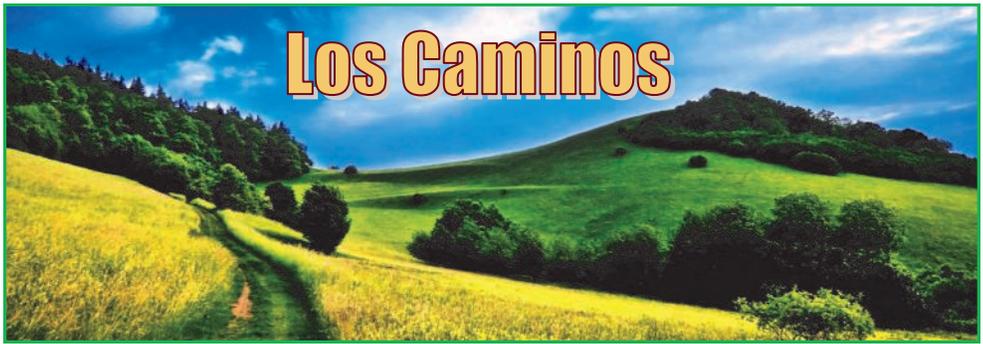


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*Celebrating and sharing our experiences along "the roads" we take through nature.*

Award Winning Newsletter of the El Camino Real Chapter  
Milam County Texas Master Naturalist Spring 2014

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**Prairie Tracks by Katherine Bedrich**

The Nature of Milam County Project - Observation.

Observation - to see or sense; to take notice; to inspect.

How do you use the five senses to observe nature? What do you see or notice - Color, movement, shape. What do you smell - odor, sweet, offensive, strong, gentle. Do you hear bird calls and songs, frog chorus', coyotes howling, the wind moving grass and leaves? Is the touch soft and furry, does it tickle, is it wet? Can you taste the rain, the air, the sun?

Observing nature calls on using all of our senses and helps us learn the difference between species. A red headed woodpecker has a full red head. A red bellied woodpecker has a partial red head with some red on its belly. Smelling a sweet scent in the spring can help identify certain wildflowers. Blue-bonnets have a unique wonderful smell.

lease. Southern leopard frogs sound like clowns laughing. Doodlebugs tickle your hand. The sun tastes warm and rain tastes wet... Noticing what is around you in nature



Queen butterflies on blue mist flower

takes some learning. You need to slow down, stop, and inspect the nature around you. Finding tracks on the prairie or savannah is a wonderful way to spend time observing.

What tracks have you seen lately?

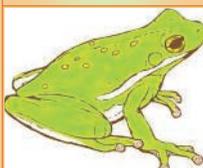


Bird tracks in snow

**Our Motto**

Our Mascot  
The Green Tree Frog

- Look
- Learn
- Teach
- Conserve

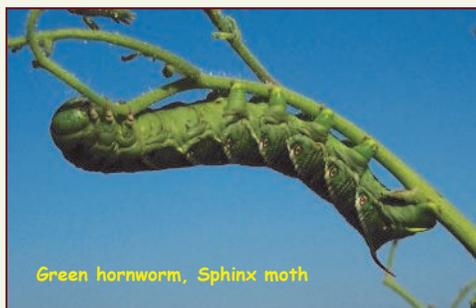


**Did You Know?**

What shoots smelly boiling liquid as a defense?



See last page for the answer.



Green hornworm, Sphinx moth

Green hornworms, Sphinx moth, let you know when you are too close by the odor they re-



Green lacewing eggs on fennel

## Snake of the Day

by Sue Taylor

Some days nature is so amazing, it will show you something only people on National Geographic get to see in person.

One day last fall, as I was just sitting on the porch at the lake, I noticed what could have been a whip snake or black racer or rat snake. Needless to say I wasn't getting close enough to check it out more closely to be sure. It sneaked its way across the little hill ridge across from my porch.

It was one of those lazy days, when you just want to relax and let the world roll by, and he did roll, all over the hill.

