



The Friends of
Pheasant Branch
Conservancy

Winter 2023 Newsletter

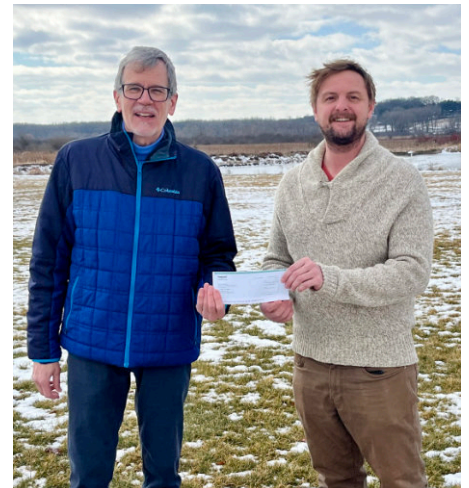
Jim Struve Donates a Second \$25,000 to “Seed the Need” Campaign

By Lois Sater, Development and Marketing Committee Chair and Board Member

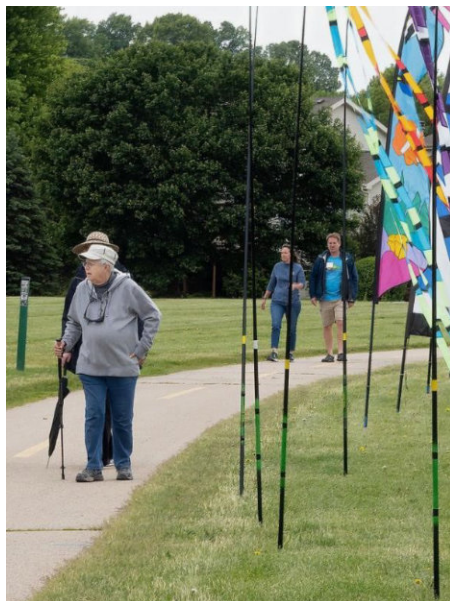
The Friends of Pheasant Branch Conservancy are in the midst of a four-year “Seed the Need” campaign to fund the planting of a

“Platinum Prairie” on the 160-acre addition to the Conservancy purchased by Dane County in 2019. The Clean Lakes Alliance (CLA) received a \$100,000 matching donation from the Alliant Energy Foundation to help restore the former farmland to prairie and wetlands. In 2020 and 2021, the Friends joined forces with Dane County and CLA to raise a matching \$25,000 per year through generous donations from the community.

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Jim Struve and Hans Hilbert



Enjoying the trails at the 2022 event

A Celebration of Trails on June 24, 2023

By Pete Witucki, Board Vice President, Prairie Chase Coordinator, Accessibility and Use Committee Chair

Our two June trail-centric events, Prairie Chase Run/Walk and Trails Day, are teaming up on June 24th for an all-day celebration of the trails of Pheasant Branch Conservancy!

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The Friends of
Pheasant Branch
Conservancy

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Photos

*Gary Sater, Michael Knapstein,
Chris Kubiak, Deb Weitzel, Cayla
Matte, John Daly, Rob Schubert,
Hans Hilbert*

Newsletter Editor

Stefanie Brouwer

Design/Layout

Chris Kubiak

From the Co-Presidents

Dear Friends,

We hope the New Year finds you well and enjoying winter in the Conservancy or wherever your travels take you.

Thanks to over 100 members who participated in our virtual Annual Membership Meeting on January 7. We reported on notable accomplishments of the past year, the healthy state of our finances, and the programs and activities of our committees and volunteers. Rick Eilertson was newly elected to the Board of Directors. A civil and environmental engineer by training, Rick is a longtime member of our Watershed Committee and an active Friends volunteer. We look forward to tapping his expertise and enthusiasm for the natural world. A roster of 2023 board members and officers is available at pheasantbranch.org/about/board-of-directors. Notably, Board Member Mark Warshauer will now serve as Secretary.

