On The Fringe
Journal of the Native Plant Society of Northeastern Ohio

Request for Proposals for 2014 Annual Grant

The Native Plant Society of Northeastern Ohio is accepting applications for our 2014 Grant(s). We will consider projects that demonstrate excellence in research, conservation or education that clearly support the mission of the Native Plant Society of Northeastern Ohio. The amount of each grant will be up to $500. The number of grants will depend on available funding. Submissions must be received by 5:00 PM Monday, September 5, 2014. The grant(s) will be awarded at the Annual Meeting of the Society November 1, 2014. For more information on the grant and how to apply, please see our Website www.NativePlantSocietyNEOhio.org or contact Kathy Hanratty at nativeplantsocietyneo@gmail.com.

Program Schedule – Summer 2014

Sunday, June 1, 2:00 pm – Cleveland Lakefront Nature Preserve. Formerly known as Dike 14, this 88-acre preserve is owned by the Cuyahoga County Port Authority. During the years 1979 to 1999, the dredging from the bottom of the Cuyahoga River was dumped on this site. Since then, nature has been allowed to reign. With Naturalist Wendy Weirich, see what plants have made their way here via wind, animal, or in the dredging from the river. This is a fascinating site to see up close. **Directions:** Located where Martin Luther King Jr. drive meets I-90. Follow the signs to the Cleveland Lakefront Office. We will meet in the parking lot of the Lakefront Office. Registration limited and required. Call Diane to Register at 440-666-4870.

Saturday, June 21, 10:00 am – Gott Fen, Portage County. Rick Gardner, ODNR Division of Natural Areas & Preserves Botanist, and preserve manager Adam Wohlover lead the trip to this state nature preserve to see the showy lady's slipper orchid and results of our stewardship day last fall cutting the invasive European buckthorn. Gott Fen harbors more than 20 state-listed species including the largest population of showy lady's-slipper in the state. Other rarities include round-leaved sundew, grass-of-parnassus, shrubby cinquefoil and northern bayberry. One of the finest boreal fens in the state. The site, normally closed to the public, does not have a trail system, and visitors are asked to wear appropriate footwear for wet conditions. Prepare for wet walking; knee-high boots recommended. Some poison sumac occurs on the property as well. **Directions:** take St Rt 43 south through Streetsboro to St Rt 303, turn right (west). Parking will be at the north end of the Target parking lot, where we will carpool to the site. **Registration** required and limited due to fragile habitat. Call Judy to register at 440-564-9151.

Sunday, July 13, 3:00-5:00 pm – Northern Monkshood, Metroparks Serving Summit County. Rob Curtis, Park Biologist with the Metroparks Serving Summit County, will take us on a special adventure to see the state-endangered northern monkshood on their property. Please be advised this is a somewhat rugged hike with some deep mud and a 10ft descent to the site. To thank him for taking us into this special area, we plan to pull some of the invasive *Epilobium parviflorum*, smallflower hairy willowherb.

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The Journal of the Native Plant Society of Northeastern Ohio is published 4 times a year at Novelty, Ohio. ISSN 8756-6087. Questions or comments are welcome and may be addressed to Diane B. Christensen, 8400 Top Rail Lane, Novelty, OH 44072; 440-666-4870, dbpolice@roadrunner.com; or Bill Oberdick, 986 Bushwood Ln., Columbus, Ohio 43235-5016; 216-392-7027, bandbober@wowway.com.

The Mission of the Native Plant Society of Northeastern Ohio is to promote the study, appreciation and conservation of the native plants and plant communities of Ohio.

Program Schedule – Summer 2014, *cont*.

Directions: Meet at Main Entrance (1160 Front St., 44221) of Gorge Metro Park, located just west of SR8 in Akron. From I-76 or I-77, take SR 8 toward Akron. Get off on the Howe Rd exit and go west to Front St. Go right (north) on Front St., and the parking entrance will be on your left, just past the bridge over the Cuyahoga River. From there, we will need to carpool in 2-4 vehicles to a small lot on the other side of the river. **Registration is limited to 10 people and is required.** Call Judy at 440-564-9151

Wednesday, July 30, 6:00 pm – Ohio Prairie Nursery, Portage County. Bob Kehres, owner and founder of Ohio Prairie Nursery, will give us an overview of their operation, then a tour of the prairie, which should be in full bloom. Ohio Prairie Nursery has been delivering high quality native wildflower and grass seed to its customers since 1998. They offer standard and custom seed mixes along with seed of individual wildflower and grass species. They also provide native plant material for restoration and storm water control projects and offer the "Let it Rain Garden," the "Butterfly Hummingbird Garden," and the "Monarch Cafe Garden." **Directions:** Take state Rt 44 south into Portage County. At SR 82 turn left and head east approximately 3.4 miles to Alpha Drive. Turn left and head north 0.6 miles to entrance on the left. Nursery is open only during scheduled events. Some native seeds and plants may be available for purchase.

Saturday, Aug. 2, 10:00 am-Noon – Guy Denny's Prairie. Guided by Guy Denny, this tour is in conjunction with the Design Network and the Ohio Association of Professional Landscape Designers (APLD). This prairie is one of the best and most established examples of Ohio's prairies. Vital to the survival of many native pollinators and birds, prairies are remarkably diverse and biologically productive landscape features. Location: 6021 Mt. Gilead Rd. (SR 95), Fredericktown, Ohio 43019. **Directions:** Details of meeting times and locations for carpooling will be provided upon registration. Travel time is approximately 2.5 hours. **Pre-registration** is required. Contact Kathy at 440-477-5468 for more information.

Interested in Being a Board Member?

The search is on! The Native Plant Society of Northeastern Ohio is looking for people who would like to become more involved in our organization at the board level. We have opportunities for those who would like to fill appointed positions and those who may be interested in an elected position on the board.

