

Prairie Wind

Friends of Neal Smith National Wildlife Refuge PO Box 114, Prairie City, IA 50228 • www.tallgrass.org • buffalo@tallgrass.org

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2023 Concert on the Prairie

By Sue Tew-Warming, Friends Board

The first Concert on the Prairie - Tallgrass Tunes on Friday, June 9th was a great re-start to inviting guests back to the prairie for an evening of music, art, food and exploring the prairie. We last offered the Concert on the Prairie in June 2019, before the pandemic changed how we were able to gather in community.

The Friends of Neal Smith felt it was time to bring the event back and decided to give the annual concert a new twist for 2023. We reduced the price per ticket, had guests bring their own chairs and had a food truck available for those who wanted to purchase a meal. The strategy, the timing, or both seemed to work. We had 124 people register (our goal was 120) and with Friends Board members, refuge staff and interns plus a great group of volunteers — we had close to 150 people enjoy the evening together.

Our guests had the opportunity to go for a guided hike on the prairie, meet artist Nancy Carlson about her exhibit in the Visitor Center's gallery, engage with the Conservation Station team from Iowa State University Extension, and check out the Nature Store. At 7:00 p.m., we gathered on the hill behind the building and enjoyed the Native American flute music of Jonny Lipford.

The weather was cool with a nice breeze and the sunset was beautiful. It offered people a chance to pause, take a few deep breaths and be with nature. I loved how Jonny ended his concert by inviting everyone to take a deep breath, hold and release - the perfect way to end the evening!





Prairie Hike



Prairie Hike



Jonny Lipford

All photo credits: Mike Cox Photography, Knoxville

Jonny Lipfor

Manager's Corner

By Scott Gilje

New faces from different places. Neal Smith NWR is again teaming with many new interns seen around the refuge. Biology has four new interns; visitor services has two new interns and two externs. We also have a monarch monitoring intern. The parking lot is full of vehicles and I am glad that they are here. Getting the much needed and required work done around the refuge with only a few full-time staff is near impossible. With all the interns pooling their talents and willingness to get the job done, we are accomplishing some great work on the refuge.

The biology interns have been busy learning all the new prairie plants growing on the refuge. They have been assisting with bison/elk surveys, bee/monarch surveys, invasive species removal, and they also learned how to drive utility vehicles.

The visitor services interns have been busy with school groups, day camps, volunteers and daily visitor center tasks.

With all the talk about declining budgets, staff shortages, debt ceiling – the list goes on and on, its good to see these interns working so diligently as they will be the ones keeping conservation going into the future.

Have a great and safe summer!

Elsa Klotz, Pollinator Intern



My name is Elsa Klotz, and I am a member of the pollinator survey team at the Neal Smith Wildlife Refuge until early December. Under the supervision of the pollinator survey coordinator (and monarch enthusiast) Tenlea Turner, I will be conducting vegetation and pollinator surveys. This monitoring is part of a larger U.S. Fish and Wildlife study. Our surveys take place at three sites on the refuge until October, at which point we will travel to three wildlife refuges in Oklahoma and Texas.

My hometown is Ligonier, Pennsylvania, about 800 miles east of Prairie City. I am a recent graduate of Juniata College in Huntingdon, PA, where I studied environmental science. During my four years, I spent two semesters at Juniata's remote field station on Raystown Lake and one semester at the University of Leeds in England. In addition, I was fortunate to travel to seven countries while on tour with the Juniata College Concert Choir (not including layovers!). Along with singing and travelling, I enjoy hiking, yoga, and reading in my free time.

Although I am most familiar with the forested mountains of the Northeast, I'm excited to explore this area and learn more about the ecosystems of the Midwest. I am most interested in plant ecology, but I am open-minded to other subjects within environmental science. I hope my experience here will offer guidance in my pursuit of a master's degree and future career.

What's happening this Summer?

All programs are free, but reservations are requested.

Nature Tots, Exploring the Tallgrass Prairie Saturday, July I from 10:30 a.m. to 11:30 a.m.

Learn all about the tallgrass prairie during this free Nature Tots program at Neal Smith National Wildlife Refuge. Children ages 3-5, accompanied by an adult, will read a nature story, do an outside activity, and make a craft. Participants should wear pants, closed-sturdy shoes and bring drinking water. Register by emailing nancy corona@fws.gov or calling 515-994-3400.

