

Upcoming Events

Groundhogs Workdays

9:00 AM - Noon

Saturday, Sept 13

Saturday, Oct 11

Saturday, Nov 08

Snyder Prairie, Mayetta, KS

Weather dependent

GHF's Fall Native Plant Sale

Thursday, September 4,

4:00 - 6:30pm

Cottin's Hardware Farmer's Market

1832 Massachusetts St.

Lawrence, KS 66044

Soil Fungi: Liz Koziol

Sunday, November 16, 1:30PM

Baker Wetlands Discovery Center

1365 N 1250 Rd, Lawrence, KS

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FALL NATIVE PLANT SALE

GHF will be hosting a native plant sale at Cottin's Hardware Farmer's Market once again! Join us **Thursday, September 4 from 4:00 - 6:30** to shop over 25 species of native Kansas wildflowers, grasses and sedges. Fall is a fantastic time to plant native prairie plants, as they get to spend all winter growing their root systems without expending precious resources on flowering.

Species list and additional information about the Fall Native plant sale will be available mid-August at:

<https://www.grasslandheritage.org/fallplantsale>

Cottin's Farmer's Market

1832 Massachusetts St.

Lawrence, KS 66044



Plants we have ordered and expect to sell are forbs: Leadplant, Wild columbine, Showy milkweed, Butterfly milkweed, New Jersey tea, Purple prairie clover, Purple coneflower, Rattlesnake master, Rough blazing star, Prairie blazing star, Cardinal flower, Blue lobelia, Wild bergamot, Large flowered penstemon, Beardtongue, Brown-eyed Susan, Royal catchfly, Showy goldenrod, Smooth blue aster, Spiderwort, and Grasses and graminoids: White-tinge sedge, Sideoats grama, River oats, Little bluestem, Prairie dropseed. Check the web site for the list with scientific names and the descriptions.



Grassland Heritage Foundation is a non-profit 501(c)(3) membership organization dedicated to prairie preservation and education.

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Program Director

Kathy Denning

Preserve Manager

Nicole Stanton-Wilson

A Note from the President

It has been several years since we purchased Leadplant Prairie, our property just south of Welda. I've been personally active in the ongoing maintenance of that property, so I'm going to take advantage of my column as president to give an update of what we have done.

I'll start with a brief description of the property, which we bought in two parts. The largest part is our first purchase of about 17-acres of unplowed prairie on a roughly triangular piece of land between US-169 and the Prairie Spirit Trail. It's the section labelled A on the accompanying image. We bought this in 2018. The highlight of the prairie is a population of Mead's milkweed, a federally-listed threatened species. Additionally, surveys have found 214 other species of wildflowers and grasses. Two years later we bought a neighboring strip of about 5 acres which we usually call the Annex, and which is labeled B on the image. This section is a former commercial site of some sort and is fairly degraded with about 1/3 of it apparently having been a gravel parking lot. Although it has limited ecological value, we bought it because it helped solidify our continued access to the good prairie. Also, the previous owner neglected the property and the noxious weeds he allowed to grow were spreading onto our land.

The biggest challenge in maintaining prairies always seems to be fighting invasive plants. On the good prairie, the two primary invaders are teasel and sericea lespedeza. The teasel is mostly a problem around the perimeter of the good prairie, moving in from the highway and from the trail. Happily, our efforts at control are paying off. We've engaged in a fairly intensive program of both spraying and hand-pulling the teasel since we acquired Leadplant and you can really see the difference. Getting to all the teasel used to take multiple visits by multiple people. This May, I was able spray all the teasel in less than an hour and using only about 2 gallons of herbicide mix. We've been helped by the state becoming more aggressive in their teasel control efforts along the trail.

The sericea problem is less extensive. It grows primarily along an old path that was once used to access a natural gas pump formerly located on the property. We probably won't ever be able to entirely eliminate the sericea, but our current spraying efforts seem to be keeping it under control (knock wood).

On the Annex, teasel and cedars represent our two biggest problems. Because of the previous owner's neglect, the teasel was a BIG problem on the annex, becoming a monoculture in some spots. Our progress on the good prairie has allowed us to spend more time on the annex and we are starting to see smaller populations of teasel, although much work remains. The cedar are more of a long-term problem because there are a lot of big trees which are labor-intensive to cut. Our current strategy is to go after mostly the small trees for now, and try to cut a few of the big ones each year.

