Volume 18, Number 2

inpawsjournal

www.inpaws.org

News and Views from the Indiana Native Plant and Wildflower Society • Summer 2011

DOGGED BOTANIZING

Native Silverberry —or Evil Twin?

Patricia Happel Cornwell, Indiana Master Naturalist

It was early May, and I was walking up the road to rescue an Eastern box turtle that had stalled mid-road. I was stopped in my tracks by an overwhelmingly sweet, spicy fragrance like the perfume of an old lady. Looking around I found, not an old lady, but a huge silvery bush full of creamy blossoms. How long had that been growing in the corner of our field? Years, apparently. It was eight feet tall and just as wide.

I hoped it was native, because it was good-looking and delicious-smelling. I broke off a sprig and took it up to the house. My husband said, "Oh, you mean that big bush I've been meaning to chop down?"

In *Native Trees, Shrubs and Vines* (William Cullina, New England Wild Flower Society, 2002) I found a look-alike, *Elaeagnus commutata*, native silverberry. The photo showed only leaves, but they were elliptical with crinkled edges, a good match for my sprig. From there, I went online to investigate the Elaeagnus family.

Native silverberry's black-sheep relatives include the infamous autumn olive and Russian olive. Autumn olive is native to eastern Asia, Russian olive to Asia and southern Europe. Highly invasive, both were introduced into the US in the 1800s for erosion control and landscaping, and both can still be bought in garden stores. A less-known invasive is "thorny Elaeagnus," *E. pungens*, which nurseries also sell. Its foliage is variegated, so I ruled it out immediately.

Continued page 4

◄ The mystery silverberry, photographed by the author.

Inside

INDIANA NATIVE PLANT *and Wildflower Society*

INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278.

Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS 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. For membership information, visit www.inpaws.org.

News and Views

Information to be shared with INPAWS members may be directed to membership@inpaws.org.

Officers

President	Tom Hohman	317-831-1715	hohmantr@aol.com
Past President	Nancy Hill	317-283-8345	ndhill86@gmail.com
Vice President	Art Hopkins	812-372-2862	plant4art@yahoo.com
Recording Secretary	Janice Gustaferro	317-596-0977	jgustafe@butler.edu
Corresponding Secty	Hilary Cox	317-272-4938	crumpetlee@gmail.com
Treasurer	Clare Oskay	317-786-7529	oskays2@iquest.net

Chapter Leaders

Northeast	Alicia Douglass	765-623-4652	alicia.bever@gmail.com
Central	Amy Smith	574-229-8782	amynsmit@iupui.edu
South Central	Steve Dunbar	812-325-0968	clarencestevendunbar@hotmail.com
West Central	Reni Winter	765-714-4288	reni@winterhavenfarm.us
Southwest	Davie Sue Wallace	812-963-3930	daviesue@aol.com

Committee Chairs

Annual Conference	Jeff Pitts	317-363-1643	jpitts@ratioarchitects.com
Conservation	David & Jane Savage	317-873-5083	d5j8z2@indy.rr.com
Education	Dan & Sophia Anderson	317-849-3105	danjand1@comcast.net
Garden Tour	Amy Perry	317-696-5074	amyperryindy@yahoo.com
Grants & Awards	Jackie Luzar		jluzar@gmail.com
Historian	Ruth Ann Ingraham	317-253-3863	rai38@sbcglobal.net
Hoosier Outdoor Exper.	Amy Smith	574-229-8782	amynsmit@iupui.edu
Invasive Plant Education	Ellen Jacquart	317-951-8818	ejacquart@tnc.org
Journal Editor	Wendy Ford	317-334-1932	wwford@comcast.net
Membership	Amy Perry	317-696-5074	membership@inpaws.org
Native Plant Rescue	Kelly Spiegel	317-418-5489	kms@arsprod.com
Plant Sale & Auction	Ross Nelson Co-chair open		rossavius@gmail.com
Programs & Field Trips	Mike Homoya		mhomoya@dnr.in.gov
Speakers Bureau	Art Hopkins	812-372-2862	plant4art@yahoo.com
Website (interim)	Wendy Ford	317-334-1932	wwford@comcast.net
Youth Outreach	Cheryl Shearer	317-841-8110	ck_shearer@comcast.net

INPAWS JOURNAL is printed on 100% post-consumer recycled paper.

PRESIDENT'S MESSAGE

The Perfect Tree

I just finished reading a book called *American Chestnut: The Life, Death, and Rebirth of a Perfect Tree* by Susan Freinkel. It tells the history of the American chestnut, including its importance to both wildlife and people, its almost total elimination at the hands of the chestnut blight, and efforts to save it from extinction. The blight is a non-native fungus imported by people (of course). In addition to being enjoyable reading, the book raised some interesting questions, mostly related to efforts to bring the tree back.

For those who don't know the story, the blight was first noticed at the New York Zoological Park in 1904. In the next 40 years it spread across the entire natural range of the chestnut tree, which included portions of Indiana, and killed between three and four **billion** trees. In many of those areas the chestnut tree had been the single most important tree in the forest.

Scattered specimens of the tree are still living today, many located outside the tree's natural range. Some have sprouted from the roots of former trees only to be attacked eventually by the same fungus. Others survive but don't thrive, apparently having some minimal natural resistance to the fungus.

Continued page 5

INPAWS PARTNERS

Indiana Urban Forest Council

Established in 1991, the Indiana Urban Forest Council is a nonprofit organization dedicated to promoting public awareness of Indiana's urban forests in and along parks, greenspaces, streets, and urban woodlands. The Council assists Indiana communities in protecting, expanding, and improving their urban forests. Membership is open to communities, tree boards, beautification committees, private organizations, corporations, non-profit organizations, students, individuals, and anyone with an interest in and appreciation of Indiana's urban forests.

The IUFC annually hosts winter and summer programs and a fall conference. These events serve as networking opportunities for urban forestry volunteers and professionals to meet others with the same ideals and challenges in our Indiana communities. These events also host nationally known speakers and presenters working on the latest urban forestry trends. IUFC Awards are presented annually to Indiana's outstanding projects and people in urban forestry.

The 2011 IUFC Summer Conference will take place July 13 at Coffee Creek Watershed Preserve in Chesterton, five miles from the Dunes of Lake Michigan. The meeting location will give weary conference attendees a break from the norm with a pavilion setting, an outdoor lunch, and a walking tour of a beautiful area of the state that has been affected by emerald ash borer. The Nature Conservancy and Indiana Wildlife Habitat Council will talk about about restoration projects that are putting trees, native landscapes, and wildlife back in places where industrialization had taken over.

To learn more about the Indiana Urban Forest Council, visit www.iufc.org.

Native Silverberry

continued from page 1

Numerous websites offered descriptions and photos of Russian and autumn olive, but nowhere did I find a comparison of these undesirables with native silverberry. As I scoured the Internet, a variant of a Sesame Street jingle ran through my mind. “Which of these things is not like the others?”