Second Saturday Stewardship, 9:00 a.m. to 12:00 p.m. July 8

August 12

Join the refuge team to help maintain the walking trails and the health of the tallgrass ecosystem. Volunteers will use hand tools to clear trails and remove invasive plants that are growing in the prairie. Learn about lowa's native ecosystems and wildlife while providing a helping hand. To register, email nancy_corona@fws. gov or call 515-994-3400.



Volunteers are required to sign a volunteer agreement and a volunteer under the age of 18 must have a parent or legal guardian fill out and sign it. Volunteers ages 16 or older are permitted to use hand tools. Volunteers are required to wear pants, closed shoes suitable for field work, a long sleeve shirt, and bring a refillable water bottle. Please register by calling 515-994-3400 or emailing nancy_corona@fws.gov

Bison Day Family Festival Saturday, August 5 from 10:00 a.m. to 2:00 p.m.

Mark your calendars for this fun, free, family-friendly annual event. Bring your friends and family and join us in the celebration of bison and the tallgrass prairie. Learn about our tallgrass prairie heritage and get a chance to view the herd of bison and elk herds and participate in prairie and bison themed activities.

Activities will include free bison stickers; making a bison charm craft; bison coloring pages; playing a ring toss game; taking group photos in our bison photo booth area; and going on a bison trivia themed self-guided walk on the 1/2 mile Overlook Loop Trail. Reservations are not required for ongoing activities but call 515-994-3400 or email nancy_corona@fws.gov for additional information.

2023 Friends Scholarship Recipient

The Friends of Neal Smith NWR annually offer a scholarship for a student graduating from an area high school that will be a full-time student working towards a two- or four-year degree in conservation or environmental related studies. The initial \$1,000 scholarship can be renewed up to three additional years at \$1,000 each year while a full-time student and working on their degree.

Ciana Olsen is the recipient of the 2023 Friends of Neal Smith NWR Scholarship. She is a graduate of Southeast Polk High School and will be attending Iowa State University majoring in Animal Ecology in the fall. Her long-term interests are in wildlife rehabilitation. Ciana is working at Adventureland Bay as a team lead for the lifeguards this summer. Congratulations, Ciana and best wishes on your college career.



Spring Fling features Prairie Expert Dr. Tom Rosberg

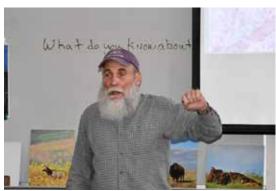
By Sharon Tinker, Friends Board

Friends of Neal Smith National Wildlife Refuge members got together for the annual membership meeting at a Spring Fling on March 25th. Thirty-four Friends members and guests attended in addition to Friends Board members and their families. The meeting kicked off with a delicious soup lunch, followed by a program with a refuge update by Refuge Manager Scott Gilje, Friends update by the Friends Board, and a prairie presentation.

Dr. Tom Rosburg, Ecology and Botany Professor at Drake University, spoke about the loss of lowa tallgrass prairie and native biodiversity and efforts to reverse the losses. Dr. Rosburg has investigated the ecology of grassland, forest, and wetland ecosystems and engaged students in ecological restoration projects. His guidance was that the top priority should be saving the existing prairie remnants on public and private land to preserve species diversity and genetics. A second priority is increasing ecosystem reconstruction, especially prairie and grassland, to reverse the loss of native ecosystems. In addition, changes are required in today's farming practices to curb species loss. Dr. Rosburg contributed an essay titled "lowa's Rich Biodiversity Legacy: A Vision for the Future" in the recently published book Tending Iowa's Land: Pathways to a Sustainable Future, edited by Cornelia F. Mutel.



Friends Members enjoying a soup lunch Photo by Joan Van Gorp



Dr. Tom Rosberg, Professor of Ecoclogy and Botany at Drake University and Guest Speaker at Spring Fling Photo by Joan Van Gorp

Sedges

By Shami Morse, Former Biology Intern

Sedges, grasses, and rushes are collectively known as Graminoids: herbaceous plants with culms (flowering stalks) and long, blade-like leaves. The sedge family (Cyperaceae) is often distinguished by the axiom "Sedges have edges and rushes are round," although there are exceptions. Because they have not had the same agricultural value as the grass family, they are not as widely known, and many species lack a common name. And because they are not as closely associated with human history, there are few invasive species of sedge.

