Beaver Creek Wetlands Association

Volume 37, Issue 2
Spring 2023

The Spotted Turtle

Photo by Dave Nolin

Pearl's Fen boasts this rare orchid called Shining Ladies'-tresses in late May.

Photo by David Goldstein

A Painted turtle hatchling warms itself on the Siebenthaler Fen boardwalk.

Photo by Mike Mushala

In early June, Baltimore Checkerspot Butterflies will appear in fens.

Photo by Mike Mushala

Red-headed Woodpeckers are unusual in that they will catch insects in the air. Their diet includes acorns and beech nuts, too.

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Spring in the Wetlands

CALENDAR

Please sign up to volunteer or attend these events. Visit beavercreekwetlands.org/event

April

Knollwood Garden Party Volunteer
Saturday, April 15
Details in our Volunteer Email Notice

Earth Day Cleanup
Friday, April 21, 11:00am – 1:00pm
See page 11 for details

Wetland Walk & Talk
Thursday, April 27, 10:00am – 12:00pm
Pearl's Fen

Vernal Pool Hike
Friday, April 28, 2:00pm – 4:00pm
Koogler Wetland/Prairie Reserve

May

Reptiles and Amphibians Hike
Friday, May 12, 2:00pm – 4:00pm
Koogler Wetland/Prairie Reserve

BCWA 35th Anniversary Celebration
Saturday, May 13, 5:00pm
See page 2 for details

Critter Hike
Saturday, May 20, 2:00pm – 4:00pm
Koogler Wetland/Prairie Reserve

Spring Flowers Hike
Saturday, May 27, 2:00pm – 4:00pm
Pearl's Fen

June

Fossil Hike
Saturday, June 3, 2:00pm – 4:00pm
Oakes Quarry

River Festival Booth
Saturday, June 10
Details to come

Pollinator Expo Booth
Wednesday, June 21, 10:00am–2:00pm
Wright Memorial, WPAFB

President's Message

Active Participation: The Key to 35 Years of Success

I recently received the Spring issue of the World Wildlife Fund magazine. WWF notes that the conservation successes that have occurred during the past couple of years share a unifying feature. That is, they depend on "engaged communities of people, actively participating in conservation."

Needless to say, that is exactly our model at BCWA. We are so proud of the work being accomplished to conserve our local wetlands and to provide opportunities for the public to enjoy and learn about those lands. Those successes would not be possible without out engaged community of partners, volunteers, and contributors.

We are excited about upcoming projects and programs, and we welcome, and thank you for, your continuing engagement with BCWA.

– David Goldstein

BCWA Board President

BCWA's 35th Anniversary Celebration

You're invited to celebrate 35 years of conservation in the Beaver Creek wetlands!

Holiday Inn
2800 Presidential Drive
Beavercreek, Ohio 45324

5:00pm Reception with Cash Bar
6:00pm Dinner
7:00pm Program and Speaker

Early bird ticket price is $35 until April 22, 2023. Tickets increase to $45 beginning April 23, 2023. Reservations required by May 7, 2023. Reserve your tickets online at beavercreekwetlands.org/annual-meeting or mail in the form below.

Keynote Speaker, Richard S. Phillips, PhD, Associate Professor of Biology at Wittenberg University
Historical records suggest spotted turtle populations used to be more common in Southwest Ohio. In his presentation, "Spotted Turtles In Southwest Ohio: What We Know and How We Know It," Dr. Phillips will compare historical distributions with current distributions and discuss life history characteristics and their importance in protecting the species. He will share current efforts to better understand spotted turtles in Southwest Ohio.

Musical Guest, Moroni Lane
Moroni Lane is a singer/songwriter from Dayton, Ohio with a vison of using music to uplift and unify humanity. Through his music, he promotes community, love, and consciousness. He will perform two conservation songs originally written and composed by Dave Nolin at the celebration.

A special thanks to our event sponsors UES and Holiday Inn!

Celebrating 50 UES Advancing the Future of Science and Technology

Holiday Inn AN IHG HOTEL

MAIL-IN RESERVATION FORM
Return to 1999 Dayton Xenia Rd., Beavercreek, Ohio 45432

Entrées served with a salad, dinner rolls, mixed vegetables, rosemary garlic redskin potatoes, dessert, coffee, tea, water. Please indicate the number of each meal type.

