

It is that time of year when we **ask/beg** for people to volunteer to be on our board. We have been functioning as a “skeleton crew” for the past couple of years and while those on the board have done an yeoman’s job, we need more members.

If you have a special interest in any of our projects, or have an idea for a new project, the board is the place to be. We always can use different perspectives!

*Please contact one of the current board members to volunteer.*



Northern Flint Hills Audubon Society,  
P.O. Box 1932, Manhattan, KS 66505-1932



## prairie falcon

Northern Flint Hills Audubon Society Newsletter

Vol. 43, No. 11 ~ July/August 2015

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### Upcoming Events

**July 11 - Saturday Morning Birding**  
8 a.m. Sojourner Truth Park

**Aug 3 - Board Meeting 6 p.m.**  
Home of Tom & MJ Morgan

**Aug 8 - Saturday Morning Birding**  
8 a.m. Sojourner Truth Park

**Aug 12 - Rex Buchanan, Kansas**  
Geological Survey, at 7:00 pm,  
at the Konza Prairie Stone Barn

**Sept 14 - Board Meeting 6 p.m.**  
Home of Tom & MJ Morgan



## Skylight plus

Pete Cohen

And so in  
May the rains came  
hereabouts and are  
continuing sporting  
about as I write in June.  
All those tons of water

falling out of thin air, mindlessly yet insistently seeking the lowest level in the quickest possible time, which did not always translate into the shortest straight line route. Little of it during this go-round seems to have felleth as gently as Portia describes mercy's application in *The Merchant of Venice*, but all of it seems to have generally left behind a message that I think sounds so euphonic in Spanish – *pasó por aquí* – i.e., I passed through here. For better as well as for worse, for the moisture has been dearly needed.

Many have been the comments about rain. Someone always has to have said it first. "Into every life a little rain must fall," is credited by Bartlett's to Longfellow in a poem titled "A Rainy Day." "Raining cats and dogs," to Jonathan Swift in "A Polite Conversation."

In a book, *Fresh Water* (Univ. of Chicago Press, 1998) a naturalist signing as E.C. Pielou, expressing more scientifically, reports that even industrially unpolluted rainwater is slightly acidic, having gathered some of the atmosphere's carbon dioxide on the way down, which notoriously dissolves limestone, and even erodes tiny vulnerable crystals in such tough stuff as granite.

She goes on to give thanks that small water droplets form around a cornucopia of small particles aloft, because without those particles vapor would grow into a undifferentiated mass that some trigger always would send down in massive deluges. Instead, as I read her, the discrete moist particles also scatter the sunlight, making the sky blue, against which young clouds appear white because the colliding and accreting particles, being still scattered, reflect so well.

Then, according to conditions (which other sources tell me occur mostly according to combinations of winds and topography) various things can happen. Mists can form. Aggregating particles can form clouds that become darker as they become larger and denser and from cooler to frigid as they grow upward. The small droplets resist freezing, but evaporate vapor that does freeze and accumulate. The condensed droplets can begin falling as rain at about .2 millimeters of diameter.

The ice bundles can grow toward 10 millimeters before starting down, melting as they grow, striking the ground, or the rest of us, weighing 100,000 times as much as the droplets in the gentle, merciful mists.

And where does it all come from? I understand that the theory that Earth got its water from bombardments of comets is being questioned by the possibility that it came instead from asteroids, the discussion being mostly about the amount and variation of deuterium found in those travelers' waters vis-a-vis what our water now contains. And peripherally the possibility that Earth was born containing water has not been completely silenced. All of which is out of my depth.

In the two months ahead the "rain" of the Perseid meteor shower should be at its best the night of August 11<sup>th</sup>-12<sup>th</sup>, with not much of a waning Moon to interfere. Prior to that, in July, Venus and Jupiter continue their evening duets, setting swan songs, so to speak. Leo's Regulus will be directly above Venus the 14<sup>th</sup>. As they go down another dual attraction begins parading across the southern sky, Scorpio in the lead of Sagittarius, with the bright stars forming the Teapot asterism aglow in the latter.

