

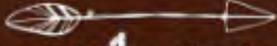
The Steward

Fall 2019

Highland Lakes Master Naturalists

Volume 10 Issue 3



Life is an Adventure 

Highland Lakes Master Naturalists

Back Cover of Steward State entry: A Year in Review

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Please submit pictures, articles, reports, stories, announcements, etc. to becky_breazeale@yahoo.com

Photos should have captions and appropriate credits. We will announce the deadline for submissions two weeks prior to the deadline. Or contact Becky and Martelle. Sams we are going to miss you. (Trifecta!!)

Thank y'all for ALL!!

Message from our President

By Susan Montgomery

My time as President of HLMN is drawing to a close. That is bittersweet. Naturally, I look forward to having more time to work out in the field with you all. I am grateful for the many friendships I have made. As you all know, 2019 had its controversial moments. I did the best with my abilities, but I will always wonder what I could have done differently to make it better. There have been challenges I did not expect. I am proud to have represented such a passionate and caring group of people. I ask for your understanding if my decisions didn't always align with yours. Thank you for the privilege of serving you. It has truly been an honor.

I will leave you with a thought I hope will inspire you, as it has me.

Surely we can all agree that we should be conscientious about caring for our planet. My sister and brother in law took a 3 month class in Oregon that certified them as Master Recyclers. Their mission is to educate others on how to live sustainably. I would love to see this program come to Texas. Most people know they should reduce, reuse and recycle to protect the environment. But people don't always act in accordance with what they know! Research shows that personal contact, when paired with specific information about how to reduce waste, is a powerful way to inspire action. Master Recyclers bridge the gap between awareness and action by motivating people to reduce waste in their homes and workplaces. Much of what they learned was about making products that will last, rather than being thrown away into a landfill after one or two uses. As Master Naturalists, we are the perfect folks to initiate a program similar to this in our beloved home state of Texas. For more information, go to www.masterrecycler.org. Perhaps some day we will all be more educated about the importance of land stewardship and sustainable living.

I wish you all happy holidays, and a wonderful and healthy 2020!

Thank you, Susan

Meet the Members:



Pat Campbell Class of 2012

Where were you raised?

I was born in Terre Haute, Indiana.

What is your professional background?

I graduated from ISU and spent my working years in accounting
Most of that was public accounting

Tell us about your nature-related passion or volunteer activity.

I joined MN after hearing about it at a HLNPSOT meeting. I continue to focus on native plants as well as volunteering at Inks Lake State Park and Inks Dam National Fish Hatchery. Have thoroughly enjoyed working with and getting to know fellow naturalists



Shirley Winslow Class of 2005

Where were you raised?

My hometown is Beaumont, Texas.

What is your professional background?

After graduating from North Texas State University with my masters degree in School Psychology, I worked as a school psychologist in both state and public schools as well as a special education teacher.

Tell us about your nature-related passion or volunteer activity.

My husband, Doug, and I have always enjoyed nature adventures as part of our travel. After we moved to the Hill Country and I retired, I devoted more time to pursuing my hobbies of gardening and birding. I first trained to be a Master Gardener and the following year, a Master Naturalist. Now, birding time is always incorporated into our vacations, and I have traveled independently to Central and South America on birding tours.

For volunteer activity, I have spent many hours at Blanco State Park leading birding groups to share information about birds and was the coordinator for the building of the first wildlife viewing station at Blanco State Park in 2010. Also, I always look forward to the beginning of Project Feederwatch with Cornell University and have regularly participated as a citizen scientist for many years.

A Brief Report On My Most Recent Safari *By P. Wyde*

Earlier this year I told you about a safari that I went on around our property. Well months have passed, it is September and I thought that I should go on another expedition. I grabbed my camera and stealthily crept around the house, around bushes, under trees and in dark places during the day, early morning and early evening to see what was inhabiting or enveloping Oak Bend. (Oak Bend is the name of our house, which sits on property populated with some very impressive Oak trees and overlooks a bend in the Llano River. I probably shouldn't explain this. I am sure that most of you have houses that have names.) The safari did not take long (about two hours total, over a few days). What follows is a depiction, with minimal narrative, of the wild creatures and beautiful things that I saw.



