2018 Cure for Cabin Fever

SAVE the DATE: January 21, 2018, at 2 pm in the Konza Stone Barn.

At 2 pm **Judd Patterson, an award-winning wildlife photographer**, will present the program. After his program, it is time for homemade soup. Friends of the Konza Prairie members are encouraged to bring a crockpot of soup to share, or a dessert. If you are planning to bring soup, please contact Cindy Quinlan at (785) 776-5163, or just bring soup and surprise us.

Hope to see you there!

Chasing Birds: Photographic Adventures Across the Planet

Judd Patterson was born in Kansas and began to seriously develop his interest in nature photography while in high school. Judd attended Kansas State University, where he completed a Bachelor's in Biology and a Master's in Geography. Judd currently works for the National Park Service with the South Florida/Caribbean Inventory & Monitoring Network. He continues to pursue nature photography to promote environmental education/conservation and for the sheer joy of being outside.

Judd's photography has been used for a variety of regional and national causes, including The Nature Conservancy publications, Audubon Magazine, Bear River Migratory Bird Refuge education center, Tallgrass Prairie National



Preserve visitor center, and birding guides. He has exhibited in Kansas, Florida, and Washington D.C., including the Department of the Interior Museum and Everglades National Park.

Judd remains highly motivated to capture images of threatened species and habitats in order to play a role in ensuring their future. Miami has served as a perfect base for launching trips to seek wildlife and adventure. Recent travel has included Australia, Botswana, Costa Rica, Dominican Republic, New Zealand, and Thailand.

Bíson

Research

Education

Conservation



Upcoming FOKP & KEEP Events

Jan. 21, 2018 - Cabin Fever - 2:00 pm - Program (see above)
Jan. 27, 2018 - Sat. 10 am - The Docent Roundup and Awards
Feb. 27, 2018 - Tues. 9 am - New docent training begins (see page 6)
Mar. 24, 2018 - Sat. 3 pm - 6 pm - "Mash In The Middle" microbrewery festival benefitting FOKP. Tickets at \$20 each gets you a commemorative glass and entry to sample beer from 15 different local brewmasters. Details to follow.



KPBS Director Dr. John Briggs

Dear members of the Friends of Konza Prairie,

It is Fall break (Thanksgiving week) on the K-State campus and as you

might guess it is a lot easier to drive around Manhattan, KS, and to find a parking spot on campus! It is also a good time to get caught up on some paperwork like this report. For once, I am trying to get it to the FOKP Publications and Publicity Committee before their deadline. I think they might be shocked if I do that.

As usual, it has been a very busy year on the prairie and a very productive one! We finished up the fall burns this month and last month we had a successful round-up of the bison herd. We got all of the animals in and although we had some equipment failure during the round-up which resulted in one late night, I believe things went very well. Prices for bison remain strong and steady so I am very happy with the end results. We sold 95 animals (mostly younger male and females) and after the round-up we have 284 bison on Konza. This annual cull of bison is very important for our financial well-being but also it is imperative that we have constant grazing pressure on Konza as part of our long-term fire-grazing experiment.

I am pleased to announce that the National Science Foundation (NSF) has awarded Konza Prairie Biological Station and the Division of Biology nearly \$225,000 to upgrade facilities for the Long-Term Bison Grazing Experiment. The last time the facilities received an update was in 1997. The award will provide funds to replace certain sections of the Konza Prairie corral area, build eight additional working pens, provide easier access for researchers along the bison perimeter fence, and additional remote scales to increase frequency of measurements to document seasonal dynamics of body weight of the Konza bison. As most of you probably know, all bison on Konza Prairie have a unique ID, and since each individual is weighed annually during fall round-up, Konza Prairie has a large database with generations of information about the Konza bison herd. That data can be used for a variety of current research projects and even those not thought of yet. We had requested funds to replace the entire bison fence but NSF did not fund that part of the grant. We will need to replace the fence as it is approaching 40 years of age and

I am working with The Nature Conservancy and the K-State Foundation to see if we can find another source of funds. In the meantime, the KPBS staff will be very busy as they completely remodel the current bison corral. They will need to get it done before next fall, and, of course continue doing all of their normal items! It will be a very busy year for them.

In September, the long-term research program funded by NSF had an on-site review by NSF personnel, in addition to international respected grasslands ecologists. This program (LTER) has been continuously funded at KPBS since 1980. We were one of the original sites that were funded. The sites are reviewed every six years and proposals are also reviewed by NSF. It is an amazing accomplishment to be continually funded for this time frame, given that NSF has decommissioned sites at numerous places. It was stressful but in the end, the review was very positive and the team provided information that would help the LTER investigators when they submit a proposal in three years.

