



# inpaws journal

Indiana Native Plant and Wildflower Society

Spring 2018

## Giant blue cohosh

### New wildflower documented in state

By Kimberly Miser

Full confession: On Good Friday, 2017, I didn't go to church — even though I had the day off from work to do just that. It was a textbook perfect spring day, and I impulsively changed the plan. I picked up my 78-year-old mom Susie Watson and celebrated the day with a hike in the

Steuben County. Once we entered the forest, the canyon came into view. A wooded trail descends the slope to a stream bisecting the canyon, then rises again on the opposite side. Once on top of the west-side plateau, the trail makes a loop. Here, a weirdly wonderful wildflower stopped us in our tracks.

I admit, I bumble my way through flower identifications. Even so, I stopped hiking with my *Newcomb's Wildflower Guide* a year ago. It became a problem. I would spend 30 minutes working on an identification, sometimes at the first flower I'd come to. That method usually reshaped my hike from a peaceful woodland walk to a standing-in-one-place exercise of futility.

I developed a new method. When facing an unfamiliar plant, I take pictures of all its parts. I make notes on characteristics, such as whether



Kimberly Miser

*Giant blue cohosh had been documented in northeastern states and southeastern Canada, but not in Indiana until two INPAWS members found a stand in Steuben County last spring.*

woods. Within a few hours, we would discover a wildflower previously undocumented in Indiana.

You may remember last year's spring. In north-east Indiana, nature turned up the wow factor and gave us a truly fantastic wildflower season.

We stopped at Acres Along the Wabash, an ACRES Land Trust nature preserve in Wells County. Easter-appropriate yellow and white trout lilies (*Erythronium americanum* and *E. albidum*) carpeted the banks; the preserve's famous shooting stars (*Dodecatheon meadia*), in peak bloom, charmed us.

For our second stop, we picked another ACRES property, Robb Hidden Canyon in

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the stem is hairy or what's growing nearby. Then I move on. More hiking, less standing around. Later, armed with the internet and guidebooks, I work on an identification.

Susie and I puzzled over this plant for quite a while. The flowers looked like those of blue cohosh (*Caulophyllum thalictroides*) but were dusty pink-purple.

What really drew our attention were the stem and leaves. With a rubbery purple stem and strangely "wilted" leaves, we couldn't tell if the

*New cohosh – continued on page 3*

# Indian pipe (*Monotropa uniflora*)

By Michael Homoya

Indian pipe, ghost flower, corpse plant – strange names for a strange plant. So strange, in fact, that one might wonder if it really is a plant. But a plant it is, although certainly not your everyday, garden variety.

Indian pipe looks more like fungus than wildflower. Standing approximately 5 inches tall, it typically consists of a cluster of single stems with leaves reduced to small scales. The entire plant is waxy and ghostly white, turning black with age or if picked.

## Native plant profile



Lynne Tweedie

*“Indian pipe is one of the few plants in the world that totally lack chlorophyll.”*

Atop each stem is a single flower with four to six petals. During prime blooming the flowers bow down to the ground, as if hiding some inner dark secret. And indeed it is. Our featured plant's guise isn't the only thing that's odd.

Indian pipe is one of the few plants in the world that totally lack chlorophyll. Chlorophyll, the substance that gives plants their green color, is necessary for photosynthesis. Without it they can't produce sugar, the simple food of life. So how does Indian pipe get its food? By stealing.

Indian pipe is a mycoheterothroph, that is, a non-photosynthetic plant that derives all of its nutrition from a green plant via a subterranean fungal conduit connecting the roots of both. The flow is one way, however, as the Indian

pipe provides nothing in return. Fortunately for the fungus and the green plant, this parasitic act does little harm, as the amount of nutrients taken is minute. After all, if the host is killed, so goes the meal ticket.

As bizarre as Indian pipe might be, it's related to some familiar “normal” plants. Indian pipe, blueberry, cranberry and azalea are all members of the heath family (Ericaceae). Other recognizable family relatives include huckleberry, mountain laurel, sourwood, heather and wintergreen. (Note: some botanists place Indian pipe in a different family, the Monotropaceae).

Indian pipe's scientific name, *Monotropa uniflora*, refers to its one flower (*uniflora*) on a stem with a one-directional (*mono*) turn (*tropos*). The common names are the result of one's creativity and imagination. (Don't you see the feathers on the peace pipe?) By whatever name, the species occurs in most forested regions of North America, and as far south as northwestern South America. Amazingly, eastern Asia is also home. Moist forest is the favored habitat of Indian pipe, where it normally blooms in late summer.

Indian pipe occurs throughout much of Indiana, but is uncommon where found. Actually, perhaps it's not so uncommon, because Indian pipe can exist indefinitely underground and out of sight. Most likely, we're just unaware of the true number of plants underfoot.

Unless, that is, it appears that all are in bloom. Charles Deam, Indiana's premier pioneer botanist, reported such a rare event in his *Flora of Indiana*. He saw Indian pipe “so common that it reminded one of a woods in winter when the snow was on the ground. Acres of this woods were carpeted with it.”

In subsequent years he could find only a few scattered plants at the site. But these fascinating plants are likely still there, quietly living out their lives underground.

*Reprinted with permission from Outdoor Indiana.*

*Michael Homoya is a botanist with DNR's Division of Nature Preserves and current president of INPAWS. As a teen, one of the first wildflowers he found and identified on his own was Indian pipe.*

## New cohosh – from page 1

plant was at its end stage or a victim of a hard frost or chemical exposure. Groups of the plants covered the plateau — we considered whether it might be invasive.

Once home, I was unable to find the flower in any of my field guides. After a quick internet search, I made a preliminary identification of *Caulophyllum giganteum* – giant blue cohosh. But I had doubts — according to the U.S. Department of Agriculture, *C. giganteum* is not listed in Indiana.

The web site of the University of Michigan Herbarium, *michiganflora.net*, says the flowers of *C. giganteum* are usually purple/maroon or greenish purple, while those of *C. thalictroides* are yellow, green, or yellow lightly tinged with purple. *Flora of North America* says the blooms of *C. giganteum* are purple, red, brown or yellow and those of *C. thalictroides* are yellow, purple or green.

