



Konza Stream Research:

The use of the Konza experimental stream facility to characterize the interactions between nonnative predators and endangered stream fishes

The Topeka shiner (*Notropis topeka*) is a small minnow that inhabits several of the Flint Hills streams in the area surrounding Manhattan. Historically, the species exhibited a continuous distribution across Kansas, but most populations west of the Flint Hills went extinct prior to 1935 as a result of groundwater depletion, extreme sedimentation, and pollution from agricultural practices. Topeka shiners are now restricted to small, upland streams of the Flint Hills where favorable habitat persists, primarily due to shallow, rocky soils that have prevented cultivation. Similar declines in distribution and abundance throughout the species' range (Minnesota to Missouri) led to the listing of the Topeka shiner as a federally endangered species, effective 14 January 1999. Topeka shiners are now estimated to occupy less than 10% of their historic geographic range!

One of the largest threats to Topeka shiners in Flint Hills streams is the construction of dams and the subsequent stocking of predatory sport fish such as the largemouth bass. Therefore, the objective of my graduate research is to evaluate the effect of predation by largemouth bass on Topeka shiners and some of the other more common minnow species inhabiting Flint Hills streams. I will use the experimental streams at the Konza Prairie Biological Station to answer the following questions: 1) are Topeka shiners more susceptible than other native fishes to predation by largemouth bass? and 2) does the presence of largemouth bass affect resource use (e.g., habitat and food) by Topeka shiners? I will answer these questions by placing mixed schools of Topeka shiners and other minnow species in the experimental streams and allow bass to forage for several days. During this time I will monitor the habitat use of the prey species and record their interactions with the bass. Because the experimental streams are self-contained, a simple count of the minnows remaining at the end of the trial will allow me to estimate prey preferences of the bass. The results of my study should provide important information about the effects of non-native predators on native stream fish communities and will help in the conservation and management of this endangered species.



Topeka Shiner, Photo by Konrad Schmidt



Dr. Keith Gido gives artificial stream demonstration to teacher's workshop, June 2003

Prairie Patter

by **Dr. Valerie Wright, Environmental Educator and Naturalist**

We are in the middle of a very busy fall! So many docents have been helping with visitors, classes and science activities it would take this whole page to mention everyone. The statistics from the past year show a decided increase in the involvement of docents. Many individuals are coming out more often. This is so wonderful for me to see and it's a real compliment to the KEEP program. And it's great fun, isn't it!

Recently I attended a LTER meeting in Seattle, Washington, along with 20 other participants from KPBS. It is called the "All Scientists Meeting" for obvious reasons, but we educators now have sessions there as well. Our meeting on cross-site collaboration, program assessment, interactions with researchers and research proposals, discussions on the education portion of the strategic plan and development of an education handbook kept us busy for more than three days. The Konza cross-site workshop held here last April, with "virtual participants" as well as real ones, has been accepted as the new and efficient way to get a lot of work done.

Three important objectives of the Education Working Group are to 1) improve the understanding and value of long-term ecological processes, 2) develop a framework for LTER education at all levels, 3) improve the training and diversity of future generations of ecologists and 4) develop LTER education as a model to improve science literacy.

New Book

The *Field Guide to the North American Bison* by R.U. Steelquist was brought to my attention by Chod Hedinger, who purchased it while on vacation earlier this year. This little book of 46 pages is packed full of information about bison behavior, distribution and some history, ancient and more recent. One quote: "Bison raise their tails when they are perturbed and when they defecate. When the tail goes up, they charge or discharge!" This book makes a great review before a bison tour. There are now two copies in the Hulbert Library.

The tallgrass prairie is spectacular this year with more fall wildflowers than I have ever seen. If you can, take a long hike to the Godwin Hill Trail, as several docents did last Sunday, and enjoy mounds of asters and wands of blue sage and antenna plant blowing in the wind.



Combative Posture



Defecation Posture



Mild Excitement



Great Excitement

Letters

Dear Dr. Wright and Konza Docents,

The field trip was really fun! I learned a lot, and liked when we classified the grasshoppers! I had no idea that grasshoppers have wings! I saw one that looked like it had monarch butterfly wings! Thank you soooooo much for the great time.

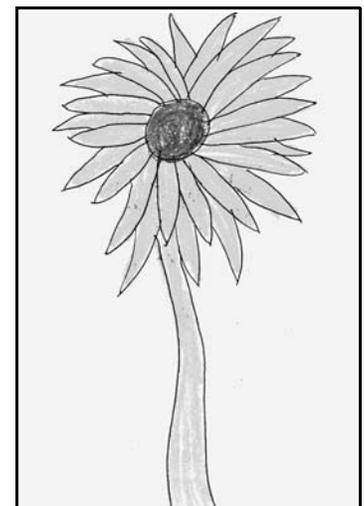
Yours Truly,

Hillary

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New Plant Guide for Konza Docents

Review by Jen Henderson

Have you ever been frustrated on a hike at Konza because the flower you've found isn't listed in one of your many wildflower books? Or the flower doesn't look like the one on the page? Well, some of the docents decided to do something about it. Earl Allen, Nancy Goulden, Charlie Given, Joc Baker and Loren Alexander spent this last growing season photographing Konza flora, researching its history, and compiling a reference book. "It was mostly Charlie's idea," says Nancy. "He thought of it and has been the main one to organize it."