The only good description I found of native silverberry (*E. commutata*) was at www.gardenguides.com/taxonomy/silverberry-elaeagnus-commutata. This perennial member of the Oleaster family is found only in the wild. It is highly tolerant of cold, drought, and poor soil and provides cover and food for birds. Its fragrant tubular flowers are white or cream and bloom in clusters from the leaf axils. Its leaves are simple, alternate, crinkled, and silvery, its branches thornless. This sounded promising.

Like silverberry, both Russian and autumn olive have tiny fragrant flowers, but those of the Russian are yellow and not tubular. All three have deciduous, alternate leaves. The leaves of autumn olive (*E. umbellata*) are green above, silver below; those of Russian olive (*E. angustifolia*) silvery on both sides but slender and willow-like. Both autumn and Russian olive have thorns.

My shrub’s leaves appear dusty green above, silver below—similar to autumn olive, but it has no thorns—like native silverberry. Autumn olive has small juicy, red fruits; Russian olive has large silvery fruits shaped like olives. Silverberry has small round silver berries.

Maps on the Purdue Extension Service pest species website (http://extension.entm.purdue.edu/caps) show autumn olive established in every Indiana county, but Russian olive only in Tippecanoe, far north of me here in Harrison County. Autumn olive was not reported in the state in 1899 (Stanley Coulter, *Catalogue of Indiana Plants*) nor in 1940 (Charles Deam, *Flora of Indiana*), but by 2002 it was in every Hoosier county (William and Edith Overlease, *100 Years of Change in the Distribution of Common Indiana Weeds*, Purdue University Press, 2006).

Invasive.org, the repository of The Nature Conservancy’s invasive species database, advises getting rid of autumn or Russian olive in the fall by cutting back the trunks, then applying herbicide to the stumps. Cutting, mowing, or burning without using herbicide only increases re-sprouting.

Given Russian olive’s detection in only one distant county, its narrow leaves and non-tubular flowers, I eliminated it. That left silverberry’s evil twin, autumn olive.

A week later, the first ox-eye daisies were blooming, and I walked back down the hill to take another look at the “suspect.” One source said silverberry blooms in June, but here my specimen was, finished by Mother’s Day. A week before, its heavy scent made me dizzy, but now there wasn’t a hint of a flower or a fragrance.

But neither was there a hint of a thorn, and native silverberry is thornless.

Once you see a house finch and a purple finch side by side, you will never misidentify them again. But it is very unlikely that an autumn olive and a silverberry will ever line up side by side to give me such an opportunity for comparison.

Frustrated, I e-mailed Kay Yatskievych, research associate at Missouri Botanical Garden, author of *Field Guide to Indiana Wildflowers* (Indiana University Press, 2000), and the brain behind the downloadable Flower Finder for Indiana Spring Wildflowers.

To my dismay, Kay’s reply introduced me to yet another invasive Elaeagnus: *E. multiflora*, cherry silverberry. She cited an entry for the species in the *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (Henry Gleason and Arthur Cronquist, New York Botanical Garden, 1991).

I doggedly visited 15 web sites for *E. multiflora* and discovered that it is established in some parts of the eastern US (but not in Indiana), and is grown as an orchard tree in the northwestern US. Nurseries market this native of China, Korea, and Japan variously as Sweet Scarlet, Red Gem, Goumi, Gumi, or Natsugumi. It is a thorny, shrubby tree that matures to nine feet high. It is characterized by elliptic leaves that are green above and silver/brown below, creamy four-lobed flowers borne April to May singly

The Perfect Tree

continued from page 3

Many efforts to battle the fungus and prevent the demise of this once great tree have showed promise, but all failed. However, recent attempts are beginning to offer a glimmer of hope—and raise some interesting questions.

The most publicized recent effort involves crossing surviving American chestnut trees with the Chinese chestnut, which has good natural resistance to the fungus, and then backcrossing the hybrids with American chestnuts to get a tree that genetically is more than 90 percent native American. Obviously, this process is long and laborious, but it has resulted in developing trees that some believe can be reintroduced in North America. Others are bothered that this tree will not be a pure American chestnut, and question whether it should be reintroduced.

Another group is working strictly with surviving American chestnut trees, trying to magnify the natural resistance these survivors seem to have. This group thinks they will eventually be successful, but they are still a long way from having a tree that can be reintroduced.

A third group is trying to use modern biotechnology methods to transfer genes into the American chestnut tree that will make it immune to the blight. This approach makes a lot of people nervous, wondering if the transfer of totally unrelated genes into the trees will yield unexpected results. Given the tree's long lifespan, it will be many years before any unexpected results become known.

Although I understand the misgivings toward the 90 percent American chestnut, I am excited and supportive of its reintroduction. The irony is that, as a promoter of native plants, I am normally not thrilled by their cultivars and usually do not plant them in my home landscape. Am I being inconsistent? Possibly. But to me the benefits outweigh the negatives. Besides, the thought of a genetically engineered tree being reintroduced into nature really scares me. If the 90 percent American chestnut tree is viable, there will be no need for the bioengineered one.

—Tom Hohman

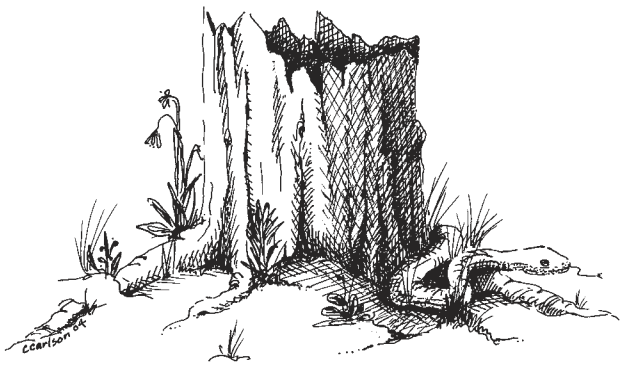


Illustration by Chris Carlson in R.A. Ingraham, *Swimming with Frogs.*

---

or in pairs in the leaf axils, and small oval berries that ripen to red in mid to late summer.

One northeast grower, who had planted 200 *E. multifloras*, complained, "I had to prune them after one year because they smothered the apple trees." Another said, "The deer don't eat them, as they have everything else, and I can harvest a unique berry for the tourist market."

So where did that leave me?

I considered the facts about *E. multiflora*:

● Its leaves are dark green above, silver/brown below, and not crinkled—unlike my bush's crinkled *dusty* green and silver leaves.

● Its flowers are creamy, faintly speckled with brown, and grow from the leaf axils singly or in pairs—unlike my bush's flowers, which are pure ivory and bloom in clusters of up to five.

● The tubular flower of *E. multiflora* ends in four lobes that are noticeably larger than those of my bush—or those in photos of *E. commutata*, native silverberry.

● *E. multiflora* is thorny—unlike my specimen.

Based on these differences, I ruled out *E. multiflora*, but I am still left with the possibility of *E. umbellata*, autumn olive.

Kay noted, "*E. umbellata* is very common in south-central Indiana where I do most of my botanizing. I do have a record of an escape of *E. multiflora* [in LaPorte County] and it's possible that it's more widespread, since it and *E. umbellata* are difficult to tell apart."

