



inpaws journal

Indiana Native Plant and Wildflower Society

Winter 2016

Grant lets kids learn by getting their feet wet

By Emily Schroeder

Thanks to a \$350 grant from INPAWS' Letha's Youth Outdoors Fund, the sixth grade class at Horizons at St. Richard's Episcopal School,



Sixth grade students of Horizons at St. Richard's Episcopal School, Indianapolis, study the properties of water at Marott Park.

Indianapolis, was able to explore nature, study ecosystems and test water as part of Hoosier Riverwatch, a program of the Indiana Department of Environmental Management. Horizons is closing the academic achievement gap in the capital by providing underserved children access to high-quality academics in an engaging summer program, tuition-free.

Summer learning loss, considered the largest contributing factor to the nation's achievement gap, disproportionately affects low-income children, who statistically lose two to three months in reading and math skills each summer while their middle- and upper-income peers gain two to three months. The compounding effect this has puts low-income children three years behind their peers by fifth grade. However, students enrolled in Horizons return to school each fall confidently, having grown an average two to three months in reading and math. Through the support of Letha's Fund, students were able to achieve

these results through hands-on outdoors application. In addition to preventing summer learning loss, Horizons students take swim lessons at Butler University and learn how to be fit through teaching and modeling healthy habits.

As part of the sixth grade science curriculum, students explored the question of "Where does water come from?" In addition to two in-class lessons modeling the watershed, students visited Marott Park in Indianapolis three times. Activities included a nature scavenger hunt,

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habitat evaluation, measuring physical (flow rate, temperature, transparency) and chemical (dissolved oxygen content, pH, phosphates, nitrates, nitrites) properties, and searching for benthic macroinvertebrates (organisms without backbones).

The field trips were successful for two reasons: they exposed students to science in a real and accessible way, and they helped students feel comfortable and engaged in nature. The trips allowed students to see and explore concepts typically encountered only in textbooks. For example, students learned about flow rate by sending a plastic egg down the creek, measuring the distance and timing it. Such opportunities help students better understand and apply concepts.

Beyond the science curriculum, a key component of the field trip was getting kids comfortable

Wet Feet – continued on page 7

Plant this ... not that!

Love red fall foliage?

Host plant spotlight

By Holly Faust

We all love the colors of autumn: the yellows, reds, oranges. Many people landscape for color with *Euonymus alata*, also known as burning bush, winged euonymus or winged spindle. It is native to Japan, China and Korea and has several cultivars. Unfortunately, it is also invasive. I had some pop up in my yard, which was previously devoid of this plant. A few doors down, my neighbor had planted it in her yard.



"Sumac is an astringent, and it's been used in herbal medicine as an antiseptic and tonic. Sumac pink lemonade was used for fever. It may not get rid of the fever, but like lemonade, it will make the patient feel a little cooler." – Wildman Steve Brill

So, to people who say, "But I love the red color in the fall," my response is, "So do I, but I love it on our native shrubs that are in harmony with the soils, birds, animals and other surrounding plants."

We have plenty of native options from which to choose.

Sumacs are glorious in their bright red fall color. In *Shrubs and Woody Vines of Indiana and the Midwest*, Sally S. Weeks put it well when she stated, "There is probably not any other group of shrubs that can topple the 'King of Color' from its throne." There are four species in the genus *Rhus*: smooth sumac (*R. glabra*), staghorn sumac (*R. typhina*), dwarf sumac (*R. copallinum*) and fragrant sumac (*R. aromatica*).

Sumacs can range from two to 30 feet in height, depending on the species and where

they are planted. Their red fruits ripen in late summer and early fall, persisting into winter. They serve as emergency food for over 30 species of birds, including wintering songbirds such as eastern bluebirds, robins, hermit thrushes and game birds, and some mammals. This shrub family is also host to several moth species, including ruddy dagger, showy emerald, dark Marathyssa and saddled prominent moths. Carpenter bees like to tunnel in the pith of the sumac, not really doing any damage to the sumac itself. The main insect pollinators of sumacs are native eusocial bees.

Chokeberry is another beautiful shrub that produces spectacular red fall foliage. According to Sally Weeks, identifying chokeberry species is nothing shy of difficult, so I will discuss these briefly. Chokeberry (*Aronia prunifolia*) can reach a height of 10 feet. It is commonly found in bogs, swampy woods and on dry wooded slopes. Planted as a hedge or border, it produces a beautiful fall sight. This chokeberry, along with *A. melanocarpa* and *A. arbutifolia*, is host to butterflies such as coral and striped hairstreaks. The pollen and nectar attract beetles and flies, and shrub-nesting songbirds like the dense growth form. The berries provide winter nourishment for chickadees, catbirds, grouse, thrashers and cedar waxwings.

Blueberries, farkleberries and deerberries are other choices if you're looking for a smaller shrub with red leaves in autumn. The genus *Vaccinium* offers bell-shaped flowers in spring, lovely blueberries in summer and fall, and wine red-to-green twigs in winter. These shrubs do require acidic soil and prefer full sun but some, such as farkleberry or sparkleberry (*V. arboreum*), can tolerate heavy shade. Lowbush blueberry (*V. augustifolium*), Canada blueberry (*V. myrtilloides*), and dryland blueberry (*V. pallidum*), are small low-growing shrubs, reaching two feet or less. Canada blueberry (or velvetleaf huckleberry) is endangered in Indiana.

These lower growing *Vaccinium* prefer sandy acidic soils. Farkleberry, highbush blueberry (*V. corymbosum*), and deerberry or squawberry (*V. stamineum*) can grow to heights of six to 10 feet. Birds love these shrubs' berries, as one can imagine! Species include songbirds

and gamebirds, including catbirds, cardinals, robins, cedar waxwings and wild turkeys. According to Doug Tallamy's book *Bringing Nature Home*, *Vaccinium* species host over 280 moth and butterfly species, among them Henry's elfin and striped hairstreak.