Mike Campbell shamsoup@yahoo.com

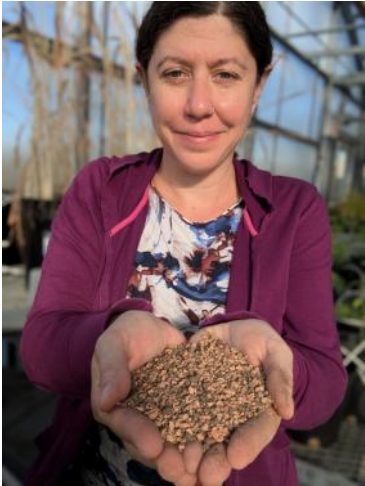


Left: Leadplant Prairie You can tell that part was hayed.

Below: Volunteers cutting small cedars on the annex.



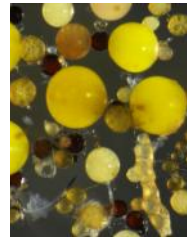
Beneath the Prairie: The Importance of Soil Fungi



Although hidden from view, much of the ecology of a prairie is happening below ground. To learn more about amazing soil fungi and their importance for prairie plants, join us for a GHF talk this fall. **Dr. Liz Koziol**, a KU scientist, will speak on **November 16th at 1:30 p.m. at the Baker Wetlands Discovery Center**, 1365 N 1250 Rd, Lawrence, KS 66046. This talk was scheduled just before this newsletter was published, so we don't have full details or a firm title yet, but we know it will be a great event.

Visitors to our spring plant sale may have already met Liz. At her table at the sale, Liz talked to people about "arbuscular mycorrhizal fungi" (AM fungi, for short) which are microbes associated with plant roots. These fungi increase the ability of plants to take up nutrients and water while the plants provide carbon to the fungi. At her November talk, Liz will discuss the ecology of these plant-fungal associations and their significance in prairie restorations. She also will share her work with

"Mycobloom" (<https://www.mycobloom.com/>), her company that sells mycorrhizal inocula that can improve plant performance.



Join us to learn more about a microbial world and its importance to the prairies we love!

Announcing New Program Director: Kathy Denning

Effective June 30, Nicole Stanton-Wilson resigned as Program Director and Kathy Denning was chosen as her successor. Nicole will continue as Property Manager of Snyder Prairie. Kathy shared a bit about herself.

Although I'm new to the Program Director position, I'm not a stranger to GHF. As a graduate student in ecology and evolutionary biology at KU, I carried out some of my prairie pollinator research at Snyder prairie, and was fortunate to be awarded a GHF scholarship to further my research. My fascination for all things prairie began when I took Mary Ann Vinton's ecology class as an undergrad at Creighton – I'm embarrassed to admit that before then, I'm not sure I had ever set foot on a prairie! I have served on the GHF Board of Governors for the past 4 years, while working at KU's Office for Diversity in Science Training, and I'm really looking forward to this new position with GHF. For the record, my favorite prairie wildflower is blue-eyed grass, and my favorite prairie grass is blue grama.

One of Kathy's first official duties was representing GHF at the **Open House** for the celebration of **Free State High School's Prairie**.

On Sunday, August 3, GHF participated in an outdoor open house, celebrating the educational prairie restoration at Free State High School in Lawrence. The prairie restoration was established in 2014 by Free State biology teacher Julie Schwarting and KU professor (and current GHF Board member) Helen Alexander and has served as a hub for teaching and research at Free State High School and the

broader community. GHF had several outreach activities available at the open house, including a prairie scavenger hunt and a "build your own butterfly" craft. Fortunately, the weather cleared up just in time for the open house, and visitors were able to enjoy the educational activities and guided prairie tours under clear skies. For more information about the Free State High School prairie, visit <https://freestateprairie.wixsite.com/mysite>

Left Rosin Weed was plentiful on the site.

Right Kathy Denning and Helen Alexander prepared for visitors.

Inset Several people enjoyed our "kids" activities.



THE RELATIONSHIP BETWEEN WOODLANDS AND WOODY ENCROACHMENT IN TALLGRASS PRAIRIE

Tucker Eckols, M.S. Student at Emporia State University

Grasslands are experiencing global land cover loss, and tallgrass prairie losses exceed those of any other ecosystem in North America (≈ 82 -99% loss). One major reason for this is woody encroachment, which has many negative consequences, including loss of biodiversity and decreased livestock production. Prevention of encroachment is important, but management strategies are resource and time intensive. Thanks to funding from the Grassland Heritage Foundation, I was able to conduct research focused on determining where encroachment is occurring most rapidly in the prairie and why. My objective was to determine if environmental characteristics of woodland and adjacent prairie can be used to predict spread of woody encroachment into prairie to help landowners make more informed management decisions.

