GHF News

Grassland Heritage Foundation Newsletter **December 2009**

GHF is pleased to announce two upcoming talks on prairie establishment and prairie management in January and March 2010. GHF board member, Groundhogs coordinator, and president of Norman Ecological Consulting, Frank Norman will lead the presentation on these two topics.

How to Establish a Tallgrass Prairie on Your Land and Maintaining It Into the Future

Wednesday, January 20, 2010 7:00pm to 9:00pm Lawrence Public Library

Learn the necessary steps to establish a prairie on your land, then maintain it as the prairie species start growing. Topics to be discussed include site preparation, seeding, and maintenance. A handout will be provided that outlines the presentation and provides sources for prairie establishment publications, potential funding sources, and firms that supply prairie seeds and perform prairie establishment. Pre-registration is requested. Contact Rachel at **grasslandheritage@gmail.com** or call 785-856-7243. Those attending without registering may not receive handouts.

Managing Your Virgin Tallgrass Prairie or Hay Meadow March 2010 TBA

Learn the various methods required to manage your tallgrass prairie whether it is in good condition or being overrun by woody vegetation and sericea lespedeza. Topics to be addressed will include tree and shrub removal, herbiciding invasive plants, prescribed burning, and seeding. A handout will be provided that outlines the presentation and provides sources for prairie management publications, potential funding sources, and firms that supply prairie seeds and perform prairie management.

Don't forget the 2010 Kaw Valley Eagles Day Celebration on Sunday, January 24, 2010 from 10am to 4pm at Free State High School in Lawrence, Kansas with eagle viewing at Clinton Lake!

Basketry with Native Plants

GHF is considering hosting a workshop in Lawrence, Kansas on basketry using native plant materials. Many prairie plants are ideal for basketry and make useful and lovely baskets and mats. The class will cover which plants can be used for basketry, material preparation and hands-on instruction in the fundamentals of twining. No previous experience necessary, but patience is a must! Please email Rachel at **grasslandheritage@gmail.com** or call 785-856-7243 if you are interested in participating in the class.

GHF Board Member, Glenn Fell will be giving a class at the Flint Hills Technical College on January 20 and 27 from 6:30 to 8:00pm on **Prairie Wildflower Identification and Medicinal and Edible Prairie Plants**. The contact at FHTC is Rachel LeClear rleclear@fhtc.edu.

Groundhogs Needs Workers!

Groundhogs is our prairie maintenance group that meets the 3rd Saturday of each month at our Snyder Prairie near Mayetta, Kansas at about 9:30am. We'll be off for December, but back to work on January 16, February 20, and March 20. We usually gather about 9:30am.

Contact Frank Norman at 785-691-9748 or fjnorman@sunflower.com to get on the contact list and be informed of work day activities. During the winter this usually involves cutting trees and shrubs.

It's a great way to get some productive exercise, learn about prairie, and get to know some GHF members. Frank schedules our spring burns, too. So, if you're interested in helping or attending, please contact him for dates or watch for the early spring newsletter.

November Groundhog workers from left: Gary Tegtmeier, Craig Freeman, Frank, Brad Guess, Blake Mayberry, and Gus.

Message from the President

I want to say many thanks to Ruth Ann Guess who joined the GHF board this year, but is leaving to be near her daughter in Texas. She was most gracious in making her beautiful prairie available for walks. Brad Guess will be moving onto the prairie, will replace her on the board, and he has already demonstrated a great willingness to help.

The GHF board met on a Saturday morning in early October to discuss short and long term goals, which will help us prioritize how the funds our members donate will be used most effectively. I truly appreciate the dedication of all who were able to be a part of that process. Although Rachel Myslivy, our part-time staff person, was terribly ill that day, she provided us with a structure and outline to examine the issues we needed to visit.

As a result of our meeting, the following tasks are currently being undertaken: finalizing development of a new GHF logo; redesign of GHF's website; clarification of our mission statement; development of a new membership brochure; seek opportunities for collaboration and partnership with other prairie entities; provide information to landowners interested in prairie restoration; recruit volunteers for short-term tasks; increase our educational outreach opportunities; and certainly last-but-not-least continue to work to preserve prairies.

Be certain to check out our website for updates and iBoarnformation on future programs and other events in our area.