Identifying sedges down to the species level is not easy! Identification is seldom possible from just the vegetative parts (stems, leaves, rhizomes). Even with the inflorescence (flower/seed head), a good microscope may be needed to clearly see the details that distinguish one species from another. For that and other reasons, sedges on the refuge have often been recorded only at the genus level — e.g., as *Carex sp.* (unidentified species in the Carex genus). About a dozen Carex species (the most common genus) have been identified previously on the refuge.

As biology interns, several of us attended a 2-day class on sedges, taught by Dr. Thomas Rosburg and Dr. William Norris, two experts who have composed keys specific to lowa for the Sedge Family. After the class, we collected 29 specimens from various locations on the refuge. Over the summer, we worked to identify them, using those keys and other books in the refuge library, as well as online resources.

It's been a slow, and sometimes frustrating, process. We have settled on tentative identifications on about two thirds of the specimens, with 14 unique species. If these hold up to further review, it would add 10 new Carex species to the list of refuge sedges, all of them native.

Lessons learned in collecting and identifying sedges: I) Collect the entire plant, including a piece of the root or rhizome, 2) Record habitat information, 3) Keep the specimens refrigerated in a plastic bag and don't wait too long to identify them, 4) Use the most detailed resources available to you, 5) Take a class.

2023 Photo Contest



Planting Prairie

By Karen Viste-Sparkman, Refuge Biologist

At Neal Smith NWR, one of our main activities is reconstructing prairie in former agricultural fields. We use the term reconstructing to distinguish it from restoring, which we usually use to describe what we do in remnants—removing invasive plants and woody species to allow the native plants that are already there to flourish. When reconstructing a prairie, we start with a blank slate, in a way. Typically the area that we are reconstructing is a crop field that has just been taken out of production—either corn or soybeans. Be-

cause of the glyphosate herbicide used in these crop fields, there are usually very few weeds growing, although there is a residual seed bank of weed seeds ready to

The first major step in reconstructing prairie is planting the seed. Some people use the term reconstructing to refer to the planting process, but there is much more work to be done after Planting with a tractor planting before it can re-



ally be called a prairie. In a way, the reconstruction process is never finished, as it will take maintenance indefinitely to keep the prairie from being overtaken by invasive plants and trees.

Before we can plant a prairie, we need to obtain the seed. In the early days of the refuge, the vast majority of seed was obtained from prairie remnants off the refuge because there was only a small amount of native prairie vegetation and limited species on the refuge. Now that we have planted more than 4,000 acres of prairie, we are able to harvest many spe-

cies on the refuge. Most years we will harvest seed using a combine to gather a mix of seeds. This harvest is usually dominated by grasses such as big bluestem, Indian grass, and



little bluestem, although we try to select areas where there is a good diversity of plants. When possible, we harvest at more than one site and on more than one day to capture as many species as possible. The combine harvests almost all the seed that is ripe at that location on the day it is harvested, but all species do not ripen at the same time, so some seed will have already dispersed and some will not be mature yet. By harvesting more than one location we can also get different species, as not all plantings result in the same species growing in them.

We also try to target for harvest with the combine an area dominated by grasses such as Virginia wild rye or Canada wild rye. These species are considered a "nurse crop"—they are quick to establish, so they outcompete the non-native annual weeds that would otherwise come in the first year or two. Sometimes a new planting will be dominated by one of the wild ryes in the first one to three years. These grasses do not tolerate fire as well as other prairie plants, so once the planting is burned, these species are much reduced, allowing sunlight to reach other prairie plants so they can take off and thrive.

Other seed is purchased or hand harvested. We use several vendors that grow or collect local ecotype prairie seed. The majority of the hand harvested seed is collected on the refuge by students, volunteers, interns, and staff. Many school groups collect seed when they visit the refuge in the fall. We host several seed collection events in the fall which may attract dozens of volunteers to the refuge on a single day to collect as many species and as much seed as possible. Individual volunteers, biology interns, and staff also target certain species that may be found in lower numbers on the refuge. Some of these species may not be commercially available, or may be prohibitively expensive to buy.

