



KANSAS NATIVE PLANT SOCIETY

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NEWSLETTER OF THE KANSAS NATIVE PLANT SOCIETY

APRIL 2023



Halstead sixth graders putting the finishing touches on their prairie garden. Teamwork allowed the students to build two raised beds and spread three tons of soil. (Photo courtesy of Halstead MS)

PLANT A PRAIRIE

School Gardens are a Nexus for Community

— PAUL SHOWALTER

Since its inception three years ago, Plant A Prairie project has provided sixty-seven prairie garden kits to Kansas teachers and youth leaders and engaged about 10,000 children. The kits include thirty-two native plants and teaching resources. KNPS recently visited with several projects to ask teachers about their Plant A Prairie experience.

ATCHISON HIGH SCHOOL

When visiting the Atchison High School, you cannot miss the Plant A Prairie garden. It occupies a space next to the flagpole and is bordered by sidewalks that lead to the front entrance. Each species in the garden bears an attractive ID marker with the plant's scientific and common names. The garden also features a custom-crafted wooden sign with the school's name, along with a relief carving depicting the school mascot — a Rising Phoenix.

The garden is the brainchild of Atchison biology teachers Sarah Tschauder and Macy Pickman, who each applied for a PAP garden grant in 2021. The plants arrived in mid-September, and they combined their projects into one garden.

Along the way, the garden project turned into a community effort. Community members contributed materials — top soil and rototilling to prepare the bed; Tschauder's parents crafted the school sign from wood of Osage orange and other local trees. But it was the responsibility

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OUR MISSION

The mission of the Kansas Native Plant Society is to encourage awareness and appreciation of the native plants of Kansas in their habitats and in our landscapes by promoting education, stewardship, and scientific knowledge.

The Kansas Native Plant Society Newsletter is published quarterly: Winter (January), Spring (April), Summer (July), Fall (October). Readers tell us how much they enjoy the newsletter in paper format. Contributions help us continue to produce a publication of this length in this form.

You may send your gift to KNPS at:

Kansas Native Plant Society
R. L. McGregor Herbarium
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KNPS Winter Board Meeting Notes

— KRISTA DAHLINGER

The KNPS Board – Winter Meeting took place on January 14, 2023 at the Dyck Arboretum in Hesston. Fifteen KNPS Board members attended the Winter Meeting on January 14, 2023, at the Dyck Arboretum in Hesston, including our newest board member, Pam Paulsen of Hutchinson. One guest, Jamie Parrott of Belle Plaine, was also present. Following are summaries of committee reports.

Membership – KNPS has just over 650 paid up members for 2023, with that number to increase as renewals continue. We have interest in activating a Southeast Kansas Region.

Finance – Earl Allen, Treasurer, reports that he is working with Nadine Champlin who will take over Treasurer duties in September 2023.

Scholarship – Mike Haddock proposed increasing the annual Mary A. Bancroft Memorial Scholarship budget to \$3,000 due to increased donations. The board approved.

Website, Events, Publicity, Outreach – Krista Dahlinger reported that the website Events Calendar could show more events and encouraged everyone to use the website “submittal” feature to share native plant sales, walks, and educational events. KNPS Facebook pages are active and growing. Krista and Anthony Zukoff continue writing native plant feature articles for the *Kansas Wildlife and Parks Magazine*.

Newsletter – Cynthia Rhodes reported that the upcoming April 2023 *Newsletter* article theme is “educational opportunities available for youth to young adults” related to native plants. She asked the board to encourage people to contact her to suggest articles about their programs.

Cynthia and Brian Martin, our terrific newsletter team, are both retiring from their career work and announced they are also retiring from producing the KNPS newsletter after the October 2023 issue. A new newsletter team is needed.

Plant Resources and Stewardship – Brad Guhr reports the committee is discussing Callery pear and other invasive plants that are increasing in landscapes. The “Wildflower of the Year” series will be renamed the “Native Plant of the Year” to be inclusive of trees, shrubs, and grasses.

Awards – Mike Haddock would like to have an additional board member on this committee with Mike Kaye retiring.

President’s Message

— ANTHONY ZUKOFF

A great sense of anticipation always fills me this time of year. Gradually and then suddenly, spring will be upon us and we will be surrounded by all of the wonderful diversity Kansas native plants have to offer. For me, the middle of March has the landscape of western Kansas still quite dormant. Bronze tufts of last season’s little bluestem help to break up the scenery and distract me from the wide-open horizon. However, when I look closely, I can find hints that the world is waking up.

In the Sand Sage Prairie, I am already finding small rosettes of curvopod fumewort along with the waxy, green shoots of western spiderwort. Buds are also forming on sandhill plum and buffalo currant, two of the earliest blooming species of shrubs found along the sandy acres of the Arkansas River. Further north, in the chalky prairies, aromatic sumac flower buds are getting larger each week, woolly locoweed is already sending out new growth, and the Easter daisies will be blooming soon. News from native plant enthusiasts from across the state also help to grow my excitement for spring when I hear of what is stirring in the eastern regions: spring

ephemerals such as wild columbine and spring beauty are already well on their way. I certainly hope you are enjoying the gradual suddenness of spring wherever you are in Kansas.

Looking ahead, there are many exciting opportunities coming up this year for exploring Kansas’ native flora. In May, there will be a weekend spent in the Osage Cuestas ecoregion exploring several diverse prairies located in Anderson and Allen counties. In September, we hope you will join us as we celebrate our Annual Wildflower Weekend (AWW) in Phillips County when we explore a unique part of the state where the tallgrass prairies of the east are transitioning into the shortgrass prairies of the west.

For more details on these events and many others held in between, keep your eyes on the KNPS events calendar online as well as the event listing included in the quarterly newsletter. If you are interested in becoming involved with the planning or coordination of our yearly events or have any ideas you would like to share, please reach out to any of the board members listed in this newsletter. Thank you for being a member and for supporting awareness of Kansas native plants!

RIGHT, TOP TO BOTTOM Paintbrush Prairie in Anderson County.
Prairie wildflowers at Kirwin National Wildlife refuge in Phillips County.
Indian Blanketflower at Kirwin National Wildlife refuge in Phillips County.

