



Kings Creek Streamgauging Station: A vital long-term record resource for water at Konza Prairie

By Dr. Jim Koelliker, Professor and Interim Head of Civil Engineering, Kansas State University

Konza Prairie is producing many valuable, long-term records of information for the tallgrass prairie ecosystem. The U.S. Geological Survey (USGS) streamgauging station on Kings Creek is one of those records and it now has 29 years of continuous streamflow and many measurements of water quality, too. The only obvious sign of this station is the small tan structure located a few hundred yards up the creek southeast the Hokanson Homestead site. This station, one of about 130 in Kansas, is especially valuable because it is one of only 57 benchmark watershed or drainage basins whose purpose is to provide consistent data on streamflow, including rate and amount of flow and quality of the water, and related factors in representative undeveloped watersheds nationwide. As such, it provides a way to compare and contrast conditions observed in watersheds more obviously affected by human activities.



Dr. Koelliker and docent trainees.

Much information about the data that is and has been collected can be found at the web site http://waterdata.usgs.gov/nwis/nwisman/?site_no=06879650&agency_cd=USGS. Of special interest may be the most recent information on stage or depth of streamflow, rate of flow or discharge and rainfall at the site. This information for the past one to 31 days is available within a few hours of real-time and the values for streamflow are compared with the long-term values for the same days of the year.

Some details about data measured and the watershed, all within Konza, include:

- Drainage area: 4.09 square miles (10.6 square kilometers or 2,618 acres)
- Average annual precipitation: about 860 mm (34 inches)
- Average annual streamflow: 2.23 cubic feet per second (1,000 gallons per minute) or 1,630 acre-feet and equivalent to 7.5 inches over the drainage area
- Highest year of streamflow (1993) was 9.47 cubic feet per second equivalent to 31.7 inches over the drainage area
- Lowest year of streamflow (2006) was 0.09 cubic feet per second equivalent to 0.30 inches over the drainage area

The biggest flood has been 10,200 cubic feet per second on May 13, 1995, a rate of runoff equivalent to about 3.9 inches per hour off the entire drainage area. It was produced from nearly six inches of rain in less than an hour when the area was already wet. Both of the flood and the rain events are more rare than 1 in 100 year chance of occurrence. For comparison, this flood is estimated to have been about five feet higher than the footbridge on the Nature Trail and it would have been about ten feet deep over the low-water crossing near the Hokanson Homestead site. About half of the time the stream does not flow at all.

If you are interested in how the USGS scientists measure streamflow at this station and others, go to <http://ga.water.usgs.gov/edu/measureflow.html>. The Kansas USGS Office in Lawrence operates this station. They check the operation about 20 times per year. Real-time information on water stage (depth) and rainfall measurements by the tipping bucket gauge on the roof of the structure are sent via satellite relay to Virginia back to Lawrence and to you over the web site. **TGG**

Prairie Patter

by Dr. Valerie Wright, Environmental Educator and Naturalist

I love spring! The prairie is greening up and wildflowers are finally able to show their faces after a long, cold winter. The January Docent Roundup seems like a long time ago but it sure was a good one. We had poetry read by Nancy Goulden and myself, original music by Docent Martha Seaton, a scavenger hunt with all kinds of clues, and an excellent presentation by Brett Sandercock on the prairie chicken and wind turbine research.

In late April Annie and I, Susie Johnson, Nancy Calhoun, Shelly and Darren Gunderson, Sara Leavitt and Adi Angel, Sue Hunt and Anne Humburg courageously dug into the mesocosm research site to remove some of the native plants. The mesocosm will be used for another experiment this year and the current plant community was no longer needed. We moved great clumps of soil and plants to the Ordway monument where we have been trying to start a wildflower garden for the last couple of years. Before we started Susie said what a great idea it was. After struggling to remove the clumps she said something like, "Is it ok if I don't come to help tomorrow?" We all felt the same. But the planting is finished and we look forward to see what will survive to enhance the Ordway memorial.



