



inpaws journal

Indiana Native Plant and Wildflower Society

Fall 2013

A tale of leg-pulling

GIANT BLADDERWORT EATS MAN'S LEG!

By Michael Homoya

Hovey Lake, Indiana. Two biologists from the Department of Natural Resources have reported an amazing story about a co-worker's near-fatal experience during a recent vegetation survey of Hovey Lake State Fish and Wildlife Area in Posey County.

The plant responsible for the biologist's condition has been identified by a botanist from the Division of Nature Preserves as a tropical species of bladderwort. Bladderworts are normally quite small carnivorous plants that use bladder-shaped traps to capture prey. How this giant species became established in Hovey Lake is unknown, but it is suspected



Indiana's ten bladderwort species produce flowers, but lack true leaves or roots. All have tiny balloon-shaped bladders that capture and consume small animals including mosquito larvae.



According to the biologists who witnessed the event, the three men were in a boat inspecting an unusual aquatic plant in Hovey Lake, when the hand of the biologist collecting the specimen was sucked into a huge slimy, bulbous trap emanating from the plant's underwater stem.

The trap pulled the biologist from the boat, keeping him submerged for approximately two minutes. Working quickly, the other biologists were able to free their co-worker from the plant's grasp, but only after vigorously pulling on his leg. The victim, whose name is being withheld at the family's request, is currently in satisfactory condition in an Evansville hospital, but is still suffering from mental distress and shock.

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that migrating waterfowl may have transported the plant's seed from Central America.

That there exists a species of bladderwort large enough to trap a man is truly unreal, especially considering that all other species of bladderworts known to occur in Indiana are very small, often less than five inches in length. These bladderworts, of which ten different kinds have been recorded for Indiana, consist almost entirely of threadlike green stem tissue and are without true leaves or roots. All have balloon-shaped bladders, most of which are no larger than the size of a pin head, attached to their branchlets. The plant's Latin name, *Utricularia*, derives from the term *utriculus*, meaning "little bladder."

The bladder of the bladderwort might be more aptly termed "deathtrap," since it is used

Bladderwort – continued on page 2

Don't Forget the Goldenrods

By Paul E. Rothrock

Autumn is a scary time for the wildflower enthusiast! September and October have fewer and fewer species in flower until only asters and goldenrods seem to remain. Both groups are taxonomically challenging; both have a high diversity of species.

This year let's begin to face the problem head-on and start by learning some goldenrods. In so doing, also make sure you fully enjoy these species in your wildflower gardening.

Goldenrods, members of the family *Asteraceae* (the "composites"), encompass about 30 species in Indiana. Most belong to the genus *Solidago* (from the Latin *solidus*, or whole, a reference to reputed healing properties), but several are now assigned to the genus *Euthamia*.

Our common species favor three distinct habitats. In open fields and meadows expect Canada and tall, gray, and grass-leaved goldenrod. The first two are the most abundant species in Indiana, probably because they spread by rhizomes and use phenolic compounds to slow the growth of nearby competitors.

In wet habitats, stream corridors, fens, and marshes, you may encounter late and rough-leaved (or swamp) goldenrod.

Finally, we have several common and quite beautiful woodland species – bluestem, elm-leaved, and zigzag goldenrod. Find the new three-page picture guide to these species and others on the INPAWS website at inpaws.org/in-the-wild/botanizing-tools.

Of our common goldenrods, Canada and tall goldenrod are too aggressive for home landscapes. In fact, in some parts of the world they have become introduced weeds. On the other hand, zigzag and occasionally bluestem goldenrod show up on retail lists of native plants. They adapt readily to partially shaded flower gardens and, depending upon when adequate soil moisture is available, provide color from sometime in September until well into October.

Retailers also have been quick to feature several prairie and dry woodland species. These include stiff goldenrod (*Solidago rigida*), a prairie species with flat-topped inflorescences and gray-green leaves, and showy goldenrod, which hails

from black oak savannas. The latter can have large feathery plumes of yellow from late July well into autumn.

Potential sources for garden-safe goldenrods may be found on the INPAWS website: inpaws.org/landscaping/sources-of-indiana-native-plants.

Paul Rothrock is professor of biology and environmental science at Taylor University.

Plant profile



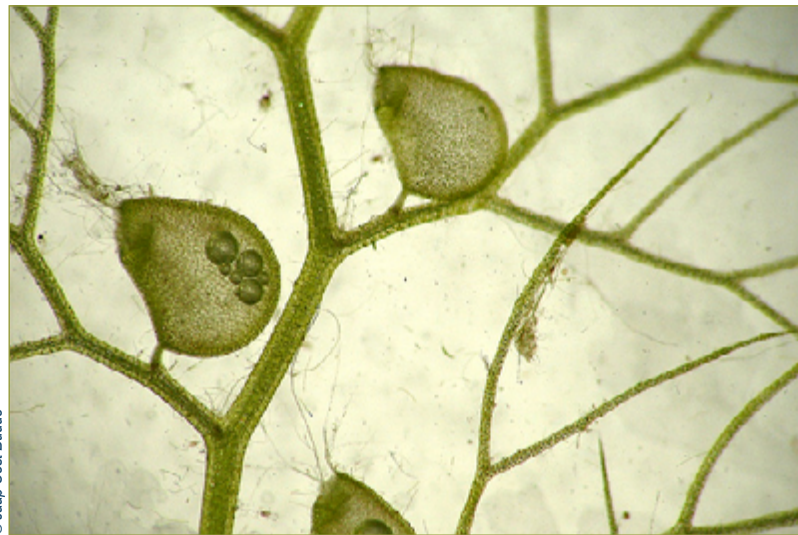
© Bruce Morrison

The countless wings that from the infinite
Make such a noiseless tumult over it
Do no doubt with their color compensate
For what the drab weed lacks of the ornate.