Our annual meeting featured keynote speaker Christopher Kilgour, founder of Color in the Outdoors, an organization dedicated to making the outdoors more accessible to marginalized communities, including individuals with different abilities and those who are LGBTQ+ or Black, Indigenous and People of Color (BIPOC). Color in the Outdoors seeks to actively include everyone in the outdoors, from wilderness adventures to exploring nature in the backyard.

Chris urged us to consider why it is beneficial to engage underserved folks in the outdoors and how to offset practical limitations to accessing the outdoors, such as a lack of warm clothing and boots for young people.

The mission of Color in the Outdoors squares with the Friends' 2021-2025 Strategic Plan, which states that our organization must be open and accessible to all members of the community and that we will achieve our greatest successes when our organization represents this entire community. Our Board's Accessibility & Use Committee will continue to develop, implement and evaluate programs designed to engage various underserved populations in the health benefits of being outside.

We look forward to further dialogue and collaboration with Chris Kilgour and Color in the Outdoors to advance our mutual goals.

Feel free to drop us an email anytime with questions or concerns.

See you on the trails,

Pam & Hans

Co-Presidents
copresidents@pheasantbranch.org



Middleton High Students Enjoy Bio-Service Day

By Deb Weitzel, Education Committee Chair

Close your eyes and try to imagine 635 Middleton High School (MHS) freshmen biology students doing service work over two days in October at Pheasant Branch Conservancy (PBC), Holy Wisdom Monastery (HWM) or Governor Nelson State Park (GNSP). Imagine sunny days, warm temperatures, and lush prairie plants bearing seeds ripe for collecting. Try to imagine a cacophony of excited student voices. This scene unfolded at the county unit of the Conservancy and Holy Wisdom Monastery while students learned the names of new plants and techniques for harvesting their seeds. Seeds are precious; in fact, one Wisconsin seed company advertises oxeye sunflower seeds at \$120/lb. and showy goldenrod at



9th grade students clearing invasives

\$600/lb. Both species are found at Pheasant Branch Conservancy. The seeds collected by the students for the county are cleaned and used at prairies across Dane County. To date, more than 120 acres have been restored to upland prairie at HWM with donated seed or seed collected by volunteers and college interns.

If your eyes are still closed, now try to picture students with loppers cutting and hauling buckthorn from the hillside above Pheasant Branch

Creek near Middleton High School. Boys challenging other boys to cut the biggest stems. Girls working alongside their friends to out compete their male counterparts. Kids grabbing cut invasive brush and piling the stems on ten-foot mountains for burning at Governor Nelson State Park. The adage that “many hands make for light work” was on full display when students did their task in less than an hour.

Ninth grade teacher Dan Drangstveit remarked, “This activity is one that students remember as a highlight of freshman biology.” “Many hands” also describe the organizers of this massive undertaking. Many thanks to the MHS biology teachers for providing their students with this outdoor opportunity. Accolades go to the partners who organized activities on area properties: Mark Wegner, City of Middleton Assistant Director for Conservancy and Forestry; Rob Schubert, Dane

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Membership/Donation Form



Name: _____
 Street: _____
 City, State, Zip: _____
 Phone: _____
 Email: _____

Membership Level:

Memberships purchased after 9/1 apply to following calendar year

- \$10 Student
- \$25 Individual
- \$40 Family

Volunteer Opportunities:

- Restoration
- Education
- Watershed
- Development & Marketing
- Special Events (such as Prairie Chase Run/Walk)
- Board Member

Additional Giving Opportunities

- \$_____ Unrestricted – use where needed most
- \$_____ Glen & Joan Pulver Education Endowment
- \$_____ Restoration Endowment
- \$_____ Seed the Need

Send this membership form and payment to:

Friends of Pheasant Branch Conservancy, Inc
 P.O. Box 628242
 Middleton, WI 53562

For charitable IRA donations or legacy giving, please use our legal name, PO Box address and Tax ID# 39-1838491

Three Years of Bird Monitoring in Pheasant Branch Conservancy

By Janet Kane, Restoration & Management Committee Member

In 2018, birders expressed concerns about observed declines in grassland birds in the restored prairies at Pheasant Branch Conservancy. The Friends worked with the Dane County Parks Department to make several changes: (1) Publicize regulations about leashing dogs in the Conservancy; (2) Post signs about grassland bird nesting ; and (3) Close trails that weren't part of the master plan. Several participants in the Friends 2019 Master Naturalist class designed monitoring projects to evaluate the changes, with a focus on 9 grassland and savannah species.