I especially want to express my thanks and gratitude to all our members and supporters. Without your investment in our programs and projects, GHF's work would not happen. *Joyce Wolf* rjjawolf@sunflower.com

Board Nominees Wanted

Grassland Heritage's Annual Board Meeting will be Saturday, February 13 from 9:00am to 1:00pm at the Kansas Biological Survey, Higuchi Hall on KU's west campus. We are currently seeking nominees to the board and for our slate of officers. If you're interested in getting more involved with GHF, this is a great opportunity. Contact Angie Babbit at angie.babbit@gmail.com to let us know your interest or to nominate someone. If you're interested in volunteering, but not a position on the board, please let our president know of your interests.

Grassland Heritage Foundation

The Grassland Heritage Foundation is a non-profit 501(c)3 membership organization dedicated to prairie preservation and education.

GHF News is published quarterly by Grassland Heritage Foundation.
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Green Christmas Gifts

If you haven't finished your shopping, how about one of these ideas for "nature friendly" gifts suggested by our board.

Seeing is Believing - the Illuminated Loupe Anyone who uses a magnifying lens in the field knows how challenging it can be to see small objects in low light conditions. At a recent workshop that I taught in Longmont, Colorado for the Colorado Native Plant Society, I was given a great little device that is the perfect solution to that problem – the illuminated loupe. A loupe is a small, hand-held magnifier that is held close to the eye. Botanists and field biologists usually use ones that have a single lens that folds into a protective frame. The loupe can be attached to a lanyard and worn around the neck for convenience. Illuminated loupes that I've seen have an 18 mm diameter lens (3/4" inch); 10x or 20x lens are available. Each loupe has one or two LED lights built into the frame. The LEDs are powered by button-cell batteries, which are turned on and off by a small switch on the frame. They provide excellent overall illumination, and if lighting is not a problem, they can be left off. Prices vary depending on the vendor but generally range from $4.95 to $13.95. I've seen them on-line through Amazon.com and Garrett Wade. If you are looking for a handy, inexpensive gift for a botanist, geologist, or naturalist in your family, consider the illuminated loupe. *Craig Freeman*

If you're looking for some really interesting, generally eco-friendly and original Christmas gifts, consider purchasing original art and crafts from your local church bazaar. Art centers usually have Christmas sales as well, where you can find a wide variety of practical and ornamental gifts. But if you just can't make it to one of those sales, take a look at the online art store called Etsy.com. There, you can find anything your heart desires when it comes to handmade items. Many of the artists who sell their work are residents of northeast Kansas and northwest Missouri. They even have a search engine that allows you to select artists from specific locales. I am a big fan of the printmakers on Etsy. One of my favorite artists on Etsy is Marissa Buschow, who created this beautiful image of the Trout Lily, and many other grassland flowers and birds. *Angie Babbit*

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Climate Change and Prairies

Climate change, greenhouse gases, carbon sequestration, and renewable energy are all topics that are currently being discussed and debated. The following articles all address this theme of prairies and climate.

A special thanks to *Dr. Stephen Porder* for offering up his thoughts on how our prairie ecosystem might be involved. Dr. Porder has published articles on science and public policy and his research involves identifying biogeochemical patterns across landscapes, how these patterns affect the function and services and ecosystems, and modeling the possible response of ecosystems to anthropogenic changes.

Carbon storage in grasslands - one piece of a complicated problem

Stephen Porder, Assistant Professor of Ecology
Brown University, Providence, RI 02906

The United States, and indeed the world, is currently engaged in perhaps the most important discussion of the young 21st century – how to respond to a rapidly changing climate. A large part of this discussion is how to slow, and then reverse, the unprecedented rise in carbon dioxide (CO2) in the atmosphere that has resulted from our use of fossil fuels and conversion of land for human use (e.g. turning tropical forests into pastures). Prairies, and other carbon-rich landscapes, have a role to play in slowing the increase in CO2, but some caution is warranted. International negotiations are ongoing (the next big meeting is in Copenhagen this December) to reach a global agreement on how fast to cut emissions, and which countries will go first. Developed countries (the U.S., Europe, Australia) have very high standards of living, and high per capita emissions. But these countries are loath to slow emissions if "developing" countries (China, India and Brazil) don't also agree to emission cuts. Unilateral cuts come with an economic cost (at least in the short term) which would handicap manufacturers relative to their competitors. "Developing countries" argue that the developed world has been responsible for almost all CO2 emissions to date, and it has raised their standard of living dramatically. Shouldn't the U.S. and Europe cut emissions, even while China and India use some fossil fuels to raise their people out of poverty?