The Moon's schedule brings it closely above Taurus' red Aldebaran the 12<sup>th</sup>, first to the right and then to the left of Virgo's Spica the 22<sup>nd</sup>-23<sup>rd</sup>, and part of a Moon, Antares (red in Scorpio), and Saturn trio the 25<sup>th</sup>-26<sup>th</sup>, then it makes its second (Blue Moon) appearance in July the 31<sup>st</sup>.

On the 14<sup>th</sup> the spacecraft New Horizons is scheduled to be the first to visit Pluto, getting as close as 6200 miles, and taking months to send back its data, for it's so far from home.

In August Jupiter makes a brief hard-to-spy rendezvous with Mercury in the twilight of the 6<sup>th</sup>, and by the 15<sup>th</sup> both it and Venus are gone from view, Venus starting to reappear as the morning star at month's end. Saturn becomes the evening star, to the left of the Moon the 21<sup>st</sup>.

Otherwise in August the Moon gets back with Aldebaran the 8<sup>th</sup>-9<sup>th</sup>, with Spica the 19<sup>th</sup>, and a more spread out trio with Antares and Saturn the 22<sup>nd</sup>. Full July 1<sup>st</sup> (9p20) and 31<sup>st</sup> (5a43), August 29<sup>th</sup> (1p350; new July 15<sup>th</sup> (8p24) and August 14<sup>th</sup> (9a53).

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# Riparian

Dru Clarke



As an unrepentant tree lover, life in a prairie province, amidst those devoted to grasses, can prove challenging. I cherish the expanses of woods and enjoy walking in their shade, especially when the sun is boiling the air in summertime.

We have a wealth of walnuts – though they look better standing than cut down – and chinquapin oaks, prevailing like druids on slopes sliding into creek bottoms; the troubled ash and elm – beset by borers and suppurating disease- and box elder; the occasional hickory and Kentucky coffee tree with its “doubly pinnately compound” leaves (that is, multiple opposite leaflets arranged feather-like on the same repeated pattern, making the entire leaf, designated by where its petiole is attached to twig, enormous – several feet! – when it is finished growing). But probably the most dominant or frequent – by count – is the often overlooked hackberry tree, a member of the elm family, that, in much of the literature, is given short shrift, some even derisively calling it “trash.” Whoever said such a blasphemy obviously doesn’t appreciate the ubiquitous nature of this adaptable tree.

Not only here at home but at Manhattan High’s Project WOLF woodland, adjacent to Wildcat Creek, the hackberry was the most ‘important’ tree, determined by its frequency (distribution by each measured quadrat) and sheer numbers over years of student counts for ecological study. In the woodlands by the streams at Konza Prairie Biological Station, it is common. It – there are 100 species worldwide, seven in North America – is found on every continent except Antarctica and its seeds have been discovered in the graves of 500,000 year old humans. On fall walks with students in Project WOLF, I would often pluck a blue-black fruit from the tree and peel off the thin, sweet skin with my teeth: a grin would entice the kids to try one, being careful not to bite down on the stone-hard seed within. The fat and protein-rich seed, with its sugary skin, can be mashed into a paste that can be toasted and eaten like a granola bar. “Milk” can be made from the crushed seed and water and jam from the flesh. Northern Plains Indians used it as a spice and extract for sore throats, others as a treatment for gynecological problems as well as venereal disease.

The bark may be its most interesting visual feature: it is crusty and rucked into long grey channels,

and resembles an eroded, stratified series of canyons. If you’re into hugging trees, this one will give you a warty embrace via blunt woody acupressure.

The wood is yellowish, brittle but hard. Cathy Bylinowski of University of Missouri Extension told me that its name “biscuit wood” she learned, as a community liaison for the Land Institute, from a Mr. Talkington of Matfield Green who supplied her with it for her brick, wood-fired oven as it would make a hot, fast fire good for baking biscuits. (And, from another source, the jam made from the fruit was slathered on biscuits.) To me, the bark sometimes looks like the surface of a baked drop biscuit! On another note, the wood was used as fuel for the altar fire accompanying peyote ceremonies.