Serving on a non-profit board such as ours is not only a good way to give back to our community, it can also help you to grow personally and professionally. The Native Plant Society Board sets the direction for the organization and oversees all of the tasks that keep the organization functioning. The time commitment is reasonable, generally less than ten hours per month, and there is no additional financial commitment other than regular membership.

If you are interested, please contact Kathy Hanratty (President) or any board member. We will make you welcome at a board meeting, where we can get to know each other and see if the board is a good fit for you.

We look forward to hearing from you!

NPSNEO Board:

Kathy Hanratty: (H) 440-285-3722 or (C) 440-477-5468
Judy Bradt-Barnhart: (H) 440-564-9151
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Ecophysiology of Forest Wildflowers

By Stephen G. Saupe

Consider round-lobed hepatica, *Anemone Americana*, and zig-zag goldenrod, *Solidago flexicaulis*. In central Minnesota the peak bloom period for round-lobed hepatica is the first week of May, while for zig-zag goldenrod it is the first week of September. As a consequence, even though these forbs grow in the same forest, they must contend with radically-different conditions.

Spring-flowering forbs, like round-lobed hepatica, that bloom before canopy closure have at least 20 times more light available for photosynthesis than the summer-flowering forbs like zig-zag goldenrod. Similarly, spring-forbs also have a greater and more predictable water supply, and they must deal with cooler temperatures and more wind than summer-forbs. In response, the spring-forbs and summer-forbs employ different ecophysiological survival strategies.

The availability of light is arguably the most important factor. The shady and drier conditions on the forest floor in the summer make it an especially challenging place to make a living. This explains, in part, why the frequency of angiosperms that bloom in a Minnesota forest is greatest in May and then steadily declines throughout the growing season.

Considering the limited availability of light, it's not too surprising that summer-forbs typically photosynthesize at about half the rate of spring-forbs. However, they are much more efficient at using the light they do get. For example, summer-forbs have a lower light saturation point, which refers to the amount of light at which a plant reaches its



Zig-zag goldenrod (*Solidago flexicaulis*) Photo by Merel Black courtesy University of Wisconsin-Stevens Point

maximum photosynthetic rate. This means that a summer-forb needs considerably less light than a spring-forb to accomplish the same amount of photosynthesis.



Round-leaved hepatica, *Anemone americana*
www.minnesotawildflowers

Acting like a large television antenna to help harvest the limited light in shady woodlands, leaves of summer-forbs typically have a larger surface area and are packed with more chlorophyll than the leaves of spring-forbs. In an attempt to outcompete their neighbors for the limited light, the summer-forbs are normally taller and less branched than the spring-forbs. Being short has an added advantage for the spring-forbs; it is warmer next to the soil surface, which is a bonus in the springtime.

In forests with relatively uniform conditions throughout the growing season such as a rain forest, the leaves of forbs and trees are similar. However, in our forests the leaves of the forbs are more commonly dissected and compound while those of trees are simple. The advantage of dividing leaves into sections is that it breaks up the leaf boundary layer, which increases carbon dioxide uptake for photosynthesis. The drawback is that it results in higher rates of water loss. Presumably for the trees, the advantage of increased photosynthesis with compound leaves is trumped by the loss of water. Since water is generally more abundant during the spring, we hypothesized that spring-forbs would have a greater frequency of compound and dissected leaves than the summer-forbs. Though this trend exists in central Minnesota forests, it is not statistically significant.

Spring-forbs live their life in a hurry. Or, as the old expression goes, they need to "make hay while the sun shines." Spring-forbs must complete their life cycles before the canopy closes and they go on a light "diet." Thus, these plants have a shorter bloom time than summer-forbs. And since the spring-forbs have more light available and ultimately more resources to invest in growth, spring-forbs grow more rapidly and develop more synchronously than summer forbs.

Spring-forbs are typically perennials that arise from a bulb, corm or tuber. There simply isn't enough time for most annuals to complete their life cycle between when the soil is warm enough for seed germination and canopy closure. Cold is an important signal to help 'tell' the perennial spring-forbs when to break dormancy and begin growing. In fact, the more cold they get, the quicker spring-forbs emerge and the larger many will grow. Similarly, a cold treatment of the plant is usually necessary to trigger flowering. This is called vernalization, it insures that the plants bloom soon after emerging. Some plants, such as *Hydrophyllum virginianum*, eastern waterleaf, even respond to the amount of cold they receive; the colder it gets, the shorter the time to flowering. A long cold-treatment suggests to the plant that there was a long winter and that there will be a short growing season before canopy closure. They don't have much time to "git er done."


Round-leaved hepatica, *Anemone americana*
Photo by Christopher Noll, courtesy University of Wisconsin-Stevens Point



Hydrophyllum virginianum L. - eastern waterleaf
USDA.gov

The cooler, unpredictable weather in the springtime means that pollinators, and the days on which a pollinator can fly, are more limited than in the summer months. One consequence is that a large percentage of spring-forbs, like other plants that grow in adverse conditions (i.e., alpine species), are self-compatible. This insures a seed crop even without pollinators. In addition, spring-forbs aren't especially picky about their pollinators—most can be pollinated by more than one pollinator. Their flowers are usually bowl-shaped to allow access by a diversity of pollinators, and they are commonly white, somewhat analogous to a lighted billboard. There are a few spring-forbs, like Dutchman's breeches, that are specialist species. They rely on queen bumblebees for pollination. Interestingly, the specialist species often grow in large colonies to encourage their pollinators to hang around.