Graduate students are extremely important to our program at Konza and as of November 20, 2017, 278 graduate students have earned their degree (M.S and/or Ph.D.) by working on Konza. Funds to support graduate students are vital and it was with great delight that we received news that Barbara and Wayne Harms have established the Barbara and Wayne Harms Konza Prairie Graduate Research Fund. These funds will help us continue to train future grassland ecologists and will assure that KPBS is competitive in future grants.

As I reported in the last report, this year has been extremely busy and frustrating to me as I deal with the budget cuts that are occurring across campus. It was worse than we thought and I still don't know what our final cut will be. It is very painful to deal with but it helps to know that FOKP is doing what they can to support KPBS. I would like to thank all of you for your financial and moral support to KPBS! All of you are vital to the long-term success of KPBS. As always, please contact me (jbriggs1@ksu.edu; 785-532-0140) if you have any questions or concerns about KPBS as we try to continue to develop as one of the finest biological field stations in the world. -john

John M. Briggs Professor of Biology Director of Konza Prairie Biological Station Kansas State University Division of Biology 104 Ackert Hall Manhattan, KS 66506

785-532-0140

Outgoing FOKP President

Donna McCallum

Winter on the Prairie

During the late fall and winter on the prairie, the grasses and plant material have dried up and it seems as though death tends to sap the imagination and does not invite second looks. However, this dormant plant matter provides an above-ground blanket that reduces soil moisture loss and slows changes in temperature. It also improves chances of winter survival of the roots of living dormant perennial plants. According to Bria Flemming from The Nature Conservancy, above ground during growing season a healthy prairie is a beautiful mess of colorful flowers and waving grasses. What is seen is only about one quarter of the actual living plant material. The rest is underground and this the key to the prairie's hardiness.

During the winter months or in times of high stress such as drought or fire, many of these plants can essentially withdraw all their energy into their roots, nicely protected until growing conditions are more favorable. Down in the earth the plants have everything they need. The dead plant materials from winters past have decomposed, leaving an ample supply of carbon. Also, fungi and bacteria in the soil have added nitrogen. In the soil, waiting for spring and warm temperatures, are millions of seeds. Many of these seeds require a winter's worth of cold before they can grow.

In addition to this, insect eggs persist and survive on residual vegetation, a good reason to leave thatch on site when cutting in the spring. Besides the plants surviving the winter, wildlife needs to retain body heat as well as finding food. For animals that do not hibernate or achieve some form of dormancy, fattening up provides insulation for body heat and protection from wind. During the winter season, one of the best adapted animals on the prairie are the bison. They use powerful heads to brush away deep snows to reach good grass buried beneath. Bison are very active in winter and consistently keep moving despite the weather.

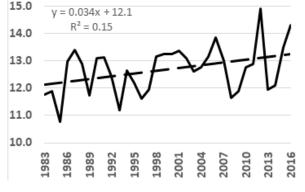
Winter is the harshest time of the year for most prairie animals, but many adaptations make survival easier. If unable to move to a warmer climate, animals must find ways to endure frigid temperatures, howling winds, and occasional deep snowdrifts. Those that survive and make it to spring emerge from the winter ordeal to a time of breeding and renewal.

> Information from: The Nature Conservancy 11/12/17 Prairie Wildlife Research, PO Box 308 Wellington Co.

Natural environments of upstate New York were prominent in my childhood. The family would rent a cottage on Keuka Lake (one of the glacially carved Finger Lakes) where I could spend time swimming or exploring a small stream in a glen that drained from the uplands down toward a delta that extended out into the lake. Boy Scouts had me visiting the Adirondack Mountains and learning a few things about camping, hiking, and environmental concerns. Later the Adirondacks would call me back with the lure of climbing the 46 highest peaks. Hiking the trails (in the trees, with few vistas by western hiking standards) allowed my brother and I to become ADK 46ers (I was the 934th person to accomplish the task).

I attended land grant colleges at Michigan State (bachelor's and PhD) and Minnesota (master's) to earn degrees in geography. As a sophomore, I realized that I needed to change my major from math to geography in order to be able to take that cartography class I thought I would really like. Climatology became the subject within geography that captured my attention and I did both my MA thesis and PhD dissertation on aspects of synoptic climatology. Synoptics is an approach that emphasizes the role of individual weather events in building the suite of weather types that characterize the climate of a place. My seemingly natural facility with math and statistics made certain aspects of doing climatology come easily.

