



# inpaws journal

Indiana Native Plant and Wildflower Society

Fall 2017

## Conner Prairie native plantings harken back to pioneer days

By **Cathy Donnelly**

When William Conner settled along the White River in central Indiana in 1802, he was lucky. He found the only break in an old-growth forest that extended for miles. The land was ideal for farming and became known as Conner's prairie.

Fast forward 200 years: the land now belongs to Conner Prairie, an outdoor living history museum opened in 1964, that interprets and preserves

shortgrass plants. A two-day BioBlitz of the property in 2013 documented native sedges, grasses and asters, and birds such as Henslow's sparrow (*Ammodramus henslowii*) and sedge wren (*Cistothorus platensis*).

On a wooded bluff above the prairie, Conner Prairie opened a nature walk in 2013. The path includes a four-story treehouse surrounded by interactive experiences and concludes with an observation station that overlooks the prairie. Signs provide information on plants and animals and how the land was used over time. In the future, the museum might extend the walk to include access to the White River.



Cathy Donnelly

*In front of the William Conner House, built in 1823, lance-leaved coreopsis offers nectar and attracts butterflies.*

Conner's home, along with early buildings that pharmaceutical entrepreneur Eli Lilly relocated there. The site encompasses more than 1,000 acres on the east and west banks of the White River in Hamilton County, about 20 minutes north of downtown Indianapolis. Costumed reenactors explain the pioneer experience as it was lived in 1836.

More than half of Conner's original land, farmed for 200 years, is slowly reverting to prairie as part of a 10-year USDA-supported initiative. In 2009, the museum removed invasive plant species and planted a prairie conversion seed mix of tall and

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At historic William Conner House, built in 1823, Conner Prairie planted a new garden in 2016 that includes a variety of native plants. The garden extends the theme of exhibits inside the house that focus on dramatic changes in early 19<sup>th</sup> century Indiana as the forest became farmland.

To begin planning this garden, staff talked to DNR botanist/ecologist and INPAWS president Mike Homoya, who visited the property and walked through woodlands south of the house. Though much of the land has been disturbed over time, Homoya found an upland forest where native plants are thriving. He made a list of the plants he saw and encouraged staff to start with native plants that grew onsite.

*Conner – continued on page 3*

# Goal: 4,688 acres of monarch

## By Amber Barnes & Julia Kemnitz

You probably know that the iconic monarch butterfly (*Danaus plexippus*) and its spectacular migration are in jeopardy. Their numbers have declined 80 to 90% over the past two decades due largely to loss of overwintering, breeding and migratory habitat. To support the annual migration of up to 3,000 miles round trip from Mexico to breeding sites in the north, monarchs need adequate nectar sources to sustain their journey. Without them, they are at risk of disappearing forever.

Monarchs also need milkweed on which to lay their eggs to ensure food for the next generation.

To address this decline, the Pollinator Partnership formed Monarch Wings Across the Eastern Broadleaf Forest (MWAEBF), a two-year project sponsored by a \$150,000 matching grant from the National Fish and Wildlife Foundation (NFWF), a nonprofit entity established by Congress in 1984 to support the US Fish and Wildlife Service's conservation mission ([www.fws.gov](http://www.fws.gov)). The remaining

\$300,000 was provided by many partners across several states who helped match the NFWF grant with labor, time, supplies and financial resources.

Partners in Indiana, Ohio, Illinois and Arkansas are participating to reach the project goal of planting 4,688 acres of monarch and pollinator habitat by fall, 2018. The acreage figure is based on the methodologies to be used and available funding.

The core group of partners includes the Pollinator Partnership, U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program (IL, IN, OH), Indiana, Illinois and Ohio Departments of Natural Resources, Ohio Pollinator Habitat Initiative, Holden Arboretum, Chicago Botanic Garden and the University of Arkansas Center for Advanced Spatial Technologies.

The program is creating a network of volunteer seed collectors who have been trained in seed collection techniques and identification of 20 target plant species that are nectar and host plants native to each participating state. These species will provide a continuous nectar source throughout the growing season. Seed will be processed at a single cleaning center, tested for weeds and

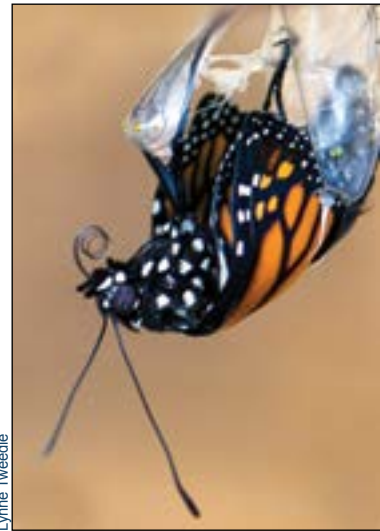
## 20 monarch host plants (in order of seed production, April-Oct.)

Golden Alexander (*Zizia aurea*)  
Ohio spiderwort (*Tradescantia ohioensis*)  
Foxglove beardtongue (*Penstemon digitalis*)  
Common milkweed (*Asclepias syriaca*)  
Whorled milkweed (*Asclepias verticillata*)  
Yellow coneflower (*Ratibida pinnata*)  
Narrowleaf mountain mint (*Pycnanthemum tenuifolium*)  
Ox-eye sunflower (*Heliopsis helianthoides*)  
Swamp milkweed (*Asclepias incarnata*)  
Black-eyed Susan (*Rudbeckia hirta*)  
Partridge pea (*Chamaecrista fasciculata*)  
White vervain (*Verbena urticifolia*)  
Wild bergamot (*Monarda fistulosa*)  
Common boneset (*Eupatorium perfoliatum*)  
Tall coreopsis (*Coreopsis tripteris*)  
Frost aster (*Symphyotrichum pilosum*)  
Giant ironweed (*Vernonia gigantea*)  
Late boneset (*Eupatorium serotinum*)  
New England aster (*Symphyotrichum novae-angliae*)  
Smooth blue aster (*Symphyotrichum leave*)

germination, then used for seedling propagation or reseeding efforts at project sites.

The boundary for this project is the Eastern Broadleaf Forest Continental Province (EBF-CP). Monarchs do not consider political boundaries in their migration, and the perimeter of the Eastern Broadleaf Forest ecosystem spans multiple state boundaries. Therefore, cooperation among states and their conservation partners will foster an increase in seed resources and ensure locally adapted seed for plantings.

In Indiana, over 100 volunteers were trained earlier this year and assigned to one of 12 collection teams. Since June, they have been going to



A monarch butterfly emerges from its chrysalis. Monarchs rely on native plants, not only for reproduction, but also to fuel their amazing 3,000-mile migration.

# habitat

## Oct. 28 conference: “Aldo & Friends”

### By Tom Hohman

The theme of this year's INPAWS conference is “Phenology, Biology and Saving the World.” Full information is in the summer issue of *INPAWS Journal* and at [www.inpaws.org](http://www.inpaws.org).

Keynote speakers are Dr. Stanley Temple, professor emeritus in conservation at University of Wisconsin-Madison and a senior fellow with the Aldo Leopold Foundation, and Douglas Ladd, author and conservation biologist for The Nature Conservancy in Missouri.

Other speakers are David Gorden, ASLA, landscape architect with Mark M. Holeman, Inc.; Michael Homoya, author and plant ecologist for the Indiana Division of Nature Preserves; and Cheryl Coons, forest botanist for Hoosier National Forest.

