother may have preached long ago: Slow and steady wins the race. In this case, the longevity race. But we're getting ahead of ourselves here, so first a little background:

Led by Reinartz, UW-Milwaukee scientists are updating their comprehensive 1991 vegetation survey. He led that survey as field station manager and resident biologist. Major field work for the follow-up was done in 2006, 15 years after the first complete botanical survey was done to establish benchmarks. The tamarack study, for which the last samples were collected just this past winter, will be part of the general description of bog plant communities to be published this fall.

Reinartz first had to relocate the 10 east-west transects established across the bog at quarter-mile intervals from north to south. The northernmost was just south of Highway 33, the southernmost a quarter mile north of Cedar Sauk

Road. Some 165 sample points were spaced at 100-meter intervals along those lines.

Reinartz long had known that tamarack growth rates varied widely across the different plant communities in the bog, and that became the focus of his sampling effort. Some of these conifers standing 70 feet tall with a 12-inch diameter were only 40-50 years old, while others just 10-12 feet tall with a 6-inch diameter have stood in the bog for more than 300 years.



Tamarack is widespread in the bog, and was found at 120 of the 165 sampling sites, with 604 trees sampled. Reinartz also collected samples of glossy buckthorn at each of those sites so he could compare the growth rates of this invasive shrub with those of a high quality native tree such as tamarack.

Some 700 buckthorn samples (circular trunk slices) were taken after the shrubs were cut down. For tamarack, similar samples were taken from trees lost in the big die-off caused by root freeze in the winter of 2003-'04. At sampling sites where live tamaracks were present, core samples were taken with an increment borer (basically a hollow drill bit).

A growth rate study is possible because of the growth rings that trees and shrubs lay down each year. You can see and measure the annual rings because their vascular cambium layer just beneath the bark

produces earlywood (composed of big vessels designed to get water up to the top early in the season) and latewood (heavier structure that gives the tree its support).

Reinartz's study converts his sampling data to a growth rate measured in millimeters per year. In the buckthorn, the difference from fastest to slowest growers was 3 times. For tamarack, the range was 13 times! But there was a strong site correlation so that both species grew fastest in the same parts of the Bog.

The controlling factor for both? Nutrient availability and root growth, with both determined by how well oxygenated the underlying soil is. "Where the peat is in effect floating, little oxygen is available, and trees and shrubs develop in a real nutrient-poor condition," Reinartz noted. "Away from the string bog and more toward the edge where things are more grounded, the growth rate is much faster."

"The slowest growing are the oldest and most of those are in the center of the bog," he added. The oldest samples there were 260 years old, although Reinartz said trees as old as 325 years had been found in the same area but not at the sample sites.

And the other half of the lesson?

"Fast growing tamarack are not built to live that long," Reinartz said. "They are not built like white pine; no tamarack could grow that large and avoid being tipped over in the wind."

Above a certain growth rate, is there a maximum age for this iconic conifer? "Probably 80 years or so," Reinartz said after some thought. "Good question. We'll have to look at the data some more."

By Carl Schwartz

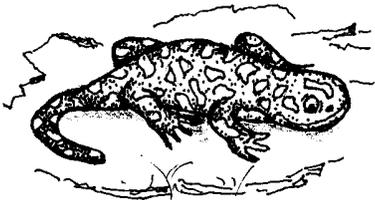
Ephemeral Ponds

Ephemeral ponds are often defined in terms of what they are not – and that’s “permanent.” These bodies of water are waterless for some portion of some years, generally from late summer through winter. The second “lack” in the life of an ephemeral pond is fish; regular dry periods generally prevent fish from becoming established.

Their water comes from snowmelt, rising groundwater, precipitation, run-off, or a combination of these. The fact that they tend to be wettest in spring earns them their other names - “vernal” or “spring” ponds. Occasionally, wet weather may fill them for a year or two, but they typically go through a dry cycle. Animals that are ephemeral pond “specialists” have developed adaptations that allow them to survive when their world dries up, usually at a predictable point in their life cycles.

Leaves and other organics that fall or wash into the water are the source of the ephemeral pond’s energy and the base of a deliriously complex food web. The leaves themselves and the microscopic organisms that work to decompose them are food for zooplankton, grazers and shredders, bacteria, snails, caddisfly larvae, and tadpoles.

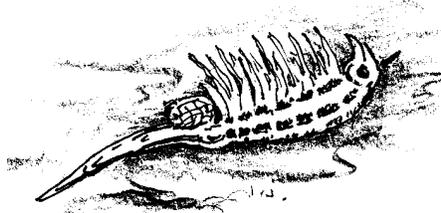
Carnivores within the pond include diving beetles, dragonfly nymphs, and ravenous larval salamanders that, as they grow, even consume young of later-emerging species of salamanders. Owls, herons, snakes and raccoons are among the terrestrial and airborne predators that drop in to dine.



Poster child for vernal ponds is the tiny (three-quarter-inch) fairy shrimp (*Eubranchipus sp.*). Fairy shrimp are Crustaceans; their relatives include lobsters and shrimp as well as sow bugs and cyclops. Suspended, belly up, in the world below the water’s surface, they use the rhythmic movements of their legs to move

algae, detritus and tiny aquatic animals toward their mouths.

