

The BogHunter

the newsletter of the Friends of the Cedarburg Bog

Volume 13, Number 4 FALL 2018

FALL COLORS REVEALED!!

It's officially autumn! Time for pumpkins and sweaters and soaking up every moment of sunshine before winter. In fall, the entire bog turns into a spectacle of color and light — a showy and powerful promise from Mother Nature that if we huddle through these few cold months, she'll be back, better than ever. Walking through the beechwoods in fall, one might think that the forest is settling down for a big nap. From the perspective of a tree, though, fall is an incredibly busy season.



The gold of Tamarack needles

When we walk through the woods in the fall, we're walking among trees that are wide awake and working harder than they've worked all growing season long. To prepare for winter, our trees are storing and compartmentalizing nutrients that they'll use to stay alive through the winter, forming next year's leaves, and protecting them with little shield-like bud scales.

During the growing season, leaves that are healthy and productive are usually green. This is because of **chlorophyll**, an amazing molecule responsible for photosynthesis. When sunlight hits the leaf, chlorophyll absorbs the sunlight and uses that energy to turn carbon dioxide and water into sugars, the food that the tree needs to keep growing. Chlorophyll absorbs and uses the red and blue wavelengths of light, and it reflects the green wavelength, which is why leaves appear green. Leaves have other photosynthetic

compounds that compliment chlorophyll by absorbing other wavelengths of light as well, but those compounds are usually masked during the growing season by the overwhelming amount of chlorophyll.

Throughout the day, leaves are usually bombarded with way more sunlight than they can possibly use. Chlorophyll is such an excitable little molecule that when it is exposed to light, it just can't help but photosynthesize. But, like any machine that constantly runs at full throttle, chlorophyll eventually degrades and breaks down. During the growing season, chlorophyll molecules are constantly being replaced within the leaf. Eventually, when days get shorter and temperatures get lower, the tree stops replacing the chlorophyll that is destroyed.



Fall colors were hiding in the leaf!

Carotenoids are photosynthetic compounds that are yellow to orange. They exist in the leaf all summer long, but we cannot see them because the green color of the chlorophyll drowns out the carotenoids. As the chlorophyll dissipates, the yellows and oranges are able to shine through. There are a bunch of different kinds of carotenoids that exist in different levels in different kinds of leaves, which accounts for the range in color and brilliance of oranges and yellows in the woods.

When a tree gets ready to lose its leaves, it puts all of its energy into storing as many nutrients as possible to make it through the winter and into the spring. Leaves are full of nitrogen, phosphorus,

potassium, sulfur, and other compounds that the tree needs. The tree starts transporting those elements out of the leaf through the leaf stalk and into the living bark to store through the winter, a phenomenon called **phloem-loading**. In fact, trees are able to store and save up to one-third of the total amount of nutrients they will need the next year through phloem-loading! The catch: reserving all of these nutrients inside the tree takes a considerable amount of energy.

Now our tree is presented with a problem: at the very same time that it is trying to shut down its photosynthetic machinery, some of the equipment has to be left intact to allow the tree to stockpile its winter stores. Because our tree has already stopped replacing spent chlorophyll, the tree needs a filter (or a sun-screen) to protect the remaining chlorophyll from extra light energy.



Red maple leaves are loaded with anthocyanins

That's where red and purple colors come into play. Our tree uses up a little of its energy to actively produce compounds called **anthocyanins**, which act as a filter to protect the remaining chlorophyll. Anthocyanins are red to purple in color. Have you ever noticed that the leaves on the outside and the top of individual trees tend to turn red or purple, while the inside leaves will stay yellow or greenish longer? That's because those leaves are subject to more light bombardment, and therefore produce more sunscreen, the anthocyanins!

*Caitlin Reinartz, FOCB Administrative Assistant
and Urban Ecology Center Forester*

BOARD TALK

Hello Cedarburg Bog Community,

This is my final submission to the newsletter as President, as my term is coming to an end. It's been an incredible honor to work with an extremely passionate, talented and fun community of volunteers, professionals, teachers, and students of all ages. The only thing that's really changed for me is that I'm even more impressed, if that's possible, with the quality of the classes and workshops, the enthusiasm at workshops and festivals, and with just how unique this natural community is in Wisconsin and the entire Midwest.