She added, "Good luck with your identification. If it is *E. multiflora*, that would be an interesting record, given how big your plant is."

If there is a chance that the giant shrub in my field is native silverberry, I don't want to kill it. There remains one last clue, but I will have to be patient. Small, silver fruit in the fall: native. Red fruit: invasive.

At the first sight of a red berry, I will send my husband down the hill with the hatchet.

Rain Garden Plant List

SHRUBS

7 Staghorn sumac *Rhus aromatica*

1 Golden falsecypress *Chamaecyparis pisifera aurea*

1 Pyramidal arborvitae *Thuja occidentalis* 'Holmstrup'

7 Hancock coralberry *Symphoricarpus* 'Chenaultii'

SEDGES

64 Frank's sedge *Carex frankii*

64 Yellow fox sedge *Carex annectens xan.*

FORBS

16 Marsh milkweed *Asclepia incarnata*

32 New England aster *Aster nova-angliae*

16 False blue indigo *Baptisia australis*

32 Purple coneflower *Echinacea purpurea*

32 Wild geranium *Geranium maculatum*

16 Sneezeweed *Helenium autumnale*

16 Monkeyflower *Mimulus ringens*

32 Blue flag iris *Iris virginica shrevei*

32 Blackeyed Susan *Rudbeckia fulgida speciosa*

A RAIN GARDEN PARTNERSHIP

Rain, Rain, Come

May 2010: Rain Garden Performs First Flush Treatments

It's a beautiful 2011 spring day—birds singing, flowers blooming, and their fragrances wafting through the freshly washed air following a May rain on the grounds of Cold Spring School, Indianapolis Public Schools' environmental studies magnet. INPAWS' own Donovan Miller, Cold Spring's Chief Steward of Greenhouse and Composting Operations, prepares for another day of student activities. Today's challenge: dead-heading last year's faded foliage and removing nuisance weeds. The site: a rain garden installed the previous May by volunteers from the American Society of Civil Engineers with the assistance of Cold Spring School students.

As the children file out the building and head toward today's project, 8-year-old Kenneth James confronts Mister Donovan (that's what the kids call him): "Why do we have to do this work? And what's the big deal about rain gardens anyway?"

Mister Donovan, in his quiet, reassuring voice, replies: "Why Kenneth, there are many reasons to build and tend a rain garden!"

► First of all, it's a beautiful combination of plants that change throughout the seasons!

► Second, a rain garden can be entirely planted with native plants that support many types of insects, birds, and other animals. We can enjoy all of these as they visit our garden. By providing food, nesting areas, and cover from predators and foul weather, we can be certain to enjoy their presence for years to come.

► And that's not all. This garden employs plants that enable rain water to soak back into the ground to sustain our local landscapes and trees, rather than rushing into our streams and rivers.

INPAWS members Ken Remenschneider, Donovan Miller, and Wendy Ford are founding members of the Friends of Cold Spring School, which fosters partnerships to lend expertise and enthusiasm to the learning community at this IPS environmental studies magnet. Buoyed by the rain garden experience, Remenschneider, a landscape architect, recently led campus master planning for the school's historic buildings and lands.

▲ A lesson in surveying and associated math skills.

◄ ASCE volunteer explaining the fine points of hydrology. Photos by Graeme Sharpe.

& Stay

Ken Remenschneider, ASLA, CLARB
Remenschneider Associates, Inc.

► Finally, a rain garden does a great job of treating the first flush of airborne and surface pollutants that come with the rainwater at the beginning of a storm. The plants in our garden, with the help of bacteria and other microbes, capture and filter these pollutants. Eventually they break them down and convert them into harmless, even beneficial compounds.

Mister Donovan notices he still has not motivated young Kenneth James. So he takes another tack. "Do you see that monarch butterfly over there in the rain garden?"

"I do!" replies Kenneth. "Our teacher Ms. Hammon taught us about their cool life cycle and the way they go from egg to larva to cocoon to butterfly, all in one year!"

May 2011: Rain Garden Sees a Flush of New Growth

Mister Donovan shows Kenneth the milkweed plant in the rain garden where the monarch will lay her eggs later this summer. He assures Kenneth that if he helps tend the garden, Donovan will let Principal Darragh know when the monarch larvae hatch, so that Kenneth's class can come to observe their voracious eating habits. Before long, Kenneth James is busy at work alongside his classmates, planting milkweeds for the monarchs.

Master Gardener Donovan Miller donates his time at Cold Spring School managing the greenhouse, school composting operations, and "hands-on" class greenhouse projects. He also faithfully tends the school's cultivated landscapes, including a prairie, the rain garden, and a native plant demonstration garden. Donovan is a member of the INPAWS Youth Outreach committee and spearheaded the initiative to create Letha's Youth Outdoors Fund.

Cold Spring School students dig in, installing 400 plugs of forbs and sedges.

What It Took to Build the Rain Garden

The rain garden project was a collaboration between adult volunteers and the children of Cold Spring School. Its genesis was a $20,000 grant from United Water for the construction of rain gardens at local elementary schools. The intent: to educate children about water—the very same water we've had since the beginning of time—and how it cycles through our environment. Volunteers at Remenschneider Associates, Inc., designed the basin and specified the plants. Volunteers from the Indianapolis Branch of the American Society of Civil Engineers (ASCE) engineered the design and supervised the construction.

The engineers' project plan provides a snapshot of the collaboration and addresses the most challenging aspect—getting everything in place for "game day" to run smoothly.

Week Before Planting: Volunteer tree service contractor clears rain garden site and grubs out existing plantings.

Several Days Before: Volunteer contractor completes dirt and tile work. More than 30 cubic yards of soil are excavated and removed, and more than 40 lineal feet of drain tile are eliminated. One 12-inch diameter drain tile is installed for overflow storm events. A photographer stands by to document the steps.

Two Days Before: Volunteers are on hand when plants arrive at the school to open plant boxes, organize plants in a staging area, and keep them watered once a day until planting. (This was a good teaching opportunity: children were engaged in this effort and learned which plants were which.) Seventeen native shrubs are planted by the volunteer landscape contractor.

Game Day: The volunteer rain garden team arrives early to lead the operation. Another 12 adult volunteers, working in half-day shifts, come to assist in and oversee activities in the morning and afternoon.