Clearly, flower color was not going to be the definitive factor in this identification.

I involved Kate Sanders, stewardship chair for INPAWS Northeast Chapter, who then shared my pictures with Nate Simons, executive director of Blue Heron Ministries, and Ben W. Hess, east central ecologist for DNR's Division of Nature Preserves. Both felt we should share the find with Michael Homoya, DNR's state botanist and plant ecologist.

To make an accurate identification, Homoya said we needed measurements of the petals, pistils and leaves. Kate and I returned to Robb the following week. One characteristic of *C. giganteum* is that it blooms before the leaves unfold. Now most of the flowers were gone and the plant's leaves had transformed from looking dead to flat, smooth and green. We found a few flowers and measured what we could.

The pistils and stamens of *C. giganteum* are longer than those of *C. thalictroides*, and *C. giganteum* also has more sepals and slightly larger leaflets. Using our measurements and pictures, Homoya confirmed the identification as best he could without seeing the plant firsthand. He said *C. giganteum*'s natural range is mostly the northeastern United States and southeastern Canada, but he often thought it should occur in Indiana.

"As far as I know, it has never been documented in the state until your discovery," Homoya told me.

Homoya thinks the plant has probably been there awhile, given its spread on the ridge, but previous visitors may not have known how to distinguish *C. giganteum* from *C. thalictroides*.

"Some botanists don't think the distinction is worthy of recognition as a species," Homoya said. But differences in leaves, reproductive strategies, and length of pistils, styles and stamens lead most botanists to the same conclusion as his: "From what I can see, the differences are sufficient to treat it as a separate species."

Homoya offers advice for both wildflower experts and novices: "Keep wandering! With over 2,000 native plants in the state, there's always some new, really cool plant to meet."



Kimberly Miser

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*Editor's note: In her 2000 Field Guide to Indiana Wildflowers, Kay Yatskiyevych notes in her entry for Caulophyllum thalictroides: "A second species that was recently recognized, Caulophyllum giganteum (Farw.) Loconte & W.H. Blackw., with purplish sepals and styles > 1 mm might eventually be found in northeastern or southeastern Indiana."*

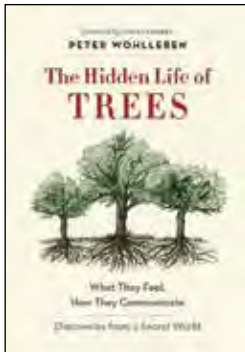
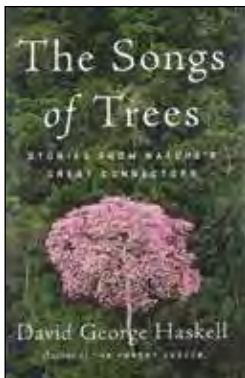
*Kim Miser is communications chair of INPAWS Northeast Chapter.*

*Compared with the more familiar blue cohosh, giant blue cohosh (above) has longer pistils and stamens as well as more sepals and slightly larger leaflets.*

## Trees:

# Beauty is more than bark-deep

### Book reviews



By Patricia Happel Cornwell

*The Songs of Trees: Stories from Nature's Great Connectors* by David George Haskell, Viking, New York, 2017

David Haskell is as good a writer as he is a scientist. He has the gift of being scientific without being didactic or intrusive, lyrical without ever becoming sappy. He has done his homework, too, as evidenced by the 22-page bibliography that follows the text.

This is a man who knows how to sit still in one place and listen to what nature has to teach him. His earlier book was *The Forest Unseen: A Year's Watch in Nature*, Viking, New York, 2012.

The forest, Haskell writes, "is the place where biological hubris dies: we live in profound ignorance of our cousins," the trees. And "because life is network, there is no 'nature' or 'environment' separate and apart from humans."

In *Songs* he spends time with individual trees in Ecuador, Japan, Jerusalem, Scotland, Ontario and the US, studying their complicated webs of relationship with other plants, fungi, insects, birds and mammals. The author distinguishes among the characteristics of different woodpecker drills on tree trunks, explains how the redwoods turned to stone, and how "plant cells not only sniff the air to detect the health of neighbors but also use airborne odors to attract helpful caterpillar-eating insects."

"The tree that we see above the ground," Haskell explains, "is the sun-gathering appendage of a community of roots and fungi, a chimeric water-seeking subterranean giant." Botany class was never this fascinating.

*The Hidden Life of Trees: What They Feel, How They Communicate* by Peter Wohlleben, Greystone Books, Vancouver, 2015

In the acknowledgements at the end of this book, Peter Wohlleben makes a simple, profound statement: "Only people who understand trees are capable of protecting them." He, too, is a scientist with a flair for words.

Wohlleben, a German forester, uses no Latin names or scientific jargon, but provides

resource notes at the end of the book. He makes a case for the learning ability of trees ("Can plants think? Are they intelligent?"), explains how trees share nutrients with weaker neighbors, and manages to explain carbon 14 dating in plain terms.

In some instances, one is reminded that he is writing from a European perspective, as when he writes that beeches and oaks drop their leaves early in fall – that is, in Germany. In North America these species retain their leaves throughout the winter, having evolved to cope with different climatic conditions.

There is a certain amount of anthropomorphism in Wohlleben's book, but there is so much good information that it is a valuable and enjoyable read.

*Seeing Trees* by Nancy Ross Hugo, photography by Robert Llewellyn, Timber Press, Portland, 2011

*Seeing Trees* is a good-looking, slightly oversized book you'll be tempted to leave lying open on the coffee table. (The page-and-a-half photo of a pair of tulip poplar blossoms is spectacular.) Hugo's appreciative text and Llewellyn's artistry present close-ups of ten familiar trees in an unfamiliar format, more like "senior pictures" than snapshots.

Magnified photos of the flowers, seeds and leaves of these trees make them seem exotic, but they are old friends: beech, sycamore, walnut, cedar, ginkgo, red maple, magnolia, tulip poplar, white oak and white pine. Other species such as redbud, persimmon or birch are showcased in sections on fruits and bark.