On the KSU campus, two hackberry trees from the original arboretum that were damaged and a danger to passersby were removed but repurposed as benches for the newly created “Meadow” (adjacent to Beach Museum) and as growth medium for shiitake mushrooms. The tree is afflicted by a number of galls and frantic-looking “witches brooms” often adorn the branches.

The array of wildlife benefiting from hackberry ranges from the tawny emperor, hackberry and mourning cloak butterflies to bluebirds, yellow-bellied sapsuckers, mocking birds, quail, woodpeckers and cedar waxwings, squirrels, raccoons, possums, skunks and foxes. Kevin Cook, Wildlife Window columnist, says: “A hackberry in a ravine is like a lodge in the forest.”

Many might know Hackberry Glen, a privately owned preserve along McDowell Creek Road. Misidentification probably led to its name, as the dominant tree in this relict community of plants (there are walking fern and paw paw trees) is the hop hornbeam or ironwood whose leaf resembles the hackberry but whose identity is clinched by the hop-like fruits that appear in summer.

Maybe the next time you see a hackberry tree you might be inclined to hug it, aware of its giving nature. At least, give it a nod. Please – no trash talk.

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# 17-year Cicada Emerges

*Magicicada cassini*



Seventeen Year Cicadas...and Authors!

*On the last day of May, 1998, seventeen-year cicadas began emerging on Konza Prairie. This was noted by Prairie Falcon contributor Tom Morgan, who began writing natural history columns at the request of Dave Rintoul. This piece on the cicadas of 1998 was one of his two first contributions. On May 31, 2015, Tom and MJ Morgan saw emergent seventeen-year cicadas and many of their holes while walking on the Annenberg Park nature trail. The precision timing of these insects continues to amaze us! And like Magicicada, Tom Morgan returns, as we bring back his 1998 column.*

Insects of Kansas – *Magicicada*

Published September, 1998, Vol. 27, No. 1

The periodical cicada (*Magicicada*) is black with red eyes and orange markings on the wings. These insects emerged this year in eastern Kansas, chorusing together and creating sound levels as high as 100 decibels. At the Konza Prairie, I heard the chorus of *Magicicada cassini* at the trailhead on the last day of May. They emerged here in 1981 and 1998, so watch for them in 2015.

After spending seventeen years in the ground as nymphs feeding on plant roots, the nymphs become adults that live for a single month. Only nymphs are present now, and this may be a good time to ponder the forces that shaped this insect. Predation by birds is a very important force. Wood thrushes, red-winged blackbirds, blue jays, and other birds eat many of the adult cicadas. When huge masses are produced, however, as much as 450 pounds of adults per acre, the birds and other predators eat less than 40% of this quantity. The availability of the cicadas does increase the fledgling success of some birds, but the cicadas have already laid their eggs before the fledglings start to catch flying cicadas.

The nymphs do not feed on a single selected species of plant. They feed on the roots of any plant species. This enables massive numbers of nymphs to develop side-by-side in a small area. The resources of the entire population are devoted to the one objective. They risk it all on one roll of the dice, on the year 2015. There can be an “acceleration,” however, in which part of the population emerges four years earlier than the rest, so watch for the presence of black cicadas with red eyes in the year 2011. (*Did we see any?*)

Not all species are as vulnerable to predators as the periodical cicadas. There are many genera of cicadas with ‘protoperiodical’ population cycles. The adult populations of the protoperiodical cicadas have a repeating cycle with greater numbers present in some years. The adults of ‘annual’ cicadas are present in the same abundance every year (although the shortest period of development of the nymphs is four years for any of the cicadas). *Magicicada* is the only genus, however, that plays the game of chance for the big stakes.

*Thomas D. Morgan, 1998*

Its close 13-year relative *M. tredecassini* sometimes synchronize their calls and flights all at once, a display that has been likened to a “giant game of musical chairs.”