The goal of this essay is not to argue that either side is right - that is not my area of expertise and from my vantage point there do seem to be valid arguments on both sides. But it is clear that if the concentration of CO_2 in the atmosphere continues to grow at its current pace we are headed for a climate-driven catastrophe and almost all people on Earth will be the worse for it. The best available science suggests that business as usual will "likely" produce somewhere on the order of 4-9 degrees F global average temperature rise by the year 2100. Since oceans will warm more slowly than continents (imagine a swimming pool and the surrounding cement on a hot day) the land will likely be even hotter. To put that in perspective, Kansas City may well have the average temperature of Dallas by 2100. Sea level rise may inundate many coastal cities, and agricultural production, particularly in the U.S., may dramatically decline. A future of continued high level CO_2 emissions, and the warming it will bring, is not in anyone's best interest.

Given the urgency of the situation, and the gravity of the threat, people are exploring every avenue that might reduce global temperatures: putting mirrors into space to reflect sunlight, capturing CO_2 as it comes out of coal-fired power plants, and building state-sized arrays of solar panels. While many proposals focus on energy production, others strategies include managing ecosystems to capture and store carbon. Ecosystems do this naturally. Plants take CO_2 out of the air to build their tissues, and when those plants die some of the carbon they store ends up in soil. Globally, plants and soils hold roughly three times the amount of carbon that is in the atmosphere. If we could increase the amount stored on land, less would end up in the atmosphere — this could potentially slow the warming of the planet.

In particular, the restoration of native ecosystems are being promoted by some to help sequester carbon in the short term, and thus buy us time to build the carbon-free energy generation capacity that we will need to avoid calamitous climate change. We've already been benefiting from ecosystem carbon sequestration. Northern temperate forests, particularly in New England and Europe, were almost completely cut down by the early 1800's, but have now grown back substantially, and in doing so have been acting as a carbon sponge, sucking up some of the excess CO_2 that we continue to dump into the atmosphere. Native grasslands store substantially less carbon aboveground (trees are heavier than grasses), but their deep and extensive rooting systems store a great deal of carbon in soil. In theory, then, restoration of prairie could promote carbon storage in soil and help mitigate climate change, but the benefits will be slim if grassland restoration only allows more emission elsewhere.

The Chicago Climate Exchange (CCX) already allows land owners to sell carbon offsets for improved management, at a rate determined on a carbon exchange (a stock exchange in which carbon rather than stocks are traded). There is no doubt that landowners can earn income for restoring prairie through this mechanism. And, there is the added benefit to native plants and animals, likely water quality improvement. So selling carbon sequestration is a good thing, right? It probably is for prairies in the short term, but when it comes to a long-term benefit the question gets a little trickier.

When you sell "carbon credits" you are essentially saying that Company X, which produces CO_2 and has agreed to not exceed a certain level of emissions, can exceed that level if they pay for carbon credits. In theory, the extra carbon Company X emits will be soaked up by the land. Company X pays a penalty, the landowner makes some money and restores native ecosystems, and the atmosphere wins because the prairie soaks up Company X's extra emissions. The key here, from the atmosphere's perspective, is that the land does soak up CO_2, in the same amount and at the same rate as Company X emits it. This is tough to predict, and it's even tougher to measure. Even in the case of no-till agriculture, which is one of the best studied carbon sequestration possibilities, these rates and amounts are poorly known. In the

case of other carbon sequestration programs, the data are scarce at best. Yet understandably enough CCX assigns average sequestration rates based on region, and hopes the average is roughly representative of the truth. If it isn't - and I would argue we don't know how good this average is in most cases - we could be promoting carbon sequestration at the detriment of our climate, which in the end hurts both prairies and people.

So how then to proceed? Restoring prairie provides myriad benefits, to the people that live there, to the animals and plants that use this wonderful habitat, and to the climate. There is no doubt that prairies can store a lot of carbon, carbon that can be lost when prairie is converted to other uses. But allowing companies to exceed their emissions targets if they pay for prairie restoration is complicated, and I would argue the science has not yet caught up with the policy. The dollars that may come in from a carbon market may be great for the prairie in the short term, but climate change is, in the long term, as big or bigger a threat to these ecosystems. Allowing unsustainable emissions in the hope that they will be offset by native ecosystem uptake is thus a very risky proposition.