More recently the K-State Volunteer Center of Manhattan carried out an awards and recognition evening for those who dedicate some part of their time to either KSU or Manhattan organizations. We were all invited to the Alumni Center on April 29. Twelve KEEP docents attended and received framed recognition certificates and applause as they stood before an audience of about 100 people. We all enjoyed the dessert buffet!

Lastly, I would like to report what the LTER review team recently said about the education programs on Konza. This includes all aspects of K-12, undergraduate and graduate education. "The ed/outreach program at KNZ is strong at all levels, including the schoolyard program." "Outreach and education appears to be excellent at all levels."

Other reviewers used positive phrases like: "...overall effort is exceptional" and "quite impressive" and "the commitment to communicating science to non-science audiences is just plain wonderful." "KEEP and SLTER...have expanded their influence across the State of Kansas and they have involved an impressive number of K-12 students." "KEEP and SLTER [are] flagships for the site." Lastly: "The education and outreach activities and prospects for the future are outstanding." So give yourselves a pat on the back, teachers, docents and all involved! **TGG**

Thank you to our supporters!

We have been fortunate in 2008 to receive funding for some specific needs from local organizations. The Northern Flint Hills Audubon Society supported the renovation of the prairie chicken blind. Early morning observers are now housed in an insulated blind with padded seats and a heater.

A big thanks to docent guides **Doris Burnett, Chod Hedinger and Hoogy Hooghem** who interpreted the mating ritual of the Greater Prairie Chicken throughout March and April. KEEP hosted 17 tour dates and 103 guests from two foreign countries and five states. Five Konza Prairie docents took advantage of this unique opportunity, as well as 16 Northern Flint Hills Audubon Society members sponsored by the society.

This year the docent guides participated in the long-term monitoring of the lek by recording observations such as the ratio of males to females and number of copulations.

The Manhattan Community Foundation helped us purchase equipment for the FOKP Presenter's Bureau. We now have a portable digital projector and portable screen as well as lightweight public address system. Many thanks for helping us purchase these equipment and materials. **TGG**

Burning news for Konza Prairie

Some of our docents have been active on KPBS burn teams this year. Myron Calhoun and Larry Loomis were among the team members with the most prescribed fires notched on their belts (6 each). Earl Allen participated in 5, Diane Barker, Betty and Byron Burlingham in 3 each, and Mike Butler in one. Gene Towne, the Fire Boss, is very appreciative of the hours docents have spent burning Konza. He sends a special thanks for their efforts. The following paragraphs are excerpts from Gene's report at the end of the spring burn season.

"The 2008 burn season is over. It required a 10-week period to get in 14 burn days (plus 1 day that we assembled but cancelled due to gusty winds). We burned over 5,000 acres, consisting of 29 watersheds/pastures, plus numerous plots, restoration sites, and managerial subdivisions around headquarters. All planned units were burned.

The burning was lead by the core staff: Greg Zolnerowich, Tom Van Slyke, Jim Larkins, Paul Galle, Eva Horne, and Amanda Kuhl. But many volunteers were required to supplement the burning. We had 44 additional people participate in the burns this year, including 7 docents, 5 graduate students, and 5 undergraduates.

Burning prairie is a piece of cake; but burning prairie and keeping the fire contained in the target watershed is more challenging and is dependent upon volunteer help. The top volunteer participants this year were Patrick O'Neal (10 burns) and Rose Phillips (9 burns). In addition, there were 5 people that participated in 5 or more burns: Rosemary Ramundo, Sheena Parsons, Gary Kuhl, Larry Loomis and Myron Calhoun. Jackie Ott led the graduate students in number of burns (3 burns). **TGG**



Docent Betty Burlingham

Wildflowers Forever!



This year the wildflowers on Konza Prairie are getting a late, but good start. By Sunday, June 8, the date of the 2008 Wildflower Walk, the display along Butterfly Hill Trail should be just great. There will be a refresher hike on Wednesday, June 4, at 6:00 p.m. for all docents, as an in-service event. In case of bad weather, we will meet Friday evening.

Last year 115 people attended and 18 docents guided. Another nine volunteers worked at the registration and sales tables. We are now starting the Walk at 6:30 p.m.

