Volume 23, Number 2

inpaws journal

Indiana Native Plant and Wildflower Society Summer 2016

Wintercreeper Exterminators Club

Students fight invasive wintercreeper

By third grade students of Orchard School

Preface: Three concerned third graders founded the Wintercreeper Exterminators Club at Orchard School on 64th St. in Indianapolis. Nate Mylin, STEM (Science, Technology, Engineering, Mathematics) coordinator, helped facilitate their efforts and compiled the following article from students' contributions. Tom Rosenbluth is their principal. Diana Shelhaas is outdoor education coordinator.

Reprinted with permission from Outlook, *Orchard School's online newsletter.*

Nate Mylin

Nate Clawson, brother of Wintercreeper Exterminators Club founding member Nicholas Clawson, gathered an armful of invasive vines during the Orchard School's first Youth Environmental Civics Summit (and Wintercreeper Frenzy cleanup day).

It all started when we were studying different kinds of leaves and matching them to native Indiana trees. Crunch! Crunch! We were walking through the Orchard Woods and then we saw a tree covered with this big, dark green vine ... and then we noticed that the vine was growing everywhere! It was covering almost all the trees, and the trees looked like they were dying. We asked Mr. Mylin what it was, and he told us that we should research it. There was so much of it, it was CRAZY!!!! With just a few clicks of the computer keys, we discovered that it is called wintercreeper and it is invasive!

What We Found

We found that wintercreeper`s scientific name is *Euonymus fortunei* and that it is an invasive species. Wintercreeper came from Asia in 1907. We researched it a little more and found that some states have outlawed wintercreeper. We asked Mr. Mylin how to make a law. He said he wasn't exactly sure, but if we found out how and did it ourselves, he would buy candy bars for the whole third grade. So we got to work!

Persuasive Letters

On the way into school one day, one of the girls in our class saw that wintercreeper was growing in the new landscaping in front of school, so we decided to write persuasive letters to the head of our school. [Classmate] Nate Smith worked extra hard on his, so we agreed that everybody would just add onto his letter. Once everybody was done with their additions to the letter, Mr. Mylin helped edit it. After we sent it, Mr. Rosenbluth came to talk to our class. He said we could pull the wintercreeper plants from the landscaping (because the landscaper had just put fresh purple wintercreeper in the front and back!) so we pulled it for two days and got it all out.

Then we found out that we could make our own rule to ban wintercreeper in Indiana. We all wrote what we wanted in our rule on a Google document, and Mr. Mylin helped us put it in the right form. Basically, we made it say that there would be no wintercreeper sold, bought,

Students – continued on page 5

Inside

Bush honeysuckles: an invasive nuisance

By Terry Bonace

Wikimedia

Above: blossoms of a pesky bush honeysuckle. Below: blossoms of the native spicebush (Lindera benzoin).

You have likely heard about the problem of invasive "bush honeysuckles" in Indiana and much of the northeastern United States. Amur honeysuckle (*Lonicera maackii*), Tartarian honeysuckle (*L. tatarica*), Morrow's honeysuckle (*L. morrowii*), showy fly honeysuckle (*Lonicera x bella*) and common fly honeysuckle (*Lonicera x muendeniensis*) are the majority of species or hybrids known as bush honeysuckles. Other problem species and hybrids may still be emerging, but these are the best known at the moment.

Amur honeysuckle and Morrow's honeysuckle are from Asia, while Tartarian honeysuckle is from Russia. Showy fly honeysuckle is a hybrid of Morrow's and Tartarian honeysuckle. Common fly honeysuckle is considered a hybrid of showy fly honeysuckle and Manchurian honeysuckle (*L. ruprecthiana*).

Bush honeysuckles are most distinctive in springtime with their sometimes fragrant, asymmetrical, tubular white, pink or red flowers, and in summer through early winter when their red or orange berries appear in pairs along the stem. Leaves and flowers also appear in pairs along the stems. All bush honeysuckles have hollow stems with no pith.

These invasive species were introduced to the US as ornamentals in the 1800s. From the 1950s through the 1970s, their planting was encouraged by government agencies for wildlife food and cover (a mistake repeated with many invasives) and to prevent erosion. The seeds of bush honeysuckles are widely disseminated by birds and small mammals, creating a problem in the management of many natural areas. The plants spread rapidly and form dense thickets, choking out native plants. Some bush honeysuckles also produce a chemical that inhibits the growth of native plants in their vicinity (a trait called allelopathy).

Bush honeysuckles involve some effort to control. When plants are small, they can often simply be pulled up by the roots. Larger shrubs may need to be treated with an herbicide containing glyphosate, like Roundup. Either the whole shrub can be sprayed on the foliage or, for greater success, the bush can be cut to the ground and the stumps treated. Plants with fruit on them must be disposed of in garbage bags to prevent the seeds from spreading.

There is one native shrubby honeysuckle of the genus *Lonicera, L. canadensis* or American fly honeysuckle, found in Indiana. It has solid white pith and is shorter, with sparser foliage, than its Eurasian cousins.

Diervilla lonicera, a relative of *Lonicera*, shares the common name "bush honeysuckle" but has solid stems, capsules instead of berries, and teeth on the leaf margins. It grows in a small mounded shape up to three feet in height, with branches close to the ground.

Many invasive bush honeysuckles are still sold in nurseries, but native alternatives are available.

Spicebush (*Lindera benzoin*) is common in rich woodlands in much of Indiana. It has small, fragrant yellow flowers in the spring, bright red, spicy-smelling berries in late summer and bright yellow leaves in autumn. The shrub tolerates part shade and dry shade well. The only requirement for obtaining those beautiful berries is to grow both male and female plants, as spicebush shrubs have two sexes (are dioecious). The berries are a good food source for birds and the spicebush swallowtail caterpillar feeds on the leaves.

Winterberry (*Ilex verticillata*) is another shrub with attractive red berries. The berries grow in clusters along the stems, so showy that they are often sold for Christmas decorations. This native holly loses its leaves in winter and, though more common in moist habitats in the northern half of the state, it does not require wet feet to grow. It

… and native substitutes

is, however, dioecious and needs at least one male per 12 female plants to produce berries.