Let us not forget **dogwoods** (*Cornus* spp). While the leaves are more purplish red, we have several native species ranging in size from four feet to upwards of 15 feet, although most do not reach this taller height. All have white flowers blooming from early May to June, depending on the species. Most dogwoods do better in full sun but some can tolerate full shade. Rough leaf dogwood (*C. drummondii*) and gray dogwood (*C. racemosa*) both produce fruit that is pleasing to wildlife and birds, both residents and migrants such as warblers, vireos, thrushes and eastern phoebes.

All dogwoods have opposite leaves with the exception of alternate-leaf dogwood or pagoda dogwood (*C. alternifolia*) in which the branches are alternate. This makes for better nesting sites for birds such as cedar waxwings and thrushes. This species can grow to 20 feet or more, becoming a small tree. Besides providing flowers for nectar and pollen for native pollinators, this shrub also serves as a host for myriad butterflies, including spring azure, American snout and banded hairstreak.

There are several other colorful natives that are very beautiful and underappreciated. **American barberry** (*Berberis canadensis*) has beautiful yellow flowers in May and blazing red leaves in autumn. It is endangered in Indiana due to the fact that it is an alternate host for black-stemmed rust which affects wheat crops. For this reason, it was very efficiently eradicated in a campaign that started in 1918. (I wish we could do this with many *non-natives*.) If you can find it, this shrub provides good nesting sites for indigo bunting and field sparrows. Please do not buy the invasive Japanese barberry (*Berberis thunbergii*), for obvious reasons.

Sassafras (*Sassafras albidum*) is also beautiful in the fall, as are **red maple** (*Acer rubrum*) and **American sweet gum** (*Liquidambar styraciflua*). Sassafras is a host for such butter-

flies as spicebush, tiger and pale swallowtails. Red maple is a host plant for Cecropia and rosy maple moths. Sweet gum is a host for luna, regal and imperial moths. These trees grow to great heights.

Virginia creeper (*Parthenocissus quinquefolia*) is a beautiful native vine that turns the trunks of trees, which it wraps around, a beautiful red with its fall leaves. In addition to the caterpillars supported by Virginia creeper, at least 30 species of birds eat the beautiful blue



berries in the fall. The vine is a host plant for several species of moths, as well, such as the Virginia creeper sphinx, Virginia creeper clearwing, and the beautiful wood nymph.

These native shrubs, trees and vine are all native to our Hoosier state and will, if planted, make us see red every fall! When we plant these in our backyards and woodlots, we support and sustain the diversity of our fascinating and beautiful flora and fauna for future generations to study and enjoy.

Holly Faust is an interpreter for Hamilton County Parks & Recreation at Cool Creek Nature Center and a member of INPAWS Central Chapter.

"Chokeberry had an extreme makeover once its nutritional profile was discovered. High in vitamin C and antioxidants, it is being touted as the healthiest fruit in the world." –John Kitsteiner.

Friends of the Limberlost

INPAWS
in action

By Terri Gorney

Last spring Friends of the Limberlost received a \$1,000 grant from INPAWS to buy seeds and plugs to enhance and diversify native plants seen along the trails at Loblolly Marsh, Limberlost Swamp Wetland Preserve, and at Limberlost State Historic Site around Gene Stratton-Porter's cabin. The planting was accomplished by volunteers and DNR staff.



Curt Burnett and Bill Hubbard recreate characters from Gene Stratton-Porter in the Limberlost books. Burnett plays Paxson the swamp guide while Hubbard plays Limber Jim.

Friends of the Limberlost celebrated this and other achievements at their Sept. 26 annual meeting and dinner.

The Friends are unusual in that they work with two state agencies: Indiana State Museum (ISM) and Department of Natural Resources (DNR). The Friends own land, the largest property being 231 acres at Rainbow Bottom along the Wabash River in Geneva. It is a place Gene Stratton-Porter made famous in her books *Song of the Cardinal* and *At the Foot of the Rainbow*. In the

same area, DNR's Division of Nature Preserves owns and manages close to 1,500 acres of nearby uplands and wetlands, restored portions of the Limberlost Swamp.

Before the dinner, ecologist Ben W. Hess hosted an open house at the newly completed DNR maintenance building, which the Friends helped establish. Ben gave a PowerPoint presentation on the year's highlights. This included the Friends joining the Indiana Parks Alliance. New trails have been created at Music of the Wild Preserve just south of Geneva off US 27, connecting it to the Limberlost Bird Sanctuary and a new trail at Limberlost Swamp Wetland Preserve, an excellent trail for birders.

Thirty-nine acres around the historic White Oak Cemetery, north of the Loblolly Marsh, recently went up for sale. It is a property that retired

ecologist Ken Brunswick has long wanted to see preserved. Ben believes it is an old oak opening. It contains a variety of plant life, including the rarely seen shooting star (*Dodecatheon meadia*) and fire pink (*Silene virginica*). The Friends have pledged \$37,000 for its purchase; ACRES Land Trust also pledged some funds. The Friends are working with DNR to additionally obtain a Bicentennial Nature Trust (BNT) grant for this purchase.

This summer saw nine rare bird alerts in the area, eight of them at Limberlost Swamp Wetland Preserve. According to Fort Wayne birder Jim Haw, the glossy ibis that appeared in June is only the second one on record in northeast Indiana since 1969. The birds attracted bird watchers from Lafayette to Jeffersonville and Cleveland.

FrogWatch USA was conducted for the second year; 10 of the 11 frog species of this area are thriving here.

Limberlost State Historic Site (SHS) manager Randy Lehman reported that over 24 events were hosted at the site in the past year. Through Aug. 30 the Friends donated 1,640 hours to Limberlost SHS. This does not include hours donated to DNR.

Limberlost naturalist and program developer Curt Burnette created a PowerPoint presentation called "Little Known Limberlost." Curt has ventured more deeply into the Limberlost properties than most. His "tour" included pictures of the heron rookery and giant sycamore trees (*Platanus occidentalis*) at Rainbow Bottom.

The highlight of the annual meeting was Scott Forsythe's unveiling of a new app called "Birding with Gene Stratton-Porter at Limberlost." The app contains over 200 birds seen at Limberlost, maps and GPS directions, a picture of each bird, a quote of Gene's about the bird or Limberlost, and a link to the Limberlost events page. The app will be available for Android and Apple devices. Scott thanked his sister Alexandra, 16, for her help. Alex is webmaster of the Friends web site, www.limberlost.weebly.com.

