THE BOG HAUNTER

the newsletter of the Friends of the Cedarburg Bog

Volume 4, Number 4 Fall, 2009

FANTASTIC FUNGI

First, their names grab you – Horse's Hoof and Bird's Nest, Hen of the Woods, Turkey Tail, Scarlet Cup, Stinkhorn, Mary russula, Trumpet of Death (also known as Horn of Plenty), Inky Cap, Shaggy Mane, Puffball, and Destroying Angel Mushrooms.

Next, their exotic lifestyle. They seem to materialize overnight, in sizes and shapes ranging from basketball-sized Giant Puffballs to yellow, coral-shaped fingers to tiny, brilliant orange stems and caps.

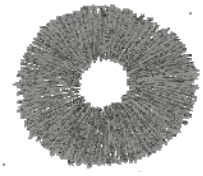
The term "mushroom" generally refers to a variety of forms of fungi. Many wild mushrooms, along with the common grocery store mushrooms, have gills. The underside of the cap looks like spokes on a wheel - a series of slits, separated by membranes. Others, like the multi-colored Turkey tails that decorate stumps in fall, have small holes (pores) instead of gills.

Spores, the fungal version of seeds, are produced on the sides of the gills and in the lining of the pores. Gills and pores are oriented downward so the spores can fall out. Puffballs are covered by a "skin;" its spores are released when the skin gets dry enough to crack and split.

Mushrooms have been used for millennia for fabric dyes, tinder, religious ceremonies and, with caution, as food and medicine. Poisonous mushrooms are often called "toadstools," but there are no structures that separate edible from non-edible fungi. The tests of folklore aren't valid – animals safely eat mushrooms that people can't; "toadstools" don't tarnish silver spoons or rust tin cans; not all white mushrooms are safe; and the toxins can't be cooked, dried or processed away from most poisonous fungi.

How are mushrooms identified? Carefully. True identification often relies on a microscope, but there are "field marks" like color, shape, odor, habitat, and season, that can be used to make intelligent guesses.

Spore prints, themselves a beautiful art form, also help both professionals and amateurs to classify mushrooms. Place a ripe mushroom cap, gills down, on pale blue or green construction paper and cover it with a glass (wash your hands after handling unknown mushrooms). The next day, the mushroom will have dropped spores onto the paper, and the spore color and gill pattern may be used to categorize it. Some small mushroom feeders may also be trapped under the glass.



The mushrooms (fungi) we see on the ground or on tree trunks are comparable to the apples on an apple tree. They are the short-lived fruiting bodies of the "plant," (mushrooms used to be classified as plants but are now in a different kingdom of life). They often appear after a rain, and they bear the "seeds" (spores, in the case of fungi) that ensure another generation. Mushrooms can be harvested without damaging the supporting plant. But, if they are the "apple," where's the "tree?"

Mushrooms are the tip of what can be a very large iceberg. They grow from a network of pale strings called *mycelia* (the singular is *mycelium*). Strands of mycelia, large and small, are interwoven through soil, dead trees, wet leaves, the floor of ephemeral ponds, and many other substrates. Mycelia absorb food from their surroundings, and different species of mushroom "dine" on specific kinds of plants (morels, famously, grow near old elm roots).

Fungi are important recyclers of the nutrients locked in plant material, both living and dead. Scientists are learning about the amazing partnerships that are formed between mycorrhizal fungi and the living roots of a wide variety of plants, from orchids to trees.

In this mutually beneficial exchange, the fungus gets carbon and sugars, and its plant host receives minerals, especially nitrogen and phosphorous. The mycorrhizal fungi give their host an extended "root system" that helps it to glean nutrients and water from a wider area, and the fungi may also give protection from pathogens in the soil. Some scientists preach that mycorrhizal fungi make the world go 'round.

The largest and oldest known fungus lies beneath 2,200 acres of Malheur National Forest in eastern Oregon. That's about the size of the Cedarburg Bog, which equals more than 1,660 football fields. It has been decomposing the

remains of the plants above it for an estimated 2,400 years.
No one has found anything in the Bog that matches a 2,400 year old fungus (yet), but you can learn about the fungi that inhabit the Field Station's beech-maple woods and how to identify them on October 3 from 1:00 to 4:00 p.m. Check the Calendar section for registration information.