Figure 1 Gulf Fritallary on a zinnia in our garden.



Figure 2 Titmouse sitting on one of our walls, amazingly for more than seconds.



Figure 3 Agriope spider waiting patiently on one our bushes.



Figure 4 Black Vulture on front edge of our property.



Figure 5 Clouds above Oak Bend.



Figure 7 Young American Goldfinch recovering after knocking itself out hitting our window.



Figure 6 Gecko on the prowl, early morning.



Figure 9 Praying Mantis, poised and ready.



Figure 8 Snail racing along.



Figure 10 Sunset at Oak Bend.



Figure 11 Wary Spiny Lizard.



Figure 12 Eastern Tiger Swallowtail in front yard on Pride of Barbados.



Figure 13 Giant Swallowtail Butterfly on a zinnia



Figure 14 American Goldfinches



Figure 15 Brown Grasshopper lying low.



Figure 16. Harvest Moon over Oak Bend



Figure 17 Ruby Throat Humming Bird migrating through.

COFFEE TALKS OUTREACH (AN EYE OPENER)

By Billy Hutson

Three years ago while drinking coffee at a local coffee shop and casually discussing nature with interested customers I had an epiphany. If this many people (10 or 12 adults plus kids) were interested enough to listen to me spout off about the conservation and biodiversity of Texas' natural resources and the intricate symbiotic relationship between all of the natural world, why not continue this venue.

So, I spoke to the owner who actually loved the idea mostly because, as luck would have it, she is a teacher in the local ISD. As far as she was concerned it was a win win because it was educational. I like the idea because it is non political, non denominational, covered all income groups, was free and gave me and others a nature outreach opportunity.

Here is how it works. We set up two tables of eye candy and from 9am to noon ever other Saturday throughout the winter and spring we tend tables with knowledgeable presenters. Patrons of the coffee shop stop by to see what we are doing and engage in conversations about the natural science of the day.

This is our third year of successful talks and we introduce new talks every year. We have Master Naturalists, members of local friends groups, Upper Highland Lakes Nature Center, Master gardeners, local state and Federal presenters from our Texas State Parks and Federal wildlife oriented organizations participating.

Our schedule for the 2019/2020 coffee talks is below. The ideas are diverse and we not only use very knowledgeable presenters but allow the participating state parks and nature oriented federal reserves

and hatcheries to represent their locations since they are places where people can extend their knowledge of nature in the best classroom of all- the outdoors. If it wasn't for the vagaries of the weather we would have our coffee talks outside also.

We call it "A taste of nature" since customers get nature with their coffee.

2019/2020 Coffee Talks Schedule

Nov 16-	Medicinal Plants/Amy
Nov 30-	Fish related topic/IDNFH
Dec 14-	Vultures/Martelle
Dec 28-	Archaeology/Chuck
Jan 11-	Native American Gardens/Ray
Jan 25-	Edible Plants/Lynette
Feb 8-	Bats/Matt
Feb 22-	Butterflies/Sondra
Mar 7-	Trees/Vicki
Mar 21-	BCNWR birds/ Jennifer
April 4-	Invasive species/Willard
April 18-	Geology of the hill country/Charles
May 2-	Birds of the hill country/Sherry



A Fibonacci Obsession *By Becky Breazeale*

I admit it, I am obsessed with Fibonacci patterns in nature. It all started when I read an article in *Texas Parks and Wildlife Magazine* which stated that Sunflowers grow in a Fibonacci pattern. I had to refresh my memory about this pattern. The pattern goes 1, 1, 2, 3, 5, 8, 13, 21, 34, and on. The next number is found by adding the two previous numbers. Fibonacci, the famous mathematician, discovered this sequence while investigating how fast rabbits could reproduce in ideal situations.

Starting with flowers, here are some examples. The number of petals a flower may have is often one of the numbers in the sequence. Iris has three petals, Columbine five, Black-eyed Susan 13, and the daisy has 34 or 55.