In 2020, monitors regularly surveyed the restored prairie area bordered by the multi-use trail and the trail up Pheasant Branch Hill. In 2021, the monitored area was expanded to include the newly-acquired 160 acres, and in 2022 the area east of the hill was added because of trail changes.

After each survey, monitors report all birds they observed in an eBird checklist, contributing to a treasure trove of over 100 species observed between mid-April and early September.

Monitors raised questions about the adequacy of available habitat for the target species. Nesting habitat has many components. Habitat fragmentation has caused declines in many grassland species. Studies show that continuous habitat supports more birds and more bird species than an equivalent area of disconnected tracts. Birds also vary in vegetation preferences like height, density,

litter layer, and percent of shrubs. Prairie management activities are transforming some areas to attract specific species.

The table summarizes the findings to date. eBird recommends using Average Observations per Checklist in year-to-year comparisons. The table shows that 5 target species made gains from 2020 to 2022. The area monitored in 2022 was larger than 2020 but size isn't the only difference. The many Dickcissels and Savannah Sparrows in 2021 nested in fields on the new parcel rather than in the restored prairies. In 2022, many Dickcissels and Savannah Sparrows again nested in the farm fields, but some were observed in the restored prairie, especially after late July mowing on the new parcel.

There are more hopeful signs. While Eastern Meadowlark numbers aren't large, they are growing. The decline of 2021 may have resulted from landscaping projects on the new parcel. Sedge Wren numbers fell in 2021 because of casualties from late winter storms in the Southeast where they over-winter. Now they're rebounding. Willow Flycatchers are doing well. The 4 remaining sparrow species haven't increased, but a few individuals have stopped by while migrating. Besides providing nesting habitat, the Conservancy is important as a refuge during migration.

Observations over 3 years support the 2019 changes and the additional habitat of the new parcel. We're looking forward to another year of monitoring, especially as the recently-seeded prairies fill in. If you have questions, please email office@pheasantbranch.org.

Number of Checklists (Lists) and Average Observations per Checklist (Avg) for 9 Target Species, 2020-2022

Note: Averages are computed for species on 5 or more checklists.

	2020		2021		2022	
	Lists	Avg	Lists	Avg	Lists	Avg
Clay-colored Sparrow	1	-	1	-	1	-
Dickcissel	1	-	19	3.26	35	8.34
Eastern Meadowlark	12	1.85	7	1.00	31	2.03
Grasshopper Sparrow	6	-	0	-	0	-
Henslow's Sparrow	1	-	0	-	0	-
Savannah Sparrow	0	-	13	5.30	46	7.17
Sedge Wren	45	2.45	6	1.17	11	2.82
Vesper Sparrow	0	-	0	-	2	-
Willow Flycatcher	45	3.98	35	3.46	38	4.05

Hydrology for 8th Graders

By Cayla Matte, Education Coordinator

If you were out and about in the Conservancy in October 2022, you probably saw A LOT of kids up at the Homestead Site! In an effort to regain normalcy post-COVID with our educational field trips, we planned a brand-new field trip with the 8th grade science classes at Kromrey Middle School to learn about hydrology. What a beautiful sight to see students using the Conservancy as a science laboratory again! The idea started off as a Master Naturalist project from 8th Grade teacher Maria Pittner and quickly turned into 300 students coming to the Conservancy to learn about the springs, soil types, the Pheasant Branch Watershed, infiltration,



Tom Bernthal working with students

water resources, and seed collecting. Education Chair and board member Deb Weitzel lead students in identifying prairie plants during the seed collection portion of the field trip. Restoration & Management Committee member Tom Bernthal showed students soil samples and discussed soil types

found in the Conservancy. Students used PVC pipe setups to study infiltration rates in various areas of the Conservancy to learn how water flows in different soil types and substrates.