Please let me know if you will be a Wildflower Guide or volunteer this year. -Valerie- **TGG**

Tallgrass Gazette Editors:

Gordon Cunningham - cunningham@networksplus.net,
Gerry Snyder - gsnyder@ksu.edu

Konza Prairie — my sanctuary far away from home

By Anne Humburg

Editors' note: Anne Humburg is from Germany and has been studying at Kansas State University this semester. She has been participating in the docent training program as a means of learning about the tallgrass prairie. This summer she will be volunteering at a botanical garden in Vail, Colorado, and then she plans to go to New Zealand in the fall.

I was asked to write a few lines about the Konza Prairie and I am feeling very honored to receive this opportunity. Since the prairie provides so many topics to talk about, I decided to share my very personal feeling about Konza with you. And, probably you know far more about this special place than I do, and I would embarrass myself trying to teach you anything.

Let's start with the beginning of my little prairie story and how I found out about this breath-taking ecosystem. Before I came to Manhattan, I probably belonged to this group of people who can be called the “prairie virgins.” Though I have been all over the world, I had never traveled to North America and, therefore, never got in close contact with the prairie. Frankly, I had a rather obscure idea about this grassland type. Key words which most likely popped up in my head when I read “Tallgrass Prairie” were somewhat close to cowboys, native Americans, and balls of dried plants tumbling through deserted villages. This concept of the “Wild West” pretty much describes what I thought to expect out there in Kansas (besides wheat, wheat, and wheat fields). To be honest, I wasn't that naive and uninformed. As a passionate gardener, I am familiar with a few prairie wildflowers and grasses which are used by sophisticated European garden designers who try to replicate this piece of nature in the form of gardens.

When I found out about the docent program in January and that I was eligible to take part in it, my anticipation was incredible. I actually counted the days backwards to the first meeting. I won't forget the day in early February, my first encounter with Konza Prairie. On this day, besides the general introduction for all new docents, I had a private one by Jim Morrill who explained the purposes of the corral to me. It is really difficult imagining the whole round-up process without having seen bison before. Well, two weeks later I got my chance and saw these wild animals so nearby that there wasn't any other way than falling in love with them.

The next big subject I became acquainted with was the importance of fire. It was really astonishing hiking the Nature Trail while one side was burned and the other unburned. Comparing these two situations and seeing the beauty in both stages, was not only an informative experience, it also made its way deep into my memories. I understood the theoretical background of prescribed burns and I knew about the results, but to grasp the entire idea of this man-made nature spectacular wasn't there, yet. The opportunity to watch the fire crew burning the field in front of the education center was more than supportive and helped me to understand fully. This field burned so quickly I was hardly able to get out the camera and take some photos. And now, one week later the ground turned from absolutely black to green. Isn't nature amazing?



Anne observers burning.

I tried to share my observations and feelings with friends and family back home in Germany. Their commentary to my photos which depict different scenes of the prairie throughout late winter and early spring sounded something like, “Well, it looks kind of brown or burned to us. To be honest, it seems dead, really!” I believe there must be something about being right in the prairie— breathing the air, feeling the sun shining on your head and the wind blowing in your face— which fascinates you so much that you even adore burned ground.

Finishing off my little excursion and leaving you with my deepest gratitude, especially to all the people helping me in gaining this unforgettable experience, I would like to cite a phrase I found in one of the books about the prairie: “Those who dwell, as scientists or laymen, among the beauties and mysteries of the earth are never alone or weary of life. There is something infinitely healing in the repeated refrains of nature — the assurance that dawn comes after night and spring after winter.” (Rachel Carson)

My best wishes, Anne **TGG**

The Docent's Notebook

The first bison calf was born April 18 this spring and at least one or two more have been born each day since. Last year 113 calves were born. How can you, as a docent, keep up-to-date and involved with what's happening on Konza Prairie? Discover the "Docent's Notebook," our new on-line password-protected website geared toward docent education and events.

Unveiled at Docent Round-up in January, the "Docent's Notebook" features weekly announcements, in-service and training session calendars, local events of interest, research opportunities for docents, recommended resources such as books and websites, docent handbook materials, and a photo gallery of recent activities— with a lot more to come.