Around every tree and nook he came up on. Figured he was on the hunt for food. It was wonderful from my perch "on the porch" to watch the figure eight routes he made around every tree. This consumed about ninety minutes of my lazy afternoon.

Then he started toward the porch. He got within about twenty feet of me and suddenly disappeared. Finally I assumed he had found a hole in the grass and returned to his underground world. I just sat there enjoying my ice tea and to my happy surprise, I notice the long black vertical neck of my little friend as he cautiously raised his head and looked long and hard to the east of us. Took me awhile to center in on what he was staring out. A bird, mouse, or maybe a juicy bug, no..... it was Princess, my neighbors' cat.

She was on the other side of an old log, almost totally out of my sight. Only her tail twitching while she sunbathed gave her away. Believe it or not this took another hour of my life watching this cat and snake game. Cat would move, snake hide, snake would extend neck up a foot and check on cat, freeze for awhile and then hide again. Finally the cat got hungry and went home for supper.



The snake moved closer to me in the grass. (This didn't worry me however, porch is fifteen feet in air.) Then suddenly on the hill behind the snake, my eye caught a swift motion and I do mean swift. It was another snake. Twice the length and size of my first snake. What was more amazing, was the fact this second snake was making every tree, turn, nook, and figure eight our first snake had made. Moving at twice, no, more like four times the speed of the first snake. It was hunting or tracking our first snake. And finally it made contact.

They were face to face for almost fifteen seconds, like a staring contest. Then the small one broke stare and took off down the gully as fast as I'm sure he could possibly slither. Not six inches behind his head was the head of the large snake. They almost seemed to move as one, appearing inter-twined as they sped away.

Two and half hours well spent. Not to mention the heated discussion that followed on the speculation of the conversation that went on between the two

snakes.

Was it momma snake chewing on teenage son snake, telling him to get home, the world was still too dangerous for him to be out by himself? Or was it wifey snake, catching up with hubby snake, chewing him out for running off and having a good time while she was home with 30 baby snakes? Or maybe their mom had called and was on her way over ... and we all know, no one can face mom by themselves.

Thanks nature for a very entertaining afternoon.

[Two garter snakes shown in photo. Editor]

## A Conversation Between Father and Daughter

by Sharon Sweet

Background: A couple nights ago, my son had killed a water bug on the ceiling over his daughter Alison's bed.

This conversation was between Alison and her dad, at 10:30 PM, after she had been "in bed" for 90 minutes.

Ali: "Daaadeee!"

Dad: arriving in her room and finding her in the bathroom: "What's wrong?"

Ali, whimpering: "I'm afraid there's another big bug over my bed."

Dad: "No, he was just looking for food, and he didn't find any."

Ali: "But you killed him, you didn't let him go outside so he

could tell his friends there's no food in my room."

Dad: She had me on that one.

All I could say was "bugs don't talk to each other."



## What's in the Water?

By John Pruett

### Folklore:

Freshwater catfish are the subject of much folklore worldwide. With software like photoshop, note the two men holding the apparent giant catfish in the accompanying picture, and the availability of the Internet, these tales are widely disseminated. Tales range from divers reporting catfish at the base of deep-water dams large enough to swallow a man, to a catfish actually swallowing a basketball, complete with picture. There are in fact some huge freshwater catfish species. The largest freshwater catfish is the Mekong catfish (*Pangasianodon gigas*) with records measuring 10.5 ft and 660 lb. This fish is found in the Mekong basin in Southeast Asia. We can relax knowing that our North American, catfishes, the flathead yellow cat (*Pylodictus olivaris*) and the Blue catfish (*Ictalurus furcatus*), while large, can grow only to a mere 100 plus pounds.



dorsal spines. These catfishes have no scales, but a mucus covered skin. The yellow cat reaches sexual maturity between 3 and 7 years of age. The species can live up to 28 years with the normal span being 5 to 22 years. Alligators, water snakes, turtles, larger fish, and man prey upon young yellow cats, while larger older fish are top predators themselves with only man and members of their own species being their principal predators. Spawning occurs between late May and August,

and a single nest may contain 100,000 eggs that are ferociously defended by the male. Eggs hatch in 6 to 9 days and like other catfishes they grow continuously.