Previous studies show dispersal and establishment of tree seedlings may be influenced by characteristics of both the woodland they are dispersing from and nearby prairie. Therefore, I sought to determine the characteristics that could predict encroachment from woodland into adjacent tallgrass

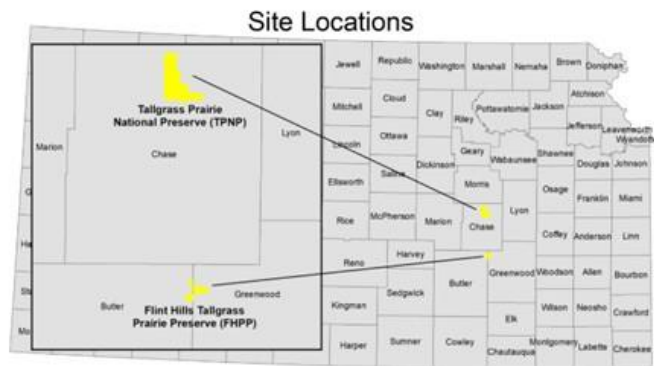


Figure 1. Tallgrass Prairie National Preserve and Flint Hills Tallgrass Prairie Preserve and their locations within the state of Kansas.

prairie in central Kansas. I conducted my research on two sites owned and managed by The Nature Conservancy (TNC); Tallgrass Prairie National Preserve and the Flint Hills Tallgrass Prairie Preserve. I collected data from 25 sample plots at FHPP and 50 at TPNP. For each plot I recorded number and size of each



Photo 1: Tallgrass prairie and adjacent woody encroachment at the Flint Hills Tallgrass Prairie Preserve in Butler and Greenwood counties.

tree species, canopy cover, and percent shrub cover along the woodland edge. I also recorded percent coverage of biotic and abiotic features, number of seedlings per tree species, and topography of adjacent prairie up to 50 m from the woodland edge. Lastly, I used the Gridded Soil Survey Geographic Database to determine soil characteristics and TNC records to determine grazing and burning regime. I used a form of data visualization called principal component analysis (PCA) to identify potential relationships between these variables and seedling occurrence. I used simple linear regression to determine statistical significance of potential relationships.

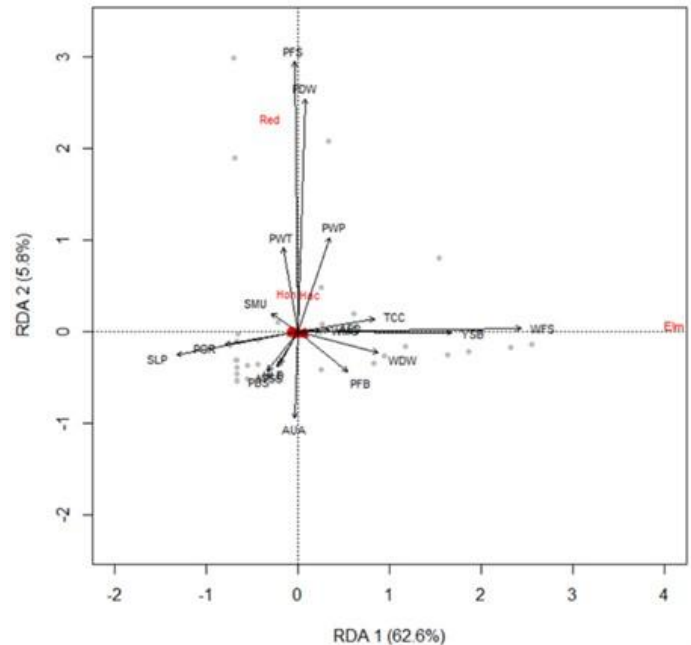


Figure 2. Principal component analysis displaying relationships between environmental variables, occurrence of seedlings from individual species, and plots. Environmental variables are displayed in black; species are displayed in red, and plots are shown as grey dots. Variables on the same side of an axis have a perceived positive relationship. Those on opposite sides have a perceived negative relationship.