____ Vegetarian Portobello Stack w/ Spinach, Mozzarella and Tomato Basil
____ Grilled Chicken Breast w/ Tuscan Cream Sauce
____ Prime Rib (cooked medium rare to medium) w/ Au Jus and Horseradish Sauce

____ Total number of meals at $35 ($45 after 4/22/23) = $ _____

Yes! I'd like to be a sponsor to help BCWA offset costs.
____ $500 Queen of the Prairie Level
____ $250 Fringed Gentian Level
____ $100 Blue Flag Lily Level

$ _____ Total Enclosed (Make checks payable to BCWA)

Name(s) _____
Address _____
City/Zip _____ Phone _____
Email _____

Reflection on BCWA

It's been 35 years now since the formation of Beaver Creek Wetlands Association, a process that I was a part of. I was a young man then but can't say that anymore. Fortunately, BCWA is still a youthful non-profit that continues to protect, care for, and teach about the importance of our cherished wetlands.

I'm a conservationist by trade, so I tend to measure success by amount of land protected, the biodiversity of protected lands, and the effectiveness of stewardship on these lands to keep them in good health. By any account, BCWA has been successful at these. When the group started 35 years ago there were no protected lands, while today over 2,000 acres along the Beaver Creek are protected in parks, reserves, and private conservation easements. This achievement was made possible by contributions of time and money from our members, leadership from the board, and most importantly, the support of our numerous partners.

The wet places have been thriving here for at least 11,000 years, but the last 150 have been tough on them. Some were converted to agricultural use long ago. More recently, rapidly expanding residential and commercial developments have increased runoff and pollution going into the stream, and excessive pumping and/or contamination of groundwater from the life-giving aquifer are also ongoing threats. These things weaken the resiliency of natural systems, making them more vulnerable to invasion by non-native plants. Oceans once separated Earth's continents, and each evolved its own suite of plants and animals. Humans have shaken that barrier up like an old-fashioned snow globe, and unwanted species are constantly arriving and finding their way into the wetland corridor. Dealing with the massive problem is difficult, so BCWA, like everyone else, must pick its battles against invasive species. Our land management crews under the leadership of folks like Jim Amon, Jim Schneider, Skip Beehler and Debbie Karr have successfully managed invasive species in targeted sections of the wetlands for a long time. These are important successes, but in the long run, only the protection of the wetlands, an insulating buffer of undeveloped land around them, and the continuation of the cold, clean inputs of groundwater that the wetlands need will ensure that they continue to flourish.

Running a non-profit isn't just about biodiversity or managing invasive species, it's about money and support. For that reason, the board decided in 2017 to initiate a major project to lay out and open a trail system, Spotted Turtle Trail, that will connect the existing trails in the wetlands. To implement such an ambitious project, the board made the decision to hire an Executive Director to focus on fundraising, coordination with partners, and increasing awareness of our land trust. This was a roll of the dice that has paid off. Since taking the reins in 2021, Jacki Mayer has brought in $223,950 in grant funds, memberships have increased by 57% and engagement in the community has greatly increased. Jacki hired a new Administrative Coordinator, Shandah Brannen. Shandah and our Outreach Director, Beth Edsall, bring skill and dedication to this important organization. These three staff members, together with a dedicated and talented board, are enabling BCWA to go to another level of effectiveness and make its future bright.

– Dave Nolin

Fun Facts About Birds Found in Siebenthaler Fen

Photos by Mike Mushala

Left: A secretive bird, the Virginia Rail often stays hidden in vegetation, but its loud grunting may give away its presence.
Center: After grabbing a fish with its talons, during flight the Osprey shakes water off its feathers, similar to a dog.
Right: The male Spotted Sandpiper will fake a wing injury to lure a predator away from its nest or young.

In My Backyard – Actions for Individuals

Choose the Perfect Plant to Attract the Birds You Love

What is your favorite characteristic of birds? Is it beautiful coloring of the bold red cardinal or the sunshine yellow goldfinch? Is it the, "hey, sweetie" song of the chickadee, or the fast fluttering of a hummingbird? What if there is a way to see and hear your favorite birds in your own yard? There is! Audubon has a webpage to find the perfect plant for your yard that will attract the birds you love. And the plants are native to your location.

Go to https://www.audubon.org/native-plants and input your zip code to search for options. (Although there's a box to enter your email address, it is not necessary to search the site.) Once you are redirected to the page listing ideal plants for your location, you can begin to narrow your search. Each of the four search boxes allows multiple selections so you find exactly the plant you want.