Hugo writes, "Travelers marvel at European cathedrals that took hundreds of years to complete and that have survived the vicissitudes of history, but in many of our own neighborhoods are living trees that have survived as long with little or no recognition."

She urges readers to look at a tree from every angle, even from a hammock among its branches, and to look at that same tree in every season as it goes through its life cycles, rather than merely identifying a silhouette in a guide book and thinking we know what a tree is. 🌿

# What is a tree made of?

By Adrienne Funderburg Newsome

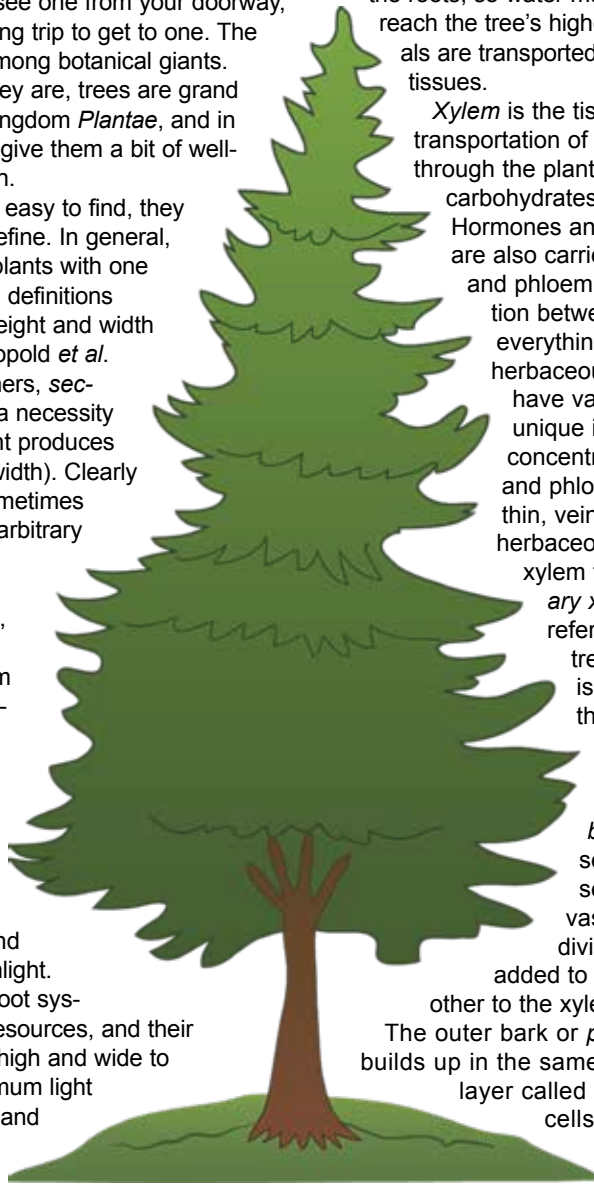
If you step outside or look out a window, chances are you can spot at least one tree. This of course depends on where you live, but even if you can't see one from your doorway, it wouldn't be a long trip to get to one. The truth is, we live among botanical giants. As common as they are, trees are grand wonders of the Kingdom *Plantae*, and in this column, we'll give them a bit of well-deserved attention.

While trees are easy to find, they can be tricky to define. In general, trees are woody plants with one main trunk. Some definitions include specific height and width requirements (Leopold *et al.* 1998), and for others, *secondary growth* is a necessity (meaning the plant produces wood and gains width). Clearly defining terms sometimes requires drawing arbitrary lines, but it's an important part of any scientific field, including botany. For example, palm trees lack secondary growth, so in some cases they are considered herbs instead of trees (Edelman 2016).

Plants require water, minerals and nutrients, and sunlight. Trees grow vast root systems to take up resources, and their branches stretch high and wide to give leaves maximum light exposure. Height and wide branching offer distinct advantages in the collection of resources, but present a huge challenge in the transportation of those

resources within the plant. Carbohydrates produced by photosynthesis in the leaves must be transported down through the trunk to the roots. Conversely, leaves need the water gathered by the roots, so water must travel against gravity to reach the tree's highest points. These materials are transported by systems of vascular tissues.

*Xylem* is the tissue responsible for transportation of water and minerals up through the plant, and *phloem* transports carbohydrates downward (Berg 2008). Hormones and signaling molecules are also carried through the xylem and phloem, allowing communication between roots, leaves and everything in between. While all herbaceous and woody plants have vascular tissues, trees are unique in that they develop thick, concentric circle layers of xylem and phloem as opposed to the thin, vein-like bundles found in herbaceous plants. The built-up xylem tissue is called *secondary xylem*, also botanically referred to as the *wood* of the tree. *Secondary phloem* is a thinner layer than the secondary xylem and is the inner bark of a tree. A thin ring of cells, called the *vascular cambium*, lies between the secondary xylem and the secondary phloem. When vascular cambium cells divide, one daughter cell is added to the phloem side, and the other to the xylem, widening each layer. The outer bark or *periderm* of the tree builds up in the same way, produced by a cell layer called the *cork cambium*. The cells produced are called *cork cells* and are found just beneath the *epidermis*, the outermost layer of bark. Cork cells are impermeable to water and gas (Evert and Eichhorn 2013).



Botany  
basics

Botany basics – continued on page 7

# IU Herbarium needs your help

**By Eric B. Knox and  
Paul E. Rothrock**

After four years of work by a small army of undergraduate students, the Indiana University Herbarium is entering the final phase of its 5-year digitization project, and we need your help!

Charles C. Deam, Indiana's foremost botanist, published the *Flora of Indiana* in 1940.



*Building on the life's work of Charles Deam, the CMH web site provides a 21<sup>st</sup> century data portal to thousands of species.*

A county outline map showed the distribution of each species based on Charlie's 65,000 specimens and thousands of specimens that he consulted in other herbaria. Despite having visited every township in every Indiana county, there were more than a few plants that escaped his careful eye.