The conference returns to Monroe Convention Center, 302 S. College Ave., Bloomington. Hotel rooms are available at a special rate of \$99 at Holiday Inn Bloomington, 1710 N. Kinser Pike. Call the hotel at 812-334-3252 and ask to make reservations in the “INPAWS” group. To book online, go to [www.inpaws.org](http://www.inpaws.org) and use the link provided. **Reservations must be made by Sept. 29 to receive the conference rate.**

For those arriving early, INPAWS will host a reception and cash bar at Crazy Horse Food and Drink Emporium, 214 W. Kirkwood Ave.

**Early registration deadline is Oct. 14; final deadline for advance registration is Oct. 21.**

### Conference rates: Before/After Oct. 14

Member	\$65/\$75
Non-member	\$80/\$90
Student	\$35/\$40

There will again be a great selection of books and nature-related items for sale. To donate silent auction items or used nature books, contact Suzanne Stevens at [booksale@inpaws.org](mailto:booksale@inpaws.org). There is still time to become a sponsor or register your non-profit organization as an exhibitor. See [www.inpaws.org](http://www.inpaws.org).

Tom Hohman is 2017 conference team leader.

identified collection sites, including National Wildlife Refuges, county parks and private properties, to scout potential populations of target plant species. They will return to the sites to collect seeds as they mature, continuing into the fall as late-blooming species go to seed.

We are still looking for collection sites and planting locations. If you know a location with an abundance of native plants for seed collection, check the Pollinator Project web site to ensure the place has one or more target species and contact one of the state leaders. (Go to [www.pollinator.org/MWAEBF](http://www.pollinator.org/MWAEBF), find “Download Center” at bottom and click “20 target species with bloom chart.”) If you are interested in your property becoming a planting site, contact Julia Kemnitz at [julia\\_kemnitz@fws.gov](mailto:julia_kemnitz@fws.gov) or Ben Miller at [BMiller2@dnr.in.gov](mailto:BMiller2@dnr.in.gov).

Amber Barnes is a wildlife biologist and program coordinator with the Pollinator Project. Julia Kemnitz is a biologist with the USFWS Partners Program in Bloomington.

### Conner – from page 1

A grant from the Indianapolis Garden Club enabled Conner Prairie to work with Spencer Goehl from Eco Logic in Bloomington and Indianapolis landscape architect Darren Reno. Reno drew up the site plan. EcoLogic removed invasives and provided new plants.

In summer, 2016, volunteers planted 1,400 grasses and forbs in the new garden. For the sunny area, Reno chose prairie plants such as pale purple coneflower (*Echinacea pallida*), butterfly weed (*Asclepias tuberosa*) and lance-leaved coreopsis (*Coreopsis lanceolata*).

Along a shadier path, he planted columbine (*Aquilegia canadensis*) and wild geranium (*Geranium maculatum*). In spring, 2017, three eastern redbud trees (*Cercis canadensis*) were planted. What was once a patch of gravel, clay and grass is now a thriving garden that attracts butterflies and birds. Here, Conner Prairie visitors can catch a glimpse of plant species that William Conner likely saw when he arrived in 1802.

Cathy Donnelly formerly worked at Conner Prairie and is now an exhibit developer at the Indiana State Museum and Historic Sites. She has been an avid home gardener for years, but is a new convert to native plants.



Aldo Leopold (1887-1948) wrote the seminal book, *A Sand County Almanac*, and profoundly influenced the environmental movement with his scientific, ethical and holistic thinking.

# Not all prairies

By Karen Griggs

Prairies are becoming popular in Indiana, but how do prairie restorations and reconstructions compare to the few natural prairie remnants that remain in the Hoosier state? Paul Rothrock and other scientists have conducted studies of the richness of native plants

**Editor's note:** A prairie "remnant" is what remains of an original pre-settlement prairie. A prairie "restoration" is a project in which shrubs and invasive species are removed from an area that was originally prairie. A prairie "reconstruction" is one in which a prairie habitat is created where one never before existed.



Prairie dock is among prairie plants that flourish, even in drought conditions, thanks to deep roots and rough leaves.

in prairie remnants and prairie restorations since 2005 (Rothrock, 2016). They found that some prairie restorations improve over time in floristic quality, but are not as rich in forbs

(non-grass flowering plants) as native prairie remnants. Prairie plants have a long blooming season and flourish in full sun even in drought conditions, thanks to their deep roots and water-conserving rough leaves.

Their dramatic flowers are often held on tall stems. Examples are queen of the prairie (*Filipendula rubra*), prairie dock (*Silphium terbinthinaceum*), rattlesnake master (*Eryngium yuccifolium*), showy tick tre-foil (*Desmodium canadense*), white wild indigo (*Baptisia alba*), coneflowers (*Echinacea* spp.) and royal catchfly (*Silene regia*).

Native prairie remnants can be found in Lake and White counties and other sites in northern Indiana. Prairie plants are show-stoppers in native sites such as the 1,547-acre Hoosier Prairie, a national natural landmark south of Indiana Dunes National Lakeshore (IDNL), and Spinn Prairie in White County on the east side of the railroad, parallel to U.S. 421 north of Reynolds.

According to Tom Post, DNR northwest regional ecologist, Hoosier Prairie Nature Preserve is owned and managed by DNR's Division of Nature Preserves. It is a 715-acre prairie remnant east of Kennedy Ave. and along Main St. in Griffith. It lies inside the boundaries of IDNL. Gaylord Butterfly Tract, owned by IDNL, is approximately 110 acres adjacent to Hoosier Prairie.

Spinn Prairie is a 29-acre natural prairie remnant in White County owned by The Nature Conservancy (TNC). There, visitors can see nice stands of marsh blazing star (*Liatris spicata*).

Jim Beaty, superintendent of the Agronomy Center for Research and Education at Purdue University, gives tours of a 4.2-acre prairie demonstration site in Tippecanoe County on U.S. 52 northwest of West Lafayette, where he explains to local and international visitors that soil science is vital to understanding forest and prairie ecosystems.

Beaty's research used 40-inch soil borings. He found a distinct difference between soils of forest land and the beginning of the open prairie.

"From this point, the prairie stretched all the way (west) to Nebraska," Beaty says. "The prairie soils were formed thousands of years ago by wind-borne deposits of fine soil, or loess." (Beaty, field trip at demo site, Aug. 28, 2013)

The demonstration site marks the boundary between forest and prairie, roughly north to south. The Agronomy Center staff planted the site in 2003 with seeds donated by the University of Nebraska. Beaty and staff maintain the plantings and prevent the invasion of "woodies" with annual burning and removal of invasive mulberry (*Morus* spp.) and cottonwood (*Populus* spp.) trees and other invasive plants.

Beaty points out, "Big bluestem grass (*Andropogon gerardii*) is dominant, along with switchgrass (*Panicum virgatum*). The second most common plants are milkweeds (*Asclepias* spp.) and goldenrod (*Solidago* spp.)."

Beaty observes three stages of blooming by prairie flowers. He states, "They bloom when they are a few inches taller than the grasses

# are created equal

like the big bluestem that grows seven to 10 feet tall. The earliest blooms are just above the grass. Then, as the later flowers grow taller than the surrounding grasses they, too, bloom before the grasses catch up to them." (Beaty, field trip, Aug. 28, 2013)

The tallest prairie flower, prairie dock, has a yellow composite bloom on a tall naked stem, 10 to 12 feet above its broad, coarsely toothed leaves that spread on the earth below. It blooms above the late-season grasses.