After the combine-harvested seed has dried, we take a sample of the seed mix and send it to a seed lab for analysis. The seed lab examines the seed sample and determines what proportion of the mix is seed (rather than chaff or inert matter), the species that are present, and the proportion of each. In addition, a viability test is conducted on the most abundant species in the sample. This gives us an idea of what percentage of the seed is likely to germinate.

Using the data from the seed lab, we then calculate how much of each seed mix to use in the planting. This is calculated based on the number of acres of each soil type to be planted. The proportion of dominant warm-season grass seeds (big bluestem, Indian grass, switch grass, and little bluestem) is an important factor in determining the amount of the seed mix to use. These grasses can be aggressive and outcompete other prairie species, so in order to get a diverse mix of species, we dilute the seed mix by adding other species. We also try to have a minimum amount of the "nurse crop" species (Virginia wild rye, Canada wild rye, and sideoats grama).

In most cases we add as many forb and cool-season grass seeds as we can to the mix. There are a few forbs that can become dominant, so these are limited, but these are usually not species that we try to collect in large numbers anyway. When funding allows, we may buy certain species because they are not found in large numbers on the refuge or they are difficult to collect.

Then comes mixing the seeds. The large bins of combine-

harvested seed, which includes a lot of chaff. are spread on the concrete floor of the seed storage building. Then bags and jars full of seed are scattered on top of this seed. This often involves hundreds of different batches of seeds. Finally, the seed can be mixed. The bulk weight of the seed can be more than a ton! We recruit several people (4-6 is a good number), who use Mixing the seed shovels and rakes to



move and turn the seed. When the seed has been turned 3 or 4 times it is probably mixed well enough. It doesn't have to be completely even throughout, but we want to disperse each species so it is not all planted in one spot.

Sometimes the field must be prepared for planting, which may involve removing trees and fencing around the field. If there are any buildings or debris piles on the site they should be removed. Although there are drain tiles under almost all farm fields, we have not removed very many of these because it takes a lot of time and effort and may not provide much benefit due to the soil disturbance.

Ideal timing for planting is during the fall, winter, or early spring. Because we have to wait for the results of seed analysis, we usually aren't able to plant until late winter or spring, but earlier planting allows the seed to go through a cold period. It is best to plant when the soil is frozen or firm or covered with snow. Snow cover makes it easier to see the seed dispersing and to see the vehicle tracks to tell where it has been planted, and the seed will sink into the snow and be

protected by it. Planting just prior to a snow is also good. In the spring, planting before rain will help the seed stay moist and encourage germination. Low wind during planting is preferred to keep the seed on the field.

For many years, the refuge used a tractor with a broadcast seed spreader for planting. In recent years we have used a Utility Terrain Vehicle (UTV) with a similar seed spreader.



The UTV has a smaller Spreading seed with a UTV

turning radius and requires less training to drive. The seed spreader is small so requires frequent re-filling. To save time, we load up a pickup truck full of seed and take it out to the planting site to use for re-filling the seed spreader. It may take a few days to plant a large field of 100+ acres. If there is more than one soil type in the field, there may be multiple seed mixes.

The last critical part of the planting process is recording the data. The seed inventory is updated, a GIS map is made of the planting areas, the final list of plant species and the amounts of each is made, and the planting dates and weather data are noted.

Then we wait. If conditions are good, many species will germinate and grow the first year, and some will even bloom. The planting site will continue to be managed for years to come and hopefully more species will become established. Eventually maybe some of them will be collected for future plantings.

Prairie Point Nature Store

By Joan Van Gorp, Friends President

We are looking forward to the increase in visitors during the summer. When you visit the Prairie Point Nature Store, I know you will find the perfect gift or just something special for yourself! New book titles for both youth and adults are arriving, along with great t-shirts for the summer. If you are looking for an excellent pair of binoculars, check out the Opticron Oregon 4 PC Oasis 8x42. Cornell Lab Review just named these binoculars their TOP PICK for affordable full-size 8x42 models. We have several other Opticron binoculars in the Nature Store. Opticron produces excellent quality binoculars with high-end optical performance at reasonable prices, ensuring you get excellent value with your purchase. All proceeds from the sales at the Nature Store directly support the projects and events at the Refuge.