The graph that accompanies this short piece is an example. The data are from the instruments at Konza Headquarters and the sensors have been in place since the spring of 1982. So, we now have a 35 year record of observations. I downloaded the local data at a monthly timescale from an LTER related website: https://climhy.lternet.edu/ The graph provides an analysis of the average yearly temperature in °C and shows an upward trend over the time period. To help readers convert from Celsius to Fahrenheit, 55°F is 12.8°C. The coldest year in the data record is from 1985 and 2012 was the warmest.



My wife and I have a second home in coastal SW Washington state in a small community, Bay Center. A July afternoon temperature in the upper 60s is characteristic for Bay Center. Summer getaways to our place on the eastside of Willapa Bay provide welcome relief from the heat and humidity of northeast Kansas. Returning in mid-August to my faculty job as a geographer at K-State is a major shock to the system and requires a week or two of acclimatization. Over the years, the journey from Manhattan to Bay Center and back has provided a wonderful opportunity to experience a good number of our national parks.

It is always a pleasure to take a dignitary visiting K-State on the Bison Loop. Several have remarked on how nice it must be to have this wonderful place to experience the Flint Hills and get away from it all.

Incoming FOKP President John Harrington



From the Stone House



Director of Education **Jill Haukos**

Plant Response to Seasonal Fire





One of the primary tenets of prairie management is that fire is essential for the maintenance of a healthy prairie. Fire accomplishes several things that are necessary for a prairie:

- Fire kills wooded trees and shrubs that are small, have relatively thin bark, and whose roots have not yet grown deep enough to reach permanent groundwater.
- Fire can kill eastern red cedar if the conditions are right (hot and dry).
- Fire removes thatch and litter, thus exposing the soil to the heat of the sun and allowing precipitation to reach subterranean roots.
- Soil that is warm and moist not only supports plant growth but also bacterial and fungal growth both essential for fertile and productive soil.
- Fire speeds the breakdown of dead, above-ground vegetation, releasing certain nutrients back to the soil.

A balanced discussion also addresses the limitations of fire and the negative aspects of burning:

- Fire will not kill established trees and shrubs- plants whose roots have found groundwater. Clonal species (rough-leaf dogwood and smooth sumac) that have large, complex underground systems are particularly resistant to fire.
- Fire stimulates the growth of warm season/C4 grasses which in turn, can out-compete forbs for water and soil nutrition. Thus, where there's frequent fire there are abundant warm-season grasses but fewer forbs. Fewer forbs means fewer insect pollinators and fewer other species associated with those plants and insects.
- Fire negatively impacts air quality with the production of smoke. By burning on dates other than the end of April, prairie managers can reduce the overall smoke produced on any one day and spread it out over the calendar, thus lessening the impact of burning on the health of nearby population centers.

Another aspect of burning to be considered is the timing of fires. Does the timing of a burn – whether it is in November, January, April, or July – affect the growth of plants and the presence or absence of certain species? The short answer is - yes.

Some plants respond positively (+) to the traditional spring burning; other plants respond negatively (-). Some plants always respond positively to burning, regardless of the date of the burn. It's a very complex system with hundreds to thousands of species (plant, vertebrate animal, invertebrate animal, bacteria, fungus) all interacting and responding to a dramatic stimulus - fire.

("+" = res Species	sponds positively to fire at this	season; "-" = respor Fall	ason; "-" = responds negatively to fire II Winter		= no net affect) Summer	
	Big Bluestem	+	+	+	+	
	Indiangrass	-	-	+	-	
	Little Bluestem	+	+	0	+	Souro Taylo
	Switchgrass	+	+	+	+	Nove Town
	June Grass	0	+	-	0	YouTu watcl
	Sedges	+	+	-	+	Konz
	Forbs	+	+	-	+	

Burn data from Konza is quite clear – here's what you can remember:

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Tav	or	leff

 Personal communication, vember 15, 2017. vne, Gene – Burning on Konza Prairie, uTube-<u>https://www.youtube.com/</u> tch?v=B34UP-pXq30&t=2228s, nza Prairie Channel. March 15, 2014.

Take-home messages:

- Spring burning reduces (to eventual elimination) native cool-season grasses, sedges, and forbs
- Established woody plants do not decline with annual burning, even after 40-50 years of annual burning
- Grass biomass is not affected by the timing of a burn
- Forb biomass is knocked back by spring burning but less so with fall and winter burning
- Aster species respond positively to fall and winter burning



Docent Spotlight: Buz Bruzina

What motivated you to become a Konza Prairie docent?