"[Prairie dock] is my favorite broadleaf," Beaty says. "Compass plant (*Silphium laciniatum*) also has the same height and is recognizable as part of the sunflower family."

Professor Paul Rothrock, now at Indiana University, and a team of Taylor University students conducted research into the species richness of prairie restoration sites. They studied 24 sites to compare the plant diversity of prairie restorations to their plant inventories at natural prairie remnant sites. (Rothrock, "Evaluating Prairies," April 27, 2012, presentation to West Central INPAWS, West Lafayette)

The Rothrock team used Floristic Quality Assessment (FQA) to conduct a formal evaluation of species richness (SR) and species conservatism (C), "an estimated probability that a species is likely to occur in a landscape relatively unaltered" (Swink and Wilhelm, 1979). A low C value means a plant is adaptable to disturbance. A high C means a plant is very faithful to a particular habitat.

Using this approach, the team quantified the species growing on each site by counting the number of plants in a square meter. Their inventory of plant species at prairie remnant sites showed that native prairies have extremely high species densities compared to restoration sites. They found that some species are not found at all on prairie reconstruction sites; therefore "species richness" is higher in native sites.

Why were the prairies lost? Rothrock says the history of prairie loss stems from two technologies: first, from the steel plow, when

homesteaders converted natural grazing lands to production agriculture, and second, from drain tiles. (Rothrock, Aug. 27, 2012, presentation to West Central INPAWS)

Reconstruction of suitable prairie sites in the Hoosier state began 30 years ago with seed stock from undisturbed native prairie sites. An early effort was led by the Holcomb Research Institute and Butler University in 1987 when they began a reconstruction for an outdoor laboratory in Indianapolis, now managed by staff of the Butler Herbarium.

In 1993, Taylor University reconstructed a 25-acre prairie site for field-based research across from the campus on land owned by Avis Industrial Corporation in Upland in Grant County. There, Adam Thada researched plant diversity and prairie restoration in 2013, using cutting, burning and herbicide methods. As part of his master's studies in environmental science at Taylor, he led a team to identify seedlings and study the biomass at the Upland Prairie Restoration. A major finding was that big bluestem grass was overly dominant at the site. (See "INPAWS funds forbs in prairie restoration" by Thada in the spring, 2014, issue of *INPAWS Journal*.)

In his 2012 talk, Rothrock said that when he compared early restorations to current efforts, success is now more likely than in the 1980s for two reasons. First, planters demand more variety in seed mixtures. Second, local genotypes are now available.



A monarch butterfly patronizes butterfly weed, a native prairie plant.

*Prairies* – continued on page 6

In the old method of restoration, mostly grass species were planted, and the mix consisted of approximately 12 species. Sometimes seeds and seedlings had to be obtained from other states. Now more species are in the seed mix, and the site is prepared carefully. Weeds are controlled; more flowering plants (forbs) and fewer tall grasses are planted.

Management at prairie sites is complex. For instance, at DNR-owned Elkhart Bog in Elkhart County, a neighbor to the nature preserve planted a prairie buffer bordering the state property and added further protections to his land in the form of a conservation easement. On this site, as well as on all managed prairies, fires are used by specialists to keep small trees and shrubs from invading the prairie grasslands.

Two large northern Indiana prairie reconstructions rich in forbs provide wildflower lovers and scientists with dramatic vistas that evoke pioneer experiences: Kankakee Sands and Prophetstown State Park.

Kankakee Sands, established by TNC in 1995, is a massive prairie and savanna restoration in northwestern Indiana, totaling 7,800 acres. It is located near Willow Slough Fish and Wildlife Area along US 41. The site extends from Indiana, near Morocco in Newton County, to northern Illinois's black oak barrens in Msokda Land and Water Reserve. TNC has begun a long-term restoration site complete with seed harvests, greenhouses and plantings.

In 2016, American bison were introduced at Kankakee Sands. The 23-head herd is a major addition to the restoration because

bison, wolves and other wildlife were part of the original ecology. (Allen, 1967)

At Prophetstown State Park in Tippecanoe County, prairie plantings bloom lavishly from May through October. The park opened in 2004, and hikers, cyclists and campers enjoy 1,000 acres of prairie flowers, as well as the Farm at Prophetstown, an authentic historical reconstruction of a 1930s farm with tours of the farm, barn, livestock and meadow.

Angela Manuel, naturalist at Prophetstown State Park, can attest to the growing popularity of native plants. One thousand of the park's 2,300 acres are in prairie restoration. The Dept. of Natural Resources grew 18,000 prairie plants in the park's greenhouse this year, and this spring park visitors bought 3,500 native plants. Garden lovers at the Master Gardeners Expo at the Tippecanoe County Fairgrounds bought 4,000 more. The rest were planted in the park. (Manuel, interviews, July, 2017)

Until frost, these prairies have acres of blooms, from the purple of asters to the yellow of goldenrods and the blue of the state-threatened prairie gentian (*Gentiana puberulenta*). Bees, butterflies and birds flock to these plants for pollen and seeds, as they must have done before the arrival of settlers.

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*Karen Griggs is a technical writer in West Lafayette and a member of INPAWS Central Chapter.*



Karen Griggs

Tall cup plant in bloom

## Who was Jane Brooks Hine?

### By Terri Gorney

I was first "introduced" to Jane Brooks Hine while transcribing conservationist Maurice McClue's notes for *Natural History Memorandum (1919-1957)*. McClue, an Angola attorney born in 1907, mentioned Jane and her bird notes in his journal. This piqued my interest. No one in the Indiana birding community knew anything about her when I began my research in 2008.

Jane Brooks was born in 1831 in Lake County, OH. She attended Oberlin College and became a teacher until her marriage in 1857 to Horatio Hine. The couple had six children. In 1861, they moved to land in northern DeKalb County that Horatio's father had bought in the 1830s. The land had been left pretty much in its natural state, a perfect habitat for a lifelong student of nature such as Jane.

Through my friend Bob Wilder, I found some of Jane's descendants and discovered that she kept birding journals and wrote poems. These relatives, Jean Faulkner and Maynard "Butch" Hine, generously allowed me to copy her journals.

The ink in the first journal was so pale that I needed to digitalize it to read it. It was written in the old-fashioned English of the 19<sup>th</sup> century. Reading Hine's journals was like reading a slice of Indiana history. Some of her writings were dated and others were not. Most, I believe, are from the 1880s and 1890s.

She wrote of her family's homestead, "This farm in part lays [sic] between two Heronries. The largest is a mile and a half north near where our swale joins Cedar Creek just above Cedar Lake, the other, two miles south at a pond called Indian Lake."

In another entry, Hine noted, "Those [willow] patches and black-ash grasses were strung here and there like occasional beads on a

thread; but the greater portion of the swale like to cover[ed] its bosom with sword grass, bull rushes [sic], cattails and sedges."

Jane described "at least 20 snipes eating on the [roots of] flags" (wild irises) on their farm for four days in April, 1884. An avid naturalist, she got up in the night to watch them feed by the full moon.

On March 5, 1891, Jane recorded, "The Acadian Flycatcher arrives here early in May and remains through the summer to work for the interests of those who own forests containing beech trees and as such forest[s] are the rule here, we have the birds quite evenly distributed."