- Choose the types of plants you want such as annuals, perennials, shrubs, trees, etc.
- Search by the resource types that plants offer like those that host caterpillars and butterflies, plants that bear fruit, etc.
- Choose specific birds or bird types you want to attract.
- Enter any keywords to further narrow your search.

As you sort through the options, you can create your own plant list, enter your email address and Audubon will email it to you.

"Native plants are the foundation of a region's biodiversity providing essential food sources and shelter for birds, especially those threatened by the changing climate. Since native plants are adapted to local precipitation and soil conditions, they generally require less upkeep, therefore helping the environment and saving you time, water, and money."

- Audubon

Once you decide on the plants you need for your yard, the site makes it easy to buy them. When you click on "Buy Now," you can purchase Audubon Native Plants or choose from a list of local nurseries that specializes in native plants.

Be sure to follow guidelines for planting and caring for your plants so they flourish in your yard. Then, enjoy the colors and sounds of the birds your yard attracts.

– Beth Edsall

Photo unattributed

Photo unattributed

Photo by Mike Abel

Photo by David Goldstein

Clockwise from top left: Carolina Chickadee, Northern Cardinal, Baltimore Oriole, White-breasted Nuthatch

Restoring Wetlands During Climate Change

Science has shown that restoration of forests, prairies, wetlands can help us remove the excess carbon dioxide (CO_2) humans have added to the atmosphere (Fig. 1). That excess CO_2 is warming our planet, causing severe weather events and damaging every ecosystem on Earth. Science based ecological restoration can be means of control of climate change. At the Beaver Creek Wetlands, we have an opportunity to restore wetlands and their associated habitats. How we do that is important, but in the face of climate change that becomes complicated. How do we proceed unless we know what to prepare for? Time is critical.

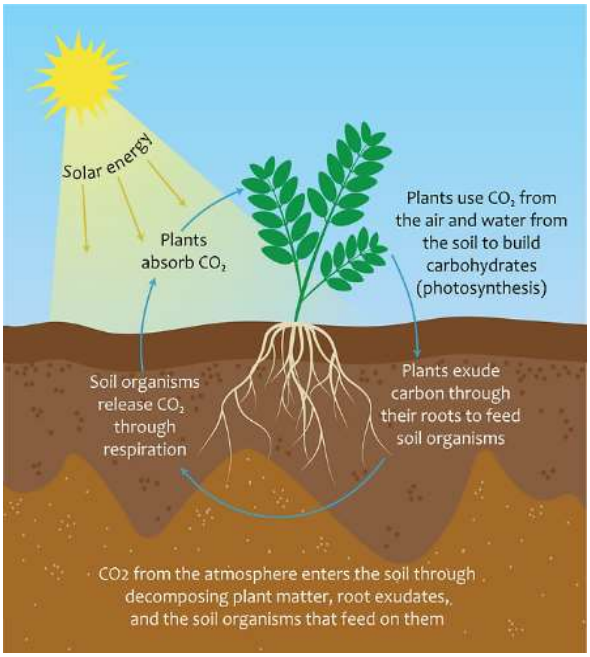


Figure 1: *In this diagram the amount of CO_2 released back to the atmosphere by decomposition is small compared to what was taken out. Most of that carbon from CO_2 becomes part of the soil. Both prairies and wetlands do that very well.*

Restoration means rebuilding habitats that were lost, most often to agriculture. Soil scientists can examine soils and working with botanists they can get a reasonable idea about what used to be present on a particular site. That is called "using reference wetlands". The problem is that climate models say that we will have different temperatures, the seasons will behave differently and moisture will not be the same as in the past. For the near future those changes will continue to occur, possibly over decades. If we plant with things that grow well now it is likely at least some of them will not grow well in the *changed climate*.

Fortunately, studies have shown what kinds of plants grow best in warmer or colder climates and which ones require wetter/ drier habitats and this info is readily available for wetland species. The biggest gap in our knowledge seems to be the details – how warm? or how wet? The recent extreme weather patterns we are seeing suggest we need to proceed with care. Data available suggests we can use plants from warmer regions if we expect warmer weather or we can use plants that can tolerate growing in both warm and cool regions. Likewise, we can use plants that are "Facultative" with regard to moisture needs. This means they can grow in wet or dry habitats. We may be able to find sites that are wetter now in a place to the south that is warmer and use seeds from them to grow what we need for restoration. Using seeds of those species that tolerate wide ranges of climate gathered from places where temperatures and moisture are already different means we are taking advantage of their genes that are preadapted to the changed climate. Unfortunately, many rare plants grow only in a narrow climatic zone. Collecting such seed from a variety of sites each with different present-day climate may help find some that are naturally adapted. To hedge their bets many organizations are collecting seeds of all kinds of plants so that we have some choices in our repair efforts.