Excerpt from "Pod of the Milkweed" from In the Clearing by Robert Frost

Bladderwort – from page 1

to capture and consume prey. Even the tiniest of bladders is capable of entrapping small animals, including water flies, mosquito larvae, even tadpoles and small fish. The prey is literally sucked into the bladder through a one-way, hinged trapdoor and is eventually digested into the plant tissue.



© Jeap Cost Burdette

The bladders of the bladderwort are extremely small, no larger than the head of a pin, yet capable of entrapping small animals by sucking them through a one-way, hinged trapdoor.

The mechanism by which bladderworts capture organisms is most complex and, even today, not completely understood. Basically, a trap must be set before it is capable of capturing prey. Special glands located inside the bladder set the trap by creating a condition of negative pressure within the bladder cavity. The negative pressure creates a suction that draws objects into the bladder as the trapdoor is opened.

The opening of the tightly closed trapdoor occurs when an unsuspecting organism such as a tadpole brushes against the sensitive trigger hairs near the bladder opening. As that occurs, the door hinge loosens, allowing the organism to be rapidly sucked inward. Once in, the poor victim can never get out, for the trapdoor closes immediately. Because the door is hinged to swing only to the inside, the prey is securely trapped, with no option to avoid its fate of slow death.

In Indiana, bladderworts are mostly found in the northeastern lake region. The plants are usually immersed in shallow pools of lakes, ponds and swamps, but may also occur in bogs, fens and moist sand. Because bladderworts are small and usually out of sight, most people are unaware of their existence until the plant sends forth a flowering stalk above the water's surface. Even then, the attractive snapdragon-like flowers often escape detection.

Most Indiana bladderworts have yellow flowers, but two species have purple ones, purple bladderwort and upside-down bladderwort. The flowers range in size from one-fourth inch tall, as in lesser bladderwort (*Utricularia minor*), to one inch tall, as in greater bladderwort (*Utricularia vulgaris*). One odd species, awl-shaped bladderwort (*Utricularia subulata*), may actually have the tiniest flowers of all Indiana bladderworts, since the flowers generally never open! Fortunately, the flower is self-fertilizing and can still produce viable seed to propagate.

Bladderworts, fact or fiction, are certainly among the most unusual organisms occurring in Indiana. Inspect one closely if you are fortunate enough to encounter one – but beware of those exceptionally large specimens! Don't worry, though, if you do get trapped by one, for there will surely be a DNR biologist nearby to "pull your leg."

Michael Homoya has been a plant ecologist and botanist for the Indiana Division of Nature Preserves since 1982. He is author of *Wildflowers and Ferns of Indiana Forests: A Field Guide* (Indiana University Press, 2012) and *Orchids of Indiana* (Indiana University Press, 1993).

Reprinted from *Outdoor Indiana magazine* with permission of the Indiana DNR. When this article, partly a spoof, appeared in that publication in 1986, staff at Hovey Lake Fish and Wildlife Area received reports of visitors concerned about the dangerous "giant bladderwort." INPAWS trusts that our readers get the joke and understand that they need not fear our common but tiny bladderworts.

Part II:

Why Do the Scientific

Taxonomy



© Diane McCarthy

Sky-blue aster is now known as *Symphyotrichum oolentangiense* after undergoing a second change of name when studies of *Aster* and related genera resulted in removal of many species to other genera.

By Michael Huft

In the last issue I discussed reasons for changes in the scientific names of plants that involved only the second word of the scientific name, the specific epithet. We continue with examples of name changes that result from moving a species from one genus to another.

One reason this may happen is that the person who originally named the plant simply put it in the wrong genus.

An Indiana example is the plant long known as upland white aster, *Aster ptarmicoides*. Because botanists noticed it occasionally hybridized with a species of goldenrod (*Solidago*), it was concluded that despite its white flower heads, it really is a goldenrod, not an aster. In 1972 it was formally moved to

Solidago. It is now known as *S. ptarmicoides*.

As a goldenrod, this white-flowered species is somewhat anomalous in a genus in which nearly all species have yellow flowers. This is also a rare example in which a change in scientific name is accompanied by a change in the common name — this plant is now known as upland white goldenrod.

More commonly, a change in genus results from a changed classification at the genus level. Two or more genera may be combined because studies show the differences between the species in the genera are less than what is usually the difference between genera.

An example would be two genera separated by only one or two prominent characteristics. Several species now in the evening primrose genus *Ludwigia* were originally placed in the genus *Jussiaea* on the basis of stamen number: eight in *Jussiaea*, four in *Ludwigia*. These species were otherwise quite similar to *Ludwigia*.

Closer studies showed that the species in *Jussiaea* did not form a closely-related group. Many were actually more closely related to species in *Ludwigia* than to other *Jussiaea*. In

keeping with the principle that a genus should contain only the most closely related species, all species formerly in *Jussiaea*, including three in Indiana, were moved to *Ludwigia*.

By the same principle, larger genera are sometimes split into two or more small genera, because the original genus was shown to consist of groups of species more closely related to other species than to each other.

An example involving several Indiana species is the genus *Aster*. As formerly understood, *Aster* is a large genus of some 600 species occurring in temperate areas of both western and eastern hemispheres, including about 30 species in Indiana. Extensive studies of *Aster* and related genera on a worldwide basis in the 1990s showed that the traditional *Aster* contained a number of groupings not most closely related.

Accordingly, several groups of species were moved out of *Aster* into other genera, leaving the genus *Aster* with about 180 species, all but one restricted to Eurasia. The majority of North American species (including most Indiana species) are now in the genus *Symphyotrichum*.

However, some smaller genera, made up of other North American species formerly in *Aster*, are also now recognized. For example, flat-topped white aster, formerly known as *Aster umbellatus*, is now *Doellingeria umbellata*, and big-leaved aster, *Aster macrophyllus*, now goes by *Eurybia macrophylla*. Sky-blue aster, *Aster oolentangiense*, noted in Part I as an example of the discovery of an earlier name, is now known as *Symphyotrichum oolentangiense* — a species that has undergone two different kinds of name change.