ANTHONY ZUKOFF



Yellow curvopod fumewort bloom in the Sand Sage Prairie

PHYLLIS SCHERICH



PHOTOS COURTESY OF KIRWIN NATIONAL WILDLIFE REFUGE





TOP Lawrence High School's Plant A Prairie garden takes shape in September 2022. Instructor Lisa Ball (shown at far end of the garden plot) leads students in milkweed germination experiments; the milkweed seedlings go to a local prairie restoration site. (Photo courtesy Lawrence HS)

ABOVE Atchison High School: native foxglove beardtongue and a Rising Phoenix greet school visitors. Biology teachers Sarah Tschauder and Macy Pickman and students combined two Plant A Prairie kits to fashion this high profile garden. (Photo: Sarah Tschauder)

Plant A Prairie

— CONTINUED FROM PAGE 1

of the biology students, who gathered plant descriptions and growing information, to handle planting and maintenance.

Students were admittedly lukewarm about the project in the beginning, said Pickman, but as it progressed and they put their plants in the ground, they got excited to see the results. They went out frequently to check on “their” plants late into the fall.

As sometimes happens, the first-year planting achieved mixed results. Some plants did well, others not. Aromatic asters (*Symphyotrichum oblongifolium*) and purple poppy mallow (*Callirhoe involucrata*) were in great shape, but — blame it on the drought — some other plants did not survive the winter. The bare spots have since been filled in with natives, including cardinal flower (*Lobelia cardinalis*). In a few weeks, the project hopes to see a lush mini-prairie with red and yellow flowers to match the school colors.

LAWRENCE HIGH SCHOOL

It is a long slog to traverse from one end of Lawrence High School all the way to the classroom of biology teacher Lisa Ball. You need a student guide to help find your way. But you know you have arrived when you see the large poster with a list of familiar poisonous plants and their toxins.

Ball’s classroom is populated student experiments in various stages of completion. Lab groups are sprouting milkweed seeds (one of those plants that happens to produce toxins). The seeds are gathered locally from butterfly milkweed (*Asclepias tuberosa*) and swamp milkweed (*Asclepias incarnata*). In their experiments, students are testing three different germination treatments: cold stratification, water germination, and winter sowing.

The winter sowing experiment is taking place outdoors near the Plant A Prairie plot. Rows of milk jugs have been converted into mini greenhouses, each with drainage holes, soil, and about five milkweed seeds. The jugs were cut in half, except for a small hinge, and then taped back together, so they can be opened later when temperatures rise and plants sprout.

Lisa said the plants propagated in these various experiments will be distributed in May to a local prairie restoration project. Some plants will go home with students, and some may be transplanted into the Plant A Prairie garden, which serves as a larger student laboratory.

HALSTEAD MIDDLE SCHOOL

Sixth Graders at Halstead Middle School installed a Plant A Prairie garden as part of an outdoor classroom, according to classroom teacher Ward Willis. The project included building two raised beds and filling them with three tons of dirt.

Students planted one raised bed with thirty-two natives from the Plant A Prairie kit. Plants included: purple poppy mallow, June grass, wild petunias, Eastern bee balm, lead plant and New England asters. The other bed was sowed with native wildflower seed received through another grant.

The project completed last fall garnered a front-page story in the Harvey County Independent newspaper. “Next year, this is really going to take off,” Willis told the newspaper, “They’re all native plants to Kansas...hopefully it’s going to get really beautiful.”

Willis explained to KNPS that he wants students to understand the value of native plants for habitat and the environment. The middle schoolers were obviously having a lot of fun, too. Among the newspaper’s best student quotes: “I think it’s a good way to learn and have teamwork and not just mess around,” said Desiree Keel. Others described the time spent as an “educational recess.”

Free Prairie Garden Kits for Teachers & Youth Leaders

Kansas teachers K12 can receive 32 native perennials for September 2023 planting.

Your 8’ x 10’ garden comes with instructions, teaching links, a garden sign, on-line support and a 274-page wildflower field guide: *Wildflowers & Grasses of Kansas*. The application deadline is May 15, but the supply of kits is limited.

Plant A Prairie is a program of the Kansas Native Plant Society. Since its inception 3 years ago, it has engaged more than 10,000 Kansas students. For an application form and more information, visit <https://www.kansasnativeplantsociety.org/plant-a-prairie/>

They Took a Different Path: Heterosporus Ferns

— CRAIG FREEMAN

Of the forty-one species of ferns and fern allies in Kansas, six differ from all the others in the way they reproduce. To understand the difference, let us start by reviewing some basic botany.

In the first article in this series (*KNPS Newsletter* Vol. 44, No. 2), I described the general life cycle of a fern, beginning with the spore, a single cell with one set of chromosomes. The spore germinates and grows into a tiny prothallus, and the prothallus eventually produces gametes: egg and sperm. This part of the fern life cycle is called the gametophytic phase. A fertilized egg or zygote, now with two sets of chromosomes (one each from egg and sperm), begins the sporophytic phase of the cycle. Ultimately, the zygote develops into a multi-celled fern plant that produces more spores. Spore production occurs through meiosis, cell division that reduces the number of sets of chromosomes from two in the sporophyte to one in the gametophyte, allowing the cycle to repeat.

The vast majority of ferns produce one type of spore and their gametophytes are bisexual. They are described as homosporous. However, some, like the six described here, produce two distinct spore types. Large spores, called megaspores, germinate to grow into megagametophytes, which produce eggs. Small spores, called microspores, germinate and grow into — you guessed it — microgametophytes, which produce sperm. Ferns that produce megaspores and microspores are said to be heterosporous. The evolution of heterospory from homospority happened multiple times and was an important step in the diversification of land plants. Here is a snapshot of our heterosporous ferns and fern allies.

Western water-clover (*Marsilea vestita*) is widely scattered in the state and known from nearly half of our counties. It is seen most often in south-central and southwest Kansas, growing in and around ponds, roadside ditches, irrigated fields, and creeks. Water-clover produces creeping, branched rhizomes and leaves with four-parted blades resembling those of a four-leaf clover. Spores develop in small, pod-like structures called sporocarps, which are borne on short stalks on the rhizomes near the bases of the petioles. Sporocarps only open in water and can remain dormant for many years.