For the next few decades, the weather will be in a state of constant change. Scientists will need to keep collecting seed and maintaining those seeds in special cold storage facilities. Meanwhile we need to get these restorations underway. Most of these habitats grow very deep- rooted communities of perennial that will store large amounts of excess CO_2 in the soil, peat and roots of these plants. These habitats make new soils providing more places to store the carbon from CO_2. Wouldn't it be nice to see the CO_2 levels in our air dropping for a change? It won't happen overnight, so we need to start now. If we can also stop using fossil fuels and eat less meat, less CO_2 will be produced and we will be on our way to improved climate.

– Jim Amon

Photo by Dave Nolin

Canada Burnet is likely a remnant from glaciers that covered Ohio more than 11,000 years ago. It prospers due to cool groundwater temperatures in fens along the Beaver Creek wetland corridor. If temperatures increase this flower many cease to live in our wetlands.

How Technology and Nature Work Together

What was that (bird/plant/bug)?

A walk in the wetlands provides a rich sensory experience. The colors of butterflies and flowers, and the sounds of birds and frogs, provide a wonderful release from everyday cares and technology. Enjoying that experience does not require being able to identify the responsible plants and critters. But still… knowing those identities can add to the experience in a variety of ways.

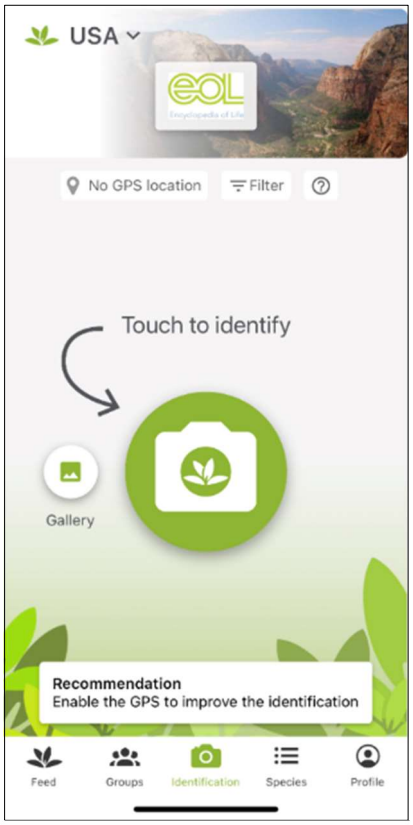
Most basically, the names can be intriguing and informative. Bladderwort is an aquatic plant that captures prey in its "bladder"; shadow darners are large needle-shaped dragonflies that are active in shaded forest edges alongside wetlands. Know the name and you know something about the animal.

But attaching names to organisms provides other benefits, too. Names provide passwords to further investigation. Want to know more about the habits, geographic range, or ecological interactions of that organism? Identification is a first step. Putting names on organisms also can attune one to diversity. It's pretty easy to recognize a bumblebee. But did you know that Ohio is home to something like 20 species of bumblebee, some of which are rare and/or diminishing in number? Putting names on sightings can help to illuminate important issues in ecology and conservation. Finally, sharing identifications with the broader community helps to create valuable databases of species abundance and geographic range. These citizen science projects are invaluable for assessing changes to the natural environment induced by climate change and other impacts.