American black elderberry (*Sambucus nigra* subsp. *canadensis*) is another native beauty, perhaps so common as to be underappreciated. It grows abundantly along roadsides and in woodland edges, especially in wet areas. Its white umbrella-like clusters of flowers bloom in early summer and its deep purple berries, very popular with birds, develop later in the season. The leaves are pinnately compound and opposite. Elderberry is very easy to grow and does not require multiple plants to produce berries. Its cousin, red elderberry (*Sambucus racemosa*), is less common, growing more often in woodlands in the northernmost portion of Indiana. It is more shade-tolerant than black elderberry, produces flowers and berries in pyramidal clusters and has bright red fruit. Elderberry fruits, besides being attractive to birds and pollinating insects, make delicious jams, pies and even wine. Though edible, the fruit must be cooked because it is slightly toxic when raw. Elderberry flowers are also used both for their flavor and medicinal properties.

Highbush cranberry (*Viburnum opulus* var. *americanum*), is not actually a "cranberry," as is evident from the scientific name, but rather a viburnum. It is a popular and easy to grow native shrub. Its bright red berries, borne in umbrella-like clusters, give it its name. The berries are edible and rich in vitamin C, though quite tart, so you might prefer to leave them for birds and other wildlife. These berries are preceded by an umbrella-like arrangement of white flowers, with inconspicuous fertile flowers in the center surrounded by sterile but showy white flowers. Leaves are opposite on the stem, resemble a maple leaf and have a nice red fall color. The tiny spring azure butterfly uses viburnum as one of its host plants. One must be careful to avoid buying European highbush cranberry (*Viburnum opulus var. opulus*), often mistakenly sold as the native variety by well-meaning nurseries. European highbush cranberry is invasive in many parts of North America, including Indiana.

Terry Bonace, an environmental scientist retired from the US Environmental Protection Agency, has enjoyed plants since taking required botany courses while studying zoology and wondering if he should have been a botany major instead. He divides his time between Chicago and Beverly Shores, IN.

Lynne Tweedie

*Three stages of the spicebush swallowtail butterfly (*Papilio troilus*) whose caterpillar feeds on the leaves of spicebush* (Lindera benzoin).

"Arts in the Park" at Brown County

Nashville, IN, artist Patricia Rhoden Bartels has received a state grant to commemorate the 100th anniversary of Indiana's state parks by painting several signature species of the flora of Brown County State Park.

Park naturalists and volunteer David Mow, an INPAWS member, helped the artist determine which plants to depict. They chose species that are considered locally uncommon and important for various reasons.

By fall, Bartels will have created eight *plein air* (French for "open air") paintings. She has already completed work on large-flowered trillium (*Trillium grandiflorum*), yellow lady's slipper (*Cypripedium parviflorum* var. *pubescens*), yellowwood tree (*Cladastris kentukea* var. *kentukea*), white ash tree (*Fraxinus americana*) and common milkweed (*Asclepias syriaca*).

Remaining sessions, all at 1 p.m., are July 3 for wild bean (*Phaseolus polystachios*), Sept. 4 for yellow nodding ladies-tresses orchid (*Spiranthes ochroleuca*), and Sept. 19 for northern blazing star (*Liatris scariosa*). The public is invited to join the artist as she paints. Those wishing to watch Bartels paint these remaining species should gather July 3 at the park office, Sept. 4 at the Nature Center, and Sept. 19 at Kelp Playground.

David Mow, who is collecting plants to create an herbarium at the park's nature center, will talk about the plants as they are being painted. The paintings will later be part of a temporary exhibit at Abe Martin Lodge, along with the works of other artists doing projects in the park this summer.

Shawnee Bottoms Nature Preserve

Natural area profile

By Bob Easter

Shawnee Bottoms Nature Preserve in Fountain County is a wonderfully diverse piece of west-central Indiana located along the middle Wabash River, a mile north of Portland Arch National Natural Landmark. It is owned and maintained by NICHES Land Trust. In some ways this preserve has outgrown its name since its initial protection in 2002, when 150 of the original 220 acres were still in agricultural production and the majority of the property was in the floodplain.

Three separate purchases of adjoining upland tracts added 35 acres in 2009, 54 acres in 2014, and 23 acres in 2015. Shawnee Bottoms Nature Preserve is now NICHES Land Trust's largest property, covering 332 acres evenly balanced between bottoms and upland oak woodland.

Bob Easter

Brad Weigel, one of NICHES' stewardship managers, steps out on a log at Shawnee Bottoms Nature Preserve.

A section of the old Wabash and Erie Canal, later converted to a railroad bed by the Covington branch of the Wabash Railroad, roughly bisects the property from southwest to northeast, splitting the bottomland and upland portions of the preserve. The railroad line, which once took holiday-makers to the area that is now Portland Arch Nature Preserve, was abandoned in the early 1930s and now makes up a large portion of the Shawnee Bottoms trail system.

The natural communities at Shawnee Bottoms are as rich as they are varied. In the bottoms there are multiple seep streams, high quality fens, mature riparian woods, and restored and naturally regenerating stands of floodplain tree species, including American sycamore (*Platanus occidentalis*), eastern cottonwood (*Populus deltoides*), black willow (*Salix nigra*), black ash (*Fraxinus nigra*), northern pin oak (*Quercus palustris*), and swamp white oak (*Q. bicolor*). The western boundary of the preserve consists of one and a half miles of frontage on the Wabash River.

The most interesting feature of the bottoms is Scott's Pond, a 20-acre floodplain pond fed by a combination of Wabash floodwaters and seep streams flowing through the well-drained outwash and residuum soils that blanket the adjacent uplands. On the river side, the pond edge is curtained with a thick mangrove-like strip of buttonbush (*Cephalanthus occidentalis*) and native crimson-eyed rose-mallow (*Hibiscus moscheutos*), which provides a striking late-summer display of pink and white when viewed from the sandstone bluff above the pond's northern end.

The higher ground of Shawnee is as diverse as the low areas. The southern half of the upland consists of 30 acres restored to native grasses, forbs, and white oaks (*Quercus alba*) in 2002 and 2003, sections of mature oak woodland and a large outwash ravine with a meandering seep stream. Over the last two years, a welcome colony of busy beavers has created a multiple-acre impoundment on the high side of the canal towpath/old railroad bed on the south. Using this man-made structure as a dam, the beavers have slowed the movement of water through the soil profile and revitalized populations of naturally occurring remnant fen species including New England aster (*Symphyotrichum novae-angliae*), fen betony (*Pedicularis lanceolata*), white turtlehead (*Chelone glabra*) and porcupine sedge (*Carex hystericina*).