Elsewhere she advised, "If you have tangles of shrubbery on your lawn, or berry patches in your garden, [the catbird] may raise a brood near your house."

In her time, Jane was a well-known lecturer and writer. She became known as the "Bird Woman of Indiana." She contributed to Amos Butler's *Birds of Indiana*, 1898, but her best-known writing was her chapter in the 1911 *Biennial Report of the Commissioner of Fisheries and Game for Indiana*, entitled "Game and Land Birds of an Indiana Farm."

Jane has over 400 bird sightings listed in the American Phenology Bird

Project on [www.USGS.gov](http://www.USGS.gov). She was a member of the National Ornithology Society, which published a booklet as a memorial to her after her death.

In 2009, I was honored to be asked to teach in the persona of Jane at the Allen County Indiana Master Naturalist class on early naturalists. I think Jane would be pleased to know that she is still teaching in the 21<sup>st</sup> century.

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

### The Watery Road to Heron Town

No barren road  
Leads travelers on  
Its dusty way  
To Heron Town:  
But  
Tangled willows,  
Sweet swamp roses,  
Sword grass meadows,  
Bogs of rushes,  
Wild flag blossoms,  
Wiry sedges,  
Stately cat-tails,  
Ferns and mosses  
Line all the road  
That stretches on  
Its swaly path  
To Heron Town.

Jane Brooks Hine  
(1831-1916)

### Naturalist profile



Cattails – Wikimedia



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**President's Message**

**(1931 – 2017) Daniel J. Anderson**

**By Mike Homoya**

My wife Barbara and I had the opportunity this summer to visit the herbaria of the New York Botanical Gardens (NY) in the Bronx and the Field Museum (F) in Chicago. At NY and F we viewed preserved specimens of two very special plants, *Orbexilum (Psoralea) stipulatum* and *Thismia americana*. Neither has been known to occur in Indiana, but the site for the *Orbexilum*, a.k.a. Falls of the Ohio scurf pea, was a stone's throw from Clarksville on a bedrock island in the Ohio River. The *Thismia* population was west of Lake County, a couple of miles from our state line. *Thismia* is a mycoheterotroph (its sole energy supply is via a fungal pathway) and the scurf pea is a legume (member of the bean family). These unusual plants have two things in common. They are known only from the site where they were first discovered, and both are thought to be extinct, having last been seen alive over 100 years ago. Though it may sound gloomy, like visiting a crypt in search of botanical mummies, it was thrilling to see them.

Seeing those two species recharged my hope that they still exist somewhere in the wild. Very possibly, the next discovered population of either could be in Indiana. We certainly have habitat similar to where they grew. All the more reason to protect what's left of our natural landscape. Just think, you may be the one to find them!

On that same trip to NYC we enjoyed a walk on the popular High Line, a former elevated rail line transformed into a pedestrian park and greenway. While not all plants used along its border are natives, a high percentage are. Similarly, we observed several native plants along the Chicago Riverwalk and in Millennium Park's Lurie Garden. While millions (yes, millions) of users of these parks may think the landscaping consists of "meticulously landscaped weeds," many will stop and look more carefully.

Do these parks even come close to having the diversity of plants and animals of a natural area? Clearly not, but their value lies in exposing users to the beauty and value of native plants and natural areas. Awareness of indigenous plants is getting through, dear readers. Thank you all for your work in making it happen. See you at the conference! 🌱

**By Betsy Wilson and Ruth Ann Ingraham**

INPAWS recently lost a dedicated member, Daniel Anderson, who died May 26. Dan and his wife Sophia (1925 - 2014) were charter members who dedicated long-term commitment to what they valued.

Volunteering was a way of life for the Andersons. Dan served many years as our education chair. Both advocated the use of native plants and staffed booths at the Flower and Patio Show, Orchard in Bloom and Earth Day. As active members of INPAWS and Master Gardeners, they took responsibility for two public native plant gardens, one next to Indiana State Museum and the other behind the nature center at Holliday Park. Dan helped landscape the corner of Binford Blvd. and 71<sup>st</sup> St. in northeast Indianapolis. Educators at heart, they gave talks and slide shows to various clubs.

A rustic cabin in the woods of Owen County, with a pond and small meadow, was Dan and Sophie's get-away. At their "farm" they planted a small vegetable garden, explored the woods and dug ferns and flowers to donate to plant sales sponsored by INPAWS and Master Gardeners.

What most of us did not know is that Dan, as well as Sophie, sang in several choirs and that the Children's Museum had honored them both for over 25 years of volunteer service.

Dan and Sophie were endowed with the spirit of volunteerism. They are missed.

*Betsy Wilson is a member of Central Chapter. Ruth Ann Ingraham is a co-founder of INPAWS and currently serves as historian and as a member of the board of directors.*



*Dan Anderson (top) at the INPAWS Earth Day booth, Indianapolis, 2017; Sophie Anderson at Shaw Nature Reserve, St. Louis, 2005*

# Chapters on the go

## INPAWS In Action



### Southwest Chapter

In April a partnership including SWINPAWS installed pollinator gardens at seven Vanderburgh County schools and Burdette Park. A \$535 grant from Vanderburgh County Soil and Water Conservation District will be used to certify the schools' wildlife habitat gardens with the National Wildlife Foundation. The gardens will serve as an outdoor lab and will allow children, as well as teachers and parents, to gain hands-on experience with native plants and the pollinators that depend on them. The certifications will help Vanderburgh County toward its goal of becoming a Certified Wildlife Friendly/Monarch Community.

On May 20 Gena Garrett, curator of education for Wesselman Nature Society, led SWINPAWS members on a tour of the "Nature Playscape" at Wesselman Woods Nature Center in Vanderburgh County.

The Playscape is a 3/5-acre fenced and landscaped area designed to give children, from toddlers to age 12, unstructured play time outdoors. The land, once farmed, is adjacent to Wesselman Woods, the 200-acre old-growth forest in the center of Evansville. The Playscape will be planted with primarily native Indiana species. More information is at [www.wesselmannaturesociety.org](http://www.wesselmannaturesociety.org).

### Central Chapter

April showers bring May flowers and lots of hikes, talks and outreach activity for this chapter. In April, Amanda Smith shared her knowledge and passion for native plants at St Peter's Church in Carmel, whose property provides habitat via native prairie and wetland plants. In May, Sand Creek Elementary School, a past recipient of an INPAWS grant, hosted a native plant and pollinator program also led by Amanda.

An event was held in Noblesville to welcome newcomers, and members have experienced the many uses of native plants in everyday landscaping through short notice "pop-up" tours in April and May. Special thanks to Michelle Arfman, Bill McKnight and Barbara and Irv Goldblatt for sharing their time, experience and yards. More pop-up tours are in the works.

Members including Mike Homoya, Ben Hess and Bobby Kimball led hikes at the Hoosier Outdoor Experience in June while Barbara Homoya, chapter president Jeannine Mattingly

and Bobby conversed with folks who visited the INPAWS booth.

### North Chapter

Spring began a season of North Chapter field trips arranged by Nathanael Pilla. In May, led by botanist Adam Blazer, members visited Pinhook Bog, a property of Indiana Dunes National Lakeshore. It is about 100 meters from the gate that admits one into the bog itself. The moat surrounding the bog is populated with buttonbush (*Cephalanthus occidentalis*) and lizard's tail (*Saururus cernuus*). Water covered the boardwalk as guests stepped carefully so as not to lose their balance. Wild calla (*Calla palustris*) bloomed brilliantly and lake sedge (*Carex lacustris*) stood tall along the water's edge.