The detailed distribution information in *Flora of Indiana* inspired citizen scientists throughout Indiana to help "fill in the missing information" and annual county record updates were published in the *Proceedings of the Indiana Academy of Science*. The Indiana University Herbarium has photographed its Indiana specimens, transcribed their label information into a structured database, and is currently determining the latitude and longitude of each collecting locality so the information can be retrieved in map-based searches.

This specimen information is available through the Consortium of Midwest Herbaria (CMH) data portal (<http://midwestherbaria.org>), along with information from other participating herbaria. The species information includes descriptions from Gleason & Cronquist's (1991) *Manual of Vascular Plants* and Deam's *Flora of Indiana* observations. On the Home page, you can search for information using scientific names. The Specimen Search tab enables you to Search Collections using key words, or to conduct a Map Search for an area of your choosing (for specimens with latitude/longitude

information). The Inventories tab takes you to an up-to-date checklist for Indiana (where you can also search on Common Names), but the golden key symbol takes you to an Interactive Key that will identify plants using easily observed features and simple terminology. A green information symbol takes you to a Wikipedia page on that topic. Clicking on any species name takes you to the species page.

### **How you can help:**

1) Do you have high quality digital images of plants *live and in the field* that can be posted on the CMH species pages (with photographer credit and, if desired, copyright)? If so, please contact Paul Rothrock ([perothro@indiana.edu](mailto:perothro@indiana.edu)) for instructions on how to submit your photos.

2) Not all species grow in all counties and 2018 will be the last growing season during the IU Herbarium Digitization Project. Can you photograph species in your area this spring/summer/fall? If so, please contact Paul for a personalized *desiderata* list.

3) Will you help test the Interactive Key for Indiana? We are still compiling information in the species level database that powers the Interactive Key, but we need beta-testers to spot places that need improvement. Again, contact Paul.

4) Although the Indiana University Herbarium will soon finish digitizing the largest and historically most important collection of Indiana plants, there are many Indiana specimens at other herbaria. Will you help with their label transcription and geo-referencing?

The CMH data portal provides a 21<sup>st</sup> century version of the *Flora of Indiana*, and we hope that you might help "fill in the missing information."

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*Eric Knox and Paul Rothrock are Curator and Associate Curator of the Indiana University Herbarium.*

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## Botany basics – from page 5

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Tree cork is used to make a number of common products, including bottle stoppers and flooring (Berg 2008).

These three tissues, secondary xylem, secondary phloem, and periderm, are the source of the expansion of girth characteristic of trees. Secondary growth occurs in both the trunk and branches.

Whether or not the wood of a tree is living or non-living depends on the definition of terms. Functional xylem cells are dead – basically just hollow tubes for conducting water and nutrients from the soil up to stems and leaves. However, because they transport resources throughout the living organism, some botanists consider wood to be alive until it is cut from the tree. The outer bark is made of dead cells that do not act in any form of transport; therefore, it is considered non-living (Evert and Eichhorn 2013).

So the vascular tissues are responsible for resource movement, but how in the world does water travel tens or hundreds of feet against gravity to reach a tree's top? The main theory for water movement in plants is called the *cohesion-tension theory*. This theory states that water is transported via a pulling force, or tension, from the top of the tree. *Transpiration*, evaporation of water from leaves, causes a potential gradient in leaf cells (Berg 2008). In other words, surface cells draw water from cells adjacent to them, which draw water from the cells adjacent to them, and the pattern continues down the xylem. Water is a polar molecule, and as such experiences *cohesion*, attraction to other water molecules, and *adhesion*, attraction to other molecules (Evert and Eichhorn 2013). These phenomena allow water to climb and be pulled up the xylem, even as gravity pushes down on the tree.

There is much more to learn about these botanical giants. If you have questions of your own, visit a library, greenhouse, botanist or forester! But whatever you do, make sure to take note of the sheer size and number of trees around you and enjoy them thoroughly this spring.



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*Adrienne Funderburg Newsome is a senior at Huntington University where she studies biology and environmental science. American sycamore (Platanus occidentalis) is one of her favorite Indiana trees.*

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### Need a grant?

A reminder: this year, October 1 is the deadline for INPAWS grant applications, with notification of awards the first week of November. Funds will be provided as reimbursement after a project is completed. Applications must fit one of three categories: research, land management and restoration, or demonstration garden.

Letha's Youth Outdoor Fund still accepts applications any time of year, restricted to educational field trips, transportation for students, naturalist fees and supplies. These awards are also disbursed as reimbursements of actual costs. For more details, see the winter 2017-18 issue of *INPAWS Journal* or [www.inpaws.org](http://www.inpaws.org).

### April 28-29

#### Newfields (IMA) plant sale

Newfields, the 152-acre campus that includes Indianapolis Museum of Art, will hold its annual "Perennial Premier" April 28-29. On Saturday, the plant sale will be open to members only from 9 a.m. to 12 p.m. and to the public from 12 to 4 p.m. On Sunday, the sale will be open to all from 12 to 3 p.m. Gardeners can shop for the best plants for their landscapes and receive plant advice from the Newfields horticultural experts. Species available will include native plants for sun and shade, shrubs and trees. Visit [discovernewfields.org](http://discovernewfields.org).



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To promote the appreciation, preservation, scientific study, and use of plants native to Indiana.

To teach people about their beauty, diversity, and importance to our environment.

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### Submissions

All are invited to submit photos, articles, news and event postings. Acceptance for publication is at the discretion of the editor. INPAWS welcomes differing points of view. Please submit text and high resolution photos (300 ppi) via e-mail to journal@inpaws.org. Submission deadlines for specific issues are: Spring – Jan. 22 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

### Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public at inpaws.org.

### Share

Please direct information of interest to webmaster@inpaws.org.



# INPAWS 2017 Financial Summary

## By Don Gorney

The financial statements and this commentary reflect only state-level operations. They do not include any chapter financial data.

The financial position of INPAWS remains strong. During 2017, revenues exceeded expenses by \$14,124, compared to an operating deficit of \$6,135 in 2016. Revenues were bolstered near year's end 2017 by a \$10,000 donation to Letha's Outdoor Fund by an anonymous donor.