The yellow cat is a carnivore that preys on many different types of live animals. Young fish feed on insect larvae. As they grow they begin feeding upon small fish and crustaceans. Large adults feed almost exclusively on other fish. In contrast the blue and channel cat, which also eat live prey, are also scavengers on dead prey, as well.

The yellow cat is most active in the spring where its home range in the river is believed to be 0.4 miles upstream and 0.4 miles downstream. As the yellow cat is mostly found in turbid waters it has a keen sense of communication and perception. It uses its eyes, mechanosensory lateral line, and the taste buds covering its body and concentrated on the barbels. It has an improved sense of hearing due to the presence of a Weberian apparatus, which connects to the swim bladder,

serving as a resonance chamber to the inner ear.

Although I have focused on the yellow cat, the blue cat and the channel cat are also considered worthy catches for sport and food. The blue cat can also attain a great size (130 lbs), while the channel cat is much smaller (41 lbs). The channel cat is the preferred species for fish farming, which represents a large industry in the southern U.S. Approximately 89,400 acres of ponds are in production of 472 million pounds (2010) of catfish, which are harvested at 1 to 2 lbs. The major producing states are Alabama, Mississippi, Arkansas, and Texas. All three catfish species are game species, however none are considered vulnerable or threatened. In the words of the late, legendary Game Warden, Harley Berg, "So

### *Pylodictus olivaris* Biology:

A prized catch for anglers, throw and trot liners, in our Milam county rivers is the flathead (yellow cat) catfish. Prized for both its size and its flavor. Yellow cats inhabit rivers with slow currents, lakes and reservoirs of our county. Younger individuals are found in shallow water, while older and larger yellow cats are found in deeper waters 9 to 20 feet. The large fish move into shallower water at night. They reside near cover like overhanging banks, fallen trees, and drift piles. They are generally found in waters with a temperature range between 70° and 86° F. They become relatively inactive at water temperatures below 50° F.

The yellow cat is a large bodied species that can reach a weight of 125 lbs. Its dorsal surface is yellow to brown (can be mottled) with a pale white underbelly. The lower jaw protrudes farther out than the upper jaw, with the mouth having a wide oval shape. The head is wider and flatter than other North American catfishes, therefore the common name flat-head. The caudal fin (tail fin) is rounded and only slightly notched, which distinguishes the yellow cat from the deeply notched caudal fins of the blue cat (*I. furcatus*) and the channel cat (*Ictalurus punctatus*). The yellow cat has pectoral and



fellows let's keep them running, swimming, and flying, by being good cooperators, because together we can, there is a tomorrow." Today the term good cooperator can be extended to a good conservationist as well.

#### References

1. University of Michigan Museum of Zoology, [http://animaldiversity.ummz.umich.edu/accounts/Pylodictis\\_olivaris/](http://animaldiversity.ummz.umich.edu/accounts/Pylodictis_olivaris/)

2. <http://ffanewshorizons.org/farm-facts-about-catfish>.

3. Freshwater Fishes of Texas. C. Thomas, T. H. Bonner, B. G. Whiteside. Texas A&M University Press. 2007. 201 pg.

## A Fish Tale

By John Pruett

Several of my co-workers and I would pilgrimage to Port Aransas at least once a year and get what we referred to as a "salt water treatment". Although, one may call it a short vacation, it was in fact a fishing trip. All of us were avid anglers and we always started dreaming and talking about each trip months in advance.

On one of these adventures we had wade-fished all day in either the bay or surf, and after dinner we decided to drive to Rockport to fish from the old Copano Bay Causeway under the lights. Now both the night and we were young so it was without reservation that the hardest of my companions, Chris, Brenda, Fidel, and I started on our way.

The time of the year was early spring and a cold front had just arrived in that area of south Texas. The wind speed that night had to be gusting to 30+ mph, which placed the chill factor at hardly bearable. As we walked onto the causeway an elderly couple were leaving in what appeared to be mutual repugnance. The older gentleman said to his wife, "look Ethel there are some other folks that took their stupid pills." You might think that a comment like that would deter any further attempt to fish, but not a merry band like us.

