



RAVINIA

An Advocate for Community Resources

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Fall 2018/Winter 2019

Love for the Bat

By Maureen Lorenz

Last October, my daughter's family found themselves living with bats in their home. My 4-year-old granddaughter announced, "I know it's Halloween, but there is no excuse for these bats in our house! Anyway, how do they work?" And I thought—what an excellent question. How does the only mammal that flies, fly? And when bats are at rest, they are generally upside down, and they look rather odd. It is no wonder people lack an understanding of bats. It also does not help public relations that bats operate at night and are rather secretive, a characteristic Hollywood has exploited.



Cal Butchkoski/PGC Photo

We were surprised to learn that bats can be extremely long-lived, with a lifetime of 20 years not uncommon. They have usually one pup a year that is born 2/3 the size of the mom. In geologic time, bats are found in the fossil record 65 million years ago and were around when dinosaurs went extinct. The fossil record of some insects with echolocation ability suggests it was in response to bat predation and, therefore, bats might have been around over 75 million years ago! Bats are mammals and evolutionarily more closely related to dogs than they are related to rodents. The response of bats to the

rise of vascular plants and their diversification and insect species might account for the more than 1,300 species of bats. One in 5 species of mammals is a bat; this specious group of animals occupies an array of ecological niches on every continent but Antarctica. (But, nothing much seems to fly in Antarctica.)

All bats are in the Order *Chiroptera*, which roughly translates to 'winged-hand'. The wings of a bat are really its hands. Bird wings are more analogous to arms. The development

LETTER FROM THE CHAIR

Is the *Branch Out* program Dormant or Dead? In 2015, Friends of the Ravines joined other local environmental groups and signed a pledge supporting the City of Columbus's goal to plant 300,000 trees by 2020 to increase the urban tree canopy. This ambitious goal was to be implemented under the City of Columbus's *Branch Out* program; the purpose was to increase tree cover from 22% to 27%. (Before settlers came to Ohio, over 95% of Ohio was covered in deep old growth forests.) It was hoped that adding trees to our neighborhoods would curb the urban heat-island effect across the City to provide cleaner air and other important health benefits as well as to reduce thermal pollution in area waterways. A recent report by *Climate Central* lists Columbus, Ohio in the top ten cities for urban heat-island effect, and first in the nation in the rate of increase of urban heat island affect.

Recent articles in the *Columbus Dispatch* suggested that the *Branch Out* program was dead. But in meetings with the Columbus Recreation & Parks Department, city officials softened that message, declaring that the program was paused while new department policies under the Andrew Ginther administration were being developed. One ongoing problem with the *Branch Out* Program had been finding funding for tree plantings and forestry staff. Mayor Ginther added to the perception that tree planting efforts were getting the ax when he sent a July 16, 2018 email to residents stating that the Department of Neighborhoods has "identified streets for additional lighting and tree canopy reduction...because one of the first steps in providing safer neighborhoods is bringing it out of the shadows." This statement drew the ire of environmental groups aware that neighborhoods which experience the highest crime rates also suffer from the lowest tree canopy cover. If only we could solve problems of crime and safety with simple acts of planting trees.

The tree population in Central Ohio has taken a beating in recent years from storms, disease, age, and pests: the emerald ash borer has killed about 8% of Ohio forests. And that situation is no different in Columbus. In my neighborhood, many of the graceful giants are succumbing to the chainsaw, with not

enough younger trees being planted to fill the void. Another problem is that local officials have no mechanism for estimating the number of trees which are removed due to age, disease, or urban development. Planting a tree is an act of faith since many folks will not live long enough to see the tree grow to maturity.

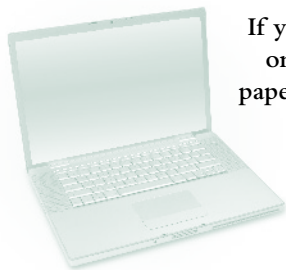
But local environmental groups are trying to tackle the problem. *Green Columbus*, which organizes the largest *Earth Day* celebration in the nation, has given away more than 114,000 tree seedlings in the past 11 years. If each of these seedlings could survive we would meet the ambitious *Branch Out* program's goal. But the mortality of seedling trees can be high, especially in settings where watering is sporadic and deer browse freely.