I first developed a fondness for the plains when starting to read books about them in Ohio as a first grader. I discovered in the fall of 2015, from a Master Docent, the opportunity to learn about the plains in detail by participating in the KEEP docent program; and not really knowing what a docent does, the curiosity was too much. After completing the Docent Course led by Jill Haukos, I become captivated yet overwhelmed by the plant life that was new to this amateur, and had not realized that so much existed. The challenge to expand my knowledge and recall motivated me to continue the program.

What are some of your hobbies & interests?

Currently my hobbies include reading, walking my two dogs, physical exercises, participating in community activities, and the latest, the KEEP Docent program. As a youngster growing up, baseball was my sport, along with running and reading. Some people teased me that my cow/calf operation was a 20-year hobby that really became a second, or maybe primary, job.

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

The best part of being a docent is threefold:

A. There is the opportunity to appreciate nature at its finest and the beauty of the prairie.

B. The opportunity to mix with youth of different age groups to present and describe another important feature of the earth to those who may not realize that it exists and it is real.

C. The opportunity to develop an in-depth knowledge of the immense variety of plant life as it develops and grows through the life cycle.

What brings you the most joy in your life?

The most joy in my life is from experiencing success from whatever has been accomplished through my efforts. Examples:

Planting and producing from a garden.

Hitting in the winning run in a baseball game.

Successfully completing a military operation in the Army, be it in peacetime or at war.

Watching cadets graduate receiving their diplomas after four years of effort guiding them through.

Successfully bringing a newborn calf into the world.

Receiving a "Thank you" from a group of students participating in the KEEP Program.

Docent (Volunteer) Training

Coming in February!

Have you ever thought about joining the ranks of the docents/volunteers of the Konza Environmental Education Program? These volunteers are the lifeblood of the program:

- lead guided hikes along the Nature Trail
- assist with the experiential activities:
 - o test water quality of Kings Creek
 - o catch and identify grasshoppers
 - o catch and identify the creatures that live in Kings Creek
 - o find, identify, and measure the major types of tallgrasses of the prairie
- learn the prairie wildflowers and document the first day of blooming for each species
- lead driving tours within the bison area of Konza
- help maintain the Nature Trail
- find and identify prairie wildflowers during the annual Wildflower Walk

There's so much to learn and do on the prairie and every day you're out here you'll learn something new! Come join others who love the prairie as much as you do.

Training begins: Tuesday, February 27th @ 9:00 am – 12:00 pm. It continues for a total of 8 days in the spring (Tuesday – Friday, each day 9 am – 12 pm) and another 4 days in the autumn. There is a charge of \$40 to help us offset the cost of materials and transportation (you'll get a driving tour of Konza Prairie).

If you're interested, please find a registration form here - keep.konza.ksu.edu/docents/orientation

You may either email the registration form to KEEP at: konzaed@ksu.edu. Or – you can bring it with you on the day of orientation.

Questions? Call Jill @ 587-0381 or email her at konzaed@ksu.edu. We'd love for you to join us!





Diane Barker

Susie Johnson



Jim Koelliker

photos by Jill Haukos

Visions of the Flint Hills Opening October 6, 2017

2017 saw some dramatic changes in our fourth Visions show, with over 500 people coming through the gallery on opening night. The place was packed, and the buzz was transforming. We added a few elements that contributed to the excitement about the show.

Honorary Chairs. We will now have Chairs for each show to guide and contribute as they feel inspired and inclined. Jim and Cathy Hoy, a six-generation ranching family with ranches in the flint hills of Butler and Chase Counties, served as our Inaugural Honorary Chairs. They brought the elements of successful stewardship and preservation of the tallgrass prairie to the show. Cathy attended several KEEP docent training classes and spoke to the quality and relevance of the program. Jim addressed the importance of protecting the land with conservation easements through organizations like the Kansas Ranchland Trust.

Jim announced the prizes that juror and Flint Hills artist Lisa Grossman awarded. It's a thrilling moment for artists and the crowd to see the ribbons presented. We appreciate the difficult job that Lisa had with so many great pieces to choose from and her thoughtful remarks to the artists.