We walked a good ways down the abandoned structure and found a good place, under a strong light. One thing that made us choose that site was the presence of an emaciated heron that struggled to maintain his perch in the gale force wind. I suppose our site choice was based upon having the additional company of the heron, and the possibility of sharing some of our catch with this lonesome looking bird. You might say we all felt co-dependent with the heron. However, you did not want to look at the heron for too long, as its oscillations in the wind would induce a feeling of nausea. The heron likewise seemed grateful to share his space; I am sure also hoping that we could feed him some of our prized catch.

We were of course casting with the wind, and when you would stand up to cast your lawn chair would conveniently stick to your bottom by the force of the wind.

We fished for some time that evening and caught one small hardhead catfish (*Ariopsis felis*), which is not one of the coastal species prized by fisherman. In fact it is generally considered emblematic of a fishing failure. Among coastal

fishermen the hardhead has little value, and is equipped with dangerous spines. Those spines have caused wounds to anglers attempting to remove them from their hook, and painful encounters for pedestrians walking on the beach bare-footed.

Now I know that the heron was not pleased with our prowess as anglers, however, he knew that on this night he could not be choosy. Although we thought he would reject the fish he appeared thankful that we shared our catch with him. It was quite a show to watch the heron as it ate the hardhead. The hardhead was no stranger to the heron. First he made sure the fish was dead as he speared it numerous times with his sharp beak in the cranial region. The heron then skillfully positioned the fish where the spines would not be deployed as he swallowed his meal. His feeding behavior was a beautiful thing to watch, and quite educational for us. I want to think we made a new friend that night.

We left for our condo shortly thereafter, and stopped along the way for some well deserved hot coffee and conversation.

Stupid pills did not encourage us to go "fishing" that night we were simply spending quality time with good friends doing what we loved, enjoying nature.



[Copano Bay Causeway photo from internet]

## Armadillo Clanking

by Sheri Sweet

Wes and I went for a ride in the country a few days ago. Driving along, all of a sudden, he started laughing, jammed on the brakes and stopped on the country road! Of course, I thought he'd lost his mind! Then he started backing up and said, "did you see that?" "Well, no, what was it?" He said, "it's an armadillo. It's down on your side in the ditch." Finally I saw the creature! It was running along beside the road in the ditch getting closer to the fence. I grabbed my trusty camera, slid out of the truck and started following the critter.



The armadillo was not pleased at being interrupted! It rustled through the grasses along the fence. It became agitated when it was aware of my movements. If I stood still, it couldn't tell where I was, so it would relax and figure I'd gone away. If I moved again, it would try to run away from me. I managed several pictures of the critter. It finally got tired of being harassed, ran up out of the ditch, and clicked and clanked down the country road. It is my conclusion that Armadillos do not see very well. And I don't think they hear too well, either!

Anyway, the little creature "clanked" (the various shell pieces would clank against other various shell pieces) and clicked (its toenails clicked on the paving) along the road and then ran down into the ditch on the other side of the road. So I crossed the road and followed it. It then hid in a bushy place along the embankment. Its shell creates quite a camouflage for itself. Next I noticed a fairly large hole about 4 feet ahead of the armadillo. I got a little too close to it and it then zoomed down into the hole - way back in there where I couldn't even see it!

It's not often I get to meet up with an armadillo! I guess it won this round!