The standing water has created habitat for wood ducks, turtles and other wildlife and has helped increase amphibian breeding. The beavers' tree thinning will help promote the growth of the rich diversity of sedges, grasses and forbs that are abundant along the towpath area and will help oaks and understory shrubs have a chance to regenerate.

The northern half of the uplands features both wet and dry oak woodland communities shaped by the thin soils and closely associated bedrock geology. Sandstone increasingly outcrops through the soil as you move north, creating

Shawnee – continued on page 15

grown, or transported in Indiana. Then we all wrote persuasive letters to the DNR [Indiana Department of Natural Resources] and sent our rule to Mr. Cameron Clark, the director of the DNR. We want that law to be made!

Our Actions

We have done a lot to get rid of wintercreeper in our woods. We researched and discussed burning it vs. pulling it, and even putting tarps over the creeper, which could have taken two years! We discussed many options from our research and finally came to a solution that we could try: goats. The goats [loaned by a farmer] are really helping get rid of the wintercreeper. We have been seeing if goats eat the wintercreeper, and they do, but they only eat the leaves.

We received a grant for $1,000 from the Service Learning Action Fund, which is part of CICF [Central Indiana Community Foundation]. We used some money from our grant to hire a professional company called EcoLogic. They came and scouted our whole woods and gave us professional advice. They said the goats were helpful, but that we will still need to use two special herbicides to get rid of such large patches. [The goats were removed in April.] They used a GPS and made a map for us that shows all of the bad spots of wintercreeper in the woods. We also created our own Wintercreeper Exterminators Club. There were 14 members for the first session, and last session we had 22 members!

We have done lots of pulling of wintercreeper. We pulled some during our class time and at recess, and we pulled some for a project. We had a special day where people came to help pull wintercreeper, and we called it The Wintercreeper Frenzy and Student Environmental Presentation Day. It became Orchard's first Youth Environmental Civics Summit! About 120 people, with students from over 10 schools, came to help and we made great big piles of wintercreeper for a fun competition! That same day we presented on stage and shared with everybody what we were doing for our project. Two other groups from other schools also shared environmental projects that they were working on at their schools.

Wintercreeper

Your long green winter vines, everywhere they creep,
Slithering up the trees, while making native plants weep.

Just like a bully, you push others out,
You make us want to cry, you make us want to shout!

You're not welcome, because you do not share,
You hoard the sun and rain, and you act so unaware!

If we could have but one wish, we would make you disappear,
Instantly and forever, and we wouldn't shed a tear!

So watch out, Wintercreeper, we are coming to get YOU!
We may be kids, but we mean business, and we won't stop until we do.

By Nate Mylin

We wrote a rule because we want to stop the wintercreeper problems in Indiana. We have not gotten all the creeper out of our woods, but it is a start. The rule will be helpful because it means NO MORE PEOPLE PLANTING, BUYING OR SELLING WINTERCREEPER IN INDIANA, AND OUR WOODS WILL BE BETTER PROTECTED!!

We recently spoke at the Natural Resources Commission annual meeting. This is the body that approves rules in Indiana. Seven of our classmates spoke, giving PowerPoint presentations and showing a poster board. We also showed the commission the public service announcement video that we made. Because of our persuasive letters, the DNR finished a draft rule that would ban 37 INVASIVE PLANT SPECIES in Indiana!! They are now trying to get the commission to approve it. Other states have already outlawed wintercreeper. Our rule means a change FOR THE GOOD!! We are very happy about our rule.

Distribution of wintercreeper from Early Detection & Distribution Mapping System.

@inpaws.org

Officers

President	president@inpaws.org
Jeff Pitts	317-363-1643
Past President	pastpres@inpaws.org
Art Hopkins	812-372-2862
Vice President	vicepres@inpaws.org
Davie Sue Wallace	812-963-3930
Secretary	secretary@inpaws.org
Tom Swinford	317-233-4849
Treasurer	treasurer@inpaws.org
Don Gorney	317-501-4212

Chapter Leaders

Central	central@inpaws.org
Amanda Smith	317-867-5352
East Central	eastcentral@inpaws.org
Jon Creek	765-348-4019
North	north@inpaws.org
Steve Sass	574-287-8939
Northeast	northeast@inpaws.org
Betsy Yankowiak	
South Central	southcentral@inpaws.org
Steve Dunbar	812-325-0968
Southwest	southwest@inpaws.org
Laura Lamb	812-867-8592
West Central	westcentral@inpaws.org
Gregory Shaner	765-447-2880

Committee Chairs

Annual Conference	conference@inpaws.org
Tom Hohman	317-831-1715
Conservation	conservation@inpaws.org
Doug Rohde	
Grants & Awards	smallgrants@inpaws.org
Daryn Fair	317-435-2918
Hikes & Field Trips	hikes@inpaws.org
Mike Homoya	
Historian	historian@inpaws.org
Ruth Ann Ingraham	317-517-9022
Invasive Plant Edu.	invasives@inpaws.org
Ellen Jacquart	317-951-8818
Journal Team Leader	journal@inpaws.org
Scott Namestnik	574-303-7758
Journal Editors	journal@inpaws.org
Patricia Cornwell	812-732-4890
Kit Newkirk	765-719-0414
Landscaping Support	landscape@inpaws.org
Karen Bird	317-263-9655
Membership	membership@inpaws.org
Cindy Monnier	317-460-7751
Plant Sale/Auction	plantsale@inpaws.org
Open	
Website	webmaster@inpaws.org
Wendy Ford	317-334-1932

Mission

To promote the appreciation, preservation, scientific study, and use of plants native to Indiana and to teach people about their beauty, diversity, and importance to our environment.

Check out INPAWS' great blog at inpaws.org

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. 23 for April 1 mailing
Summer – April 22 for July 1 mailing
Fall – July 22 for Oct. 1 mailing
Winter – Oct. 22 for Jan. 1 mailing

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*.

Inside INPAWS: Chapter news

North

This busy chapter meets at least once a month during the winter and sometimes more in spring, summer and fall.

