



Highland Lakes Steward

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MISSION

The Texas Master Naturalist program is a natural resource-based volunteer training and development program sponsored statewide by Texas A&M AgriLife Extension and the Texas Parks and Wildlife Department.

The mission of the program is to develop a corps of well-informed volunteers who provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Texas

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CHAPTER PRESIDENT'S LETTER

By Pat Campbell

Hi again from the President's corner. Well, it seems winter still has a slight grip on us. Even my native plants have been slow to come up, but they are starting to peek through. Of course, most of you live south of me, so you are probably seeing much more.

I wanted to advise you of an advanced training opportunity. The Native Plant Society is planning an outing to the Common Ford Ranch Metro Park, in Austin on Monday, March 31. We will meet there at 10:00 and have a 2 hour guided walk with Diane Sherrill about the native plants and last summer's prescribed burn and subsequent recovery. The park is located off Bee Cave Road on Common Ford Rd. If you are interested in joining us, please let me know. I am assuming there will be car pools leaving from Marble Falls, so if you are interested also let me know. More information will be forthcoming. And of course lunch will be part of the day.

This is a very busy time of year and there is so much to choose from both for advanced training and volunteer training. Be sure to watch your emails and the website for opportunities. There is some-

thing for everyone. One of the easiest ways to get volunteer hours is to be a Cocorahs watcher. All you do is get a special rain gauge and log your rains when you get them. Needless to say, I have had little to report, but there is always hope and you need to record the lack of rain as well. If interested, let me know and I will hook you up.

Back to the holes in my yard. I have learned that animals other than armadillos also dig holes. If the hole is cone-shaped and 3-4" in diameter, it could be from a skunk. They dig specific and individual holes looking for insects. If it 4" or larger, it is probably a raccoon looking for food. Fox also dig holes looking for food and could be around your house. They dig for earthworms, insects, eggs, reptiles, and rodents. They also will dig around your yard if you have used fertilizers that contain bone or blood meal. They think it is dead prey that they can eat. And then of course any larger holes are probably dens. I don't have any large holes around my house, but have seen them in the woods and along the creek.

Have a great month! Pat

Stewardship

An ethic that embodies cooperative planning and management of environmental resources with organizations, communities and others to actively engage in the prevention of loss of habitat and facilitate its recovery in the interest of long-term sustainability

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APRIL PROGRAM by Chris Faught

The April meeting at the Methodist Church will be preceded by lunch at River City Grille at 11:00 located at 700 First St. Marble Falls. Our speaker will be: Chad Norris, a Aquatic Biologist from Texas Parks and Wildlife Department. Mr Norris has a BS degree from the University of Houston and a MS degree in Aquatic Biology from SW Texas. His area of expertise is in helping private landowners identify, conserve and restore natural springs and consulting in other water planning activities. He will talk about water right permits and other water development projects with our group as private land owners.

LAST MONTH'S PROGRAM

by Chris Faught

Photo by Mike Childers

HLMN Intern Allan Wolfe discussed the 2014 class project at Inks State Park. Volunteers spent many months and countless hours identifying and marking sites of interest on the Pecan Flats Trail. The work was divided up among five committees and all class members participated in one or more of these work groups. The end product is a new state of the art guide to the existing Pecan Flats trail with new identifying sign posts and a trail guide brochure which is coming out in the new format soon.

Please submit pictures, articles, reports, stories, announcements, etc. to

chili865@gmail.com.

Photos should have captions and appropriate credits. The deadline for submissions to each month's newsletter is the 10th of the month and publication will be by the 15th.



JOHN F. AHRNS

2/24/1947 – 1/20/2014

Memorial Service

March 22, 2014
at Westcave Preserve

- 1:00 p.m. Westcave Hike (Optional)
Preserve will be open for self-guided, reflective hikes.
- 3:00 p.m. Tree Planting at the Ahrns Grove
Ceremonial planting of a native Eastern Redbud and a Texas Oak in John's honor. Short hike from building.

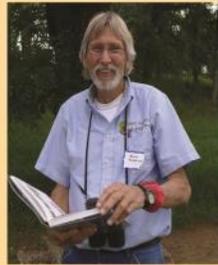
3:45 p.m. Service

The Ahrns family has requested that memorial contributions be made to either Westcave Outdoor Discovery Center or the Hill Country Land Trust.