Scott's new app was named a Bicentennial Legacy Project by the Indiana Bicentennial Commission (IBC). Executive director of the IBC Perry Hammock attended the annual meeting and made the surprise presentation. Scott, a high school senior, was in for a second surprise when Natanja Tabb, store manager of Nordstrom of

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Friends, flowers and funds = butterfly garden restoration

By Terri Talarek King

Thanks to INPAWS, a native plant garden in Knox County is being restored to honor the memory of a local naturalist, support local wildlife and educate visitors.

Three Ouabache Trails Park volunteers were thrilled to find out that Knox County Parks and Recreation Department was awarded one of the INPAWS small grants for 2015 for the Lynn Wiseman Butterfly Garden Restoration Project. Terri Talarek King, Linda Wilcox and Linda Sutterer (members of INPAWS Southwest Chapter), with the support of park superintendent Rama Sobhani and the parks board, set to work immediately.

Lynn Wiseman, an area naturalist, photographer and wildflower expert, was the first person to survey native plants in the 254 acres that were to become Ouabache Trails Park in 1983. With one border along the Wabash River, the park consists of wooded hills, floodplains, creeks and wetlands rich in native wildflowers. Many people visit to use its trails, playgrounds, picnic areas, campground, cabins and special events.

After Wiseman's death in 1997, his widow Sherrie established the Lynn Wiseman Butterfly Garden. Roughly 56 by 18 feet, it consists of garden beds with a narrow pond in the middle, which has a waterfall at one end and an arched bridge across the center. It is situated near the park office/nature center and the head of Trail 1, easily noticed by visitors.

After Sherrie Wiseman moved away, care of the garden diminished. During a previous superintendent's administration, a local landscaping company was hired to maintain the pond and replant the garden. The company used mostly non-native plants, some of them invasive species, and the bridge was painted white.

Terri, Linda and Linda were concerned about the garden and in 2014 began working toward restoring it to native plants. Superintendent Sobhani dismissed the landscaping company. We assessed the condition of the garden and applied for a \$675 INPAWS grant.

And got it! We were thrilled and eager to transform this spot to reflect the diversity of plant life at Ouabache Trails Park, attract local wildlife, honor Lynn's life and educate others.

Things started happening. The Togetherhood group of volunteers from the YMCA of Vincennes chose the Lynn Wiseman Butterfly Garden Restoration as their spring project. On work days, a healthy number of enthusiastic, hard-working



folks came to remove the old (non-sustainable) mulch, remove almost all of the non-native plants (more will be removed later), unearth the irrigation system hose, clean dead leaves from the pond, plant native plants, make temporary labels, and lay down new sustainable mulch donated by Ford's Sawmill. We are immeasurably grateful for the Togetherhood group's work and interest in this project.

A cousin of Lynn Wiseman found out about the project, visited the garden with us, was very pleased and gave a monetary donation. Since that time, we have had renewed contact with Sherrie Wiseman. Others have become interested in helping, including a volunteer, Rosa Clasby, who works on the garden every week.

More work has gradually been done. With the help of Rama Sobhani, the filtering/pump system was cleaned, restoring the waterfall to normal flow. We eventually added more native plants, bought with INPAWS grant monies, from Strangers Hill Farm near Bloomington and rescued from local areas. The garden near the

Butterfly Garden – continued on page 9



Members of INPAWS Southwest Chapter and staff of Ouabache Trails Park used funds from an INPAWS grant to restore the Lynn Wiseman Butterfly Garden in Knox County.

Volunteers were pleased to find a skink in the garden. Skinks are considered by some to be indicators of healthy habitat.

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Please submit text and high resolution photos (300 ppi) via e-mail to journal@inpaws.org. Submission deadlines for specific issues are: Spring – Jan. 23 for April 1 mailing Summer – April 22 for July 1 mailing Fall – July 22 for Oct. 1 mailing Winter – Oct. 22 for Jan. 1 mailing

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Kevin Tungesvick, a restoration ecologist with Spence Restoration Nursery, updated members on the status of the Mounds Reservoir proposal. Calling the project "a dangerous precedent," he detailed the history of the project, which would destroy ten miles of the White River and inundate a third of Mounds State Park and all of Mounds Fen State Nature Preserve. The Adena-Hopewell Native American earthworks are also in jeopardy from the plan.

"People don't make fens," he said. "Ice ages make fens."

More than 20 groups, including INPAWS, Heart of the River, and Hoosier Environmental Council have led opposition to the project for the last three years. The Anderson Corporation for Economic Development (ACED) sought the approval of city and county governmental entities from Anderson to Muncie. Public education forums and public protest have stymied the project, but ACED has not withdrawn the proposal, despite studies by Ball State University and Indiana Dept. of Environmental Management that have concluded that the project is not environmentally sound.

A "greenway" alternative development plan that would capitalize on, yet preserve, the area's natural resources is being put forward by the environmental groups. Tungesvick said, "Heart of the River and its allies remain vigilant."

The life cycle of butterflies and moths was the topic of Jim McCormac, an avian education specialist with the Ohio Division of Wildlife. Showing close-up pictures of life stages of various Lepidoptera species, he said, "Caterpillars form the majority of biomass in Eastern deciduous forests. They are tubular objets d'art."

The mortality of caterpillars, he explained, is "about 99 percent" due to predation by birds and parasitoid wasps and flies. As an example he cited the red-eyed vireo, one-third of whose diet is caterpillars.

"This underlines the importance of growing native plants to feed birds, not just filling your feeders," McCormac said. "Birds need caterpillars!"

At the opening business meeting, INPAWS president Jeff Pitts presented a review of the Council's actions of the past year. A membership vote affirmed proposed changes in the organization's by-laws to comply with state statutes regarding nonprofit corporations.

Officers were elected: Jeff Pitts as president for another year, Davie Sue Wallace vice-president, Don Gorney continuing as treasurer, Tom Swinford recording secretary, Sharon Patterson corresponding secretary.