The boardwalk is a constant reminder of the fragile ecosystem of the bog. Poison sumac (*Toxicodendron vernix*) was nestled among highbush blueberry (*Vaccinium corymbosum*). Of course, everyone comes for the carnivorous plants and orchids. Northern purple pitcher plant (*Sarracenia purpurea*) was a stand-out, along with three different bladderworts (*Utricularia* spp.) and two types of sundew (*Drosera* spp.). But the orchids stole the show for most of us.

In June the chapter visited Jasper-Pulaski Fish and Wildlife Area for a tree hike. District forester Carmen Dobbs led the hike and, though rain threatened, Carmen kept the group positive. The group saw tulip poplars (*Liriodendron tulipifera*), our state tree. Straight and tall, this tree was used by Native Americans for canoes, by pioneers for lumber and later by Europeans who came to Indiana to buy wood and ship it back to Europe for homes and furniture.

As we walked on we saw a couple of non-native trees, black alder (*Alnus glutinosa*) and Osage orange (*Maclura pomifera*). Osage orange can be a pesky tree with its messy fruits, unusable wood and painful thorns. The hike was less than a mile, but took two hours. The gray day turned into a cheery time together.

### Northeast Chapter

On July 20, Northeast Chapter members helped tag invasives for later removal at Norwell High School's 25-acre environmental lab in Ossian in Wells County. INPAWS awarded a \$1,000 small grant to Northern Wells Community Schools in

# Trailside plant survey meets need

## By Barbara Tibbets

Potato Creek interpretive naturalist Tim Cordell had a final project or two on his park bucket list before retiring last year, and a \$1,000 INPAWS grant made one of those dreams come true. A trailside plant list has been generated and seven detailed brochures will soon become available to park and web site visitors to encourage their appreciation and understanding of the natural beauty of one of Indiana's most biologically diverse state parks.

When Tim applied for an INPAWS grant in 2016, the goal was to create a list of all of the "flowers" a visitor might encounter while hiking the trails of the park in St. Joseph County. The target audience was persons with little or no knowledge of plants. The list would include herbaceous plants, grasses and sedges that produced flowers large enough to catch a visitor's eye, and perhaps a few floristically showy shrubs. The list was not intended to be a comprehensive scientific survey, but rather a useful guide to help fuel a visitor's knowledge at the moment a trailside flower sparked interest.

Scott Namestnik, senior botanist with Orbis Environmental Consulting and a neighbor to the park, was hired to conduct the survey. He identified three growing seasons: spring (March – June), early summer (June – July), and late summer (July – October). He developed a species list for each of the park's seven hiking trails that included scientific and common names, the plant's native or non-native status and relative abundance.

Namestnik said, "A total of 528 vascular plant taxa were identified to at least the species level

## Chapters – from left

2016 to reclaim the neglected property for student use. (See "School reclaims rare woodland lab" on page 12 of this issue.)

Members held a picnic Aug. 26 at a private home in Noble County, where they observed a prairie with over 100 species of native plants and an alternative septic system that uses native wetland plants to treat wastewater. Following the meal, members carpoled to Glacial Esker Nature Preserve in Chain O' Lakes State Park, home to several state-endangered plants. 🌱

along the trails. Native taxa along the trails ranged from 124 along Trail 6 to 274 along Trail 4. While Trail 4 had the most total and native taxa, Trails 2 and 3 had the greatest natural area quality, as measured by the Floristic Quality Assessment."

After conducting the survey, Namestnik shared that he was "actually pretty amazed by the species richness along some of the trails." He made some "good finds" along the way, such as starry campion (*Silene stellata*), as well as a hybrid violet, *Viola x brauniae*, that was a first record for St. Joseph County.

Because of the knowledge and attention to detail Scott brought to the project, as well as his familiarity with park trails, the list is rather comprehensive and will provide an important tool not only for visitors, but also for park naturalists and others with an interest in botany.

Members of the Friends of Potato Creek State Park (FPCSP) and park staff thank INPAWS for funding a project that will benefit tens of thousands of visitors who enjoy the park each year. Without this money, the project would have remained an unmet visitor need.

The brochures being developed by staff and members of FPCSP will be available by November. Our hope is that equipping visitors with a brochure as they hike will inspire or rekindle an interest in plants. An appreciation of park flora, including an awareness of native vs. non-native species, might then foster a willingness to participate in invasive plant control projects and other conservation efforts.

*Barbara Tibbets is an interpretive naturalist at Potato Creek State Park. A graduate of the Purdue University wildlife science program, she worked as a naturalist and natural resources manager at Turkey Run and Shades State Parks for 26 years before transferring to Potato Creek in 2016.*



*Starry campion (top) and the hybrid violet Viola x brauniae were among the "good finds" made by botanist Scott Namestnik while surveying the flora of Potato Creek State Park near South Bend.*

Scott Namestnik

# School reclaims rare

By Kimberly Miser

The cross-country team of Norwell Middle/High School in Wells County has enjoyed a nearly untouched wetland all to themselves for 20 years. But when the team runs the trails at eight miles per hour, some of the charm and raw beauty can be lost on teenagers. All of that is about to change with a little help from INPAWS.

**INPAWS  
In Action**



Gene Donaghy

Volunteers who helped tag invasives for later removal at the Norwell Middle/High School outdoor lab included, from left, Kate Sanders, Indiana State Parks volunteer coordinator Jody Heaston, Betsy Yankowiak and Martha Ferguson. Sanders, Yankowiak and Ferguson are members of INPAWS Northeast Chapter.

In 1997 the board of Northern Wells Community Schools (NWCS) purchased 25 acres of woods adjacent to the school to create an environmental lab. Additional trees were planted, some areas burned, a few benches installed and a trail created. However, when the school changed its block schedule a few years later, class time went from 1.5 hours to 45 minutes. Outdoor study was no longer feasible for the school's 725 students in grades nine to 12. Other than the cross-country team, no one used the wooded area and it fell into disuse within a few years.

Gene Donaghy runs those trails, too, but recreationally. Lately he has taken notice of what surrounds him and sees opportunity. "We've got a real gem out there; it just needs some help," he said.

Donaghy, a graduate of Norwell High School, serves on the school board and on the Northeast Indiana Regional Development Authority. "I wanted to know if the woods were worth reclaiming as an environmental center," he said. "And I knew just who to call."

He called Betsy Yankowiak, director of preserves and programs for Little River Wetlands Project in Fort Wayne and co-director of stewardship for INPAWS Northeast Chapter. In summer, 2016, she joined Donaghy and Scott Mills, NWCS superintendent, to evaluate the site. Of the school's 25 wooded acres, Yankowiak identified four acres as a wetland, pointing out uncommon plant species. "Quite honestly, I didn't even know what we had," Donaghy said. "But when Betsy got excited, I knew we had something good."

Donaghy's next call went to Jody Heaston. Heaston, Indiana State Parks volunteer coordinator, works out of Ouabache State Park, less than 30 minutes from Norwell High School. For a school to own a 25-acre woods and wetland is rare, but Heaston knows that is not enough to ensure success.

"To create a true environmental study lab, we'd need interpretive signs for the habitat, trees and wildflowers," Heaston said. She envisions programs that involve math, biology, science, art and language, plus an environmental club. "It's crucial that we solicit input from teachers and staff and enlist professional help from the state to develop a curriculum."