Wisconsin weather can be incredibly unpredictable in October so, on the first day, students had a much colder start and dealt with water buckets freezing, while the next day was bright and filled with sunshine. The students were troopers and managed to find the fun in the field trip as well as fill many bags of prairie seed to be brought to Dane County Parks for processing. Naturalists were happy to be out in the fresh air seeing the smiling faces of the students as they got to do hands-on activities and learn more in depth about the Pheasant Branch Watershed. We look forward to continuing this field trip for years to come!

Trails Celebration

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prairie chase
pheasant branch conservancy

8 AM – 11:30 AM

We will get off on the right foot first thing in the morning with the 9th annual Prairie Chase 5K/10K. The 5K route takes participants around the main crushed limestone path through the Conservancy. This

route is great for runners looking for a flat and fast course, and is friendly terrain for walkers and jogging strollers. The 10K route will explore less-frequented corners of the Conservancy, with a point of finding all the hills, and in 2023 will include trails in Dane County's newly restored northern parcel. As usual, the post-run celebration will include a free kids run, refreshments, and live music. Learn more and register at prairiechase.org.

12:30 PM – 3:30 PM

We'll keep the celebration going into the afternoon with our second annual Pheasant Branch Conservancy Trails Day. Family-friendly, inclusive activities include

the Madison Reading Project's Big Red Book Bus, Pollinator Week info and activities, kite-flying demonstrations, and hands-on nature exploration and crafts. All will be located at Orchid Heights Park. Naturalists will be leading short nature hikes from Orchid Heights to the Pheasant Branch Springs, up Pheasant Branch Hill, and along the new Listening Trail. Access Ability Wisconsin will facilitate access to the trail via their all-terrain wheelchair. We hope you can join us for some or all of our Celebration of Trails!

For a complete schedule and list of all our partners, watch our events page at pheasantbranch.org/events.

Farewell to Cayla Matte

By Deb Weitzel, Education Comm. Chair and Board Member

We are sad to say goodbye to Cayla Matte who has been the Friends Education Coordinator for the past year. She has taken on a myriad of duties to further environmental education in and around Pheasant Branch Conservancy: field trips involving 600+ ninth graders doing service; 600+ sixth graders learning about and restoring Kromrey's rain gardens; 600+ eighth graders experiencing hydrology in action. In addition, she has organized and planned Conservancy Days, activities for seniors, National Trails Day and more. Cayla tackled all these duties and more with expertise and efficiency. While we are sad to see her go, we wish her well in her new job at the Sand County Foundation.

Bio-Service Day

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County PBC land manager; Amy Alstad, Director of Land Management and Environmental Education at HWM; and Michael Ring, Park Manager at GNSP. Kudos to Cayla Matte, FOPBC Education Coordinator, who organized all the volunteer naturalists to work with the students. And finally, a big thank you to MCPASD Transportation who found drivers, in the midst of severe bus driver shortages, to deliver students to their work sites and back to school.

Winter Restoration Update

By Rob Schubert, Pheasant Branch Conservancy Land Manager

Ecological land management follows the rhythm of the changing year; for each season there are tasks assigned. Winter is a time to reflect on the past year and prepare for the next, while seeds undergo cold stratification in advance of spring germination. Over the past few years winter has been a time to march out into the frozen wetland and cut back the encroaching shrubs to reveal the diversity of the sedge meadow hidden beneath. This has been a time to work together, spend time outdoors, and cook brats and s'mores over the glowing coals of what had been encroaching brush.



Lake Huron Orchid

Tremendous progress has been made removing invasive brush from the sedge meadow over the past few years. Effort from volunteers, weeks of Operation Fresh Start working in often adverse winter conditions, and no small sum of money to pay contractors to clear invasive brush from the most daunting and least accessible areas of the wetland have left a visible change.

This change is more than aesthetic. Removing encroaching brush has expanded the areas of high-quality remnant sedge meadow, revealed plant species not previously documented at the Pheasant Branch Conservancy (i.e., the Lake Huron Orchid,) improved conditions for prescribed fire, and improved critical habitat for wildlife species dependent on the Pheasant Branch wetlands. For more on the benefits of brush removal see article on page 10.