The City of Columbus offers tree planting incentives such as \$100 vouchers for tree purchases for residents who sign up for the City's *Greenspot* program and pass an online quiz. You can request a street tree in the right of way in front of your house by calling 311, but wait times for these requests can be long. The *Franklin Soil & Water Conservation Office* contributes to the tree planting cause with their annual spring tree sale; it offers a list of Ohio native tree choices at very attractive prices. Central Ohio's ravine streams benefit when the neighborhoods surrounding these areas are populated by healthy trees.

How can we all contribute to a healthier tree canopy? Volunteer for tree planting events at *Earth Day* or whenever you see a chance.

Or if you have a nice spot in your yard, hire a landscaper to plant one for you. Got some trees in your yard already? Take care of them by calling a qualified arborist to evaluate and prune trees as necessary to maintain their health. Got more money than time? Consider donating to a local organization which plants trees and advocates for tree preservation. (Hint, hint...) The bottom line is that the city probably won't be able to reach the goal of 300,000 trees on its own, so it is up to each of us to contribute as we are able to make our neighborhoods safe, healthy, and beautiful.

from Alice Waldhauer



If you would prefer to read *Ravinia* on the Web instead of receiving a paper copy, please send an e-mail to friendsoftheravines@gmail.com and let us know.

We'll e-mail you when a new issue is ready to read.

MORE WAYS TO DONATE TO FRIENDS OF THE RAVINES:

Amazon Smile, Kroger Rewards Program, The Columbus Foundation's Giving Store, The Big Give, PayPal, or you can write a check and make it out to Friends of the Ravines, and send it to PO Box 82021, Columbus, Ohio 43202



Indiana Bat colony in a cave. Bats are packed in for warmth during hibernation.

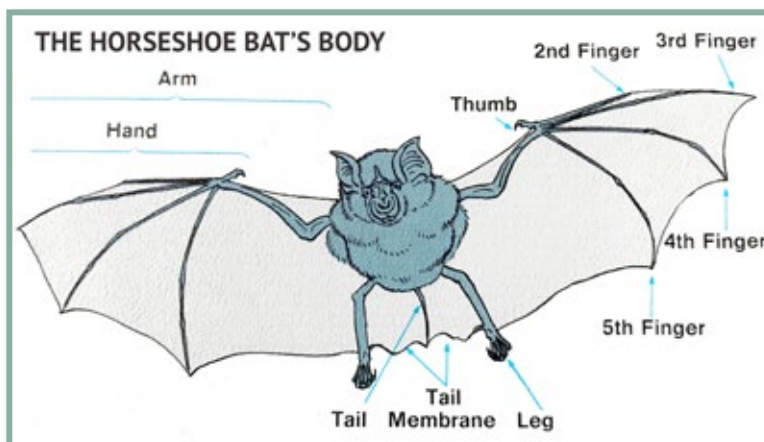
of wings was likely in response to efficiency in food capture and predator avoidance. The bones of the hand developing into wings resulted in supreme aerial control. So, contrary to belief, bats are not going to get tangled in your hair. My German-speaking grandmother called the knots in my uncombed hair something similar to bird or bat nests—likely helping that myth to continue.

Because bats wings are their hands, and the way their bodies are built, it's hard for them to get the lift they need to get off the ground. They also cannot "perch" as a bird does outside the entrance to their roost or when at rest. The bat hangs upside down by its feet, which clench during rest. To fly, the bat must let go and "fall" into flight.