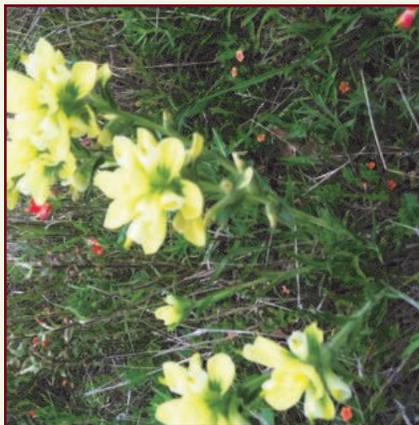


**I Foretold the End!**

by Linda Jo Conn

While driving to an El Camino Real Texas Master Naturalist meeting on a March Tuesday afternoon, I passed a corner on the county road where Red Indian Paintbrushes (*Castilleja indivisa*) bloomed in the triangular right-of-way. Among the red spires, a clump of pale yellow caught my eye! Having no time to spare, I promised myself to stop and take a photo as soon as possible to document the atypical specimen.

Fortunately, I did take a photo with my iPhone on the following Thursday. Elated, I told my husband about the unique plant but sadly predicted that it would probably not last a week on the roadside. I dreaded that it would be dug up in a futile transplant attempt, or more regrettably, the blossoms plucked for a short-lived bouquet by someone enamored by its relative rarity, unaware or not caring that the future seeds of those yellow blossoms were lost forever.



Friday, I drove around the corner twice and did not see the yellow splotch of color. Dreading the outcome of further investigation, I pulled over on my way home on Saturday afternoon to determine the reason. The stubs of the remaining plant were obvious. Someone had picked a bouquet of Texas diversity to enjoy and hopefully to share.

However, those of us who travel that county road could have enjoyed a few more days of the wonder and variety that is nature and that is Texas. If only someone had just had a little more insight and infor-

mation....

And that is what being an active Texas Master Naturalist is all about.... Sharing our knowledge and our respect for all things.

**Getting Ready for Hummingbird Season**

by Linda Jo Conn

Most grandparents will agree that time spent with a grandchild is precious. It is certainly a fact that a grandchild grows and matures three times faster than one's own child did. In today's world, schedules are busy, time slips away, and grandchildren grow into young adults before we realize.

My eldest grandson, a six year old kindergarten student and amazingly eager to learn and help with any project at hand, spent last weekend with me. It was time to put out all the feeders in anticipation of the coming influx of hummingbirds, and while in the process, clean and change the sugar water in two feeders that had been maintained through the winter months.

He mixed up the sugar water solution for the hummingbird feeders. He carefully measured and stirred the granulated sugar into the water (1 cup sugar to 4 cups water) and, when it



was dissolved, filled each clean feeder with the solution. As each feeder was filled and hung, we filled its ant moat with water to deter ant raids.

While we did not see a hummingbird visit a feeder during his weekend stay, the following Monday, when my grandson was in school miles away, the first ruby-throated visitor squeaked loudly and then sipped from a feeder that was ready and waiting. The next time my grandson spends time with me, there will be plenty of activity at the hummingbird feeders for my young assistant to observe and enjoy. And, I will again welcome a helper to clean and refill the empty feeders.



## What and How do Birds Smell?

by Don Travis

With their keen eyesight, flashy plumage, melodic songs, and dramatic mating rituals, birds obviously use sight and sound to guide much of their activities. But what about smell?

They don't really have what we call noses or go around sniffing things like dogs do. They actually lack the vomeronasal organ that most mammals, amphibians and reptiles use to detect odor particles.

However, many bird species do have olfactory bulbs as part of their forebrain that receive odor signals from the nasal cavity. Vertebrates that really emphasize olfaction have very prominent olfactory bulbs on the front of their brains, sometimes hanging off in long stalks as in many fish. In one study, all 108 bird species studied possessed an olfactory bulb. The tissue took up as little as 3 percent of songbird brains and as much as 37 percent of seabird brains.

Recent molecular studies on seven major branches of the avian family tree found that bulb size correlates with the number of genes that encode olfactory receptors which detect odors, that is, a bigger structure equals more genes. Two nocturnal birds, kakapos and kiwis, topped the list with more than 600 smell-related genes, while canaries and blue tits had about a third as many. Humans have about 400 such genes.

