

Another Non-native Species Invasion

By Joann Fricke

Ten years ago I had no idea what Bush Honeysuckle was, much less that it was an invasive species taking over our forests and preventing our native hardwoods from regenerating. Now, I can barely walk by a plant without trying to pull it. I've even gone so far as to ask a local business if I can pull a bush honeysuckle out of a planted area in front of their shop. But I am not going to talk about honeysuckle in this issue. And, while there is a myriad of other invasive species to discuss, I would like to focus on Bradford Pear (a cultivar of Callery Pear, *Pyrus calleryana*).

As a young homeowner, I made the mistake of planting one in my yard. It was so pretty with its profuse blooms in the spring, but those blooms smelled so bad, like rotting meat. Ugh! I learned the hard way that because of its dense array of branches and brittle wood, it is prone to splitting off large sections or toppling over completely in wind or ice storms. During one spring storm, my Bradford Pear broke at ground level. In retrospect, that was probably a blessing in disguise.



Callery Pear has invaded many areas along local roadways. Photo courtesy Chris Evans.

Callery pear was introduced to the United States from China in 1916 by the U. S. Department of Agriculture for development of fire blight resistance in the common pear. In the 1950's, the ornamental value of the tree was recognized and resulted in the development of several cultivars, most notably 'Bradford.'

The Bradford pear's popularity has led to overplanting in communities. However, despite the fact that each cultivar was bred to be sterile, as new varieties were introduced, cross pollination occurred, which led to fruit fertility.

Now we have a problem. Birds eat the fruit and disperse the seeds far and wide, producing dense infestations of trees in fallow fields, right-of-ways, and other natural areas. If you've travelled the back roads in Monroe, St. Clair or Randolph counties in spring, you have likely seen the Callery pear invasion. The exchanges along Interstate 255 in South St. Louis County are also filled with invading Callery pear trees. Left unchecked, they pose a threat to native vegetation by crowding out native communities.

So, how do we fix this? For starters, I would encourage people to not plant any cultivar of Callery pear. Ideally, nurseries would stop selling these trees voluntarily, but that will likely not happen, although, we, the public, could strongly suggest this. (And while you're at it, suggest they stop selling burning bushes, too, but that is a whole other article.) Much like bush honeysuckle, cutting the trees down and herbicide treating the cut stumps is one way to eliminate them in the landscape. Basal bark treatment is another solution, but then you create standing dead trees, which can fall on power lines, endangering the public.

Now let's think about what native alternatives to plant instead of callery pear. If you have your heart set on a white flowering tree, flowering dogwood (*Cornus florida*) and serviceberry, also known as shadbush, (*Amelanchier*) are excellent choices. Yellowwood (*Cladrastis kentukea*) is another fine choice for white flowers. Note that it is not native to this area, rather a bit farther south in Illinois, but close enough. For those that prefer more color, Eastern redbud (*Cercus Canadensis*) blooms in that lovely purple color you see scattered throughout our woodlands in early spring.

Please share this information with your friends and neighbors so as to halt the callery pear invasion of our natural areas. Our native plants will love you for it.

Editor's note: If you would like to stay informed of invasive species issues, please contact Chris Evans, University of Illinois Extension Forester, at (618) 695-3383 or cwevans@Illinois.edu, to be added to the monthly distribution of the Illinois Plant Phenology Report. Clifftop member Sharon Geil is an observer in our area. To view the April report, please visit: <https://uofi.app.box.com/s/d110qda5j7gnttqwad3y6ro4vjlcwy1t>

Guestviews...

What IS Nature?

By Angela Mayer

How does one ever begin to become interested in nature? Can you remember your earliest experiences in the outdoors? For me, I believe it all began with intrigue and curiosity, as I'd assume it does for many of us.

Upon reminiscing of childhood musings, I realized some of my earliest nature encounters were in my very own backyard! My trusted sidekick sister and I would make our rounds around the house and yard in search of critters. We discovered the mecca of roly pollies and earthworms under a few limestone rocks in our landscaping. Snatched and in-hand, we'd whisk our specimens off to our red wagon where their constructed habitat awaited – full of grass, leaves, and small mounds of mud. My sister and I studied them, enjoying their quick movements and armored, spherical, transformed shape when frightened. We were so proud of our finds! And of course, always happy to release them.