PARDON OUR DUST

The Friends of the Cedarburg Bog is assisting in the renovation of the trail that leads from the public parking lot off of Highway 33. A grant received from the DNR's State Stewardship Fund was matched by the Friends to get this worthwhile project done (an example of your membership dollars at work). The slope of the hill west of the parking lot will be reduced in order to make it handicapped accessible. The boardwalks and the fishing pier at Watts Lake are already handicapped accessible.

Because of the grading work, the trails will be closed briefly in October.

CONIFER SWAMP

The "gatekeeper" of the Cedarburg Bog is its conifer swamp, a collection of plants that brings the flavor of "Up North" to southeastern Wisconsin. It forms a border that surrounds much of the Bog, the first band of vegetation (and the first bands of mosquitoes and poison sumac) to be negotiated.

A swamp is a wetland whose dominant plants are trees; put another way – it's a woodland with water-filled soils. Conifer swamps are classified as northern lowland forests. In northern Wisconsin, these are a combination of tamarack, black spruce, white cedar and balsam fir. They were the first forests to be described in Wisconsin, almost 200 years before statehood.

The Cedarburg Bog is a swamp community dominated by tamarack and cedar. Both species can grow in dry, damp or wet soils, though tamarack is more tolerant of wet soils than cedar. Like the other wetland communities in the Bog, the conifer swamp grows on a thick layer of peat, which is semi-decomposed organic material. And, like the other communities, root growth occurs only in the top 10 to 12 inches of the peat, because that's where the oxygen is. Aquatic and soil animals are also restricted to that zone. During wet periods, the peat is saturated and water stands on its surface; in dry periods, typically by mid-summer, it is barely damp at the surface.

A few species of hardwood trees like yellow and paper birch and black and green ash are interspersed among the conifers, and the most common shrubs in the under-story are red-osier dogwood, poison sumac and the invasive glossy buckthorn.

Swamp trees don't need taproots; they need a broad base that will intertwine with their neighbors and help them stay upright in soft soils. When a tamarack blows over, its flat disc of roots is revealed. Tamarack roots have been measured that stretch out as far out from the trunk as the trunk rises vertically. In the conifer swamp, the straight trunks of living trees, the tilted trees - leaning but still hanging on - and the horizontal trunks of trees that have lost their battle with gravity make a crazy geometry.

Calls of Woodpeckers, Veerys, Chickadees, Northern Waterthrushes, Wrens, and the occasional Ruffed Grouse resound in the conifer swamp in breeding season. Barred Owls, with their raucous conversations, are permanent residents, probably feeding on red-backed voles, a northern rodent that is restricted to tamarack swamps here at the southern edge of its range in Wisconsin. Anglewing, Azure and Eyed-brown butterflies ply its vegetation.

Dappled sun under the cedars and tamarack provides the habitat for a procession of wildflowers throughout the growing season. The swamp floor looks bare in the thin sunlight of mid-April, when water stands between the raised hummocks where trees grow. Early season flooding keeps the mud flats bare and sets the stage for the annuals that bloom in fall. Ground-hugging early flowers - skunk cabbage, marsh marigold, and violets – are followed by taller plants, and the ground gets more crowded.

A jungle of autumn wildflowers replaces mid-summer's water parsnip, water plantain and deadly water hemlock. White boneset and turtlehead, purple aster and Joe-pye weed, and orange jewelweed, punctuate the yellows of tickseed sunflower, bur marigold, and goldenrod,

As flowers fade, the tamaracks begin to glow; their needles turning to gold – coloring first the trees themselves, and then, as needles drop, the boardwalk and water, and finally, the first layers of thin ice on the Bog.

OSPREY – YEAR TWO

In March of 2008, WE Energies, the American Transmission Company, and the Friends cooperated on an osprey platform project. Five nest platforms were installed in and around the periphery of the Bog. Within a month, a platform located a mile south of the Bog was occupied. In late summer of 2008, two young were fledged, the first recorded successful osprey nest in Ozaukee County in at least 100 years. This summer, a pair of osprey produced three chicks. Stay tuned

ANNUAL REPORT

At least once a year, it's important to step back and reflect on the amazing work that goes on at the Field Station.

