

Erythronium

Newsletter of the Iowa Native Plant Society vol. 23 no. 2 - December 2017

Botanical Travels in Backbone State

Park (1994-2017), by William R. Norris [Report for INPS Grant: "Floristic Inventory of Backbone State Park (1994-2017): Final Phase"; \$1000, Bill Norris, Western New Mexico University. This project was funded by a gift from the former Iowa Natural History Association.]

Borrowing (and adding to) a line from Thoreau (Walden, 1854): "I have traveled a good deal in Backbone State Park, and everywhere... the flora has appeared to me to be intriguing in a thousand remarkable ways". During a year in the late 1990s when I was able to make frequent visits to Backbone over the course of an entire growing season, I witnessed a kaleidoscope of color: pink spring beauties and deep purple hepaticas in April, canary yellow buttercups and bold red columbines spanning late spring and summer, orange and yellow touch-menots by mid-July, yellow wands of goldenrod and all shades of blue aster in late summer through late September, closing out with milky white Indian pipes poking out of the soil as the last leaves dropped. During numerous summer hikes north along the West Lake Trail since the early 1990s, I have encountered forest slopes covered by oceans of ferns, walked underneath enormous red oak trees whose canopies shade entire hillsides, approached monolithic dolomite outcrops where mosses and liverworts have taken residence in most crevices and crannies, dropped down into a floodplain forest where my boots were swallowed up by a green salad of wood nettle and other less painful plant species, crossed the Maquoketa River and walked back up to high ground to enter a black oak forest where dry leaves and downed branches crunch loudly underfoot, finally emerging at Six Pines Campground to find park visitors engaged in all sorts of recreation.

I am not the first to "travel a good deal" in Backbone, Iowa's first state park (dedicated in 1920), and to take note of its spectacular geologic features and splendid flora. Late 19th century State Geologist Samuel Calvin wrote¹: "Its sides are in places precipitous, the rocky cliffs rising sheer for more than 80 feet. Erosion and secular decay have carved the



rocks into picturesque columns, towers, castles, battlements and flying buttresses. The exposed faces are deeply pitted and weather worn."
According to early 20th century botanist L.H. Pammel¹: "The Devil's Backbone is a veritable island of vegetation

(Dissected grape fern, by John Pearson)

when considered with the contiguous region-an island of flora because some of the species do not occur in the surrounding region. The type of vegetation of this singular area is accounted for by the some [sic] of the topographic features: the region is very rugged and interlaced with deep ravines which converge in a narrow valley or gorge through which flows the south branch of the Maquoketa River." Botanical excursions at Backbone State Park since the early 20th century are also documented by plant specimens collected in the park and deposited in Iowa herbaria by a who's who of Iowa botanists, including Louis Pammel, Bohumil Shimek, Ada Hayden, David Savage, Martin Grant, Robert Thorne, Marlin Rickey, Larry Eilers, Donald Farrar, Mark Leoschke, Dean Roosa, and Jeffrey Nekola. However, at the time of publication (1996) of

no longer the case. (continued on page 11)

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an ecosystem management plan for the Backbone State

"no comprehensive study of the total flora of the park"

had been conducted. I am pleased to report that this is

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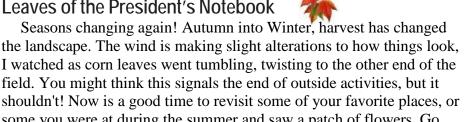
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Leaves of the President's Notebook



field. You might think this signals the end of outside activities, but it shouldn't! Now is a good time to revisit some of your favorite places, or some you were at during the summer and saw a patch of flowers. Go back and take another look at what happened to that patch of flowers! Learn what they look like as dried seed heads. This will help you the next time you see them as seed heads only. Learning these plants in different seasons will help your identification skills. You need to challenge yourself to grow!

I had a fairly successful summer of prairie walks at Doolittle, people kept showing up! I haven't decided if this was my last summer or not, will yet decide if there will be a 27th year or not. It has been fun observing a prairie over the years, noting the changes in flowering dates and patterns. I learn something there with every visit. Consider leading a prairie walk to a place near you. You don't have to be an expert to start one, and I guarantee you will learn as you go. It is a great way to test yourself.

The winter months are a time to attend meetings and conferences. One coming up at the end of January is the Iowa Prairie Network winter meeting on January 27. It brings people together from all over the state, and is a good chance to reconnect with people you don't see very often.

~ Lloyd Crim



In Memoriam: Linda Loos Scarth



The Spring 2017 issue of Erythronium included a haiku in this space by Linda Scarth. At that time, we had no clue that she would soon receive a cancer diagnosis. Following Linda's death on July 3rd, a Celebration of her life was held on August 12th at the Wickiup Hill Learning Center near Cedar Rapids.

Linda contributed to INPS in numerous ways, including serving as our President in 2012-2014, and on the Board since then. She and Bob attended most of the INPS field trips

and represented the Society at many activities of other organizations.

We share this from the obituary and updated by her spouse, her friend, and the person who helped make all of her contributions possible. In Bob's words: "Linda had skill, grace, knowledge, and dedication in abundance and the energy and persistence to transform these qualities into tangible contributions; she brought a thoughtful passion to everything she said and did."

The Cedar Rapids Museum of Art will feature their photography in Framing the World: The Photography of Linda and Robert Scarth. The exhibit will run from January 13th to April 29th, with a reception being planned for early February. Details can be found at:

http://crma.org/Exhibition/Exhibition Upcoming.aspx

Calendar of Upcoming Events and Activities

Saturday, January 27th – Iowa Prairie Network Region 5 Winter Seminar

As always, this event is free and open to the public! Tell a friend!

Ames High School, 1921 Ames High Dr. in Ames.