The future of the Friends is continuing under the sage, astute and principled leadership of former President Bill Taylor, who agreed to serve as president in the final year of his final term. We couldn't be happier with this decision, particularly as he will serve as a mentor to the future leadership of this organization. I will continue to humbly serve the Board and the Friends in the Executive and Governance Committees and I very much look forward to it. I hope to see you at the Annual Celebration as the Bog transitions to my favorite season with the return of the crisp, clean air and the ever-changing tapestry of colors, sounds and smells.

Tim Vargo, Board President



Jim Ellis with a bag of teasel seed heads

BOG GUARDIANS AT WORK

The Cedarburg Bog Guardians have been hard at work this summer! The main purpose of the Bog Guardian program is to stop the spread of invasive species from reaching the Cedarburg Bog and adjacent natural areas.

This summer, dedicated Bog Guardian volunteers helped locate and eradicate wild parsnip and teasel along 27 square miles of roads surrounding the Bog. Of all the wild parsnip that was located, more than 87% was eliminated, and of all the teasel populations that were located, 91% were eliminated. Please give a big thanks to all the volunteers for their hard work!

To view a large map of the area where treatments were conducted please visit the following link: <https://tinyurl.com/BGTreatments>

*Tyler Betry, Bog Guardian Program Manager
bogguardian@bogfriends.org
(414) 303-1670*

MOSAIC DARNER DRAGONFLIES

Even as the growing season winds down, there are still plenty of insects around, and fall can be an exciting time if you're a dragonfly watcher.



A Canada darner

Dragonflies and damselflies are in the order Odonata. Dragonflies tend to be larger and chunkier than damselflies, have "wrap-around eyes," and rest with their wings held out to the sides.

Dragonflies are unapologetic carnivores. As aquatic naiads they eat other small water animals, including tiny fish and tadpoles; as adults they eat soft-bodied, flying insects (and they target mosquitoes in both stages).

At about three inches long, with four-plus inch wingspans, the darners (family Aeshnidae) are impressive dragonflies. Their huge compound eyes have as many as 30,000 facets apiece, each a small, wedge-shaped individual eye with its own lens, light sensor, and optical nerve. These powerful insects hunt

in the air, using their spiny legs to snag their prey. The name "darners" reflects the old belief that dragonflies were the Devil's darning needles and could sew people's lips shut.

Common Green Darners are found in the Bog from May through the fall. Some are migrants and others are permanent residents, but most of our other common darners (Canada, Lance-tipped, Shadow, and Green-striped) are "blue" or "mosaic" darners that emerge as adults in summer, and linger into fall. Darners perch by hanging vertically from plants, often close to the ground.

Mosaic darners can be a challenge to identify – the shape and color of the stripes on the side of the thorax are diagnostic. Mosaic darners (there are about 20 species in North America) are so-called because their dark abdomens are decorated with a "mosaic" of blue/green/gray lines and speckles. Sexual dimorphism runs rampant, with females of some species having as many as three different color phases (blue, green and yellow), all of them distinct from the coloring of the males.



A Green-striped Darner at rest.

Interesting darner fact: darners tend to be darker in color on cooler days than on warm ones.

Together with Common Green Darners, the mosaic darners often form "feeding swarms," sometimes dramatic in size, above the vegetation.

Friends of the Cedarburg Bog:

Supporting stewardship and appreciation of the Cedarburg Bog through land management, preservation, research and education.

STEWARDSHIP VOLUNTEERS AT WORK

A crew of volunteers was up bright and early on a Saturday morning in June to clean up damage done to the Mud Lake boardwalk by a fire set by vandals over Memorial Day weekend. The burned sections were removed and hauled to the UWM Field Station where they were stripped of hardware to be reused. Materials to rebuild the damaged sections of boardwalk are on order. Once the materials are received, a call will go out to volunteers to rebuild and install the damaged sections of the boardwalk. Hopefully this will be completed prior to duck hunting season.