I found that American elm seedling occurrence was higher in areas with more woodland fragrant sumac, longer time since burn, and lower slope. Eastern redbud seedling occurrence was significantly higher in areas with fragrant sumac and rough-leaf dogwood in the prairie. While significant, these relationships were statistically weak. However, I did find a strong positive relationship between woodland tree size and number of prairie seedlings. Next, I used a heatmap to display seedling occurrence from directly under woodland edge to 50 m into the prairie. I found that seedlings mostly occurred close to woodlands and occurrence decreased as distance from woodland increased. The most common seedlings were American elm and eastern redbud, which also had the furthest dispersal. I attributed this to wind as a dispersal mechanism. Therefore, I tested if prevailing wind direction had a significant

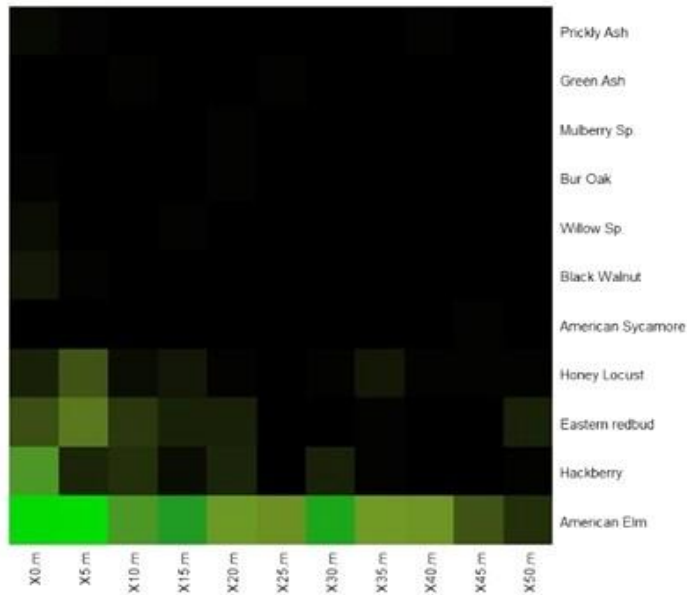


Figure 3. A frequency heatmap displaying the occurrence of detected seedlings within quadrats placed every 5 m from woodland edge to 50 m into adjacent prairie. Areas with few or no seedlings are represented by black squares and higher seedling occurrence corresponds to a shift from black and dark green squares to squares with brighter, more vibrant green coloration.

impact on seedling occurrence and found that downwind plots had significantly more seedlings than plots upwind or cross-wind from woodlands.

In summary, woody encroachment occurs non-selectively in prairie despite the variety of environmental characteristics present. However, wind-dispersed species may be an exception to this trend. Management focused on large individuals of these species, especially in areas with the possibility of downwind spread, could be the most successful.



Photo 2: Orienteering using a compass to lay a 50 m tape straight out from woodland edge into adjacent prairie.



National Prairie Day Event @ Prairie Park

GHF hosted a National Prairie Day celebration and prairie workday at the restoration site on the east side of Prairie Park on Saturday, June 7. The Prairie Park Nature Center joined by sending their animal ambassadors. The snake was a big hit!



Volunteers from GHF hosted the Bison Box table. Due to stormy skies and pop-up thunderstorms, the celebration saw limited attendance, but volunteers planted blue sage (*Salvia azurea*) and sweet coneflower (*Rudbeckia subtomentosa*) And Mike worked diligently removing invasives.

Photos by Nicole Stanton-Wilson

Prairie Park sign installation

While the hands-on restoration work at Prairie Park has been completed, Native Lands Restoration Collaborative and GHF are thrilled to announce that the interpretive sign has been installed at Prairie Park. This sign serves to educate the community and visitors to Prairie Park about the importance of ecological restoration and the process undertaken with the prairie restoration at Prairie Park. Stop by the east side of Prairie Park and take a stroll along the paved path to St. Mary's Lake to view the sign and read about the restoration project funded by Douglas County's Heritage Conservation Council. Many thanks to Courtney and Ryan for their unending support of this project and dedication to educating our community about native ecosystems!



Sustaining Prairies Grants

We offered a second round of grants in July and the committee decided to fund three more projects. We'd like to thank Dennis and Susan Lordi Marker for making this possible.

Dr. Erika Martin, Emporia State University, requested funds for educational program materials to provide teachers with lesson plans associated with workshops to be held at or near a prairie planting and restoration along the Neosho River. Additionally, funds will be used for experts from Native Lands Collaborative to consult with restoration and workshops.