Left: Purple Iris with three petals. *Photos from Pixi.com*

Right: Columbine with five petals. *Photo from amazon.com*



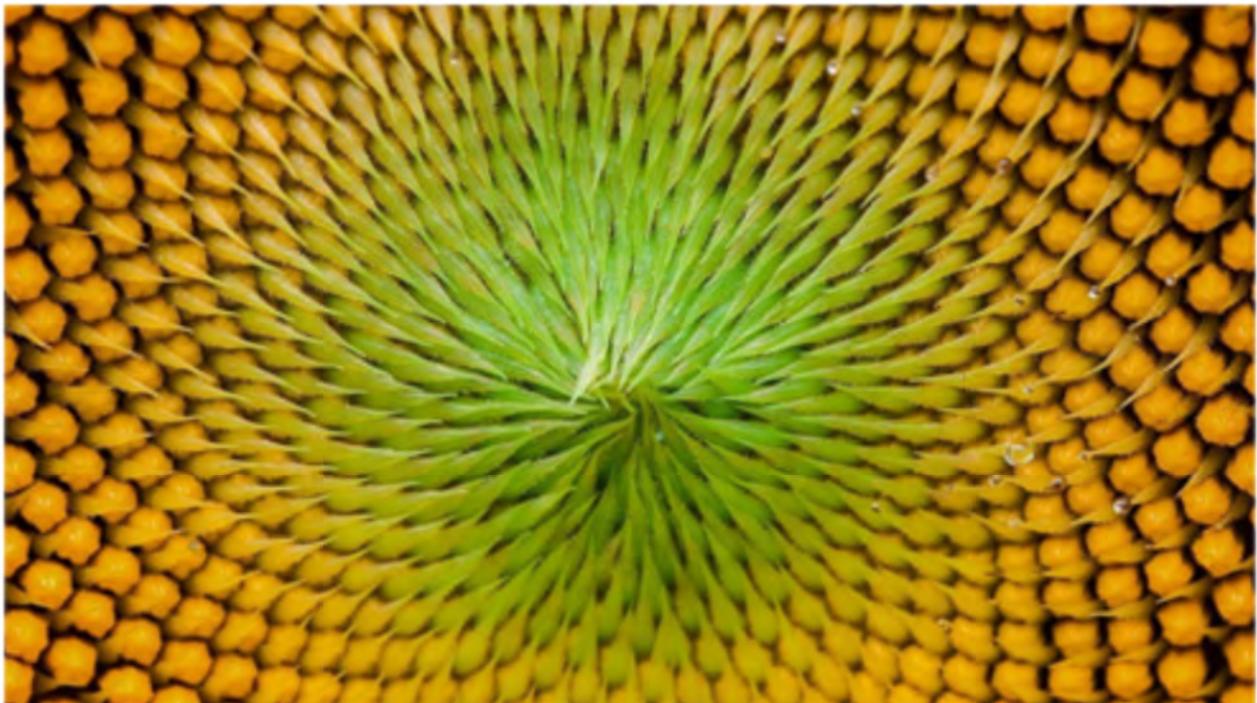


Black-eyed Susan with 13 petals.

Photo from americansseedco.com

As I mentioned before, my infatuation with Fibonacci sequence occurrences in nature began with the August edition of Texas Parks & Wildlife Magazine, "Flora Fact, Here Comes the Sunflower". The article states "The outer petals of the sunflower are called ray flowers. The flowers in the center of the head are called disk flowers, and mature into seeds. Those disk flowers are arranged in a Fibonacci spiral, producing the most efficient packing of seeds in that area, according to the math." The close up below displays the spiraling of the disk flowers.

Photo Courtesy of Treehugger.com



The diagram on the left below shows shallow spirals with blue lines totaling 21. The middle diagram with a deep slope shows spirals with red lines totaling 34. The right diagram with a different slope shows spirals with green lines totaling 55. These three numbers are in the Fibonacci sequence.