Just like a grocery store distributing free samples to entice customers, some spring-forbs such as toothwort and spring beauty produce nectar to help attract pollinators. Others, such as bloodroot and hepatica, don't produce nectar but rely solely on their good looks. These non-nectar producers usually flower early, when the physiological cost of nectar production isn't justified by the lower frequency of pollinators. In a very clever strategy that may be a kind of mimicry, when non-nectar producers grow in clumps with nectar-producing species, pollinators visit them more often. Mom was right—it pays to pick your friends wisely.

In conclusion, round-lobed hepatica, zig-zag goldenrod, and other woodland forbs have evolved an amazing suite of physiological adaptations to grow in our woodlands at different seasons. Plants are truly smarter than we think!

Stephen G. Saupe works in the Biology Department, College of St. Benedict/St. John's University. This is a summary of his presentation at the February 7, 2012 Minnesota Native Plant Society meeting.

Reprinted from the Minnesota Plant Press, *The Minnesota Native Plant Society Newsletter*, Spring/Summer 2013, Vol 32, No 2.

The Ferns of Allegheny County, Pennsylvania

Excerpted from *Trillia* III, 1912-1913

By Lewis S. Hopkins

WHAT A FERN IS

The Pteridophytes (including the ferns and fern allies) are often spoken of as the vascular cryptogams or higher flowerless plants. They are plants which are characterized by a more or less alternation of generations in which the sexual stage is a small thalloid body. The asexual stage is commonly differentiated into stem and leaf and is the one which is familiarly called a fern. The parts are usually rolled inward in the bud, and development consists in the uncoiling and enlarging of these parts.

TIME OF FRUITING

The majority of our local Pteridophytes fruit, i.e., shed their spores, during July.

The first to ripen its spores is the Field Horsetail, whose pale yellow fertile spikes usually appear early in April and are followed closely by the Interrupted Fern, which fruits as it unrolls in May. The spores of the Cinnamon Fern reach maturity the last of May or the forepart of June. The Fragile Bladder Fern comes into fruit about the middle of June, and, in favorable situations, continues all summer, although it may disappear by the first of August. The Royal Fern, the Scouring Rush, and the Rattlesnake Fern also fruit the last of June.

The July list is the longest and includes the following species: American Shield Fern, Obtuse Woodsia, Boort's Shield Fern, Broad Beech Fern, Bulbet Bladder Fern, Club Mosses, Common Polypody, Crested Marginal Fern, Ebony Spleenwort, Goldie's Fern, Hay-scented Fern, Maidenhair Spleenwort, New York Fern, Oak Fern, Spinulose Shield Fern, and the Walking Fern.

Extending from the middle of July into August are the Lady Fern, Maidenhair, Sensitive Fern, and Silvery Spleenwort, while the following usually are in their prime in August: Brake, Marginal Shield Fern, Marsh Fern, and Narrow-leaved Spleenwort. The last are the Ternate and Dissected Grape Ferns, which shed their spores in September and October.



Botrychium virginianum (L.) Rattlesnake fern

WHERE TO FIND THE FERNS

It adds no little pleasure to an afternoon's walk to know what kind of plants, and what species of birds and other animals, one may expect to find in the course of one's loiterings. The ferns are usually limited to certain ecological conditions and are not found except where these particular conditions occur, although occasionally straying from their normal habitat.

On dry rocks and cliffs, with more or less shade, the Common Polypody makes its home, with the Walking Fern and Fragile Bladder Fern as its occasional companions.

Moist cliffs, with shade, are the chosen places of the Bladder Ferns, the Maidenhair Spleenwort, and the Walking Fern.

In marshes, swamps, and moist thickets, the Royal Fern, New York Fern, Crested Shield Fern, Crested Marginal Fern, and Cinnamon Fern are to be expected. The latter is occasionally found on wet rocks in shady situations.

In rather moist open spots are found the Cut-leaved Grape Fern, Marsh Fern, and Ostrich Fern. The Scouring Rush and the Sensitive Fern frequent moist low ground and places along streams. The Field Horsetail is usually found in moist gravelly soil and along railroad embankments, although it will grow almost anywhere.



Osmunda claytoniana L., Interrupted fern

The rich woods, where the leaf mold is abundant and moist, offer a congenial home for the following species: Broad Beech Fern, Christmas Fern, Clayton's Fern, Club Mosses, Ternate Grape Fern, Goldie's Fern, Lady Fern, Maiden- hair, Narrow-leaved Spleenwort, Oak Fern, Rattlesnake Fern, SilverySpleenwort, and Spinulose Shield Fern.

Rocky hillsides and stony soil with more or less shade are just to the liking of the Marginal Shield Fern and the Hay-scented Fern. The Obtuse Woodsia and the Ebony Spleenwort are more likely to be found on shaded rocky banks than elsewhere. The Brake and the Lady Fern are frequently found in woods, pastures, and waste lands that are not too wet.



Asplenium rhizophyllum L., Walking fern



Asplenium platyneuron (L.), Ebony spleenwort

Lewis S. Hopkins, Head of Department of Biology, State Normal School, Kent, Ohio.
Reprinted from *Wildflowers*, The Bulletin of the Botanical Society of Western Pennsylvania, May-June 2012.

Contribute Articles, Photos, Ideas for

On The Fringe

On The Fringe Journal of the Native Plant Society of Northeastern Ohio is published quarterly by the Society. We welcome short articles about particular native or invasive plants of botanical interest. Please send your article for possible publication to co-editor Diane B. Christensen, 8400 Top Rail Lane, Novelty, Ohio 44072 or to dbpolice@roadrunner.com.