We found out asking the bats to leave, or what is termed exclusion, was not going to be all that difficult and found someone who was bat-knowledgeable for the job. Placing an "exit only" panel over the entrance is required. Once the bats leave, they cannot re-enter. The most important factors were finding their entrance to the house and timing. Female bats ban together to form a maternity colony to raise their pups sometimes taking advantage of the shelter of a house. Some

species of bats hibernate in a suitable place, some migrate, but the cycle will begin again in the Spring. The time to exclude bats is before the mom bats give birth (usually May) or after the pups can leave on their own (usually August).

Our daughter's bats were already starting to prepare to hibernate and locating their entrance was going



to have to wait till the spring. In the spring, however, we missed finding their entrance in time. Bats are protected by law. And so we waited, enjoying the bats eating the insects we didn't care to have biting us.

And that's the greatest thing that humans should love about bats. At least the ones in Ohio are insectivores and referred to as microbats. These little guys are small, but have mighty appetites. A single bat is able to eat 1,000 mosquitos a night. This insect-eating benefit to farmers and agriculture in the U.S. has been measured in the billions of dollars. Unless you are really fond of mosquitos and moth worms in your sweet corn, bats are a reliable defense against them.

The larger, fruit-eating bats are called megabats. These types of bats are not found in Ohio, but are no less deserving of love for the work they do pollinating and dispersing seed.

Microbat species also pollinate flowers such as wild banana and agave, necessary for the production of margaritas. Our giant saguaro cacti, an icon of the Southwest landscape are also pollinated by microbats, a diverse family of bats.

There are 11 species of bats found in Ohio. The common names of bats usually focus on a physical feature of the bat. The strange noseleafs and ears you see in various photos of bat species modify their echolocation system in response often to their preferred prey. Echolocation allows bats to navigate the night sky with ease, an incredibly rich ecological niche. Bats are not blind and see quite well, it's just a better advantage to catch prey with their sonar. What is also fascinating are the mechanisms their prey use to try to confuse that sonar. Scientists are just beginning to study the complex relationships between prey and bats. With their incredibly fine-tuned echolocation bats can detect something as thin as a human hair and will definitely not be in yours!

Bats need their echolocation when leaving a cave en masse. One species of bat sometimes even reported in southern Ohio is the Mexican Free-Tailed bat (*Tadarida brasiliensis*) and puts on the Bracken Cave Preserve display near San Antonio, Texas. You can watch millions of bats leave their cave nightly. It is the largest colony of bats in the world and the reason Bat Conservation International is located in Texas. Another reason to love bats is the international tourist dollars this cave generates for San Antonio. Other bat sites are catching on to this. This link is worth the trip:

www.facebook.com/BatCon/videos/328866490988768/

Big Brown bats (*Eptesicus fuscus*) are a common species in Ohio; they can be found in a variety of habitats including our ravines and sometimes in our homes. The Big Brown Bat in the photo below was unhappy about being plucked off the curtain

and asked to leave. They naturally roost in trees in colonies of females in the spring/summer from 20 – 500 individuals. Males form smaller groups or roost alone.

If there is a Big Brown Bat, there must be a Little Brown Bat (*Myotis lucifugus*). This species was probably the most abundant in Ohio, until the onset of White Nose Syndrome. Annual bat surveys are underway trying to count the population of these once plentiful bats. Little Brown bats will take up residence in hot attics and barns, too, although the natural habitat of Little Brown Bats are trees. These bats typically migrate in the winter to hibernate in caves and old mines in southern Ohio.

The little bat that has the attention of conservationists because it is on the brink of extinction is the Indiana

Bat (*Myotis sodalis*). The species name 'sodalis' implies it is a 'member', found in large colonies. In the winter it hibernates in old mines and caves referred to as "hibernacula", and in the summer the bats will live under peeling bark or loose



Photo by Maureen Lorenz



Little Brown Bat in the eaves of a barn

Photo by Elayna Stierhoff

bark or cavities providing hiding places to rear their young. The female bats form large maternity colonies that can occupy several large trees. Because of the bats listed on the Federally Endangered Species list and that they use trees to support their colonies, tree removal should occur only from October 15th through March 31st, avoiding the time for the pups being raised. Another reason to love bats is they love trees and depend on trees being there for their survival.