10:00-11:30 – morning concurrent sessions

11:30-12:30 – lunch on your own

12:30- 4:30 – 3 afternoon sessions

5:00 pizza following the meeting

Items for the silent auction may be brought to the seminar site after 9:00 on the 27th.

This year there will be a morning session. The building will be open at 9:30 for people wanting to attend one of the morning sessions from 10:00-11:30.

There will be 2 presentations held concurrently:

1. "Using Smartphone apps and online resources for plant ID and inventory". Presenters will be John Pearson and Pat Sauer.

Pat will have an app that ISWEP has been working on and may be ready for some beta testing by participants.

2. "Native Plant Propagation" workshop.

There will be a break from 11:30-12:30 for lunch on your own.

At 11:30 the meeting area will open to visit displays, renew IPN and INPS memberships, browse the silent auction, and put your name in for a door prize.

If you are coming from I-35 and would like a quick lunch on your way or to go, there are 4 fast food restaurants west of exit 113 (13th St). Feel free to bring a sack lunch with you if you would like. Information on lunch locations near the high school will be available for those attending the morning meetings.

Afternoon sessions will start at 12:30 and end around 4:30.

There will be 3 sessions with 2 breaks. Session topics will include:

- 1. "Evaluating pollinator habitat"
- 2. "Building Soil with Prairie", Dr. Lee Burras, presenter
- 3. "How can I miss you when you won't go away/ unwanted botanical visitors to our natural areas", Loren Lown, presenter

The afternoon breaks will allow attendees time to bid on silent auction items, view displays, enjoy refreshments and visit. The seminar will wrap up around 4:30 with people picking up silent auction items

You may sign up during the 1st afternoon break if you would like to stay following the meeting for pizza.

Directions to meeting location and additional information:

Coming from I-35 take Exit 113 (13th St) and go west into Ames (2.5 miles) - take Grand Ave north (right) to 20th St (1/2 mile) - then go west (left) on 20th St. - this will take you directly into the north end of the High School property. Continue to drive along the north side of the school which is a parking lot and the entrance door (double door) is near the west end. You also may park on the east side (north end) of the school and enter the doors under the "Home of the Little Cyclones" sign. We will try to have Meeting signs on both entrances.

More information will be available in early January on the Iowa Prairie Network website http://www.iowaprairienetwork.org/.



Saturday, March 24th – Day of Insects

Reiman Gardens is so enthusiastic about insects that we set aside a special day just for them every year. Our annual Day of Insects brings together professionals, academics, advocates and enthusiasts of all levels from across the country to explore and celebrate entomology (the study of insects). Topics often include insects native to Iowa, exotic insects, endangered insects, conservation efforts and new educational programs aimed at advancing the appreciation of all invertebrates.

Events are open to anyone interested and also include snacks and lunch during the day.

Preregistration and prepayment are required. More details to come at:

www.reimangardens.com/event/day-of-insects-4/



Saturday, April 28th (rain date – May 5th) – Into the Wild and Out with the Mustard!

8:30am and also at 1:00pm 6th Annual Into the Wild and Out with the Mustard! at Heritage Valley (Allamakee County) – Sponsored by Iowa Natural Heritage Foundation. RSVP required: Brian Fankhauser at 563-382-2008 or bfankhauser@inhf.org.

Saturday, April 28th (rain date – May 5th) – Plant and Insect Hike at Red Oak Prairie, in association with Into the Wild and Out with the Mustard

2:00 PM - Following the morning garlic mustard pull, there will be a hike at Red Oak Prairie, a private hill prairie remnant located north of Harpers Ferry at 1180 Red Oak Road (no 911 marker, but across the road from 1179 Red Oak Road) which is just off the Great River Road. Depending on spring weather, fringed and hoary puccoon, violet wood sorrel, bird's foot violet, bastard toadflax, cream wild indigo, columbine, Robin's-plantain, blue eyed grass, prairie groundsel, wood betony, redroot, and prairie phlox may be in bloom (and garlic mustard). For those who hike to the top of the prairie, woodland wildflowers will be blooming. Sturdy shoes are a must, perhaps also a walking stick, on this somewhat steep hill prairie. Parking will be at the edge of Red Oak Road but the road is narrow so please, leave room for other vehicles when you park. Be sure to bring your binoculars. Attendees might want to observe ducks, geese and birds, as the south portion of Red Oak Road is adjacent to the Mississippi River. We will be looking for insects too. MJ Hatfield will lead the hike. Watch for details of a similar hike led by MJ in September!



May – 2018 Iowa Wildflower Month, sponsored by INPS

It is not too early to begin planning for Iowa Wildflower Month! If you have ideas or are willing to host and/or lead a field trip or other activity, contact Dianne Blankenship, bennaid@hotmail.com.



(Spring Hill Prairie Field Trip with Carl Kurtz, by Luke Gran)

2017 – Through the Year with INPS, by Dianne Blankenship

INPS offered a variety of field trips during 2017 and supported a number of events. We began Iowa Wildflower Month (May) with our annual meeting and field trips at Chichaqua Bottoms Greenbelt on May 6. We visited a prairie and a wetland in the morning. The meeting was held during lunch. Connie Mutel, a board member, gave a program about her most recent book and its reception. We ended the day with a walk in a woodland. Loren Lown and his staff provided background and information on each area. The Longhouse was ideal for the meeting and program.

On May 21 Beth Henning and Rob Davis provided a Native Plant Walk in the Middle Raccoon River Valley at Whiterock Conservancy. Beth is an INPS board member.

Lloyd Crim, INPS president, began his series of four walks at Doolittle Prairie State Preserve on May 25, with additional walks held on June 22, July 27, and August 24. These INPS walks are co-hosted by IPN and Story County Conservation. This seasonal series has continued for decades, thanks to Lloyd.

We co-sponsored the Loess Hills Prairie Seminar which always provides many opportunities to get to know the plants in western Iowa and to be updated on many other natural history topics and issues. It is held annually on the first weekend after Memorial Day. Dianne Blankenship provided an INPS display there this year.