Folklore:

Gardening With Native Plants
Spotted Jewelweed *(Impatiens capensis)*

By Bob Edelen



Spotted jewelweed
www.wildflower.org

NATURAL HISTORY

I remember my first experience with spotted jewelweed as a child playing with friends and the endless enjoyment of touching the swollen seed pods to watch them explode, scattering their seeds perhaps two feet in all directions. Spotted jewelweed, Touch-me-not, wild balsam, snap weed, orange balsam and silver weed are all common names for *Impatiens capensis*. "Impatiens" is the Latin word for "impatient", referring to the seed pods that burst open at the slightest touch—hence the common name "touch-me-not" and the species name "capensis" means "of the cape", referring to the Cape of Good Hope at the southern tip of Africa where they were thought to have originated. The more common name of "spotted jewel weed" is thought to reflect the beautiful one-inch, orange-spotted flowers that bloom for up to two months in late summer, and the way dew or rain beads up on the leaves forming sparkling droplets gives rise to the common name of jewelweed. Spotted jewelweed is a native of eastern North America, occurring from Canada south to Oklahoma, Alabama and Florida. It is an annual plant of boggy, shady areas, typically occurring throughout its range in low woodlands and thickets, along stream banks, and in swampy areas. It grows two to five feet tall on weak, watery stems that are translucent—you can see light through them! The beautiful trumpet shaped flowers have a long spur at the end, enticing long-tongued pollinators to its rich nectar reward. Spotted jewelweed is a magnet for humming birds, butterflies and moths that can reach the nectar and to bees and other insects that will chew through the flower's base to reach the nectar. The caterpillars of several moths feed on the foliage, including Obtuse Euchlaena, Pink-Legged Tiger Moth, White-Striped Black, and Toothed Brown Carpet. Upland game birds eat the large seeds, including the Ruffed Grouse, Ring-Necked Pheasant, Greater Prairie Chicken, and Bobwhite Quail. Among mammals, White-Tailed Deer browse on the foliage, while the White-Footed Mouse eats the seeds.

WHERE TO GROW

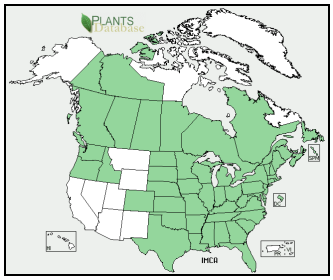
Spotted jewelweed is an annual plant in the balsam family that grows to a height of two to five feet and remains in the landscape through self-seeding and can become somewhat aggressive under ideal growing conditions. It will often form large colonies in the wild. Spotted jewelweed is a plant of damp, low woods, stream and river banks, swamps, pond edges and moist disturbed areas. Though it will tolerate drier locations given a constant moisture supply, it will do best in moist shade or woodland gardens, bog gardens, pond or stream margins and low spots. It prefers light shade to partial sun, and a fertile soil with an abundance of organic material. Submergence of the roots by flood water is tolerated without apparent ill-effects.



Spotted jewelweed
www.wildflower.org

PROPAGATION
In the late summer collect seeds by encasing the seed pods in a paper bag and shaking vigorously to cause expulsion of the seeds. They can be difficult to start from seed because they are a double-dormancy species, and may need a cold moist period followed by a warm moist period followed by a second cold moist period, implying the need for two years (winter, summer and winter) for germination, although some seeds have been reported to germinate the year following planting. Therefore it is best to directly sow the seeds immediately in the target landscape.

LORE
Native Americans used the watery plant juices to relieve itching associated with poison ivy, stinging nettle and insect bites. The Ojibwa applied the thick juice to skin rashes and rubbed it on the head for headaches. Native Americans had many other uses for the plant, including treatment by the Iroquois for renal disorders, as a diuretic, as a febrifuge, and for sore eyes and by the Cherokee as a gastrointestinal and gynecological aid.
It is said to have value in easing of bee sting pain and mosquito bites, minor burns, cuts and acne, and it has been used for warts, bruises, and fungal skin infections such as athlete's foot and ringworm.
But don't forget its most popular use—entertaining children—exploding seed pods with the slightest touch, submerging the leaves in water to watch the undersides turn silvery or misting with water to watch the water bead up creating the "jewel' of jewelweed!


Spotted jewelweed Usda.gov


Spotted jewelweed
www.wildflower.org

Jewelweed is listed in the "The Flora of Delaware, Delaware Natural Heritage and Endangered Species Program" - Bill McAvoy's database.

Reprinted from *The Turk's Cap*, The Newsletter of the Delaware Native Plant Society, Fall 2013, Vol 16, No 3.

Invasive Plant:

Wavyleaf Basketgrass
Oplismenus hirtellus spp. *Undulatifolius*



WB in Patapsco Valley State Park, MD.
Kerrie Kyde, MD-DNR

Background:
Wavyleaf basketgrass, an introduced sub-species of a native basketgrass (*O. hirtellus* (L.) P. Beauv.), is a fast spreading understory grass that forms dense stands in deciduous forests.

Range:
Wavyleaf basketgrass was first discovered in Howard County, MD in 1996. In 2000, it was found growing along a stream in Baltimore County, MD. Documented locations have also been found in VA, but it is not known to occur in PA or OH yet. It is native to Europe and Asia.

Description:

The leaf blades are flat, dark green, about 0.5 inches wide and 1.5 to four inches long, with rippling waves across the blade. The leaf sheaths and stems are noticeably hairy. When it blooms, from mid- September to November, the grass spikelets form long sticky awns.



WB Spikelets. Kerrie Kyde, MD-DNR

Habitat:

This species is shade tolerant and does not tolerate sunny environments very well. It is mainly found in shaded, mesic deciduous forests.

Biology and Spread:

It is unclear how wavyleaf basketgrass was first introduced to the U.S., but possibly was a contaminant of discarded hanging baskets. It spreads quickly through rhizomatous means. In addition, the sticky awn on the seeds may adhere to passing animals, people or vehicles, making it easily spread to new environments.

Ecological Threat:

This species can completely cover the forest floor, competing with native forest interior plant species. It decreases plant diversity , and provides little wildlife value. Because this species is relatively new in the U.S., its ecological impacts are still mostly unknown.