Debbie Baker from the Lawrence Bird Alliance, applied for funds to help maintain

a native planting at Hobbs Park in Lawrence. They will purchase tools for volunteers to use in removing invasive species. Additionally, the group plans a sign that will highlight the benefits of native gardens and plant species that help birds and pollinators and link to their web site. Finally, LBA expects to pay consultants to develop a species list and to train the volunteers on which species to eliminate.



Prairie planting near Civil War Era House.

Sarah Tschauder at Atchison High School sought funds to help rehabilitate a prairie planting originally funded by KNPS. They will involve science students, as well as history and English classes. Their plan also includes using a consultant. They will purchase tools and gloves and pay students over the summer

Snyder Prairie

This summer marks the completion of GHF's monarch habitat improvement efforts funded by NRCS's EQIP cost-share



grant. The final field to be planted with a milkweed seed mixture was planted immediately following our prescribed burn in April. The final round of herbaceous weed control was conducted in late July. Now GHF is tasked with continuing to improve habitat for all native plants and animals at Snyder Prairie, and we are delighted to have the opportunity to continue doing so. If you are interested in becoming involved with this

work, consider joining us for a Groundhogs workday this fall. Our next scheduled day is September 13, 2025. To sign-up for email communications about GHF's Groundhogs, please visit our website: <https://www.grasslandheritage.org/volunteer>. Snyder Prairie is about 20 minutes north of Topeka. Nicole Stanton-Wilson continues as our Property Manager.

To learn more about NRCS conservation programs for landowners in Kansas, visit: <https://www.nrcs.usda.gov/state-offices/>

Spring Native Plant Sales A Success

With the largest number of plants ever sold, GHF's Spring Native Plant Sales in Lawrence and Emporia were quite successful this year. Over 4,000 native plants found homes through the Lawrence sale, with half of those being sold via pre-order. GHF was thrilled to have MycoBloom, lead by Dr. Liz Koziol, right present at the sale this year. Check out the details of her November talk on page 3.



We want to thank the City of Lawrence for sponsoring Rain Garden Kits. We sold two varieties and had 28 available for purchase. It gave customers a nice discount.



Another exciting addition to this year's sale was the new online storefront for placing pre-orders. This was made possible through the time, talent and true dedication invested by GHF Board Member, Andrea Repinsky. On behalf of all GHF board members and staff, a very sincere

and heartfelt "Thank you, Andrea!" This new asset saved an immense amount of time and effort to keep pre-orders organized, and allowed for automatic online payments. GHF looks forward to using this system for all future pre-orders. If you utilized this system and have any suggestions for improvement, please share your thoughts with us at ghfplantsale@gmail.com.



Nearly 500 native plants were sold through the Emporia sale, and GHF looks forward to continued collaboration with the Prophet Aquatic Research and Outreach Center left at Emporia State University to host future

sales in Emporia. GHF continues to be thrilled by the number of new and returning faces that attend our plant sales, and looks forward to seeing you again this fall or next spring!

Last but certainly not least, GHF volunteers are critical for making these sales not only possible, but as successful as they are. Nearly thirty people volunteered over 140 hours to support GHF's plant sales this spring. A very heartfelt and sincere THANK YOU to all of you!!! GHF also expresses gratitude to all who have helped support the native plant sales over the years. We literally can't do it without you.

We depend on your contributions! Please help GHF protect prairie by sending your donation today. The date of your last contribution is printed above your name on the mailing label. Send this form to: Grassland Heritage Foundation, PO Box 394, Shawnee Mission, KS 66201

Membership Categories: ☐ \$20 Friend ☐ \$35 Family ☐ \$50 Steward ☐ \$100 Sustaining ☐ \$250 Conserver
 ☐ \$500 Patron ☐ \$1000 Benefactor ☐ \$5000 Founder ☐ \$15 Student/Retiree

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City State Zip

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☐ Save postage/printing and email my PDF newsletter **OR** ☐ Send my printed newsletter to the above address

☐ Contact me about volunteering

☐ Gift in *honor* or *memory* of (mark which)

Your contribution will support prairie conservation in the general fund unless you designate your donation for:

- ☐ Gaylord Atkinson Memorial Scholarship Fund
- ☐ Prairie Protection
- ☐ Education Programs
- ☐ Prairie Management
- ☐ Match for Sustaining Prairies

You can also send membership renewals and donations to GHF online at www.grasslandheritage.org