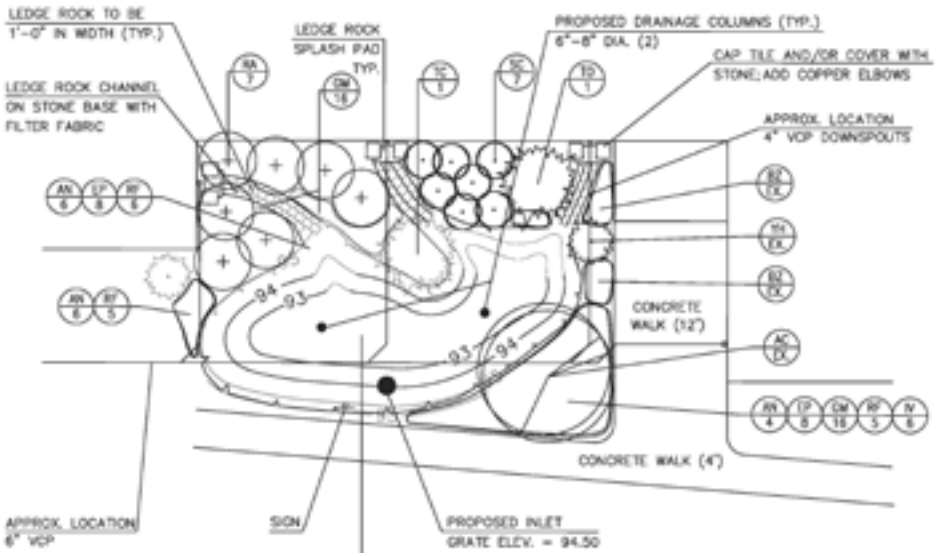
Six-foot tables are set up to stage the 400 perennial plant plugs in advance of engaging 4th and 5th graders in the planting. The plants are labeled and a plant poster with the garden design prepared for the students' use. They plant the slopes of the

Rain Garden
continued from page 7

rain garden basin first, the basin bottom next, and the meadow areas at the upper rim of the basin last.

Aftercare: The rain garden team presides over watering, which should happen every third day when dry. Sprinklers are best for this critical need.

A year later, the rain garden begins the season with a flush of new growth. To date, no rain events have overflowed the basin, which means that the rain garden plants and the engineering design are doing a fantastic job of putting the storm water back into the ground to recharge groundwater supplies and reduce runoff and erosion.



Sponsors of the Cold Spring School rain garden were the Indianapolis Branch of the American Society of Civil Engineers, ASCE's Environmental and Water Resources Institute, and United Water. Supporting sponsors were Remenschneider Associates, Inc., Smock Fansler Croporation, Greenleaf Landscape, and Spence Restoration Nursery.

A Learning Lab

In terms of education, the rain garden installation is a win-win for students, adult volunteers, and teachers alike. The site was chosen for greatest visibility—right by the school entrance, and coincidentally the site of three downspouts that were carrying superheated water and pollutants from the roof directly into local streams and rivers, to the detriment of aquatic life.

With the rain garden so close at hand, students can see the water being treated in the way that Nature intended, percolating slowly into the soil to recharge the aquifer and eventually daylight into streams, cleansed of pollutants and back to a normal temperature and rate of flow.

For the ASCE volunteers, it was a welcome opportunity to show children why math is important and why science is interesting. Students learned to use the transit and level for surveying, they learned about the hydrologic cycle, and they became familiar with native plants appropriate for a rain garden—sedges and forbs. For the teachers, the project provides an opportunity to build many lessons for the classroom around the math, biology, and hydrology of the rain garden.

Landscape architect Ken Remenschneider and the ASCE rain garden team worked with the children and teachers in advance of game day so that they already knew a lot about why they were planting a rain garden. "The beauty of an elementary school rain garden project can be seen in the eyes of the children," says Remenschneider. "Through the caring tutelage of their teachers and ASCE volunteers, they come to understand the benefits to native plants, wildlife, and the water that sustains life on earth, and they get excited about having a positive impact on our environment."

Visitors to Cold Spring School will find a sign posted near the entrance telling the rain garden story long after the students who planted it move on to middle school.

Bobbi Diehl, Amateur Naturalist

A Trip to Little St. Simons Island, Georgia

The Nature Conservancy Legacy Club sponsors trips to biologically rich places around the US. Some of you may get these brochures and be tempted but uncertain about paying the pricey fee. Bobbi Diehl sprang for such a trip and found it "definitely worth the cost." Read on.

When my husband Jim and I received the 2011 TNC Legacy Club trip brochure in January, we immediately focused on the May 8-14 stay at Little St. Simons Island, an unspoiled Georgia barrier island near the Florida border, and signed up as soon as we could. Let's just say we were ready for a major change from shoveling snow, and hang the expense! That May trip filled up immediately, but TNC kindly decided to sponsor a March overflow trip, and we were on the list.

No more than thirty guests at a time can be accommodated on the 10,000-acre island, which consists of salt marsh, maritime forests with cypress, live oak, and slash pine, and seven miles of beaches. It is accessible only by boat. Today the island is partially owned by descendants of Philip Berolzheimer (Eagle Pencil Co.) who acquired it in 1908. About five years ago former Treasury Secretary Henry Paulson and his wife, Wendy, purchased three-quarters of it for a reported $32.65 million. The couple are serious nature lovers and visit the island several times a year.

On 10 March we left for the two-day drive to Georgia. Once on big St. Simons Island, we parked the car at the Marina and, along with our nine fellow TNC travelers, boarded the boat for the ride to Little St. Simons. En route, all we could see was the expanse of marsh grasses, broken up with waterways. A second boat followed with our luggage, which was unloaded and left outside the door of our assigned rooms.

The home base of our island stay was the old Lodge. Its front parlor, decorated with deer heads, featured an amazing fireplace and a well-furnished bar where guests could help themselves to libations or a Georgia microbrew on tap. A back parlor/ natural history museum offered additional seating. Appetizers were served during cocktail hour, and most meals were served family style in two nicely appointed dining rooms. One day we rode in the trucks to a beach and were served a picnic luncheon of beef fajitas and corn and crab chowder. The first evening, we were treated to a shrimp boil. The last, an oyster roast, where we were furnished knives and special gloves to wear, and taught how to open the critters.

Carolina jasmine (*Gelsemium sempervirens*), a staple of Southern gardens. Photo courtesy www.gardensoyvey.com.

The cooks and servers produced excellent, beautifully presented food under rigorous conditions. The fresh herbs and salad greens are grown in their (fenced in) organic garden, which is lovingly tended, and in general they take advantage of seasonal produce. Among the many "green" practices on the island, they maintain a compost pile, and little plastic is in evidence.

We visitors stayed in two guest houses with four bedrooms each (eight guests share the living room with fireplace and screen porch) and several guest cottages. The accommodations were spacious and comfortable, but not luxurious—a shower in the bathroom, for instance, but no tub. The screened windows opened to catch the breezes, and there was also a sliding door to the back deck. A ceiling fan provided additional breezes when necessary.

As a Midwesterner, I was puzzled at first that the views from our room (in Cedar House) changed constantly. Sometimes we had a water view on two sides. Other times there was only marshland. When the penny dropped, I was fascinated by the coming and going of the tides. Our stay luckily coincided with the full spring moon, when the tides are especially high. One moonlit night we were taken out to Main Beach after dinner at high tide. It was chilly but lovely, with the moon reflected in the ocean.

Different excursions were offered every day. Several times a week there was an early birding hike, or an evening hike to look for night birds. Guests could hike, bike, boat or ride around the island in the back of one of the big white pickups driven by the six naturalists on staff. The naturalists are the crown jewels of the resort. They know everything about the island, and love to impart their knowledge. One of them, Ben the herpetologist, loves to show guests his favorite snakes. In his company, we saw three different Eastern diamond-backed rattlesnakes and assorted other reptiles and amphibians, including many alligators from babies to huge adults.