How to Control this Species and Prevent its Spread:

Unless numerous other populations are discovered, wavyleaf basketgrass can still be eradicated from the Mid-Atlantic region. Most of the MD and VA populations are relatively small and can be eradicated through hand removal or by treatment with a two percent solution of glyphosate.

Due to its limited distribution, early detection and rapid response is the best strategy for addressing the problem. There is an urgent need for an organized effort by federal, state and local agencies, and volunteers to determine the total distribution of this species in the Mid-Atlantic region. Increased public awareness is critical for success of the effort.

This species may come into PA through unintended means, such as on hiking boots. It will most likely establish in southern PA, along the MD border. If you believe you encountered this species, please alert your local conservation agencies.

Look-A-Likes:

Native Deertongue
Dicanthelium clandestinum



John Cardinam, Ohio SU

Invasive Japanese Stiltgrass
Microstegium vimineum



Chuck Bargeron, U-GA

Non-native Small Carpetgrass
Arthraxon hispidus



Leslie J. Mehrhoff, U of Ct

Information downloaded from the Invasive Plants in Pennsylvania, Department of Conservation and Natural Resources. www.dcnr.state.pa.

What You Can Do

Be careful to avoid spreading this plant:

- Do not hike in wavy leaf basketgrass patches.
- Don't let your dog off leash.
- Check yourself and your dog for seeds before you get back in the car.

Report sightings:

- Go to eddmaps.org, register, and take it from there, or
- Download Towson U's smartphone app, designed especially for reporting wavy leaf basketgrass, http://skappsrv.towson.edu/wavyleaf/website/, or
- Contact Dr. Beauchamp at *vbeauchamp@ towson.edu*

For more information:

Wavyleaf Basketgrass in Maryland, Maryland Department of Natural Resources:
http://www.dnr.state.md.us/wildlife/Plants_Wildlife/WLBG/index.asp

Virginia Department of Forestry, Wavyleaf Basketgrass in Virginia:
http://virginiaforests.blogspot.com/2008/11/wavyleaf-basket-grass-invasive-exotic.html

Wikipedia Article on Wavyleaf Basketgrass:
http://en.wikipedia.org/wiki/Wavyleaf_basketgrass

Cleveland Lakefront Nature Preserve

A UNIQUE URBAN WILDLIFE HAVEN ON LAKE ERIE

The Cleveland Lakefront Nature Preserve is an 88-acre man-made peninsula that has become a haven for diverse species of migratory birds, butterflies, and animals. The Preserve provides one-of-a-kind recreational and educational opportunities for children and adults to connect with nature on the waterfront. The Port Authority manages this unique urban green space, formerly known as Dike 14, and opened it to the public in February 2012. The Preserve's land mass began taking shape in the late 1970s as the U.S. Army Corps of Engineers disposed of sediment dredged from the Cuyahoga River in a walled-off area that juts out from the Lake Erie shoreline. The Corps placed sediment in this confined disposal facility (CDF) called Dike 14 from 1979 to 1999 as part of its program to dredge the river, work that is necessary to preserve the width and depth of the ship channel for goods and raw materials that have to move by waterborne transportation.

Prior to the Clean Water Act of 1972, river sediment was placed in the open lake or along the shoreline as fill to create more land. But with the change in federal law, the Corps confined sediments within dike walls so that if they were contaminated, the health of the lake would not be harmed.

CREATING THE LAND MASS

Before the Corps built Dike 14, the shoreline at the site was part of the land William Gordon willed to the City of Cleveland in 1896 for use as a public park (now Gordon Park). In 1962, two old freighters were sunk offshore to create a breakwall to protect the park's beach. During this time it was not uncommon for solid waste to be dumped along the lakeshore. The waste eventually formed an approximately 10-acre area between the sunken freighters and the shoreline. The Corps designed the contours of Dike 14 to encompass the entire area. Over the



Photo taken from www.portofcleveland.com

years, layer upon layer of sediment–essentially sand, soil and clay–was placed within the walls of Dike 14 and formed what is now the Nature Preserve. The Corps continues to dredge roughly 210,000 cubic yards of sediment annually—an amount that could fill most of a sports stadium. But that material is placed in other CDFs that are north of Burke Lakefront Airport.

FROM DISPOSAL FACILITY TO WILDLIFE REFUGE

After the Corps stopped using Dike 14 as a CDF, nature took hold and–with little human intervention—the peninsula became filled with plants, trees and shrubs that attracted diverse species of birds and other wildlife. Over time, visitors have identified more than 280 species of birds, 42 species of butterflies, 16 species of mammals (including red fox, coyote, mink, deer), 2 species of reptiles, 26 Ohio plant species (including wildflowers and grasses) and 9 species of trees, and shrubs. The diverse mix of habitats includes grasslands, a forest area, meadows, mudflats, shrub lands, and wetlands.

The site was designated as an Important Bird Area by Audubon Ohio because it provides essential habitat for birds. The Preserve is located at the intersection of four migratory bird routes.

In 2001 the Port Authority took responsibility for Dike 14, but the site was only opened a few days a year, mostly for Collaborative open houses and other events.

In 2006 the Cuyahoga Soil and Water Conservation District–a member of the Collaborative–secured a U.S. Environmental Protection Agency grant for an environmental assessment that showed the site was safe for passive recreation and education.

OPENING THE NATURE PRESERVE

In 2011 the Port Authority committed to opening the site. The agency officially renamed Dike 14 as the Cleveland Lakefront Nature Preserve, and on February 6, 2012 it formally opened the preserve to the public. It is open daily during daylight hours and has 1.2 miles of shoreline and over 2.5 miles of trails. It is intended for walking, observing nature, research and education. The Preserve also is an important community asset that can draw residents and visitors to Cleveland's lakeshore and create opportunities for additional economic development through recreation and eco-tourism.