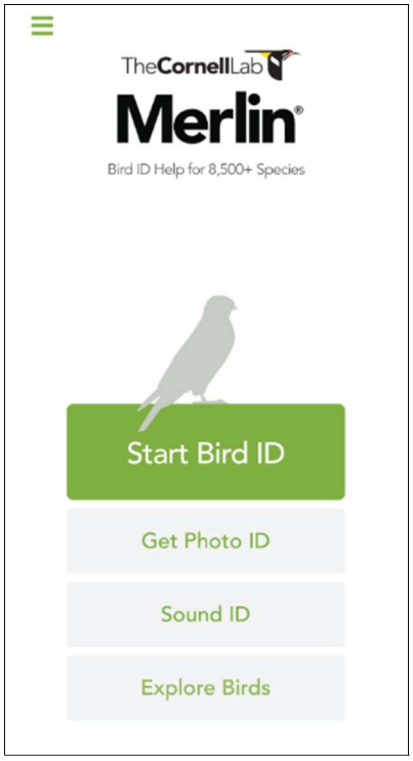
So, how does one go about identifying all those plants, birds, and bugs? Of course, the best way is to bring along a knowledgeable friend (or perhaps BCWA hike leader). But that might not always be an option. As an alternative, web-based tools—apps--for identifying living things have advanced tremendously in recent years. With huge collections of images and ever-improving machine learning algorithms, these apps have become user-friendly, fast, and amazingly competent. Here I will recommend three apps that I have come to value. These recommendations do not imply any comprehensive effort to evaluate available alternatives, and each app has many features that I have never explored. So, take this as a first pass recommendation; I encourage you to explore further. Note that all three of these apps are free of charge, ad-free, and available for either IOS or Android.

For identifying plants: Wetlands are characterized by diverse plant communities, including many species that are restricted to that habitat. My go-to app for plant identification is **PlantNet**. PlantNet is easy to use, accepting either camera input or a saved photo, and it offers the option of identifying plants by flower, leaf, fruit, or bark. It quickly provides identifications ranked by the estimated probability that the ID is correct. A click on the species name brings up additional images, and another touch takes you to the Wikipedia page for that species. One also can share postings with the broader community, which both provides the possibility of feedback on the observation and contributes to the app's citizen science mission (by adding images to the database and documenting occurrences).

For identifying birds: Birds, of course, are harder to photograph than plants. Indeed, initial awareness of birds often comes from their calls, rather than from a sighting. The app that has solved that challenge is **Merlin**. Merlin is based on the Cornell Laboratory of Ornithology's "ebird" database, the premiere collection or bird images and recordings. Merlin's features include the abilities to identify images of birds, to create life-lists of observations, and to generate lists of birds likely to be seen in one's viewing area. But the real magic is



The home screen of PlantNet allows you to choose an image from either a saved gallery or your camera



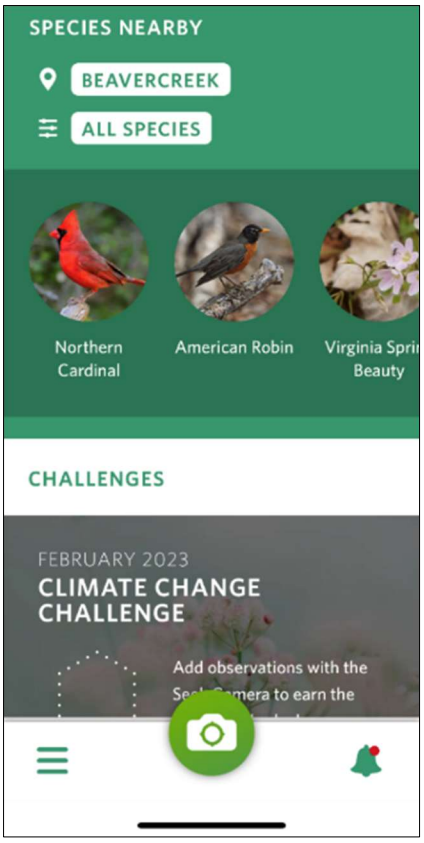
The home screen of Merlin allows you to choose whether to identify a bird from an image or from its vocalization

Merlin's remarkable ability to identify bird songs, even in complex acoustic environments. Just point your phone at the world, and Merlin will identify any bird that it hears. An image of the bird pops up, and it highlights any time the species is heard again, thereby providing a great aid to recognizing bird sounds. The software also includes a library of playable bird sounds; playing a vocalization sometimes can draw a bird in closer, where they can be seen more easily. This can be really effective with some secretive wetland birds like rails. A word a caution as overuse of this feature can interrupt mating or otherwise disturb the bird.

For identifying bugs: The platform I use for identifying insects is **iNaturalist**. This database covers all variety of living organisms, including more than 650,000 observations of nearly 7000 insect species from Ohio. iNaturalist can be accessed in two app versions. The iNaturalist app requires registration and login, and it connects to the larger iNaturalist system. **Seek** is a somewhat simpler version that remains local on one's phone. Seek includes features like badges and challenges that are designed to be kid- and family-friendly, and it does include an option to share images with iNaturalist. (iNaturalist postings, in turn, are accessible to a community of participants who can assist with, or confirm, identifications.) I will admit, I usually photograph insects with a "real" camera rather than with my phone, then submit to iNaturalist once I'm home. The ability of iNaturalist to identify insects never ceases to amaze me. The diversity of insects is overwhelming, and there is a real possibility for anyone to make an exciting discovery.