Wet Feet – from page 1

in nature. Horizons students come from many crime-riddled neighborhoods that lack safe environments for kids to explore nature. While students were hesitant at first, they quickly acclimated to the environment and, over the three trips, became more engaged with their surroundings.

Through the grant, we were able to purchase water shoes for every student. These were a critical component as they allowed students to walk on the muddy trails or wade in the creek without ruining their own shoes.

Because of supporters like Letha's Fund, Horizons students have access to non-traditional learning beyond the classroom. We believe it is opportunities like these that keep our children returning each day and each year. Horizons has a daily attendance rate of 95% and an early retention rate of 72%. Thanks to INPAWS for allowing our children to see that learning can happen anywhere, even on a log in the river.

Emily Schroeder is program coordinator of Horizons at St. Richard's in Indianapolis.

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Special thanks to the Center for Earth and Environmental Science, local IUPUI sponsor and partner for the 2015 INPAWS conference. Thanks also to the following sponsors.

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Check out INPAWS' great blog at inpaws.org



Slime molds are no garden threat

By Kenneth Setzer

If it resembles the partially digested matter dogs vomit, it's likely the aptly named dog vomit slime mold.

Ever wander outside to find what looks like a shredded kitchen sponge — an alarming, shocking, bile yellow — roiling its way over your mulch? Is it an animal, plant, fungus, or maybe some unholy combination? You may be cohabitating with slime mold.

It can also look a bit like scrambled eggs. "Fungus" might immediately pop into your worried mind, but this isn't a fungus at all. What you have is *Fuligo septica*, the aptly named dog vomit slime mold.

Slime molds are weirder than you might think. They are not molds (which are in the fungus kingdom) but rather fall into the kingdom *Protista*, one of the stranger of the six or so kingdoms of life.

The vomit slime mold — let's call it *Fuligo* — is

the one you are most likely to notice, especially on mulch. Many other slime molds are quite small, but you might see them on very damp, well-decayed wood.

If slime mold spores successfully germinate, they can come together to form what's called the plasmodium. Sources describe it as a giant cell composed of many nuclei (there is another type of slime mold). The plasmodium does indeed creep and crawl in search of food. If all goes well, it will produce its fruiting bodies and spores, and the process will continue.

I find it tough to get my mind around its means of existence and reproduction. Slime molds seem just so biologically alien from what we are. But that's my anthropocentric prejudice. The main point for us to remember

is that slime molds are harmless to animals and plants. *Fuligo* in particular is innocuous and even eaten by people in some parts of the world.

Like us, slime molds first ingest and then digest their food. Fungi, on the other hand, break down their food by secreting enzymes before absorbing the available nutrients. And, of course, plants do away with all this nasty business by making their own food.

The bright yellow *Fuligo* fades into a pinkish beige once the spores begin to form into a mass called an aethalium. The entire *Fuligo* then dries out and hardens. It soon releases its spores as a brown powder and begins to decay and disappear until conditions are right for the next generation.

Though many unknowns still exist, slime molds have been studied extensively. They have been shown to be able to find food in a maze and react to stimuli like light. In some, the many individual cells can exist independently and signal each other at the right time to come together and behave like a single colony, some having different roles in the community, all while moving around like a single creature. Some have even been chopped up in the lab, only to be able to find each other and reunite!

Another slime mold you may have seen is wolf's milk (*Lycogala epidendrum*), often found on soil and mulch. Before aging, it lives as small globes of bright bubblegum pink, fading to beige. One of the most common slime molds, often mistakenly identified as a fungus, is *Stemonitis*, a genus sometimes called chocolate tube slime. It looks like a mass of brown wires.

If you find any of these slime molds, be sure to look at them up close, preferably with a hand lens, and you will be amazed by their minute, intricate beauty. I've read they can even be brought home and kept alive eating oats, though, outdoors, they prefer eating bacteria, fungi and other microorganisms — but not plants.

Kenneth Setzer is writer and editor at Fairchild Tropical Botanic Garden. Go to fairchildgarden.org. Reprinted with permission.



wikimedia

Slime molds are not a threat, but are "weirder than you might think," according to writer Kenneth Setzer.

Letha's Fund Donors

The following individuals and groups contributed to INPAWS' Letha's Youth Outdoors Fund in 2015 in memory of Letha Queisser's daughter, Kristie Queisser Cohee, who died in August.

In memoriam

Kristen Anderson
Karen and Robert Dietrick
Connie and Jack Douglas
Sue Hirschman
Linda Kerr
Shawn Linderman
James Price
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Cheryl Shearer
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Trailing Arbutus Garden Club
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Undesignated gifts were also made to the fund in the past year.

General donations

Perian Brett
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Marion County Master Gardeners
Trailing Arbutus Garden Club

Limberlost – from page 4

Indianapolis, presented Scott with a \$10,000 scholarship and a Macbook Air.

For more information about the Friends, check their Facebook page: "Friends of the Limberlost State Historic Site, home of Gene Stratton-Porter."

Terri Gorney is vice-president of Friends of the Limberlost. She volunteers for DNR at Limberlost State Historic Site in Geneva.

Butterfly garden – from page 5

waterfall tends to be sunny and was planted in mostly summer-blooming plants, while the mostly shady opposite end is planted with spring ephemerals.

This garden is beneficial by:

- attracting and providing for local wildlife, especially pollinators and larvae
- rescuing and nurturing native plants from spots where they are endangered
- educating the public about the importance of native plants, pollinators and wildlife
- encouraging others to start native plant gardens
- adding to park visitors' experience in a new way

Parts of the restoration project are taking longer than we expected, but we are pursuing our goals with diligence. Goals for the near future are to:

- find more native plants, particularly shrubs, vines and water plants
- remove remaining non-natives
- add permanent labels (ordered)
- develop a brochure with a key and information
- develop a binder with more detailed information
- design a structure to hold a garden sign, brochures and binder
- replace or improve the bridge to be safer and blend into the garden area
- order educational materials from Monarch Watch for public education

Thanks, INPAWS, for supporting the Lynn Wiseman Butterfly Garden Restoration Project, which is becoming a far-reaching, beneficial addition to our community, park and local wildlife. More information may be found at www.knoxcountyparks.com.

