

THE NODDING ONION

Newsletter of the Northeast Chapter of the Illinois Native Plant Society



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Letter from the President

We're halfway through the first year with our new slate of chapter board members and I'm so pleased to have met many new people, put faces to familiar names, and to have seen many of you returning to attend multiple field trips this year.

I'd like to express my appreciation for all of those leading and organizing events, especially the superstar of the summer, Jon Duerr, who has led three hikes and attended every other Northeast Chapter event so far this year too!

Some chapter news: our bylaws were approved by the state governing board. You can find the chapter and state bylaws on the INPS website. As you'll read, the purposes of the Northeast Chapter are:

1) to promote the appreciation, conservation, and study of the native flora and natural communities of Illinois, with emphasis on northeastern Illinois,

2) to provide education about the native flora and natural communities of Illinois, and

3) to provide activities and programs that encourage collegiality among area members of the INPS

With that mission in mind, we'd like to put the call out for late summer, fall, and winter events. The collective knowledge and experience of Northeast Chapter INPS members is staggering. Would you like to lead an aster and sunflower identification workshop? A tour of your lab, experimental plot, or herbarium? An informal stroll



cassi and Bella monitoring a wetland restoration project in Lake County, IL

through a favorite natural area? A talk on your local research subject? A mini bioblitz of a site in need of study or protection?

If you have ideas please reach out to the chapter at northeast.inps@gmail.com or to me directly at cassisaari@gmail.com. Let's make it happen!

—cassi saari



INPS 2019 Annual Gathering participants hike at a new land acquisition at Starved Rock State Park.

Northeast Chapter at the INPS Annual Gathering

by Sheri Moor

Botany enthusiasts from throughout the Chicagoland region converged in Oglesby, Illinois last month at the 2019 INPS Annual Gathering. The highlights of Friday evening's mixer, in addition to reconnecting with old friends from throughout the state, were the research updates provided by several 2018 research grant award winners and the keynote presentation on the Dixon Waterfowl Refuge given by Gary Sullivan from the Wetlands Initiative (TWI).

In his talk, Sullivan described both the pre-restoration history of the Dixon Refuge and the hydrologic trade-offs that his team evaluated in their implementation of the restoration. The critically important habitat at the Refuge has been recognized in its formal designation as a Ramsar "Wetland of International Importance."

Saturday's field trip selections included the opportunity to visit the Dixon Refuge with TWI staff, as well as outings to Starved Rock, Nachusa Grasslands, Amboy Marsh, and Green River State Wildlife Management Area. Fortunately, the weather cooperated all day, and participants returned to home base at Illinois Valley Community College thoroughly botanized, eager to discuss the highlights of their day over a cold beer, and hungry for the banquet spread of lasagna, salad, and cannolis.



Illinois Botanists Big Year winners Evan Barker and Erin Faulkner chat with Alice Brandon while strolling through Dayton Bluff Preserve.



Linda Masters, Roger Ross, and others look on as INPS President, Floyd Catchpole, and trip co-leader Bill Handel get down for a closer view of the Amboy Marsh flora. Photos: Sheri Moor

Though the raffle's much coveted prize, a copy of *Flora of the Chicago Region* signed by both authors and the illustrator, went to Edie Sternberg of the Central Chapter, Northeast Chapter members Diana Krug, Erin Faulkner, Brian Hale, Evan Barker, and Linda Masters, among others, took home goodies offered at the evening's silent auction. Sunday morning's field trips reshuffled the meeting's participants once again, offering half-day guided visits to Jubilee College State Park or Dayton Bluff Preserve.



INPS Northeast Chapter members appreciating *Carex* species at Harms Woods with site steward, John Balaban. Photo by Evan Barker.

Sedging at Harms Woods

Northeast Chapter members who joined site steward, John Balaban, and North Branch Restoration Project volunteer, Katie Miller, at Harms Woods Forest Preserve on June 8 were rewarded by a generous abundance of sedges. Thirty-one *Carex* species were identified during the outing, including one state-endangered and one state-threatened species (not listed here). The woodland wildflowers also did not disappoint, with *Conopholis americana* (cancer root), *Eunonymus obovatus* (running strawberry bush) and *Lithospermum latifolium* representing some of the more uncommon species that were encountered. Thanks to Katie Miller and Mark Kluge for providing the species list.

—Anna Braum

Carex species identified:

Carex albursina
Carex blanda
Carex buxbaumii
Carex cephalophora
Carex crinita
Carex cristatella
Carex davisii
Carex gracillima
Carex granularis
Carex grayi
Carex grisea
Carex haydenii
Carex hirtifolia
Carex intumescens
Carex jamesii
Carex lupulina
Carex muskingumensis
Carex pellita
Carex pennsylvanica
Carex radiata
Carex rosea
Carex shortiana
Carex sparganioides
Carex sprengei
Carex squarrosa
Carex stipata
Carex tenera
Carex vulpinoidea
Carex woodii

How does flower-timing affect reproductive success in a woodland spring ephemeral?