Continued page 11

Arundinaria gigantea

Brad Salmon, Bamboo Afficionado

Allow me to begin this article with a confession—I am an avid bamboo grower and proponent. This generally puts me at odds with native plant enthusiasts, due to the "running" species of bamboo's capacity to colonize an area and spread beyond desired boundaries. Although more properly classified as a spreading plant than an invasive, bamboo can indeed become problematic when planted irresponsibly. I think that the appropriate use of this valuable plant, with more than 1,200 species, has the potential to curb the destruction of native bamboo forests, but that's a topic for another forum.

When bamboo first captured my attention, I consumed every article, book, website, and conversation I could find on the plant, and was surprised to learn that a species of bamboo is native to southern Indiana—*Arundinaria gigantea*.

The US has three recognized native species of bamboo, all forms of *A. gigantea,* including two sub-species: *A. gigantea* ssp. 'Tecta' and the newly recognized deciduous form, *A. gigantea* 'Appalachiana'. Originally it ranged from Maryland, Virginia, and Florida to Texas, northward to Missouri and the Ohio River Valley, in its northern-most range of south central Indiana forming vast "canebrakes" or groves.

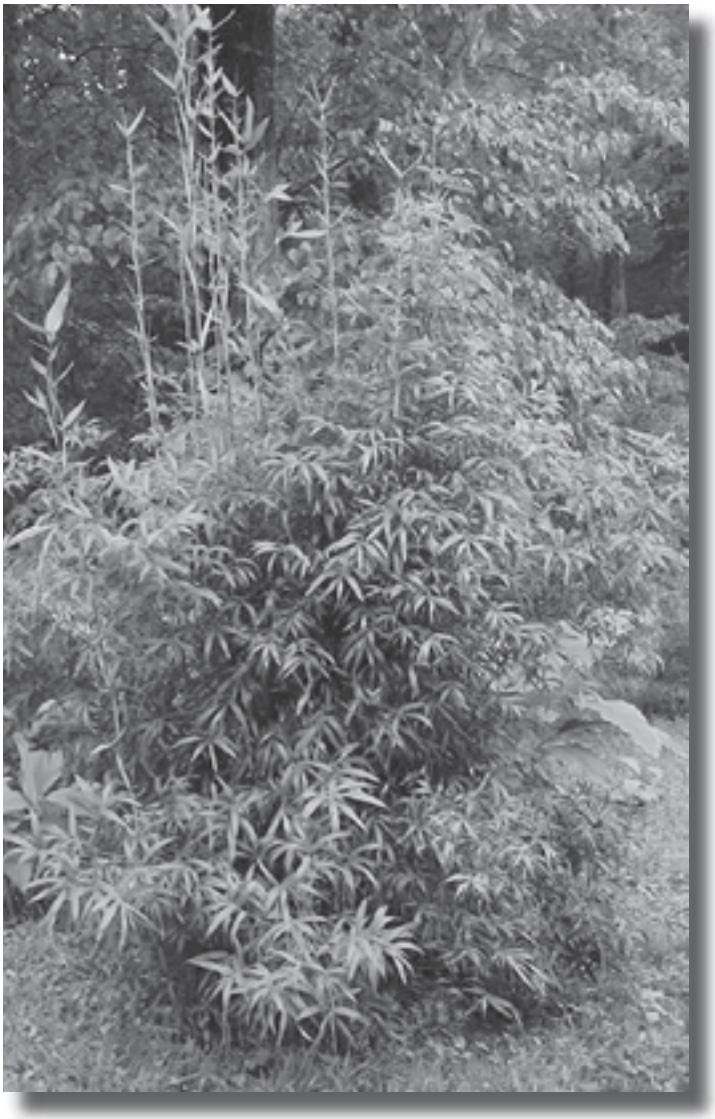
This bamboo has a rich and important history in the US, but in my experience few people are aware of this threatened native Indiana plant. I suspect that few readers of this journal have ever encountered *A gigantea* in the wild despite its once having been widely distributed in the state.

Listed at the right are some notes from Charles Deam regarding the location of native groves. I have attempted to find some of these stands to see if they continue to exist but have had little success in finding more than a few scattered plants.

A. gigantea forms colonies on silt-rich streambanks, the canes generally ranging from 1 to 5 meters in height by 1 to 3 centimeters in diameter. The groves produce new canes in early to mid-summer. These first-year canes have "persistent culm sheaths" and only one or two simple branches during the first year. In subsequent years, additional branches and foliage leaves tiller up the initial branches, increasing significantly in years two and three.

Bamboo is a unique plant in that it rarely flowers and sets seed, with decades between flowerings, but the entire grove flowers at once, setting vast amounts of seed. There are local tales of how fat the squirrels were during periods of the canebrake flowerings. Over the years, *A. gigantea* has flowered and produced multiple clones, somewhat adapting to local conditions and resulting in varying form and appearance.

Native Americans utilized the bamboo for basketry and also hunted the canebrakes, as they knew that wildlife sought refuge there.



During the civil war, the underground railroad used the vast network of groves for concealed passage during the northern migration. In some groves, the density was estimated to be 65,000 culms per acre. As settlers moved about, they learned to associate the canebrakes with fertile soil, and huge areas were cleared for farming, breaking up the vast groves into small islands.

The extinction of the passenger pigeon, Carolina parakeet, and Bachman's warbler can all be attributed to the loss of the canebrakes.

Brad Salmon is pleased to introduce you to this rare Indiana native plant. For more information, contact Brad at info@needmorebamboo.com.

"Plant Detectives" on Hiatus

Faithful contributor Barbara Plampin, PhD, is taking a break this issue to pursue a major research project. She's off seeking a lost lake in northeast Porter County. Read all about it in the next *INPAWS Journal.*

Native Bamboo Sightings by Charles Deam

Clark—In a low place in a Beech & Sugar Maple woods 1-1/2 miles southeast of Borden.

Dubois—1.8 miles north of Birdseye on dirt road along Lick Fork; small stand in poorly drained soil near road; with Rhus, Typha, and other grasses; culms to 2 meters tall, all sterile; T2S R3W S13 SW ¼; elevation 570 feet.

Gibson—In a low woods on the north side of Eggwood Pond which is about 5 miles northwest of Patoka. This pond is an old White River channel.

Gibson—Goose Road - First flowering.

Harrison—Lower edge of wooded slope between Locust Point and Rosebud.

Harrison—Rocky wooded bluff of the Ohio River 3 miles west of Mauckport.

Jefferson—Old Chamber's place.

Knox—In a low woods in 1 mile of the southwest corner of the county. Associated with Ulmus americana, Gleditsia triacanthos, Corya laciniosa, Tecoma radicans, Cercis canadensis, Ambrosia trifida, etc.