American pillwort (*Pilularia americana*), a close relative of water-clover, is known in Kansas only from several historic collections around sand dune ponds in Harvey and Reno counties. Like water-clover, pillwort has slender, creeping rhizomes, but its

leaves are grass-like and up to four inches long, and the sporocarps look like BBs. Difficult to distinguish from the surrounding vegetation, pillwort can be recognized by the tightly coiled tip of the young leaves.

Mexican mosquito fern (*Azolla mexicana*) is a curious aquatic fern found in a dozen counties in eastern and south-central Kansas. It grows on the surface of the water in ponds, lakes, and still creeks, or sometimes stranded on drying shorelines. Its intricate fronds are compactly branched, mat-like, and up to one inch wide. Sporocarps are of two types and borne in pairs in the lower leaf axils. Mosquito ferns form a symbiotic relationship with a cyanobacterium that lives

in chambers in the leaves. The bacterium fixes atmospheric nitrogen, giving the fern access to this important nutrient. Mature fronds often turn red or reddish purple in the fall, and migrating waterfowl and shorebirds help spread the plants.

Quillworts (*Isoetes*), so named for their quill-like leaves, are the closest living relatives of *Lepidodendron*, an extinct, tree-like plant that flourished in forests 300 million years ago. Quillworts are easily overlooked and often mistaken for grasses or sedges. They have a stubby, swollen, stem-like base buried in the mud, with anchoring roots and a rosette of slender leaves. Megaspores and microspores are produced in separate sporangia in the expanded leaf bases. Kansas has two species. Butler’s quillwort (*Isoetes butleri*) is known from about a dozen counties primarily in the Osage Cuestas. Populations occur in muddy seeps around surfacing limestone and sandstone. Black-foot quillwort (*Isoetes melanopoda*) has been documented only in Reno, Saline, and Wilson counties around limestone seeps and sand dune ponds. It was last seen in the state in 1979.

Finally, Rock spike-moss (*Selaginella rupestris*) is a diminutive perennial usually found in dry, shallow, sandy soil around sandstone outcrops, ledges, and crevices. Often mistaken for a moss, spike-moss has branched stems that hug the substrate. Its awl-like leaves are only one-tenth inch long. Megaspores and microspores are produced in cone-like structures at the ends of the

upturned stems. Rock spike-rush has been documented in a dozen counties almost entirely within the Osage Cuestas.

As you explore the out-of-the-way places across the state, be observant. You might be rewarded with the discovery of one of these fascinating but overlooked members of the Kansas flora.



ABOVE, TOP Mexican mosquito fern (*Azolla mexicana*)

ABOVE Butler’s quillwort (*Isoetes butleri*)

Why Choose a Horticulture Career?

— NADINE CHAMPLIN

The Kansas Native Plant Society (KNPS) is considering supporting a scholarship for high school students desiring a horticulture degree. For many years, this group has honored graduate students with scholarships for working on their master’s or doctorate degrees through native plant research programs. KNPS has been blessed with donations from members, memorials, and corporations that had the desire to further public knowledge of native plants. The KNPS board has become aware that the cost for a high school graduate to attend college has increased tremendously in recent years. Also, during this same time, interest in majoring in Horticulture has been declining. Therefore, consideration is being made to offer monetary assistance for high school students interested in pursuing a post-secondary degree in Horticulture.

Last year, I participated in a job fair for a local high school. I was excited to talk to students about the many opportunities there are in the career field of Horticulture. As the students filed into the gym, they headed to the tables with the “high tech” jobs (chemical industry, business management, engineering, etc.). However, I had one student walk directly to my table, and indicate she was interested in horticulture, but her parents thought she should choose another major in which she could make more money. She said she was an honor student and could easily apply for scholarships. After our conversation, I hoped I convinced her to continue to pursue her dream, as many of the horticulture jobs these days are actually “high tech” using computers as well as scientific and technical knowledge in every aspect of the job every day.

As the time was nearing for the students to go back to their classes, a group of football players (they had on jerseys since it was a Friday) sat down at my table, I think to pass the remaining time. I asked them if they were interested in horticulture and they just shrugged their shoulders. Then I asked them if they like to breathe, eat, or enjoy a nice fire in their wooden houses. (We just do not stop to think about how important plants are in our daily lives.) They started asking questions and left with smiles when we discussed golf course turf management or wildlife and forestry management as they talked about liking to play golf or wanting to hunt and fish. For a young person, the study of plants simply opens the door wide to interesting and important career opportunities.

The American Society for Horticulture Science reports for the past several years many college horticulture programs have experienced a decline in undergraduate enrollment, resulting in the elimination of some degrees. A study was conducted comparing college offerings existing in 2012 and 2017. Overall, this data suggested a trajectory toward elimination of two-year and certificate programs, and continued consolidation for four-year degrees. If it continues, this trend is not favorable for the continued vitality of post-secondary horticulture

programs in the United States and may impact progress negatively for the field of horticulture as a whole.

Newsweek has listed the top twenty most useless degrees and sitting close to the top at number two was horticulture. (Do not feel bad, journalism was number one!) The ranking was based on data that included the industry’s median starting salary (\$35,000), median mid-career salary (\$50,800) and percentage change in the number of jobs from 2008-2018 (-1.74). And the ranking reiterated many of the reasons university and college horticulture programs say they are having trouble attracting students — the public’s perception is that salaries are too low and a degree is, well, useless for a career that could involve planting and mowing

“Parents are sending their children to business school — the business schools are swelling,” says Roger Harris, professor and head of the horticulture department at Virginia Tech University. “There’s a perception that people don’t know what horticulture is ... and there’s a perception that they can’t make a good living, which is totally false. Our students are making near the top of the college, as far as starting salaries. They’re working for competitive companies.”

As federal and state budgets are cut, it is no surprise as the trickle-down effect of that tightening grips many universities and colleges into an economic squeeze. The cuts have meant the loss of faculty, extension, and research programs. It has also meant horticulture departments have merged with other departments. And it has meant an increasing number of programs have looked externally for non-state sources of funding.