MOVING FORWARD TO BENEFIT THE COMMUNITY

The Port Authority is working to facilitate additional educational opportunities at the preserve and to develop a master plan that would lead to both the replacement of invasive and non-native plants and the creation in phases of diverse habitat areas that would improve the preserve's value to wildlife and people.

The Port Authority is also leading initiatives to treat sediment not as a waste material to be disposed of in large lakefront CDFs, but as a resource that can be used to benefit the community. Sediment has been used to cover a Cleveland brownfield slated for redevelopment. Other opportunities could include roadway construction projects, landfill cover, and even creation of new aquatic habitat or beach nourishment. After all it was nutrient-rich sediment that led nature to transform Dike 14 into a wildlife habitat in the first place.

The Port Authority is pleased to manage this unique asset for the community and will continue to lead efforts to beneficially use sediment in the future–work that could save the region millions of dollars in disposal costs, help revitalize a range of sites, and further enhance our community.

EDUCATION

Various educational programs have been undertaken over the years through the Environmental Education Collaborative, which was formed in 2003 by nearly a dozen leading environmental education organizations that came together to provide multi-interdisciplinary environmental education for students, teachers and families, and to promote environmental stewardship of what was then Dike 14. The Collaborative has continued to play an important role at the Preserve, teaching about the important role the site has taken on for migratory birds and creating experiential learning activities such as activity kits in backpacks that teachers and families can use to foster problem solving, an understanding of environmental sustainability, and critical-thinking skills through environmental education.

In addition, members of the Student Environmental Congress at Cleveland's John Hay High School designed and are planting a 'sample garden' at the Preserve containing a small collection of plants that grow on site. Their work will provide information about the plant species and will complement a Boy Scout made kiosk at the entry gate that highlights the history and creation of the Preserve.

RESEARCH

The Collaborative has also partnered on research work done by Baldwin Wallace College, the Cleveland Museum of Natural History, Ohio Lepidopterists and the Nature Center at Shaker Lakes. That research has included the following: surveys of amphibians, invertebrates, and snakes; a plant inventory; a long-term butterfly monitoring project; and a bird-banding project to better understand migratory and resident bird populations.

Jim Bissell, Curator of Botany at the Cleveland Museum of Natural History, confirmed a new plant species to Cuyahoga County, growing in an unlikely habitat near the Nature Preserve. In June 2001, Jim visited the Nature Preserve. When he left, he cut across the lake bluff on State Park land and collected a few sedges from a seep on the Lake Bluff. The sedge, new to Cuyahoga County, keys to *Carex brevior*, a State Threatened species known from only two locations in Northeastern Ohio, NASA Plumbrook and the Museum's North Kingsville Sand Barrens. The Museum's Herbarium also has a historical specimen from Cedar Point in Erie County.



Image courtesy of
USDA-NRCS PLANTS Database

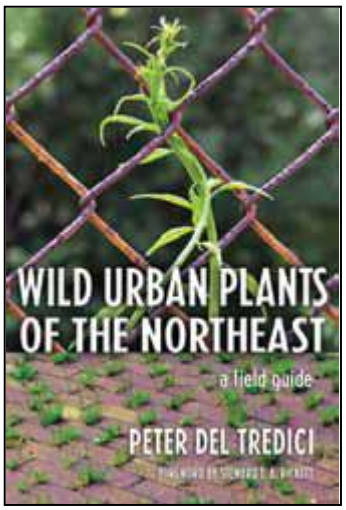
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Our new website address is

www.nativeplantsocietyneo.org

Book Review:

Wild Urban Plants of the Northeast: A Field Guide By Peter Del Tredici



Publisher: Cornstock Publishing Associates, 2010.
Pages: 392 pages
ISBN-10: 0801474582
ISBN-13: 978-0801474583
Paperback
Price: $19.39

Reviewed by Christa Partain

Even for a self-described plant geek like me, some plants tend to go unnoticed. Like the places in which they are found, these plants are forgotten, even ignored. Road verges, vacant lots, and abandoned industrial sites are not botanically attractive, and the plants in those sites reflect a degraded environment. As a group, these plants are usually not particularly ornamental and many are not native. What they have in common is that they are opportunistic and they are survivors. In the plant ecologist's parlance, they are ruderal species, meaning that they grow in waste places. Most plant enthusiasts and urban dwellers dismiss them as members of two detested categories: invasives and weeds.

In his book, *Wild Urban Plants of the Northeast: A Field Guide*, Peter Del Tredici asks us to re-evaluate our assumptions about these "spontaneous urban plants." He argues that they have value. Like other plants, they provide "ecosystem services," which include temperature reduction, food and habitat for wildlife, erosion control on slopes and disturbed ground, stream and river bank stabilization, nutrient absorption in wetlands, soil building in degraded land, and tolerance of pollution and contaminated soil.

Because the urban environment is continually disturbed, this plant community of opportunists, pioneers, or invasives–whatever label you want to use–will inevitably persist. As Del Tredici says, "In an urban context, the concept of restoration is really just gardening dressed up to look like ecology." Indeed, in our highly homogenized landscape, what's the harm of allowing Tree of Heaven to provide shade in the inner city or for Common Reed to soak up excess nutrients in superfund sites? We are not living in reality if we expect to restore fragments within urban landscapes to some period 1000, 500, or even 200 years ago.

Del Tredici does not argue for giving up on preserving wilderness areas or rare habitats; he simply points out that reviling non-natives does not work in the urban context. "Ecological functionality should be recognized as being of equal value to ecological form."