We co-sponsored the Iowa Prairie Conference on June 14 and 15. Programs were held in Council Bluffs; field trips included visits north and south in the hills as well as some in Council Bluffs. We held an INPS membership meeting before the banquet at Hitchcock Nature Center. Our sponsorship provided us with a table where we introduced our new notecards which feature photos by Tom Scherer. The photos and order for notecards are posted on our website and announced in this Newsletter.

Board member Carl Kurtz welcomed INHF and INPS to Spring Hill Prairie in central Iowa on July 22. Carl had received an INPS small grant to have this site inventoried.

On the same day, July 22, Mark Leoschke offered an INPS field trip to the Nelson Paradise Wildlife Area in northeast Iowa. We appreciate Mark's annual scheduling of an INPS field trip to a special site of his choosing.

The Celebration of the Life of Linda Scarth on August 12 brought 120 people to the Wickiup Hill Learning Center. Many INPS members attended this farewell to our past-president, Linda. The photos there and stories shared were a tribute to the huge impact Linda and Bob have had on the appreciation of nature in Iowa. Gail Barels and many others facilitated the success of the celebration. Memorial donations to INPS provided over \$900 to support our Restore Iowa! grants.

On August 12 Lloyd Crim and Eileen Miller represented INPS with a booth at the Okoboji Blue Water Festival.

Bob Scarth and his daughter, Jennifer, set up a tent and tables for INPS at the Pelican Festival (attended by 327 people) on September 10. Lloyd hosted the INPS exhibit and brought notecards and other materials. (Bob and Linda Scarth had represented INPS at this event for several years.)

Sioux City Prairie was the site of an Iowa Prairie Heritage Week wildflower walk on September 10. Dianne Blankenship and Bill Zales were the leaders. This was co-sponsored by INPS, Loess Hills Wild Ones, and IPN.

Lloyd once again offered child-friendly activities at the Monarch Festival at the Blank Park Zoo on September 17. (INPS is a sponsor of Plant.Grow. Fly., which organizes this annual festival.)

Dianne provided INPS materials at the Sioux City Riverssance Festival on October 1.

Note: the calendar of events on the INPS website displays information about field trips and related events that are hosted by INPS and many of our conservation friends. Check it regularly. Visit the website for photos from past field trips.

INPS welcomes suggestions and offers for field trips and other activities. We already have some planned for 2018. (See separate announcements.) We also welcome members to help us with the many opportunities we have for displays at events. Contact any board member. If you have photos of past field trips, email them to Dianne at bennaid@hotmail.com.



INPS Small Grants and Restore Iowa! Grant – Call for Proposals

It's time once again to consider applying for an INPS grant for the coming year. We have 2 categories of grants:

Our <u>small grants program</u>, which has for several years funded efforts in these fields:

Land acquisition

Inventory, restoration, and management of quality native communities

Native-plant-related research

Native-plant-related training and education

Our "Restore Iowa!" grants program, which started a few years ago, is aimed at simultaneously restoring native landscapes and getting Iowa's youth involved in doing so.

We encourage you to consider both types of grants. Applications are normally due by January 15, but I will be out of the country until Jan 25. So the deadline for submission this year will be extended to Wednesday Jan 31.

Information and application instructions for both grants are described on our website:

http://iowanativeplants.org/grants.php

These instructions should answer your questions, but if not, don't hesitate to contact me. I'll be glad to discuss your ideas with you and help you submit an application that includes what we need to know. Checking with me before submitting your application will probably save both of us time in the long run, and I do enjoy hearing your ideas.

Thanks, Connie Mutel (INPS grant manager) Connie-mutel@uiowa.edu



2017 INPS Grant Projects: Final Reports Cryptogams and other Curiosities of the

Loess Hills, by Jack Phillips, The Naturalist School

INPS Grant: \$500.00, Jack Phillips, Loess Hills Nature School/Golden Hills RC&D

Lichens, Fungi, and Bryophytes workshops by Kathleen Thompson with support from Iowa Native Plant Society*

We are botanists and poets, philosophers and birders, nature-lovers and land managers and artists in a long shuffle down a dry winter ravine. Black oaks and reds, burs and chinquapins, stand raw against the sky, having piled their leaves into russet heaps all the way down, deep enough to lose your footing or sight of your dog. Plush greens bid us to rest and read a poem.

We carry poems in our packs because you never know when you might need one. And field guides, too. In their primal yet novel ways of being plants or plantlike, bryophytes, fungi, and lichens are hard to parse, and in every season these savanna bluffs and wooded hollows bubble forth with curiosities. In the tawny, orange, frosty, and green seasons they show colors and forms that startle and delight us: wood ears, witches butter, pheasant back, cat's tongue, chicken of the woods and some hens, dryad's saddle, sunburst, maidenhair, honey mushroom with shoe-string on the side, earth star, scarlet cup, eyelash cup, artist's conk, stinkhorn, dog vomit, and the phallus fungus that so deeply offended Thoreau.

And many in our company – naturalists, mycologists, artists, and broad collection of et cetera – are likewise curious creatures in their colors and quirks and compulsions to go belly-wise through duff and bramble, a lens in one hand and Mary Oliver in the other. One needs a guide to explore this primeval flatness of everything, and we have a good one. Katie Thompson is a wide-eyed mycologist with the soul of a seeker. She has trudged with us the Loess Hills in crazy ups and downs that are deeply un-Iowa-like in relief and biota. She teaches us the cryptogamic ways of being alive in this world, by definition mysterious and yet somehow basic, so vivid in the lives of creatures that can enchant or poison us. On our forays we become more human by being less so, and better bipeds by going about on our bellies. Falling into ravines in every season is a falling into nature, into deep kinship, into to ourselves.