The Friends of the Cedarburg Bog's mission is to initiate and support activities that will enhance the natural history, public appreciation and scientific study of the bog. We do so in cooperation with the Department of Natural Resources and the University of Wisconsin-Milwaukee, which operates a 320-acre Field Station at the bog. The recently-published 2008 Field Station Annual Report offers a snapshot of the extraordinary array of work going on at the site's three separate

state natural areas well as its old ag field sites. So what do director Jim Reinartz and manager/staff biologist Gretchen Meyer cite as last year's highlights?

- Completion of construction on boardwalks in both the bog and the beech-maple woods.
- 48 research projects conducted there, including 5 M.S. theses, 9 Ph.D. dissertations and 23 studies by researchers outside UWM.
- Over 10,000 student hours of instruction and group use.
- Redesign of the field station web site (www.fieldstation.uwm.edu).
- Expansion of the Natural History Workshop program to include a January "Winterim" course. Eight workshop topics were offered, each filled to capacity.
- Discovery of the larvae of the federally endangered Hine's Emerald Dragonfly living in the string bog mat – only the second such known site.

- And a "lowlight," the first Wisconsin population of the Emerald Ash Borer was discovered in Newburg less than two miles from the Field Station.

While the bulk of the annual report (34 of its 44 pages) is devoted to abstracts of the research projects conducted there last year, its scope is even more comprehensive. Among the other areas it covers:

- Comprehensive meteorological data for 2008.
- Descriptions of the on-site natural areas (the bog and upland woods are also National Natural Landmarks), as well as of four outlying natural areas managed by the field station: Neda Mine Bat Hibernaculum, Neda Beechwoods, Benedict Prairie and Downer Woods.
- Collection of long-term databases on species lists, weather data, phenology, hydrology, small mammals, population fluctuations among Dark-eyed Juncos and Black-capped Chickadees, as well as breeding bird surveys, bird-netting and banding programs and long-term studies of avian vocalizations.
- A list of 53 recent publications resulting from Field Station projects and 13 recent theses.
- A review of the 22 groups and agencies that the Field Station offers services to or cooperates with. The Friends of the Cedarburg Bog leads that list and organized 14 educational events for the general public as well as a number of work parties for boardwalk construction and natural area management.

In the next issue of "The Bog Haunter": Highlights from last year's research, including several on the growth and distribution of tamarack in the area, conservation of the Butler's Garter snake and the ongoing buckthorn invasion.

To get a copy of the Field Station Annual Report, write to UWM Field Station, 3095 Blue Goose Rd., Saukville, WI 53080 or E-mail fieldstn@uwm.edu.

By Carl Schwartz

GOT A QUESTION?

If you have a question about the Friends or about the plants, animals or workings of the Cedarburg Bog wetlands or uplands, send it to Editor Kate Redmond at the Field Station address. Your question may become an article in a future *Bog Haunter*.

WHO COOKS FOR YOU *ALL*?

One of three large owls in the Midwest, the Barred Owl (*Strix varia*), is also known as the eight hooter from its call, "who-cooks-for-you, who-cooks-for-you-all". The Great Horned Owl (*Bubo virginianus*) is the other large owl commonly found here year round. Snowy owls (*Nyctea scandiaca*) are occasionally seen in winter.

The Barred Owl's range is the eastern half of the United States and into Canada. They prefer dense woods, wooded swamps and woodlands near waterways. The field station has at least one pair that has been heard calling in the evenings.

Barred Owls lack ear tufts. The pattern of horizontal bars on the neck, vertical streaks on the breast, and large bands on the tail give the bird its name.

It is the only North American owl with brown eyes. The feathers surrounding the eyes have circular streaks. The beak is yellow and almost covered by feathers.