We are looking for volunteers to help in the Nature Store and at the Front Desk. If you are reading this, I know you have a love of and interest in the Refuge. This volunteer opportunity is an ideal way to be even more connected to this special place. And be assured you will truly make a big impact in the success of the Friends and our efforts to support the Refuge.









Ding Darling Art Gallery

By Joan Van Gorp, Friends Board

We hope you visit the Ding Darling Gallery in the Visitor Center for these special upcoming exhibits.

In July and August, we welcome the inspiring nature photography of Nelson Shulenberger. Nelson grew up on an acreage in the Loess Hills and that is where his love of and connection with nature "sprouted roots". Nelson's photos have been displayed at Grandview University and published in the Iowan magazine. He also traveled to Japan with the Iowa Sister States program and presented his "Seasons of Iowa" exhibit at the International Center in Kofu, Japan. Nelson is gifted with the art of "seeing nature with a soulful connection" and when you see his photographs you will also feel that connection.

In <u>September and October</u>, we welcome back "Wildflowers of the Upper Midwest", the watercolor paintings by Lydia Curtis. These paintings, painted from 1955 to 1972, focus on plants found growing in rural lowa and Minnesota by the artist and her family. The collection was curated in 2018 under the direction of her daughter, Cora Curtis Hayes, using the portfolio of 140 renderings. The display will present seasonal wildflowers-32 paintings, accompanied by narrative plaques about each specimen, researched and written by the artist. The initial showing of this collection was at the refuge in spring of 2019. Since then, it has toured 8 other venues in lowa, Minnesota and Ohio. Lydia wrote "Flowers in all their varying color and form have always intrigued me. Thus, in humble reverence, I offer these sketches fully aware they do not show the glow and glory of the flowers themselves, but in the hope that they may help others to experience the joy I have known because of our native wildflowers.







Time to renew your Friends Membership?

Our Friends members are our greatest asset in providing funding for the refuge and the many events and programs offered to the public. We value each and every donation no matter the amount. If you haven't renewed your membership, an easy way is online through our secure website. This takes just a couple minutes and is so vital for the Friends to continue our goals to promote awareness, support, education and appreciation for the natural ecosystems of the Neal Smith National Wildlife Refuge. Can we count on your donation? Go to www.tallgrass.org / Click on "Get Involved" / "Become a Member"

You Can Make a Difference!

The power of a Friends group is its members. Please support this all volunteer, non-profit organization with your tax-deductible gift and be a part of the learning, growing and discovery happening at the Neal Smith National Wildlife Refuge every day. Thank you!

\$25 Big Bluestem Friend	\$50 Bison Buddy
\$100 Savanna Saver	\$250 Prairie Patron
Other \$	

Be sure to find out if your company will match contributions.

You may make your donation online and choose to make that gift recur monthly, quarterly or annually.

Or you may make a one-time gift!

Please make checks payable to Friends of Neal Smith NWR, PO Box 114, Prairie City, IA 50228

Summer Interns

Matthew Rosonke



I was born and raised in Prairie City, lowa, where I have spent a lot of time enjoying the beauty of the prairie. During that time, I became interested in conservation and restoration of varying ecosystems. This led me to study Environmental Engineering at the University of Iowa in Iowa City. When I first heard about the internship position at the Neal Smith Wildlife Refuge, I was so excited and knew that the position would offer me an amazing experience and knowledge that will help in my pursuit of a career

in conservation and restoration. During my internship, I plan to take on a project revolving around snakes, including identifying the different species of snakes that are housed here on the refuge and the role they play in the prairie's ecosystem. Snakes have always fascinated me with their wide range of colors and characteristics. Through my project, I hope to share that fascination with the visitors and staff at the refuge. Every day I come into work, I am always excited because it is always something new:new information to learn, tasks to be done, and the prairie itself. You never know what you might see when you visit the prairie, and I believe that is what makes it special along with its natural beauty. I am so eager to continue my internship and keep learning new information.