Another example is sand cress, or lyre-leaved rock cress, common in the Indiana Dunes. This species had been included in the large genus *Arabis*, where it was known as *Arabis lyrata*. Recent worldwide studies of this genus, however, have shown that sand cress is more properly placed in the smaller genus *Arabidopsis*, where it is now known as *Arabidopsis lyrata*. Those same worldwide studies have shown that *Arabis*, traditionally understood, consists of several groups of species not closely related. As a result, most Indiana species formerly in *Arabis* are now in the genus *Boechera*.

Names of Plants Change?

Sometimes when a species is moved from one genus to another, not only does the genus name change, but so does the specific epithet, or second name. That could happen if there is already a species in the new genus with the same specific epithet. In a recent large-scale study of the evening primrose genus *Oenothera* and related genera, it was found that the genus *Gaura*, including several species in Indiana, cannot stand as a separate genus, but must be combined with *Oenothera*. Since *Oenothera* was already a relatively large genus, the specific epithets for several *Gaura* species were already in use in the genus *Oenothera*.

The biennial *gaura*, *Gaura biennis*, is now known as *Oenothera gaura*, to distinguish it from common evening primrose, *Oenothera biennis*. *Gaura parviflora*, a species known in a few counties in northwestern Indiana but common on the Great Plains, is now known as *Oenothera curtiflora*, to distinguish it from small-flowered evening primrose, *O. parviflora*, known in a few scattered counties in Indiana.

Although most name changes result from a change in classification, and a few because of the discovery of older names, there are also special cases.

One of those cases involves the four Indiana species of Indian plantain. These had long been placed in the genus *Cacalia*, where they were known as *Cacalia atriplicifolia* (pale Indian plantain), *C. muehlenbergii* (great Indian plantain), *C. plantaginea* (prairie Indian plantain), and *C. suaveolens* (sweet Indian plantain).

It was recently noted that the name *Cacalia* had been applied to plants belonging to at least eight different genera worldwide, several not even closely related. A proposal was made to the International Committee on Botanical Nomenclature to formally reject the name *Cacalia* under the rule permitting such action if a name causes excessive confusion that cannot be readily rectified. The proposal was accepted. The genus name *Cacalia* cannot now be applied to any plants.

As a result, the earliest name was sought for each of the eight genera previously named *Cacalia*. For three of the Indiana species, that turned out to be *Arnoglossum*, a name used for Prairie Indian Plantain way back in 1817. For two

Nature Preserve Hikes Oct. 19

The Indiana Division of Nature Preserves is offering guided hikes at eight "seldom seen preserves" in seven counties, all on Oct. 19, beginning at 10 a.m. local time at the following nature preserves:

Crawford Co. — Leavenworth Barrens
Floyd — Brock-Sampson
Jay — Bell-Croft Woods
Lake — Clark & Pine
Lake — Liverpool
LaPorte — Springfield Fen
Monroe — Sweedy Hollow
Montgomery — Calvert-Porter
Numbers of participants will be limited.
Registration is required by calling 877-463-6367 or signing up at naturepreserves.dnr.in.gov.

Indiana species, this involved a simple replacement of the genus name; these are now known as *Arnoglossum atriplicifolium* and *A. plantagineum*.

It was independently discovered that an earlier specific epithet (*reniforme*) applies to pale Indian plantain, so that epithet replaces *muehlenbergii*, and the plant is now known as *Arnoglossum reniforme*. Finally, research going on at the same time resulted in removal of sweet Indian plantain to a different genus, so it is now known as *Hasteola suaveolens*, a change that would have occurred regardless of the *Cacalia* problem.

We have merely scratched the surface of the rules of botanical nomenclature, but the goal has been to give some insight into the reasons for name changes. Changes in names of Indiana plants often result from things that happen far beyond Indiana's borders.

With some 300,000 species of flowering plants in the world, much remains to be done to understand their relationships. New techniques of study make changes in the classification of even familiar plants inevitable. We can expect even more name changes in the future.

Michael Huft is a research associate at the Field Museum in Chicago. He has a PhD in botany from the University of Michigan.

Buzzword for Common-Sense Gardening?

Permaculture

Terminology

By Hilary Cox

In January our friend Leona, at whose house in Tucson I had been spending winters, invited me to go to a talk at Native Seed Search (shop.nativeseeds.org). The speaker was to be Toby Hemenway, author of *Gaia's Garden: A Guide to Home-Scale Permaculture*.

The actual meaning of the term "permaculture" was a new one to me, although I had heard the word bandied about.

As I listened and watched the accompanying presentation, I became uncomfortable. This "new" way of farming, especially aimed at urban farming, was older than the hills. It just had a new label. There was already a term, used in Britain for centuries, which covered the concept: husbandry. (See Wendell Berry's "Renewing Husbandry," *Orion Magazine*.)

The same thing happened with "organic" gardening. Less than a hundred years ago, organic gardening was the only type of gardening, or farming for that matter, that existed. But the "old" ways were side-lined and eventually ridiculed by agribusiness and its proponents, so that the term "organic" now has negative connotations in some circles. We will have to wait and see if "permaculture" gets the same bad rap.

Listening to Toby, I learned that permaculture's design principles are supposed to derive from systems ecology. (In my opinion, they come from 20,000 years of human agriculture!) But those principles remain sound, no matter the terminology.

Care of the earth – without which humans cannot survive ("*Proper use and care of an immeasurable gift*" – Wendell Berry in "The Agrarian Standard" – *Orion Magazine*)

- Care of the people – making sure they have access to resources
- Return of surplus – Reinvesting surpluses back into the system, including recycling waste
- Minimizing waste, labor and energy use – which together result in synergy

For us gardeners, these principles just seem like common sense. I learned them at the knees of my grandparents and parents and have lived my whole life accordingly.

1. Taking care of the earth, whether in the broadest sense – the planet (*an immeasurable gift*, indeed!) – or getting down to the nitty-gritty and replenishing the actual soil, adding organic matter from composted waste material at certain times of the year to ensure good plant growth – it's just what we do!