For the past six months, I have been working to identify wild urban plants alongside artist Lynn Cazabon, who has dedicated herself to photographically documenting wild plants within Baltimore's urban landscape. Her project, called *Uncultivated* (see: uncultivated.info), seeks to draw attention to the tiny pockets of wildness within the urban environment in order to break down hierarchies that privilege certain aspects of nature over others. Like Del Tredici, Cazabon's project does not value native plants over non-native, but instead simply presents the plants in these spaces. In fact, these sites are surprisingly diverse and contain more native plants than I had assumed.

Like many other field guides, the author organizes the plants by taxonomic group. Within each entry, Del Tredici discusses a given plant's name(s), nativity, morphological characteristics, habitat preferences, cultural significance, and, interestingly, its ecological functions. Closely related species are sometimes included. The author also includes five to six color photos with each entry, including close-ups of the flower and leaves, its overall habit and a shot of the plant in a typical setting. The intriguing appendix places some of these plants in a historical context, lists urban horticultural uses (such as "cosmopolitan urban meadows"), and provides key characteristics of twelve common plant families. Del Tredici also includes a comprehensive glossary, but it is not illustrated as those in many other field guides are.

This book will confront native plant enthusiasts with a paradigm shift in the way they view the landscape around them. Whether you find this provocative book heretical or refreshing, you are sure to come back to it, both figuratively and literally, especially if you frequent urban areas.

Chris Partain is President of the Baltimore Chapter of MNPS.
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Honey Bees and Native Plants

By Chris Murrow

At our most recent meeting someone asked the question, what native plants are good for honeybees. As a beekeeper, I've spent the last few years trying to answer this question.

It's important to understand that honeybees, *Apis mellifera*, like things to be planted in mass and will travel two to six miles away from the hive and pollinate flowers. They're ideal for pollinating farm crops because the foraging bees use a waggle dance to tell other bees about the richest and most abundant source of food. Park a beehive in front of any farm in flower and they'll pollinate it, regardless of the flower shape. For native bees the richest source of nectar has more to do with the flower shape and proximity to the nest, as they typically don't travel as far as honeybees. Once a rich source of food has been discovered, its location is only known to an individual bee, and that knowledge isn't passed on. Understanding this is the key to getting honeybees into your garden.

Honeybees are easily distracted by abundant blooms. That said, small herbaceous plants should always be planted in groups of at least three to five. More would be better! If you have the land, consider three to five patches of plants or installing a "pocket prairie." Woody shrubs and trees can be planted in smaller numbers. Remember: the smaller the plant is, the less attention it will get.

Here is a list of my suggestions arranged by season. In late winter and spring the earliest shrubs and trees begin flowering. Among the earliest are willows, maples, and American hazelnut, followed shortly by assorted fruit trees, dogwoods, redbuds, tulip tree, poplar, magnolias, and just about everything else in the forest. There are very few trees that can be planted to improve this lineup and even fewer herbaceous plants that can get the attention of the swarming bees when competing with those trees. Jacob's ladder, *Polemonium reptans,* is perhaps a notable exception. Before spring is over, several species of Mountain Mint,



Honey bee on Joe Pye weed
Courtesy of Tracey Knierim

Pycnanthemum sp, start blooming; they fill the gap while most of our sun-loving prairie plants get underway. Mint plants can be a little aggressive, so keep an eye on them in the garden. Very few trees flower over the summer time. Sumac and black locust, *Robinia pseudoacacia,* are notable exceptions. Herbaceous forbs have a far easier time attracting bees with less competition. Consider planting any of the following: Tickseed, *Coreopsis rosea;* coneflowers, *Echinacea* sp.; black-eyed susan, *Rudbeckia hirta;* spiderwort, *Tradescantia* sp.; sunflower, *Helianthus annuus;* Culver's root, *Veronicastrum virginicum.*



Honey bee on Echinacea
www.swallowtailgardenseeds.com

Milkweeds, *Asclepias* sp., are misunderstood by a lot of beekeepers. Basically the anthers get attached to the bee's legs and leave the bees hanging from the flowers. The misconception is that the bee dies from exhaustion. This isn't true. The bee eventually gets free and the anthers are later removed. Assassin bugs, however, will take advantage of a few bees that get stuck, and gardeners shouldn't be put off from including these plants in their pollinator gardens. It doesn't happen as often as it sounds like it might. *A. tuberosa, A. purpurascens,* and *A. incarnata* are excellent garden choices.



Honey bee on St. John's Wort
antsbeesbutterfliesnature.blogspot.com

Blazing Star, *Liatris* sp., is perfect for any garden. Don't restrict yourself to the mass-marketed variety available by the bag and sold alongside other spring bulbs. I believe this is *Liatris spicata,* and there's nothing wrong with it. Other species such as Northern Blazing Star, *Liatris scariosa,* and Prairie Blazing Star, *Liatris pycnostachy,* bloom much later in the year and are excellent for attracting Monarch butterflies, especially if there's milkweed around.

Cup plant, *Silphium perfoliatum,* is a little aggressive and seedlings can be downright weedy, but this is a good plant when kept under control. Each plant forms its own patch and thankfully seems to peter out from there. The leaves come together to form a small cup that collects water, hence the common name. Bees not only love the flowers but go for the water in the cups as well. It's a surprisingly good butterfly plant too.

St. John's wort, *Hypericum* sp., has wonderful puffy yellow flowers that produce rich amounts of pollen that bees can't resist. *H. punctatum* and *H. pyramidatum* are herbaceous perennials. *H. prolificum* is a deciduous shrub that gets to be about 4' by 5' in diameter. Be afraid of *H. perforatum,* which is an imported noxious weed!