In January the chapter hosted a meeting at the Ethos Science Center in South Bend. Scott Namestnik presented a program entitled "Dumb Luck: The Stories behind the Collections." It featured the rare plants he has found in the last few years and the serendipitous stories that led to the finds.

On February 21, Namestnik and Steve Sass teamed up to present "When Glaciers Collide" at Indiana University South Bend. This program included the history and ecology of the St. Joseph County Kettle Lakes and Wetlands. Some of these areas are in the local news, as the properties may come up for sale. Around 100 people got an in-depth look at each region and the variety of plant species found there.

March 20 took members back to the Ethos Science Center for a program by Amanda Smith from Hamilton County Parks on "Historical Plants and their Stories." This interesting program was well attended.

North Chapter has one or two activities per month during the summer. Hikes and events planned include some in very restricted areas with limited admittance, a group picnic and a kayaking trip that members are excited about.

South Central

In March, South Central members participated in a skunk cabbage hike at Jordan Seeps Nature Preserve, led by Jeff and Sandy Belth, and had a display table at a seed swap hosted by the Brown County Seed and Plant Project.

On July 30 at 10 a.m., members will tour EcoLogic's native plant nursery in Bloomington. The company has a storm water wetland and prairie with over 70 species of native plants. Members will try to identify some of the pollinators they see.

Southwest

On Saturday, July 16, the Southwest Chapter will host a talk by Evansville attorney Steve Bohleber regarding his work with the group Discover Life in America. They are working to identify all living organisms in the Great Smoky Mountains National Park and have identified almost 1,000 species of life previously unknown to science. The session will begin at 9:30 a.m. at the nature center at Wesselman Woods, a National Natural Landmark and state nature preserve in Evansville.

"Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.

~ Chief Seattle

Ft. Wayne area gets new chapter

INPAWS members in the Fort Wayne area have formed a new chapter, bringing to seven the number of INPAWS chapters. The new Northeast Chapter is composed of members in Adams, Allen, DeKalb, Huntington, Noble, Steuben, Wells and Whitley counties.

Officers are president Betsy Yankowiak, vice-president Sandra Lamp, treasurer Robert Streeter and secretary Ronnie Greenberg. Others on the executive board representing chapter committees or functions are Martha Bishop Ferguson, Janet Canino, Kate Sanders and Laura Stine.

INPAWS president Jeff Pitts welcomed the new group: "We have wanted a chapter in the Fort Wayne area for a long time. As [it is] the second-largest city in Indiana, an active and thriving chapter is important to our efforts to promote the importance of native plants for healthy ecosystems."

Watch the next issue of *INPAWS Journal* for more information on the chapter's plans and activities.

INPAWS Chapters 2016

Define rare: fringed polygala

Rare plant profile

By Michael Huft

Some plants are considered rare in Indiana because they are rare everywhere. Many species of orchids are in this category. Other species that are rare in Indiana are common elsewhere, usually some distance from Indiana, but one or more outlier populations (called disjuncts) occur in Indiana. Some examples include species common on the prairies to the west of us that also occur in small numbers in western Indiana, or species that are common on the Atlantic coastal plain but that also find suitable habitat in northwestern Indiana. Finally, there is a category of plants rare in Indiana because they occur here at the edge of their range — typically restricted to localities at or near the southern or northern boundaries of the state. Were it not for the existence of political boundaries, these species would generally not be treated as rare.

Wikimedia

Fringed polygala (*Polygala paucifolia*), a small woodland herb, is a good example of a species that is rare in Indiana because it occurs here at the edge of its range. In Indiana, it is known only from a few stations in black oak forest in the high dunes within the Indiana Dunes State Park, which borders the south shore of Lake Michigan in Porter County.

The species ranges throughout northern Minnesota, northern Wisconsin and Michigan (where it is absent or quite rare in the southernmost three tiers of counties) and extends to New England, then southward along the Appalachian Mountains as far as northern Georgia.

In the Great Lakes states, fringed polygala tends to be more common northward. Its typical habitat in the Great Lakes is coniferous forests or mixed hardwood and coniferous woodlands. In some areas it is so common that it seems to carpet the forest floor. I have seen literally thousands of these flowers dotting the ground in Manitowoc County, Wisconsin.

The flowers of fringed polygala are very distinctive and strongly irregular, often mistaken for legume flowers or even orchids. There are five sepals, three of which are green and quite short. The two lateral ones are much larger, spreading and petal-like with a rose-purple color; they are referred to as wings (giving the species its alternate vernacular name “gaywings”). The three petals are united at the base and form a tube; the upper petals are rather short, rose-colored, and encircle the basal portion of the lower petal. This lower petal is about as long as the wings, is keel- or boat-shaped and has a prominent fringed crest attached to the apex. It is this fringed crest that gives the plant its best-known vernacular name, “fringed polygala.”

The populations of fringed polygala in the Indiana Dunes are unusual in that, in addition to plants with normal rose-purple flowers, there are plants with all white flowers. This is a rather rare condition, and we are fortunate to have both color forms in Indiana. In my experience, any one locality within the State Park has only one color form — they are not mixed within a single population.

The genus *Polygala*, traditionally understood, contains well over 500 species throughout the temperate and tropical areas of the world and consists of annual and perennial herbs, shrubs, vines and trees. Of these, about 56 species are native to the US, with particularly large concentrations in the Southeast and the arid Southwest. In recent years, however, as a

Rare – continued on page 10

Speakers named for Nov. 5 conference

By Tom Hohman

Plans are final for the November 5 INPAWS annual conference, and it looks to be another exciting group of speakers. The theme of the gathering is "Preservation: Keeping What We Have, Restoring What We've Lost."

SPEAKERS

Keynote speakers will be Dr. Robbin Moran and professor Reed Noss.

Moran is the Nathaniel Lord Britton Curator of Botany at New York Botanical Garden. His research interests are ferns, horsetails and lycophytes, and he is the author of *A Natural History of Ferns*. He will talk about the biology of ferns and some surprising characteristics of Indiana ferns.

Reed Noss is professor of conservation biology at the University of Central Florida and president of the Florida Institute for Conservation Science. Well-known nationally and internationally in the fields of conservation and ecology, he was a speaker at this year's national Natural Areas Conference. Noss will speak on current issues in preservation of natural areas. Early in his career, he worked for Ohio State Parks and the Ohio Natural Heritage Program, so he will add a Midwestern perspective to his presentation.

