

**Friends of Konza Prairie Annual Meeting Sunday, September 25**

- 4:00 pm** Annual Meeting in the Stone Barn at Konza Prairie headquarters  
Introduction of 2022 Docent Class and the newest “Konza Rock Star” award winners
- 5:00 pm** Bison Burger Potluck on the Hulbert Center Patio  
Please bring either a side dish or dessert  
RSVP if you want a burger – [keeped@ksu.edu](mailto:keeped@ksu.edu) or (785) 587-0381
- 6:00 pm** Bison Loop Tour - school buses available to take you on a guided tour of the bison area. Expect the tour to last 1.5 hrs.

**2023 KONZA Calendar!!**

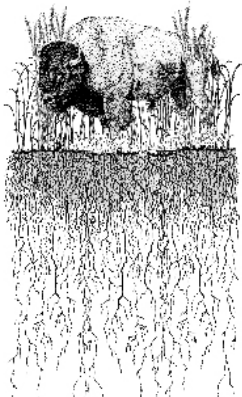


The evening includes **Art in the Barn**, a selection of artwork by prairie artists available for sale in conjunction with Visions of the Flint Hills Art Show opening October 7 at the Buttonwood Studio in Kansas City, Missouri.

See page 8 for the story of Visions of the Flint Hills.

Konza Prairie merchandise will also be available for purchase.

Research      Education      Conservation



**2022 Visions of the Flint Hills Art Show**  
**Opening Night Reception Oct. 7, 5-8 pm**

Diana Werts is our juror and Rob and Stephanie Manes are our honorary chairs. Diana is a native Kansan and artist who owns an art gallery and frame shop in Manhattan and Rob is the Kansas director for The Nature Conservancy. We'll have music at the reception by Bob and Melissa Atchison, and for the first time we'll have wine from 456 Winery in Wamego. This is also the second year we will have “Art in the Barn”, an accompanying show in the Konza limestone barn for the weekend of our FOKP annual meeting on September 25, which also benefits FOKP.

## KPBS Director's Report John Blair



I hope that you had a relaxing and rewarding summer! Some of you may have traveled this summer, while others enjoyed time with local friends or family. If you live here or traveled to Manhattan this summer, I hope that you were able to visit Konza Prairie and spend

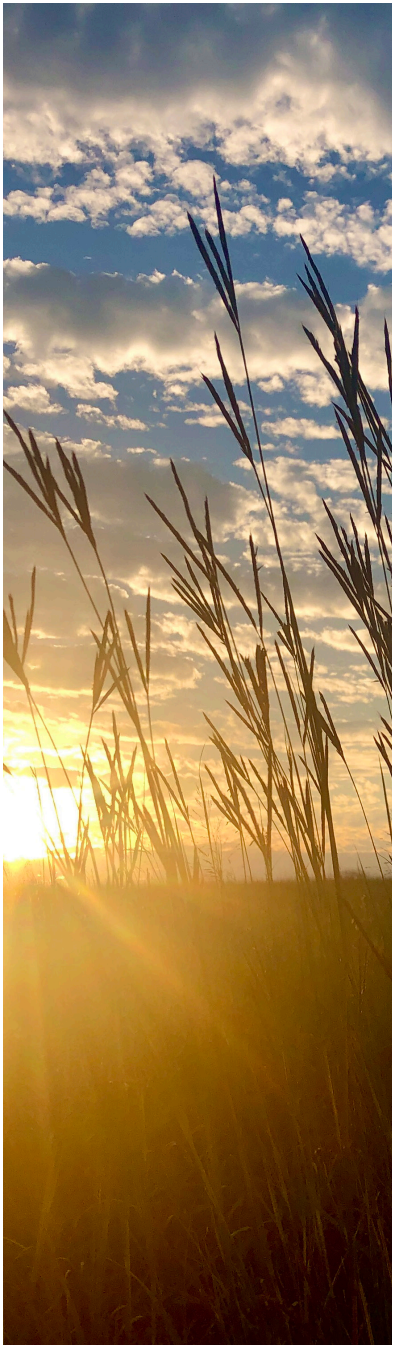
some time on the Nature Trail. Despite very high temperatures through much of July, it was a great year for spring and early summer wildflowers, and the late July rains set the stage for an explosion of color from fall wildflowers like Baldwin's ironweed. Those late rains also fueled the emergence of the tall flowering culms of big bluestem and Indian grass. If you can, be sure to continue watching as the senescing sumacs and grasses add their colors to the prairie landscape.