One thing all experts agree on is, sadly, the decline in bat populations. All eleven Ohio bats species are in danger. In addition to the endangered Indiana Bat, the Northern long-eared bat is threatened and the other species are State listed species of concern. Bat populations have declined in overall abundance by nearly 25% between 2011 and 2017. Too little value is placed on our natural environment and all its inter-related pieces: too little is known of how it all works together.

Conservation can help save bats along with education and the awareness of their positive impacts. A factor affecting the decline of bats is habitat destruction and forest fragmentation. Losing our undivided stretches of forests and mature canopy trees is a loss of habitat, shelter, and food that bats depend on to survive. Fragmenting the forest into smaller and smaller pieces and surrounding it with the built environment limits the survivability of bat species. Bats are adaptable and they have learned to exploit the built environment, but it comes with new threats that can change rapidly compared to a forest.

Other factors in the decline of bats are forms of pollution. This includes chemical, light, and noise. At this same time, vector populations of mosquitoes are increasing. The response often is to spray pesticides. As the US EPA has stated – NO pesticide is 100% safe. The chemicals sprayed into the night



Indiana bat in its tree



Joe Kosack/PGC Photo

The bats are gone now from my daughter's home. (Yellow jackets moved in. Seriously). The bats were coming in through the chimney and this was repaired. Even though she has a new appreciation for bats, she did not want to live with them. She gave them a home of their own by putting up a bat house. My granddaughter is now fascinated with bats and no longer turns the page upside down to look at their pictures. Providing bat houses, protection of existing tree canopies, and awareness and support of conservation efforts might help stem the loss of these magnificent mammals if we act together. Bats in China are a symbol of happiness. Don't let happiness slip away.

Author's Note: Special thanks to Marne Titchenell, Wildlife Program Specialist at The Ohio State University for her review of this article and photos she supplied. Uncredited photos are in public domain.

sky kill beneficial insects indiscriminately and can weaken other animals such as bats that feed on these insects. Some of these pesticides can act on humans as hormone disruptors. The use of pesticides is not a solution. Sixty-five million years of evolution was working as a deterrent to insect pests, but who wants to listen?

In our developed environment we are lighting up the night. Artificial light has a negative effect on bats. Light avoidance has the potential to exclude bats from otherwise good roosting and foraging habitat. It can also restrict travel in the home range as well as the distribution of insects, and expose the bats to predation.

We surround ourselves with noise. We poorly understand the intricacies of the echolocation of bats and prey, but we know they hear and at frequencies that are often undetectable to human ears. Road and truck noise was studied and shown to reduce foraging efficiency in bats.

Persecution is, yet, another factor and is answered best with education. Bats can carry rabies. Less than 1% of bats are infected with rabies and if you see one during the day, avoid it and report it. Never handle a bat without gloves, and only when necessary.

Unfortunately, White Nose Syndrome (WNS) caused by the fungus *Pseudogymnoascus destructans* (Pd) is a major factor causing the loss of bats in Ohio. Pd is a cold-loving fungus that affects 6 species of bats during hibernation, forming white, fungal bodies over their faces, ears, and wings. Some factor of the infection wakes the bat from hibernation, thus weakening it by burning through its fat and water reserves. If all these things continue at this rate, species such as the Little Brown Bat may be regionally extinct in less than 20 years.

References and Great Reading:

For building or finding a bat house:

<http://www.batcon.org/resources/getting-involved/bat-houses>

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Bat Conservation Sites:

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[The World of Bats.](#) Sylvia Johnson. Lerner Publications Company, NY. 1985.

[The Secret Lives of Bats. My Adventures with the World's Most Misunderstood Mammals.](#) Merlin Tuttle. 2015.

The website of the Ohio Department of Natural Resources:

<http://wildlife.ohiodnr.gov/species-and-habitats/fish-and-wildlife-research/bat-roost-monitoring>

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/state-listed%20species/franklin.pdf>

The Ohio State University:

<https://cfaes.osu.edu/news/articles/ohio's-bats-do-scary-good-work-face-real-horror-story>



Oak Wilt

By Cindy Decker

A deadly fungus spread by beetles is increasingly threatening Ohio's oaks.