Cryptogamic "plants," so-called for their secret sexualities and explosions of genders, have proven elusive in natural history as well. They have often gone unnoticed and poorly documented and in this respect, our every-season expeditions have an element of discovery and adventure. Thoreau observed that we walk in native fields as navigators of undiscovered islands in the sea, and so we return with new discoveries in our internal terrains as well. We make lists by common name and genus and if

we're lucky, by species. And in between, in a margin, under a sketch, or on a scrap, we carry the spores of a poem yet to be written.

*Loess Hills Nature School, a program of The Naturalist School, offered four seasonal workshops with ISU graduate student Kathleen Thompson at Waubonsie State Park, Fremont County, in 2017. These workshops were made possible with the generous support of Iowa Native Plant Society and Loess Hills Alliance. For the full text of this essay and for more information about our workshops, visit www.thenaturalistschool.org



A Toolbox for Volunteers - Connecting Recreational Trail Users with the Land, by

Rob Davis, Whiterock Conservancy, Conservation Lands Manager

INPS Grant: \$1000, Rob Davis, Whiterock Conservancy

Whiterock Conservancy staff appreciates the financial support of Iowa Native Plant Society (INPS) in permitting the purchase of equipment for volunteers. Whiterock has continued to expand volunteer program outreach to better control invasive plants in remnant ecosystems throughout the Middle Raccoon River Valley. Equipment purchases included loppers, saws, ear and eye protection, machetes, and herbicide applicators for control of shrubs, trees, and vines. Equipment was used by volunteers interested in the trail volunteer program ("Trail Repair, Education, and Development Supporters" or TREADS), as well as natural lands restoration. Most importantly, volunteers were educated about common invasive species, so that they would pay attention to not just Whiterock Conservancy but other places trail users visit. The goal continues to be the education of recreationists in identifying and controlling invasive species and to better understand the landscape on which they recreate.

Whiterock Conservancy hosted six work days at which 3-21 participants each day worked on projects ranging from natural lands restoration to trail corridor maintenance. Participants ranged from Boy Scouts interested in native ecosystems to the passionate trail rider looking for a fun trail experience. Personal safety equipment as well as hand tools permitted volunteers to be more engaged than those working on previous work days, at which Whiterock Conservancy staff operated equipment. Hand tools are both quieter and safer for general volunteers and

were quickly put to good use. By promoting more interaction with volunteers during service projects, Whiterock saw a greater number of volunteers return to assist with projects over the course of the year. The volunteer equipment was extremely effective for bike riders as these trail users are able to pack compact, collapsible saws, and herbicide applicators on their bikes. Trail users trained in equipment handling were able to provide a more enjoyable recreational experience for themselves and other trail users, while enabling staff to focus on areas of greater immediate concern.

The goals identified in developing the INPS small grant have been clearly met in the eyes of staff. Whiterock Conservancy staff again would like to thank the INPS small grants committee for funding the grant request as part of an ongoing effort to better educate the public on natural lands and restoration techniques.



Prairie Lily (*Lilium philadelphicum*) in a Cemetery Prairie Remnant, Story County,

by Amy Yoakum

INPS Grant: \$760, Amy Yoakum, Story County Conservation

The prairie remnant at the Murphy/Micah French Cemetery is one of only two locations in Story County where Lilium philadelphicum has been vouchered. The cemetery and associated prairie remnant are managed by the Richland Township Trustees. Story County Conservation (SCC) has been assisting with the management of the remnant for 25+ years. Due to SCC's staffing restraints, management of the area has been limited in the last few years and woody species have a strong foothold in the remnant. SCC successfully submitted a grant request for \$750 to the Iowa Native Plant Society to hire Conservation Corps Iowa (CCI) for brush removal. The grant request, coupled with a generous \$500 donation from a local prairie enthusiast, covered the contract amount with CCI.

On a very cold and blustery day (December 5, 2017), CCI and SCC staff dedicated approximately 81+ hours of work in the Murphy/Micah French Cemetery prairie remnant. Work consisted of the removal of sumac, buckthorn, and other woody vegetation that had encroached into the prairie remnant. Brush was cut and hauled out of the remnant – CCI and SCC staff used a dump trailer and flatbed pickup to carry the unwanted vegetation back to a SCC managed burn pile (16 miles round trip). A few brush

piles that were the results of previous work efforts were also removed. All cut-stumps were treated with herbicide to lessen the chances of re-sprouting.

Story County Conservation would like to thank the Iowa Native Plant Society for the grant funds which made work in the prairie remnant possible.





(Photos before and after the project)

Woodland Restoration at the Howard H.

Cherry Scout Reservation, by Shaun Vecera INPS Restore Iowa! grant: "Boy Scouts of America -Invasive removal and education" \$845, Shaun Vecera, Hawkeye Area Boy Scouts Council Conservation Committee (Iowa City)

The Iowa Native Plant Society awarded the Boy Scouts' Hawkeye Area Council a Restore Iowa! grant to support our efforts to restore woodlands at the Howard H. Cherry Scout Reservation near Central City, Iowa. This generous grant made possible handson conservation experience and education by eastern

Iowa Boy Scout youth, who helped remove woodland invasive species and who learned about the impacts of these species. Our invasive species removal efforts have concentrated on the removal of exotic honeysuckle, garlic mustard, and multiflora rose.

Our recent work has followed a management plan that was conducted by eight forestry undergraduate majors and supervised by two Iowa State faculty members. Beginning in the Spring 2017, two separate work days focused on garlic mustard and honeysuckle removal in the woodlands near a tallgrass prairie reconstruction. A group of 27 Cub Scouts (ages 7-10) helped remove garlic mustard on May 6, and later that month a smaller group of 5 Boy Scouts (ages 11-18) helped remove honeysuckle. Beginning again in the fall, a group of 15 Boy Scouts removed honeysuckle from this area on September 9. Honeysuckle removal started at a new site recommended by the Iowa State forestry management plan during the November 4 and December 2 camp work days. The November work day saw 20 Boy Scouts assisting with the removal of honeysuckle and autumn olive, and the December work day saw 5 scouts assisting in the same area. Approximately 2 acres of woodland at the reservation have been cleared.