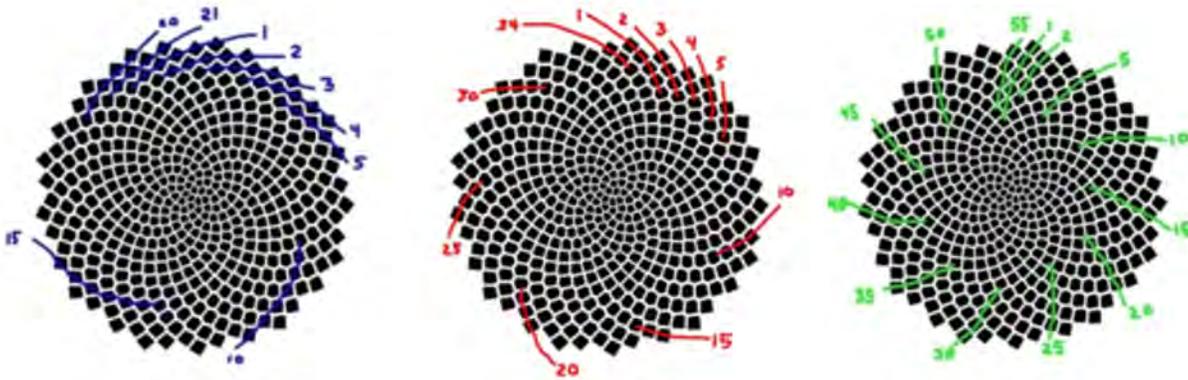


Diagram from National Museum of Math

Similar to the sunflower, you can count the spirals of the pine cones from the center or where it attached to the tree. There will be spirals running clockwise and counter clockwise. The number of spirals in the pine cone is usually consecutive numbers in the Fibonacci sequence. These examples show eight clockwise spirals and 13 counter clockwise spirals.

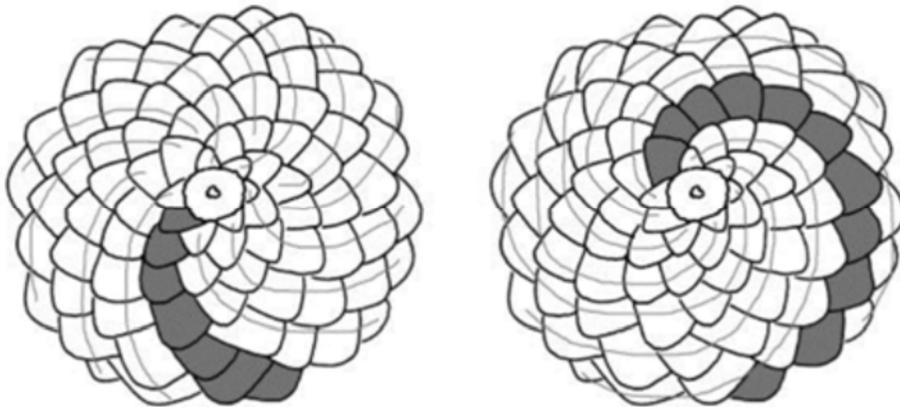
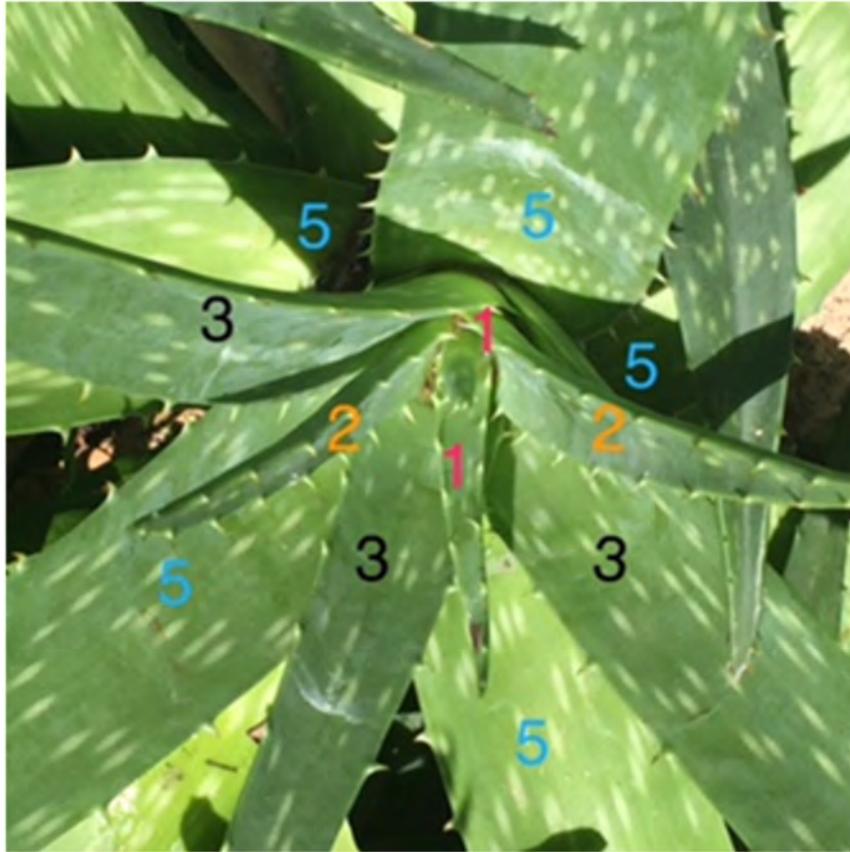