And while some may look to the robin to announce the arrival of spring, many wetland enthusiasts mark it by the appearance of fairy shrimp in the slowly warming waters of a vernal pond. In the words of Dr. Mary Linton, wetlands ecologist. “Nothing kicks the slop out of a nasty case of Seasonal Affective Disease like the first fairy shrimp of spring.”



When the tepid water of summer evaporates, fairy shrimp dig in – literally. Their encysted eggs, buried in the litter on the pond’s dry floor, withstand the heat of late summer and the freeze of winter. In fact, the eggs require drying and re-hydration before they can hatch, and they can remain viable through as long as two decades of drought. Other denizens of vernal ponds are similarly adapted to wait for the return of water.

Alternate strategies for surviving drought are as creative as the fairy shrimp’s. Amphibians that use the vernal pond for reproduction may be terrestrial as adults; telescoping their larval period to fit the short life of the pond and reaching adulthood before the water dries. Or, as adults, they may migrate to permanent ponds, trading the dangers of fish predation for the assurance of water.

Vernal ponds are considered critical habitat not only for their specialized occupants, but also because of their value to the animals that visit them to drink or feed. Land owners’ lack of recognition of their uniqueness may lead to their being regarded as mosquito factories and drained or filled. Conversely, they are sometimes excavated to make a permanent fish or stock pond. Either modification is disastrous for animals whose life cycles are adapted for cycles of water and drought.

Ephemeral ponds are classified as wetlands, so draining, filling or enlarging them requires a permit. Many are so small (many more are unmapped) and the concept of

vernal ponds is not on many people’s radar, so landowners may not recognize them as wetlands.

Citizen Scientists Monitor Ephemeral Ponds at Cedarburg Bog And Beyond

Along with nature centers, universities and County Staff, the Friends of the Cedarburg Bog entered into an exciting venture this spring when we joined with the University of Wisconsin Extension on a new Citizen Science Monitoring initiative – the Wisconsin Ephemeral Pond Project, or WEPP.

WEPP’s goal is to inventory ephemeral ponds in Wisconsin to increase our understanding of their ecological importance and to support their conservation. With the help of a grant from the Wisconsin Coastal Management Program, WEPP has its start in the Counties along southern Lake Michigan.

Joining more than 85 citizens from Kenosha to Sheboygan Counties, Volunteer Coordinator Cindy Kowalchuk participated in a 2-day training program in ephemeral pond ecology and inventory methods. Cindy and Friends’ volunteers have been working with scientists to study ephemeral ponds in the Town of Saukville, including ponds near Cedarburg Bog and in the Beech Maple Woods State Natural Area at the Field Station.

Some volunteers examine physical features like water depth and pond size as the season progresses. Others record the vegetation and animals, such as species of aquatic invertebrates and amphibians. This information will help us understand the different types of ephemeral ponds and their significance in the landscape.

Ephemeral ponds are to the forest what coral reefs are to the ocean, “hot spots” for diversity, life and productivity. Knowledge about these systems in Wisconsin is limited and due to their ephemeral nature, these ponds often go unappreciated as the extremely diverse and ecologically vital places they are. The WEPP project will broaden our knowledge base leading to a deeper understanding and eventual protection of these special places.

The volunteers who are dedicating their efforts and time during the spring and summer of 2008 (and, we hope, next spring and summer, too) monitoring ephemeral ponds will reap the rewards of their enthusiasm as they hone their skills and expand their world view to include fairy shrimp, skunk cabbage and, maybe, even an elusive Blanding's turtle.

If you enjoy exploring wetlands and want to learn about and contribute to ephemeral pond conservation, contact Cindy at (262) 957-4771 or cindyk@bogfriends.org or. And watch future issues of the *Bog Haunter* for some survey results!

by Gail Epping Overholt

Board Bids

New Board members will be elected at the Annual Meeting of the Friends, on September 14. Members are invited to attend the Annual Meeting and Potluck at the Field Station from 3:00 to 7:00. Consider serving a three-year term on the Board of Directors. If you are interested, contact Board Secretary Kate Redmond at the Field Station mailing address.

Thanks to our current Board, for their dedication.

*Dan Kline, President
Tom Uttech, Vice President
Kate Redmond, Secretary
Jack Isselman, Treasurer*

*Dave Clutter
Gail Epping Overholt
Mary Holleback
Hank Klapproth
Mark Murphy
Bill Niehaus
Jackie Niehaus
Vicki Piaskowski
Sue Schumacher
Carl Schwartz
Alice Thompson*

*Andrew Krueger, DNR Partner
Jim Reinartz, UWM Partner*

If You Build It, They Will Come.

In late winter of 2008, WE-energies, the Friends, and the American Transmission Company collaborated to erect five osprey nest platforms on or near the Cedarburg Bog.



Photo by Seth Cutright

Within a month of their installation, a pair of migrating osprey claimed one of the platforms. At the time of this writing, it looks like the female's two month sit on the nest, with the male in attendance, may have paid off. If they are able to fledge their young, it will be the first successful osprey nest in Ozaukee County in recorded history. If not, this or another pair of birds will probably return to the platform next spring. Stay tuned!