Barred Owls hunt by perching and waiting for prey to come into the area. Even though they have a large wing span, they are able to maneuver easily between tree trunks. Mice, voles, young rabbits, chipmunks, squirrels, and some insects are the typical diet. Barred owls are opportunistic hunters and will sometimes hunt before dark. The Barred Owl can be "found" during daylight hours, perched near the tree trunk hidden in foliage. They are drawn to lights, like campfires or yard lights, where they catch large insects. They usually eat on the spot, but will carry a larger prey to a perch to eat.

Courtship begins in February with lots of noise to attract a potential mate. Males will chase females, hooting and screeching. Males sway back and forth, raise their wings and inch along a branch to attract a female.

Two to four eggs are laid in a cavity, or abandoned hawk or crow nest. During the 28-33 day incubation, male feeds the female. The young leave the nest at approximately four weeks and sit on branches. The parents care for the young for at least four months, which is longer than the typical owl.

By Chris Fredrich

Check out the "Owl Prowl" information in the calendar.

MEMBERSHIP RENEWALS

If you haven't received a renewal letter yet, you will soon. We hope you believe in what the Friends are doing and will renew. And, of course, we'd love it if you could enroll a friend or two.

CALENDAR

Riveredge Speaks Out
Programs on the environment for the curious of any age.
All programs - 7–8 p.m.
October 1: *12,000 Years in an Hour: The Prehistory of Southern Wisconsin*
Washington County Public Agency Center, Room 1113, 333 E. Washington St. West Bend (The SE corner of Hwy 33 and Indiana Ave, lower level, south entrance.)
For other dates, topics and locations, contact 1-800-287-8098 or www.riveredge.us .
Free, (a $5 donation is suggested).

Bog Friends Event
Fungi of the Field Station's Beech-Maple Forest with Dr. Alan Parker
October 3, 1-4 p.m.
UWM Field Station.
Please register at 262-675-6844 or fieldstn@uwm.edu
Free, (a $3 donation is suggested).

Return the Sturgeon
October 3, 1– 4 p.m.
Thiensville Village Park Dam.
Help to restore a breeding population of Lake Sturgeon into the Milwaukee River. For information, food tickets or to release a sturgeon, call 800-287-8098 or see www.riveredge.us.

Riveredge Bird Club
First Tuesday of every month except December. 7-8:30 p.m.
Riveredge Nature Center "Barn."
November 3 – Photographing Wisconsin's Birds
Open to the public. No fee.

Prairie Seed Harvest
October 10, 1-3 p.m.
Lac Lawrann Conservancy, West Bend
Come gather seed with us to expand and diversify our prairie and take some seed home for your own use.

Raptor and Migratory Bird Watch
October 11
Forest Beach Migratory Preserve (formerly Squires Country Club)
Contact Bill Mueller for meeting time, location, and weather cancellations bmueller@cedarburgscience.com

Bog Friends Event
Quarterly Board Meeting
October 15, 7–8:30 p.m.
UWM Field Station
Members welcome.

Luminary Walk
October 17, 7-9 p.m.
Lac Lawrann Conservancy, West Bend
Take a self guided walk along the candlelit trail on a beautiful fall evening. No fee.

Bog Friends Event
Celebrating the Land Through the Voices of Poets
October 17, 1:30-5 p.m.
UWM Field Station.
Please register at 262-675-6844 or fieldstn@uwm.edu
Free, (a $3 donation is suggested).

Bog Friends Event
Owl Prowl
November 13, 7-8:30 p.m. UWM Field Station.
Join the hunt for the unseen birds of the Field Station. Bring a flashlight.
Please register at 262-675-6844 or fieldstn@uwm.edu Free, (a $3 donation is suggested).

Annual Christmas Bird Count
December 19, Dawn to Dusk
Spend all or part of the day with fellow birders counting our birds. Participate as a field or a feeder counter. Then join us at the barn to compile data and enjoy a potluck dinner. For more information contact maryh@riveredge.us.
Riveredge Nature Center
No fee

Do you Know?
That the wildflower White Turtlehead (*Chelone glabra*) got its names (both common and scientific) because of its resemblance to the head of a turtle? The Greek word "*chelone*" means "a tortoise." It's pollinated by bumblebees that muscle their way into the flower.

C/O UWM Field Station
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www.bogfriends.org

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