Tara Henderson



Hello! My name is Tara Henderson and I'm a new biology intern. I currently attend school at Western Carolina University which is nestled in the Blue Ridge Mountains of North Carolina. So, as you can probably guess, I'm not very accustomed to prairie life. But, that's exactly why I decided to make the trip over here! I love how the rolling hills and flat plains point your attention towards the blue lowa sky. Before this, I had only been to lowa and the refuge once, but it stuck

in my mind as somewhere I wanted to come back to. As far as education, I'm graduating next year with my bachelor's degree in Natural Resource Conservation and Management, with as much of a focus on wildlife as I can manage. I have a particular love for large wildlife, which means I'm going crazy over the beautiful bison and elk populations. I don't have any concrete plans for my future, but I'm hoping to gain a clearer idea of my path as I work through this opportunity. I also have past experience in trail maintenance which I think has prepared me pretty well for the hands-on work in store for us. We've already learned so much-- I'm building up my plant identification knowledge (slowly, but surely!), we've transplanted, surveyed, and collected seeds! For my project, I'm looking at either pinning native insects or mounting some plant samples that have been waiting for homes in the seed lab. It's only my second week and I plan to be here until mid-August, so there is endless knowledge left to gather. I'm so excited to widen my horizons and bring it all back to the mountains.

Gid Fynaardt



Hi, I'm Gideon Fynaardt; call me Gid. I'm spending this summer as a biology intern here at Neal Smith NWR and I couldn't be more excited. When I was a kid, my dad would walk me through the nine acres of grove and pasture growing on an abandoned farm-place that he promised would one day be our new home, and he taught me to

identify plants and animals and ascribe them relative value by their rarity and ecological importance. Years later, we've been living on that property for 15 years, maintaining and restoring an oasis of wilderness in the agrarian desert that dominates the state, and I'm entering my senior year at Northwestern College in Orange City, Iowa, as an Ecology Major, investing in my lifelong passion for wilderness and natural beauty. That's why I'm here at Neal Smith: to care for the wilderness. I'm absolutely thrilled to be working here this summer, and I look forward to everything I'll experience.

Kayla Natelborg



My name is Kayla Natelborg, and I am enjoying my first days as a biology intern at the refuge. I am a resident of Prairie City, so the refuge has always been one of my favorite places. During the school year, I am a student at Liberty University in Virginia, so it is wonderful to be back in Iowa for the summer. I major in conservation and environmental biology as well as zoo and wildlife biology, so this internship was a perfect opportunity for me to gain field experience and participate in hands-on work. The refuge has always

been important to me, so I am honored with the opportunity to help preserve the land. Even though I grew up around the prairie, I am getting to enjoy it even more as an intern. I have particularly loved learning the management techniques used on the prairie and identifying various native prairie and woodland species. Hearing the expertise of the staff and learning alongside my fellow interns has already made this an incredible experience. As the summer progresses, I look forward to seeing how the prairie changes and how different plant species develop and bloom. We have begun to see the first flowers bloom, and I cannot wait to see the prairie gain even more color. The native plant identification has given me a greater appreciation for the diversity of prairie life, even when plants are not flowering. Identifying plants based on vegetative growth alone is a new experience for me, and I have enjoyed the challenge. When I am not enjoying the refuge, I love to go hiking (in either the Appalachians or the Rockies), kayaking, stargazing, or running. I also love to take walks with my family or play basketball with my two brothers. I am looking forward to learning more about the prairie throughout the summer, and I know I will enjoy every day.



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President's Message By Joan Van Gorp

As summer arrives, make plans to visit the refuge often. Summer is the ideal time to see the prairie in all its glory, as the vibrant native plants, including pale purple coneflowers, black-eyed Susans and blazing star, paint the landscape with an array of colors. Take a walk on the trails to explore and appreciate the beautiful landscapes and diverse wildlife. Watch our Facebook page for upcoming events, workshops and guided tours. If you are passionate about conservation and want to contribute to the preservation of the refuge, I hope you will consider becoming a volunteer. Join the dedicated team at Neal Smith NWR and participate in activities such as trail maintenance, educational programs and outreach events. It is a rewarding way to give back to the community while immersing yourself in the beauty of the tallgrass prairie. Whether you are seeking an escape into nature, an educational adventure, or a chance to make a positive impact, the refuge has something for you!



Wild white indigo By Joan Van Gorp

Prairie Wind

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Prairie Wind is a newsletter about the activities of Friends of Neal Smith National Wildlife Refuge and the Refuge.