Terri Talarek King is a member of INPAWS Southwest Chapter.

Natives solve drainage woes

By Betsy Ingle

St. Peter's United Church of Christ in Carmel has planted over 2.5 acres of its grounds in native plants, thanks to grants from INPAWS, White River Alliance, Hamilton County Soil and Water Conservation District, and Interfaith Power & Light.

The church began rethinking the use of its property in 2013. Members Ginger Bievenour

and Betsy Ingle thought that changing the landscape by introducing native plants could solve some issues of drainage from a large field of turf grass at the high end of the property and from the



Many gathered on the 27th of September near the busy intersection of Keystone and Carmel Drive to celebrate the dedication of the church's prairie and listened as Dave Benson described the vision and the process.

asphalt parking lot and the church roof at the low end. They recruited another member, Dr. David Benson, director of the Ecolab at Marian College, to lead the project.

After getting agreement from a general meeting of the congregation, the trio began applying for the grants that allowed planting to begin in spring, 2014.

The 6,000 plugs planted by hand, often in the spring mud, resulted in the flourishing of a rain garden that helped trap runoff from the church roof and parking lot. In November, 2014, 70 native trees and shrubs were planted along Keystone Parkway and in February, 2015, a prairie was drill-seeded on the flat top of the property.

Since that time volunteers have put in hours eradicating "weed" species like Queen Anne's lace (*Daucus carota*) and sow thistle (*Sonchus sp.*). Water was carried to the trees in late summer and fall to ensure their survival.

St Peter's Church houses a pre-school of 80 children. The Sunday school serves 100 children and 35 high school students. The pre-school is especially interested in using the area in classes, and the Sunday school students

have been active volunteers when work days are planned. Further discussion of educational uses of the property for youth is planned.

INPAWS' donation of \$1,000 was used to partially pay for native plants. Natives decorated St. Peter's altar several times in 2015 and, at the fellowship hour between services, native plants have been displayed and discussed.

The next project, which began last fall, required planting native vegetation on the slopes of the detention basin along Keystone Ave. The bottom of the area is already alive with sedges, rushes and moisture-loving forbs.

Betsy Ingle is a member of INPAWS Central Chapter.

Streambed Retreat Relieves Flooding

By Amy Perry

Last May, about 20 people gathered at the rural Monroe County home of Ellen Jacquart and her husband for a tour of her gardens. One of the main gardens is the streambed garden, which she created in the ravine in which her house sits.

A storm water specialist once told her that their house should not have been built where it is—close to a low point in a watershed, at the bottom of several hills in karst terrain. Before the streambed garden was built, the lower level of their house used to flood during a rain. Now when it rains the streambed garden, bordered by flagstones she installed in back of the house, directs the water in a path parallel to the house. The water streams past the house instead of into it. The streambed is 100 feet long.

You can barely see the streambed for all the plants surrounding it and planted within it. As one descends the four or five feet from the driveway into the bed, endless textures, heights, shades and shapes of green comfort the eye. There are around 20 sedges, which on this occasion Paul Rothrock identified for us.

Here are some highlights from Paul's botany tour of this garden: Grass has leaves in two

ranks and is hollow, while sedges have three-edged stems and leaves in three ranks. Sedges are wind-pollinated and therefore don't need to have insect-attracting bright colors.

We saw hop sedge (*Carex lupulina*), which is yellow-green and looks similar to pineapple; meadow sedge (*C. granularis*), which is gray-green and whose seed head looks similar to a corn cob; graceful sedge (*C. gracillima*), which has a slender drooping fruit spike; and fringed sedge (*C. crinita*), which droops gracefully and has female spikes that look like caterpillars. *C. grayi* – mace or bur or Gray's sedge – looks like the medieval weapon.

Paul used his sense of touch as well as sight. If you squeeze the stem of awlfruit or sawbeak sedge (*C. stipata*), you'll see that it is spongy. Pubescent sedge (*C. hirtifolia*) is the only woodland sedge that is hairy on leaves and fruits.

"A storm water specialist once told her that their house should not have been built where it is ..."

Ellen obtained the sedges from the woodland on her property (thus they were more likely to flourish) and from Spence Restoration Nursery. Other forbs — and these were not in bloom, as it was late May — are turtlehead, three different colors of jewelweed (two species and a form), wild senna, green dragon, blue false indigo shrub, arrowleaf, lizard tail and sensitive fern, with its blunt rounded leaves. Ellen digs up and moves any jewelweed plants that grow in a patch of a different color, thus maximizing visual coherence. Otherwise, maintenance is minimal. And enjoyment is maximal!

On the side of the streambed away from the house are plants that need less moisture than those on the house side. As it turns out, sedges divide up the terrain like cats dividing up territory; some like the water's edge and some like it further up the bank.

Ellen has solved a water problem and created a lush retreat-like walkway at the same time. 🌱

Invasives, brats, beer

By Tom Hohman

In recent years Central Chapter's Invasives SWAT Team has used the annual plant sale as an opportunity to expand their work and raise funds for INPAWS at the same time. They have offered their services for sale at the auction portion of the sale, with the stipulation that the site needed to be within Marion County and adjacent counties.

This year, one of the potential bidders was located outside of the Indy area.

To further competitiveness (i.e., raise more money) Tom Hohman said that others could bid if they provided refreshments for the group. (Actually, he may have mentioned beer.) That explains why the SWAT Team was traveling to the

French Lick area in October for an afternoon of removing invasive plants. Several members from South Central Chapter also joined in the effort.

Winning bidders and hosts for the afternoon were Carol Thornton-Anderson and her husband John Anderson. Their property includes some nice forested areas, but also multiple invasive plants in disturbed areas.

Most of the time was spent removing large privet bushes, but there was also the usual bush honeysuckle, autumn olive and Japanese honeysuckle vine. Japanese stilt grass was also discovered by an astute member of the team, as well as the first report from the French Lick area of Chinese yam.

Following the work, the hosts set the bar high for future auction winners. They treated the volunteers to a cook-out and some good craft beers. The food and refreshments were great, as was the company. Definitely a win/win for all involved.