It was a busy summer for the Konza Prairie staff and for me. The staff did the annual survey across Konza Prairie to locate and eradicate noxious weeds and invasive plant species that threaten the native biodiversity we strive to protect. And, of course, we hosted numerous visiting scientists and students, and provided research-oriented tours for many professional groups as part of our outreach efforts. This summer, those groups included members of the Natural Resources and Conservation Service, regional and national leadership for The Nature Conservancy, K-State research administrators, and several agricultural industry groups. These tours generally highlighted the unique role that Konza Prairie plays in advancing both ecological research and grassland conservation.

I will be teaching the undergraduate ecology class at K-State this fall, as I have for the last 30 years. Lately, I've been thinking about how much our planet's environment has changed in that short time. Carbon dioxide concentrations rose from 356 ppm in 1992 to over 420 ppm today, and the seven warmest years on record have all occurred since 2015. Recent news includes extreme drought and wildfires in the southwestern US while strong storms and floods impact parts of the Midwest. It is clear that humans are altering the Earth's climate. Why is this important? Climate is the most important factor affecting ecological systems, and the effects of climate change will be felt in ecosystems around the world. At times, increasing greenhouse gasses and climate change can seem like too large or too difficult a problem to solve. We have the scientific understanding and technology to reverse this trend, but it is important that we act now. Legislation pending in the US Congress as I write this is a good first step, but we need to do more. I encourage you to ask your elected representatives and candidates running for office about steps they will take to fight climate change. Collectively, we can make a difference.

I'll close by thanking you for supporting our research, education, outreach, and conservation activities, all focused on this iconic North American ecosystem. We could not do all we do without your support! As always, please feel free to contact me ([jblair@ksu.edu](mailto:jblair@ksu.edu); 785-532-7065) with any questions or concerns about Konza.

Dr. John Blair  
University Distinguished Professor  
Edwin G. Brychta Professor of Biology





## Listening to the Teachers

The educational opportunities offered by the Konza Environmental Education Program (KEEP) are quite amazing. Classes in grades K-12 are invited to visit the tallgrass prairie at Konza and directly experience the prairie, either through guided hikes and tours or by participating in experiential activities involving the collection of scientific data. You might ask, “Where else can students do that in the tallgrass prairie?” The answer is, “Nowhere else”.

But we can do better...by listening to the teachers. Every summer KEEP hosts a Summer Teachers’ Workshop, where educators from around the state visit Konza for a week. During that time, they directly experience each of the different activities available for students at Konza. At the end of the week, they can conceptualize the visit for their class and can begin preparing. But the Workshop isn’t just a one-way experience with KEEP talking to teachers. The teachers have ideas and thoughts they share with KEEP, too.

One idea that has come up repeatedly is the need for prairie-based material for the teachers to use in the classroom. They want to introduce the concept of the tallgrass prairie, including information on ecology, history, and geology – to students before coming out to the prairie. This is a wonderful idea and so full of possibilities! It would be a wonderful experience not only for the students, but also us and the docents, for the students to get off the bus and already know the names of the grasses!

Thus, let me introduce you to “Prairie Week” – a week-long set of curricula, including a daily PowerPoint, Teacher’s Guide, and Student Worksheet that introduces a new prairie-themed topic each day. Note: these topics are both tallgrass prairie-centric and Flint Hills-centric. The topics are:

- Day 1 – Introduction to the prairie. What is a prairie?
- Day 2 – Fire on the prairie
- Day 3 – The role of bison on the prairie
- Day 4 – How rocks saved the tallgrass prairie
- Day 5 – Grasses of the Prairie: they rule!!

The Prairie Week material may be used as a stand-alone set of lessons or may be paired with a visit to Konza Prairie to cap off the week. We are very excited to see if the students both know more about the prairie and are more connected to their ecosystem. The Prairie Week material will be available on the KEEP website and will be directed towards an elementary audience.

Material for a middle- and high-school audience is also in preparation and will involve a storyline format titled “What good is a prairie/What is a good prairie?” This is being beta tested by USD 383 Manhattan High School and will be made available within the next year.



I am a National Science Foundation Fellow. I am a first year PhD student studying Rangeland Ecology and Management in the department of Natural Resource Ecology and Management at Oklahoma State University. I grew up on a cow-calf operation outside of Hennessey, Oklahoma. My parents made sure that I was involved as possible in all aspects of farm life. Being involved in agriculture from a young age, I developed a passion for all things involved in agriculture and natural resource management. for which I will be forever thankful for the experiences.



My research examines how potentially complementary belowground traits, such as symbiotic mycorrhizal fungi and rhizosheath formations, affect plant resilience to drought. Rhizosheaths are root-soil formations facilitated by plant and bacterial exudates that may mediate plant responses to drought. These formations have been observed in many plant species and are thought to be a drought adaption trait. I will be investigating the mechanisms behind their formations.