By Samantha Danguilan
Northwestern University, Chicago Botanic Garden

Spring ephemeral flowers are an important food resource for early-season pollinators such as flies and native bees. Without ephemerals, these early foragers would go hungry because nothing else is in bloom. In return for their pollen and nectar, pollinators move pollen from flower to flower—an important step in plant reproduction that allows plants to produce seeds. But what happens when there is a mismatch between when the flowers open and when pollinators are active? Or what happens if a random frost comes through and destroys the flowers before pollinators are able to get to them? Luckily, many plants have evolved a bet-hedging strategy, spreading out when they flower across a growing season.



Claytonia virginica (spring beauty), a spring ephemeral, was the focus of Samantha Danguilan's INPS research concerning the reproductive consequences of variation in flowering time. Photo by Samantha Danguilan.

INPS Grants Research

The Illinois Native Plant Society Research Fund was developed to promote the conservation of Illinois native plants and communities through scientific research.

To test whether there are reproductive differences between spring ephemerals with earlier or later flowering times, my study used eastern spring beauty (*Claytonia virginica*) as a model species. Starting in late March, I went out to McDonald Woods in Glencoe, Illinois and did a daily survey of how many flowers were open, how many pollinators were visiting, and what the environmental conditions were like (i.e. temperature, sunlight, and soil moisture levels).

In late May, as the tree canopy begin to close, any *Claytonia* flowers that had been successfully pollinated turned into fruits which I collected and analyzed to determine the quantity and quality of seeds they produced. I measured reproductive success by analyzing seed viability, and I quantified it in two ways: the presence of formed plant embryos during seed x-ray analyses, as well as the seed's ability to germinate under controlled greenhouse settings.

Interestingly, *Claytonia* that flower later in the season are able to produce as many seeds as earlier-flowering individuals, but these seeds tend to be less viable.

This may be because, as the season progresses, *Claytonia* must compete for pollinator services with more and more flowering species that are coming into bloom. Another reason why later-flowering *Claytonia* produce less viable seeds might have to do with decreased levels of sunlight as the forest canopy develops. With less light available, plants may reallocate resources away from reproduction to vegetative growth. Finally, results from the germination experiment show a negative relationship between flowering time of the maternal plant and germination time of its offspring—that is, earlier flowering correlated to earlier germination. This suggests that the environment in which the plant embryo is conceived may have implications for the offspring. However, further research is needed to tease apart the mechanisms behind this relationship.

Understanding how natural variation in flowering time might affect reproductive success gives us a better framework for predicting how certain plant populations might respond to large-scale climate-induced shifts in flowering. For example, we know that climate change is signaling many plant species to flower earlier than they have historically been known to. For the earliest of bloomers, the lengthened growing season provides potentially high rewards with first access to important resources and pollinator services. However, these early-flowering individuals are at higher risk of experiencing more extreme weather events. Understanding how the timing of flowering relates to the natural biology of plant reproduction will be key to the conservation of many plant populations.



Samantha Danguilan hand-pollinating *Claytonia virginica* flowers. Photo by Fayette Aurelia Nichols.

INPS @ IBSP 2019

by Evan Barker

This Memorial Day, the Northeast Chapter joined a group of volunteers that have gone on a plant walk at Illinois Beach State Park for the past 35 Memorial Days. It's a fantastic tour of a fantastic natural area every year.

This year we had over 60 people attend. That's not a typo—over 60 people! Due to the large numbers, we could not “corral” everyone through the walk at the same pace, and we had to split up. I don't think anyone missed anything though. Between flooded conditions and the early season conditions, we all got to see most of what the site had to offer that day.

You couldn't have asked for better weather. It was a perfect morning: windy, cool, and sunny. However, since the burn season in fall 2018 was basically nonexistent, the burn in spring 2019 may not have initiated a growing season that was as early as in previous years. We noted that the tips of some *Juncus* were blackened, which indicated a later spring burn than usual.



Orobanche uniflora (one-flowered cancer root) was spotted on the hike. Photos by Evan Barker.



Lithospermum incisum (fringed puccoon) was one of three *Lithospermum* species seen in bloom at Illinois Beach State Park.

While many species that we normally see on this walk were not blooming due to early conditions, we enjoyed a glorious hike with many of the great species we expected to see such as three species of puccoon, wood betony, Canada mayflower, false toadflax, lupine, and an abundance of sedges. Highlights of the walk this year were definitely *Orobanche uniflora* (now *Aphyllon uniflorum*), bladderworts, Lake Michigan, and of course the company of fellow plant enthusiasts, the joy of which always abounds at events like this.

The second half of the day was a bit rainy, but many of us braved the wet and wind to visit Chiwaukee Prairie, just over the border into Wisconsin. Worth it!