My sister and I were delighted to find birds' nests in trees and shrubs and to see the progression of their hatchlings. The American robin was the first backyard bird I learned because of its abundance in our yard and its memorable blue eggs, closely followed by the cardinal. Refilling the bird bath and feeder were some of my favorite tasks! It was one of the ways I was introduced to new species so quickly.



Barred owl in Angela's current backyard in Columbia, IL. Photo courtesy Angela Mayer

I remember the excitement of picking out spring annuals for our concrete planters and getting to help arrange and plant them. "What is this? What do we use a trowel for?" Even more exciting was when my dad took us to the nursery for a new addition to the back yard. I still love looking at trees!

Throughout elementary school, a friend and I would concoct potions during recess with found plant material on the playground. Dandelions, clover flowers, and greater plantain weed leaves and seeds would get mashed together with mud in the nook of the oak tree's roots. We would rush back to our tree the following day in the hope that our mixture would still be there. Elementary school presented many nature-oriented experiences other than the playground potions: the classic grow-a-bean-in-a-two-liter bottle exercise to mimic how an environment recycles water with evaporation and precipitation, or the dissection of an owl pellet to see the bird's recent stomach contents.

It wasn't until around fifth grade I became obsessed – I needed to know everything about backyard birds, especially the hummers. Hummingbirds were, and still are, my infatuation. Their playful clicking, soft yet cheerful squeaks, the intense bumble bee noise their tiny wings would make – I couldn't get enough! I will never forget the pure elation I felt the first time I came upon one of their nests. It was then that I was hooked on nature and I knew there was no turning back.



Smart weed at Fort Chartres Waterfowl Club. Photo courtesy Angela Mayer.

My thirst for knowledge was unquenchable and my curiosity grew steadily greater. I embraced the bigger and more complex concepts middle and high school presented, but it was my college education that pushed those boundaries of nature even further. I chose to pursue an education in landscape architecture, which trained my mind to think a little differently than before. Was I thinking linearly--approaching a discussion, thought, concept in a way that was a commonly accepted mindset? Or was I thinking critically? Theoretically? Thinking from the other side? (Wait – there was another side?!).

What IS nature?

I started learning about plants, their purposes, topography, micro- and macro-climates, ecotones, fluvial geomorphology, and so many other things I probably can't even pronounce anymore! My view started to change of what I considered "nature" and "natural". I started to notice the difference between man-made and naturally occurring. Native versus foreign or even invasive became noticeable. That park-like setting many of us grew up in, wasn't so natural after all, with perfectly sloped yards coated in a perfectly manicured blanket of green with carefully trimmed shrubs accented by perfectly placed perennials in front of each house. The creek that ran near my childhood home was actually a glorified ditch, draining the overflow from a man-made lake bounded by rip-rap to "stabilize" the lakeshore. Was this nature?

How about acres of row crops of corn and beans full of grasshoppers and stink bugs with the occasional visiting family of deer – is this nature?

The first responders of an impacted site, weeds, growing between the cracks in the pavement of a city, ephemeral streams of stormwater popping up from a large rain event, pigeons absent-mindedly pacing about – are these nature?

Or the rolling prairies of the Midwest with bluestems, gramas, and coneflowers? The soggy bottoms of the Mississippi or Meramec, accompanied by smart weed, lotus, and the most terrifyingly thorned Honey Locust you've ever seen? Are these nature?

Lotus blooming at Fort Chartres Waterfowl Club (right). Photo courtesy Angela Mayer.



The truth is, the meaning of the word "nature" is quite subjective and situational. The processes are present; the flora and fauna are present. Are they all naturally occurring? Or are there just natural elements? If it's planted and managed by humans, is it still nature? Technically the roly polly wagon habitat could be nature because it contains natural things, right? That's up to you! Food for thought to get your mind churning! We are so fortunate to live in an area of the Midwest where we not only get to experience nature and natural landscapes, but we get to participate in their wellness through organizations like Clifftop, so our families and friends can see the differences we see too, and form their own opinions!