The book will show the different stages of a plant's life cycle: a flower like ironweed in full bloom, the reddish purple florets like tendrils of lace, and next to that, the plant going to seed with its towering brown husk topped by fuzzy seeds, for example. In addition, Nancy says, it will provide a close-up of each plant, as well as a full-body shot, so a prairie rambler can identify plants from any distance.

Though it won't be for sale, it is essentially a loose-leaf binder with laminated pages. It will be available for reference at Konza Prairie Headquarters. "This will allow us to update the photographs and information when we need to," Nancy tells me as she leads a group of fourth graders in imagining themselves as Lewis and Clark. "It's been fun learning the names of plants," she says, though she admits there is a lot to learn. And unless you see the prairie year round, it is difficult to recognize one plant during its entire life cycle. Luckily, we will soon have a handbook devoted solely to the plant life at Konza Prairie, thanks to the hard work of these dedicated docents.



Nancy Goulden and Earl Allen on one of their plant expeditions.

2003 Docent Graduation

Fourteen new docents completed training and joined the docent pool which now numbers just over a hundred. Graduation proceedings held the evening of September 26, 2003 were conducted by Valerie Wright and Verlyn Richards, assisted by Loren Alexander and Earl Allen.

Nancy Goulden and Earl Allen were given special recognition as Docents of the Year, and Annie Clark was recognized as Docent Trainee of the Year. Other special recognition was given to Charlie Given and Verlyn Richards for "Leadership," to Ted Hopkins for "Science," and to Hoogy Hoogheem who received the Early Bird Award.

A hearty welcome is extended to the new docents and congratulations to those docents who received special recognition for their outstanding contributions toward carrying forward the programs at Konza Prairie.

New docent Jackie Mershon's note of thanks to Valerie Wright probably goes a long way in expressing the feelings of all of us who are privileged to contribute to KEEP in various ways. She says: The Konza Prairie Docent Program is one I've wanted to attend for quite some time now and it just worked out for me to do it this year. Several previously trained docents have said how much they enjoyed it and I certainly have too. It is well planned and organized with lots of information from knowledgeable staff and volunteers.

Being outdoors hiking and realizing how much there is to the Konza Prairie to observe and identify was always an adventure. I have a lot to learn yet but can't think of something I'd rather be doing these past several Saturdays than heading to class at the Konza Prairie. Many thanks to you and all the volunteers.

2003 Konza Docents



(Left to right) Stephen Kitchel, Jack Bales, Judith Edelstein, Karl Seele, Rebecca Wehmueller, Jeff Neel, Kelly Loub (front), Terry Wehmueller, Jackie Mershon, Dottie Evans, Ole Olsen, Kennard Kopp, (not pictured, Ray Hernandez, Jennifer Henderson, Annie Clark)



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SPOTLIGHT! on Sue Hunt

by Annie Clark

My first season as a Konza Prairie docent was busy and exciting! Not having completed docent training, I learned a lot through my duties as environmental education assistant. I definitely could not have done it without Sue Hunt, docent and education program assistant. Sue assists Valerie and I on all Schoolyard LTER activities, helping us set-up and take down, as well as keeping us on schedule. She also monitors the groups at lunch and during bathroom breaks. In her "spare" time on Konza, Sue works independently organizing the education lab, running errands on campus, devising creative ways to improve SLTER programs, cleaning the Nature Trail restrooms, stocking trail guides and brochures at the trailhead and so on. As you can see she is an indispensable part of KEEP!



Here is a little bit more about Konza docent Sue Hunt. Sue was born in Manhattan, Kansas, at the old Parkview Hospital near City Park. She graduated from Manhattan High School and received one year of nurses training from St. Luke's before getting married. Sue later finished her nursing education at Manhattan Area Technical College and worked for the next 30 years as a licensed practical nurse. In the mean time, Sue raised three children, who now live in Texas, North Carolina and Missouri with their families. Sue retired one year early to spend a summer working at Yellowstone National Park. She fell in love with the area and got in the best shape of her life. Sue credits her involvement in Konza's docent program to her love of nature, as well as her Yellowstone experience. During the summer she was in Yellowstone, Sue realized how much she is capable of doing while she is still in good physical health, and she joined the docent program the following March 2000. Sue enjoys working at Konza because she is always learning and keeping her mind active. She especially enjoys visiting with the other docents, whom she describes as "more interesting and more educated" than herself. Sue's favorite Konza programs are the Schoolyard LTER activities because she knows the teachers (from interaction at the summer teacher workshop) and she understands the group expectations for the trip. Fifth through seventh graders are her favorite ages to work with.