The changes in recent years have not all been gloomy. Departments have restructured to meet the needs of incoming students and the job industry. In a glimpse of how things have changed in the last decade, for example, Michigan State University added a sustainable and organic horticulture concentration. Also, Virginia Tech’s landscape contracting students receive a minor in entrepreneurship. Additionally, Colorado State University changed the name of its Landscape Horticulture major to Environmental Horticulture and added a landscape business concentration. Why the changes? Steve Wallner, professor and head of his academic department said, “When you’re talking about the curriculum and what those students are interested in and hope to wind up doing, it really is all about outdoor spaces and outdoor environments, so environmental horticulture made sense from that point of view. It is also more appealing to students from a recruiting sense.”

Another trend companies have seen is a change in graduates’ expectations. “There is less eagerness among current college graduates to go into more physically demanding jobs,” says Gordon Ober, vice president of recruiting and development for The Davey Tree Expert

Top three reasons for the decline in Horticulture majors:

1. Horticulture is not seen as a “professional” industry to many.
2. Land-grant universities with large engineering and business schools have raised the entrance bar and put caps on the number of students, making it difficult for students interested in any field to get accepted.
3. The number of students transferring from community college systems or two-year programs has declined. People are deciding to keep working instead of going to school for economic reasons – they do not know if it is worth it or not. This has resulted in the discontinuation of some horticulture programs in community colleges.

Company.” Many of today’s college students are also not as eager to work longer hours or pick up and move far away from home. Also, upper ranking students are not as willing to start at the bottom to learn the business and then work their way to the top. They want a defined, short-term roadmap for advancement up and out of production positions. They expect to start as management trainees, account representatives/managers, or supervisors.” He added, “Students get interested in majoring by having some positive contact with horticulture. The best recruiter is someone who gives them a chance to do something more with plants than dig holes and/or pull weeds all day; then they see that this can be a career. If companies can provide high school students with summer employment that is varied in scope and includes a few days

shadowing the bosses, for example, or a trip to an industry event like an expo or a field day, it can really open their minds to what is possible.”

A new program I have come across called “Seed Your Future” is a movement to promote horticulture and inspire people to pursue careers working with plants. Just envision a world where more people understand and value the importance of plants and the people who work every day in the art, science, technology, and business of horticulture!

At Kansas State University the Horticulture and Natural Resources Department was officially founded in 1871 as one of the first departments at KSU. Their website states: “As a commitment and tribute to the founding members of the department, we continue to educate outstanding students who become outstanding members of the industry. Students are passionate about improving human-nature interactions and understanding what the future of Horticulture and Natural Resources can do for the world.”

As members of KNPS, our goal is to promote the awareness, appreciation, and stewardship of Kansas native plants. The Plant A Prairie program has been and continues to be a success in encouraging elementary, middle, and high school students to participate in planting native plants and studying the benefits provided for our environment. Let us then take this argument to the next level: learning to grow plants using less water, fertilizer, and pesticides can be an important goal in protecting our environment and the health of our populations, and helping to fund a young student’s budding career in Horticulture is certainly a positive beginning toward fulfilling that goal.

Nadine Champlin has a Bachelor of Science degree in Horticulture, is the owner and designer of Prairie Place Designs LLC, and is a Certified Nurseryman with the Kansas Nursery and Landscape Association.

GREAT PLAINS BUMBLE BEE ATLAS — KATIE LAMKE

Join a large and growing group of volunteers to help track and conserve bumble bees in Kansas! The Great Plains Bumble Bee Atlas is a regional community science project spanning North Dakota, South Dakota, and Kansas that trains people to survey for bumble bees using catch-and-release methods. After launching in May 2022, nearly 130 community scientists have already observed approximately 2,000 bumble bees, and we are hoping to expand our network of participants for the 2023 season.

The Atlas hosts educational workshops that provide the skills and knowledge needed to participate – from understanding bumble bee ecology and species identification to swinging a net and photographing bees – so volunteers walk away with the confidence to conduct their own surveys. Volunteers are asked to conduct at least two forty-five minute surveys anytime between June to September, and surveys can take place anywhere there is permission to do so. Survey findings are then submitted to BumbleBeeWatch.org, the largest platform collecting bumble bee observations across the U.S. and Canada, and the data is used to improve our understanding of bumble bees and further our ability to conserve these valuable pollinators.

The Atlas is coordinated by the Xerces Society for Invertebrate Conservation with support from the U.S. Fish and Wildlife Service. To learn more about the Great Plains Bumble Bee Atlas, view 2022 results, and sign up for our 2023 workshops, visit www.BumbleBeeAtlas.org.

Contact: Katie Lamke (katie.lamke@xerces.org), Conservation Biologist, The Xerces Society



KATIE LAMKE/THE XERCES SOCIETY

Schools Offering Horticulture Programs			
Program Type	1997	2012	2017
4-year degree	–	98	85
2-year degree	–	215	133
Certificate	–	138	98
Total Schools	446	253*	209*

*Because some schools offered multiple types of degree programs, the number of total schools is less than the sum of each type of program.

Meet Your New Community Forestry Coordinator

— MATT NORVILLE

Hello from the Kansas Forest Service! I am Matt Norville, your new Community Forestry Coordinator. Forestry has been a long and winding path for me. Some of my first memories, like maybe a lot of yours, involved plants. I remember following my grandpa down tree-lined trails exploring the hardwood forest and tripping over my own feet more than logs. My parents cleared large oaks to build our family home, and I grew up exploring the oak-lined creeks of the Midwest, losing shoes in mud, catching poison ivy, and having adventures in what were just the neighbors' backyards. Moving into high school, my dad took me on trips into the Boundary Water Canoe Areas, and I experienced a forest bigger than one could comprehend as an adolescent. We used canoes to pass swiftly, but quietly, almost ghostly traveling through nature, the woods, streams, and lakes, portaging where needed. The forest was calling, and I listened, attending Warner College at Colorado State University to study forestry and natural resources management to try and understand the language of the trees. While there, I worked on Bureau of Land Management and The Nature Conservancy wildfire crews and watched the energy and devastation the forests can fuel. Today, I am excited to begin a career as a forester with the Kansas Forest Service.