The Restore Iowa! award was critical in supporting our efforts through purchasing materials necessary for the work (for example, work gloves, bow saws, herbicide and applicator wand, and marking flags). Most important, however, is the knowledge that scouts have gained by assisting with these projects. Before removing garlic mustard, during a pre-work presentation the Cub Scouts and their parents learned how to identify garlic mustard and heard about the impact of garlic mustard on a woodland. Garlic mustard samples were passed around the group, and the group learned to crush the leaves and smell the distinct odor that gives garlic mustard its name. The Cub Scouts and their parents heard about how garlic mustard came to North America as a food source and about the distinction between first- and second-year plants.

The Boy Scout volunteers, primarily focused on honeysuckle removal, learned how to identify honeysuckle by first walking the work area with the work crew leader and viewing the distinct characteristics of the plants. After this walk to target the species, the group then looked at the larger work area to learn the desired appearance of a natural Iowa woodland—that is, a woodland without a heavy understory of honeysuckle and garlic mustard. The

group heard that honeysuckle leafs out earlier and loses leaves later than most native species, allowing it to shade the understory and outcompete desirable species. While working the volunteers took regular breaks, and during these breaks they learned to identify several native tree species using guidebooks that introduce readers how to use leaf characteristics to identify trees. The volunteers learned to distinguish simple and compound leaves and whether those leaves were alternate or opposite. The group leader also showed Boy Scouts how to identify trees that have distinct bark, such as hackberry and black cherry, and how a light bark scraping with a pocketknife can help positively identify black walnut.

Throughout this project, scouts have fulfilled requirements for several Boy Scout awards, including the Soil & Water Conservation, Environmental Science, Forestry, and Plant Science merit badges. The conservation service provided by scout youth has helped those scouts earn the Paul Bunyan Woodsman award for safe tool use and the Outdoor Ethics Awareness Award.



(Scouts with bags of garlic mustard)



(Honeysuckle removal)

The remaining 2017 grant reports will be included in the spring newsletter.



Announcements Have You Paid Your 2018 Dues?

If not, INPS Treasurer Bill Blankenship will be happy to receive them! As always, the membership form is available on the back page of this newsletter, and dues will also be collected at the Iowa Prairie Network Region 5 Winter Seminar (the seminar is described on pg. 3.).



INPS is a partner and sponsor of this "conservation initiative to help protect our native pollinators." Butterfly-friendly plantings of any size count. There are already 1000 registered! Native wildflowers are recommended and offer many other environmental advantages. To register your planting, visit the website and indicate INPS "sent you." https://www.blankparkzoo.com/conservation/plantgrowfly/



The Brilliant Beauty of Iowa's Wildflowers Captured on our INPS Notecards

Our first notecards were created with photos provided by Linda and Robert Scarth. The next series highlighted Carl Kurtz's images from our prairie and woodland posters. The new notecards feature Iowa's native wildflowers from a variety of habitats photographed by INPS Board member Tom Scherer. The notecards include: Bloodroot, Cardinal Flower, Bottle Gentian, Hepatica, Indian Paintbrush, Leadplant, Golden Alexanders with Prairie Smoke, and Fringed Gentian. Each card includes the common and Latin names and the Iowa habitat where this plant can be found. These can be seen on our website's "Shop" page.

Notecards may be ordered individually at \$1.00 each for members; \$1.50 each for non-members. Add \$1 for postage for your total order. Special rates may be possible for large orders. Order through Dianne Blankenship, 737 Buckwalter Dr., Sioux City, IA

51108. bennaid@hotmail.com

Proceeds will promote conservation, education, and appreciation of Iowa's native plants through the INPS small grants program directed at preservation, restoration, education and research of native plant communities.



Bottle Gentian Gentiana andrewsii

Contributed Articles Photographing Iowa Wildflowers, by Tom

Scherer (our notecard photographer)

For well over twenty five years the excitement of searching, finding and sometimes discovering wildflowers throughout the Iowa prairie, woodland, marsh and various other habitat has been a passion of mine as a nature photographer. Now that I am officially retired I hope to spend a few more years experiencing the beauty of Iowa plants and wildflowers.

I used to keep detailed notes on bloom times and weather conditions as I followed my calendar from early March until sometimes November. I can still remember many years ago calling a friend to ask her about Pasque flower bloom. I called her in February. She politely advised me that I was probably a bit early yet! These days I have an internal GPS of sorts advising of what and where to go to photograph what we call the wildflower bloom of a specific species.

Wildflower notecards are a wonderful way to share with our friends of flowers and nature how delicate and in some cases endangered these beautiful treasures of our Iowa Nature are. From the ephemeral round lobed hepatica to the gorgeous purple fringed gentian, Iowa wildflowers provide stunning color and excitement.

Sunflower Leaf-cutter Bees and Their Floral Choices, by Stephen Johnson

It's not possible to say when the first sunflower leaf-cutter bee (*Megachile pugnata*) arrived, but my first sighting of a male was in early July coincident with the flowering period of purple coneflower (*Echinacea purpurea*). I noticed this first stationary male near a cluster of purple coneflower plants, but he was on a leaf of variably-leaved ground cherry (*Physalis heterophylla*). While this may also be a good position to be seen by predators, his mission was most likely to advertise for a female. Over approximately the next two weeks I saw skittish females only rarely visit *Echinacea* flowers, but males foraged and also paraded on the flower heads.