Professors Receive $4.6 Million to Study Impact of Climate Change on Potential Biofuel Source

The University of Texas at Austin has announced that researchers at the school have received a $4.6 million grant to explore how switchgrass, a native prairie grass and promising source of biofuel, will fare under future climate change. They will work with scientists at the U.S. Department of Agriculture to translate findings into real world tests of biofuels production.

Among other goals, the researchers expect to be able to make better forecasts about how different switchgrass varieties will perform under future climate environments, and to uncover many of the genetic mechanisms of switchgrass tolerance to drought. They will plant cultivars and native varieties at locations in four states and analyze results when grown under marginal conditions. Previous estimates have been based on prime agricultural land and forecast conditions.

The grant also allocates money to run a research course in the college's Freshman Research Initiative. This will be an intergenerational approach integrating modeling, ecology, physiology and genomics and getting students out in the field on a daily basis.
To read the full article see: http://www.utexas.edu/news/2009/10/27/climate_change_biofuel/

Wind Turbines and Bat Mortality

Grassland Heritage Foundation tends to look at prairie preservation on a small scale. We usually grapple with problems like cutting a patch of sumac or burning particular field. However, we know our members are also interested in issues like global climate change. Alternative energies like wind power represent one of the great hopes for fighting climate change, but also represent a great risk for prairies and their wildlife. Several studies have shown that wind turbines kill significant numbers of bats, not by striking them, but because the low air pressure created behind the turbines damages the bats' lungs. Luckily, a new study in the *Journal of Wildlife Management* has demonstrated a simple method for addressing the problem. Stopping the blades during periods of low wind speeds cut bat mortality by about 60% without lowering the turbine's electrical production. Easy to implement solutions like these give us some hope that we can find a way to power our lives without destroying the planet. You can read more about the study at http://eponline.com/Articles/2009/09/30/Slowing-Turbine-Blades-Lowers-Bat-Mortality-Study-Says.aspx Mike Campbell

Rachel Snyder Scholarship Update

In cooperation with the Kansas Native Plant Society, GHF awarded scholarships to two Kansas student researchers. Here is a summary of the work by Kristen Polacik on an invasive species in Kansas.

Response to flooding in invasive saltcedar (Tamarix ramosissima).

Kristen A. Polacik*, and Brian R. Maricle, Fort Hays State Univ., Hays, KS.

Along western riparian zones, natural flood patterns have been altered due to human activity (Busch and Smith 1995). Consequences of altered flood patterns have allowed more stress-tolerant invaders to establish themselves in these areas. One such invader is *Tamarix* (saltcedar). Saltcedar displaces native tree species, such as *Salix* (willow) and *Populus* (cottonwood), and animals, such as insects, birds, and amphibians (Glenn and Nagler 2005). Competitively, saltcedar is superior to other riparian species. During drought, it has more control over stomata than native species, which limits water loss (Anderson 1982); however, saltcedar loses its competitive advantage under flood conditions. The exact mechanisms that make saltcedar less competitive under flood conditions are unknown.

A hypothesis was developed to explain this loss of competitiveness by weekly measures of respiratory processes, photosynthesis, and transpiration in saltcedar plants subjected to flooding. Respiratory processes measured root alcohol dehydrogenase activities weekly using a similar procedure from Maricle et al. (2006). This enzyme is important in respiration under anaerobic conditions. Transpiration and photosynthesis measurements were completed by using a LI-6400 (Li-Cor Biosciences, Inc.; Lincoln, NE, USA). These measurements are important because flooding can cause stomatal closure affecting transpiration and photosynthesis. Also, further transpiration measurements will be done using carbon isotope analysis. The stable isotope ^{13}C can be of importance when investigating fluctuations in transpiration and photosynthesis (Farquhar and Richards 1984). Evaluating water use efficiency using ^{13}C over time could illustrate changes in transpiration under the various flood treatments.