Parking: Given Westcave's limited parking capacity, please carpool if possible.

Dress: Dress comfortably for hiking.

RSVPs to info@westcave.org would be appreciated.



John F. Ahrns, an unsurpassed Texas naturalist and a true Westcave icon, served as Westcave Preserve's manager from 1974 until his retirement in 2010. John Ahrns began his work at Westcave by hauling more than 100 full-size garbage bags of trash out of the canyon. Years later, after he had accomplished astonishing restoration and protection for the Preserve, John set out to build an environmental education program by traveling to area schools and encouraging teachers to bring their classrooms out to see Westcave. John also began offering weekend guided tours to the public.

John transformed the land into a place of extraordinary natural beauty and developed an education program serving thousands of schoolchildren and weekend visitors each year. By the time he retired in January 2010, John had dedicated 36 years to protecting this natural treasure in Central Texas, and educating many thousands of visitors about the geology and ecology of the Texas Hill Country as well as the unique features of the Preserve itself.

After his retirement John and his wife, Brenda, moved to Fredericksburg. Since then, he has volunteered as an LCRA water monitor, with the Fredericksburg Nature Center, the Old Tunnel State Park and as a board member of the Hill Country Land Trust.

FRIENDS OF THE UPPER HIGHLAND LAKES NATURE CENTER (UHLNC)

by Billy Hutson

It's been busy with scheduled events coming up. Our agenda consists of two geology outreach classes for ACC and LCHEC (picture of ACC geology class attached), two girl scout outreach programs, and three ISD outreach programs. We have also formed an alliance with Heart of Texas wildlife rehabilitation center. HTWRC has released two screech owls so far under our programming and we have another to release at our April 5th scout badge day. See pictures attached.

We are also closing in on the nature center building due to be complete or at least close to it by the end of the year. There have been some delays but a picture of the duplicate building being built now by RPR for the Military and various police forces is attached and underway. It should be completed by June and then duplicate construction will commence on the nature center building at the base of nature hill.

Honey bee classes coming this fall also.

Lots going on because we have such a great friends group.



BALCONES CANYONLANDS NEWS

by Joan Mukhergee

The recent cold may fool us but nature knows that spring is just around the corner in the Canyonlands. I am seeing Dutchman's Breeches, Agarita, Golden Groundsel and Fleabane starting to bloom. Elbowbush is already past its bloom period. These plants are the nectar sources for early bees and butterflies who appear on warm spring days.

Environmental Education Day, held on February 20th, was successful with many enthusiastic, talented attendees. The scheduled children's programs are staffed, but if you haven't signed up yet let Rob Iski know because there will likely be a few more days scheduled and there are also last minute cancellations.

Rob is retiring this year and probably won't be replaced. He coordinates all the programs open to the public and we will really miss him. Let Deborah Holle, Refuge Manager, know if you are concerned about losing him.

Rob's retirement makes the informational gathering we are having on March 18th doubly important. Unless we have a dedicated group of volunteers many outreach programs to the public will have to be scaled back. I am hoping to get a good turnout of potential volunteers from areas near Balcones Canyonlands. Please come if you can and are interested in helping out. If you can't come let me know if you want to be on my mailing list.

The Songbird Festival scheduled for the last weekend of April is on track. It is now open for registration on the Balcones Canyonlands site and programs are filling up fast. One of our fellow Master Naturalists, Lynette Holtz, will be leading a tour of Candlelight Ranch where she works. I hope many HLMN's will be able to enjoy it either as a volunteer or a participant.



AMPHIBIAN WATCH

by Joan Mukhergee

Our repetitive cold spells have discouraged our amphibians from even thinking about breeding. Except for one little peep from a cricket frog I have heard nothing from them. Thus I am hibernating also. I will send an email with a schedule to members as soon as the little critters get active. Then anyone who is interested can join me.



THE EASTERN BLUEBIRD “OF HAPPINESS”

by Joanne Fischer

The Eastern Bluebird occurs across all of eastern North America (east of the Rockies) and is a year round resident of the Texas Hill Country. It is a member of the thrush family (Muscicapidae) and like other members of this family is characterized by its medium size, relatively long legs and a slender bill. The male is a vivid deep blue above with a rusty throat and breast and a white belly. Females are grayish above with bluish wings and tail and a subdued orange-brown breast.