(Male *Megachile pugnata* on coneflower)

I watched the flower heads several times every day and often saw a male flaringly transit an *Echinacea* flower head. Perhaps the most beguiling behavior most probably attributed to female invitation was a choreographed walk across *Echinacea* disk flowers. In this stylized walk he would proceed with abdomen elevated, head lowered to a position fitting between the long-haired forelegs and quickly walk across a flower head shallowly dipping his forelegs into disk flowers, right foreleg then left. I didn't see this often, but tried unsuccessfully to photograph it twice. I actually saw this particular behavior three times, but had no camera with me the first time.

By late July, females were more commonly seen and males were scarcer. One female could often be seen foraging exclusively on purple coneflower. I also happened to notice then that some annual Greek poppies (*Papaver dubium*) that possess thin large red petals that were now sculpted with characteristic *Megachile* circumferential cuts. I finally observed her in the act of petal pilfering. She daily made several excursions from her nest to the nearby poppies until

the poppy flower petals were decimated. Her nest, I found, was about 17 cm above the ground up in the *Echinacea* stem. She had excavated the pith carefully, not damaging the ring of vascular tissue and the removed pith was scattered on the ground below like sawdust. Her nest was also on the side of the stem where a leaf was positioned just below her



(Female leaving nest)

nest hole. After watching her at this nest for several days I found her pattern of behavior. She foraged on average a total of three minutes. She would return to her nest but first land on the nearby leaf petiole, turn herself around and precisely back into her nest hole. There she would remain for about two minutes before venturing out on another three-

minute foraging mission. When she was out collecting petal fragments she returned to her nest and entered head-first. Then she would carefully back out of the hole and "compose herself" on the leaf petiole. At least a few of these foraging trips were for collecting pollen provisions for her fertilized eggs to be enclosed in a petal egg cell lining. I also found that she was a fairly late riser, not leaving the nest for an initial foraging trip until at least a few minutes after nine o'clock in the morning. At this early time, she would appear at the nest hole, sometimes extending just beyond the rim of the hole and patiently wait. Her complete nest I later found was 6.6 cm long and constructed from the entrance hole upward. This arrangement seemed designed to eliminate flooding from rainfall.

So, from the third week of July to the second week of August she foraged, collected flower cuttings and returned to her nest. Males were only seldom seen on flower heads. By the third week of August the sole female was not seen at the initial nest, and I feared that on a foraging trip she had been captured by one of the actively foraging, white banded crab spiders (*Misumenoides formosipes*). Fortunately, she had left the first nest to make a second nest at the base of another nearby purple

coneflower plant. Again, I watched her beginning at her post nine am nest departure. Now she made several daily trips to obtain nest cell linings from the broadly expansive tube flowers of wild petunia (*Ruellia humilis*).



(Female *Megachile pugnata* on coneflower)

From early September on I saw neither males nor females. What I can say is that during the entire encounter the major focus of the sunflower leafcutter was purple coneflower. While another member of sunflower family, wild ox-eye (Heliopsis helianthoides) also flowered during this time, it was never visited by males or females. It also seems that part of this bee's common name is grossly inaccurate, based on my observations in my yard; this species was never observed cutting leaves. The type of flower used for making nest cell linings seemingly must be broad and apparently of radial design, making flowers like those of poppies to the Hibiscus family and wild petunia likely targets for a plethora of cuts. She also seemed to shun these likely flowers where other visitors were larger and frequent. There were for example many available flowers of the mallow family representative Kankakee mallow (Iliamna remota) but these were under a fairly continuous foraging assault from larger two spotted bumble bees (Bombus bimaculatus), common eastern bumblebees (B. impatiens), two spotted long horned bees (Melissodes bimaculatus) and virescent green metallic bees (Agapostemon virescens). Another likely candidate Virginia meadow beauty (Rhexia virginica) was under a fairly heavy visitation schedule from buzz pollinating common eastern bumble bees. Papaver dubium and Ruellia humilis received little attention from other insects and so they apparently received the artistic sculpting from the female Megachile pugnata.

Botanical Travels in Backbone State Park

(continued from page 1)

I first visited Backbone State Park in the spring of 1994 while preparing to conduct fieldwork associated with my graduate studies at Iowa State University. Like most park visitors, I was almost immediately drawn to its signature feature: the "Backbone." This narrow, exposed ridgetop, with its spectacular views of the Maquoketa River, supports one of the most fascinating plant assemblages that I have seen anywhere in Iowa. Here, prairie plants (big bluestem (Andropogon gerardii), little bluestem (Schizachyrium scoparium), Indian grass (Sorghastrum nutans), side-oats grama (Bouteloua curtipendula), leadplant (Amorpha canescens), prairie brome (Bromus kalmii) and several dozen prairie forb species) intermingle with dwarf white pines (Pinus strobus) and eastern red cedars (Juniperus virginana), ninebark (Physocarpus opulifolius), dolomite-loving ferns (Pellaea glabella) and mosses, red columbines (Aquilegia canadensis), cream gentian (Gentiana alba), and patches of ebony sedge (Carex eburnea). Growing in the shade of oak (Quercus sp.) and ironwood (Ostrya virginiana) trees at the edge of this prairie glade, it is easy to find nodding onion (Allium cernuum), dwarf honeysuckle (Diervilla lonicera), and Canada yew (Taxus canadensis), each of which is more typically associated with moist talus slopes in the Paleozoic Plateau.

During this first visit to the Backbone, I was excited to find rock spikemoss (Selaginella rupestris) growing at the very edge of the most treacherous rock ledge that I dared walk up to. One misstep, and over the edge I'd go to fall through the air 60 feet down to the Maquoketa River. Again and again during the summer of 1994 I tempted fate to sneak up on this very rare Iowa plant, marveling how it persisted in the face of frequent foot traffic, harsh growing conditions and absolute exposure to the elements. Returning to this spot the following summer, I was surprised to find that rock spikemoss had disappeared from this spot. I have searched for this plant here and elsewhere in the park each and every year since then through the present, with no luck.