A case of the disease, oak wilt, was confirmed in August in Walhalla Ravine in a towering old oak that suddenly lost many of its leaves.

Another case was confirmed earlier in the summer in a stand of trees in north Columbus. In both cases, homeowners contacted arborists who removed the trees and tested for the fungus.

Although oak wilt is suspected in tree deaths as early as the 1930s, it has been spreading more rapidly in recent years. The disease, which attacks both red and white oaks, has killed millions of trees throughout the Midwest and Texas, the U.S. Forest Service reports. Ohio has seen occasional cases since the 1950s.

Local arborists watch carefully for the exotic fungus, which could have serious implications on tree populations already ravaged by emerald ash borer, chestnut blight and Dutch elm disease.

"Oak populations could decrease greatly because oak wilt affects both red and white oak groups," said Dan McCarthy, a master arborist with Ahlum & Arbor Tree Preservation. "It definitely kills the red quickly."

Once a tree is infected, there is no cure.

Losing oaks would have a domino effect, hurting birds and animals that rely on the trees for their food and shelter. More than 100 species enjoy the nutrition of acorns, from the fat squirrels of central Columbus to blue jays and deer.

Trees infected by the fungus (*Bretziella fagacearum*) may show a fast decline, losing leaves quickly. "Red oaks infected with oak wilt lose about 90 percent of their leaves in two months," says a fact sheet by the Minnesota Department of Natural Resources, which saw its first case of oak wilt in 1950.

"Those in the red oak group (leaves with pointed lobes) die about two months after infections. Bur oaks die between one and seven years after infection, while white oaks die from one to over 20 years after infection."

Leaves wither from the outside of the canopy in, a sign that the leaf loss is not caused by less serious issues such as anthracnose, which is not fatal.

If a tree is found to have the disease, it should be properly removed, McCarthy said.

The stump should be covered so that beetles do not spread the fungus to healthy trees. Also, all logs from the cut tree should be hauled away for disposal because they harbor fungal mats that might continue to grow.

In addition, trenching should be done around the tree, 3 to 4 feet deep and a few inches wide, to sever roots that the diseased tree might share with neighbors. These shared roots, root grafts, that could transfer the disease to adjacent trees.

An antifungal injection to prevent oak wilt is available, and at least one local arborist, Jacob Sauer, is planning to put it in use.

To learn more about oak wilt, check out these fact sheets:
https://www.dnr.state.mn.us/treecare/forest_health/oakwilt/index.html

<http://www.michiganoakwilt.org/oak-wilt-101/>

https://woodlandstewards.osu.edu/sites/woodlands/files/d6/files/pubfiles/HYG_3306_09%20oak%20wilt.pdf

Prevention is the best way to thwart the spread of the fungus, experts agree.

- * Do not prune oak trees during the growing season. Michigan State University suggests refraining from pruning between April 15 and July 15, when the sap beetles that carry the fungus are most active.
- * Contaminated beetles quickly spread the fungus to a fresh cut. The Ohio State University suggests extending the no-pruning time to Oct. 15 to be even more safe.
- * Seal cuts or storm damage immediately with pruning paint. The Michigan experts say the sap beetles have sometimes found cuts within 10 minutes.
- * Do not move firewood.

Planting Trees for Glen Echo's Future

Text and Photo by Maureen Lorenz

It might look like an attempt to create an instant forest along the banks of Glen Echo Creek, but it really is a matter of survival for the trees. The Water Protection Coordinator and Naturalist for the City of Columbus, Elayna Stierhoff, recommends over-planting a difficult site. Trees planted and then left to fend for themselves can experience attrition as high as 70%+. In our park setting, this seemed like the perfect time to experiment.