Eastern Bluebird populations fell in the early twentieth century and it is believed that although some of the decline was due to loss of habitat, the major cause was competition for nest sites by House Sparrows and European Starlings. However in the 1960s and 70s bird enthusiasts (including many scout troops) established bluebird trails and other nest box campaigns to help alleviate this nest site competition. As a result, Eastern Bluebird populations increased by almost 2 percent per year between 1966 and 2010 and they are no longer on the Bird Watch List.

Eastern Bluebirds live in the open country near trees but they are also common along pastures, agricultural fields, suburban parks, backyards and golf courses. They eat mostly insects in the summer and supplement their diet with wild fruit and berries during the winter months. Bluebirds often perch on wires, posts and low branches scanning the ground for insects. It is speculated that bluebirds can sight their tiny prey from 60 feet or more away. They feed by dropping to the ground onto the insects or catching them in midair.

Eastern Bluebirds put their nests in natural cavities or in nest boxes or other artificial refuges. A male bluebird attracts a female to a nest site by carrying material in and out of the hole, perching above the hole and fluttering its wings. However once the female has been attracted successfully the male withdraws and the female does all of the nest building. Where multiple nest boxes are available, a female bluebird may build multiple nests – but then she finally uses just one.



The bluebird nest consists of a loose cup of twigs, stems and grasses lined with softer materials like hair, feathers and fine grasses. The female lays and incubates between three and six sky-blue eggs. After hatching, the young are fed by both parents. Because they begin breeding relatively early in the year (often as early as April), Eastern Bluebirds typically have more than one brood per year.

Bluebirds in the northern range of their territory are entirely migratory but the distance they travel varies. Sometimes they travel relatively short distances to find food supplies while others will travel as far as 2000 miles to wintering grounds. Birds in the southern part of the range (like Texas) are typically year round residents.

Eastern Bluebirds don't often visit feeders, but they are a great prospect for nest boxes if you have the space to put one up in your yard, and if your yard isn't too hemmed in by trees or houses. There are many resources, including various websites, that provide information on size and location and caring for bluebird nest boxes.

And why the phrase “the Bluebird of Happiness”? It is speculated that because the call of the Eastern Bluebird is very light and musical in nature that naturalists (romantics) said it sounded like “pur-ity” or “tru-ly”

(Continued on page 7)

(Continued from page 6)

and coined the phrase “bluebird of happiness” to describe this elegantly plumaged, song bird.

And some lyrics from the song “The Bluebird of Happiness” by Jan Peerce, recorded in 1948: “Life is sweet, tender and complete; When you find the Bluebird of Happiness. You will find perfect peace of mind; When you find the Bluebird of Happiness. Two hearts that beat as one, 'Neath a new found sun, We are in a world that's just begun. And you must sing his song, as you go along. When you find the Bluebird of Happiness.”

Correction to the article on Dark-eyed Juncos in last month's issue of the Steward:

Unfortunately the pictures of the subspecies of Juncos were mislabeled last month. I wrote out the picture titles and then submitted the pictures in a different order (so Mike I apologize for the confusion). For the record, the correct subspecies by picture order are: Top/Left=Grey-headed, Top/Right=Oregon, Bottom/Left=Slate-colored and Bottom/Right=Pink-sided.

CAN YOU BELIEVE EVERYTHING YOU READ ON THE INTERNET?

By Kim Bacon

Well, you can if you are a member of the Cornell Laboratory of Ornithology's Birds of North America (BNA) website.

Are you going on the Birding Trip to South Texas and wonder if there are any particular behaviors that will allow you to readily identify an Altamira Oriole? In BNA, you would learn that they commonly have aggressive encounters with Bronzed Cowbirds, that they may like to nest near wasp nests and Great Kiskadee nests (and why), and that they tend to remain as pairs during the winter. So maybe you should be on the lookout for wasp nests?