I made my first acquaintance with many Iowa plant species at Backbone State Park during the 1990s. As a dedicated sedgeophile, I distinctly remember my first encounter with hop sedge (*Carex*

lupulina), in all its green spikiness, growing in standing water within a truly flooded floodplain forest of the Maquoketa River inside the park. Wow! While wading across this same river to access a study site for the above mentioned graduate work, I saw sweet Indian plantain (Hasteola suaveolens) for the first time, its broadly arrow-shaped leaves most distinctive and eye-catching while growing at water's edge in the partial shade of black walnut, hackberry and green ash canopies. I also made first acquaintance with fellow plant enthusiasts in the park in the 1990s, especially longtime Backbone State Park Technician Charles Besler. He told me about plant populations within the park boundaries that I would never have found on my own, among them squirrel corn (Dicentra canadensis) which he showed me in April 1998 growing along a secluded trail in a cool oak-maple forest. Mr. Besler is long retired, and I have not seen squirrel corn in the park since.



(Nodding onion, by John Pearson)

Other plants were and continue to be too easy to find in Backbone State Park. Among these is garlic mustard (*Alliaria petiolata*), an introduced herb which, when green and fresh in spring and early summer, appears to be common to abundant wherever forests and woodlands occur in the park. It has likewise always been far too easy to observe an exotic vine, Asian bittersweet (*Celastrus orbiculatus*), growing

profusely in tree canopies throughout Backbone. Both garlic mustard and Asian bittersweet no doubt exert negative effects on native forest species within the park. Likewise, long open stretches of the Maquoketa River are bordered by vast monocultures of reed canary grass (*Phalaris arundinacea*) which permit coexistence with virtually no other wetland plant species. All of the above aggressive non-native plant species are out of control at Backbone and seemed destined to remain as permanent fixtures of the park flora far beyond my lifetime.

By the late 1990s, I decided to undertake a comprehensive plant inventory of Backbone State Park. Both Deb Lewis (curator of the Ada Hayden Herbarium at Iowa State University) and John Pearson (plant ecologist, Iowa Department of Natural Resources) joined me in this venture early on. During the ensuing twenty years, I have endeavored (often in the company of Deb or John) to visit every square foot of ground within the park boundaries, with the goal of compiling an annotated list of vascular plants for Backbone State Park. Although I have probably not achieved the first goal just yet, we have nevertheless documented numerous plants occurring in upland hardwood forests, in floodplain forests, in prairie remnants, on sandbars and riverbanks, on dolomite cliff faces, along roadsides, in waste disposal areas, in mowed lawns and adjacent to picnic shelters and rest rooms, in spring basins and on the grounds of the historic park fish hatchery. The flora of each of the above habitats could be the subject of several paragraphs, which I will save for our planned flora of the park to be published in a scientific journal within the next few vears.

To date, Deb, John and I have documented about 620 vascular plant taxa as occurring at Backbone State Park since my exploration of the park began in 1994. Following standard protocol for conducting plant inventories, we have collected a voucher specimen for almost all of the above species, to be mounted and deposited in the Ada Hayden Herbarium. [One notable exception: the single 3 meter tall Cannabis sativa plant I observed growing in sand in the "Flats" area of the park in 2015]. We have also conducted exhaustive inventories of five Iowa herbaria in search of plant specimens collected at Backbone State Park prior to this study. This effort has yielded about 50 additional vascular plant taxa which we have yet to discover during our current study. The grand total of 670 vascular plant taxa now documented from the park exceeds the total known

from any other state protected area in the northeast corner of the state. This is a testament to the park's large size (@1,800 acres), to the many different habitats available for plants to colonize, and to the protection afforded to these habitats by virtue of Backbone's designation as a state park almost 100 years ago. Less intuitively, frequent foot traffic on "the Backbone" has no doubt helped maintain the diverse plant assemblage here by preventing significant encroachment by woody shrubs onto this unique site.

Although this project has been ongoing for over 20 years, we continue to find new plant species in Backbone State Park. 2014 was a banner year in this regard. In June of that year, Deb and I discovered two healthy butternut (Juglans cinerea) trees growing on the edge of the historic fish hatchery, the first record of this tree species in the park since Louis Pammel collected it here in 1918. In the fall of 2014, several long walks along the margin of the Maquoketa River resulted in my discovery of the first records in Backbone of white turtlehead (*Chelone glabra*) (yeah!) and two highly invasive wetland plants: purple loosestrife (Lythrum salicaria) and Japanese bamboo (Fallopia japonica) (boo!). When John accompanied me that fall for several fun days of field work, he found the very rare shrubby cinquefoil (Dasiphora fruticosa) growing in exposed glade habitat, another first record for the park. We also documented the first record of dissected grape fern (Botrychium/Sceptridium dissectum) at Backbone, growing in thin soil in second growth upland forest. Backbone State Park Ranger Dave Sunne even got in the act that fall, finding and photographing for us the first record of stiff gentian (Gentianella quinquefolia) in the park since Bohumil Shimek collected it here in 1923.

Although I was only able to spend about half a day at Backbone in 2016, this was enough time for me to stumble upon a sedge species new not only to the park flora but also to the flora of Iowa: Swan's sedge (Carex swanii). During another week of botanical field work at Backbone in fall of 2017, John and I added an additional six vascular plant species to the plant list, including (acting on a tip from botanist Wayne Schennum) puttyroot orchid (Aplectrum hyemale) and three birds orchid (Triphora trianthophora) both growing in flat to rolling terrain in upland hardwood forests. It is likely that we will continue to find new plant species in Backbone for as long as we are able to continue our field work in the park. All of us who conduct plant inventories know

that one "never finds them all."