An educational component. We titled this show "Peering into the Prairie" because we wanted it to be an adventure in learning about this iconic grassland. We asked Jill Haukos to provide teaching moments for the show to be placed next to selected artworks. Jill created a set of brilliant QR (quick reference) codes providing information about seven topics including Flint Hills: climate, bison, managing grass with fire, cattle grazing, grasses and forbs, and celestial observation. It's a delight to see Jill's artistry as an educator paired with the art in the show. She is skilled at presenting processes and facts in a way that engages and makes the information part of what Samuel Johnson called the "furniture" in a mind. Valerie Wright provided the QR code for the insect that she conducts research on, the Buck Moth. The QR codes are available on the website and add depth to viewing the artwork.

Flint Hills sourced music. Annie Wilson's Tallgrass Express String Band played their unique Flint Hills grown mix of folk, country, rock, and traditional music. We were particularly happy to have Annie involved because of her ranching background, her work as an elementary school teacher, and her work in creating the wonderful Flint Hills maps for schools.

Flint Hills sourced food. George LeRoux, owner of Flint Hills Bison Reserve in Alta Vista, provided the bison meat served in the bison slider hors d'oeuvres. Thank you to the bison.

Dave Kendall and Laura Mead of Prairie Hollow Productions filmed the opening because of their project, Prairie Women: Engaging Women of the Flint Hills. The sixty minute film will air in March and features Hoy family members and Jill Haukos..

We added the category of endorsers to our supporters. Thank you to all who sponsor, endorse, advertise, talk up, show up, and otherwise support our efforts to celebrate and fund the research, education, and conservation that Konza Prairie Biological Station pursues. You made the opening a party we'll always remember. **The show raised over ten thousand dollars for FOKP!** ~ Diane Barker



"Snowy Staredown " photo by Barb Van Slyke



"Land Verse 2" by Vickie Johnston



"Tallgrass to Sky" by Ken Sabatini.)

We would like to thank you all for your support of the Friends of Konza Prairie, including those that have newly joined or renewed their membership since the last issue of the Bison & Bluestem:

Little Bluestem Level

\$30 (individual) \$50 (family) to \$99 Donna Alexander Rachel & Daniel Andresen Mary Ann Andrews Amir Alexander Bahadori Karen Barker Karen Barker & Chris Ramseyer Tom & Jody Boeding Paul & Sally Bohlen James & Kathleen Bower Jane Bowers Chuck & Sandy Bussing Dr. Kevin & Jan Carnes Steve Coulson Melanie Derby Michael Donnelly & Jackie Macdonald Edward Downum Mary Ann Fleming Terry & Paula Harbert Mark & Terry Healy Thomas Herald Kathleen Hoss-Cruz Katherine Hummels Sue Carolyn Hunt Loretta C. Johnson Ellen Jones George & Stormy Kennedy Tom & Andrea Krauss Dennis & Elaine Lang Vera A. & Larry N. Langemeier **Bob** Lewis Allie Lousch Donna & Bruce McCallum Edwin & Sharon Noyce Kathy Phelan Stephanie Reeck Carl & Marty Reed Cvnthia Rhodes & Brian Martin Carolyn Roberts William & Jennifer Sims Barry & Charlotte Schartz **Michael Stubbs** Elisabeth & Richard Vanderlip Larry Weaver & Gabrielle Thompson Karen L Wells & Dan Francke Tom & Ronnie Whalen Keith & Sue Ann Wright Janice & John Zimmerman

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Annie Wilson & the Tallgrass Express String Band Little Apple Toyota Honda

Bison Level

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In Memory of Janet Phillippi



Janet Phillippi, a docent with the Konza Environmental Education Program since 2012, passed away on Saturday, December 2nd. I started with KEEP in January of 2012 and Janet and her husband Don were in the first class of docents that I trained. Janet and Don were always together and it's hard for me to mention Janet without also mentioning her husband. Their warmth and generosity were a source of both inspiration and encouragement for me as I made my way in discovering how to do this new job. My goodness, what a fun and funny class of docents they were! Greg and Jan Adams, who were in the class of 2013, recently told me that Don and Janet were the ones who greeted and welcomed them when they arrived for their first day of docent training.

Don and Janet both worked during the weekday so

volunteering for the typical school activities was often a challenge for both of them, but they were absolutely dependable when we had weekend events. They were always together and were always in good humor. It was a very sad day indeed when I learned of Janet's passing, not that anyone's passing is pleasant news, but it does seem that hers was too surprising and far too soon. It's a gross understatement to say that she will be missed.

~ Jill Haukos

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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.

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



Bison & Bluestem is published quarterly by the Friends of Konza Prairie, edited by Cindy Jeffrey, 15850 Galilee Rd. Olsburg, KS 66520 or email cinraney@ksu.edu

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