At the end of 2017 the organization had liquid cash assets of \$77,319 and no liabilities. Net assets (the equivalent of capital or net worth in for-profit accounting) include temporarily restricted assets of \$11,068 for Letha's Fund. ("Temporarily restricted assets" is a term used in nonprofit accounting to indicate funds that are restricted to a specific purpose.) Donations to Letha's Fund must be used only for grants to Indiana schools to pay for nature-oriented field trip expenses.

*Don Gorney is treasurer of INPAWS.*

## Profit & Loss Statement

### Fiscal Year 2017

#### INCOME

Memberships	
Gross membership dues	26,815.00
Dues transfer to chapters	3,990.00
<b>Membership total</b>	<b>22,825.00</b>
Donations	
Donations – restricted	500.00
Donations – other	1,213.82
<b>Donations total</b>	<b>1,713.82</b>
Plant sale income	11,015.20
Conference income	32,577.81
Interest income	25.11
Miscellaneous income	186.72
Letha's Fund donations	13,565.00
<b>Total income</b>	<b>\$81,908.66</b>

#### EXPENSES

Bank fees	12.00
Legal fees	500.00
Publications	1,589.29
Outreach	889.00

Insurance, liability	2,791.00
Network for Good	
Processing fees	519.10
Monthly fees	1,088.95
<b>Network for Good total</b>	<b>1,608.05</b>

Membership	
Printing/ mailing	1,445.13
Membership coordinator	150.00
<b>Membership total</b>	<b>1,595.13</b>

Journal	
Printing	5,114.17
Mailing	1,446.66
Prep/editing	5,000.00
<b>Journal total</b>	<b>11,560.83</b>

Postage, other	394.20
Web site	235.27
Technology expense	174.00
External grants	5,000.00
Plant sale	
Plants	1,591.44
Credit card processing	193.35
Other	874.39
Bookstore	895.66
<b>Plant sale total</b>	<b>3,554.84</b>

Annual conference	
Venue & food	19,987.03
Credit card processubg	1,399.78
Other	6,184.15
Bookstore	2,617.70
<b>Conference total</b>	<b>30,188.66</b>

Grow IN Natives project	49.70
Letha's Fund distributions	7,243.59
Meeting expense	129.52
<b>Miscellaneous expenses</b>	<b>268.75</b>

<b>Total expenses</b>	<b>\$67,783.83</b>
<b>NET INCOME</b>	<b>\$14,124.83</b>

## Balance Sheet – December 31, 2017

#### ASSETS

Checking	13,566.59
Money Market	63,743.68
<b>Total Assets</b>	<b>\$77,310.27</b>

#### Net Assets

Unrestricted	66,242.04
Letha's Fund	11,068.23
<b>Total Net Assets</b>	<b>\$77,310.27</b>

<b>TOTAL LIABILIBIES</b>	<b>0.00</b>
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# Chapters dig into the

## INPAWS In Action

### West Central

In 2017, West Central Chapter's RIP (Remove Invasive Plants) Squad contributed more than 550 volunteer hours removing invasive plants. The effort is co-sponsored by Sycamore Audubon Society and West Lafayette and Tippecanoe County parks and recreation departments.

The squad averaged three to six volunteers per session, but at one of our "Pulling for

Bats" events at Ross Hills Park, we were joined by 20 students from Purdue University's Alpha Phi Omega – a lot was accomplished that day! These students also came to several of our spring and fall sessions. In April, Purdue's Circle K service organization joined us at Happy Hollow one afternoon, and a Purdue Women's Club group, "Into Nature," pulled a good morning's worth of garlic mustard at Celery Bog. Altogether we were pleased to have 32

Purdue folks joining our 14 community volunteers. Several chapter members contributed even more time on their own, knowing even a half-hour helps.

We pulled garlic mustard and small honeysuckle sprouts for more than 140 hours in West Lafayette, over 20 spring afternoons and some mornings in Celery Bog Nature Area, Michaud-Sinninger Nature Area (Cumberland Woods) and Happy Hollow Park.

Nick Harby focused on winter creeper in the Michaud-Sinninger Nature Area throughout the year. He discovered the invasive lesser celandine/fig buttercup during an April wildflower walk in Happy Hollow Park, and reported it via EDDMapS ReportIN, [www.eddmaps.org/indiana/distribution/point.cfm?id=4885459](http://www.eddmaps.org/indiana/distribution/point.cfm?id=4885459). West Lafayette Parks staff member Bob Cheever has worked to eradicate it.

We traveled in Tippecanoe County to nearby Ross Hills Park and Prophet's Rock Woods, volunteering more than 410 hours. We spent five winter afternoons on autumn olive and bush honeysuckle in Ross Hills and four summer mornings on Japanese stiltgrass there. Our early intervention on stiltgrass at Ross Hills looks successful so far. We enjoyed more than 20 spring afternoons, seeing wildflowers while pulling garlic mustard in both locations, and over 20 autumn afternoons going after bush honeysuckle, winged burning bush and autumn olive.

### Central

Central Chapter enjoyed wonderful speakers over the winter and kicked off 2018 with enthusiasm. In November, Dr. Rebecca Dolan gave a presentation on the Indiana Plant Atlas and the Friesner Herbarium at Butler University. Thanks to Ruth Ann Ingraham for hosting the January "ice breaker" – 25 years after she held a gathering in her living room that started INPAWS! Tom Hohman presented a "Why Native Plants?" program at Plainfield Library in February, and in March the chapter hosted a guest speaker, Eyup Erdogan, who discussed "Vascular Plants of Turkey" at St Peter's Church in Carmel. Hikes for the spring and summer are in the works.

### North

North Chapter held a native plant sale at the South Bend/Elkhart Audubon Society Sanctuary in Mishawaka in September. Members who had ordered ahead came out to pick up their orders and peruse other plants that were for sale. Audubon members, neighbors and friends also came out to see and purchase plants. Plant experts were available to help in making selections. Sales netted \$342 for the chapter's



*Jeri Pierce pulled garlic mustard on a trail walk at Celery Bog Nature Area in West Lafayette, April 17, 2017.*

Carole Ross

# New Year

## May 12 INPAWS plant sale

activities. The day was a partnership that included guided hikes and removing invasive plants from the sanctuary.