This winter we and our partners have focused on priority restoration areas that have not previously seen much effort. City of Middleton Conservancy Lands staff and Adaptive Restoration have made progress toward achieving our winter invasive brush removal goals. Work in the city section has involved clearing invasive brush and building piles to be burned later this winter. This effort creates a greater connectivity between wetland and upland habitat that is vital for many species. Additional shrub removal has been contracted with Quercus Land Stewardship Services. This effort will focus on removing non-native invasive brush such as buckthorn and honeysuckle from additional sedge-meadow and shrub-carr communities.

The Conservancy wetlands have witnessed historic and important change in the past few years. I think back to all the cold days, the number of volunteers that have come out to help, and geese flying low over-head in the early evening as they are coming home to roost in the marsh. I'm looking forward to seeing the progress made this winter and the resultant change over the next growing season!



Dane County High School Climate Action Conference

By Deb Weitzel, Education Comm. Chair and Board Member

We are in the middle of a climate crisis. As an organization that works to promote, restore, and protect the Pheasant Branch Conservancy, the Friends work to expand upon these concepts and acknowledge conservation and sustainability as a whole. The Education Committee works to shape the minds of the next conservation-minded generation because it not only benefits the Conservancy, but wherever and wherever those students put their minds and hearts to. In November, the Friends were invited to have a table at the Dane County High School Climate Action Conference at the Alliant Energy Center. With over 20+ high schools represented and several opportunities for students to showcase their thoughts on the climate crisis, it is safe to assume that these students are going to make a difference.

Signs were hung throughout the conference to measure what students felt about climate impact and how it affects them

personally. It was clear that these students realize that climate change is and will continue to impact their lives, and they want to do something about it. The conference itself was started by Middleton High graduate Daphne Wu, who has now gone on to Yale to continue her fight for sustainability, and established a legacy among students who also wish to take control of their future. There were various leaders in the sustainability community to share insight, but most importantly create discussion and establish new forms of environmental communication among peers. Continuing next year, the entire conference will be driven by the students themselves as they continue to inspire their classmates, families, and affiliate organizations/partnerships that share the same fight. Education Committee members who represented the FOPBC table were awestruck at the determination of some of the students to find a way to make their mark in this battle for combating climate change. Seeing the students reinforces the determination that we, as an organization, have to be accountable for our actions in restoration and education.

Jim Struve

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At the end of 2021, member Jim Struve notified the Friends that he would like to donate \$25,000 to Seed the Need for 2022. Now Jim intends to make a second donation of \$25,000 to Seed the Need for 2023! Jim is a resident of North Lake subdivision in Middleton, near the Conservancy. He became aware of the investment Dane County was making to transform this former farmland into a high-quality restored platinum prairie, whose numerous and diverse species with deep root systems enhance water infiltration and groundwater recharge. He could see the benefits of this transformation and wanted to support it. He especially liked the fact that establishing a platinum prairie at Pheasant Branch Conservancy would provide a high-quality seed collection source for future prairie restoration on other Dane County properties.

Jim is a retired IT infrastructure director for WEA Insurance Trust. His contributions come from his investments as part of a charitable Required Minimum Distribution (RMD). Jim hopes that his gifts inspire others to consider supporting causes like this. The Friends, Dane County Parks, and Clean Lakes Alliance are enormously grateful that Jim Struve envisioned all of the benefits that come from the creation of a platinum prairie and contributed in this incredibly generous manner.

In Memoriam: Connie Threinen and Jane Maher

By Pam Shannon, Board Co-President

Last autumn, we lost two stalwart members of the Friends — Connie Threinen and Jane Maher. The two were next door neighbors in Middleton and friends for over 60 years.



Connie Threinen

Connie Threinen (born Constance Fuller) grew up in Lexington, Massachusetts and came to the University of Wisconsin to complete her degree in Economics.