Ordinarily, I would be happy to advocate for leaving technology behind during a walk in the wetlands. But I have become quite enamored of these identification apps, and I know they can add value to an excursion. I'll look forward to seeing you on the trails—and I won't be surprised to see you pointing your phone at a flower, or at the trees in the distance.

– David Goldstein



The home screen of Seek includes a button for uploading images along with other features and activities

Spring Blooms! What To See and When

	March	April	May	June
Skunk Cabbage	X			
Marsh Marigolds		X		
Ragwort		X		
Buttercups		X	X	
Spring Cress		X	X	
Blue Flag Iris			X	
Strict Sedge			X	
Dogwoods			X	
Burr Reed			X	
Great Angelica			X	
Solomon's Seal			X	X
Swamp Saxifrage				X
Swamp Rose				X
Corn Salad				X
Elderberries				X

Left Column: Blue Flag Iris, Dogwood Flower, Ragwort
Right Column: Marsh Marigolds, Burr Reed, Swamp Rose

Winter Volunteer Activities

Mild Winter Weather Allowed Work to Continue

Warmer weather and many dedicated volunteers resulted in significant land management activity throughout the winter months.

Trail Maintenance and Honeysuckle Removal

In December and January, we held a well-attended, weekly volunteer event to remove honeysuckle from Greene County Department of Sanitary Engineering property. We worked from Dane Mutter Prairie to the bike trail on the north side of Rotary Park, the Phase one area of the Spotted Turtle Trail project. Volunteers cut honeysuckle along the trails, chipped it, and spread the chips on the trail. Clearing these trail edges will allow more maintenance to be done by tractor for several years to come. This project is near completion with a few branches left to chip and a few chip piles left to spread.

Prairie Mowing

March is the month we will mow about half of the prairie in Dane Mutter Prairie and about one-third of James P. Amon Biodiversity Reserve. We will follow up with herbicide treatment on invasive tree sapling stumps. Some chipping might be necessary, too.

Beaver Dams

We have disrupted three beaver dams at Koogler Reserve several times. A third one on the Beaver Creek is less accessible but has the most impact on flooding of New Germany-Trebein Road.

Another beaver dam just upstream of Dane Mutter Prairie creates an almost 4-foot drop in stream elevation. The dam shunts water around and through Dane Mutter Prairie and Dave Nolin Wetland Reserve. This is impacting the new boardwalk work site, keeping it wetter. It also affects our access to get to the bridge in Nolin Reserve. This dam has been disrupted many times as well, but it has been rebuilt by the beavers. I have asked Greene County Parks & Trails to look into the situation.

Spotted Turtle Trail Boardwalk

Boardwalk decking was cut in November. The total number of deck boards for this near 2,400-foot project will be approximately 4,800 pieces. I expect to begin taping and decking that west side boardwalk in March.

Photo by Skip Beehler

This Nurse tank carries water to locations where volunteers used the power washer on the boardwalk at Koogler Reserve.

Koogler Reserve Boardwalk

Jim Schneider and I tested our ability to transport water through Koogler Reserve to supply a pressure washer. Pressure washing seemed more efficient than scraping and brushing moss, fungus, and algae off the boardwalk. It also aided our inspection of the individual deck boards and determination of which ones to replace.

Two or three people were needed to keep water supplied to a "nurse" tank for the power washer, especially as the cleaning operation got progressively further from the water source. Several four-hour work sessions of three, four or five person crews washed sections of boardwalk. The power washing is done and most of the cleaned area is ready for the elevated kick rail to be re-installed.

We had several days of dry warmer weather in which boardwalk repairs were possible. Volunteer numbers have been good as we repaired the south end boardwalk.

Photo by Dave Nolin

This beaver dam at Nolin Reserve is approximately 30 feet across, spanning the Beaver Creek.

Some sections require frame repair, and some only need deck board replacement. We are also installing raised kick rail on that end. (The north end was completed in spring of 2022.) Removal of old kick rail exposes more deck board replacement needs. Approximately 180 deck boards have been replaced, but we will need several more work outings to complete this task. If weather cooperates, we should finish in late March.