In October members gathered at a member's home for our annual potluck and election. Members enjoyed food, drink and native plant slides that several shared. Election results were Jan Hunter as new chapter president and Adam Balzer as new secretary. Cookie Ferguson and Scott Namestnik continue as vice president

*"The schedule for 2018 includes various natural areas in our region and knowledgeable botanists, ecologists and professors as guides. We are looking forward to a great year of native plants."*

and treasurer, respectively. In January, Morgan Daniel was appointed new stewardship chair.

At November and January board meetings, new ideas were discussed, including name tags and sign-in records for monthly meetings, "Help a Member" which offers invasive removal or native plant installations for current members, awards for exemplary private and public native gardens and recognition of dedicated volunteers.

Our January membership meeting was held at the WNIT Studios in South Bend. Hal Mann from Perrysburg, OH, spoke about his journey from humble gardener to native plant advocate. Working one section of his yard at a time to convince his wife and neighbors that native plant gardens don't have to look "weedy," he succeeded. He now enthusiastically shares his expertise with others.

Ellen Jacquart, well-known throughout the state as an expert in land management and stewardship, presented a program on invasive plants at our February meeting at Indiana Dunes National Lakeshore Visitor Center in Chesterton.

The North Chapter hike schedule for 2018 includes various natural areas in our region and knowledgeable botanists, ecologists and professors as guides. We are looking forward to a great year of native plants. 🌱

This year's INPAWS Native Plant Sale and Auction will be Saturday, May 12, again at Park Tudor High School, 7200 N. College Ave., Indianapolis, 46240. The event will start with a 9:30 a.m. presentation by The Nature Conservancy's (TNC) Dawn Slack on the environmental impact of invasive plants in our yards and communities.

Back by popular demand, Dawn will discuss the importance of protecting natives by eliminating invasive plants that threaten their existence in the wild. She is a land steward for TNC of Indiana and chair of the Invasive Species Advisory Committee for the Indiana Invasive Species Council.

The \$10 fee for the presentation is also a \$10 coupon toward any auction purchase. Presentation attendees also get to enter the sale at 10 a.m., 15 minutes before the general public. Plant sale and book sale open 10:15 a.m. to 12:30 p.m.

The auction of the finest and rarest plants begins at 11:15 a.m. Each plant is described by experts for foliage, growing conditions and unique qualities.

If you have natives to share, please begin potting them a few weeks before the sale and label them if possible. If you need help digging, email Plant Rescue team leaders Dee Ann Peine and Judith Lieberman at [plantrescue@inpaws.org](mailto:plantrescue@inpaws.org). Plants can be dropped off at the school from 5 to 7 the night before or 7 to 9 the morning of the sale.

To volunteer to help with the sale, register at <http://signup.com/go/tRRuhEJ>. 🌱

### Correction

The meadow photo on page 7 of our winter 2017-18 issue was incorrectly attributed. It was taken by Ruth Ann Ingraham. 🌱



Patricia Happel Cornwell

*Volunteers help buyers prepare for checkout at the 2017 INPAWS plant sale.*

# Maurice McClue's gifts

**By Terri Gorney**

In 1836, John McClue bought a parcel of land in Steuben County. Some of it is now part of Pokagon State Park, which his grandson Maurice McClue worked to make a reality in the 1920s. An attorney by profession, Maurice was a self-taught naturalist.

I first heard the name McClue while volunteering at Pokagon Nature Center. In 2007, now retired park interpreter Fred Wooley became caretaker of Maurice's "Natural History Memoranda," a 38-year nature journal (1919-1957). I was surprised it had never been transcribed so I offered to do it for the Charles McClue Reserve board. It became a multi-year project.

Maurice was born on the family farm in Pleasant Township in 1878. He donated 80 acres of this farm to the "Citizens of Steuben County" in the 1950s, before there were land trusts. He credited his father as an early conservationist and specified it be named in his honor. Thirty acres of what was to become a State-dedicated preserve is old growth forest.

Maurice was fascinated by wildflowers, trees, birds and mammals and spoke on nature topics to school groups, clubs and Boy Scout troops.

"Wildflowers and bluebirds are the first harbingers of spring time, of balmy airs and

sunny days, celestial messengers bringing good tidings," he wrote in a 1930 article for the *Steuben Republican*.

His wife Nora was a member of the Angola Garden Club, whose motto was "Make Glad the Waste Spaces."

She hosted some meetings at their home, and Maurice was a speaker at least twice. Echoing the group's motto in his "Memoranda," he described New England asters' "purple tinge" being in "every waste place."

When the couple moved to their home, McClue loved the overgrown lots on either side because they were full of nature. He wrote: "It would be unnecessary to import a single foreign flower to create a flower garden in America of the most exquisite colors, and a garden to run through the entire season. ... It seems strange to me that people will drive a hundred miles to see tulip gardens or rare peonies, and yet neglect the beauty that a bountiful nature has planted at their very doors ... free

of cost, a garden that lasts from the first anemone in the spring to the last autumn foliage."

McClue was disturbed by the loss of native wildflowers. "Yesterday (July 27, 1941) in the edge of a marsh bordering Lake George," he recorded, "I saw a flower that is rare here, the hard hack or steeple bush. I never saw it in Steuben County but once before,

## Naturalist profile



Naturalist John McClue (right) donated land that later became part of Pokagon State Park in Steuben County (above) in northeast Indiana.



McClue Family

# to Steuben County

several years ago near Lake James, but the second year it was not there. It is difficult to preserve any attractive flower if it is where a person can reach it. Fringed gentians have disappeared from several places where they formerly grew, simply because people repeatedly picked them." He was not happy when he sold his lake cottage and the new owner pulled out the gentian on the property.

In 1941, he wrote of a severe drought that "diminished the numbers of wild flowers ... Goldenrod is one plant that seems to stand drought better than most and it is fairly plentiful but there are scarcely any wild asters."