She married Kenosha native Bill Threinen, a fisheries specialist at DNR, and they settled in Middleton, where both were active in civic affairs. Connie was a member of the Middleton Conservation Committee, a citizen group formed in 1965 to advocate for a reduction in Pheasant Branch Creek channel erosion and sediment deposits into Lake Mendota. The Committee assisted in acquiring easements to stabilize the channel and securing funds to purchase parcels of land to establish Pheasant Branch Conservancy. Connie and Bill were generous supporters of the Conservancy and founding members of the Friends.



Jane Maher

Jane Maher (born Elizabeth Jane Crawford) was a native of Iowa City, Iowa and a graduate of the University of Iowa with a degree in History and an advanced degree in Modern European History from the University of Minnesota. Her late husband, Lou Maher, was a geology professor at UW-Madison, who served on the Friends board and provided expert assistance about geological features of the Conservancy. Jane was active in the League of Women Voters and covered city government for the Middleton Times Tribune. She and Lou were early, active supporters of the Conservancy and longtime members of the Friends.

Master Naturalist Training Gains Popularity

By Colleen Robinson, Friends Master Naturalist Coordinator and Deb Weitzel, Education Committee Chair and Board Member

The Friend's Master Naturalist training program for 2023 filled quickly on January 9th, leaving many hopeful applicants on the wait-list for next year. Our program is increasingly popular, attesting to the skill of our course development team, our presenters and the range of experiences offered. The Friends' development team includes Colleen Robinson, Tom Bernthal, Janet Kane and Deb Weitzel and this year's dates are June 9-10, 16-17 and July



7-8. For those who didn't get a spot, there are other trainings in the Madison area such as FUN at Warner Park (Friends of Urban Nature), UW-Arboretum, and the Prairie Enthusiasts. Annually 20 Master Naturalist trainings are held across the state and their locations, dates, and schedules vary. To check out other opportunities go to wimasternaturalist.org/trainings/volunteer-training.

Our program focuses on the Pheasant Branch Conservancy and its watershed. We approach the full curriculum through a lens of water and explore the eutrophication of Madison lakes and remediation efforts centered on prairies. We use the Conservancy property to look at groundwater, surface water, and restoration management, education and outreach efforts, programming opportunities, plant, animal, and insect populations, policies, and multiple use challenges, benefits, and partnerships.

The Wisconsin Master Naturalist Program is a statewide effort to promote awareness, understanding, and stewardship of the state's natural resources. Please email info@wimasternaturalist.org or call 608-262-0020 to learn more.

Utilizing Drone Imaging in Restoring and Managing Pheasant Branch Conservancy

By Gary Sater, Restoration & Management Committee Co-Chair and Board Member

Restoring land involves cleaning up and rehabilitating with natural species land areas that have sustained environmental degradation by either natural causes or human activity. Once restoration has begun, managing those lands can include continued work to enhance both natural species and their habitat. Within Pheasant Branch Conservancy we are currently focusing on both. In the existing 500-plus acres we are using prescribed burns, mowing, invasive species removal and herbicidal treatments, as well as watershed management and erosion control. In the new 160-acre addition on the north side we have both ongoing restoration from previous agricultural use (e.g., tilling of the land and farm animal use) and management of 80 acres that have been recently planted in native seeds (“Seed the Need” campaign.)

A few years ago, I was asked by both our Natural Lands Manager Rob Schubert and our resident wetlands expert Tom Bernthal to consider using my drone imaging for our land restoration and management activities. So, after a brief discussion with Dane County Parks staff I began to fly my drone, a DJI Mavic Mini, to obtain aerial



Drone photo showing Frederick's Hill after a prescribed burn

still and video images to facilitate our restoration and management efforts. Previously, I had only used drone imaging for the Friends for educational, promotional and fundraising activities. Some of those images and videos can be found on our website or Facebook page if you're interested. I was excited to offer up this imaging resource for new purposes. As Co-Chair of R&M for the Friends, I also have special and personal interest in adding this resource.