Glen Echo Park naturally has about a square mile of watershed. However, because of development and connecting storm pipes outletting at the bowl next to I-71, this watershed has become a "sewershed" of two square miles. This excess stormwater creates greater flash-flooding potential. Glen Echo Creek often overflows its banks as a storm surge through the park. Friends of the Ravines has been working to stabilize the park's environment since 1999.

The first project was bank stabilization. With the first grant from the Columbus Foundation and permission from the Columbus Recreation and Parks Department (CRPD), volunteers installed logs perpendicular to the slopes stabilized by "deadmen" anchors and planted native species as soil built up upslope of the logs. This effort continues to this day.

The result is restored woodland slopes instead of previously exposed shale.

In 2003, the CRPD began a bank stabilization project funded by the Clean Ohio Conservation Grant program. Previously installed gabions or "wire boxes of rocks" lining the creek were removed, the banks shaped to a stable slope, and native plantings added to help stabilize the new banks. Stormwater continues to surge through the ravine, but with much less destruction as a result.

This latest effort is the result of the recent Indianola Bridge work. The City of Columbus and Ohio Department of Transportation agreed to a formula to replace trees that were removed from the park. The result is the multiple and dense tree planting to establish a larger buffer along the creek, especially in the areas of erosion and where park use activity is minimal. The tree roots will form a network to stabilize the soil and allow for the establishment of larger tree mass. Not all the trees planted are anticipated to survive as a result of all the stress and flooding. But those that do will provide the ravine with a forest supporting birds, wildlife and people into the Future!





Listen to Trees' Subtle Warnings

By Cindy Decker

When a tree falls in a storm, homeowners are often surprised.

But trees generally don't fall without warning. They often give ample evidence that their health is not all it should be.

Homeowners, unfortunately, have the tendency to think trees are self-maintaining. They often ignore the signs.

Trees should be seen regularly by an arborist (not just two guys with a chain saw, but someone who has certification and knowledge in this area).

Urban trees in particular are stressed. They have too much heat from the pavement, contaminated runoff from roadways, damaged roots from construction, soil that is compacted or waterlogged. Air pollution also takes a toll.

All those factors can weaken trees, making them easy prey to pests and disease.

In addition, trees should have their canopies surgically thinned occasionally so that wind goes through them. This kind of thinning is not the topping that was so common at one time; instead, it is a methodical, barely noticeable removal of some branches.

Many times when a healthy tree falls, a storm has turned a leaf-heavy canopy into a sail, which can uproot the tree from its base. Wind needs to go through the foliage; the tree might

sway in the wind, but it is less likely to fall.

When you see a tree that has toppled, pay attention as it is removed. Frequently, you will see large areas of rot inside. The tree probably gave years of warning.

Homeowners can watch for changes to tree health. Some are more subtle than others. Here are some things to watch:

- ★ Leaves are smaller than usual.
- ★ Part of the tree fails to leaf out.
- ★ The tree loses its leaves in fall earlier than others of the same species.
- ★ Bark is peeling, unless it is a tree that sheds bark, such as a river birch or sycamore.
- ★ The tree is seeping sap or has other wounds.
- ★ Large limbs die.
- ★ Fungus is growing on trunk.
- ★ Roots appear to be heaving from soil.

If you have big trees, it's wise to have them inspected and tended regularly by a professional. The cost is an investment in your landscape; studies have determined that trees add up to 20 percent to the value of a property. Plus, having a tree fall on a house is no fun at all.

Talk to a certified arborist to set up a care routine for your trees. You can find a listing of local arborists at www.treesaregood.org/findanarborist.



Water Sentinels for Ravine Rovers

Text by Alice Waldhauer. Photos by Alice Waldhauer & Sherrill Massey.

As part of Friends of the Ravines (FOR) continuing partnership with the science students at Indianola Informal K8 School, this fall we partnered with the Sierra Club and three 7th grade science classes to engage them in the Sierra Club's Water Sentinel Program. This program trains volunteers to monitor basic water quality parameters in local streams and shows them how to report the results in a national citizen-science database. In September we held three training sessions, each followed by a walk in the nearby Walhalla Ravine to measure the stream's water quality. Students used meters provided by Sierra Club and FOR purchased two more with grant dollars from the National Environmental Education Fund (NEEF). About 66 students participated in the program. Two water



quality meters remain with the school so interested students can continue this work, and FOR can share our enthusiasm for local ravines with young nature lovers.