This website was designed for you! KEEP would love to hear what else you would prefer to find here.

Visit often at...

<http://www.k-state.edu/konza/keep/docents/> and e-mail Annie, keepkonza@ksu.edu, for the password to log-in. **TGG**

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The Docent's Notebook

Welcome! These pages were designed especially for Konza Prairie Docents. They are a work in progress. How can we make this site most useful for you? Visit often!

Announcements

This section will feature up-to-date reminders and announcements from Valerie and Annie.

Posted May 13 -
First bison calf born April 18.
From Gene Towne May 7 - I had 19 confirmed as of yesterday. Probably dropping 1-2 per day for another week or so and then a big surge. Should be over 100 calves when all is done--134 mature females that could or should pop one. Last year we had 2, 2-year old heifers drop a calf, but because yearling fall weights were about 40 pounds lower last November, I would be real surprised if any 2-year olds calved this year.

Posted February 25 -
Barn work begins From Interim Director Eva Horne: The barn renovation is underway through August 2008. Construction barriers are up around the barn. Traffic flow will change and some parking (the lot behind the barn) will also be affected. Please use care moving around the construction area and watch out for vehicles in places they normally aren't.

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Raise money for Friends of Konza Prairie! By searching the Internet using GoodSearch. FOKP earns 1.3¢ per search!

Docent potluck and barbecue

Plan to attend the Annual Docent Potluck & Barbecue on the Hulbert Center patio, **Sunday, June 1, 2008**. This social is for docents, FOKP board members, staff, and their family and friends. Docents-in-training are especially invited so we can get to know you better.

We will begin serving food at 6:00 p.m. Konza Prairie will provide the bison burgers and Friends of Konza Prairie will provide the drinks. Please bring your favorite side dish to share.

This year, the Docent Potluck goes green. In an effort to host an environmentally-friendly picnic, please bring your own table service, including durable or reusable plates, silverware, cups, napkins and so on.

Come as early as 5:30 p.m. to relax and visit. After dinner, feel free to take an evening drive on the bison loop to watch the sunset.

Please **RSVP** with the number in your party before Tuesday, May 27 (Call 587-0381 or email keepkonza@ksu.edu). If you can help organize the food, cook burgers, or cleanup afterwards, please contact Ann Murphy. (Call 539-2056 or email murphyap66@yahoo.com). **TGG**

Photos for 2009 FOKP calendar

It is time to choose the photos you would like to submit to the calendar committee for the 2009 calendar. You are asked to choose five of your very best, high resolution photos that you have taken while on the Konza Prairie Biological Station. These photos should be on a CD or Flash Drive and taken to the Claflin Book & Copy Store. Ask for Will. You will be asked to sign a release form at that time. The deadline for submitting your photos is June 27, 2008.

We are looking for some really great photos this year. Docents, FOKP members, and Konza Biology staff are eligible to submit their photographs. If you have questions contact Chod Hedinger, 2009 calendar committee chair, by e-mail, HedingerC@aol.com. **TGG**



Tallgrass Gazette

Konza Prairie Office
Division of Biology
232 Ackert Hall
Kansas State University
Manhattan, KS 66506-4901
308

Save the Date!

Friday, May 30, 3:30 – 5:00 p.m.— Monitoring Collared Lizards and Other Herps on Konza Prairie

Sunday, June 1, 6:00 p.m. — Docent Potluck & Barbecue

Wednesday, June 4, 6:00 p.m. — Wildflower Walk Refresher

Sunday, June 8, 6:30 – 9:00 p.m. — FOKP Annual Wildflower Walk on Butterfly Hill

Monday, June 16 - 25, 8:00 a.m.– 4:00 p.m. — Teacher's Workshop

Sunday, September 14, 2:00 – 4:00 p.m. — Fall Hokanson Homestead Workday

Friday, September 26, 5:00 p.m. — Docent Graduation & FOKP Annual Meeting / BBQ

Saturday, September 27, 8:00 a.m. – 4:00 p.m.— KPBS Visitors' Day

Seed Collection In-service Training TBA