In addition to the keynoters, the rest of the lineup should prove interesting.

In 1969 three Purdue University botanists published *Natural Areas in Indiana and Their Preservation*. This ground-breaking work helped start the preservation movement in our state and became the guidebook for many of those efforts. John Bacone, director of DNR's Division of Nature Preserves, and Cliff Chapman, executive director of the Central Indiana Land Trust, will jointly present an update on what has happened to the properties cited in that book. They will also discuss key people involved in preservation of those areas.

Another timely presentation will be given by Alyssa Nyberg with The Nature Conservancy (TNC). Alyssa is manager of Kankakee Sands Nursery, which provides seed for the ongoing restoration efforts of TNC on the 8,000-acre area of the same name. Alyssa will bring us up-to-date on "the marvels and mistakes of a prairie 19 years in the making."

Bill McKnight, a charter member of INPAWS, will speak on "Gardening under the Influence (of Myths)." Bill has been a museum curator, field botanist, teacher and, most recently, a gardening advisor at Rosie's Garden Center. He may be best known for his almost 30 years of involvement with administration of the Indiana Academy of Science.

LOCATION

A problem arose with the facility originally contracted in West Lafayette, so new arrangements have been made for the conference to take place at 502 East Event Center, 502 E. Carmel Dr. in Carmel. The committee is securing a block of rooms at a nearby hotel, which will be announced on the web site and in the fall issue of the Journal. Also look for updates on this in your monthly news email from INPAWS.

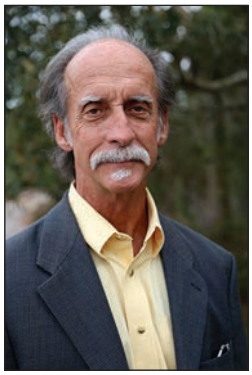
EXTRAS

With fewer speakers this year, attendees will have more time to interact with exhibitors, shop at the book store, participate in the silent auction and network with others. Many conservation organizations and businesses will be represented, so the conference presents a rare opportunity to meet like-minded conservationists.

If you have been a sponsor or exhibitor in the past, you have probably already received an invitation. If you are interested, go to *www.inpaws.org* for information or send an email to *sponsor@inpaws.org*. Nonprofit exhibitors are allotted a table for a minimal cost, while a range of price levels is available for sponsors.

Look for final conference details at *www.inpaws.org* and in the fall *INPAWS Journal*.

Tom Hohman is conference team leader.



Keynote speakers for the 2016 INPAWS annual conference will be nationally and internationally recognized experts, Dr. Robbin Moran (top) and professor Reed Noss.

Rare – from page 8

result of taxonomic and molecular studies of the genus on a worldwide comparative basis, the large traditional genus *Polygala* has tended to be split into a number of smaller genera, primarily because some groups of species have been shown to be more closely related to other genera in the family Polygalaceae than to the core species of *Polygala*.

Our fringed polygala has been moved to one of these segregate genera and is now often referred to as *Polygaloides paucifolia*. There are five or six other species of *Polygaloides*, all of them in Europe or northern Africa (Abbott, 2011). Thus it is not closely related to any of the other 55 species of *Polygala* in the US. It may well be a remnant of a larger and more extensive cross-Atlantic set of species and the only one remaining in North America.

[Polygaloides] may well be a remnant of a larger and more extensive cross-Atlantic set of species and the only one remaining in North America.

Although *Polygaloides* can be defined on the basis of a number of technical characters, *P. paucifolia* can be readily distinguished from other North American species of traditional *Polygala* informally by its low creeping habit with very short erect stems sporting only a few well-developed leaves near the tips of the stems and one to four (usually one or two) rather large flowers (generally longer than 13 mm) near the tips of the stems. Other North American species generally have much smaller, more numerous flowers arranged more or less densely on a terminal raceme (an inflorescence in which the flowers are arranged along an axis, are on distinct flower-stalks, and mature from the base of the inflorescence upward).

Reference:

Abbott, J. R., 2011. Notes on the Disintegration of Polygala (Polygalaceae), with Four New Genera for the Flora of North America. *Journal of the Botanical Research Institute of Texas* 5: 125-137.

Michael Huft is editor of The Michigan Botanist, *the journal of the Michigan Botanical Club. He is a board member of the Flora of North America Association and a research associate at the Field Museum and Missouri Botanical Garden.*

DNR Field Days

Indiana Division of Nature Preserves and its partner organizations will offer guided hikes in several state preserves in the coming months. These field days are free, but registration is required at *www.in.gov/dnr/naturepreserve*.

Date	Preserve	Co-sponsor	County
Aug. 13	Chamberlain Lake	INPAWS	St. Joe
Sept. 18	Eagles Crest	INPAWS	Marion
Sept 14	Stoutsburg	SHLT	Jasper
Sept 24	Clark & Pine	INPAWS	Lake
Oct 15	Blue Cast Springs	ACRES	Allen

ACRES = ACRES Land Trust; SHLT = Shirley Heinze Land Trust

Idea grows into reality at Noble County school

By Janet Canino

Pearl crescent, rattlesnake master and spiderwort may sound like ingredients for a scary Halloween brew. Instead they are a few examples of the life that can be found in an all-native garden.

In April, 2015, Oak Farm Montessori School in Noble County in northeast Indiana received an $890 grant from INPAWS. With the grant money and additional funding from the school, "Upper Elementary Green Team" students designed and created an amazing piece of wildlife habitat right outside our classroom door.

About 10 children in grades four to six helped design the garden, and another 10 or so planted it. Students researched and selected 22 different species of native plants, then designed the layout for the plant bed. In May, 2015, with the help of our property manager Ben Bollinger and Martha Bishop Ferguson, our Master Gardener consultant from Riverview Native Plant Nursery, we planted over 100 native plugs or little seedlings.

Species included common milkweed (*Asclepias syriaca*) and butterfly weed (*A. tuberosa*), native grasses such as little bluestem (*Schizachyrium scoparium*) and prairie dropseed (*Sporobolus heterolepis*), and flowering perennials such as downy sunflowers (*Helianthus mollis*) and smooth blue asters (*Symphyotrichum laevis*). The asters bloomed beautifully into November, providing a much-needed late-season nectar source for our pollinator friends.