Or maybe you wonder if a Black-chinned Hummingbird sings a song. In BNA, you would learn that there are only TWO accounts of singing in this hummer . . . both times near Austin (the live music capital of the world!) And, if you want to hear call notes for the Black-chinned Hummer (complete with wing humming), you can do that in BNA because it includes Cornell Lab's Acoustic Libraries for each bird. In fact there are graphs, data tables, photos and videos galore, and complete and up-to-date reference lists available for each bird.

All in all, I think this is a great comprehensive site for getting the facts on birds. It pretty much has everything.

The only potential downside is that it is a membership website. Memberships range from 30 days to 3 years and cost from \$5 to \$100. You can get a substantial discount if you are a member of eBird (free) or the Cornell Lab of Ornithology. I am a member of the Cornell Lab of Ornithology and received membership to Birds of North America for \$25 a year. I think it has been worth it. eBird offers the same discount. The American Ornithologist's Union includes access to BNA in its membership as well. There may be other organizations that offer discounts . . . just ask them. There is a trial subscription offer as well, so you can try it out before you fork over your hard-earned money.

Now, I'm going out to watch some birds.



<http://bna.birds.cornell.edu/bna>

WATER FEATURE - INKS LAKE STATE PARK BIRD BLIND

By Linda O'nan Photos by Judy Parker

Eureka! It's the land of 1,000 spring waters, well, not quite. Things are still dry as a bone at the park, but we do have a start of a big bird bath for our soon-to-be-happy friends at the ILSP bird blind. Our HLMN members moved heaven & earth, well it felt like it anyway, to build a rock waterfall to add what will be a huge bird attractor. Shovels, dolly's, buckets, and large pry bars were tools of the trade for the morning's work. The following folks joined me for this fun project: Jerry Stacy, Phil Wyde, David Payton, Maggie Booth, Jan Warren, Judy Parker, Joan Mukherjee, Barbara Booth and Vicki Myatt. You all seriously ROCK!



INKS DAM NATIONAL FISH HATCHERY BIRD SURVEYS by Sherry Bixler

The 2014 weekly bird surveys at Inks Dam National Fish Hatchery will begin on Saturday March 15 at 8:00 a.m. Anyone can help and volunteer credit is given for the one and a half to two hour survey plus driving time. This is a good way to learn more about area birds as all species are counted, although the target birds are the Painted Bunting, Bell's Vireo and Chimney Swift.

PLEASE EMAIL me any time you would like to help as most surveys are on Sundays but some, like the first two, are on Saturday or Monday. The time will also change as days get longer. If you do not get a reply, please plan to help another time as other volunteers will be filling in when I am out of town

GRASSHOPPERS

by Phil Wyde



Figure 1. A Grasshopper in PW's Yard

I know that all of you recognize a grasshopper when you see one. However, what do you really know about these creatures? If you see one in your yard or on an interpretive hike do you really look at them? Discuss them? Or even give a second thought to them? I am willing to be bet that most of you don't consider them and just take them for granted. Well, I hope that after you finish this article, you will never do that again.

Before getting to the fun "stuff," it is necessary to consider the taxonomy of grasshoppers. Grasshoppers are animals (i.e., belong to the kingdom Animalia) in the phylum Arthropoda, the subphylum Hexapoda, the class Insecta, the order Orthoptera and suborder Caelifera.¹ All of the grasshoppers that we see are short-horn (i.e., have short antenna) and belong to the taxonomic family Acrididae. I doubt if any of us will ever key a grasshopper any further than this since there are more than 2,000 genera of grasshoppers and more than 11,000 species.¹ This said, it is useful to know that their long-

horned (long-antenna) cousins, the crickets and katydids, are also in the order Orthoptera, but are classified in the suborder Ensifera.^{1,7}

One of the first things that I wonder about when I see grasshoppers is what is the difference between a grasshopper and a locust? Here I am thinking about the biblical type locust that purportedly blackened the skies, blocked the sun and devastated crops for miles and miles around (I am not thinking of so called 7 year locust, otherwise known as cicada). The reason that this question so often arises in my mind is that a couple of years after moving to the Texas Hill Country, I thought that we were in the midst of a biblical locust plague as thousands of grasshoppers descended upon our property and devoured trees, shrubs and other plants. Well, I cannot find a very clear answer to the question about what is the difference between a grasshopper and locust. According to my reference 1, a locust is a species of grasshopper that changes color and behavior at high population densities. References 2 and 3 indicate that