2. Gardeners are generally good "people people," some of the best at sharing their resources with others who don't have access to them.

3. The surpluses most gardeners experience have nothing to do with stock markets and greenbacks, rather a case of too much of a good thing (tomatoes, lettuce, peppers, zucchini), which we share with those less fortunate. And at the end of the year this "surplus" goes back into the soil where it belongs.

I do want to add here that even we, the gardeners, are guilty in the "big picture" of lack of reinvestment in our planet. ("Agribusiness and we, the end consumers, are the one percent using 99% of the resources. We take from, but don't give back to, everything which 'works' to keep us alive – the soil, the pollinators, the water, the air we breathe." — Dr. Hazel Cox)

4. Reduce, reuse, recycle – those are the "buzzwords" these days. And once again, we only need to look to our Victorian era grandmothers for whom this was normal life. Clothes got holes in them? Patch them. Socks? Darn them. (Do they even teach children how to darn anymore? Sew on buttons?) How many of us wore our big brother's/sister's hand-me-downs? And once the family had no further use for an item, it was passed around to other family members or friends or, eventually, the really needy. "Waste not, want not" was the credo by which people lived.

I don't think I need to point out the huge departure from these principles that has occurred around the planet in recent decades. The contrast is stark.

So if the concept, with its principles above, can take our urbanized planet by storm under this new label of "permaculture" – well, 'A rose by any other name would smell as sweet!' (William Shakespeare)

Hilary Cox is a garden designer and freelance writer and photographer.

INPAWS Supports Monarch Watch

Call for Milkweed Seed

The Monarch Watch conservation program based at the University of Kansas has requested INPAWS' assistance in spreading the word about their "Bring Back the Monarchs" campaign. The organization needs milkweed seeds collected from several states, including Indiana.

"Our goal is to plant as many milkweeds as possible to keep the monarch butterfly migration alive," says Tori Pocius, milkweed coordinator at Monarch Watch. "We provide local genotype seeds and plants to restoration sites and public gardens."

Michael Homoya of the Indiana Division of Nature Preserves cautions that INPAWS members should provide Monarch Watch only seeds of milkweeds native to Indiana for propagation in the state.

"Our goal is to plant as many milkweeds as possible to keep the monarch butterfly migration alive." — Tori Pocius

The common milkweed, *Asclepias syriaca*, occurs statewide. Of the seeds on the list of species desired by Monarch Watch, "only *Asclepias tuberosa* and *Asclepias incarnata* occur statewide," Homoya notes. "I recommend that seeds of other species be distributed only according to the distribution indicated by Charles Deam in his 1940 *Flora of Indiana*."

In June, INPAWS publicized on its Facebook and web pages the "Wild for Monarchs" campaign of Wisconsin-based nonprofit Wild Ones. The group, partnering with Monarch Watch, seeks to educate and encourage the public to plant host and nectar plants for monarchs and other butterflies. Their web site offers a list of suitable plants.

Studies have shown that the monarch population, whose larvae feed exclusively on milkweed, decreased by 58% across the Midwest from 1999 to 2010 due to herbicide use and habitat destruction.

Information about these projects can be found at bbtn@monarchwatch.org and monarchs@wildones.org.



© Bob Cook

Milkweed Seed Collection Tips

- Collect pods and remove seeds; send seeds to Monarch Watch, which will reimburse you for shipping. (E-mail milkweed@monarchwatch.org for shipping and reimbursement information.)
- Or collect pods, dry them and send to Monarch Watch.
- Use a separate container for seeds of each milkweed species.
- Collect only species appropriate to your region, and do not collect rare or endangered species. (See article for Indiana-wide species.)
- Provide collection date, city, county and state, and identify species. If unsure of the ID, send a photo of the plant.
- Collect when pods are ripe, just beginning to split, and seeds are brown.
- Wear gloves and keep milkweed sap away from your eyes.
- Be sure to remove any red and black milkweed bugs (*Oncopeltus fasciatus*), which destroy milkweed seeds.

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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:
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Winter—November 23 for January 1 mailing

Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

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.

Save the Date!

Annual Conference is Nov. 9

Mark your calendars! The INPAWS 20th annual conference will be Saturday, Nov. 9, 8 a.m. to 5 p.m., at the Monon Community Center in Carmel, just north of Indianapolis.

Chairperson Karen LaMere says the event will revolve around the theme "Conservation: Saving Indiana's Native Plants and Wild Places."

The program offers an exciting line-up of speakers and topics:

Peter Raven, president emeritus of Missouri Botanical Garden, will be the keynote speaker. He is co-author of the best-selling textbook *Biology of Plants* and recipient of many conservation awards, including *Time* magazine's "Hero of the Planet."

Carolyn Harstad, an INPAWS co-founder and author of *Go Native!*, *Got Shade?* and *Got Sun?*, will share her gardening know-how.

Jeffrey Belth, photographer and author of *Butterflies of Indiana*, will discuss the interaction of butterflies and plants.

Sandy Belth, a naturalist with Monroe County Parks and Recreation and a Master Gardener, will present a session on landscaping and gardening for butterflies.

Mike Jenkins, associate professor of forest ecology at Purdue University, will discuss invasives management issues in the Great Smoky Mountains, with implications for Indiana's ecosystem. Jenkins is recipient of the USDA Forest Service "National Wilderness Award for Excellence in Wilderness Management Research."

Michael Homoya, IDNR Division of Nature Preserves botanist and author of *Wildflowers and Ferns of Indiana Forests*, will pose the question "Where have all the flowers gone?"

Lee Casebere, ecologist, nature photographer, and assistant director of IDNR Division of Nature Preserves, will talk about nature preserves and land protection in Indiana.

The day's activities will include book signings and sales, vendor and youth education displays.

Conference fee for members is \$50, or \$60 after Nov. 1. The cost for non-members is \$65, or \$75 after Nov. 1. Students may attend for \$35.