## What is the difference between Locusts and Cicadas?

Though some people confuse the two because of their colors and their singing, cicadas and locusts are distinctly different insects. Cicadas, for instance, are from the order *Homoptera*, which they share with plant lice and leafhoppers. Locusts, on the other hand, are not confined to just one particular species. Rather, the word locust is a general, colloquial term for a grasshopper that has, through the release of serotonin, a chemical that creates a bond between other insects of the same species, become more hive-like in behavior and has joined a swarm. Furthermore, locusts are not in the order *Homoptera*, but rather in the order *Orthoptera*, along with crickets and katydids; to be more specific, they generally fall into the family *acrididae* (like rainbow grasshoppers and horse lubbers).

Cicadas have a more robust appearance than grasshoppers, having a wider but shorter body. Several different varieties of cicadas exist, each of them distinct in their coloring: the *Magicicada*, or the 17-year cicada that have been featured in recent news, are characterized by their black bodies, red eyes and wing veins, while dog day cicadas are known for their light green coloring and clear wings. No matter what variety of cicada it is, the wings always extend noticeably past their bodies. Conversely, locusts tend to be much more slender and longer in shape. Their hind legs are built to be able to jump, and their wings fall short of matching their body's length. Grasshoppers and locusts also tend to have a variety of colors: some are leaf green, others brown, and some are even multicolored.

Cicadas do not swarm. They cannot release the serotonin necessary to form a swarm. Locusts, however, are identified specifically by whether or not they have the ability to swarm. Therefore, cicadas pose much less of a threat to growing vegetation, especially crops, than locusts do. However, they tend to create a lot of damage to several cultivated crops, shrubs, and trees, which is caused when females lay their eggs in the plant's branch. While both male cicadas and male locusts sing to attract female mates, cicadas utilize several different calls, including alarm calls and at least three different courtship songs. Cicadas are known for their loud songs, often reaching such high decibels that their songs are capable of even damaging human ears if close enough. Locusts and other grasshoppers are not nearly as loud, nor do they sing an extensive variety of songs, as they create their "songs" by rubbing either their wings together or their wings against their legs. Cicadas use the tymbals on either side of their abdomen.

Cicadas have a fascinating and complex reproduction system compared to locusts. Females make a slit in a twig with her ovipositor to lay her eggs in. The nymphs drop and bury themselves underground once they hatch from their eggs, feeding on deciduous tree roots while maturing. The amount of time they take doing this depends on the particular variety: *Magicicadas* will take 13 to 17 years as a nymph. This kind will be emerging from underground this summer. The more common dog day cicadas take about 2 to 5 years to mature into an adult. As an adult, they only live for several months, enough time to start mating and starting the life cycle again.

Locusts, however, are much simpler: They lay their eggs in the soil, and the nymphs hatch during the spring. After several molts, the locust becomes an adult. Locusts lifespans vary, but they can go through several generations in just a year.

### TAKE NOTE:

You are invited to the Friends of the Konza event: Aug.12, at 7:00 pm, at the Konza Prairie Stone Barn. Rex Buchanan, from the Kansas Geological Survey, will be giving a presentation on water in Kansas, specifically addressing the depleting groundwater resources. Rex has been the Interim Director for the Kansas Geological Survey since 2010, and has expertise in natural resources, environment, and public policy. He has authored and co-authored many publications dealing with issues in these areas.



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Membership Information: Introductory memberships - \$20/yr., then basic, renewal membership is \$35/yr. When you join the National Audubon Society, you automatically become a member of the Northern Flint Hills Audubon Society. You will receive the bimonthly Audubon magazine in addition to the Prairie Falcon newsletter. New membership applications should be sent to **National Audubon Society, PO Box 422250, Palm Coast, FL 32142-2250**. Make checks payable to the National Audubon Society and include the **code C4ZJ040Z**. Questions about membership? Call 1-800-274-4201 or email the National Audubon Society [join@audubon.org](mailto:join@audubon.org). Website is [www.audubon.org](http://www.audubon.org).

Subscription Information: If you do not want to receive the national magazine, but still want to be involved in NFHAS local activities, you may subscribe to the Prairie Falcon newsletter for \$15/yr. Make checks payable to the Northern Flint Hills Audubon Society, and mail to: Treasurer, NFHAS, P.O. Box 1932, Manhattan, KS, 66505-1932

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