Tom Hohman chairs Central Chapter's Invasives SWAT Team.



Central Chapter volunteers removed invasives at the property of Carol and John Anderson, a service the couple won at the annual INPAWS plant sale auction.

Newcomb's guide helps ID plants

By Amy Perry

On a sunny hot August day, DNR's Jill Vance, interpretive naturalist for Monroe Lake, led a hike that helped participants learn to use Lawrence Newcomb's *Wildflower Guide* (Little, Brown and Company, 1989). The terrain was hilly, with meadows, woods and woods edges. This was not a "guided-tour" hike. Rather than pointing out plants and telling us their identity and salient characteristics, Jill selected plants in bloom for us to examine and look up for ourselves in Newcomb.

With her guidance we identified tickseed sunflower (*Bidens coronata*), late-flowering boneset (*Eupatorium serotinum*), American germander or wood sage (*Teucrium canadense*), naked-flowered tick trefoil (*Desmodium nudiflorum*), mistflower (*Eupatorium coelestinum*) with its lovely bluish-purple, field thistle (*Cirsium discolor*) with its deeply cut leaves, gray goldenrod (*Solidago nemoralis*) and Queen Anne's lace (*Daucus carota*, a non-native also known as wild carrot). On some blooms of the latter it was difficult to see the small bit of red said to be a drop of Queen Anne's blood spilled as she was sewing. This plant is also known as bird's nest flower because after blooming it dries and contracts to look like a bird's nest.

The last flower we identified was, ironically, a very common flower in disguise: a black-eyed Susan (*Rudbeckia serotina*). We had not recognized it because it was much smaller than usual. Jill explained that because the plant was blooming so late, it had only a little bit of energy left.

To use Newcomb's guide, one ascertains certain basic facts about the flower and uses those to follow a branching key of increasing level of detail until one arrives at that particular species. Here are some identification tips I gleaned, in the order that a person using Newcomb can benefit from them.

Even though many scientific names have changed, Newcomb is still valid. The identifying

characteristics of the plant don't change, and the key doesn't change. Therefore, regardless of what Newcomb calls a plant, if its name has changed, an internet search will yield the correct new name.

In the step where you count the number of flower parts, often it is hard even for Jill to tell the difference between "Seven or more" and "Indistinguishable." So you needn't be discouraged if you have trouble with this distinction.

As for determining leaf type, if you are used to the term "compound" instead of "divided," Jill said that usually "divided" applies to forbs and "compound" applies to trees. My conclusion is that Newcomb's "divided" includes leaves that look as if someone cut them with a scissors as well as leaves that would be called "compound" if found on a tree.

Once you have progressed to using the Locator Key, be aware of the level of indents. Mutually exclusive categories are at the same indent level. If you want help keeping indent levels straight, consider color-coding your copy.

When you're on the page the key led you to, it pays to read the plant descriptions as well as look at the illustrations. Habitat eliminates some plants. Be sure to look at the cross-references; your plant may be there.

If you need to know whether there are hairs, you don't always need a magnifying lens. In sunlight, sometimes you can turn a stem or leaf so as to catch the sunlight on the hairs.

Before deciding among possibilities, be sure to notice whether there's a "continued" at the bottom of the page. In fact, I highly recommend you turn the page even if there is NOT a "continued"! We found that one of our books had "continued" at the bottom of a certain page and another person's book did not. This typo meant the latter person would have missed the plants on the next page as possibilities.

Jill said, "The more you use the book, the better it gets." I am finding that to be true. After this hike, using Newcomb I was able to identify a plant in another garden that had stymied several other people. It gave me great satisfaction.

Amy Perry is a member of INPAWS Central Chapter.

By Edith Holden

The Country Diary of an Edwardian Lady

By Patricia Happel Cornwell

Of all the nature books on my shelves, there are a few that I cherish, not so much for their practicality as for the lyricism of their prose and their tangible awe and affection for nature. Among these are Aldo Leopold's 1948 *A Sand County Almanac*, Hal Borland's 1981 *A Countryman's Flowers*, Donald Kroodsma's 2005 *The Singing Life of Birds*, and the 1998 illustrated compilation of Jean Henri Fabre's 19th century writings called *The Passionate Observer*. I have many nature books that I value for their usefulness, but these few have both instructed and charmed me.

The book that almost charmed me into buying a whole set of china I did not need was the 1977 facsimile reproduction of Edith Holden's 1906 *The Country Diary of an Edwardian Lady*. Holden's diary combined field notes, transcribed scraps of poems, folk sayings and lovely watercolor paintings of plants, birds and other creatures. The dishes bore reproductions of her captivating artwork. I did buy a counted cross-stitch kit of her "Willow Warbler Feeding Young" and my framed embroidery hangs in our living room.

Born in 1871 in England, Holden was unusual for her day. Nowadays we think nothing of women who traipse through fields, woods and swamps in boots and trousers for work or pleasure. But at the turn of the last century a woman naturalist like Holden or Indiana's Gene Stratton-Porter (1863-1924) was an oddity.

Holden recorded her pastoral observations with both pen and brush and interspersed words with art, awe with science. Her "Nature Notes for 1906" unfolds the turning of the seasons day by day and concludes with alphabetized glossaries of common and Latin names of wildflowers and birds "seen in the neighbourhood (sic) of Olton, Warwickshire" throughout the year.

Her nature diary is reproduced in her own hand-lettering in brown ink. One can conjure her dipping her pen nib in an inkwell and pausing to choose the right words.

One of Holden's early January entries demonstrates her insatiable curiosity about the natural world:

"Visited a small wood on the canal bank to get violet leaves. On moving away some of the dead leaves lying beneath the trees, I discovered a Wild Arum plant, thrusting its white sheath up from the soil. When I removed the outer covering, the pale yellow leaves with dark spots were quite discernable, rolled tightly round each other and beautifully packed away inside the white skin."

Holden's descriptions of a year's worth of observations and discoveries are precise and studied, and her artistry renders even toadstools and starlings lovely.