The goal of the Kansas Forest Service Community Forestry's program is to increase the health and resiliency of community forests across Kansas. Healthy community forests provide many benefits ranging from providing vital wildlife habitat, increasing



a community's vitality and overall health, removing carbon dioxide and pollution from the air, increasing water quality, and more. We try to accomplish this important goal in a multitude of ways by delivering technical services ranging from administering recognition programs such as Tree City USA, delivering training to increase knowledge, and providing site visits for communities.

This may be the most exciting time ever to be involved with community forestry! Having the opportunity to really make a change and influence the future forest canopy has never been more important. We are faced with many challenges such as declining tree canopies, climate change, and exotic tree pathogens. Currently, across Kansas, we are conducting premier work from planting tree trials to identify new species that will allow us to grow diverse community forests, to researching statewide urban tree canopy studies, to identifying specific community needs, and developing Kansas-specific arboriculture training in association with the Kansas Arborist Association. We are working hard to serve communities statewide.

If you would like to be involved, a great place to start is to volunteer with your local tree board. They organize local community forestry events from tree plantings to Arbor Day celebrations. If there is no tree board for your town, start one! Feel free to reach out to me at mnorville@ksu.edu for more information.

ARIEL WHITELY-NOLL PHOTO

SAVE THE DATES!

Mini AWW

May 19, 20, and 21
Allen and Anderson Counties

FRIDAY - Spring/summer board meeting (tentatively at the Allen County Community College in Iola); after the meeting we will explore the beautiful prairie preserves of Anderson County.

SATURDAY - Several prairie properties will be botanized, including the famous Paintbrush Prairie, Leadplant Prairie, and potentially some private properties.

SUNDAY - An extra day of botanizing has been planned for anyone who wants to stay through Sunday. We will explore Lehigh Portland Trails south of Iola (<https://www.travels.com/kansas-magazine/articles/post/hidden-hiking-gems-lehigh-portland-trails/>)

2023 AWW

September 22, 23, and 24
Kirwin National Wildlife Refuge

Details are currently being worked out in cooperation with the property manager at Kirwin National Wildlife Refuge; exact locations are not confirmed yet. There will be several prairies explored that weekend, as Kirwin NWR will be the focal point as a property located in the mixed grass region of the state where tallgrass prairie is transitioning into shortgrass prairie "east meets west."

Check the KNPS website and Facebook pages for current information regarding these two upcoming events! All are welcome! Save the dates!

FEATURED NATIVE PLANT

Downy Yellow Violets | (*Viola pubescens*)

— LORNA HABEGGER-HARDER

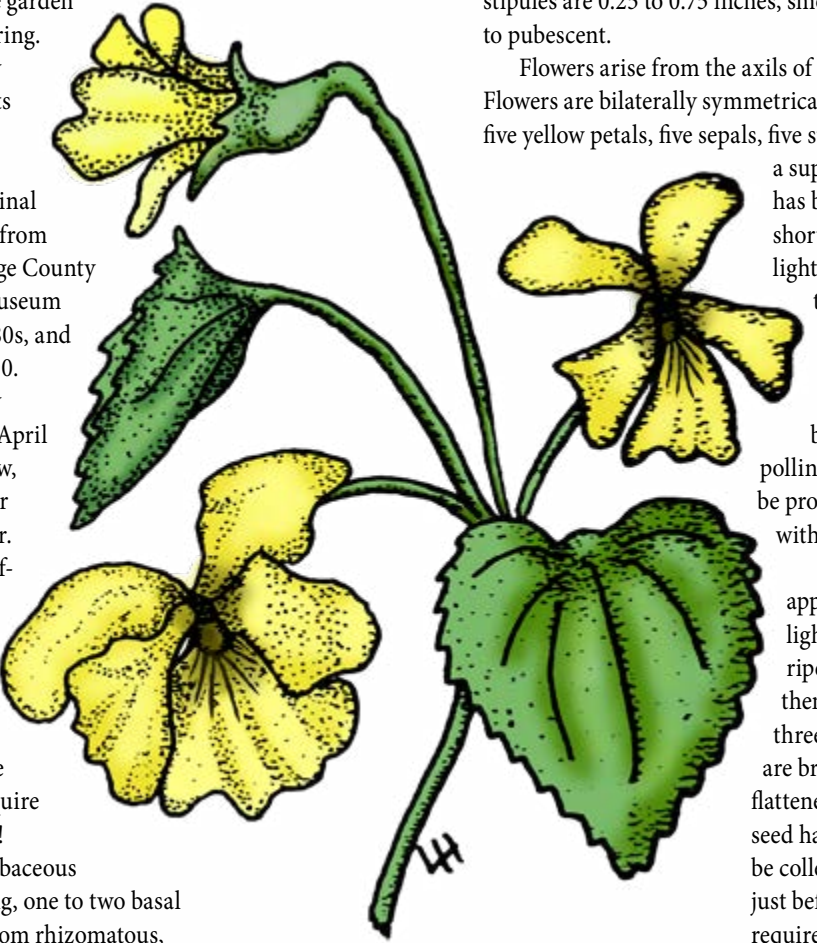
Violets are the harbingers of spring – diminutive annual little Johnny jump-ups (*Viola bicolor*), wild blue violets (*V. pratensis*), white violets (*V. canadensis*), and downy yellow violets (*V. pubescens*). Several days ago I took a peek under last year's leaves still blanketing the shade garden to see what might be stirring. There I found the crinkly leaves of the yellow violets just beginning to emerge and unfold. They are special these violets, original transplants that traveled from Lorraine Kaufman's Osage County farm to the Kauffman Museum woodland in the mid-1980s, and then to my garden in 2000. Each spring their lemony yellow flowers appear in April and May, seed pods follow, and then plants disappear in the heat of the summer. They are not vigorous self-seeders, so it has taken a number of years for downy yellow violets to fill a corner of the shade garden (unlike their boisterous wild blue violets cousins which require vigorous annual editing!).

Yellow violets are herbaceous perennials. In early spring, one to two basal leaves may first appear from rhizomatous, fibrous roots, followed by one to four stems with alternate leaves. Medium green leaves are simple with prominent veins, crenate-serrate edges (shallow blunt teeth pointed forward), and are

from two to three inches long, and 2.5 to 3.5 inches wide. They may be pubescent, sparsely pubescent, or glabrous. Lower surfaces are light green and pubescent, especially along the major veins. Petioles of the stem leaves are light green, and also pubescent. Pairs of leafy stipules are 0.25 to 0.75 inches, smooth along margins, and glabrous to pubescent.