This year students are learning to appreciate the creepy-sounding rattlesnake master (*Eryngium yuccifolium*) and Ohio spiderwort (*Tradescantia ohiensis*) and to recognize the ecological significance of these local perennials, along with their other native companions.

Last fall, students took steps to certify our native garden with MonarchWatch as an official Monarch Waystation. That means that we provide monarch butterflies and other beneficial pollinators with both nectar and larval food sources. We also have two shallow bird baths for thirsty avian visitors. Fallen wooden log benches provide places for students to sit quietly and observe the live nature show that flits in and out of the garden.

With the addition of our native pollinator educational garden, our students have the chance to get outdoors and experience some of Indiana's finest native species, from wildflowers to the sweat bees that enjoy landing on us. It is a chance for students to learn the difference between natives and aliens (students are fascinated that we are harboring aliens at school), what it means to be invasive and how destructive invasives can be.

Students learn that insects have value and are a foundational item in various food chains. They can see, for instance, that bees are essential pollinators, as well as food for other animals. Soon we hope to focus our ecological curiosity on the order Lepidoptera, so that we can recognize more than just monarchs when they flutter past. Last year the Halloween-themed orange and black pearl crescent was one of our first butterfly visitors.

INPAWS in action

Thomas Barnes

*An American snout visits the flower of the "creepy sounding" rattlesnake master (*Eryngium yuccifolium*), which students at the Oak Farm School are learning to appreciate.*

The installation effort, while important, will not be as far-reaching as the benefits to all those who spend time in the garden and experience the life that it attracts. The school has about 60 fourth- to sixth-graders each year. So every year most of them will spend time in the garden observing, learning and doing citizen science projects. In addition, we are now creating another all-native garden near the toddler and primary (three- to six-year-olds) building.

Thank you, INPAWS, for this invaluable learning resource that brightens both minds and spirits of all who visit our native pollinator educational garden.

Janet Canino is sustainability coordinator at Oak Farm Montessori School in Avilla, IN.

Native plants help control erosion

Wikimedia

Native species with deep, fibrous root systems that help fight erosion include big bluestem (top), butterfly weed and Silphiums *such as prairie dock.*

By Mark O'Brien

Our ability to conserve topsoil from wind and water erosion is critical if we want to sustain our food and fresh water supplies. Regrettably, we still take much of this for granted. In the Midwest we are blessed with an abundance of fresh water and fertile soils so many of the hard lessons learned from the dust bowl days have been forgotten. Windbreaks and filter strips of deep-rooted native vegetation are often removed in favor of increased agricultural production, while development that disturbs the soils along our waterways is a major source of sediment contamination into our streams and rivers. Disturbed slopes are especially susceptible to wash-outs.

The best way to stabilize soil is to establish plant material. The root systems of trees and shrubs play a huge role in binding soils and deflecting the energy of wind and falling rain water. The correct placement of trees and shrubs can also lower utility rates through shading in summer and reducing wind chill in winter.

Native trees such as oaks (*Quercus* species) also support hundreds of beneficial *Lepidoptera* species (moths and butterflies). This beneficial relationship between native plants and insects should not be overlooked as a critical component to sustain our planet's food web.

When choosing plants for any project, site conditions should dictate what species should be used. Soil types and moisture, sun exposure and existing vegetation should give clues to what species will be successful there. The correct plant in the correct conditions should mean longer term success for that plant.

When trying to establish plant material, there are several options. For smaller areas or those with a regular water flow, it is best to use live (growing) plant material. Plants are available in everything from bare-root and plant plugs to 30-gallon and larger containers. Most parking lot islands and small rain gardens should be installed using live plants. Live plant material will establish faster and be easier to maintain, and can also be used for a more formal look. In highly erodible areas some form of erosion blanket, such as straw, aspen fiber or straw/coconut-blend mats, should be used until plants become established.

Seeding is very successful and for most projects it is the only cost-effective method to establish vegetation. Most native seed mixes contain a cover crop of seed oats (*Avena sativa*) and annual rye (*Lolium multiflorum*). The cover greens up quickly and also acts as a carrier to help distribute the native seed. Increasing the seeding rate for the cover crop can increase coverage the first season. (A standard seeding rate for a cover crop in a native seed mix is 25 pounds of seed oats and seven pounds of annual rye per acre.)

It needs to be stressed that using erosion blankets is the best insurance against erosion on seeded areas. Native seed can take three to five years or longer to establish in heavy soils. For most natives, increasing the seeding rate will not speed up the establishment process.

There are some Midwestern native species that establish in the first full growing season. However, most of these are biennials or short-lived perennials. Annuals and biennials put their early energy into producing seed, while long-lived perennials concentrate their energy below ground, building a root system.

In upland areas the first species observed are typically sand coreopsis (*Coreopsis lanceolata*), Canada wild rye (*Elymus canadensis*), wild bergamot (*Monarda fistulosa*) and black-eyed Susan (*Rudbeckia hirta*). These species should be mowed as part of maintenance in the first few seasons. Mowing is the most effective way to reduce annual weed pressures in newly seeded areas. When the annual weeds are not allowed to reseed, sunlight is able to reach the soil line and benefit establishment of natives.

Native species like big bluestem (*Andropogon gerardii*), butterfly weed (*Asclepias tuberosa*), *Silphiums* (such as prairie dock) and many other natives have fibrous root systems that can spread well over eight feet deep. These root columns allow water to permeate soils while they build microbial activity in the ground.

In wet to saturated soil conditions native species — such as river bulrush (*Bolboschoenus fluviatilis*), sedges (*Carex* species), rushes (*Juncus* and *Scirpus* spp.), bulrush

Erosion control – continued on page 15

Vision 2026: It could happen!

By Wendy Ford

It's a fine day in April, 2026, an old friend is visiting from California, and we're picnicking at the Bill Brink Memorial Garden by the Monon Trail in Indianapolis. Inspired by the native plants surrounding us in this urban setting, I share with my friend what my favorite organization, INPAWS, has accomplished in the last 10 years.

INPAWS is known throughout the state as a champion of biodiversity, and everyone knows what biodiversity means and why it's important. Hoosiers know what native plants are and connect them to our Hoosier heritage. They know what invasive plants are, too; in fact, several towns hold annual "Rescue Our Community from Invasives" events where they pull garlic mustard and Amur honeysuckle from their parks and neighborhoods.