Thank you

To the many dedicated volunteers that supported the GHF Annual Spring Native Plant Sale by tagging plants, pulling orders, setting up the sale, working the sale – you name it, they did it! The plant sales would literally not be possible without your hours, hands and smiles; thank you so very much! *Andrea Repinsky, Angie McDonnell, Ann Davin, Barb Schwering, Brent Mortensen, Carol Schmitt, Courtney Masterson, Crystal Miles, Douglas May, Helen Alexander, Ken Tillery, Kory Norman, Laird Ingham, Lindy Eakin, Lisa Castle, Liz Miller, Maggie Norman, Mary Kowalski, Megan Withiam, Mike Campbell, Reb Bryant, RJ Torrey, Roxie McGee, Ryan Riedel, Sandy Sanders, Sara Abeita, Steve Holcomb, Sue Holcomb.* Thanks to *Trinity Episcopal Church* for hosting us and the *City of Lawrence* for sponsoring rain garden kits.

To *Maggie and Kory Norman* of McAlister's, Lawrence, who fed some hungry volunteers and staff members at Taylor Creek Nursery – what a special surprise you brought!

To *Helen Alexander, Reb Bryant, Alex Gentry, and Daphne Mayes* for making the Emporia plant sale a success.

To the *Prairie Park Nature Center staff* and *Steve Holcomb, Sue Holcomb, Mike Campbell* and the *Odgers family* for braving the stormy skies and volunteering your Saturday morning to support GHF's Prairie Day at Prairie Park.

To *Reb Bryant, Lisa Castle, and Steve Case* for reviewing applications for Sustaining Prairies.

To the *Science Department at Lawrence Free State High School* for including us in the Open House on the prairie

To *Kevin Bachkora* for continued accounting assistance

Thank you to all members, especially:

Welcome New Members: Debra Baker, Ashly Basgall, Marla Brandon, Kali Deno, Valerie Eakes-Kann, Annabelle Eason, Beth Foerster, Anne Fowler, Renee Grandiflora, Becky Harpstrite, Todd Hindman, Cameron Johnson, Jonathan Jones, Brendy Latare, Michele McNulty, Ricky J Peterson, Julie Roberts, Ann Sagan, Emily Shepherd

Returning Members After Lapse: Marlene Bailey, Denise Brubaker, James Burbage, Jane Cotitta, Terri Herman, Pat & Ned Kehde, Jessica Kleoppel, Darla Mitchell, Will Pyles, Tyson Russell, Hope Steinle, Silke von Esenwein

Education Fund: Mary Barnes, Jennifer Forth, Tyson Russell, Julie Schwarting

Prairie Management Fund: Judy Burch, Kelly Overstreet, Nicole Stanton-Wilson

Prairie Protection Fund: Ann Marie Boncella, Barbara Clark, Jane Cotitta, Kali Deno, Meredith Falkenstien, Christina Hauck & Margaret Wheeler, Julie Roberts, Julie Schwarting, Maggie Wagner

Sustaining Prairies Fund: Byril Sanders

In Memory of Rachel Snyder: Marla Brandon

In Memory of Rex Powell: Marie Alice L'Heureux

In Memory of Tom Hawkins: Tom & Jamie Krehbiel Mulder
 *arrived too late for last News

In Honor of Amanda Witt: Silke von Esenwein

In Honor of Sue & Steve Holcomb: Katy Lange

In Honor of the Women of GHF: Ang Babbitt

United Way Matching Gift by Garmin: Cameron Johnson

Full list of members will appear in the next News

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Prairie Shrubs

Two great plants that will be for sale on September 4 are prairie shrubs Leadplant *Amorpha canescens* (right) and New Jersey Tea *Ceanothus americanus* (below). Both plants will maintain a woody structure unless you cut them back. New Jersey Tea plants have more branches and may seem fuller. Leadplant has a grey-green foliage which may resemble being dusted with lead. Neither of these plants spread aggressively.

Both plants attract native bees, butterflies, and other beneficial insects, serve as larval host plants, and provide food and cover for small wildlife.

Both grow in full sun, but New Jersey Tea can take some shade. They both tolerate poor soil as long as they drain well.



Although not a shrub, Rattlesnake master *Eryngium yuccifolium* is another forb that can make a statement in a home garden. Its leaves resemble the yucca plant. The whitish flowers are spiky and very unusual and a great contrast to the yellow cone-flowers and purple ironweed that bloom at the same time. The common name refers to its use to aid snake bite victims, but don't try to test that!