Flowers arise from the axils of alternate leaves along the stems. Flowers are bilaterally symmetrical, about 0.75 inches wide, with five yellow petals, five sepals, five stamens and a single pistil with a superior ovary. The lower petal has branched, purplish lines and a short nectar spur. Slender, curved, light green pedicels cause the flowers to nod slightly. Blooming lasts approximately one month in mid- to late spring. After flowers with showy petals finish blooming, cleistogamous (self-pollinating) flowers without petals may be produced. Flowers, both with and without petals, produce viable seed.

Oval seed capsules are approximately 0.5 inches in length, light green and pubescent. As seed ripens, the capsules turn tan and then brown, finally splitting into three parts to eject the seed. Seeds are brown, round or ovoid, slight flattened and 2 to 2.5 mm long. Each seed has an oily appendage. Seed can be collected when pods are dry but just before splitting. Collected seed requires approximately sixty days of cold, moist stratification. Plant seed in fall and winter in the garden, or artificially stratify in moist sand or vermiculite before potting or sowing in the field. This species can also be transplanted.



— LORNA HABEGGER-HARDER ILLUSTRATION



TECH NOTES

— KRISTA DAHLINGER

A new section for podcasts has been added to the KNPS website under the "Learn" drop down menu at the top of the webpage. Included are the Kansas Forest Service "Kansas Canopy," Kansas Wildlife and Parks "Flatlander," and Nature Revisited (interviews with botanists and authors) for a few of the podcasts you can access there. Feel free to suggest other native plant and nature themed podcasts to email@ksnps.org.

Before you travel, use the contact information to confirm an event is still happening and not cancelled or rescheduled.

PRAIRIE RESTORATION WORKDAY
at Prairie Park, 2811 Kensington Rd.,

BABIES & WILDFLOWERS PHOTO TOUR, Maxwell Wildlife Refuge, 2565 Pueblo Rd., Canton. Board the open trams to view the Bison herd with stops along the way for wildflower photographs. Reservations required, plan to arrive by 7:45 for check-in. **Info and reservations at** maxwellwildliferefuge@gmail.com or 620-654-7230

Join the KNPS email list to receive the latest event announcements:
[www.kansasnativeplantsociety.org/
email_list.php](http://www.kansasnativeplantsociety.org/email_list.php)

Linda Mccaughey - Overland Park
Kennita Tully - Manhattan

Abstract

A map of Kansas showing its 105 counties. Major cities are highlighted in white text on a dark background. The cities shown are: Cheyenne, Rawlins, Decatur, Norton, Phillips, Smith, Jewell, Republic, Washington, Marshall, Nemaha, Brown, Doniphan, Atchison, Colby, Sherman, Thomas, Sheridan, Graham, Rooks, Osborne, Mitchell, Cloud, Clayton, Manhattan, Pottawatomie, Jackson, Atchison, Jefferson, Leavenworth, Wyandotte, Wallace, Logan, Gove, Trego, Ellis, Russell, Lincoln, Salina, Dickinson, Shawnee, Douglas, Johnson, Topeka, Greeley, Wichita, Scott, Lane, Ness, Rush, Barton, Rice, McPherson, Marion, Lyon, Osage, Franklin, Miami, Emporia, Scott City, Hamilton, Kearny, Finney, Hodge, Gray, Ford, Pratt, Edwards, Stafford, Hutchinson, Reno, Harvey, Coffey, Anderson, Linn, Fort Scott, Stanton, Grant, Haskell, Dodge City, Kiowa, Pratt, Kingman, Sedgwick, Butler, Greenwood, Woodson, Allen, Bourbon, Winfield, Morton, Stevens, Seward, Meade, Clark, Comanche, Barber, Harper, Sumner, Cowley, Elk, Pittsburg, Montgomery, Labette, Cherokee.



Kansas Range Youth Camp

— COURTNEY JACKSON

The 2023 Kansas Range Youth Camp is held at Camp Mennoscah in Kingman County, and is for high school sophomores, juniors, and seniors who have a passion for rangeland management, conservation, and wildlife. It is designed to give the students a basic understanding of the principles of rangeland ecology, including plant physiology, plant identification, native plant communities, rangeland conditions and trends, plant growth, stocking rate determinations, livestock nutrition, rangeland wildlife management, and much more!

Students selected to participate should have an interest in rangeland management, rangeland ecology, or grazing livestock. Students will gain valuable knowledge and experience in managing grazing lands in Kansas and will learn best management principles to set them up for sustainability.

Each camper will receive a camp information packet via mail by late May. This packet will include event maps, agenda, items needed, etc. During camp, each participant will receive a range youth camp t-shirt and notebook filled with presentations and handouts; after camp, a CD-ROM of pictures highlighting camp activities will be mailed to each participant.

Campers will gain a wide variety of experiences with range management and observe different management practices firsthand. In the evenings, the campers will have the options to go swimming, canoeing, fishing, hiking, play games, enjoy a steak dinner, and much more. Everyone has a great time, and many new friends and memories are made!

The camp is held at Camp Mennoscah, just south of Murdock in Kingman County from June 13 through 16, and is sponsored by Kansas Section Society for Range Management. Enrollment is \$250, and registration is due by May 12, 2023. Interested students should contact their local Conservation District, Extension Office, Farm Bureau office, livestock association, and/or other local businesses for possible financial assistance.

For more information and to register for Range Youth Camp, you can visit the Kansas Grazing Lands Coalition website at: <https://www.kglc.org/range-youth-camp.cfm>, or contact Courtney Jackson at 620-767-5111 or courtney.jackson@usda.gov.

LEFT, TOP TO BOTTOM

Campers got out of the classroom to go on a few field trips to see different factors that affect wildlife in rangeland management and tour a local landowner's property.

Campers and counselors from 2021 Kansas Youth Range Camp.

Campers got firsthand experience in examining soil structure properties. They got to see how soils can vary between different ecological sites and play a key role in rangeland site expectations.

Counselors split campers in small groups and took them to the field during the camp and worked on plant identification for common grasses, forbs, and shrubs in Kansas.