Registration can be done online at *inpaws.org* or by returning the registration form on the mailed conference brochure. It is now possible to pay for registration or membership dues on the web site. The brochure is also available for download.

Those who bought INPAWS T-shirts that faded will be happy to know they can exchange them for new, colorfast shirts at no cost during the conference.

The Monon Center, 1235 Central Park Dr. E., is located in Carmel's Central Park. The conference will be in the East Building. 🌿

EAST CENTRAL CHAPTER RISES AGAIN

By Tom Hohman

For many years the East Central Chapter of INPAWS, based in the Muncie area, was one of our most active chapters. As many of the original leaders became less active over the years, the chapter eventually became dormant. In early 2012, East Central Chapter was officially dissolved. The members were divided among the Central Chapter and the newly formed North Chapter.

Earlier this year a core group started exploring the potential to reactivate the chapter. Some had been active previously, while several were new to INPAWS. They have been meeting since then and getting input from other INPAWS members in the area. Chapter bylaws have been adopted and temporary officers selected. In the August meeting of the INPAWS Board and Council, provisional approval was given to the new chapter, with final approval to come after officers are elected in a chapter-wide meeting in October.

Having this area of the state again served by a vibrant local chapter will be a big plus for INPAWS and the members in that area. 🌿

Check out
INPAWS'
great blog at
inpaws.org



INPAWS Helps Beautify Evansville

INPAWS In Action



© Charles & Diane Peirce

Wild lupine (*Lupinus perennis*) was among wildflowers planted by volunteers in the median of U.S. Route 41 near Evansville.

By Dona Bergman

What do Keep Evansville Beautiful, the Indiana Department of Transportation, Indiana Department of Corrections, Mesker Park Zoo and Botanic Garden, Evansville Dept. of Urban Forestry, Department of Sustainability, Alcoa volunteers, Master Gardeners, Master Naturalists, Southwest Indiana Native Plant and Wildflower Society members (SWINPAWS), Anchor Industries and USI students have in common?

Only about 8,500 native grasses and wildflowers, that's all!

After over a year of planning, about 100 people converged on a plain, muddy median in the middle of U.S. Route 41, just south of the U.S. Route 57 intersection. Wearing bright yellow safety vests, they braved chilly weather and threatening rain to plant native grasses and wildflowers.

This beautification planting is part of two major initiatives: the Hoosier Heritage Roadside Program, where inmates grow seeds to gain horticulture skills while providing native plants and wildflowers to Indiana's roadside landscape, and the Airport Gateway Project, an effort to beautify main routes into the city.

This is the first project in the state for which INDOT used a structured plug planting method and the first time INDOT used Dept. of Corrections inmates to grow the plants, which saved several thousand dollars.

What was planted? Little bluestem and prairie dropseed grasses; prairie coreopsis, wild lupine, brown-eyed Susan, butterfly milkweed, purple coneflower, pale coneflower and common spiderwort.

Anchor Industries allowed use of their large tent and restrooms. INDOT provided safety training and traffic control. Most of the plants came from Putnamville Correctional Facility. Thanks to Shawn Dickerson, Urban Forestry provided chipped tree mulch and worked with the volunteers.

Keep Evansville Beautiful and INDOT will make certain the baby plants are watered this first season. They may need more mulch and some weeding. After the native plants are established, their care will be minimal.

SWINPAWS members are grateful to INDOT's Bill Fielding and Rusty Fowler; Mike McGarrah of Keep Evansville Beautiful, a Master Gardener (MG) and SWINPAWS member; Paul Bouseman, botanic curator at Mesker Park Zoo & Botanic Garden (MG & SWINPAWS); Shawn Dickerson, city arborist (MG & SWINPAWS), Davie Sue Wallace (MG & SWINPAWS), KEB director Marcia Dowell, Anchor Industries, Alcoa, and the 100 or so muddy, tired volunteers who made it possible – and fun!

Species planted included:

Prairie coreopsis – *Coreopsis palmata*
Wild lupine – *Lupinus perennis*
Pale coneflower – *Echinacea pallida*
Brown-eyed Susan – *Rudbeckia fulgida*
Common spiderwort – *Tradescantia ohiensis*
Butterfly milkweed – *Asclepias tuberosa*
Purple coneflower – *Echinacea purpurea*
Prairie dropseed – *Sporobolus heterolepis*
Little bluestem – *Schizachyrium scoparium*

To learn more about these plants, go to:

- missouribotanicalgarden.org/gardens-gardening/your-garden/plant-finder.aspx
- INDOT Hoosier Roadside Heritage Program – in.gov/indot/2583.htm
- Indiana Master Naturalist Program – in.gov/dnr/parklake/6321.htm
- Keep Evansville Beautiful – keepevansvillebeautiful.org
- Southwestern Indiana Master Gardener Association – swimga.org
- Southwest Indiana Native Plant and Wildflower Society – inpaws.org

Dona Bergman is a SWINPAWS member and director, Evansville Department of Sustainability, Energy and Environmental Quality.

A Remembrance

Janice Glimn-Lacy 1935–2013

By Wendy Ford

On June 21, 2013, INPAWS lost a founding member, a good friend, and someone who touched many lives in the Indianapolis community.

I knew Jan Lacy as an avid gardener and designer, a talented botanical illustrator, and a woman of surprising strength and courage. The obituary she wrote a few weeks before her death tells of an early interest in nursing and medical research, followed by marriage to Navy man Jack Lacy and the many relocations that entailed, including being evacuated with her infant son from Nicosia, Cyprus, as bullets flew during that island's erupting civil war.

Returning to civilian life, Jan found her calling and completed a BS in Botany at the University of Michigan. She then coauthored *Botany Illustrated* (Springer, 1984), a popular tool for learning plant structures, which went into a second edition in 2006.

When Jack and Jan moved to Indianapolis in 1985, Jan's interest in botany blossomed into a career in landscape design under the moniker The Flower and the Leaf. I learned a lot of what I know about gardening by editing Jan's self-published book, *What Flowers When with Hints on Home Landscaping* (1995), which was based on meticulous records that Jan kept on what was in bloom on her daily walks around her back yard.