Over the summer, volunteers for the Bog Guardian Program logged more than 60 hours completing road surveys to locate and control invasive plants including: dame's rocket, garlic mustard, wild parsnip, teasel, crown vetch, *Phragmites*, and purple loosestrife. Eradication and control efforts focused on wild parsnip and teasel threatening the Bog and nearby State Natural Areas.

Thank you, volunteers! Your efforts are invaluable and essential to protect and preserve the Bog and surrounding areas. You are appreciated!

Additional volunteers are welcome!

Volunteer opportunities include:

- Trail maintenance & trash pick-up
- Road surveys to locate invasive plant species
- Invasive species control
- GIS data entry
- Infrastructure maintenance and repair projects

If you are interested in volunteering and making a lasting impact on the Bog and its surroundings, please contact: Jim Ellis, Chairperson FOCB Stewardship Committee, 920-207-3801, Papajim66@gmail.com or Tyler Betry, Manager, Bog Guardian Program 414 303-1670 bogguardian@bogfriends.org



BOGHAUNTER

In the spring of 2006, I invented the BogHaunter for the newly-fledged Friends of the Cedarburg Bog; it mixed accounts of the Friends doings with a liberal dose of stories about the natural history of this magical place – the Cedarburg Bog. The Bog is my church and my shrink, and I've enjoyed sharing some of its secrets. But, thirteen years as editor is, as my Dad used to say, "sufficient," so I'm handing the reins of the newsletter to someone else, to chronicle the organization as it moves forward. Stay tuned.

*Kate Redmond, Newsletter Editor,
Founding Board Member*

RE-MEMBER

As we look to another successful year of activity, conservation, and learning, the FOCB wishes to offer thanks to our loyal members.

We had an exciting year with several new initiatives. Our board met at a retreat in February, and as a result has created a long range strategic plan. This plan has created a way to look at our accomplishments, our needs and our resources to better position ourselves for the years ahead. We have also continued to expand the Bog Guardian program which seeks to identify and eradicate invasive plants through contact with and education of local homeowners.

None of this would be possible without the support of our members. In addition to our new initiatives, your annual dues and donations allow us to continue to sponsor Bog events and educational classes for hundreds of people, and to pay administrative expenses like our website and database costs. Your generosity makes it possible for us to employ a part-time administrative assistant to keep you advised of Bog activities through emails, our website, and Facebook. We publish this quarterly newsletter, financially support research efforts to better understand the Bog environs, and we undertake projects to protect the unique ecosystem that is the Bog.

Please renew your \$25 membership when you get our email or letter and consider adding a donation. Renewal is a breeze through our website, www.bogfriends.org. Annual dues and ad-

ditional donations can be paid online through Pay Pal, with either a Pay Pal account or a major credit card. OR - put a check in the self-addressed return envelope we'll be sending you in November. Without your support, we cannot accomplish the tasks and initiatives to sustain our stewardship of the Bog. Thank you!

*Peg Edquist & Terri Haas,
Communication/Membership Chairs*

CELEBRATE THE BOG WITH US!

Come one, come all!

There is something for everyone at the Cedarburg Bog Celebration Festival on Sunday, October 7. Tractor-driven hayrides, reptiles and amphibians up close and friendly enough to be handled by children(!), live folk and country music by Matt Harvey & Friends, guided bog walks -- all of which ends with a potluck dinner around the campfire with burgers, brats, and beverages provided.

Bring your families and friends and join in at our annual Bog Fest!

Event schedule:

7 - 8:30 AM: Guided Bird Walk into the Bog

1 - 4:30 PM: Tractor-driven Hayrides (ongoing)

1:30 - 4:30 PM: Live Folk and Country Music by Matt Harvey and Friends

2:00 PM: Guided Walk into the Bog or the Upland Woods

2 - 3:30 PM: Wildlife Biologist Randy Hetzel & his cold-blooded Friends

3:30 PM: Walk into the Bog

5:30 PM: Potluck Supper

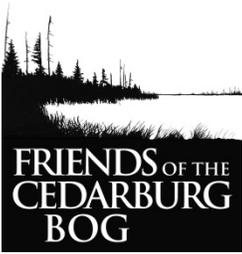
We will supply brats, burgers, and beverages.