Mosses in Spring

— BRAD WILLIAMSON

Early spring is a special time in Kansas with chorus frogs calling, woodcock flight displays at dusk, and *Draba* flowering on windswept open patches of soil ("... a postscript to a hope." from Aldo Leopold's *Sand County Almanac*). Orion shines brightly in the early evening skies that lead to cold nights, followed by warmish days wrapped up in an embrace of moisture and high humidity that was sorely missing through most of the winter. Early spring is a remarkable sensory experience. Like many of you, I, annually, try to push the calendar forward on every warm day from February to April seeking those first signs of spring.

Recently, I have started adding mosses to my checklist of spring happenings. Three very small mosses with sprouting sporophytes tend stand out in the "springy" habitats that I explore — *Funaria hygrometrica*, *Physcometrium pyriforme*, and *Weissia controversa*. I suspect these mosses can be found in every part of the state. However, they can be difficult to identify without a microscope due to their small size — except in the spring when their sporophytes are produced. They each have distinctive sporophytes which we will focus on here.

F. hygrometrica and *P. pyriforme* tend to be annual, weedy mosses that can often be found growing together. (Fig. 1 and 2) Not only that but I often find these two mosses in the same habitats that I find *Draba* — in those moist, but bare areas of soil that show up in untended but mowed grass. This type of habitat is common along sidewalks, paths, dirt roads, and parks. These mosses have been observed to colonize recently burned ground. In fact, research being done in the southwest is working to develop methods where *Funaria* could be encouraged on recent burns to perhaps speed the recovery. Before the sporophytes appear, both of these mosses remind one of a lush, green velveteen. This trait is especially evident along paths and sidewalk cracks. In high traffic areas neither moss is likely to produce "normal" sporophytes, but in low traffic areas they will often send up their unique sporophytes in March through May. *F. hygrometrica* has a uniquely asymmetrical, nodding capsule that I think you can see in the photo. (Fig. 3) While *P. pyriforme*'s capsule looks a lot like its name — a pear-shaped or goblet shaped capsule.

The almost fluorescent light, yellow-green of spring, *Weissia* resonates deeply and draws attention standing out in the dullish early spring landscape. (Fig. 4) I find it on bare ground or shallow soil sites. Its sporophytes are more typically-shaped sporophytes. The dried leaves of *Weissia* tend to curl up in spirals like intertwined pig tails. (Fig. 5) Somewhat unusual for mosses, the dried leaves also roll up to the top of the leaf surface creating a kind of canoe shape.

When I started on my moss journey, I really did not appreciate how much coming to know and recognize individual mosses would alter my experiences and awareness on my walks. For more than sixty years I have walked past these mosses paying little notice to them beyond noting the green "velvet." But once I had keyed them out and identified them, they are like long-lost relatives. I cannot walk at the Baker Wetlands now without "checking in," monitoring the progress of the sporophytes on the *F. hygrometrica* and *P. pyriforme* that grow along the paths. And when I am searching



ABOVE LEFT *Funaria hygrometrica* with maturing sporophytes.

ABOVE RIGHT *Physcometrium pyriforme* with maturing sporophytes.



ABOVE LEFT Close-up of a *Funaria asymmetrical*, nodding capsule.

ABOVE RIGHT *Weissia controversa*, hydrated with sporophytes growing on a sandstone outcrop from Woodson County.

BELOW Mostly dehydrated *Weissia* with developing sporophytes from near Sedan.



for *Draba* in flower in old cemeteries or along the Kaw River, I cannot help but note the *F. hygrometrica* and *P. pyriforme* growing in the same habitat.

In a similar fashion, *Weissia controversa* tends to show up on the shallow soil over rocky outcrops, and I just love spotting the bright yellow-green in the early spring. While I typically try not to make too much out of just naming something, I cannot deny that knowing the names is the first step to telling the story of these mosses as they are encountered here and there. Hopefully, this little article can help you to start telling your own moss stories.

Prairie Education in Kansas Schools

— BRAD GUHR & LORNA HARDER

The prairie landscape is in the DNA of what it means to be a Kansan. We have a prairie economy – thanks both to the legacy of thousands of years of prairie roots developing some of the best soils in the world and existing remnant prairie pastures and hay meadows, Kansas regularly ranks in the top three U.S. states in producing wheat and cattle. A Kansan’s cultural history is rooted in generations of the prairie providing food, supplies, and medicines for survival. The prairie ecosystem uplands and watersheds of Kansas support a thriving realm of eco-tourism including hunting, fishing, and birdwatching. And what Kansan does not identify with the beauty of treeless sunrises or sunsets that bookend the ever-changing vast open sky that is almost something to be taken for granted?

Let us never take this prairie identity for granted in Kansas. Thankfully, there are many K-12 teachers and schools not willing to take this for granted for their students either. For decades, Kansas teachers have been embracing the environmental education opportunities that come with studying, planning, planting, tending and monitoring prairie garden learning laboratories on school grounds. Let us highlight a handful of South Central Kansas schools that are currently active with such endeavors.

Goessel Elementary School students are enhancing their thirty-two year old prairie planting - the first Outdoor Wildlife Laboratory Site (the OWLS Program sponsored by Kansas Department of Wildlife & Parks is still a thriving program supporting school native plant gardens) in Kansas. With the help of the Goessel High School Horticulture Club, K-3 students recently added many new species of wildflowers to attract pollinators, acted out the Rain Shadow Play, developed a prairie roots art installation, and planned/presented a planting celebration including songs and readings.

Earhart Environmental Magnet Elementary School has been an environmental magnet in the Wichita School District for fifteen years with a “No Child Left Indoors” mission. A regular part of the student routine at Earhart involves prairie plantings/maintenance/studies, natural area field trips, tent campouts, and bee-keeping activities. Outdoor project-based learning lessons are commonplace in the curriculum. In addition to numerous restored prairie gardens around the grounds, Earhart students also have easy access within



Prairie gardens planted and tended by students and staff grace the front entrance to Earhart Environmental Magnet Elementary School

a short walking distance to acres of native remnant prairie and the Arkansas River.