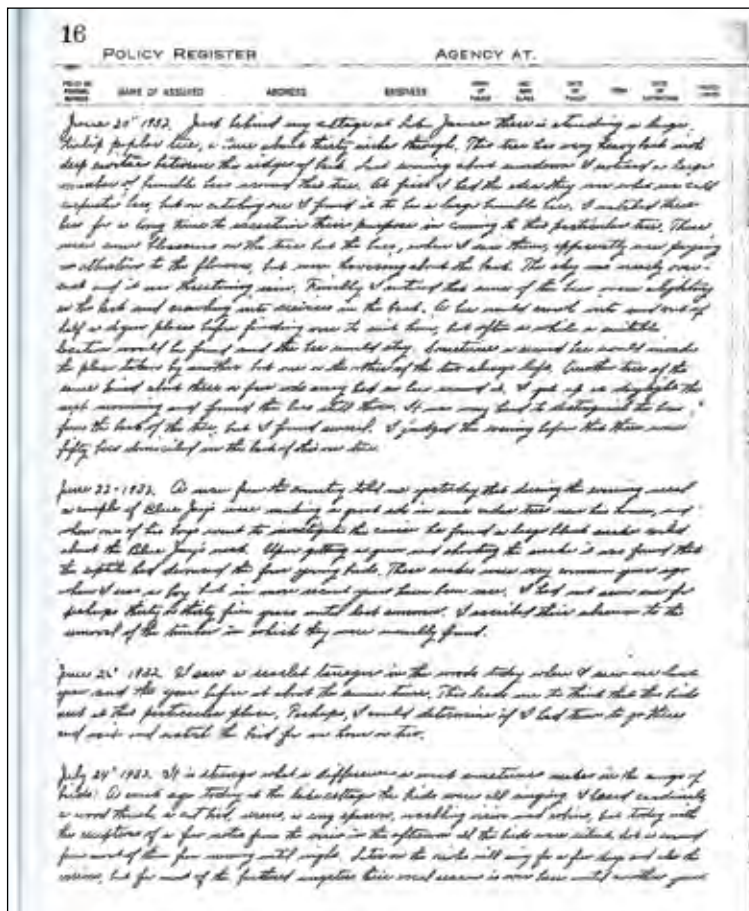
In September, 1946, McClue made an innocent, yet fateful mistake. Visiting Jonesville, MI, he "saw a lot of loosestrife, a flower that is yet very rare here. Along the bank of the St. Joseph River there were acres of these beautiful flowers ... I can hardly imagine a better addition to the ranks of our wildflowers, even though a foreigner." Unfortunately, he brought some back and planted it.

"In northern Indiana," McClue wrote, "April is the month of Nature's beginning, and August sees the inception of its ending ... the bergamots still linger, a few St. John's worts and evening primroses still remain here and there, and if one wanders about enough he may find the beautiful fox glove in blossom. In the marshes the royal purple of ironweed is in bloom, and we know the goldenrod and wild asters are yet to come, but the halcyon days of the most gorgeous bloom is gone for the year."

After Fort Wayne wildflower enthusiast Doug Rood read McClue's journal, he wrote, "McClue reminded his readers that rarities such as fringed gentian, Indian paintbrush and purple lady's slipper (fringed orchis) would soon be lost ... if not protected. He was right. Today fringed gentians are still around but the other two are scarce as hen's teeth."

Even in his 70s, McClue was still in awe of the natural world. "A short visit to the country today. What a joy it would be if I could spend part of each day out in the open to observe nature, with every day almost certain to bring ... some new wildflower." In the spring of 1955, he was anticipating the appearance of fawn lilies and trilliums in his woods.

McClue's last journal entry May 11, 1957, is haunting. Five years before Rachel Carson's *Silent Spring*, he wrote about DDT. "On the



6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> of this month the weather was clear and fine and orioles were singing in the maple trees near my home. They are beautiful singers ... but I am afraid that as soon as the town is sprayed ... to kill the insects, the orioles will all leave as they have done before." Ten days later, he died peacefully in his sleep.

*All McClue quotes are from his "Natural History Memoranda."*

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

*A copy of a page from McClue's Natural History Memoranda, which are now archived at the Fremont County Public Library*

# 25 years of INPAWS: the seed

**By Ruth Ann Ingraham**

Twenty-five years ago, Dr. Rebecca Dolan, director of the Friesner Herbarium at Butler University, was among a small gathering of people who came together to discuss starting an organization devoted to native plants. She recalls, "I was thrilled to think there were others in the community who share my love of and interest in native plants. I imagined a loosely organized group

However, snow could not hinder the momentum begun by several people both inside and outside Indiana - specifically gardener, author and speaker Carolyn Harstad, Missouri Botanical Garden botanist Kay Yatskievych, Purdue University professor of horticulture Mike Dana, birder and naturalist Brink and Terre Haute's Amy Little Mason. Each maintained lists of people interested in joining a native plant society - should one be formed. Seeds were ready to plant, even in the cold heart of winter.

But let's turn back the clock for a moment. The trigger for action occurred when Kay spoke in 1992 to members of the Horticultural Society at the Indianapolis Museum of Art (now Newfields) about her forthcoming guide to wildflowers of Indiana. During her presentation she lamented that *Indiana was the only state east of the Mississippi River without a native plant soci-*

*ety.* Those words called me to action. Although I could not define "native plant," Hoosier pride, not knowledge, spurred me to become the convener.

Fast forward to March 1, 1993. Drives and streets plowed, I met with Carolyn, one of those stymied by the snow. With her abundant energy and organizational skills, we were rolling. The time was ripe for action and on March 11 letters went out inviting some key people to an April 14 planning session. To prepare for the meeting, Carolyn asked native plant societies nationwide for copies of their mission statements, constitutions, by-laws and annual programs. (Remember, all of this occurred before the internet and email.)