My overall research objective is to understand patterns, ecological functions, and belowground plant attributes, linking drought resilience traits with native rangeland plant population and community dynamics. My upcoming field season will include a field study conducted in rangelands across the East-west precipitation gradient of the US, extending from highly productive Illinois grasslands, through mesic rangelands in the southern Great Plains and arid shortgrass steppes of New Mexico and Arizona. I will be using collected data to assess the frequency of rhizosheaths observed in the field and predict possible shifts in abundance of highly desirable rangeland grass species.

Outside of research I enjoy the hobby of spending time out in nature, fishing, plant foraging, hiking, and of course cow checking and helping out at home. I will forever be thankful for the experiences in my life that have lead me down my path, and I can't wait to see what else my time at Oklahoma State brings.



Graduate Student

I'm a full-time research technician finishing my M.S. with Dr. Gail Wilson at Oklahoma State University. North American grasslands are considered one of the most endangered natural resources on the continent, with some researchers estimating that as little as 1% of their historic range remains today. These remaining grasslands continue to be threatened by several anthropogenic disturbances, including the introduction of non-native plant species. Invasion by non-native plants can lead to the loss of many ecosystem services, including reductions in plant biodiversity and soil microbial diversity. Currently, there is an established invasion by a dreaded member of the Old World bluestems, *Bothriochloa bladhii* (Caucasian bluestem) at Konza Prairie Biological Station. Caucasian bluestem is a non-native grass that has become invasive throughout the central and southern Great Plains of the US. Caucasian bluestem has been shown to alter soil microbial communities, including arbuscular mycorrhizal (AM) fungi, making it more difficult for native plant communities to compete and survive.

AM fungi are soil symbionts that form relationships with over 90% of terrestrial plants and the fungi cannot exist outside of this relationship. AM fungi act as root extensions to increase host plant nutrient uptake in exchange for the carbohydrates plants produce from photosynthesis. Recent studies have indicated AM fungi play an important role in plant invasions and in successful restorations. Non-native invasive plant species have been shown to alter the density and/or composition of the AM fungal communities, which may affect the subsequent spread of the non-native plant species. This change in AM fungal communities can generate a positive feedback that can reinforce domination by the invader while preventing re-establishment of native plant species. However, the degradation of AM fungal communities may be mitigated by restoring sites with native AM fungi.

That is where my research comes into play! I am evaluating the influence of native AM fungal communities on Caucasian bluestem control and subsequent native plant re-establishment. What I have found so far is that if you reintroduce native plants alongside their AM fungal allies into a location degraded by Caucasian bluestem, you will likely have stronger, longer living native plants! Unfortunately, what I have not observed is a proper return of a fully functioning native plant community. With that lack of competition by the native plant species, the Caucasian bluestem has made quite a severe return over the last 5 years. While this is not favorable, it has not disheartened me. The battle to keep invasive plant species out of our remaining prairies is one that is long-term, and one that I intend to fight for the foreseeable future. I am a firm believer that the key to winning this fight is to look below the ground as much as we are looking above!



## Konza Environmental Education Program



### 1. What motivated you to become a Konza Prairie docent?

I retired from the College of Veterinary Medicine in July 2021. Although I had been a veterinarian for 53 years and had been in academia for over 40 years, I had no plans or ideas for what I would do in retirement. I had heard of the Konza docents and decided to call Jill Haukos to see if there were any opportunities for future training. Fortunately, even though the training program had been discontinued due to Covid, Jill said if I came to Konza for the school groups that were coming out in the Fall of 2021 she would put me on every activity as an observer with an experienced docent leading the activity of the day. Jill's willingness to take a chance to incorporate me into a "non-standard" training program was a fortuitous opportunity as I tried to figure out "retirement" and what it would look like for me.

### 2. What are some of your hobbies and interests?

After retiring as a Veterinary Anesthesiologist at the Veterinary Health Center, I was rehired part-time as a biomedical engineer. This is a continuation of a lifetime interest in design, repair and troubleshooting a multitude of things that were broken or did not function properly. I enjoy the many musical presentations at KSU, the Manhattan Arts Center, and McCain Auditorium—all the while having absolutely zero musical ability.

### 3. What has been the best part of being a volunteer at Konza Prairie?

I am learning how to interact with and hopefully excite young students for the multitude of amazing things Konza Prairie has to offer to them, and by extension, to their families. I have taught and mentored professional students but being able to connect and engage young students is an ongoing learning experience for me. Fortunately, there are many experienced docents I can use as my role models. Being able to help students learn as they also teach me is an enriching experience for me every time I come to Konza.