Another study looked at how odors affect mating. Danielle Whittaker at Michigan State University has been studying the compounds in "preen oil", which is secreted by glands near the tails and spread over the feathers using the beaks. Preen oil is known to protect feathers from water, heat and the sun. It also contains odor causing chemicals in sex specific ratios, with females having more of one compound and males more of a different one. She studied dark eyed juncos and discovered that males with more of the "male like" ratio had more offspring, and ditto for females with more of the "female like" ratio. While the exact role of these compounds is still unclear, they seem to indicate a possible level of attractiveness in mating and the quality of potential mates. One could say it seems to "pass the sniff test".

To some birds, the whiff of certain fragrances is like the sight of the Golden Arches: a sure sign of lunch. To others, following scents may be as good as reading a road map, since smell helps them navigate the skies. All birds possess some of the sensory equipment necessary for perceiving odors, but whether and exactly how various species use it is an ongoing field of research and debate.

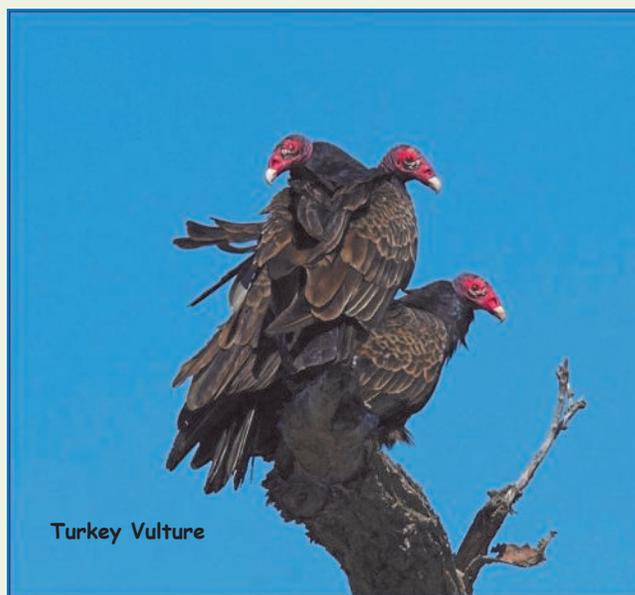
Some seabirds, like storm petrels, recognize the odor of a compound emitted by krill, their main fare. Turkey vultures track the stench of decaying flesh to ferret out the carrion they eat. Their keen sense of smell (superior to that of other vultures) has even been exploited to pinpoint leaks in oil pipelines. When ethyl mercaptan, a chemical redolent of rotting meat, was pumped through one 42-mile line, the hoodwinked scavengers congregated at the cracks. New Zealand's flightless and nearly sightless kiwi sweeps its bill back and forth like a bloodhound to sniff out insects in leaf litter. And honey guides, birds that often lead people and animals to beehives, can locate concealed beeswax candles. Now if only there was a bird that could sniff out my lost keys.



Storm Petrel

References and excerpts taken from:

1. "Birds can smell, and one scientist is leading the charge to prove it", by Nancy Averatt, Audubon Magazine.
2. "Do birds have a sense of smell", by Alisa Opar, Audubon Magazine
3. "Better-smelling birds produce more offspring", by Geoffrey Giller, Audubon Magazine



Turkey Vulture

# Floridus Milamexa

by Katherine Bedrich

*Floridus Milamexa* - a new Chapter Project.

In 2009 and 2010, El Camino Real Chapter participated with Lady Bird Johnson Wildflower Center in collecting seeds for the Millennium Seed Bank Project. Several collections of wildflower seeds were collected and sent to the Wildflower Center. Kew Botanical Garden in England was the destination for these seeds.

Flo Oxley Ph.D. recently suggested we develop a seed collection project in Milam County. This new project, *Floridus Milamexa*, will involve identifying, documenting, collecting, cleaning and storing native plant seeds of Milam County.

Plants collected will be pressed for herbarium vouchers. Vouchers will be stored with the ability to be used for identification, education, and sharing. Seeds collected and cleaned will be stored in a freezer.