Peter Harstad, then CEO of the Indiana Historical Society, chaired our gathering at Marion County Extension Offices, Indianapolis. The following attended: Bill Brink, Lee Casebere, Rebecca Dolan, Becky Lomax, the Harstads, the Ingrahams, Jeffrey Maddox, Bill McKnight, Sue Nord, Chris Turner, Jean Vietor and Kay Yatskievych.

We represented many facets of the community - The Nature Conservancy, DNR's Division of Nature Preserves, academia, landscape architecture, art, horticulture, the Missouri Native Plant



From Ruth Ann's scrapbook

*Founders Ruth Ann Ingraham and Carolyn Harstad (above) and Bill Brink (right) were photographed at an INPAWS gathering in 1997.*

of like-minded people who might get together at someone's home every few months to look at slides of folks' favorite wildflowers or at photos from a recent hike or trip. I never imagined the growth in membership, organization and activity that grew from that initial meeting."

So, how did it all begin?

My husband Joe and I invited seven people to meet at our Broad Ripple home in Indianapolis on February 25, 1993, to toss around the idea of starting a native plant society in Indiana. But eight inches of snow blanketed the city that day and only Bill Brink, who borrowed Chris Carlson's Ford Explorer with four-wheel drive, made it.



Society, and those who simply loved gardens and nature. That day we adopted the temporary name Indiana Native Plant and Wildflower Society (a still controversial moniker), accepted \$100 "seed" money from Bill Brink, owner of It's Great Outdoors, established \$10 charter memberships, and chose temporary leaders.

In May Indiana Native Plant and Wildflower Society became the official name and we adopted our statement of purpose. In June we approved the constitution and by-laws, agreed to hold meetings on first Saturdays and publish a newsletter with Chris Carlson as editor. Attendees elected Maddox as president, Brink vice-president, me as corresponding secretary, Anne Wilson recording secretary and Vietor treasurer.

Finally, Dana, surrounded by the preponderance of members from central Indiana, counseled, "The whole state needs to get involved."

Programs led by Brink took us to Holliday Park; Butler University's herbarium, prairie and Holcomb Garden and Arboretum; Marian College's wetlands (now EcoLab); Eagle Creek Nature Center's aquatic plants; and Purdue's research plots for prairie restoration. We rounded out that first year with a "Plant and Garden Goodie Auction" at Holliday Park; a wine and cheese reception to honor author Michael Homoya and photographer Lee Casebere for the publication of *Orchids of Indiana*; a hike in Pine Hills Nature Preserve; and a party at the Harstads' to celebrate 1993.

The year ended with close to 180 individual charter memberships and \$2,648 in the bank.

Lee Casebere, now retired from DNR's Division of Nature Preserves, remembers "very wonderful people from those early days as the organization began its journey to find its footing and set a worthy agenda to build upon ... INPAWS decided early on to not just become a garden club that uses native species in its landscaping. Taking a stand against invasive species became a rallying point." Casebere recalls that INPAWS, in its early years, gave monetary support to Bernd Blossey at Cornell University to help bring bio-control insects to the US to combat non-native invasive purple loosestrife.

1993 was just the beginning. In the next issue, I will feature high points in the history of INPAWS.

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*Ruth Ann Ingraham is an INPAWS co-founder and its historian.*

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### By Mike Homoya

2018 – a year to remember. 2018 marks the 25<sup>th</sup> anniversary of the founding of INPAWS. In this issue of the journal, a must-read is Ruth Ann Ingraham's article at left about the origins of our organization. From a small group of dedicated native plant enthusiasts in the beginning, we now have a membership that has increased almost tenfold to a number approaching 1,000!

Ruth Ann is not only a founding member; she is *the* founding member of INPAWS. Not to diminish the considerable contributions of others who took part in INPAWS' formation and direction, but I sincerely believe were it not for Ruth Ann, INPAWS would not exist as the vibrant, influential organization we know today.

Recently a committee was formed to discuss ways to celebrate the momentous occasion of our 25 years of existence, and by the time you read this you'll already be aware of some of them. Be assured they will not only honor our past but will also point to our future.

Some good news recently is the dedication of a new state nature preserve in Clark State Forest near Henryville. Called Outbrook Ravine, this 500+ acre nature preserve will contain the largest protected expanse of native Virginia pine (*Pinus virginiana*) in the state. Also present is a rare and unusual native grass (*Calamagrostis porteri* ssp. *insperata*) that reproduces by vegetative means only and a species of goldenrod (*Solidago squarrosa*) that in Indiana is restricted to the preserve and its immediate surroundings. The goldenrod is the subject of a restoration effort involving propagation at Newfields (property and facilities at Indianapolis Museum of Art), The Nature Conservancy's Kankakee Sands Nursery, and the Indiana Department of Natural Resources Vallonia State Nursery.

I hope by now you're taking to the forests and enjoying our state's wonderful variety of spring wildflowers. See you out there! And remember: Always be botanizing! 🌿



Barbara Homoya



# Indiana Native Plant & Wildflower Society

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## DNR Field Days – you're invited!

Indiana DNR Division of Nature Preserves and its partner organizations are offering guided hikes in several state preserves this year. Participation is free, but registration is required at [www.in.gov/dnr/naturepreserve](http://www.in.gov/dnr/naturepreserve). Hikes are from 10 a.m. till 12 noon (Eastern) unless otherwise noted.

<b>Date</b>	<b>Preserve</b>	<b>Partner</b>	<b>County</b>
April 21	Big Walnut – spring wildflowers	INPAWS	Putnam
May 12	Violet & Louis Calli Preserve	Community Foundation	Jennings
May 16	Scout Ridge – 5:30-7:30 p.m.	INPAWS	Monroe
May 19	Russell Bend	INPAWS	Parke
June 2	Twin Swamps (Central)	INPAWS	Posey
June 3	Sweedy Hollow (National Trails Day)	INPAWS	Monroe
June 16	Gibson Woods	Lake County Parks	Lake
July 25	Tefft Savanna – 6-8 p.m. (Central)	INPAWS	Jasper
Sept. 8	Bluffs of Beaver Bend	INPAWS	Martin
Sept. 15	McCloskey's Burr Oak Savannah	INPAWS	Lake