"Not content with the status quo, Jan reinvented herself at age 67..."

I enjoyed visiting Jan's cozy home on Indianapolis's west side, and Jan was always pleased to show off her color gardens, which were featured in *Midwest Living Magazine* and in many a local garden tour. I especially enjoyed lunches on the back patio ringed by veil-like serviceberry trees.

Not content with the status quo, Jan reinvented herself at age 67 by entering IUPUI's Herron School of Art and Design. She gradu-

ated with High Distinction and a Bachelor of Fine Arts in drawing in 2008 and was on her way to making a splash in the botanical art world.

Jan believed the pulmonary fibrosis that took her life may have originated with excessive particulate matter from road and bridge construction near her home.

Her most recent book, *Growing Green, Plants for Food & Wildlife in the Midwest, A Personal Story*, will be published this fall in conjunction with the appearance of one of Jan's illustrations at an international show at the prestigious Hunt Institute at Carnegie Mellon University.

Read the full obituary at janglimn.com.

Wendy Ford, INPAWS webmaster and former journal editor, has a garden design business, Landscape Fancies, in Indianapolis.



Awards – from page 13

Applicants for "Bringing Nature Home" awards submit two to five photographs and a list of native species used. They must explain how these help the local ecosystem by providing pollen for pollinators, nectar for butterflies and birds, and fruit for birds and wildlife, and how they prevent erosion and conserve water. Two FOSH members visit each site.

Inspired by INPAWS conference speaker Doug Tallamy, Peg Mohar, former SHLT executive director, initiated the awards program to carry out the aims of his book *Bringing Nature Home*. She secured his permission to name the awards after his book.

Information about the program is available at 219-242-8558 or land@heinzetrust.org.

Barbara Plampin is a field botanist and life director of the Shirley Heinze Land Trust.

Written and illustrated by Henry Cole

On Meadowview Street

By Donna Foster

In the charming picture book *On Meadowview Street* by Henry Cole, Caroline searches for flowers in the yard of her new home. But like all the other yards on this suburban block, hers sports only carefully tended grass. When she finds a few wildflowers, she begs her dad not to mow them down. Insects, butterflies and birds soon flutter about the posies, delighting the whole family.

To encourage more wildlife, the family adds young trees and a small pond to create homes for all kinds of critters. Inspired neighbors follow the trend. Caroline has made a difference by creating a true nature preserve in the midst of a city.

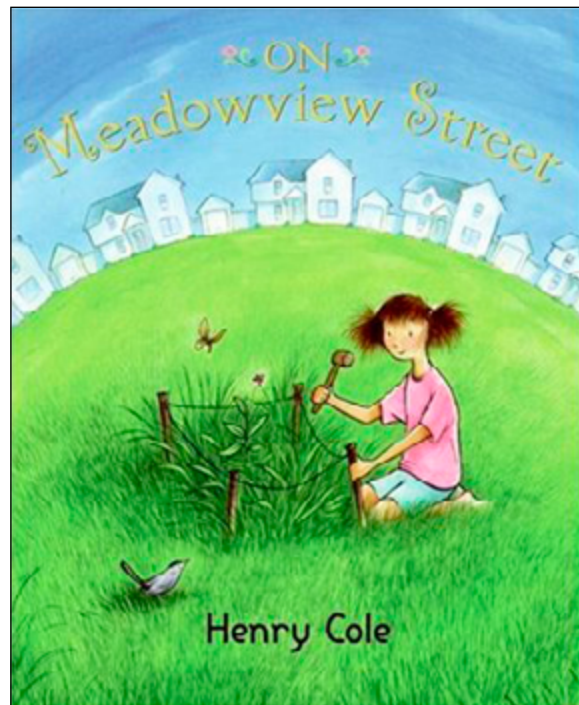
The book contains identification sketches for a few native plants that restore food and shelter for disappearing species. It's a must-read bedtime story for youngsters and a reminder to adults that caring for the

planet in a small way can have a big effect.

The book was published by HarperCollins Children's Books in 2007, and is available online and from libraries. Cole is an illustrator and children's author known for his love of nature. Some of his other titles are *I Took a Walk*, *A Nest for Celeste*, *Jack's Garden*, *The Littlest Evergreen*, and *On the Way to the Beach*. The author's web site is henrycole.net.

Donna Foster, retired librarian, now spends her time writing, volunteering and gardening.

Book Review



PRESIDENT'S MESSAGE

By Art Hopkins

What great weather we've had this summer — extended periods of cool, un-humid air, with adequate rainfall well into August. I admit it has not felt entirely native to Indiana, but it's been perfect weather to be outdoors enjoying, exploring, growing, and advocating for native plants!

I hope you've been able to go on some of the guided hikes that Mike Homoya has organized. (See summaries of hike reports elsewhere in this issue.)

Another great opportunity was the September garden tour in the Fishers-Carmel area. Ann Foster, tour organizer, worked with site owners to make a spreadsheet for each site, listing native plants and their horticultural details.

Our earlier garden tours have been in the spring and mid-summer, so this year's tour was a chance to see a different aspect. One of our cherished hopes is to offer garden tours across the state so more people can participate. If your local chapter or small group would like to host a tour next year, please let me know.

Plan to attend our Annual Conference November 9 at the Monon Center in Indianapolis! We have great speakers lined up from Indiana and across the Midwest. There'll be a book sale, interesting conversations, good food and a great time.

This just in!—now you can pay your registration fee and dues online. Thanks to Ruth Ann Ingraham and Wendy Ford, INPAWS now has online payment capability. Also, you can now donate online to Letha's Fund, our program to bring children into nature in safe educational settings. Go to inpaws.org to donate, register, and stay up-to-date on all that INPAWS is doing.

See you at the conference! 🍀

"Look deep into Nature, and then you will understand everything better."