Join us for all or part of the day!

Please bring a dessert or a side dish to share.

RSVP at bogfriends.org/events/event-registration, send an email to fieldstn@uwm.edu, or call 262-675-6844.

PLEASE, NO PETS ALLOWED



UWM Field Station
3095 Blue Goose Road
Saukville, WI 53080

ADDRESS SERVICE REQUESTED

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FRIENDS EVENTS

Unless otherwise noted, walks meet at the UWM Field Station on Blue Goose Rd. Space is limited, so please register. To register, visit bogfriends.org (click on Events). Walks are free and open to the public; a \$5 donation is appreciated. Questions? Contact (262) 675-6844 or fieldstn@uwm.edu. Please, No Pets.

Quarterly Board Meeting

October 18, 6:00 to 8:00 PM

UWM Field Station
Members Welcome

Stargazing at the Bog

October 5, 7:30 PM (Rain/overcast date:
October 12, 7:30 PM)

Join us for an evening of stargazing with the Northern Cross Science Foundation. We hope to see planets and other celestial sights. Bring binoculars if you have some.

Fall Bird Walk

October 7, 7:00 AM

Migration isn't over yet! Grab some binoculars and join John O'Donnell to search for migrants and identify the Bog's winter residents.

Celebrate the Cedarburg Bog Fall Potluck

October 7, 7:30 to 8:00 AM and 1:00 to 7:00 PM

See information on page 3 of this newsletter.



White ash leaves

Bird Banding at the Bog

October 13, 8:00 to 11:00 AM,
weather permitting

Join Friends president Tim Vargo and the UEC banding team as they catch and band songbirds.

Owl Prowl

November 16, 7:00 to 8:30 PM

Some species of owls are migratory, and some are year-round residents. We hope to find some of each. Bring a flashlight and some binoculars if you have them, and dress for outside.

EVENTS ELSEWHERE

See the Treasures of Oz website treasuresofoz.org and the websites of our partner organizations for more details about these and many other events.

Noel J. Cutright Bird Club

First Tuesday of the month except Dec.,
7:00 PM

At Riveredge Nature Center.
Free and open to the public.

Seed Gathering

October 6 and 14, noon-3pm
(*weather-dependent*)

Lend a hand in collecting seed of assigned plants to fill Mequon Nature Preserve's gorgeous prairies. No experience necessary, and a perfect outing for the entire family.
RSVP: jnickels@mequonnaturepreserve.org.

Science for Everyone

Third Tuesday of the month, 7 to 8:15 PM

Programs on natural history, science, public policy, and the environment. Riveredge Nature Cntr hosts the odd months and Lac Lawrann Conservancy hosts the even months.

Free, \$5 donation appreciated.

Southeastern Wisconsin Conservation Summit

November 2nd and 3rd

What's happening in the worlds of ecological research and restoration? Hear reports on far-ranging topics by the people in the field – land trusts, consultants, landowners, county government, nature centers, faculty, students, and others. Lunch is available with registration fee <https://wglbbo.org/what-we-do/swcs>.

Riveredge Student Symposium

Nov. 10th 8:00 AM to 4:00 PM

A celebration of student researchers and an opportunity to stay up-to-date on conservation research. Undergraduate and graduate students present their research in oral and poster presentations on a variety of biological and ecology-related studies. The general public is invited to register and attend.
Fee: \$25 for students & \$35 non-members (prices include lunch)

Between the Lawn and the Wild

November 14, 1 to 4:00 p.m.

Time to rethink the lawn! Join the Southeastern Wisconsin Invasive Species Consortium (SEWISC) at its Educational Symposium at Havenwoods State Forest. Free and open to the public.