INPAWS members know that the major strongholds of biodiversity are remnant natural areas, and we actively promote their protection and proper management wherever they exist on private and public lands.

Biodiversity education starts young in Indiana. INPAWS' Native Plant Wizard patch program has been incorporated into the K-6 public school curriculum, and teachers are fully trained to lead the exercises. INPAWS successfully used the plight of the Monarch butterfly to underscore how native plants are essential to the cycle of life.

I'm especially proud of the full-color booklet INPAWS published, introducing preschoolers and kindergarteners to native plants, with coloring pages teachers can download from the INPAWS web site. And just last month, we celebrated the 25th school in Indianapolis to receive native landscape certification.

Led by committed advocates at INPAWS, the environmental community has persuaded landscapers and garden centers to no longer sell invasive plants. Jumping on the "Grow Native" bandwagon, these businesses are stocking alternatives to invasive plants and offering a full range of landscape-worthy native plants. Despite the loss of income from Callery pear trees and burning bush, their businesses are thriving.

We've made good progress on educating builders, homeowners associations, landscapers and municipal governments that native plants are a Good Thing. Our outreach workshops are spreading the message. We made headlines last fall as a new development opened, touting itself as a native plant-friendly, invasive-free development. Promoters cited INPAWS' influence on the developer and the prospect of a good economic outcome for her because of the value added by landscapes supportive of biodiversity.

I wish the legislature were more responsive to INPAWS' message, but as the public learns more about it, they are putting pressure on their representatives. Five years ago, we did finally manage to get them to remove the Chinese peony as the Indiana state flower, so there's hope.

For me, the best part of being an INPAWS member is the interesting people I meet. INPAWS membership has grown steadily as more Hoosiers want to support the cause of biodiversity. Our 10 active chapters keep everyone engaged at the local level, while the state organization provides support and guidance and keeps us focused on our strategic goals. INPAWS is widely respected and admired in Indiana and has been acknowledged as a model for other state native plant societies. I feel really good that we've been able to harness the energy of our millennial members who seem to care more about the environment than prior generations. I'm also glad our targeted outreach programs have brought more cultural diversity to the membership.

It's great that my friend is in town right now, because this weekend INPAWS is co-hosting a remove-invasives rally in conjunction with Indy 500 activities, cosponsored with the USDA and Oxfam America. The governor is declaring this "Indiana Native Plant Week" and several rock stars and movie stars will be on hand. There are rumors that POTUS may even put in an appearance.

Our thanks to the INPAWS leaders who participated in a visioning exercise at our April 3, 2016, leadership retreat. This is the dream scenario they came up with.

Wendy Ford is INPAWS' webmaster.

Wikimedia

When mixes of native seeds are sown in upland areas, among the earliest species typically observed are Canada wild rye (top), wild bergamot and sand coreopsis.

Floral glory at Ouabache Trails Park

By Laura Lamb

Southwest INPAWS members hosted an April 9 hike at Ouabache (pronounced "Wabash") Trails Park, part of the Knox County Parks and Recreation system (not to be confused with Ouabache State Park). Seven SWINPAWS members were in attendance, including hike leaders Terri Talarek King, Mike Broz, Linda Wilcox and Linda Sutterer, plus three non-members. The park is pretty, but aren't all parks? But step out of the car, even in the mown areas near the Hedstrom Shelterhouse, and you are afraid to step, because every step meant crushing a wildflower. The place was covered!

Hikers at Ouabache Trails Park spotted leaves of Aplectrum hyemale (left), *an Indiana native orchid. Distinctively striped leaves appear in late November and persist until March. It forms colonies by spreading underground via tubers. In late May or early June the flower stalks emerge carrying several tiny flowers.*

Wikimedia

Mike Broz led the group on Trail 3 northeast from the shelter. The awe was immediate. The woods are carpeted in wildflowers. The most abundant blooming species included Dutchman's breeches (*Dicentra cucullaria*), dwarf woodland larkspur (*Delphinium tricorne*), false rue anemone (*Enemion biternatum*), wild ginger (*Asarum canadense*), green violet (*Hybanthus concolor*), prairie trillium (*Trillium recurvatum*), toadshade trillium (*T. sessile*), drooping trillium (*T. flexipes*), blue, yellow and white violets (*Viola* species) and, of course, spring beauty (*Claytonia virginica*). Mike even found a patch of sharp-lobed hepatica (*Hepatica nobilis* var. *acuta*).

The blooms of some were already past their prime. Those included bloodroot (*Sanguinaria canadensis*), cut-leaved toothwort (*Cardamine concatenata*), cresses (*Cardamine douglassii* and possibly others) and trout lily (*Erythronium albidum*).

Those with distinguishable leaves that were not yet blooming were appendaged waterleaf (*Hydrophyllum appendiculatum*), putty-root orchid (*Aplectrum hyemale*), false Solomon's seal (*Maianthemum racemosum* or *M. stellatum*), and Solomon's seal (*Polygonatum biflorum*).

In all, roughly 29 different flowers, ferns and trees were recorded. Though the park is situated not far from the Wabash River, this trail was more upland forest with deep ravines overlooking smaller creeks.

After the hike the group gathered at the shelter for a brown bag lunch. After lunch Terri Talarek King led a smaller group of four (the cold having driven some off) over to the Sacajawea Shelterhouse to start the afternoon hike in the wetland area along Trail 7. Right off the bat, we found beech drops (*Epifagus virginiana*), wild hydrangea (*Hydrangea arborescens*), sprouts of jewelweed (*Impatiens capensis* and *I. pallida*, not blooming), scouring rush (*Equisetum hyemale*), common field horsetail (*Equisetum arvense*), and buttonbush (*Cephalanthus occidentalis*, not blooming).

As the hike proceeded, paralleling and sometimes crossing the creek, we saw huge patches of drooping trillium, which was seen sparsely on Trail 3. We also added to our list squirrel corn (*Dicentra canadensis*), miterwort (*Mitella diphylla*), Jacob's ladder (*Polemonium reptans*), common corydalis (*Corydalis flavula*), stonecrop sedum (*Sedum ternatum*), and wild leek (*Allium burdickii*, not blooming). A unique plant which all agreed was some kind of Indian plaintain needs further investigation. In all, 26 different species were recorded on this trail.