Heaston also coordinates the state's Indiana Master Naturalist Program (IMN). "Our 'IMNers' are always looking for stewardship opportunities," she said. Volunteer projects will include plant identification, tagging invasive species for later cutting and treating, widening trails and planting. She notes that Yankowiak's involvement opens another volunteer pool: "Having the Northeast

# woodland "lab"

Chapter helping to push this project forward is a big win."

Donaghy loves Heaston's other ideas, such as setting aside space for a pollinator garden and using the school's greenhouse as a factory for growing starter plants of native species. But he wants to think even bigger. As a member of the Regional Development Authority, he's inspired by projects that increase quality of life for area residents.

"Eventually, I'd like to hook the Norwell acreage to the Poka-bache Connector Trail," Donaghy said. The Poka-bache, once completed, will connect Pokagon and Ouabache state parks and will be the longest trail in Indiana. "With the kind of exposure the trail will bring, we can be the model for how community government, educators, volunteers and environmentalists can come together to create something wonderful."

*"When Betsy got excited, I knew we had something good."*

Northern Wells Community Schools received a \$1,000 small grant from INPAWS this year to revitalize both the Norwell High School tract and a smaller outdoor lab at Ossian Elementary School.

With input from Yankowiak and Heaston, Donaghy has developed a planning wish list for the high school property and recruited help from a scout troop, the local US Department of Agriculture office, Future Farmers of America (FFA), and the Wells County Purdue Extension Office.

Donaghy said, "FFA members have been hand-cutting brush and we've scheduled a burn to discourage some invasives. The project benefits the Bluffton Fire Department, too. It's using the burn as a training exercise."

Summer brings fresh excitement for all involved in the project. Heaston knows the woods and wetland will reveal surprises.

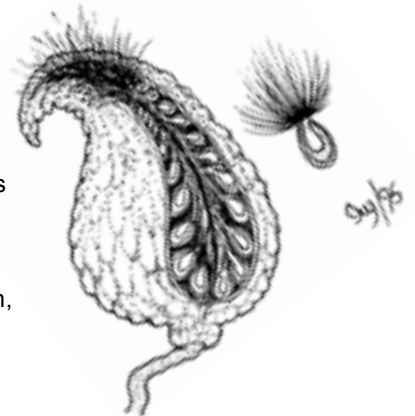
"Now that we're watching," she said, "I know we'll make new discoveries. Do we have sensitive or rare plants? The next two seasons will be exciting."

Donaghy promises the trails will remain open for cross-county use. "Cross-country coaches from other schools tell me it smells different running through our woods with all the flora and fauna. It's such a great place. With community involvement, we can make it even better."

*Kimberly Miser is communications chairperson of INPAWS Northeast Chapter.*

## SEED SWAP!

This year INPAWS will host a seed swap at the October 28 conference! If you have native plants that set viable seeds, please collect some to share. After drying and cleaning seeds, place them in wide-mouth plastic or glass jars with tight-fitting lids and label clearly with full common name, county where grown and, if you know it, scientific name. Deliver to the Cook Group Room, first floor of the Convention Center, no later than 8:30 a.m. Oct. 28. You will receive a card identifying you as a seed supplier, which will allow you and one companion to become seed swap consumers during the first program break. During later breaks the seed swap will be open to all. (See page 3 for more information on the conference).



## Gardening seminar Oct. 7

Hendricks County Master Gardeners will host their annual seminar with the theme "Four Seasons" Oct. 7, 9 a.m. to 3:30 p.m. at Hendricks County 4-H Fairgrounds, 1900 E. Main St., Danville. The seminar is open to the public, but pre-registration and payment of a \$45 fee are required. The fee includes a buffet breakfast 7:30 to 9 a.m., a picnic lunch and all materials. Register at [HendricksGardeners.com](http://HendricksGardeners.com).

# Prairie dock thrives again

**By Chad Bladow**

In an August 13, 1984, memo to John Bacone, director of the DNR Division of Nature Preserves, state botanist Mike Homoya describes a visit to Henderson Park owned by the City of Salem, Washington County. He notes that limestone glades and barrens occur in the northeast part of the park, exceptionally rare plant communities recognizable by the presence of broken, shaley limestone with little or no soil and scattered trees. He also notes that he found unusual plants like prairie dock at the site, a prairie plant that can thrive in these open communities of southern Indiana.

Fourteen years pass by and Allen Pursell of The Nature Conservancy successfully negotiates a conservation easement with the city of Salem in 1998. TNC now owns the rights to manage the glades and barrens as part of the Twin Creek Valley Preserve. But lots of searching at the site found only a couple prairie dock plants of the hundreds photographed in 1984.

The glades and barrens had grown dense with underbrush and cedar trees during the past 14 years, shading out all the sun-loving plants.

Most of the cedar and understory clearing work was completed by 2004. The small remnant barrens area was burned again in March 2001 and March 2003. Hundreds of hours and lots of sweat went into clearing and burning this site - would the prairie dock respond?

August 13, 1984. Prairie dock surrounds Cloyce Hedge and Brian Abrell at Twin Creek Valley.



July 17, 2000. In the same small barrens remnant as pictured at left, no prairie dock is visible.



March, 1999. Volunteers clear cedar trees from the barrens at Twin Creek Valley.



2001. Following two prescribed fires, prairie dock is still not present in the barrens remnant (same downed tree shown as above).

# at Twin Creek Valley

Yes! By 2006 the prairie dock was again growing in a large patch within the barrens remnant, though the plants were smaller than in the 1984 photo, and none was flowering.

It was 2008 before we saw the first flowering plants, and prairie dock now numbers in the hundreds and is recovering across the barrens and glades. The hard work and cooperative effort of the City of Salem, Indiana Division of Nature Preserves, The Nature Conservancy and volunteers has paid off with the rejuvenation of this exceptionally rare habitat. The work continues today to conserve the biodiversity found at Twin Creek Valley.

This cycle of burning and regrowth will continue. This will be necessary for the lasting conservation of the significantly rare barrens and glades found in just a few special places in southern Indiana. It will take the continued dedication of The Nature Conservancy, our partners and most importantly the support of the people who love and care for our natural world.

*Chad Bladow is director of southern Indiana stewardship and the prescribed fire manager for The Nature Conservancy's (TNC) Indiana chapter. He has worked for TNC for over 17 years, helping guide the care of the Conservancy's land and setting it on fire when appropriate.*

August 21, 2004. The downed tree is barely visible. A few prairie dock plants are now back.



August 27, 2015. Prairie dock thrives again at Twin Creek Valley.



August 1, 2013. The remnant barrens has recovered four months after a prescribed burn.



November 3, 2015. Following a prescribed fire, the southern glade appears in the background.