Lawrence—Low woods and along fence rows, waste places, and foot of wooded slope, ½ mile north of Huron. One specimen measures 9 feet. Well established. Partly associated with Quercus sensibilis, and Cephalanthus. Also along Beaver Creek.

Perry—Wooded Bluff of the Ohio River between Tell City and Cannelton.

Posey—In a low woods on the north side of Pitcher Lake, about 5 miles northwest of Mt. Vernon.

Posey—River Valley Hoovey Lake.

Posey—Bank of the Wabash River about ½ mile south of Pitcher Pond, of about 5 miles west of Mt. Vernon.

Ripley—A colony about 100 feet long along a roadside ditch near a house on high ground about 2 miles southeast of (Cross Croes Crres ?) Plains. All plants about 6 feet high. I think it has been introduced but I was not able to see people at house. No one at home.

Scott—Near creek bank 2 mi. N., 2 mi. W. of Scottsburg.

Spencer—In a slough 5 miles southwest of Rockport.

Spencer—Plants 5-9 feet high. In 29 about 7 miles southwest of Rockport.

Warrick—In a slough 3 miles southeast of Newburg.

Washington—A small colony in the trough of a beech ravine on the rocky wooded slope at Big Spring Church about 6 miles north of Palmyra. The colony seemed to form a band across the ravine. No doubt a native here.

Little St. Simons Island

continued from page 9

Stacia, another naturalist, is an expert on the plants and birds. One morning she led us on a botany hike in some of the wooded portions of the island. From her we learned that the showy vine with yellow flowers that was growing along along I-95 and also blooming in their forest is a native, Carolina jessamine as they call it down there (*Gelsemium sempervirens*), not a non-native as I'd feared. It is assertive, but I was assured it does no harm. An invasive native, Spanish moss (not Spanish and not a moss), is everywhere, hanging from the live oaks and bald cypresses and lending that Southern-gothic atmosphere. You can tell you're not in Indiana from the understory forest species—cabbage palm, palmetto, red bay, wax myrtle, and *Magnolia grandiflora*. In the salt marshes, different species of grass grow, depending on the elevation of the land (as little as 2 cm makes a difference!). I saw no kudzu on the island. One of the few invasive non-natives I did see is bull thistle. The naturalists destroy it whenever they encounter it.

One morning Stacia drove Jim and me out to the beach, which we had all to ourselves for birding and shelling. It was low tide, and we saw many unusual shells. She picked us up an hour later and told us the names of the ones we had collected.

Little St. Simons is known as one of the best birding spots on the East Coast. About 220 species migrate through, nest, or reside year round. European fallow deer (brought over as game animals) and armadillo also live on the island, and otters, dolphins, and whales swim off shore. Raccoons are a major predator, but the alligators help to keep them in check. Feral pigs may swim over and cause tremendous damage, so traps are occasionally set for them. The non-native fallow deer are destructive as well; word is that the Paulsons would like to remove them but the Berolzheimers want to keep them. So far they remain.

If this all sounds idyllic, it certainly was to us. Even the weather was warm but not too warm—in the 70s. But when you ask someone there what is the best time to visit, the response is, "What kind of bugs do you like?" In March, visitors may encounter a few mosquitoes and lots of sand gnats, but later come horse flies, black flies, etc., etc. Baskets of bug repellent are stashed on the porch of each cabin and house and on all the trucks, but they do little to deflect the bugs. I ended up pretty much ignoring them. A fellow guest outfitted herself in an Original Bug Shirt (www.bugshirt.com), and next time I'll do the same.

On 19 March, we packed our bags, took a fast ride back on the boat, and parted from our TNC friends, promising to stay in touch. We picked up our luggage, which had been transported on the second boat, loaded it in our very dusty and bird-poop-covered car, and headed home to Indiana.

A sojourn at Little St. Simons may not be for everybody. But it is most definitely suited to the nature lover or birder who likes comfortable, not posh accommodations, excellent food and drink, and peace and quiet. Did I mention the lovely scents of the forest and ocean? Little St. Simons was a wonderful interlude and just what we needed—in short, well worth the money.

Legacy Club trips are open to Nature Conservancy supporters who commit to conservation by making a life-income gift with the Conservancy or by naming the Conservancy as a beneficiary in their estate plans. Details at www.nature.org/gift-planning/legacy-club.

Landscaping with Native

Saturday, July 9
10:00 a.m. to 4:00 p.m.

Registration is limited. To receive addresses and directions to the gardens, send an e-mail to gardentour@inpaws.org or phone Amy Perry at 317-696-5074.

INDIANAPOLIS NORTH SIDE

Perfectly Imperfect Woodscape

Work-at-home couple Marcia & John Miller glory in the forest vistas framed by the large windows of their prairie-style home, especially when the palette turns to gold in the fall. To embellish the views, they "painted" their property with perennials and shrubs, leaving just a little lawn for contrast.

Close to the house the yard has an Asian feel, matching the décor of the spare interior rooms. From Japanese maple, alumroot cultivars, and hostas, the plantings transition to ever wilder woodlands that fill with naturally occurring Jacob's ladder and myriad other ephemerals in the spring.

The front yard wears a neat and trim look to appropriately greet clients visiting the home office. Islands of neatly bordered mixed native and exotic plantings include ornamental viburnums, ferns, Virginia sweetspire, goatsbeard, crested iris, and pagoda dogwood. The side yard sports a native biohedge that nourishes the local birds, who provide avid birder Marcia with endless entertainment from the kitchen and living room windows.

The backyard ravine is the real jewel of the property. Descending from the raised deck, you'll view massed native shrubs and wildflowers reflecting a woods edge plant community. Statuesque Joe-Pye weed and bottlebrush buckeye provide drama in their turn, and Virgin's bower disguises a chainlink dog run. Descend further and you're lured by a bridge and sitting area in a natural woodland recently rescued from truckloads of euonymus wintercreeper. Emerging from the streamside woodland into a meadow, a meandering path leads past a persimmon to a streetside exit framed by walnut saplings and cup plant.

The perfection in this property is in the overall design intent and planted woods edges; the imperfection is in the natural processes (windblown and bird-borne seeds) that have created a patchwork diversity of species over the years in this woodsy haven. Under Marcia's laissez-faire policy, if a wildflower seed lands among other plants, it gets to live there. The mix of species creates a happy jumble that eliminates the need for obsessive weeding.

Coneflower illustration by Chris Carlson in R.A. Ingraham, *Swimming with Frogs.*

Front yard

Back yard

Praising God's Handiwork

Echoing a trend for congregations to steward the land as part of their spiritual mission, Lisa Meek led the drive to use native plants in the landscaping of her beloved church. Her motivation: to compensate for what urbanization has done to the environment and to provide habitat for birds, butterflies and "good" bugs. Other congregants have pitched in, planting and maintaining the gardens.

Lisa's plan was launched two years ago when old, overgrown foundation plantings were ripped out. With its new landscaping, the church is graced by a large rain garden, wildflower and exotic ornamental

Plants 2011 Garden Tour

islands in the parking lot, and a sample prairie. Redbud trees against a backdrop of evergreens screen a meandering walkway that invites contemplation of Nature's wonders. Species on display include mountain mint, culvers root, coneflower, cardinal flower, butterfly weed, bee balm, showy blackeyed susan, prairie dropseed, two varieties of sedges, and wild blue iris.