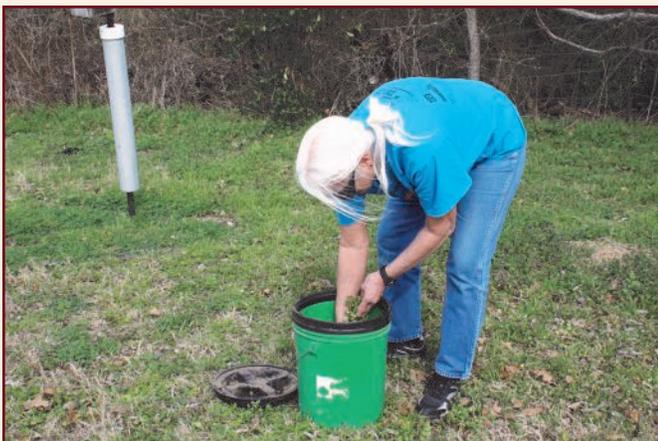
Stored seeds will be available for future distribution to members and the community to help continue the growth of native plants in Milam County.

Learning about the flora of Milam County may include taxonomy, keying plants, habitats, soil types, photographing and scanning specimens. Data collected will be used for documentation on the vouchers and seeds collected. Each specimen will have a specific number for cross referencing with all areas of the project; including photos and possible scanned images. All of this information will be available on the website.

A core team is developing the project. Work days are helping with plant id, plant pressing and collection information. Documentation is a very important part of this project. Several practice runs will be needed to form a data sheet which has all the information needed and helpful to this project. Check the weekly email for workshop and training dates.

With Milam County having two ecoregions, The Blackland Prairie and the Post Oak Savannah, there will be

plenty of plants and seeds to collect. *Floridus Milamexa* - flowering Milam - will provide the Chapter with much to observe.



## Nature Festival 2014

by Don Travis

Our 5th Annual Milam County Nature Festival had some nice weather, fun educational exhibits and hands on activities, and great performances by our featured guest Bill "Mr. Habitat" Oliver and his Otter Space Band. Comments from attendees were all very positive. The music was great. The message was sincere.

A big thanks also goes out to "Commander Ben" Shrader and his Invasive Hunter Academy, Doug Phillips from US Fish and Wildlife for his Habitat Preservation exhibit and help with the Mammal Life exhibit, and Linda Ruiz McCall from UT Austin's Bureau of Economic Geology who demonstrated the water cycle using a ground water simulator.

Bill Oliver and Commander Ben also made appearances at Rockdale Intermediate and Milano Elementary schools respectively and were both well received.

The Milano Evening Lions Club provided vision screening for the young kids, called KidSight, and about a third of those screened were found to have some eyesight issue for follow up by the parents—a most valuable service at an early age.

Of course, none of this would have been possible without the many hours of devotion by our chapter volunteers as well as those from the Brazos Valley and Central Texas Chapters, and the Rockdale iTigers. You all made it very worthwhile, even though the public attendance was down somewhat this year, those who came really enjoyed it all very much.

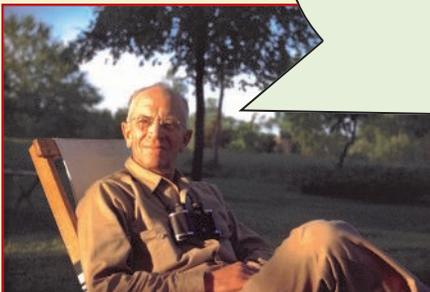
You can read all about the festival on our web page at [txmn.org/elcamino/naturefest](http://txmn.org/elcamino/naturefest), and from there also visit our Festival photo album with many pictures and videos of the events during the day. Here are just a few of the highlights.

Thank You Everyone!