FUN IN THE SUN

Gas prices limiting travel this summer? Need a place to get away? Escape to your favorite State Natural Area, the Cedarburg Bog. It offers endless glances into a forgotten world. Whether it is the ancient echo of a sandhill crane, the gentle touch of a summer breeze, the hum of a lingering swarm of mosquitoes, or the array of green foliage interspersed with vivid floral displays... the Bog is surely the place to go to escape everyday life and become more involved with your community.

Special thanks to all volunteers who have been so helpful during the last couple of months. We have had a lot going on, and the community has been right there to give us a hand in our time of need. Let's give a round of applause to those who had their paws in hauling old boardwalk sections for the May 5th National Guard Helicopter Fly-in, the dedicated 2nd Saturday Stewards, ephemeral pond monitors, Homestead High School Seniors who helped annihilate some encroaching invasives, and all Volunteer Orientation participants.

A special recognition goes out to Greg Rutzen for his professional touch with the volunteer brochures; we are extremely grateful for all the

time and effort he put forth on this project.

For anyone who is interested in volunteering at the Cedarburg Bog, please do not hesitate to contact Cindy K. at cindyk@bogfriends.org, or (262) 957-4771.

By Cindy Kowalchuk

Guardian of the Swamp

It appears harmless – a familiar-looking shrub on damp hummocks throughout the Bog, bearing shiny compound leaves with about nine leaflets that turn dark red in fall and sprays of small cream-colored flowers that produce greenish berries. Look, don't touch.

Poison sumac (*Toxicodendron vernix*) grows in wet soils that its upland relatives, smooth and staghorn sumac, can't tolerate. Like them, it has an antler-like shape with sparse branching. It shares with the related poison ivy the long-lasting, active ingredient, *urushiol*. If you are sensitive to one plant, (and about 80% of the population is) you will be sensitive to the other.

Despite its toxicity, poison sumac historically found a variety of uses. Its sap produces a black dye and a varnish ingredient, and it was used medicinally (carefully) on ringworm.

Fly-out

On May 5, workers from the Friends, the Field Station volunteer list, the Riveredge Habitat Healers and the



Sierra Club, with an invaluable assist from the National Guard, removed the last of the old Boardwalk materials from the East Island. Once again, the big orange basket was loaded and unloaded in the hurricane-force winds generated by a helicopter hovering 150 feet above the workers. Thanks to all who made it happen.

Dates to Remember

Riveredge Bird Club

First Tuesday of the month
6:00 p.m. Hike, optional;
7:00 p.m. Program.
Riveredge Nature Center Barn.
No pre-registration or fee required.

Second Saturday Stewards

Join the Stewardship Crew and control invasive plants and work on other stewardship programs. Contact Cindy K at (262) 957-4771 or email (cindyk@bogfriends.org) to let us know you're coming and to find out the project of the month

"MAPS" Bird Banding

Saturday, July 12, 26 and Aug. 2;
5:00 - 11:00 a.m.

Observers and volunteers are welcome. Sessions are weather-dependent. Call for information and location. Registration required Contact (800) 287-8098 or www.riveredge.us Riveredge Nature Center, Newburg.

Secrets of the Prairie

July 16, 9:00 a.m. - 4:00 p.m.
A day of learning on Riveredge's magnificent prairies, plus a gourmet lunch.
Registration required. Contact (800) 287-8098 or www.riveredge.us Riveredge Nature Center, Newburg.
Fee: Member: \$30.00 Non: \$40.00

Party at the Edge

July 19, 6:30 p.m.
Celebrate 40 years at Riveredge with eats, auction and entertainment. Registration required Contact 1-800-287-8098 or www.riveredge.us Riveredge Nature Center, Newburg.

Ozaukee-Washington Land Trust Fish and Steak Broil

August 17
3 p.m. Self-guided walk.
4 - 5:30 Silent Auction, Happy Hour
5:30 p.m. supper.
Music by Sawdust Symphony,
\$32 per adult, \$16 for children 12 and under. Call (262) 338-1794 for reservations.
Riveredge Nature Center, Newburg



Friends of the Cedarburg Bog
Annual meeting
September 14, 3:00 to 7:00 p.m.

This Old Barn: Bluegrass and Brats
September 19,
6 pm food available (brats, burgers, beer, and more)
7:30 pm *Big Cedar Bluegrass Band* \$12 for indoor seating.
For details, contact Kate at (262) 335-5085 or laclawrann@ci.west-bend.wi.us.
Lac Lawrann Conservancy, West Bend

You're invited to the
Friends' Annual Meeting
Bog, Burgers and Brats
Join us for our fall Potluck
If your name starts with
A to M please bring a side-dish
N to Z please share a dessert
Guided hike at 3:00,
Supper at 5:30
Annual meeting around the campfire after supper.
Rain or shine
PLEASE RSVP at
(262) 957-4771 or
cindyk@bogfriends.org.

C/O UWM Field Station
3095 Blue Goose Road
Saukville, WI 53080
www.bogfriends.org