### 4. What brings you the most joy in your life?

My great-grandparents homesteaded in Kansas in 1871. They lived in a sod "dugout" on the banks of the Little Arkansas River for 2 years and proved their claim over the next 5 years. My twin brother still farms the original homestead and I am fortunate to have a wonderful family who have always supported and encouraged me. My son and my daughter are a constant source of love and pride and I look forward to my first grandchild in December.



### *Dr. Nellie Hill*

Dr. Nellie Hill is based in Manhattan, Kansas, by way of stints in Texas and New Mexico. Originally from Pilsen, KS, Nellie currently serves as a faculty member in agricultural communications at Kansas State University. Nellie's teaching focuses on developing students' enduring understanding and skills in visual communications, including graphic design and photography. Nellie's research investigates the attitudes, behaviors, and motivations that lead to positive engagement with natural resources, conservation, and outdoor recreation. Projects include the Texas Tech University Bridge Adventure program and the Generational Grasslands effort led by The Nature Conservancy. Her teaching, research, and personal appreciation for community, travel, and the outdoors combine to bolster her work in the classroom and the field. Nellie holds degrees in agricultural communications from Kansas State University (B.S.) and Texas Tech University (M.S. and Ph.D.).



### *Mollie Wold*

As an elementary school teacher in Chase County, I was fortunate to have the Tallgrass Prairie National Preserve and Camp Wood YMCA as convenient outdoor classrooms for my students. I retired from the classroom in 2019 and moved to Manhattan with my husband, Ken. I would like to continue supporting programs that create a curiosity and foster engagement in connecting young children to the importance of the tallgrass prairie.



# Story behind the “Visions of the Flint Hills” art show

**October 3rd – December 14th, 2022**

**Buttonwood Art Space, 3013 Main Street, KCMO**



Richard Lawson

The beauty of the Flint Hills is both inspirational and motivational. Artists of all types find the grasses and wildflowers, dramatic skies, dynamic light, and the people who inhabit this area to be engaging subjects for their artwork.

It's not unusual to find these artists sprinkled in amongst the very same people who live on, or travel through the land, on their way to someplace else. These are the people who produce the artwork showcased in the “Visions of the Flint Hills” benefit art show.

This art show both highlights the beauty of the Flint Hills and serves a very important purpose: to generate revenue for the Friends of Konza Prairie. These original pieces of artwork – on display at the Buttonwood Art Space in downtown Kansas City – are available for sale. It's important to note that everyone involved with this show wants these pieces to be purchased, because 50% of the income goes to FOKP and the other 50% goes to the artist.

The Visions of the Flint Hills art show is the single largest fundraiser that FOKP has. Sales of the art helps to bolster the coffers of FOKP, which in turn, helps to support the work of the Konza Environmental Education Program. Without FOKP's financial support, KEEP simply would not exist.

KEEP is the only program in the world that actively brings students to the critically imperiled tallgrass prairie to allow them to directly experience not only the beauty of the prairie, but also engage in the ecological research of the ecosystem. Funding is needed to keep a program such as this healthy and functioning.

Can't make it to Kansas City to see the art? Not a problem. We have two other ways you can both view and purchase artwork:

1. View the artwork online – you can purchase pieces online as well – Google: Visions of the Flint Hills 2022
2. Attend the FOKP Annual Meeting on Sunday, September – we'll have our annual Art in the Barn – a small showing of some of the pieces that are part of the Visions of the Flint Hills art show.

Please consider purchasing some art. Find pieces - inspired by the Flint Hills – that speak to your soul. We appreciate your support!

Ronald Beeton







Johne Richardson

### The KPBS Staff:

**Director** John Blair, Ph.D.  
**Assistant Director** Eva Horne, Ph.D.  
**Administrative Asst.** Barb Van Slyke  
**Director of Education** Jill Haukos  
**KPBS Project Manager** Patrick O'Neal

The Friends of Konza Prairie (FOKP) promote the interests of Konza Prairie Biological Station as they pertain to its mission of Research, Education and Conservation. Membership in FOKP is open to all individuals, groups and businesses that share an interest in the common goal of supporting the Konza Prairie Biological Station.

For FOKP membership and general information, call 785-587-0441, or visit the Konza Environmental Education Program (KEEP) website at: <http://keep.konza.ksu.edu> Also, see the back of this issue for a membership form.