Initial observations in January 2009 indicated onset of flooding had a negative effect on flooded plants. Plants became dry in appearance and discoloration occurred within the first fourteen days. However, after twenty-one days, new growth

occurred within the flooded treatment plants. Photosynthesis rates within the flooded groups initially decreased due to a decrease in stomatal conductance. Photosynthesis rates within flooded plants averaged 2.4 umol CO_2 m^{-2} s^{-1} during the first week. As flooding treatments progressed, photosynthesis rates increased to 15.2 umol CO_2 m^{-2} s^{-1} as plants became acclimated to the treatment. Drained treatment plants had an average photosynthesis rate of 3.5 umol CO_2 m^{-2} s^{-1} during the first week, and during the fourth week the rate was 6.2 umol CO_2 m^{-2} s^{-1}. Photosynthesis in flooded plants increased 12.8 umol CO_2 m^{-2} s^{-1} during the course of the study, whereas photosynthesis only increased by 2.7 umol CO_2 m^{-2} s^{-1} in drained plants. Lower photosynthesis rates at the onset of flooding could account for the susceptibility of saltcedar to flooding. But the ability of saltcedar to acclimate to flooding within four weeks also indicates the capability to acclimate metabolically. These differences can become important for ecological or management concerns dealing with saltcedar.

Future treatments with saltcedar and flooding will include species comparisons with cottonwood. Cottonwood is one species that competes with saltcedar along riparian zones. Understanding flood responses of cottonwood could aid in re-establishing this species in riparian zones after flooding. Also, field measurements will be done within Kansas riparian zones of saltcedar under natural conditions. Lastly, saltcedar will be grown in various soils to represent soils in which it could be naturally found. This will help in understanding how various soils types could affect flood responses of the species.

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Continued from page 2 Green Gifts

A good gift for a nature lover would be a nice pair of binoculars. I recently received a pair of compact Bushnell binoculars and I love them. I also have two older pairs of Bushnell binoculars that have held up well over the years. They are fairly inexpensive and have good optics. *Brad Guess*

For those true prairie enthusiasts I recommend the purchase of a GPS unit. First, GPS can help you get to those out-of-the-way prairies that you have never been to before. Before leaving home just program in the location of the prairie you are traveling to and let the unit take you there. You don't want to get lost on those back roads. Once there and you begin your trek through the grasses and flowers you can set the unit to start tracking your path as soon as you leave your vehicle. When you're ready to start back to your car the GPS unit will lead you. You won't have to worry about staying out too late and getting caught in the dark. For those prairie owners who have special or even not so special specimens, GPS can be used to mark their location so year after year you can walk right to them. Also, as you try to promote the growth of your prairie by spreading seed or plant new growth, you can mark these locations so next year when you go out to see the fruits of your labor, you can easily find these spots. One other benefit of a GPS unit is when working in the prairie sometimes you take a break, lay down your tools and walk off to enjoy nature, get a drink, or just relax. Marking the spot where you have laid down your equipment can save you a lot of wasted time and energy retracing your steps trying to locate your tools. Trust me I have first-hand experience on this one. There are 3 major brands of GPS units to choose from and each brand has many models. Instead of me recommending a specific unit I will leave it up to you to do your own research as to what will work best for you. This is part of the fun of purchasing a unit. *Steve Holcomb*

I'd recommend The National Grasslands:A Guide to America's Undiscovered Treasures by Francis Moul, photography by Georg Joutras. 2006. In paperback $19.95. It covers all the national grasslands found in the U.S. and Canada. Kansas is represented by the Cimarron National Grasslands. Jeff Hansen

Some of my favorite holiday presents I've received were from our kids whose allowances didn't stretch quite far enough to purchase actual items. They would make "gifts" that were decorated certificates that we could "cash in" for chores to be done with no compensation. If you have a friend or family member who needs gardening help, a similar gift certificate for volunteer hours spent in their flower beds might be especially appreciated.

The other item that I've used quite frequently since moving to rural Douglas County is a publication by KSU and the Kansas Department of Agriculture called "Insects in Kansas" by Glenn A Salsbury and Stephan C. White, updated in 2000. Having greater diversity in the yard has meant greater diversity in the insects that I regularly observe and this book helps enormously in trying to identify the common as well as the not-so-common ones in our gardens. The spiral-bound book retails for $29.95 and can probably be obtained at one of your local bookstores or nature centers. *Joyce Wolf*

I'm a great lover of books as gifts, both to be given and to be received. Here are some I've made note of this year.
Great Plains: America's Lingering Wild (University of Chicago Press) By photographer Michael Forsberg, with contributions by novelist Dan O'Brien, environmentalist David Wishart and poet Ted Kooser. Hardcover only.
Plan improvements to your landscape during the cold winter months with these items from www.mdcnatureshop.com.
Native Landscaping for Wildlife and People, Revised. Softcover, $18.00.
Tried & True Missouri Native Plants for Your Yard. Spiralbound $6.00. Native plants that will fit in the home landscape with color photos. 60 pages with 111 plants. *Sue Holcomb*

Our Members

Once again, we'd like to thank all of the people who support GHF! Many of you give of your time and talents and we couldn't function without you. But, the following people have taken time to send GHF some financial support over the last year. Sadly, our numbers are down this year. Please, consider sending your check, for whatever amount is comfortable for you, in the envelope enclosed in this newsletter. Just use the handy form to the right!