This example of the "green congregation" movement demonstrates how one person can spearhead an education program that touches a wider audience than just avid gardeners—and have fun doing it.

All gardens

Wilderness in Suburbia

Husband-and-wife team Mary and Barry Miller value wildlife so much that they've created an Indiana Wildlife Federation Certified Wildlife Habitat in the midst of neat, trim suburbia. No "wild" look here, though. Their self-designed creation fits beautifully into the neighborhood, with contained gardens nestling against the house and fences. The front yard's minimal lawn sets off a butterfly/rain garden and a bed of natives and select non-natives that curves invitingly from street to front porch. Judiciously used decorative trellises and a lamppost lend height to the plantings.

To the swing set and patio in the traditional suburban backyard the Millers have added prairie plants, an herb garden, a vegetable garden, and water-capturing plants in a long ditch where subdivision stormwater flows.

On display at this garden will be compass plant, asters, cup plant, meadow rue, rattlesnake master, wild quinine, columbine, liatris, ironweed, and boneset.

Mary and Barry leave the grasses and forbs standing over the winter to provide cover for wildlife. Birds twittering and cheeping signal their approval of this arrangement. Goldfinches will abound in July.

INPAWS will be selling its new tee-shirts, hoodies, and hats at this residence the day of the tour.

Front yard

Back yard

Farm Country Cornucopia

Refugees from suburban Carmel, the new owners of 77-acre Creekside Farm in Hamilton County wanted to decrease the amount of lawn there was to mow. Tallgrass prairies were the answer! Four huge stretches of grasslands sprawl along the long entrance drive and behind the upscale farmhouse. The spacious property retains a peaceful park-like ambiance—you feel as though you can see forever!

Lisa Meek and husband Mike Warren use good wildlife practices to manage the prairie areas, burning or cutting two each year. They planted the prairies five years ago with a seed package containing 27 different varieties of forbs, including butterfly weed, Culvers root, cup plant, and white snakeroot. As expected, each year a few types of forbs heretofore unseen pop up as the slow germinators make their appearance. The grasses include sideoats gramma, big and little bluestem, and Indian grass.

Beyond a traditional lawn and blackberry patch, a large swath of woods lines a wide creek. Birdsong fills the air. One of the couple's goals was to return quail to the area, and quail abound there now. The woods were planted using a seedling package available from the Department of Natural Resources Division of Forestry and now provide a veritable arboretum for those wishing to explore native trees and shrubs, including Kentucky coffee, black gum, persimmon, pawpaw, and five varieties of oak.

Adding to the intrigue, Lisa and Mike just happen to maintain a small airport and keep horses along with this treasure of native plants.

Creek area

LAFAYETTE AREA

Additional tour gardens may be scheduled in the Lafayette area. Visit www.inpaws.org for further announcements.

Pressed Plants Chart City's Vanishing Native Flora

More than half of the world's population now lives in cities, yet we know little about how urbanization affects biodiversity. In one of the first studies of its kind, ecologists in Indianapolis have used 70-year-old dried plant specimens to track the impact of increasing urbanization on plants. The results were published in April 2011 in the British Ecological Society's *Journal of Ecology.*

Led by Dr. Rebecca Dolan, Director of the Friesner Herbarium, Butler University, the team examined 2,800 dried plants collected around Indianapolis before 1940, comparing these with plants they and their students found at 16 field sites between 1996 and 2006.

They discovered that increasing urbanization has wrought major changes to Indianapolis's plant species. Although the city supports a similar number of plant types as it did before 1940—around 700 species—today's flora has fewer native plants and more non-native species or "exotics," which have been introduced from other parts of the world and are now spreading on their own.

The study found that over the past 70 years, Indianapolis's native plants have been lost at a rate of 2.4 species per year, while over the same period 1.4 non-natives arrived each year. "This study shows that our flora is becoming less distinctive," Dolan laments.

This toll comes against a backdrop of already horrendous losses. In the 1820s, 98 percent of Marion County, Indiana, was covered in forest. More that 70 percent of this was beech and maple upland forest, with a small amount of oak-hickory forest on drier ridges. One hundred years later, about 80 percent of the land had been given over to agriculture. Rapid urbanization in the 1960s and 1970s reduced the forest even further, to around 18 percent.

Plants now lost to Indianapolis include Queen-of-the-prairie (*Filipendula rubra*), a member of the rose family with fantastic wands of pink flowers. It was last found growing in a damp spot by the Water Company Canal at 52nd Street in July 1935. Another loss is the Virginia bunchflower (*Melanthium virginicum*), a member of the lily family with striking stalks of white flowers.

Exotic arrivals include the invasive Japanese knotweed (*Fallopia japonica*) and Amur bush honeysuckle (*Lonicera maackii*). "Japanese knotweed was brought to our area as an ornamental," says Dolan. "It spreads readily by seed and by root sprouts, forming thickets that choke out native species. Amur bush honeysuckle was once promoted by the USDA's Soil Conservation Service for erosion control and wildlife food, but we now know it does neither. Instead, it has spread and become a pest plant, covering the banks of many of the city's streams and woodland edges, and land managers spend a lot of money eradicating it."

The study has important implications for cities, pointing to a loss of biodiversity and a threat posed by non-native species. Because so many people now live in cities, Dolan says, urban floras are becoming increasingly important. "As cities continue to grow, urban green spaces are becoming important refuges for native biodiversity and for people. In coming decades, most people's contact with nature will be in urban settings, so the social importance of urban plants has never been greater."

The study sends a clear message for the future: Be careful when planting non-native plant material, especially in great numbers, because introduced non-native plants are likely to become pests.

Dried specimen of sensitive fern (*Onoclea sensibilis)* from Friesner Herbarium, Butler University.

Queen-of-the-prairie (*Filipendula rubra*) was last seen in Indianapolis in 1935.

Learn more about the study in Rebecca W. Dolan, Marcia E. Moore, & Jessica D. Stephens (2011), "Documenting effects of urbanization on flora using herbarium records." Journal of Ecology *(18 March 2011), doi: 10.1111/j.1365-2745.2011.01820.x. Copies of the paper and photographs are available upon request to Marc Allan at mallan@butler.edu.*

The Friesner Herbarium, Butler University, a systematic collection of over 100,000 dried, pressed, and preserved plant specimens, completed the first phase of digitizing its collection this year. For more information, visit www.butler.edu/herbarium.

F I E L D N O T E S

2011 INPAWS Small Grants Awarded

This year, the Small Grants program received a record breaking number of applications! It is positive to see expanding interest in native plants and the effort individuals and groups put into such projects. Thank you to the members of the grant committee for all of their hard work and dedication! Awards went to the following:

Cold Spring School's *Native Plant Demonstration Garden*, Marion County

Native Prairie Park at Morocco Lions Club, Newton County

Native Wildlife Habitat Gardens at Wesselman Woods Nature Preserve, Vanderburgh County

Wildlife Habitat at 37 Place in Indianapolis, Marion County

Hands on Habitat at Union Elementary School, Zionsville, Boone County

Expansion of Taltree's *Native Plant Garden*, Valparaiso, Porter County

Rain Garden at The Timbers of Indianapolis, Marion County

The deadline for 2012 Small Grant applications will be February 1, 2012.