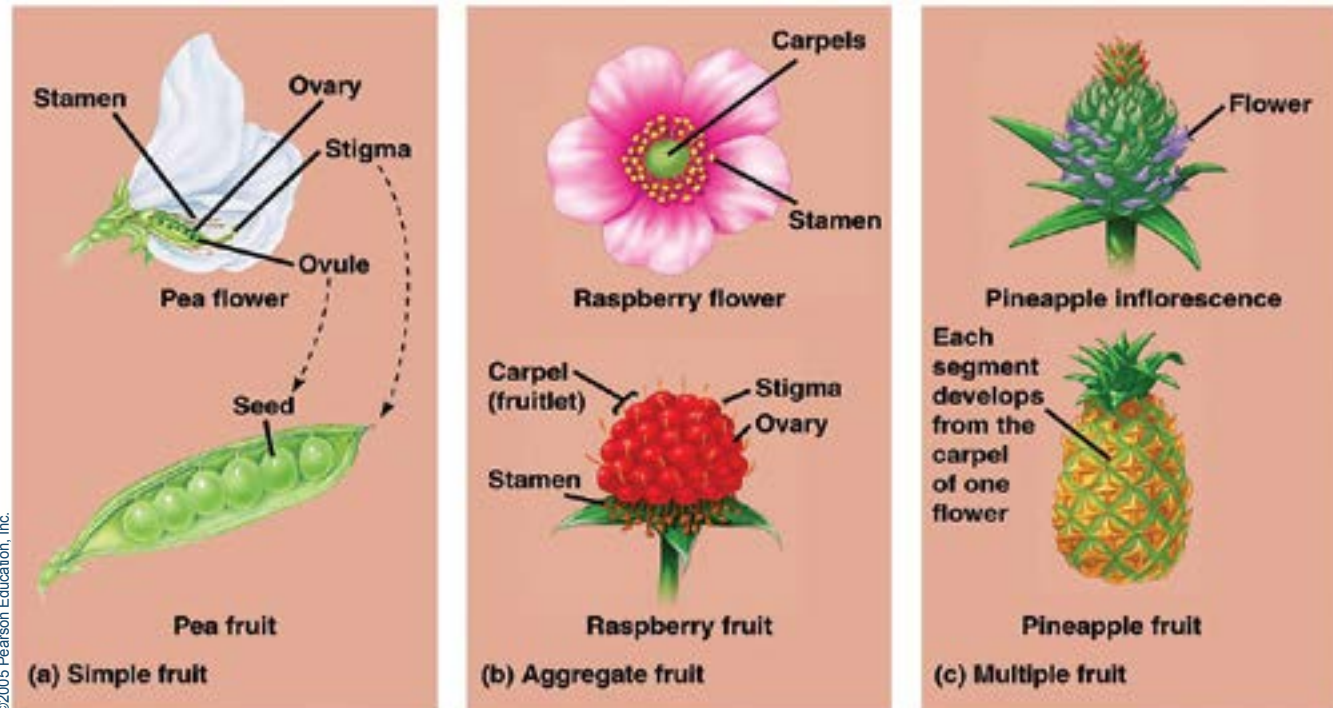
# Fruits: the familiar

## Botany basics

### Adrienne Funderburg Newsome

It's hard not to appreciate fruit. Like flowers, fruits delight and amaze us with their diversity of forms, adaptations and flavors. But as much as we love fruit, plants are dependent on them. Fruits work as seed protectors, dispersal vehicles and embryo nutrition for the plant, and each type of fruit is specially equipped for its role so populations may spread and species live on.

fruit, and botanists break fruits into four categories based on how they form from their flowers. Flowers with one carpel (the female part of a flower composed of stigma, style and ovary) or many fused carpels develop into *simple* fruits. If a flower has many individual carpels instead, the carpels may grow after fertilization and fuse into a single *aggregate* fruit. In some species, multiple flowers grow close together, and their carpels begin to fuse after fertilization. The



While there is a bounty of beautiful and bizarre fruits to study, this article will present common terminology for describing fruits and native examples of the types discussed. An internet or library search will show you many more types of fruits (and botanical oddities) than we can present in this space, but here are the fruit basics to get you started.

A fruit begins to form when the ovule of a flower is fertilized; the ovule itself will become the seed, and the ovary, which surrounds the ovule, develops into a fruit. The original structure of the flower greatly affects the resulting

resulting fruit is called a *multiple* fruit. Lastly, *accessory* fruits are those in which the fruit is formed from more tissues than just the ovary.

Fruits can also be *fleshy* or *dry*, which as you might have guessed, describes the texture of their tissues. If you think of fleshy fruits, blueberries (*Vaccinium* spp.) may come to mind. Blueberries are a good example of *true berries*, simple fruits that are fleshy throughout. Strangely enough, tomatoes (*Lycopersicon* spp.) are also true berries. (This makes ketchup a bit of an odd condiment!)

# and the far out

Other fruits that we call berries, such as raspberries (*Rubus* spp.), are not true berries because they are not simple fruits. Raspberries are aggregate fruits, arising from carpels that fuse post-fertilization. Each round fruitlet of a raspberry developed from a single carpel. Mulberries (*Morus* spp.) are also false berries; the fruits develop from the ovaries of multiple flowers, making them a

great native example of a multiple fruit. Pineapples (*Ananas* spp.) are another familiar multiple fruit, but are only native to grocery stores and the occasional greenhouse in this region.

Strawberries (*Fragaria* spp.) are also false berries. When you hold a strawberry in your hand, you are actually holding approximately 200 tiny fruits settled into the ruby-red flesh of the enlarged receptacle (where the flower attaches to the stalk). In this way, what we normally consider the fruit of the strawberry is actually an accessory fruit, made up of other flower tissues, and each "seed" on the outside of the strawberry isn't a seed, but a fruit of its own with a seed inside. Not only are there lots of fruits on a strawberry, but the whole delicious structure develops from a single flower with many independent carpels, making a strawberry an aggregate-accessory fruit.

The "seeds" on strawberries are actually dry fruits called *achenes*. Achenes have seeds that are connected to the fruit wall at one location inside the wall, rather than at two or more points. Sunflower "seeds" are also achene fruits; the dry shell is the fruit wall, which we peel or crack open in order

to eat the seed. All achene fruits are simple, and they are also *indehiscent*, meaning they do not split open at maturity.

*Nuts* are another type of simple, dry, indehiscent fruit, but they differ from achenes in that the fruit wall develops into a stony shell. This wall is easily recognizable in the acorns produced by oaks (*Quercus* spp.) and in walnuts from eastern black walnut trees (*Juglans nigra*).

Our last fruit types are dry and simple, but are *dehiscent*, meaning they split open to release their seeds at maturity. *Follicles* split open along one suture and *legumes* split along two. Milkweed (*Asclepias* spp.) fruits are a familiar example of follicles, and the remains of their split husks and fluffy seeds can be seen from late fall into wintertime. Redbud (*Cercis canadensis*) is an example of a legume.

There are more fruit types and terms to be discovered with a bit of research. Next time you go out to the grocery or on a walk, see how many of these and other types of fruits you can spot and name.

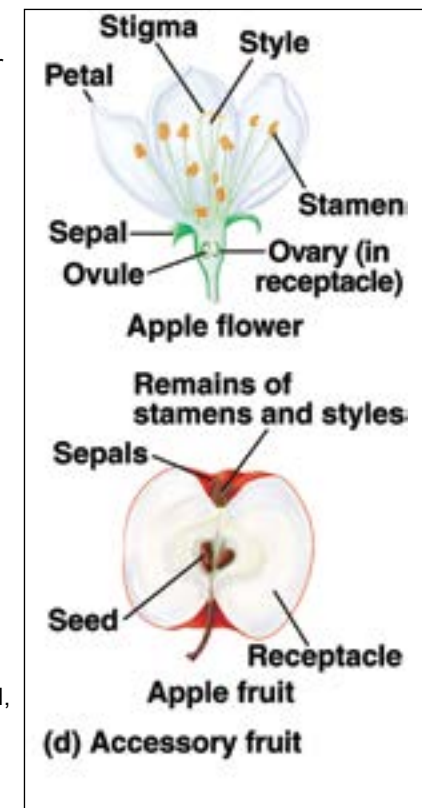
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Adrienne Funderburg Newsome is a senior at Huntington University, where she studies biology and environmental science. Blueberries are her favorite Indiana fruit.