The author attended art school and worked as an art teacher and a children's book illustrator. She married Ernest Smith, a sculptor, in 1911 and moved to London; they had no children.

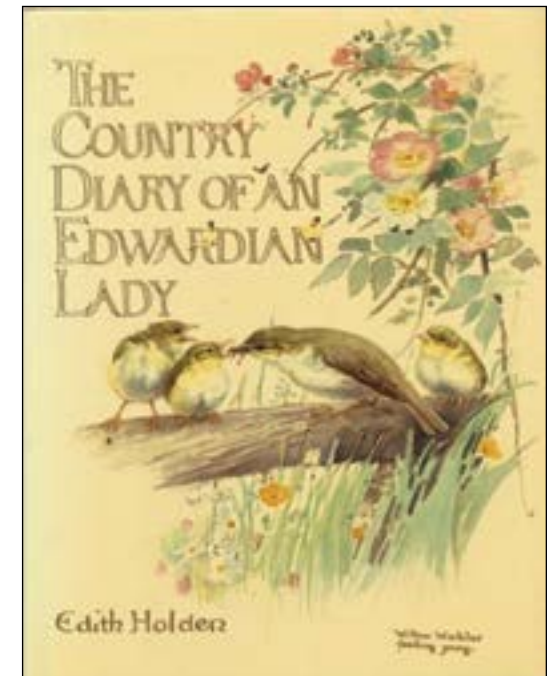
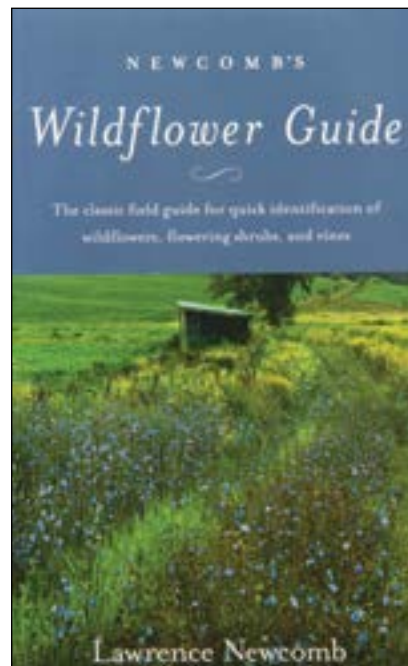
Holden was only 49 when on March 16, 1920, she drowned in the Thames River while trying to reach the buds of a chestnut tree. Her nature journal lay gathering dust on a shelf until the mid-1970s, when it was discovered by a descendant. It was first published by Holt, Rinehart and Winston (New York) in 1977.

The Country Diary of an Edwardian Lady has remained in print in various softcover and hardcover editions. It was republished in hardcover in 2001 by Friedman Publishing. A 1984 British television series based on Holden's life can still be found on DVD.

While she did not leave a large body of work and never intended for her diary to be published, Holden left a legacy of love for nature that survives and inspires to this day.

Patricia Happel Cornwell is an Indiana Master Naturalist and editor of the INPAWS Journal.

Book reviews



FYI: Inside INPAWS

INPAWS Committee notes

The conservation committee is seeking a new team leader skilled in social media and communications. Youth outreach chair Dawn Slack has stepped down due to a new job with DNR, so a new chair is needed for this committee, too. Anyone interested should contact president Jeff Pitts at president@inpaws.org.

- Indiana will celebrate its bicentennial in 2016, and the Council hopes to use the observance to make INPAWS more visible, perhaps by distributing a life list of Indiana native plants.
- Plant rescue committee co-chair Jeannine Mattingly was interviewed by phone by an Arizona landscape architect exploring rescue policy and protocol used by various native plant rescue programs in the country. Findings were presented to the American Society of Landscape Architects in Chicago in November.
- About 1,050 youth participated in various outdoor activities supported by INPAWS' Letha's Fund in 2015. Grants to schools and youth organizations totaled \$3,811.
- The Plant Wizard Patch program was completed by a youth group through Vigo County Parks and Recreation Department. Groups in New Haven and at Wesselman Woods are also working on the program.

Central Chapter sponsored a "Gardening for Birds" program by Amanda Smith, a September hike with Tom Swinford at Fort Harrison State Park, "Explore a Park with Your Family" at Coxhall Children's Garden and Wetland led by Amanda, and a "Trees and Fall Flowers" hike at Southeastway Park with Ben R. Hess.

Upcoming: On Jan. 23 at 3 p.m. at Cool Creek Nature Center, Amanda will present "Historical Plants and Their Stories." On May 28 from 10 till noon Roger Hedge will lead a "Fern Foray" at Turkey Run State Park.

Other programs in the works are presentations on "Indiana Heritage" by Tom Swinford in January or February, "State of Our Waters" with Jill Hoffman of the Upper White River Watershed Alliance in mid-March, and other spring and summer family hikes.

North Chapter's guided hike schedule was the most extensive in the four years of the chapter's existence. From April to October, 12 hikes featured a variety of natural areas: forest, prairie, dune and swale, and wetland habitats, in seven different counties. A new twist was a pair of prairie field trips to highlight seasonal changes, the first in May and the second in September.

The chapter sponsored seven of the hikes in collaboration with other organizations, including the Department of Natural Resources (DNR), The Nature Conservancy and ACRES Land Trust. Ecologists from the DNR Division of Nature Preserves arranged and guided four joint DNR-INPAWS hikes.

Before each outing, *The Plant Press*, the chapter's electronic newsletter, published a description of the hike. After each hike, volunteers submitted a report for *The Plant Press*, including photos.

In October members heard a program by Kris Krouse, executive director of Shirley Heinze Land Trust, after which attendees were invited to walk the trails of Meadowbrook Nature Preserve where the trust's offices are located. Also in October, members participated in a work day at Wellfield Botanic Gardens in Elkhart to remove invasives and plant natives. The chapter has partnered with Wellfield over the past few years to rehabilitate a native woodland ecosystem in an urban botanical garden setting.

Members have worked with schools and conservation groups to educate the public about native plants and, in some cases, have helped organizations establish native plant gardens. Chapter members also staffed INPAWS booths this summer at outreach events in the area, including the LaPorte County fair.