Aldo Leopold:

*"Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher 'standard of living' is worth its cost in things natural, wild and free." Foreword to A Sand County Almanac (1949).*



El Camino Real Master Naturalist  
C/O Texas A&M AgriLife Extension Service  
100 E. First Street  
Cameron TX 76520-0790

Texas A&M AgriLife Ext. Svc. Phone: 254-697-7045  
E-mail: Milam-tx@tamu.edu or our chapter at  
ElCaminoRealMasterNaturalist@gmail.com

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Tim Siegmund, Texas Parks and Wildlife Department  
Jon Gersbach, Texas A&M AgriLife Ext. Service

#### Newsletter Staff

Editor / Composer: Don Travis, contact via E-mail at  
ElCaminoRealMasterNaturalist@gmail.com  
Staff Writers: Katherine Bedrich, Linda Jo Conn,  
John Pruett  
Spring '14 Contributors: Sheri Sweet, Sue Taylor

Los Caminos is a quarterly publication of the "El Camino Real Chapter of Texas Master Naturalists", a 501(c)(3) nonprofit volunteer educational organization.

## *Certifications, Etc.* By Dorothy Mayer

New since the Winter 2014 newsletter are in this color.

Our 2014 Re-Certification pin is the Armadillo, Those earning their 2014 pins to date include: **Don Travis, Debbi Harris, Katherine Bedrich, Linda Jo Conn, Sandra Dworaczyk, Dorothy Mayer, Donna Lewis, John Pruett, Ann Collins, Darlene Anglen, Sheri Sweet, Wesley Sweet, Cindy Travis and Sue Taylor.**



Lifetime to date Milestone Achievement Levels earned include:

**250 Hours**—Paul Unger, Ann Collins, Katherine Bedrich, Cindy Bolch, Paula Engelhardt, Don Travis, Debbi Harris, Joy Graham, Lucile Estell, Shawn Walton, Anne Barr, Ed Burleson, Connie Roddy, Dorothy Mayer, Lucy Coward, Donna Lewis, Sue Taylor, Phyllis Shuffield, Sandra O'Donnell, Jim O'Donnell, Vivian Dixon, Sandra Dworaczyk, Cindy McDaniels, Sandra Dworaczyk, Janice Johnson, Gary McDaniels, Kim Summers, Rusty Thomas, Cindy Travis, **Sherry Collie and Linda Jo Conn.**

**500 Hours**—Paul Unger, Ann Collins, Katherine Bedrich, Cindy Bolch, Paula Engelhardt, Don Travis, Anne Barr, Donna Lewis, Phyllis Shuffield, Lucy Coward, Debbi Harris, Dorothy Mayer, Sue Taylor and Connie Roddy

**1000 Hours**—Paul Unger, Ann Collins, Katherine Bedrich, Cindy Bolch, Don Travis, Paula Engelhardt, Debbi Harris, Donna Lewis, Connie Roddy, Sue Taylor, Lucy Coward, and Dorothy Mayer.

**2500 Hours**—Paul Unger, Katherine Bedrich, Cindy Bolch, Don Travis, **and Ann Collins**

**4000 Hour Presidential Award**—Katherine Bedrich

Our Year-to-Date and Total Accumulated hours for Advanced Training are: **378 and 5374** respectively. Our Year-to-Date and Total Accumulated hours for Volunteer Events are: **2458 and 40,521** respectively.

*Congratulations to All*

## Did You Know?

## What shoots smelly boiling liquid as a defense?

The incredibly complex **bombardier beetle** has an amazing and unique ability: when threatened it shoots boiling hot chemicals from its abdomen up to 70 times in a fraction of a second.

The liquid is a combination of hydrogen peroxide and hydroquinones which are held in two separate reservoirs in its abdomen. When threatened, the beetle contracts muscles that open the valves of these reservoirs and force the two reactants into a third thick-walled mixing chamber along with water and catalytic enzymes. The resultant pressure buildup forces the entrance valves from the reactant storage chambers to close, thus protecting the beetle's internal organs. The chemical reaction brings the foul smelling mixture near the boiling point and produces gas through flash evaporation that drives the ejection, expelling explosively through an outlet valve, with a loud popping sound. The liquid is fatal to small insects and other creatures and can be very painful to human skin.

They typically live in woodlands or grasslands in the temperate zones but can be found in other environments if there are moist places to lay their eggs. Most species of bombardier beetles are carnivorous, including the larva. The beetle typically hunts at night for other insects, but will often congregate with others of its species when not actively looking for food.