Boot Brush Effective at Owen County Preserve

The Nature Conservancy installed a boot brush station at Green's Bluff Nature Preserve (Owen County) years ago, concerned about hikers introducing garlic mustard or stiltgrass into this popular preserve. INPAWS Invasives Education chair Ellen Jacquart leads spring wildflower hikes there every year and is always looking for that first garlic mustard plant of the season. On an April hike, she found it—a first-year seedling that came up in the gravel under the boot brush! After seeing that (and taking a picture and then pulling it), she searched even harder in the preserve but found no garlic mustard. "I'm not suggesting boot brushes are a perfect solution," Jacquart says. "Clearly, not everyone will use them, and animals or water can certainly move seeds around, too. But it is good to know that it appeared to work in this case."

Mark Your Calendar

Saturday, July 9 INPAWS Garden Tour Indianapolis north side. E-mail gardentour@inpaws.org or phone 317-696-5074 to register.

Saturday, July 16 INPAWS Hike Henderson Park, Washington County. Led by Allen Pursell.

Tuesday, September 13 Doug Tallamy in Indianapolis.

Wednesday, September 14 Doug Tallamy in Fort Wayne.

Thursday, September 15 Doug Tallamy in South Bend.

Saturday, September 17 INPAWS Hike Kankakee Sands, Newton County. Led by Stephanie Frischie & Alyssa Nyberg.

Saturday, October 15 INPAWS HIke Morgan-Monroe State Forest nature preserve, Monroe County. Led by John Bacone.

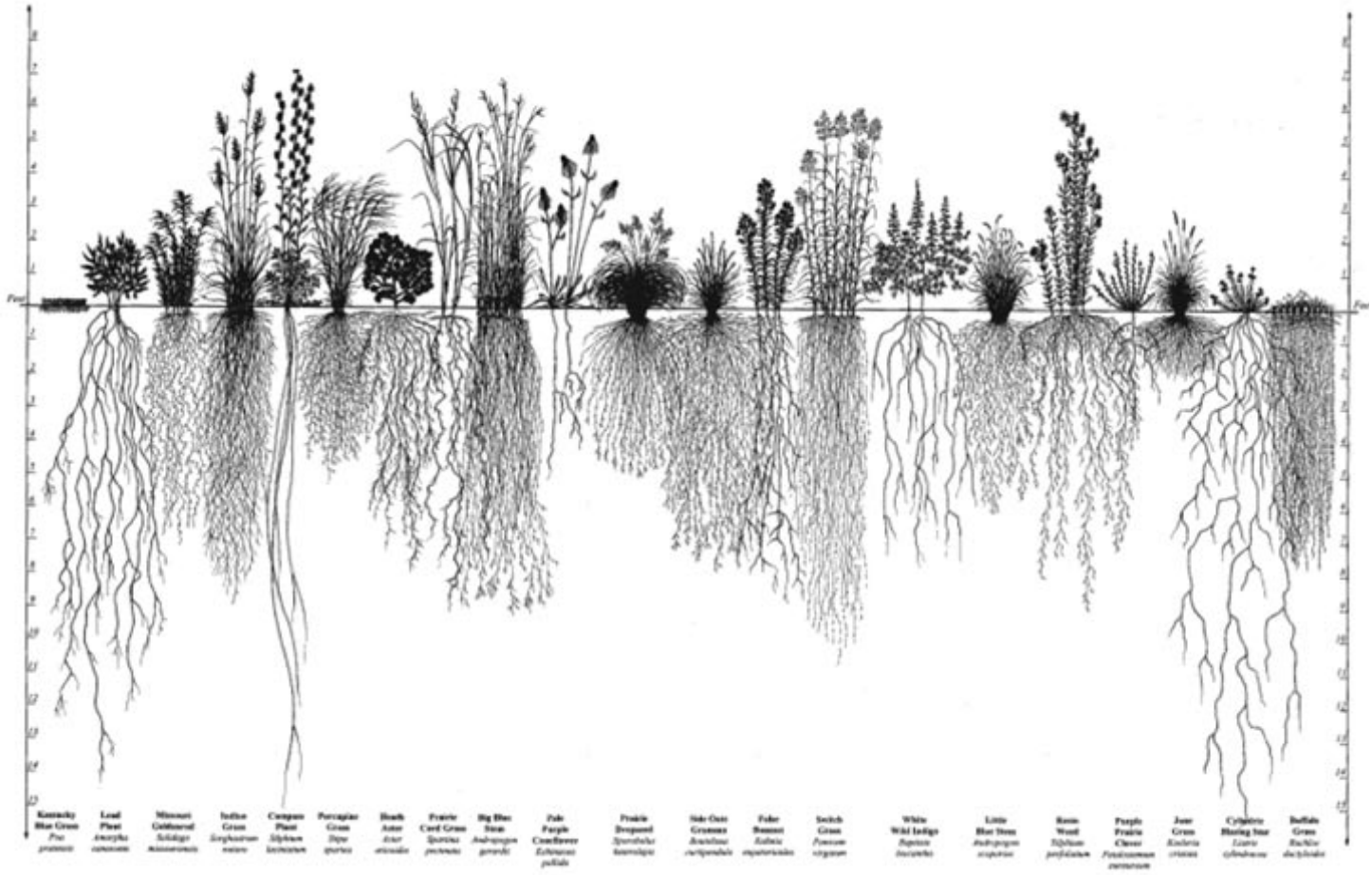
Saturday, November 12 AC2011 INPAWS Annual Conference.

Watch for announcements of INPAWS events and field trips in the mail, via e-mail, and at INPAWS.org.

Now Available! INPAWS Logo Apparel

Thanks to the efforts of Nancy Hill and Kelly Spiegel, you can purchase colorful INPAWS tee-shirts, hoodies, and hats at selected INPAWS events. Display your passion for native plants by wearing a coneflower, Jack-in-the pulpit, or logo straw hat wherever people congregate this summer. Items will be for sale at the INPAWS garden tour.

INDIANA NATIVE PLANT
and Wildflower Society
P.O. Box 30317
Indianapolis, IN 46230-0317
Address Service Requested



Why Native Plants Belong in Rain Gardens

An often reproduced drawing, worth repeating for those intending to keep rain on their property instead of rushing it off into sewers and storm drains. Native plants' extensive root systems improve the soil's ability to infiltrate water and withstand wet or erosive conditions. Note the greater biomass below the surface than above in the depicted grasses and forbs. Compare them to Kentucky Bluegrass, shown on the far left, with its shallow root system. *Illustration provided by Heidi Natura of the Conservation Research Institute. Find the full-size illustration at USDA Natural Resources Conservation Service.*