To date, I have used drone still imaging primarily for two natural lands management activities: pre- and post-prescribed burns and pre- and post-invasive species removal, within our wetlands restoration and management activities and to document our AIS (Invasive Species) Grant. I've also taken some video shots of prescribed burns so Rob can actually watch the manner in which the ignition and ongoing burning has proceeded. Both Rob and Tom have guided me in which types of images from the drone perspective are most useful. This includes not only what land areas they want imaged, but also from what altitude they would like the imaging taken. At times they have gone out in the field with me and looked at the camera view from the

drone to guide these decisions. I also recently gave a Conservation Days talk for the Friends at the Middleton Public Library and was fortunate to have Rob and Tom there for a more detailed presentation on how we are using this technology in our R&M work for the Friends.

A quick note is in order on the delicacy of using drones in PBC. I have been very careful to fly the drone from areas where there aren't many, if any, PBC users present. I do not want to interrupt or disturb others. Flying a drone in any Dane County park or natural area is prohibited except for special projects or uses approved by the Dane County Parks Director. I also tell anyone passing by what I am doing and make it clear it is for "official" Friends activities. Each time I fly my DJI drone I accept an online warning that I am about to fly near the city airport and that I am aware of those restrictions on altitude and nearness. Lastly, when I fly, I always gain altitude first and then lateral movement. I do this for safety and politeness purposes so that no one is startled by the drone or bothered by the sounds in a place such as PBC. It is truly a very special place indeed.

Upcoming Education Events

Conservancy Days

Please see pheasantbranch.org for event registration info.

Dave Ropa – Spring Harbor Middle School/Greenhouse Coordinator: Building a Sustainable School Yard - Using the natural world to engage youth

Wednesday March 15th, 6:00 PM
Middleton Public Library

Kaitlin Svabek – Madison Audubon Society:

Accessibility in Birding

Wednesday May 17th, 6:00 PM
Middleton Public Library

FUN (Friends of Urban Nature)

FUN events occur on the 4th Saturdays of the month, 1:30-3:00 PM. No need to register. Location is 4864 Pheasant Branch Rd parking lot.

“Pheasant Branch Ecosystems” with Master Naturalist

Eva Roos

Saturday February 25th

“Spring Solstice Walk” with Master Naturalists Eva Roos and Lynn Persson

Saturday March 25th

“Signs of Spring” with Master Naturalist JoAnn Riecke

Saturday April 22nd

“Magic of Feathers” with Master Naturalist Kacy Zander

Saturday May 27th

Brush Removal Efforts at the Conservancy

By Rob Schubert, Pheasant Branch Conservancy Land Manager

Maintaining a mix of sedge meadow and shrub-carr dominated by native species is a primary goal for the management of the Conservancy wetlands. Brush removal efforts are critical to that goal for four reasons.



Invasive brush removal makes way for return of native species

Protecting an Important Natural Community Type

Southern sedge meadow is a vulnerable natural community type due to its recent decline and limited remaining examples. The remnant sedge meadow at the Conservancy is a high-quality example of this important natural community. Encroaching shrubs are removed from sedge meadow areas of the wetland in an effort to help protect this important habitat and the species dependent on its existence.

Controlling Invasive Species

Many of the shrubs being removed are non-native invasive species. These are species that have been introduced to this region with resulting ecological harm. The most abundant invasive shrub species at the Conservancy are common buckthorn (*Rhamnus cathartica*) and bush honeysuckle (*Lonicera* sp.). Invasive species are being removed from priority restoration areas in order to promote species diversity at the Conservancy.

Promoting Habitat Diversity

Encroaching brush is removed from high-quality sedge meadow areas while dense thickets of native shrubs known as shrub-carr are maintained. This promotes species diversity through maintaining different habitat types.

Reintroducing Prescribed Fire

Fire was once a common occurrence across southern Wisconsin. Mostly set by indigenous peoples, fire shaped the landscape and created the 'shifting mosaic' or 'kaleidoscope' of natural communities formerly common to the region. Sedge meadows are dependent on fire and the use of fire helps promote species diversity and discourage invasive plant species. Dense shrub cover hinders the movement of fire and hinders the growth of the grasses, sedges, and forbs that both facilitate regular prescribed burning and are dependent on fire as a disturbance event. Reintroducing prescribed fire is an important and necessary tool for promoting species diversity at the Conservancy.