South Central Chapter conducted two "yard strolls," one in May at the home of Ellen and Paul Rothrock and one in June at the home of chapter president Steve Dunbar, with Rothrock leading discussions of plant identification and anatomy on both occasions.

FYI – continued at right

Council recap

By Jeff Pitts

Most members are not able to attend INPAWS Council quarterly meetings (second Tuesdays of February, May, August and November), but all need to be informed about actions taken on their behalf. These meetings are opportunities to attend to state-wide concerns, primarily regarding ongoing INPAWS programs, but also times to receive grant proposals and consider new efforts.

If you attended the annual conference in November, you will have heard much of this report; for those who were not able to attend, following are some highlights of the past year's Council actions.

The work of creating this quarterly publication, *INPAWS Journal*, was recognized as substantial enough in required hours and expertise to warrant remuneration, so the Council voted to pay our editors a quarterly stipend and created a new volunteer Journal Team Leader position on the Council to oversee this work. INPAWS also contracted with a part-time administrative assistant to help manage our membership database. Both of these necessary advancements contributed to the increase of annual dues from \$25 to \$35 which took effect in September.

After the passing of Marilyn Froberg in December, 2014, Don Gorney joined the state team as INPAWS treasurer. Don brings a wealth of experience to the position, including expertise developed during his bank examination career, and we are grateful to have him.

The Council voted to provide \$1,985 to Keep Indianapolis Beautiful for educational native plant signs at Benedict Inn in Beech Grove and

FYI – from page 14

Fifteen South Central members did a prairie planting at the home of Phyllis Schwitzer. David Mow led a Brown County State Park walk. This fall the chapter also pulled bush honeysuckle at Cascades Park near Bloomington, and Dunbar helped with plant inventory over several weekends for the Indiana Forest Alliance "eco-blitz" at Morgan-Monroe State Forest.

\$2,500 to Broad Ripple Village Association to help fund the new Bill Brink Memorial Garden in Broad Ripple.

At the Council's request, Wendy Ford created a Facebook page for INPAWS, a web site that has become very popular, with nearly 6,000 members. Check it out here: www.facebook.com/groups/105273756180332/?fref=ts.

INPAWS Council has worked with Heart of the River Coalition and authorized a number of actions to oppose the Mounds Reservoir project proposal, including an appearance by past president Tom Hohman before the Delaware County Council. To date, it appears the proposal will not go forward.

The Council has been educating itself, through the work of Ellen Jacquart, on a recently identified primary cause of pollinator decline, neonicotinoids. (See "Save our pollinators!" in the fall issue of *INPAWS Journal*.) "Neonics" are a form of systemic neurotoxin insecticide used to pre-treat crop seeds and landscape plants. Their role in the devastation of pollinator populations in recent years was verified at the March 31 Pollinator Protection Plan Development Meeting at Purdue University. "HortusScope," a free monthly e-bulletin for and about the Indiana gardening community, has detailed actions you can take. If you are not receiving "HortusScope," you can request addition to the mailing list at hortusscope@comcast.net.

A Council working group convened in March to discuss potential changes to the INPAWS governance structure. The group met for five weeks to explore how best to meet state statutes relative to nonprofit corporations, how to streamline decision-making without sacrificing valuable input, and how to reinforce local chapters to better accomplish the INPAWS mission. The group made recommendations to the Council regarding how the INPAWS Articles of Incorporation could be updated to accomplish these goals.

A conversation about rebranding and marketing the INPAWS mission is expected to continue into the new year.

Jeff Pitts is president of INPAWS.



*INPAWS members seek to protect and provide habitat for such pollinators as the Eight-Spotted Forester moth (*Alupia octomaculata*), which is most often found where wooded areas border open areas—the open areas offer the flowers the adults drink from, and the wooded areas provide the grapevines and Virginia creeper they eat as larvae and upon which they lay their eggs.*





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Conference offers “layered look” at nature

By Patricia Happel Cornwell

INPAWS' annual conference Nov. 14 at IUPUI in Indianapolis attracted 350 participants to hear speakers address the theme “Bioscaping: Gardening for Life.”

Keynoters were Rick Darke and Doug Tallamy, co-authors of *The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden* (Timberpress, 2014). The *New York Times* calls the pair “two giants of the natural gardening world.”

Darke gave presentations on the “Layered Landscape” and “Designing and Maintaining the Living Landscape.” He urged his audience to “look deeply. Think about what you’re seeing. Analyze the layers that comprise the living landscape. We can no longer let turf rule. There are complexities out there that you can’t see. It doesn’t mean they don’t exist.”

Encouraging his listeners to have a “system-focused approach” to landscaping and gardening, he said, “If we only value what is obvious, we will only protect one percent of one percent.”

Appearing for a second time at an INPAWS conference, Tallamy presented “A Chickadee’s Guide to Gardening.” The University of Delaware entomologist warned, “Our sterile landscapes are starving our birds. But we can fix this! If we design a landscape that is good for birds, we have a landscape that is good for everything.”

Tallamy advised planting oaks, wild cherry, willow and pine to create habitat for caterpillars and native shrubs that produce fatty berries for birds in fall; putting motion sensors on security lights to save moths; drinking “bird-friendly” shade-grown coffee to help stop clear-cutting of Central American forests where neotropical birds overwinter; and mowing only a different one-third of a meadow per year.

In “This is Indiana,” DNR Division of Nature Preserves botanist Mike Homoya took his audience “time traveling” to Indiana as it existed prior to European settlement. Using the Public Land Survey of the early 1800’s, he compared “before and after” images of several areas of the state, showing how prairie and marshes in the northern region are “essentially gone” and how agriculture and industry have erased other natural features over the years. Homoya said the fauna of Indiana once included bison, elk, gray wolf, black bear, mountain lion, passenger pigeon and Carolina parakeet, all now absent from the state and the latter two extinct.

“My plea to you today,” he said, “is not to forget what our baseline used to be and to protect what we have left of natural remnants.”



Rick Darke (right) and Doug Tallamy signed copies of their book, The Living Landscape during INPAWS' annual meeting.

Layered – continued on page 7