locusts are the swarming phase of certain species of grasshoppers in the family *Acrididae* that can breed rapidly under suitable conditions and subsequently become “gregarious and migratory when their populations become dense enough.” They go on to state that the resulting aggregates are nomadic, ravenous and can travel great distances denuding very large areas of virtually all green plant matter. Reference 4 states that green grasshoppers and brown locusts are closely related with both being in the grasshopper “family.” This reference goes on to suggest that grasshoppers hop and can be abundant and pesky, while locusts can fly relatively long distances. Reference 5 seems most definitive. According to this source locusts belong to the grasshopper family but have the ability to live either a solitary or gregarious state with genetic instructions for both being packaged within a single genome. The desert locust, the species that is most associated with forming classical locust swarms, lives primarily in barren regions that only occasionally get rainfall. When arid conditions prevail in these areas, the locusts live as solitary individuals and have a strong aversion to associating with other locusts. When the rains come, vegetation increases and the locusts begin to breed logarithmically, change morphologically and turn into the insatiable insects depicted in the movies. Regardless of their exact status in the grasshopper world, locusts still affect 20% of the world’s land surface – especially in parts of Africa and China. Some of the swarms are immense, containing BILLIONS of bugs. In recent years swarms nearly 4 miles long were reported in Australia.³

It is of interest to learn that serotonin production in the nervous system of starved locusts is the (chemical) mechanism that mediates their swarming.^{2,5} When this increased production occurs it causes the locust to markedly increase breeding and enter a “gregarious phase.” They then swarm, apparently in an attempt to find “new pastures.” Interestingly, serotonin is the same chemical that affects moods in humans.

I conclude that locusts are species of grasshoppers that have a “Frankenstein” gene that can be turned on by a series of environmental and chemical stimuli.

Returning now to our everyday grasshopper, here are some interesting facts about these gregarious animals (taken mostly from reference 7).

- Most grasshoppers favor eating grasses, leaves

and cereal crops. However, many species are omnivorous.⁶

- The great majority of grasshoppers are polyphagous. This means that they will eat many different plant species in one day. However, a few grasshopper species seem to eat just one type of plant.
- Grasshoppers are eaten in many areas of the world (e.g., southern Mexico, China, the Middle East and parts of Africa) – providing a good source of proteins.
- Not surprisingly, the coloring of different grasshopper species often depends on the environment that they live in. For example, many species that live in green fields and forests tend to be green while those that live in drier environments and deserts tend to be more brown and gray.
- Grasshoppers have ears on their abdomens. Under their wings, on each side of their abdomens, are membranes called tympana that vibrate in response to sound waves.
- Although grasshoppers can hear sounds, they do not distinguish sound tones very well. According to researchers, the male grasshopper’s song is not very melodious (how is that for being judgmental!) What is important is that each species of grasshopper produces a unique rhythm that permits courting males and females to recognize the opposite sex of the same species.
- Grasshoppers also make sounds to protect their territories.
- The sounds, or “songs,” produced by grasshoppers differ slightly from species to species.
- Interestingly, unlike crickets, grasshoppers do not rub their wings together to make noise. Instead grasshoppers make their sounds by rubbing their hind leg against their forewing. (This method of making sound is called stridulating.) They have special pegs on the inside of their hind legs that make a thumping sound. Other grasshoppers make their characteristic sounds by snapping their wings loudly as they fly (this is called crepitating).
- Although most grasshoppers get around by

hopping, they have wings and can fly. Flying is primarily used to escape from predators. Some species can fly longer distances than other species.

- If humans could jump comparably to grasshoppers, we would be able to leap more than the length of a football field.
- Grasshoppers normally eat about half its body weight in plants per day. That may not sound as much, but since there are so many grasshoppers, they cause billions of dollars in damage to food crops worldwide annually.
- Fossil records indicate that grasshoppers existed long before dinosaurs.
- Grasshoppers often emit a brown liquid from their mouths. This behavior apparently is a defense mechanism as the brown fluid repels predators. (It has always repelled me.)
- Grasshoppers, locusts, crickets and katydidids all belong to the order, Orthoptera. Based on physical and behavioral characteristics, this group of animals can be divided into two distinct suborders: 1) the caelifera (grasshoppers and locusts) and 2) the Ensifera (crickets and katydidids). The following table taken from reference 9 shows some of the differences between the two groups.