Rebuilding several sections of rotted frame is also part of this project. On a rainy day, we cut, drilled, and taped approximately 700 blocks for elevating the kick rail. We expect to finish this project early in March.

Little Beaver Creek Prairie

Two Saturday work dates have had good volunteer turnout. Volunteers dragged cut vegetation to areas where the tractor/chipper was used to chip it.

Invasive cattails were cut down as part of the process to manage it. The regrowth will be treated at a later date.

– Skip Beehler

The Fate of Paul E. Knoop, Jr. Prairie

Several years ago, the Dayton International Airport slated a piece of their property to develop a distribution warehouse. The plan was terminated, but in December 2022, the Dayton International Airport made public their future plans for airport development which again includes this property. That piece of land is known as Paul E. Knoop, Jr. Prairie.

According to Five Rivers MetroParks website, the impacts of losing Knoop Prairie may include, "the loss of valuable habitat, increased storm water runoff and stream degradation has the potential to impact Aullwood Garden MetroPark, Englewood MetroPark, and Aullwood Audubon Center and Farm." (Click here to learn more.)

Beaver Creek Wetlands Association's position on development is aligned with those stated on MetroParks' website. This issue concerning Paul Knoop Prairie underscores the importance of securing buffers to natural areas and streams that flow into them. BCWA supports development plans that consider an environmentally responsible approach to surrounding natural habitats.

– Beth Edsall

Paul Knoop and Beaver Creek Wetlands Association

Paul Knoop, former Education Director of Aullwood Audubon Center & Farm, was the first Vice President of the Beaver Creek Wetlands Association board of trustees. In 1988, as a well-known columnist, he wrote an article for the Dayton Daily News describing the Beaver Creek wetlands and explaining why they need protection. Paul Knoop and his son Jeff were major forces for BCWA throughout the years. Paul and his wife Cathy are still BCWA members today.

Left: Paul and David Knoop seeding Knoop Prairie in 1995.
Top and Bottom Right: Paul Knoop Prairie

Photos by Aullwood Audubon

Learn more about preserving Knoop Prairie
www.saveknoop.org
www.change.org/PreserveKnoopPrairie

Throwback From 2007

As BCWA was about to celebrate its 19th anniversary, Jim Amon wrote this article for the Spring 2007 *The Spotted Turtle* newsletter. Sixteen years later, it is still relevant.

Photos by Beth Edsall

I've been reading lately and, for the most part, it is about things that have happened in the past. One poignant tale recounts the author's lonesome trip to an old trout stream where he had once fished with a friend. He loved fly fishing. The story ended in a melancholy way as the author realized that it was more than fishing but the comradery as well. I also believe it was because, at times, memories are better than reality and I am sure both factors played a role. I want to talk about the future but we only know the future from our past so let's see what it tells us.

Where were you when your house was built? What did that place look like? Was it a forest, a prairie, a farm field or a swamp? Those are pretty much the only choices. If your yard has a tree, was the tree there or was it planted? What child played there? What animals lived and died there?

Our goal in establishing the Beaver Creek Wetlands Association was based on a recognition that things change. That place where you live will never be a forest or a swamp again. Sure, it is your "nest." It's yours and if you outgrow it you will sell it and someone else will fill your nest. Our children go out and find news nests. By identifying the Beaver Creek wetlands as something special, we have said that we don't want to put new nests there. We understand that once the natural habitat is built upon, it will not come back. Sure, we are learning how to restore, but how are we going to displace – you, your grocery store, your street, your school? Not going to happen. We need to ask, "What does it take to be sure the wetland will be here in 2107 or 2207?" Given the development we now see I have to wonder what it will be like. The Dayton metro area will have merged with Columbus, Cincinnati and maybe Toledo. Will there be parks, greenbelts, open spaces or will they be a faint memory smothered by all that surrounded them. Will they be cut-off from clean water, covered by sediment, choked by smog and poisoned by things we don't even understand and dissected by a thousand roads, lands and cul-de-sacs. What must we do to prevent this gloomy possibility?

The first things to do is make sure all lands are protected legally and *in perpetuity* (forever), but that is only the start. Think about a really cool wetland in the middle of the mall parking lot. Would it survive 200 years? Probably not. All natural habitats have connections and we need to protect those connections too. We need buffers or areas that are a transition from the wetland to its most natural surroundings. That's why we have asked developers to set aside large tracts of land between the homes they build and our wetlands. Those areas are important feeding grounds or nesting places for critical animals in the ecosystem and serve as dry havens during floods. They provide a barrier to toxic chemicals, sounds and light that would otherwise disturb the wildlife and plants. Will these extra precautions make our wetlands survive 200 years? Maybe not.