Isn't it amazing how children (of any age!) can learn so greatly through discovery in nature?! Not when we're told what and how to learn, but when we can learn it on our own through observation and doing. Think back to your earliest memories of the outdoors and how your perspectives have evolved over time. Now think of some recent ones. Just last year I saw my first Monarch caterpillar hatch and grow on milkweed I planted. Are you still discovering? What do *you* consider nature? I'd love to hear!

Editor's note: Angela is the granddaughter of Clifftop Board member emeritus, Charlie Frederick, who owns the Fort Chartres Waterfowl Club where Angela took the photos of lotus and smart weed. She provided some background on the club in a recent email: "I believe it was all wetlands at some point, then as settlers moved through they drained it all to use as farmland. It was farmed for a very long time until my grandpa decided to make it into a hunting club. The club is a "wetland" but its function and existence rely on human maintenance. It has a series of cells formed by levees that my grandpa formed from a layout from the IDNR representative he was working with at the time. A portion of the wetland is open water, some areas are covered in lotus (which is highly aggressive), and other areas have hundreds of bald cypress. Different water fowl and birds like different water depths. This particular wetland is shallower, which attracts ducks, snow geese, and coots. If it were deeper, for example, it would attract Canada geese. He drains the water every year not long after duck season is over and will start pumping ground water around July to have the cells full and ready for duck season to start. If the water would stay year round, muskrats would burrow through the levees and therefore compromise them. Finding and fixing the leak is too time and work intensive. The cells are connected to a network of channels which connect to the Mississippi. When the Mississippi floods, the water will back up into the wetland, and when my grandpa has excess water or is ready to drain the cells, it is released into the Mississippi. This is all controlled by a stop log structure system and several pump stations. Kidd Lake Marsh is not far from the duck club. That benefits the hunters because once the birds are scared and fly off, they usually resettle in Kidd Lake Marsh and will eventually come back. The alternative to that would be flying all the way to the Mississippi River."

Upcoming events...

FROG FROLIC, Saturday, May 13, 11 am until 1 pm, Paul Wightman Subterranean Nature Preserve—Learn about the wide variety of frogs hopping around the ponds at PWSNP. Call (618) 935-2542 or email cliffmbr@htc.net by May 11 to reserve your spot.



Eastern spadefoot photo courtesy Bob Weck



Lone star tick photo courtesy Bugwood.org

Ticked Off!, Saturday, June 24, 1 pm until 3 pm, Monroe County Annex Building, Waterloo—Learn about the insects and the diseases they transmit. Call (618) 935-2542 or email cliffmbr@htc.net by June 22 to make your reservation.

At the January meeting of the Clifftop Board of Directors, a new president was elected. George Obernagel passed the reins to Jared Nobbe and Jared graciously agreed to write the following article.

My Experience with Clifftop

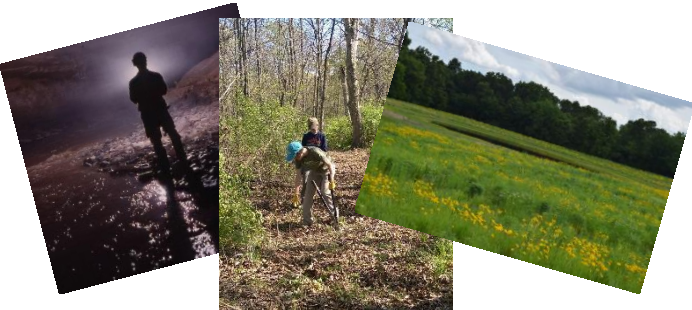
I would never have guessed that when I had my first experience with Clifftop that I would one day be charged with the awesome responsibility of being president of this great organization. My first experience was quite honestly just another day at work trying to get the organization a great deal on a gator in conjunction with our non-profit discount. When Carl (DauBach) asked me to be on the board a few weeks after the delivery, I thought, "How can I say no to a customer that just purchased a gator?" So I agreed to join under two conditions: that the meeting schedule be no more than 4 times a year and that I would not hold an office. That last one didn't work out as planned.