Dr David Alspaugh
Jan Armstrong
Ben & Jennifer Bauman
Grace Beam
Estelle Berman
Aaron & Bonnie Blosser
Deborah Borek & David Jenkins
Shirley Braunlich
Barbara Brewer
Teri & Craig Burchett
Julie & Michael Campbell
Stephen W Churchill, M.D.
Mary Conrad
Fred & Nancy Coombs
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Roger & Virginia Emley
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Monica Guillot
Dr. Edna Hamera
Don Hansen
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Chuck Herman
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Jenny Hopwood & Tim Dickson
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A. J. Loscalzo
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Doug & Beth Martin
Michael Meadors
Mary Beth & Robert Metcalf
Wayne & Judy Morton
Patrick & Mary Beth Musick
Stan & Sandy Nolind
Frank Norman
Debbie Morton Peaslee
Pfizer Foundation
Dr William Pilchard
Paul Post & Kay Kelly
Alexis Powell
Julie Rehm
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Jerry Sipe
Ronald L Sisk
Joyce Steiner
Ruth Stepien
Jerry Taylor & Nancy Bryant Foundation
Chip & Toni Taylor
Gary Tegtmeier
Sandra Tholen
David & Vicky Unruh
David L. Wagner
Martha Wagner
Joan Wagstaff
Ron & Joyce Wolf
Clifford H. Wormcke

A Special Thank You for: Prairie preservation: Mel & Mary Cottom; New members: Grace Beam, Teri & Craig Burchett, Laura Lorson; Returning members: Jenny Hopwood & Tim Dickson, Ben & Jennifer Bauman, Rick & Diane Deitz, & Mary Conrad

Thanks to Kevin Bachkora for continuing to serve as our accountant. Thanks to all who helped with the move from the office.

Don't forget the Lawrence, Kansas GiveBack Program. Get your card, register, mark Grassland Heritage Foundation as your recipient and then just spend money at the participating businesses.

Is it time for the Buffalo Commons in Kansas?

The Kansas City Star has run three articles about "Our endangered Prairie". In the most recent, on November 15, 2009 they endorsed the idea of a new million-acre short-grass national prairie park. This would be based on the "Buffalo Commons" proposed by Frank and Deborah Popper in 1987.

They suggest that funding come from the Land and Water Conservation Fund (which gets money from offshore oil and gas royalties). They detail two counties in western Kansas whose population has declined by nearly a third since 1980. This is also an area where the Ogallala Aquifer has depleted more quickly than projected. Farming now is dry, low production farming. The park would grow around the towns in the area without eliminating them.

The Poppers idea covered the High Plains in 10 different states. Kansas with the lowest percentage of public land owned by the state and federal government of any of the states is ripe for a large national park. With replanting of native flora and reintroduction of native fauna, they foresee this being a wide-open park with tourists eager to visit.

The idea of everyone being able to stake a claim on some Kansas land and start a farm has had its day and is showing its impracticality, maybe now it's time to try something totally new. Instead of "amber waves of grain", maybe it's time now for native grasses blowing in the wind. SH

We depend on your memberships!

If the date above your label is more than a year ago, or you've never given, please help us by sending your donation today. ***Send to*** Grassland Heritage Foundation, PO Box 394, Shawnee Mission, KS 66201.