- Albert Einstein

Bringing Nature Home

Ten win awards from Heinze Trust group

By Barbara Plampin

At a Sept. 21 donor appreciation luncheon in Hobart, Friends of Shirley Heinze Land Trust (FOSH), a membership organization affiliated with Shirley Heinze Land Trust (SHLT), awarded ceramic plaques to several individuals in recognition of their native plantings.

"Bringing Nature Home" awards, now in their third year, are restricted to Lake, Porter and LaPorte counties. To be eligible, plantings must be in at least their second growing season and must use native species, defined as growing in Indiana before settlement.

Linda Alessi was chosen for her lawn-free, 100-by 300-foot city lot in Valparaiso. Linda eliminated storm water run-off by adding gravel in front and a dry creek bed in back. State-listed plants and a female Kentucky coffee tree join natives and perennials in front; in back, a male Kentucky coffee tree and other natives flourish amid established oaks and hickories.

Pat Reynolds nearly eliminated grass in her Valparaiso urban yard by using natives. Her bio-hedge includes red osier dogwood, maple leaf viburnum, snowberry, ninebark, high bush cranberry and sand cherry.

Adjacent to their newly acquired 30 acres in Valparaiso, Fred and Leslie Bamsberger used a prairie mix to create a long-season, one-acre prairie. Species include wild lupine, coreopsis, wild bergamot, ironweed, New England aster, prairie grasses and prairie sedge mix.

Larry and Joan Murphy hired environmental consulting firm Cardno J.F. New to establish and supervise not one, but two rain gardens on their postage stamp lot in Coffee Creek, Chesterton.

Lydia Miramontes Loyd's upland, fenced Michigan City lot features a wetland garden, spring ephemerals with redbud, and foundation and other plantings, including Eastern red-cedar, hazelnut, Christmas fern, and prairie dropseed. Joe Pye stands tall outside her alley fence.

Carole Stoddard and Tom Brand, Town of Pines, Porter County, achieve diversity on their acre-and-a-half secondary dune. In front of established woods, they grow spring ephemerals, shade plants, bulbs and columbine. In borders, native butterfly weed, Michigan (Turk's cap) lily, and state-

listed royal catchfly flourish among perennials.

Cardinal flower blazes away with hibiscus cultivars in Valparaiso Park District's seven bio-swales along Calumet Ave. This park district will receive one of four group awards from FOSH at the trust's November 8 annual luncheon in Schererville.



Supported by Lake County Parks, Friends of Robinson Lake, Hobart, built a native-filled rain garden to absorb parking lot run-off. Sandy O'Brien supervised the effort.

Indiana Department of Transportation, LaPorte Office, planted 233 pounds of seed of native flowers and grasses in the 17-acre interchange at State Rd. 2 and State Rd. 4 in Valparaiso. Cindy McKie was project supervisor.

Lake County's MS4 Storm Water District planted an extensive rain garden in front of Lake County's Government Center in Crown Point. Most of its plants are "nativars" (cultivars), because district personnel believe genuine natives are too tall, too messy, and too plain.

Awards rules stipulate that plantings must be free of non-natives. The non-native ban was relaxed this year to include gardens where natives out-number non-natives and which use "nativars," a controversial decision still being debated.

Award winners Larry and Joan Murphy worked with consultants from Cardno J.F. New to establish two rain gardens on their small lot in Coffee Creek, Chesterton, IN. Pictured in the garden are Larry Murphy (center), Myrna Newgent, and Warren Buckler, committee members who visited the Murphy native plantings in August.

Awards – continued on page 11

INPAWS Explores

Hikes



Fred Wooley, an interpreter at Pokagon State Park, guided hikers to explore a wetland mitigation project in Steuben County on June 8.

Shrader-Weaver Woods

By Brent Smith

The April 13 INPAWS trip to Shrader-Weaver Woods, a 100-acre DNR Nature Preserve in Fayette County, was a great success, with about 80 participants!

Many of us hugged one of the largest black walnuts in Indiana before entering the magnificent old-growth section. We noted large numbers of big black walnut, tulip poplar, black cherry, beech and sugar maple. The biggest were two bur oaks.

Due to Indiana's late cool spring, many early wildflower species were at their peak and some later ones just peeking out. Once we finished the old-growth loop trail, half the group continued on the successional trail, finding new species, including invasives such as amur honeysuckle, autumn olive, and multiflora rose.

This trail through abandoned agricultural land then enters an old-growth swampy forest. Magnificent individuals of pin oak, bur oak and white ash are present, as are skunk cabbage, marsh marigold, swamp buttercup and horse-tail. We were a little early for blue-eyed Mary, abundant in this section of the preserve. Trying to catch this annual at its peak is worth a return trip.

Few places rival Shrader-Weaver for its majestic trees and beautiful spring flora. We were fortunate to see it at its near best.

Bendix Woods Preserve

By John J. Smith

These days "awesome" is overused, but it was an apt adjective for the INPAWS May 5 hike in the old-growth beech-maple forest in the State-dedicated Bendix Woods Nature Preserve in St. Joseph County.

Where in the Midwest are there more large white trillium (*Trillium grandiflorum*) interspersed with false rue anemone (*Enemion biternatum*) in 27 acres?

We found over 20 species of forbs blooming, huge numbers of prairie trillium (*T. recurvatum*) and drooping trillium (*T. flexipes*), yellow wood poppy (*Stylophorum diphyllum*), and colonies of two-leaved toothwort (*Cardamine diphylla*), the latter found only in a few Indiana counties. We

saw many other species indicative of high quality northern hardwood forests.

Over 40 persons participated, ably led by Scott Namestnik, senior project scientist and botanist, Cardno JFNew ecological consulting firm, and Deborah Marr, associate professor of biology, Indiana University—South Bend.

Pokagon's Trine SRA

By Fred Wooley

On June 8, 14 hikers joined me at Pokagon State Park to see the new Trine State Recreation Area in Steuben County. The area is noted for glacial-made kettle hole lakes, wetland fens, and high quality upland woodlands.