As I became more involved, I began to enjoy the many aspects of the organization. From the preservation of White Rock and our many seminars to the most recent work of purchasing and making available to the public the Paul Wightman Subterranean Nature Preserve. One of the most rewarding things for me is enjoying this organization with my family. Most organizations usually take you away from your family, but Clifftop has allowed me to share some of my work with my wife and sons. I have been able to go on hikes with them and share membership days with them. One of my best memories is mowing the prairies at PWSNP with my oldest son. During these activities, I am reminded that we are providing an opportunity for this generation and the next to have places where they connect with the long natural history of Monroe County.

I am humbled by the knowledge and passion of our members, board, and volunteers. I will be the first to admit that there are times that I feel like some of the discussion just goes over my head, but that just means that I get to absorb the knowledge of all those around me. I want to thank you all for entrusting me to lead Clifftop for the next few years. I look forward to working with all of you to continue the legacy of our organization.



George and Jared with "Cliffton," Clifftop's Gator just after its purchase in 2012. Photo courtesy Tom Rollins, thomasrollinsphotography.com



Requesting your photos of PWSNP

While working on the installation of infrastructure at the Paul Wightman Subterranean Nature Preserve, we are looking for your high quality photos of the preserve to use on interpretive signage. Please contact Joann Fricke at cliffmbr@htc.net and we will get instructions to you as to how to submit.



White Rock

Contractor Mike Fries, Fries and Associates, continues to do a Forest Stand Improvement on the 199-acre, Stand 5 of the Preserve. A Natural Resources Conservation Service's EQIP cost-share grant is funding the work. He'll be working there most of the rest of the year.

We designed, ordered and received four new additional interpretive signs for the Ridgetop Trail on the Preserve. Our dearly loyal member, Edna Dell Weinel had her 90th birthday in 2015 and asked her friends to make a donation to Clifftop in lieu of birthday gifts. Thanks to her and friends' generosity we received more than \$1300 in donations and used the money to purchase the signs.

We'll be issuing a call for a couple-three volunteers to help install the signs in early May.

Joann & Mike Fricke deserve many thanks for agreeing to mow and otherwise maintain the trail system and take care of the parking area on the Preserve again this year.

Wightman

Contractor Kevin Slaven, Rock Road Ecological, LLC, is working to cull honeysuckles and other non-native species on 105 wooded acres of the Preserve. The work is being funded by cost-share funding from the U.S. Fish & Wildlife Service and the Illinois Recreational Access Program. Kevin will be done in the fall.

We will then plant more than 1200 native trees and shrubs in the woods, generously supported by the 2016 Illinois Clean Energy Community Foundation's Challenge Grant for which you more than met our needed matching fundraising goal.



Volunteer Mike Fricke cuts up a large downed tree on Ridgetop Trail South at White Rock, so hikers have easier going.

Photo courtesy Joann Fricke

Twenty-two Clifftop volunteers conducted our first controlled burn on 14 acres of prairie at the Preserve on March 19th. (See photos on page 7)

Four "foster-ponder" volunteers began hand planting native "wet-footed" plants and sedges at sinkhole ponds on the Preserve. Praise be to Clifftop volunteers Cindy Helms, Tina Grossman, Susan Rick and Kay Courtney for adopting ponds. More sad, lonely sinkholes are open to foster-ponders if you want to be an adoptive caregiver. Bill Rathmann, Will Harbaugh and Mark Kaempfe have volunteered to help mow the trail system on the Preserve this growing season. Many thanks to them.



Foster-ponder, Kay Courtney, with her pond at Wightman. Photo courtesy Tina Grossmann

At last, construction on public infrastructure at Wightman begins soon. Kuhlmann design Group (KdG) has completed the survey, elevations, and alignment design to convert about one mile of our current mowed-grass trail system to a hard-pack limestone surface that will be user-friendly for all people, including those who need mobility-aid devices.