### The FOKP Executive Board:

**President** Brian McCornack  
**President-elect** Susan Adams  
**Secretary** Retta Kramer  
**Treasurer** Noah Busch  
**Historian** Joe Gelroth

#### The FOKP board members:

Susan Adams	(3-yr term expiring Dec. 2024)
Noah Busch	(re-election 3 years Dec. 2020)
Jim Koelliker	(3-yr term expiring Dec. 2022)
Retta Kramer	(3-yr term expiring Dec. 2023)
Tawnie Larson	(3-yr term expiring Dec. 2024)
Brian McCornack	(3-yr term expiring Dec. 2023)
Marcia Rozell	(3-yr term expiring Dec. 2022)
Jeff Watson	(3-yr term expiring Dec. 2022)
Jerrod Westfahl	(3-yr term expiring Dec. 2023)
Kelly Yarbrough	(re-election 3 years Dec. 2020)

#### Ex-officio and Honorary members

The Nature Conservancy- Rob Manes  
 KPBS Director- John Blair  
 Director of Education- Jill Haukos  
 KSU Foundation- Trevor Jueneman  
 Historian- Joe Gelroth  
 Honorary Board Members- Stormy Kennedy and Valerie Wright

Friends of Konza Prairie  
Kansas State University  
Division of Biology,  
116 Ackert Hall  
Manhattan, KS 66506-4901  
785-587-0441  
#308



#### MISSION

Konza Prairie Biological Station (KPBS) is a native tallgrass prairie preserve owned by The Nature Conservancy and Kansas State University and operated as a research station by the Division of Biology. The Friends of Konza Prairie (FOKP) promotes the interests of KPBS as they pertain to its mission of research, education and conservation.

Bison & Bluestem is published by the Friends of Konza Prairie

## New and Renewing FOKP Members

Thank you all for your support of the Friends of Konza Prairie!

Members who have newly joined or renewed their membership since the last issue of the Bison & Bluestem include:

#### Student

Carissa Brandt  
Joanne Burgos  
Elijah Cox  
Connor Foley  
Rain Grace  
Brian & Yvonne Hazlett  
Livvy Jones  
Aspen Tallent

#### Little Bluestem—Individual

Theresa Albrecht  
Victoria Appelhans  
Ellen Austin  
Scott Bean  
Kathleen Bower  
Rebecca Christensen  
Nova Clarke  
Peggy Coleman  
Heather Culwell  
Danielle Davis  
William & Cathy Drobny  
Miriam Edelman  
Dr. Kristen Epps  
Diane Erickson  
Steve Henry  
Ann Hyde  
Marc Johnson  
Susan Johnson  
Michelle & Mark Knoll  
Susan & Monte Metzger  
Yvonne Norby  
Ed Olson  
Patricia Payne  
Barbara L. Roberts  
Paul Rosell  
Mary Alice & Norm Schlesener  
Mrs. Gladys W. Treichel  
Nicole Wade  
Carole Wilds

#### Little Bluestem—Family

Leslie Alford & Jim Hood  
John Blocher & Kui Yang  
Margaret Conrow  
Tony Crawford

Edwin & Casee Eisele  
David & Connie Farmer  
Jack & Peggy Flouer  
Dan & Carolyn Harden  
Rick & Barbara Johnson  
Tim & Sharon Keane  
The Larry O'Neill Family  
Matthew & Kristin Rennells  
Dan & Bev Rogers  
John Stipetich  
Daniel & Katherine Swenson  
Ron & Heather Thomas  
Cindy Vadakin

#### Big Bluestem

Bayer Construction Co., Inc.  
Richard Boydston  
Marty & Sharon Gurtz  
Damien Hebert & Jane Withee Hebert  
Julia Jilek  
Lowell & Stacy Kohlmeier  
Roger & Kathleen Lanksbury  
Larry & Sandy Murphy  
Terry & Mike Olson  
Bill Pallett  
Dennis & Monika Riordan  
Tom & Barb Van Slyke  
Gabrielle Thompson & Larry Weaver  
Ryan & Rebecca Zecha

#### Flint Hills

Vicki Clegg & Bert Biles  
Brian & Heather McCormack  
Gary Mignano  
Georgina R. Schwartz  
Jay Wight

#### Prairie Chicken

Jack & Jan Carlson  
Forrest Chumley & Barbara Valent  
CivicPlus  
Mark Hulbert & Merideth Tomlinson  
Bruce & Lisa Lowrie  
Laura Mazzenga Trust  
Janice & Leland Reitz

#### Bison

James & Susan Copeland  
John & Judy Havens  
Tracy Williams & Justin Moore

#### Tall Grass

Phil Howe  
Jim Koelliker