Milkweed follicles (top) and redbud legumes (bottom) are examples of dehiscent fruits that split open to release their seeds.

## Hiking – from back cover

ledge among various ferns and rock fir-moss (*Huperzia porophila*) sprouts the only known occurrence in the entire state of prickly tree clubmoss (*Dendrolycopodium dendroideum*). Mike advised us against maneuvering the cliff face for a better look, as had been done decades before when the clubmoss was discovered and sampled.



Hikers at Yellow Birch Ravine were excited by discoveries such as a long-tailed salamander (above) and the state's only known occurrence of prickly tree clubmoss (right).



Shortly after, our group reached the end of the ravine. There we found Horseshoe Falls, a high rock overhang funneling several streams of water to the ravine below. The falls are a great place to stop for a rest before returning to the parking lot.

For those whose interests include animals, Yellow Birch Ravine doesn't disappoint. The creek provides habitat for amphibians such as the wood frog (*Lithobates sylvaticus*) and long-tailed salamander (*Eurycea longicauda*). Ebony jewelwing damselflies (*Calopteryx maculata*) flit over the water, and the keen-eyed observer may spot a candy-colored rosy maple moth (*Dryocampa rubicunda*) or its tentacled caterpillar. Birders will enjoy hooded warblers (*Setophaga citrina*) and Louisiana waterthrushes (*Parkesia motacilla*), while fossil-lovers can see good examples of crinoids and the screw-like *Archimides* bryozoan.

Despite the lack of trails, Yellow Birch Ravine is not a strenuous walk,

but hikers should expect to clamber in and out of the creek bed several times. This geological wonder is well worth the muddy boots.

*Eden, Samantha and Taylor Ransdell are nature enthusiasts from the South Central Chapter of INPAWS.*

Samantha Ransdell

## IPA grant to help restore Limberlost

### By Terri Gorney

Nestled in northern Jay County is the 465-acre Loblolly Marsh, one of Indiana's natural gems. The farmer who once owned part of the land called it "the armpit of Indiana" as he had continuous problems with flooded fields. It's all in your point of view! This area was a remnant of the old Limberlost Swamp, and even with ditching and draining, it was never meant to be farmed.

In 2012, Loblolly Marsh was dedicated as the 250<sup>th</sup> State-dedicated nature preserve by then-governor Mitch Daniels. DNR east central regional ecologist Ben W. Hess has an office at the visitor center at Limberlost State Historic Site in Geneva.

The Friends of the Limberlost help DNR's Division of Nature Preserves (DNP) care for Loblolly Marsh and other preserves in the Limberlost Territories — restored wetlands and uplands totaling 1,700 acres in northern Jay County and southern Adams County.

On August 20, the Friends received the wonderful news that they had been awarded a project grant from Indiana Parks Alliance (IPA) to enhance an area of Loblolly Marsh. Our IPA project, "Restoring the Limberlost Wetlands and Prairies with Native Plantings," provides money to purchase native plant plugs and seed mixtures. DNP staff and Friends volunteers will provide the labor.

We will focus on high-profile areas such as the Wetland Overlook, which in the past provided a view of Engle Lake. Today the lake has vanished, the result of a 22-year effort to drain Limberlost Swamp from 1888 to 1910. To make these natural areas more appealing, especially for visitors who enjoy seeing and photographing wildflowers, DNP and the Friends will plant more native flowers around the overlook and along Veronica's Trail, a handicapped accessible trail that takes visitors from the Loblolly parking lot to the Wetland Overlook. Native wildflowers will attract more insects and birds, creating more diversity and better habitat. With an additional Heritage Support Grant from Indiana Historical Society, Friends will also put an interpretive sign at the overlook.

Ben W. Hess and I worked together on the IPA grant. Ben is a botanist with a vast knowledge of

plants, seed propagation and land management. He created a list of native plants appropriate for the type of soil and the quantity of plants that would be needed. Some of the species are golden alexander (*Zizia aurea*), Culver's root (*Veronicastrum virginicum*), prairie dropseed (*Sporobolus heterolepis*), butterfly weed (*Asclepias tuberosa*), and "Low Stature Prairie Mix." Spence Restoration Nursery in Muncie was our source for plugs and seeds. (See Ben's map of the design for the plantings below.)



Ben W. Hess

DNP assistant director Tom Swinford said, "The Limberlost is one of my very favorite projects statewide. The Division of Nature Preserves and Friends of the Limberlost have worked together since day one, shoulder to shoulder, bringing this vast former wetland back to life. The 1,700 acres of poorly yielding farm ground have been returned to a mosaic of prairies, marshes, swamp forests and oak woodlands, creating hundreds of acres of native plant and wildlife habitat. It's become a real destination for birds. Also, fascinating cultural sites, including a Civil War era cemetery, are being protected in the project area."

Anyone interested in volunteering with Friends of the Limberlost can contact Nicky Ball at [nball@indianamuseum.org](mailto:nball@indianamuseum.org) or Ben W. Hess at [bhess@dnr.in.gov](mailto:bhess@dnr.in.gov).

*Terri Gorney is vice-president of Friends of the Limberlost and a DNR volunteer.*



## Indiana Native Plant & Wildflower Society

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# Hiking Yellow Birch Ravine



**By Eden, Samantha and Taylor Ransdell**

Crawford County's Yellow Birch Ravine has been on our family's to-do list since we learned of it at the INPAWS conference in 2016. Fearful of getting lost in a nature preserve with no trails and few signs, we were thrilled to hear of a guided hike led by INPAWS president Mike Homoya and DNR regional ecologist Ryan Keller. Including our leaders, nine native plant enthusiasts met at Patoka Elementary School in Taswell on June 3, a muggy Saturday morning. We carpooled to an inconspicuous parking space, where a shallow stream winding through the preserve led our group directly into the ravine.

Near the water's edge, a massive green dragon (*Arisaema dracontium*) greeted us with its unique flower. As the sandstone bluffs rose up on either side, we began seeing other evidence of what makes this area so unique. Many species of ferns littered the forest floor, including silvery glade fern (*Deparia acrostichoides*) and rock polypody (*Polypodium virginianum*). Where the topsoil had washed away from rain and flooding, thousands of yellow squirrel corn bulblets (*Dicentra canadensis*) dotted the ravine bottom.

The air in the ravine was even steamier than outside the woods. Due to a warm winter, many of the expected flowering species had already come and gone, with the notable exception of zigzag spiderwort (*Tradescantia subaspera*) and maple-leaf waterleaf (*Hydrophyllum canadense*). We were still able to find lingering blooms on some mountain laurel (*Kalmia latifolia*), as well as vigorously flowering wild hydrangea (*Hydrangea arborescens*). Clinging to the steep ravine walls we found cinnamon fern (*Osmundastrum cinnamomeum*) with its tall fertile frond.

After weaving back and forth across the creek for about half a mile, we came upon a true botanical highlight. Nestled on a high

*Hiking – continued on page 18*