In early May, Huebner Concrete Contracting, Inc. will begin constructing the new access road and parking area at the public engagement area. We're in the process of getting bids for several additional phases and work segments:

- ❖ installation of the hard-packed limestone trail segment
- ❖ purchase and installation of a pavilion
- ❖ purchase and placement of site amenities, including tables and benches
- ❖ purchase and installation of a restroom facility
- ❖ landscape a "showcase habitat" for native plants and wildlife at the public engagement area
- ❖ install interpretive signage there and along the trails.

Wightman prairie burn



Ferrying volunteers to the burn unit. Photo courtesy Ben Jellen



Carl checks weather conditions before ignition. Photo courtesy Ben Jellen



Volunteers keep the fire away from Kaskaskia Road. Photo courtesy Ben Jellen



Lighting and watching. Photo courtesy Trent Larsen

CLIFFhanger Citizen Scientists Conduct Bat Monitoring Acoustic Surveys

By Pen DauBach

Kay Courtney and Tina Grossmann, pictured at right, are engaged in a project to help understand some of the evening chatter that occurs at the Paul Wightman Subterranean Nature Preserve. Tina and Kay are assisting with bat acoustic monitoring studies. Each month from early spring through autumn, Tina straps on a backpack with a four-foot pole extending over her head. A sensitive microphone tops the PVC pole and is connected to a recording device stowed in the backpack. Tina and Kay then walk the grass-mowed paths, stopping for five-minute intervals at set points along the way. The recorder is tuned for the frequency and pitch of the sounds made by bats as they course the prairies, ponds, and woodlands of the PWSNP.



Photo courtesy Kay Courtney

Unheard by human ears, bats emit a series of clicks and calls that help them navigate through the darkness and zero in on food, such as a moth, mosquito, or other insects. The bats' ability to echolocate is somewhat comparable to the use of sonar navigation on submarines. Bats emit noise and the return echoes allow them to navigate past a tree, for example, and also shows them exactly where that juicy moth morsel of flying food can be scooped up.

The type and patterns of clicks and noises bats make differ by species. Acoustic monitoring is one method that helps identify the types and numbers of bats that are active in a given location. Better knowledge of the distribution of bat species may help with efforts to conserve these important mammals.

Matt Safford, working with Dr. Steve Taylor, Illinois Natural History Survey / University of Illinois-Urbana, devised the bat acoustic monitoring study as part of his overall research on the relationships between plants, moths, and bats. The PWSNP is one of Matt's primary research sites. During 2016, Matt conducted numerous acoustic surveys, but asked for Citizen Science volunteers this year to help gather even more data by carrying out surveys during times when Matt is absent. Tina and Kay happily and eagerly agreed to run the surveys and help Matt increase the amount of acoustic monitoring data gathered at the PWSNP.

Matt's findings, along with the numerous research activities underway at the PWSNP, will become part of Clifftop's management and stewardship tool kit, enabling us to better manage the wildlife habitat. Bats are an integral part of that habitat and provide lots of "free" services that benefit all of us. The 13 species of bats in Illinois all are insectivores and help control insects that bother us, such as flies and mosquitoes. Bats also gorge on many insects that can damage crops. Recent findings from a Southern Illinois University-Carbondale led study found that bats provide \$1 billion in crop protection for corn alone, on a worldwide basis; an astonishing figure of free ecosystem services for just one crop.

You can read a lot more about Matt's and Steve's work on the website they have set up, Illinois Bat Conservation Program, at <http://www.illinoisbats.org/>



More than bats...Steve Taylor continues to coordinate a lot of research at the PWSNP

By Pen DauBach

Understanding the effects of the transforming landscape both on the surface and within the Fogelpole Cave system remains a primary goal for Clifftop. Research and scientific-based analyses will ground management strategies. Dr. Steve Taylor, Illinois Natural History Survey and University of Illinois-Urbana, serves as chief science advisor for all research efforts at the Paul Wightman Subterranean Nature Preserve. Research topics include:

- Bat population and White-Nose Syndrome monitoring, Steve Taylor, INHS.
- Illinois Cave Amphipod (*Gammarus acherondytes*) population monitoring / cave stream invertebrate monitoring, Steve Taylor, INHS.
- Re-mapping Fogelpole Cave to modern GIS-based standards, Aaron Addison, Washington University.
- Pond Water Quality and Herpetological Surveying 2014, Chris Phillips, Andy Kuhns, IDNR.
- Paleontology / Significant Pleistocene bone deposits, and assessment of abundance, distribution, and status of Paleological resources, Sam Heads, INHS, Chris Widga, Illinois State Museum.
- Water Quality of streams within Fogelpole Cave System, Walt Kelly, Illinois State Water Survey; Sam Panno, Illinois State Geologic Survey.
- Springtail inventory and biogeography, Aron Katz, doctoral research, Steve Taylor, INHS.
- Epikarstic fauna studies - 2014, Scott Cinel (now pursuing doctoral studies at University of Florida), Steve Taylor, INHS.
- *Physa* sp. snail population biology, Bob Weck (SWIC), Steve Taylor (INHS), Matt Niemiller (INHS) and others.
- Ecological research on interrelationships between prairie plantings, moth species, and bats; including acoustic bat studies, Matt Safford, MS research, Steve Taylor, INHS.
- Dragonfly and Damselfly bioinventory and surveys 2015-present, Joe Roti Roti, Pat Washburn.
- Aquatic Entomology Inventory, 2016, Diane Wood, Southeast Missouri State University.
- Spider biodiversity inventory, Brooke Grubb, continuing research project, guidance through Diane Wood, SEMO.
- Copperhead snake radio-tracking research, Ben Jellen.
- Bee population surveys / inventories, 2017, Mickey Schutzenhofer, McKendree University, Gerardo Camilo, St. Louis University.

Funding for Public Infrastructure at Wightman Preserve



Clifftop NFP was awarded a major grant to support construction of visitor facilities and accessible trails at the Paul Wightman Subterranean Nature Preserve in Monroe County. We wrote the grant proposal in February 2015, but had to patiently wait to learn that we have been awarded a Recreational Trails Program grant of nearly \$185,000 that will cover 80% of the entire \$230,000+ infrastructure costs. The Recreational Trails Program grant is administered by the Illinois Department of Natural Resources and the Illinois Department of Transportation, and is funded through the U.S. Transportation Department's Federal Highway Administration. RTP and the projects the grant program has created are wonderful examples of the excellent benefits that follow from public / private joint works.

Our efforts to garner additional funds to cover Clifftop's 20% share of project expenses and additional items not covered in our RTP grant allowance have been successful. These generous donations and grants underscore the generosity and strong support of local civic groups and private foundations and of our membership.

The Columbia-based Sophia and Elmer Oerter Charitable Foundation, the Waterloo-based William Zimmer Family Foundation, the William E. Schmidt Charitable Foundation, the Waterloo Optimist Club, and the Waterloo Lodge Number 27, International Order of Odd Fellows all have awarded gracious donations and grants in support of the project. In addition, the Illinois Clean Energy Community Foundation and Grand Victoria Foundation, also have provided grant monies for the project. Our members and supporters continue to make the work possible.

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To those of you who have already renewed your Clifftop membership, we offer our sincere thanks. If you haven't yet renewed, please consider doing so at your earliest convenience. A membership form is available here:

<http://www.clifftopalliance.org/wp-content/uploads/2011/09/membership-form.pdf>



It's not too soon to reserve your spot at the **Total Solar Eclipse Field Trip, Monday, August 21, 2017, 11 am until 3 pm, Paul Wightman Subterranean Nature Preserve**. Please join us as we learn the scientific and spiritual sides of this rare event. Attendance is limited to 200. Eclipse viewing glasses and water will be provided. Reservations are required for this event. No one will be admitted without a ticket and signed release form. Contact Joann Fricke, no later than August 19th, at cliffmbr@htc.net or 618-935-2542 to secure a reservation.