If you have not been to this park, plan on going in April, when Mike Broz swears that, during the peak, it looks as if it has just snowed. I agree with all who love this place … there is good reason!

Laura Lamb is president of INPAWS' Southwest Chapter.

Shawnee Bottoms – from page 4

extremely dry, well-drained black and white oak (*Quercus velutina* and *Q. alba*) woods. Shooting stars (*Dodecatheon meadia*) and fire pinks (*Silene virginica*) head up a suite of high-quality dry site species occurring in close association with flatwoods dominated by swamp white oak (*Q. bicolor*). These flatwoods are filled with perched wetlands (wetlands created by drainage, away from a stream or river) and a thick herbaceous layer of common wood reed (*Cinna arundinacea*) and hop sedge (*Carex lupulina*). In summer they are adorned by blossoms of seedbox (*Ludwigia alternifolia*) and great blue lobelia (*Lobelia siphilitica*).

With the significant support of matching funds from the Bicentennial Nature Trust, the 77 acres added to Shawnee Bottoms over the last two years have not only added high-quality acreage to the preserve, including ownership of the entirety of Scott's Pond; they have also connected previously interrupted portions of the Wabash and Erie Canal towpath. This allowed us to expand the trail system in celebration of Indiana's 2016 Bicentennial to include a 3.3-mile loop which considerably improves access to some of the most interesting portions of the property.

Native species thrive at this preserve. Continued work to eliminate invasive species, manage the deer population, conduct prescribed fires and further expand the preserve's boundaries will ensure that they continue to thrive. NICHES has been working with the Indiana Division of Nature Preserves to move the boundaries of Shawnee Bottoms and Portland Arch closer to one another until they eventually meet to form a 1,000+ acre permanently protected natural area. Shawnee Bottoms and Portland Arch offer extensive unique hiking opportunities in northern Fountain County. Shawnee Bottoms also provides quality access to the Wabash River and Scott's Pond with plenty of room for fishing, wildlife viewing, and cultivation of the soul.

For more information about NICHES Land Trust, visit *www.nicheslandtrust.org*.

Bob Easter is stewardship manager for NICHES Land Trust's southwest region, which includes primarily Tippecanoe, Warren, Fountain and Montgomery counties. He is a 2012 botany graduate from Purdue University.

Amur corktree – from page 16

In order to stop this invasive and preserve Indiana's natural areas, we must be observant and diligent. The trees can be effectively treated with herbicide, but in order for outbreaks to be stopped, the tree locations must be reported — that is where you can play a monumental role. The Amur corktree is in the infancy stages of invasion in Indiana. You can help keep Indiana native and beautiful by learning to identify this tree and reporting it on *EDDmaps.org* or any of

Wikimedia

these IPhone/Android apps: Great Lakes Early Detection Network, IPAlert, IveGot1, and Mid Atlantic Early Detection Network (MAEDN).

Spencer Wesche is a junior at Franklin College, majoring in biology with a focus on conservation and ecology. Upon graduation, she plans to pursue graduate work in wildlife biology with a focus on large northwoods mammals.

Amur corktree leaflets (top), when crushed, smell like turpentine. Its bark appears twisted and its sweet fruit offers "poor, but irresistible food to native fauna."

Erosion control – from page 12

(*Schoenoplectus* spp.) and cord grass (*Spartina* spp.) — bind soils and filter runoff. These plants can provide that much-needed buffer strip between disturbed soils and waterways, reducing sedimentation.

In the end it comes down to this: any time soil is disturbed, it should be treated with new vegetation and a bandage of erosion control material until it can be healed.

Mark O'Brien is manager of Cardno Native Plant Nursery in Walkerton. He has 17 years' experience in growing native plants and seed.

Indiana Native Plant
& Wildflower Society
P.O. Box 501528
Indianapolis, IN 46250-6528
Address Service Requested

Non-Profit
Organization
U.S. Postage
PAID
Indianapolis, IN
Permit No. 229

Blinded by beauty: the Amur corktree invasion

By Spencer Wesche

Invasive plants are ravaging the Indiana landscape. Multiflora rose, burning bush, garlic mustard and numerous other species infest woodlots and, unfortunately, some high-quality natural areas. The last thing our battered landscape needs is another invasive, but the potential exists for this situation. The Amur corktree, *Phellodendron amurense*, originates from China, Japan and Korea where it is commonly used as an ornamental. Slowly but surely, this invasive is establishing a foothold in Indiana.

Unlike trees that exhibit dominant vertical growth, the Amur corktree has wide spreading branches and only stands 10 to 14 meters tall. The tree has a short trunk with highly distinctive dark gray, deeply furrowed bark. In contrast to the dark exterior bark, this tree's interior bark is neon yellow with a spongy, cork-like texture. Amur corktree is deciduous, with opposite compound leaves made up of five to 11 leaflets that, when crushed, smell like turpentine. These leaves turn a beautiful, bright yellow in the fall, adding to the ornamental appeal of this species. Another attractive feature is the small green flowers that appear on the female trees in early spring. Male and female sexes appear separately in this dioecious species, so the pea-like berries appear only on female trees.

Ria Wentink

Like most invasive species, Amur corktree is highly adaptable and occurs in a diverse range of habitats. It is both drought- and flood-tolerant—perfect for Indiana's slightly bipolar weather patterns—and is commonly found in wetlands, forests and grasslands. The spread of Amur corktree had been restricted to the Eastern Atlantic Coast; however, it has been reported in a few counties in Illinois, Ohio, Wisconsin and Minnesota. Until recently, it had been absent from Indiana, but as of 2015, it was reported in Tippecanoe, Monroe and Clark counties. The most recent sighting was in January of this year in Clark and Pine Nature Preserve, Lake County.

Now that this invasive is infiltrating Indiana, the questions become: what will be the environmental impacts, and what can be done to help?

The Amur corktree grows quickly, taking over openings in forest canopies. The wide branches that characterize this invasive block sunlight, suppress understory growth and decrease native species diversity. Its berries are high in sugar, making them a poor, but irresistible food source for birds and small mammals. These organisms eat the berries in high quantities and ignore their more natural food sources like nuts. Therefore, the seeds of the corktree are rapidly spread while nuts are not, thus decreasing the abundance of nut-producing trees.

Amur corktree – continued on page 15