Honey bee on Liatris
fineartamerica.com

Summer sweet, *Clethra alnifolia,* and Joe Pye weed, *Eupatorium* sp., love full sun and being a little wet. Summer sweet is also very shade tolerant and can be extremely fragrant. I haven't quite figured it out yet, but occasionally I can smell my neighbor's plant 30 feet away while it's covered in a cloud of the most diverse array of bee species I've ever seen in one place. More commonly though, the fragrance travels no more than five feet, and the bee numbers are much smaller. Joe Pye also produces an odor right when the afternoon shade hits them. I like to think of Joe Pye as our native butterfly bush. Just be sure to give them lots of water or else they'll fall over.

In autumn the four main plants to focus on are Ironweed, *Vernonia noveboracensi;* Blue Mist flower, *Eupatorium coelestinum;* Goldenrod, *Solidago* sp.; and Asters.

Most goldenrods are aggressive but I've found *Solidago sphacelata* 'Golden Fleece' and *S. rugosa* 'Fireworks' or even *S. rugosa* itself to be better

behaved. Asters in North America are now "Asters" only in their common name. The genus has been broken up into seven genera and people don't seem to have gotten the same memo. The one I find bees like the most are species in the *Symphyotrichum* genus, specifically, New England aster, *S. novae-angliae,* and New York aster *S. novi-belgii.*

Happy Gardening!



Honey bee on Joe Pye weed
Courtesy of Tracey Knierim

Reprinted from the Native Plant Society of New Jersey. Spring 2011.

Interesting Factoid:

Pawpaw, *Asimina triloba*

The pawpaw, *Asimina triloba,* is North America's largest edible native fruit tree. It resembles its exotic relatives in the magnolia family with its oversized leaves, rich flowers, sweet fruit, and aromatic foliage. The pawpaw has been referred to as "Ohio's first fruit" or "the forgotten fruit." The fruit has a wonderful creamy texture and a tropical flavor. Southern Ohio is home to patches of some of the largest and best tasting wild pawpaw on the planet. The pawpaw is also super nutritious and historically significant; George Washington's favorite dessert was chilled pawpaw.

The annual Ohio Pawpaw Festival is dedicated to the Pawpaw fruit, which is indigenous to the Eastern, Southern, and Midwestern United States, and cultivated in the Athens County, Ohio, area.

The festival, sponsored by the Ohio Pawpaw Growers' Association, takes place near Lake Snowden in Albany, Ohio, in mid-September, during the peak of the fruit's harvest. Various pawpaw brews and other pawpaw-related activities are offered. The event has been sponsored by a number of different local organizations. The first Pawpaw Festival took place on October 10, 1999. The dates for the 16th Annual Ohio Pawpaw Festival will be September 12-14, 2014. Mark your calendars now!

Pawpaw Facts:



- Pawpaws and nuts fed the Lewis & Clark expedition on their return trip in the fall of 1810 when in western Missouri their rations ran low and no game was to be found.
- The folk song *Way Down Yonder in the Paw Paw Patch* celebrates unselfconsciously the prominence of the pawpaw in the lives of pioneers who settled the valleys of the Southern Appalachian Mountains and the greater Ohio River territory.
- John James Audubon painted the yellow-billed cuckoo on a native pawpaw tree about 1827 *(Horticultural Reviews,* Vol. 31, p. 351). Audubon used the winter terminal buds of the pawpaw as his paint brushes.
- During the famous Hatfield and McCoy feud along the Kentucky-West Virginia border in 1882, three sons of Randolph McCoy were tied to pawpaw bushes and executed by the rival Hatfield family in what has been known as the "pawpaw-patch execution."
- In 1916, Ohio was recognized for producing superior pawpaw fruit. It was then that the American Genetic Association's *Journal of Heredity* sponsored a Best Pawpaw Contest. Ohio had three of the top seven entries. The best fruit received by the contest was from a tree in Ironton, Ohio.
- In 2009 the pawpaw was designated as Ohio's state native fruit.

Though pawpaws were grown commercially in the United States until around World War II. The current interest in papaws began in 1990 at Kentucky State University with a research program. In 1993, there were only 19 cultivars available. There are now over 40 cultivars available, and an ever-expanding body of research on the breeding and cultivation of the species. 1993 saw the Pawpaw Regional Variety Trials initiated by Neal Peterson, founder of the Pawpaw Foundation. This involved 10 cultivars and 18 seedling selections, planted at 14 locations throughout the continental United States. The trial is intended to evaluate the potential of pawpaw fruit for commercial production.

Egg-less Pawpaw Cake

1 2/3 cups all-purpose flour
1 cup packed light brown sugar
1 tsp. baking soda
1/2 tsp. salt
1/2 cup pawpaw puree
1/3 cup vegetable oil
1 tsp. vinegar
1/2 tsp. vanilla
Preheat oven to 350° F.

Mix flour, brown sugar, baking soda, and salt. Add the pawpaw puree. Stir in the vegetable oil, vinegar, and vanilla. Stir until well blended. You don't need to use an electric mixer.
Pour into ungreased square pan, 8"x 8" x 2". Bake for 35 to 40 minutes, or until a wooden pick inserted in center comes out clean.
This recipe does not contain spices because most people don't want to obscure the delicate taste of the pawpaw. If you prefer to use a spice, use sparingly, no more than 1/4 teaspoon of spice, if used. The cake is good warm without frosting but you can use vanilla or cream cheese frosting. Refrigerate any left over cake.

This article was based on material taken from the article *Where Oh Where is Pretty or Poor or Dear Little Nellie?* by Ronald L. Powell, PhD as printed in *Wildflowers*, the Bulletin of the Botanical Society of Western Pennsylvania, Oct, Nov, Dec 2013; on www.petersonpawpaws.com/Facts.php; and on Wikipedia (http://en.wikipedia.org/wiki/Asimina).
Photos in this article were added by OTF editors and taken from Wikipedia.com.
Recipe courtesy of Terry Powell and the North American Pawpaw Growers Association.



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