Photos (from top): *Betula papyrifera* (paper birch) at Chiwaukee Prairie and entrance sign by Linda Curtis. Ridge-and-swale topography visible along the Lake Michigan coastline in Lake County, photo by Ken Weik.

Chiwaukee Prairie: Steps in Time

By Linda Curtis
curtistothethird.com

The distance from the Lake Michigan shore at the Wisconsin-Illinois border to the Union Pacific railway tracks is roughly one mile. In that mile lies 10,000 years of the Earth's history, from the last glacier's retreat to today's ridges and swales—and you can walk it in less than half an hour. The railway tracks, dug by pick-axes and shovels, were leveled on the Holocene Ridge, as is shown in the 1864 county maps.

That ridge tells us that the Lake Michigan shore, known as Lake Chicago, receded to form what is now the Zion beach-ridge plain

which is made of sand and gravel. It extends 18 miles from the Kenosha Dunes in Wisconsin, south to the Waukegan Dunes, and ends at the Waukegan Harbor in Illinois.

Beginning at the beach, our most recent lake levels and shores are reduced from those of the past. Beach erosion and deposition have repeatedly added to and subtracted from the shore. Soil borings from the lake to the railway tracks show from 3,000 to 4,000 years of advance and retreat.



What's underfoot is as interesting in deposition strata as the current prairie is in sedge meadow vegetation.

The vegetation has also changed over time. Post-glacial temperatures favored cold-tolerant species such as birches and aspens now more commonly seen in Door County, Wisconsin. A few tree and herb species such as paper birch are known as relicts. They persist in small numbers and are a reminder of the past.

Walking the Chiwaukee Prairie can fill people with an enormous expanse of time—spanning from barren shores, to trappers and traders, to forts and docks, to cities built along the shore.

New properties west of the railway have recently been purchased by the Nature Conservancy, with restoration projects planned for this year. The ever-changing nature of this western Lake Michigan coastline reminds us that we live in an area of rich geologic and vegetation history.

Calendar

Upcoming events in our region

Montrose Beach Dunes

Tuesday, July 16, 9:00 a.m. - 12:00 p.m.

Join us for an in-depth exploration of the unique flora and fauna of Montrose Beach Dunes, an 11-acre foredune restoration located on Chicago's largest public beach.

Currently 26 state-listed plant species thrive at the site, and in mid-July you will find a lovely selection of other forbs, sedges, grasses, and woody species such as *Sabatia angularis* (rose pink), *Oenothera clelandii* (sand evening primrose), *Utricularia vulgaris* (common bladderwort), and *Calamovilfa longifolia* (sand reed).

RSVP here: <https://bit.ly/2WnZZHu>
or contact Susanne Masi:
inpsnenews@gmail.com

Northeast Chapter Board Meetings

Tuesday, August 13 & October 8, 6:30 p.m.

Our organizing team is meeting every other month in 2019. If you are interested in attending these planning meetings or receiving meeting notes, please contact us at: northeast.inps@gmail.com.

Interstate Native Plant Societies Get-Together

Saturday, August 17 - Sunday, August 18

This is the second annual cross-state native plant society two day event. The North Chapter of the Indiana Native Plant Society is hosting this year in Northwest Indiana.

Join us at the **Paul H. Douglas**

Environmental Center at 11:00 am Central time on Saturday, where we will start with a short presentation. The hike will be through oak savanna, panne, foredune, lagoon, and dune habitats. It will be approximately 3 miles of walking.

In the evening, join us at a local brewery (TBD) where we can discuss the plants over beer. On Sunday, we will be hiking in another one of the Indiana Dunes National Park's gems. If you are planning on staying overnight, some of our members have offered to open up their homes for you. Email Nathanael if you are interested.

RSVP to: Nathanael J. Pilla,
naj.pilla@gmail.com or 219-928-3730

Gentians in the Fen

*Saturday, September 14,
9:00 a.m. -12:00 p.m.*

David Schwaegler will lead a tour of Lake in the Hills Fen. Meet at Barbara Key Park on Pyott Road in Lake in the Hills. Park near the west end of the lot. Wear waterproof footwear (or be prepared to encounter just an inch of two of water). RSVP here: <http://bit.ly/genfen>

Join/Renew/Follow



The Illinois Native Plant Society is a volunteer-led organization with membership dues comprising the majority of our revenue. Please renew your membership and encourage friends to join. Sign up or renew your membership on our website:
<https://ill-inps.org/member>

As a member of the Illinois Native Plant Society, you contribute to our mission of appreciating, conserving, and studying the native flora and natural communities of Illinois.



As a member, you receive:
Erigenia: our peer-reviewed scientific journal
The Harbinger: the statewide newsletter
The Nodding Onion: our chapter newsletter

Notifications for events, including the statewide Annual Gathering, guided field trips, lectures, workshops, and other events at the chapter level.



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