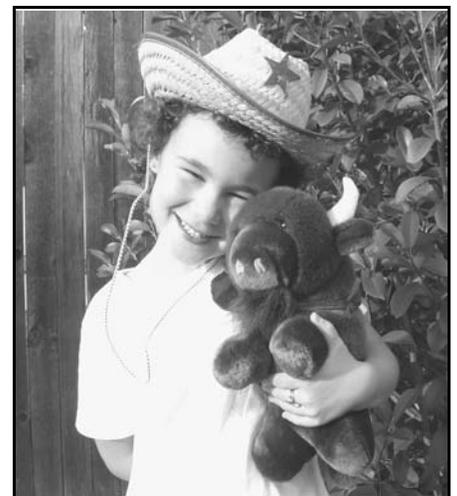
Besides being a docent at Konza, Sue is also a Kansas State University Gardens tour guide and helps with Red Cross blood drives. Sue's hobbies include working in her vegetable garden and being a part of large construction projects, such as sheds and houses. In the past, she volunteered with Habitat for Humanity. This month Sue will spend a week hiking across northern California over the Golden Gate Bridge and into the redwood forests. Hats off to Sue Hunt, who has helped make my first season at Konza Prairie run smoothly and who deserves extra recognition for her hard work!

Announcement

Mark your calendar.

October 26, Sunday afternoon from 2 p.m. to 5 p.m.

Fall Docent Round-up at Hokanson Homestead. Everyone is invited to this new event. Perhaps it will become an annual event. We'll also have a workday at the same time to fix up the shed, put more chips on the trail and put up the bird feeders. If you want to help with some of the projects, that's great. But you don't need be a worker to join the fun. Refreshments will be served.

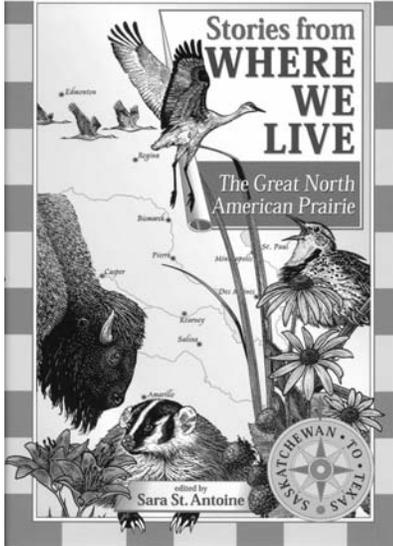


Elena Pojman, granddaughter of Simon Malo and Valerie Wright, won a Blue Ribbon in her pre-school's "livestock show" with her prize-winning Konza bison. The children were encouraged to bring their favorite stuffed animals and dress to match.

Book Review

By Ann Foster, Docent

There are some really nice new books in the docent library (see list). Some field guides on birds, caterpillars and moths and a book of stories about the prairie. Because I already own one of the new library field guides, *Birds of Kansas* by Tekiela, I chose to review a different one. However, I think *Birds of Kansas* is a must-have for anyone interested in birds in this state. I have bought two so far. They would make excellent gifts, too.



Anyway, back to *Stories from Where We Live, The Great North American Prairie*, edited by Sara St. Antoine. The beautifully illustrated cover shows us right off that we are talking about more than just Midwest USA. This region is from Edmonton, Canada to Lubbock, Texas. And it's not exactly the shape I thought it was, either. But this isn't getting to the stories.

There are short stories about blizzards, fires, thunderstorms, wind, cornfields, railroads, grass, Indians, swimming holes, Bison, birds, coyotes, prairie dogs and others. It is a fascinating book. It is an easy-read, intended for age nine and up, but I didn't feel it was a "children's book," either. The pen and ink illustrations are beautifully done. Each of the four sections has a full-page illustration plus there are smaller ones throughout the book.

Several of the authors are well known Carl Sandburg, Georgia O'Keeffe and Hal Borland. Several of the authors are Native American. But all of the essays and poems are about prairie life.

The other library book I brought home is, *Sibley's Birding Basics*. It explains how to identify birds using the clues in feathers, habitats, behaviors, and sounds. This book starts with "Getting Started." Since beginners are usually overwhelmed with all the details, Sibley tells you which details are the most important. He says focus on the bird's bill and face. But this book isn't just for beginners. In fact, as a beginner myself, I would say it is a little intimidating for beginners.

However, we must get past being beginners and get on with learning, too. Most of the book deals with bird identification through comparisons, behavioral clues and song or voice. Feather Arrangement and Color Patterns is a Chapter title on page 99. In the next chapter, Structure of Tail and Wings, Sibley says that tail and wings are unlike the feathers on other parts of the bird. They are patterned differently and move differently and need to be studied separately. They are often the last part of the bird we see and are therefore important for identification.

I highly recommend both of these beautifully illustrated books, as well as the other new guides. My guess is you will want to own some of them yourself.



List of new books at Konza Docent Library:

Sibley's Birding Basics by David Allen Sibley

Caterpillars, Peterson First Guides by Amy Bartlett Wright

Butterflies and Moths, Peterson First Guides by Paul A. Opler

Birds of Kansas, Field Guide by Stan Tekiela

Stories from Where We Live, The Great North American Prairie edited by Sara St. Antoine

New last year and a companion to the field guide above:

The Sibley Guide to Bird Life and Behavior, A National Audubon Society edition