Connections in our wetlands are not just on the surface, they extend underground too. Groundwater is the lifeblood of the Beaver Creek Wetlands. About 50% of the water that falls on the ground in a 10 square mile area around the wetlands percolates into the soil and eventually comes to our wetland. As it goes deeper and deeper it picks up minerals, nutrients, microorganisms and leaves behind sediments, odors, flavors and a myriad of strange chemicals that those microbes destroy. The water reemerges as seeps and springs in the wetlands, clean, rich in minerals and its temperature is now a cool 52-56ºF year-round. That clean water and its load of minerals, nutrients and even temperature is just what our wetlands need.

So, what happens if roads, homes, streets and storm sewers prevent that water from entering the soil? Where will the wetlands get its life blood? We have asked developers to assure that their runoff control includes groundwater recharge basins. We have

asked that they use grassy swales to allow water to run over the surface as it soaks into the soil and we have asked them to make certain that both the rate and volume of discharge from their developments do not exceed preconstruction amounts. Ten square miles is pretty large but that is the minimum of surface that feeds the wetland, there is probably more. The wetland itself is only about 30% of that area. If we are going to get it right we have to do these things and I am sure we will have to fight some tough battles over it because most people don't understand how it all works. But now you do. So, talk it up. And pass it on to your kids and grandkids, and make sure when you vote, you vote with the future in mind.

We can't change the past so our hope is the future. Let's make the best of it.

– Jim Amon

News & Notes and Wetland Wows

On May 23, 2019, World Turtle Day, Canada debuted a Spotted Turtle stamp to raise awareness about their endangered status.

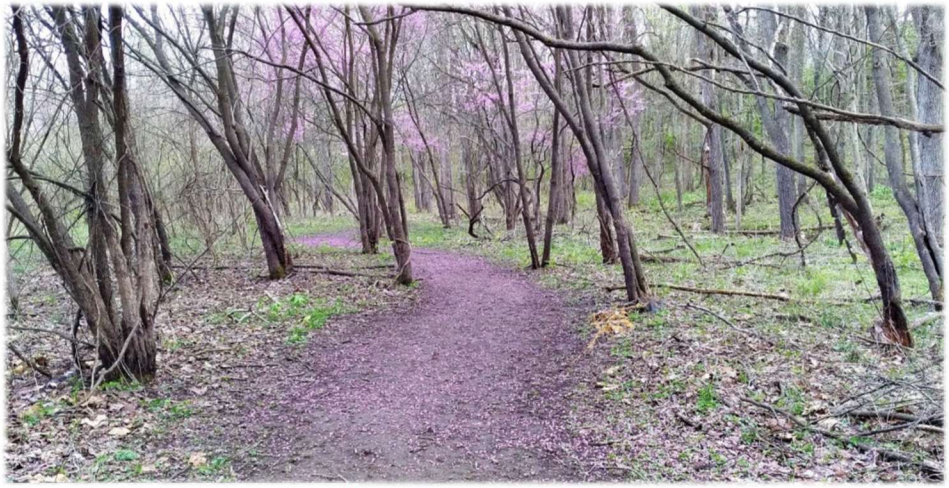


Photo by Dave Nolin

Above: Pink blooms appear in the Redbud grove along the back trail at Pearl's Fen

Photo by Brandon Hough

Left: Snow Trillium blooms on the hillside behind Oakes Quarry can still be seen in early spring

Photo by Dave Nolin

Watercress growing in the Beaver Creek at Pearl's Fen is non-native, but not invasive.

Photo by Mike Mushala

A pair of Canada Geese take a morning swim with their young in the Beaver Creek at Siebenthaler Fen

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David Goldstein
president@beavercreekwetlands.org

Technical Advisor
James Amon
technical@beavercreekwetlands.org
Have a question about the wetlands or its inhabitants? Ask Dr. Amon!

Spotted Turtle Newsletter
bedsall@beavercreekwetlands.org

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Newsletter Editors
Carol Amon, Jim Amon, Beth Edsall, Lois Gschwender, and Sue Rytel

Visit Us Online

Website: www.beavercreekwetlands.org

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Photos by Mike Mushala

Green-winged Teal pair at Siebenthaler Fen.