The Lowdown on the Prairie

Pondering the Prairie Series by David Sollenberger, Ecologist Reprinted from Chicago Botanic Garden with permission

Life in the prairie in the middle of winter is fairly uneventful; at least for humans who focus primarily on life above ground. Perhaps now is a good time to reflect on the diversity of life in a prairie below ground.

All one has to do is drive across the Midwest and view the unending and, to many, boring, miles of corn and soybean fields to understand the impact of prairie life underground has had on the prosperity of this nation. The root mass in a prairie is more than double the shoot mass above ground. For thousands of years, the death and regeneration of roots and organisms that interact with them have developed an amazingly fertile soil that has been exploited by agriculture to such a degree that very little original tallgrass prairie has survived.

The biodiversity of the soil ecosystem of a prairie equals that above ground and its biomass exceeds it. Much of that biomass is very small to microscopic. Soil microorganisms such as nematodes, fungi, bacteria, and microarthropods occur in abundance.

A common and important fungal inhabitant of the prairie soil is endomycorrhizal fungi. These organisms, which colonize root cells of the plant, engage in a symbiotic relationship with the roots of many prairie plant species—"symbiotic," meaning both

organisms benefit from the relationship.

For the prairie plants, the fungi develops a network of very fine hyphae that spread through soil and extract water and nutrients—phosphorus in particular—in areas of the soil where prairie roots cannot penetrate. The fungi share these resources with the plant in exchange for energy-giving sugars produced by green plants through photosynthesis that are utilized by the fungus to grow and reproduce. It's a win-win for both organisms.



It is important to understand that the soil beneath a prairie is a living, breathing community. The air and water that drive life in the prairie above is also just as important to the soil ecosystem. Soils of the prairie are composed of crumbs called aggregates. These aggregates allow infiltration air and water into the soil. If you think of an inflatable children's playhouse filled with colorful balls in which children can easily breathe when burrowing beneath the surface, you get a sense of how air can be transferred underground to support its biological inhabitants; especially where soil aggregates are abundant. Compared to life above ground, the volume of air is reduced but is plentiful for tiny soil organisms.

When temperatures drop below freezing during the winter months the majority of prairie plants, which are mostly perennial, abandon their life above ground for the more moderate environment beneath the surface. Despite its moderating effects on temperatures, soils still freeze in the upper Midwest; the depth of freezing depends on the degree of mulch and snow cover.

The same extensive root systems of most prairie plants that are so efficient at extracting water and nutrients in the growing season take on a different role during the winter. In the fall, prairie roots become acclimated to the cold. Sugars created by photosynthesis of summer vegetation and nutrients extracted by roots hairs and associated mycorrhizal fungi are stored in coarse roots and underground stem structures such as rhizomes, bulbs, corms, and tubers.

At the same time, much of the water inside root cells is moved outside the cells. The resulting concentration of sugars lowers the freezing point within the roots and underground stem structures. In addition, the removal of water from within the cells reduces the chance of ice crystal expansion, which could break through cell walls and kill the cells. Cold acclimation in plants also triggers physiological actions to strengthen cell membranes to resist damage from ice crystals that may form. When temperatures begin to rise again in the spring, water is reabsorbed by root cells, and the storage of sugars and minerals provides a pulse of energy to resume growth in the spring.



The Friends of Pheasant Branch Conservancy

PO Box 628242
Middleton, WI 53562

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February

25 Friends of Urban Nature (FUN): Pheasant Branch Ecosystems

March

15 Conservancy Day: Building a Sustainable School Yard

20 Board of Directors Meeting

25 Friends of Urban Nature (FUN): Spring Solstice Walk

April

1 Restoration Workday

15 Restoration Workday

17 Board of Directors Meeting

22 Friends of Urban Nature (FUN): Signs of Spring

May

6 Restoration Workday

15 Board of Directors Meeting

17 Conservancy Day: Madison Audubon Society: Accessibility in Birding

20 Restoration Workday

27 Friends of Urban Nature (FUN): Magic of Feathers