Another part of the NEEF grant proposal came to fruition in August when FOR used grant funds to purchase a trail camera which we installed in Glen Echo Park to capture images of wildlife visiting the vernal pool (restored in 2014). In the future, a camera will be available to Franklin County ravine residents to record visitors to their landscapes.

If you would like to try out the camera, please contact us at FriendsOfTheRavines@gmail.com.



FOR and Sierra Club provided classroom training to 7th grade students to familiarize them with using hand-held water quality meters and test strips.



Testing pH 3: Students teamed up to measure and record water-quality data from the stream in Walhalla Ravine.



Classroom training included collecting measurements from two test solutions to demonstrate differences in samples with a similar appearance.



ANNUAL PLANT WALK

When: April 28, 2019, 2:00 – 4:00 p.m.

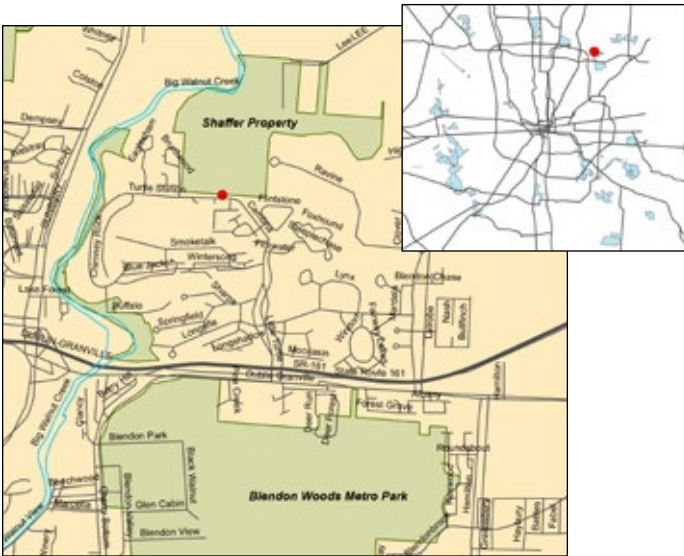
Where: New Parkland north of St Rt 161 in Little Turtle

Meeting site: 5259 Cambria Way

Be among the first to explore this new MetroPark acquisition using Clean Ohio Conservation Funding. The parkland is a ravine system located east and along Big Walnut Creek, and north of Blendon Woods Metro Park. More details will be posted on Friends of the Ravines website and Facebook page.

Plant Walk Guides: Metro Park Resource Guide
Carrie Morrow and Forest Ecologist Andrew Boose.

Wear comfortable shoes. This is a rain or shine event.



Want A Beautiful FOR T-Shirt?



Send an email to friendsoftheravines@gmail.com

Indicate size and we will send you purchase information.

YES! I WANT TO BE A SUPPORTING MEMBER OF FRIENDS OF THE RAVINES.

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 Sustainer: \$50
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- Distributing *Ravinia*
 Writing Articles for *Ravinia*
 Preparing Mailings
 Assisting with the Website
 Giving Computer Advice
 Helping with Ravine Cleanups
 Planning Events
 Removing Invasive Plants in Ravines
 Becoming an On-Call Volunteer

My special area of expertise is _____.

My favorite ravine is _____.

Friends of the Ravines, PO Box 82021, Columbus, Ohio 43202
friendsoftheravines@gmail.com

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(August 18–September 15, 2018)

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Walnut Grove Cemetery
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Michelle Sotz
Columbus & Franklin County Metro Parks:
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Science Teacher Jared Laughbaum
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Friends of the Ravines is an all-volunteer non-profit 501c3 organization whose mission is to foster the protection and restoration of ravine areas in Franklin County through community education and conservation.

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