(The next six points come from reference 10)

- The main factor affecting grasshopper populations is weather. Production of exceptionally large populations of grasshoppers usually occur after years of hot, dry summers and warm autumns. Dry weather increases the survival of nymphs and adults and warm autumns allow grasshoppers more time to feed and lay eggs.
- Grasshoppers have a high reproductive capacity. Female lay an average of 200 eggs per season. If favorable weather increases the number of eggs, nymphs and adults that survive, the population of grasshoppers can increase dramatically the next year.
- Grasshoppers lay their eggs 1/2 to 2 inches below the soil surface in pod-like structures containing 20 to 120 elongated, tightly bound eggs. These egg pods are resistant to moisture and cold and thus can readily survive the winter if the soil is not disturbed.
- Young grasshoppers are called nymphs. They look like adults, but are smaller and have wing pads instead of wings. Nymphs go through five or six developmental stages and become adults in 40 to 60 days, depending on weather and food supplies.
- Usually only one generation of grasshoppers is produced each year.

Characteristic	Grasshoppers & Locusts	Crickets & Katydidids
Antennae	short	long
Auditory organs	on the abdomen	on the forelegs
Stridulation	rubbing the hind leg against the forewing	rubbing forewings together
Ovipositors	short	long, extended
Activity	diurnal	nocturnal
Feeding Habits	herbivorous	predatory, omnivorous, or herbivorous

Table 1. Some Differences Between Grasshoppers and Crickets

- Grasshoppers have many natural enemies that help control their populations including fungus, protozoan, nematodes, other insects, birds and mammals.

Before leaving the subject of grasshoppers I want to touch upon Horse Lubber grasshoppers (*Taeniopoda eques*). When we went to Big Bend State Park a couple of years ago we saw several of these very impressive grasshoppers. These are quite large

grasshoppers (1.5 to 2.5 inches) with brightly colored hindwings (black, yellow and pink; see Fig. 2) that apparently serve as a warning to their predators. To further discourage predators, they also secrete a frothy, bad smelling substance from their thorax, hiss when disturbed and if a male, even snap their forewings.⁹ They are found in Alabama, Arizona, Florida, Georgia, Louisiana, Mississippi, New Mexico and Texas. I have only seen them in the Big Bend area – and they totally impressed me, as they did the other Master Naturalists that were present.



Figure 2. Image of a Lubber Grasshopper (ref. 9)

References

1. <http://en.wikipedia.org/wiki/Grasshopper>
2. <http://en.wikipedia.org/wiki/Locust>
3. Simpson, S.J. and Sword, G.A. 2008. "Locusts" in *Current Biology* vol. 18, pp. 364-366.
4. <http://www.livescience.com/7782-grasshoppers-locusts-swarm.html>
5. Rogers, S. M., T. Matheson, E. Despland, T. Dodgson, M. Burrows and S. J. Simpson. 2003. "Mechanosensory-induced behavioral gregarization in the desert locust *Schistocerca gregaria*." *Journal of Experimental Biology* 206 (22): 3991-4002.
6. O'Neill, K. M., S. A. Woods and D. A. Streett. 1997. "Grasshopper (Orthoptera: Acrididae) Foraging on Grasshopper Feces: Observational and Rubidium-Labeling Studies". *Environmental Entomology* 26 (6): 1224-1231.
7. <http://insects.about.com/od/grasshoppersandcrickets/a/10-Cool-Facts-About-Grasshoppers.htm>
8. <http://insects.about.com/od/grasshoppersandcrickets/f/grasshopsounds.htm>
9. <http://www.insectidentification.org/insect-description.asp?identification=Horse-Lubber-Grasshopper>

GALLERY



Palmately compound leaf from the Bluebonnet. Interesting that the variegated color is due to the white hairs. Photo taken 2/19/2014. by Jerry Stone



The bluebonnet blossom was taken 3/6/2014. by Jerry Stone



Pink Vervain, also called Low Verbena in Enquist. Photo taken 2/19/2014.



Cardinal by Sue Kersey



Nesting Nutria

By Sue Kersey



Great Blue Heron with lunch.

By Sue Kersey