Membership Categories:

__$20 Friend __$50 Steward __$250 Conservor __$1000 Benefactor __$15 Student/Retiree
__$35 Family __$100 Sustaining __$500 Patron __ $5000 Founder

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Address_____

City_____State_____Zip_____

Phone_____ Email_____

_____**I'd like to receive my newsletter in pdf form by email at the above address**
_____Contact me about volunteering
_____Gift in honor or memory of (mark which)_____
_____Rachel Snyder Scholarship Fund
_____Designate my donation for the Prairie Preservation Fund

MONARCHS IN SPACE

When the space shuttle Atlantis blasted off Nov. 16, three monarch caterpillars from the University of Kansas were on board for the trip to the International Space Station. The trio was the first of their species in space. Monarch Watch — a KU-based network of students, teachers, volunteers and researchers dedicated to study of the monarch butterfly — provided the caterpillars to NASA, along with a special artificial diet. The insects were expected to eat, grow and go through metamorphosis to emerge as adult butterflies in 17 days while in low Earth orbit. As the caterpillars developed scientists and students looked at five points in the monarch's transformation into butterflies that could be made much trickier in a low-gravity environment.

The caterpillars were introduced to the artificial diet at Monarch Watch on KU's west campus in Lawrence and were sent to Florida shortly before launch to be placed inside the "Micro-Gravity Butterfly Habitat" developed by BioServe. At the same time, Monarch Watch was to ship similar collections of butterfly caterpillars and artificial diets to hundreds of elementary schools around the country so students could track development of the monarchs in space and compare their growth to monarchs in the classroom. Check out how the project went at **www.MonarchWatch.org**. Chip Taylor is the director of Monarch Watch and a board member of GHF.

U.S. Fish and Wildlife Services Propose Creation of The Flint Hills Legacy Conservation Area

The U.S. Fish and Wildlife Service has held a series of open houses to provide information about and receive public comment on the Service's proposed Flint Hills Legacy Conservation project. The project involves the acquisition of conservation easements from willing sellers in the Flint Hills whose lands provide important habitat for fish and wildlife resources. Parts of The Flint Hills are being lost to residential and commercial development, and such development fragments important wildlife habitat. In addition to conserving wildlife habitat, U.S. Fish & Wildlife recognizes the importance of protecting and fostering traditional cultural values and ranching economies.

The Fish & Wildlife Service will consider all public comments in the development of an environmental assessment (EA) for establishing the Flint Hills Legacy Conservation Area Initiative. You may write, call or email the USFWS directly. USFWS asks for a response to 6 questions: What qualities of the Flint Hills do you value most? What is your vision for the future of the Flint Hills? What do you feel is the biggest threat to the long-term health and stability of the Flint Hills landscape, culture, and wildlife resources? Do you have any other comments, issues, or concerns? In what town and state do you reside? Name?

Send to: Vic Elam, Legacy Project Coordinator, Flint Hills National Wildlife Refuge, P.O. Box 128, Hartford, Kansas 66854, 620/392/5553 ext. 102, flinthills@fws.gov, Fax 620-392-5554.

You may also comment on this project by contacting your Congressional delegation, especially Senator Brownback who sits on the Interior Appropriations Committee. Senator Sam Brownback, 612 S. Kansas Ave, Topeka, KS 66603 Phone: (785) 233-2503

Go to http://www.fws.gov/ search for Flint Hills Legacy and an great informational brochure will come up.

Grassland Heritage Foundation
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Bison Returned to the Tallgrass Prairie National Preserve

This October a long held dream for the Tallgrass Preserve came true. Thirteen bison were released to the habitat. They'll be restricted to an 1100-acre area for now, with tours planned to travel through for close-up viewing. These bison came to Kansas from the Wind Cave National Park, whose bison show no evidence of cattle genes from previous interbreeding attempts. They have been tested free of disease that could harm livestock. The goal was to obtain approximately 20, but not enough in the critical age range were collected in a round-up at Wind Cave. They hope to eventually have a herd of about 100 animals.

Photo by Glenn Fell who was fortunate to be there for the big event

Bison are particularly important as large grazers in a prairie landscape. They feed mainly on the grasses, allowing openings for the introduction of forbs that provide much of the diversity. Their wallows open up small areas for ephemeral ponds for insects and amphibians. They're also more mobile and have less need of permanent water sources.

There is some concern about the herd being able to feed itself this winter. Under natural pre-settlement conditions, the tallgrass would not have been the bisons' winter home. But, if necessary, hay will be provided. These 350 to 400 pound animals will grow to 1200 to 2000 pounds by the time they are adults.

Thanks to the Kansas Nature Conservancy for their continued ownership of much of this land and their partnership with the National Park Service. Seeing these animals returned finally, is another step to making this preserve a more natural prairie.

S Holcomb

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