The INPAWS group viewed from afar the wetland mitigation project that pulled out truckloads of sand and gravel that previous owners had poured into the fen and lakeshore.

We entered the shoreline fen slowly, in single file, to have as little impact as possible on this fragile environment. Hip-deep in classic fen plants, we were flanked by a grove of tamarack trees to the west and beautiful Gentian Lake to the south. We saw shrubby cinquefoil and the early stages of big bluestem, dense blazing star, Ohio goldenrod, and brown-eyed Susan.

Then we had half the group stand still while the other half jumped. The ground rippled beneath us, revealing the muck and water world many feet below.

We are working hard to open the property to the public. We hope to host a "soft" opening this fall and an official grand opening early next year.

Prairie Creek Barrens

By Sue Arnold

The postcard Mike Homoya sent for the July 27 hike at Prairie Creek Barrens Nature Preserve failed to deter 28 of us from joining him for a sunny day at this site in Daviess County. He warned: "terrain hilly, no trails present, briars and brush, ticks and chiggers likely." He failed to mention trumpet vine (*Campsis radicans*), a vigorous climber determined to wrap our ankles, and knee-high poison ivy (*Toxicodendron radicans*).

Indiana's Wild Places

He and Harold Allison explained that the preserve hosts one of the last remnants of sand barrens in southwest Indiana. (Access is by permission only.) Begun 10 years ago, restoration has involved over 100 volunteers, including INPAWS members. In the first five years, thousands of plugs were planted.

Many uncommon species are present, including at least 10 state-listed rare species. Maryland meadow beauty (*Rhexia mariana*) was especially beautiful with rosy flowers and yellow-orange stamens. Globally threatened creeping St. Johnswort (*Hypericum adpressum*) thrives in the damp sand, while sand hickories (*Carya pallida*) grow nearby on high ridges at the northern range of their habitat.

Mike and Harold remain enthusiastic about the restoration project, despite set-backs such as critters who pulled up (but did not eat) hundreds of hand-raised, hand-planted plugs.

Muscatatuck Wildlife Refuge

By Holly Faust

August 17 turned out to be one great trip to the Muscatatuck Wildlife Refuge near Seymour.

We saw Joe Pye weed all along US Highway 50 to the entrance and all kinds of natives growing along the forest's edge. My favorite was the big pink native *Hibiscus moscheutos*.

Our guide was Daniel Boone, field botanist and certified arborist for Bartlett Tree Experts. We drove to the first site and disappeared into the woods to find a very dry wetland/alkaline seep. We encountered sedge muskingum (*Carex muskingumensis*), aquatic milkweed (*Asclepias perennis*) and lizard's tail (*Saururus cernuus*), blooming despite the dryness.

We walked over tall crayfish chimneys and passed more fungus than a mycologist could take. We ran into climbing hempweed (*Mikania scandens*) competing with some type of parasitic dodder, amidst blooming arrowhead (*Sagittaria latifolia*).

We saw a nice specimen of water parsnip (*Sium suave*), walked past a little buttonbush (*Cephalanthus occidentalis*), then ran into Midwestern arrowhead (*Sagittaria brevirostra*) with its burs on. We saw false water-pepper and the small flower of a plantain of some sort. We kept a lookout for the elusive (due to its height) overcup oak and passed ironweed, green ash, Walter's St.

Johnswort and smelly camphorweed. The forest floor was carpeted with invasive moneywort. Clearweed and false nettle were plentiful.

Dan showed us the difference between swamp cottonwood and Eastern cottonwood. After lunch, we drove to another area where we headed off straight into invasive multiflora rose toughing it out with native greenbrier.



We headed into the acid seep, which abounded in ferns: Christmas, New York, cinnamon, green lady's, and beech fern, to name a few. We also saw cranefly orchids, doll's eyes (white baneberry), spicebush, beech trees (some with woolly aphids), Indian pipe, Indian cucumber root (in berry), Virginia jumpseed, and American ginseng. We found the elusive *Platanthera* orchid but were not sure which one, possibly *P. clavellata*.

In trying to keep up with Dan as he was looking for black alder, I stepped into – and was briefly stuck in – the smelly acid seep. This is why one does field botany with others!

Dan and his sidekick Andrew Gibson, a student from Ohio, were very informative and enthusiastic – and in much better shape, physically and botanically, than I was!

These reports have been excerpted for the Journal. To read full reports, visit INPAWS.org.

*At Pokagon Trine State Recreation Area, tamarack trees (*Larix laricina*) and blazing star (*Liatris spicata*) flank a shoreline fen where INPAWS hikers treaded as gently as possible out of respect for the fragility of the the recently restored habitat.*



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Host Plants

Berries Bring Birds

Berries and wild grapes lure Cedar Waxwings to glean fruit, often in large flocks that arrive noisily and depart suddenly. Waxwings are known to occasionally pass a berry down a row of birds sitting on a branch until one bird eats it. They can also reportedly get intoxicated from eating fermenting fruit. When they're not eating berries, they're catching insects. In spring, they feed on buds, sap, and flowers of cottonwood, maple, and oak trees.

The Cedar Waxwing (*Bombycilla cedrorum*) is a year-round resident of the northern half of Indiana and a winter-only visitor to the southern half of the state. This crested, mostly brown bird is unmistakable for its black mask, the waxy red tips of its wing feathers, and the yellow bar at the tip of its gray tail.

According to David Sibley's *Guide to Bird Life & Behavior*, "Cedar Waxwings with orange tail bands have become increasingly common since the early 1960s, when exotic shrub honeysuckles (*Lonicera* species) became widely established in landscaping practices." Moreover, by feeding on the invasive honeysuckles, Waxwings help spread them.

Gardeners can attract Cedar Waxwings by cultivating native plants that produce small berries: pokeweed, dogwood, serviceberry (pictured), winterberry, hawthorn, viburnum, cedar, and juniper.