Plant inventory work is currently not in vogue, looked upon by many to be "old-fashioned" botany and of no value. I strongly disagree. The 20+ years of field work devoted to this study have resulted in documentation of almost one-third of the Iowa flora as occurring within the boundaries of a state park that occupies about 3 square miles. Plant lists generated from projects such as this one are often of interest to park visitors who wish to put names on wildflowers they see and to learn more about the natural history of the park. Documentation of rare and invasive plant species alike enables natural resource managers to make better, more informed management decisions. After all, if you wish to protect sensitive plant species and to control exotic invasives, you need to know which of these species you have and where they are (right?). Comprehensive studies of the flora of a fixed, welldefined area conducted at two widely separated points in time allow researchers to analyze for floristic change due to human impacts, climate change, etc. Hopefully, this narrative will inspire other Iowa botanists to embark on long-term

botanical studies of natural areas within their reach. As a full-time resident of New Mexico since 2001, it has been a challenge for me to sustain this study of the Backbone State Park flora. I am very

grateful for funds and in-kind support provided to me by the Iowa Department of Natural Resources (IDNR), the Iowa Science Foundation, Western New Mexico University and most recently a \$1,000 grant from the Iowa Native Plant Society and the Iowa Natural History Association which have allowed me to "travel a good deal" in Backbone State Park while conducting extensive and necessary field work for this project for more than two decades. Many thanks also to Backbone State Park staff Charles Besler, Mary Shea and Dave Sunne, and to veteran Iowa botanists William ("Bill") C. Watson and Wayne Schennum for their expert assistance in multiple aspects of this project, and also to Scott Gritters, Karen Osterkamp and Kevin Hanson who have over the years graciously facilitated my use of the Guttenberg Fish Hatchery and Aquarium bunkhouse (IDNR) as a basecamp while conducting this study.

The rich natural and cultural histories of Backbone State Park are well documented in the following two IDNR documents: (1) Backbone State Park Ecosystem Management Plan (many authors, 1996) and (2) Backbone History (Rebecca Gaffney, recent, though undated). Deb, John and I plan to

supplement this literature with a publication devoted to the flora of Backbone State Park within the next couple of years.]

- William R. Norris, a long-time native plant enthusiast, has lived in New Mexico since 2001 where he is Professor of Ecology and Evolutionary Biology at Western New Mexico University. He spends most of his summers conducting botanical field work in Iowa.

Heart Stays Country: Book Review, by

Dianne Blankenship

We Iowans are fortunate to have the University of Iowa Press and its Bur Oak series. Bur Oak books, edited by Holly Carver (UI Press Director-Emeritus), focus primarily on the natural history of Iowa and the Upper Midwest. Holly initiated this nature-oriented series in the mid-1980s and has since acquired and published hundreds of valuable treatises that have taught us much about our state's natural features. Many of the books were written by our INPS friends and naturalists from nearby states.

A newly-released Bur Oak book extols tallgrass prairie in northern Oklahoma, but is also inspiring to those of us here in Iowa. Author Gary Lantz grew up in Oklahoma's Osage County, left it to pursue a career in nature writing and photography, and recently returned to find himself truly at home. Heart Stays Country – Meditations from the Southern Flint Hills immerses the reader in all aspects of prairie in a loving, deep, and informative way. Keen observations of plants, wildlife, and ecology are written in short essays. Using a diary format, traveling through a year in nature, Lantz shares scholarly information about the diversity of prairie, from below to high above the ground. Birds, insects, and plants are all described vividly with smooth and elegant prose. He gives credit and respect to historical prairie leaders, Native Americans, the Nature Conservancy, the return of bison, and new approaches to grazing. I found the book extremely engrossing. The reader will surely feel enlightened and will experience prairie with even more respect, careful observation, and thoughtful reflection. I highly recommend this book to anyone who is willing to fall even more in love with our prairies.

Heart Stays Country is available from the University of Iowa Press:

www.uipress.uiowa.edu/books/2017-fall/heart-stayscountry.htm

Cyperaceae/Juncaceae and Poaceae Workshops – Save the Dates!

Bill Norris and Tom Rosburg will co-present a Cyperaceae/Juncaceae (sedge/rush) Workshop at the Port Louisa National Wildlife Refuge on July 17-19.

Tom Rosburg will lead an in-depth Poaceae (grass) Workshop at Whiterock Conservancy on August 21-23. More details of both workshops will be included in the Spring issue.



Thank You to Our 2017 Contributors!

We wish to thank all INPS members who have joined or renewed their membership for 2017, and hope you will do so for 2018! We are especially grateful to those who contributed more than the basic dues. Those who made contributions of at least \$25 in 2017 are listed below.

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Contributions to the INPS Restore Iowa! Grants in Memory of Linda Scarth

Linda Scarth's family chose the INPS Restore Iowa! grants for memorial contributions honoring Linda's life. If you wish to contribute, donations may be sent to INPS Treasurer Bill Blankenship, 737 Buckwalter Drive, Sioux City, IA 51108. Please note the memorial on your check. The purpose of the Restore Iowa! grants is to get more children and youth outdoors and working to restore nature in Iowa.

To date, more than \$900 in contributions has been received for the grant program from Scott and Heidi Blanke, Bill and Dianne Blankenship, Holly Carver, Cedar County Historical Society, Jean Day, Dave and Patty Hansen, Mary Jane Hatfield, Greg and Moni Hayne, Deb and Terry Lewis, Connie Mutel, Don Nelson, Frank Olsen, Leda Schwertfeger, Larry Stone, Pam White, and Mark Widrlechner.

A closing reminder: the Cedar Rapids Museum of Art will feature Linda and Bob's photography in *Framing the World: The Photography of Linda and Robert Scarth*. The exhibit will run from January 13th to April 29th, with a reception being planned for early February. Details can be found at: http://www.crma.org/Exhibition/Detail/Upcoming/Framing-the-World-The-Photography-of-Linda-Robert-Scarth.aspx

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