Coleman Middle School is becoming the first new Wichita magnet school in fifteen years and Coleman will eventually receive the students from the other wildly popular Earhart Environmental Magnet Elementary School. The Coleman teachers and students are using the prairie to help guide their environmental focus. A summer gardening program in recent years has added prairie plant pollinator gardens to enhance the presence of their food growing gardens where honeybee hives and chickens and rabbits can also roam. A centerpiece of the new Coleman environmental activities this year focused on the first student-conducted planting of a forty-five species prairie reconstruction on their grounds that will eventually consist of three acres in the middle of East Wichita.

BELOW, LEFT TO RIGHT Goessel Elementary students proudly show the results of their hard work after doing some path maintenance. Coleman Middle School students scatter seed mix on land adjacent to the school for its prairie reconstruction.

Approximately 150 students at Conway Springs High School seed a wetland slough and upland prairie as part of the school's 6,500 foot campus restoration project.



BRAD GUHR PHOTOS

CHRIS BELLAR

Conway Springs High School is tackling a big campus restoration project including a fifty-five species seeded prairie planting, groves of native shrubs and trees, a new wetlands slough, and an education amphitheater. Preliminary studies in botany, ecology, math, and English have already helped students contribute to this new project. Their biology teacher, a team of administrators, and community volunteers are pulling together resources and investing time to make sure that this project engages students in hands-on natural area stewardship for many years to come.

Thankfully, these prairie-promoting teachers and schools have many resources to support them:

Plant A Prairie: A Kansas Native Plant Society program supported by the Kliesen Memorial Fund that has been providing teachers with thirty-two plant prairie garden starter kits since 2021.

Outdoor Wildlife Learning Sites (OWLS): Initiated and sponsored in 1991 through the Chickadee Checkoff of the Kansas Department of Wildlife, Parks, & Tourism, the OWLS Program provides cost sharing grants to schools to support native wildlife gardening on school grounds.

Kansas Earth Partnership for Schools (EPS): With the guidance of a diverse 100+ activity curriculum, Kansas EPS at Dyck Arboretum of the Plains has been providing K-12 teachers training and 2+ years of support to establish prairie gardens on school grounds with their students since 2007.

More educational resources are available through the Kansas Association for Conservation and Environmental Education, Project Wet, and Project WILD.

Outdoor Adventure Camp – 2023

— THERESA AND TOMMIE BERGER

Are you interested in a fun, educational opportunity for your youngsters ten to twelve years of age? If so, consider Outdoor Adventure Camp (OAC). OAC is a week-long camp held at Rock Springs 4-H Center just south of Junction City. The dates for 2023 are July 23 through 28, arrive on Sunday afternoon and head home on Friday afternoon.

This will be year thirty-four for OAC at Rock Springs. Theresa and Tommie Berger are the camp coordinators and all of the counselors are past campers. We started OAC back in the late 1980's and through year thirty-two, we were housed and ate at Camp Wa-Shun-Ga, an older and rustic part of Rock Springs. We had to miss the Covid years 2019-2021 and Rock Springs tore down most of Camp Wa-Shun-Ga. In 2022 we housed at the Hilltop area of Rock Springs and ate at the main dining hall. That is where we will be again this year.

OAC is designed for youngsters who enjoy the outdoors. Sunday afternoon is arrival time and after supper we have Shooting Sports — archery, shotgun, .22 rifles, and laser shot. Monday, Tuesday, and Thursday mornings we have educational programs to include plants, insects, mammalogy, wildlife management, fisheries management, and reptiles and amphibians. In the afternoons we have shortened programs like post cards home, stream trailer, water safety, wildlife CSI, skins and skulls, water pollution, and stream sampling. On Wednesday morning, we take a road trip to the Milford Fish Hatchery and Nature Center.

The kids get to swim every day and we have shooting sports again on Monday evening. Monday through Thursday the youngsters get to be involved in afternoon activity sessions — archery, .22 rifles, canoeing/kayaking, fish print t-shirts, and fishing. On Wednesday evening, we go to the pond for a fishing clinic/fishing competition after which is a campfire and S'mores. Another

evening we go on an owl prowling where we call in barred owls and often get to see bats eating bugs. If we are lucky we get to visit the Rock Springs Nature Center or maybe get to climb their rock wall.

The youngsters are housed in cabins with bunk beds and no air conditioning, although there are attic fans that really circulate the air. The kids might be a deer, a bobcat, a coyote, a buffalo, a fox, or maybe a raccoon for their stay. The girls are usually deer, foxes, or raccoons. There is an adult counselor for each cabin/animal group

who bunks with the kids and is responsible for their group at each activity. We get to swim in the big pool and eat at the main dining hall with other groups that might be there too.

The cost for a week at OAC is \$375 per youngster. That includes all meals, housing, and activity costs. If you want a group photo, those are \$10 extra. Scholarships are available on a very limited basis. There are a few opportunities for snacks and drinks at the pool snack bar and the gift shop at Milford so we

recommend sending a bit of cash with your youngster. Usually \$20 or less is recommended as this age of kids sometimes has trouble watching their money. Lots of youngsters bring their own snacks. No cell phones or electronics are allowed.

We have brochures printed and are willing to send them to anyone interested. Last year, the Kansas Wildlife Federation had information on their web-site and sign-up was allowed on-line. Check the web site for information there. If you have questions, you can contact Theresa and Tommie Berger at bergkwf@wtciweb.com or by phone — Theresa 785-658-5159 or Tommie 785-524-6112. Theresa Berger is a retired teacher turned LPN nurse. Tommie is a retired fisheries biologist — thirty-eight years with Kansas Fish and Game/Wildlife and Parks. Our counselors are from Kansas City, Dodge City, Manhattan, and Hays.



THERESA BERGER PHOTO

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Please complete this form or a photocopy.
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R. L. McGregor Herbarium
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A membership to the Kansas Native Plant Society makes a great gift for friends and family members. Recipients of gift memberships will receive notification of your gift membership within two weeks of receipt of your check. The Kansas Native Plant Society is a 501(c)(3) non-profit organization. Gifts to KNPS are tax deductible to the extent provided by law.

Kansas Native Plant Society welcomes everyone to join our membership. Read our full Statement of Diversity, Inclusion, and Non-Discrimination Policy on the website, ksnps.org.

MEMBERSHIP APPLICATION/RENEWAL FORM

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