Diagram courtesy of Department of Mathematics, University of Illinois

In my quest to find Fibonacci patterns in nature, I wanted to locate a plant that displayed the Fibonacci sequence. I spotted this aloe vera in my garden. Its thick leaves are numbered in the photo below to show the pattern – 1, 1, 2, 3, 5.... The first “1” is in the center and each petal in the sequence is turned at an angle. The “angling” gives the new leaves optimal space to grow and creates a spiral rather than a straight line. Other succulents display this pattern very well.



Fibonacci patterns can also be found in pineapples, shells, bees, trees and many other parts of nature. Fibonacci numbers won't be found everywhere in the natural world, but it does appear often enough to demonstrate a naturally occurring pattern. I will continue my search for these patterns in nature and next time you go on a walk or hike, keep your eye out for examples of Fibonacci numbers.

<https://plus.maths.org/content/life-and-numbers-fibonacci>

<https://www.mathsisfun.com/numbers/fibonacci-sequence.html>

<http://fairfaxgardening.org/fibonacci-flowers/>

<https://faculty.math.illinois.edu/~delcour2/LessonPlanSunflowerWorksheets.pdf>

"Flora Facts, Here Comes the Sunflower", *Texas Parks & Wildlife Magazine*, Volume 77, Number 7, August/September, 2019, page 14.

**Nature's great book is written in
Mathematics ~ Galileo Galilei**

Photo Quiz

Can you identify these raptors and plants? *Answers on the last page*



Fossil Rim Wildlife Center and Dinosaur Valley State Park Fieldtrip

Photos by Betty Cruikshank

Fossil Rim Wildlife Center



View overlooking Fossil Rim Wildlife Center



Black Rhino



White Rhino



Gemsbok

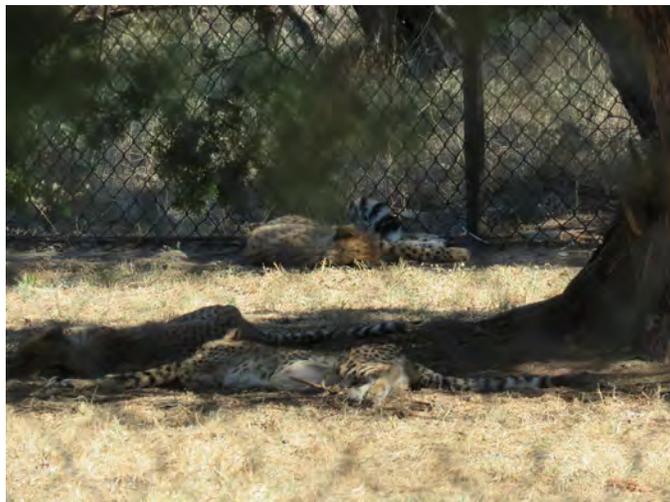
The most noteworthy difference between the two species, black or white rhino, is their upper lip. The black rhino has a hooked lip while the white rhino has a square lip. ... In addition, white rhinos have a longer skull, a less defined forehead and a more obvious shoulder hump. (<https://www.mnn.com/earth-matters/animals/blogs/difference-between-black-rhinos-and-white-rhinos>)



Aoudad



Addax



Cheetah



Roan Antelope



Blackbuck



Ostrich



Take notes, these are some great scrabble words.



Ostrich in Cathy Hill's business



Common Wildebeeste



Wild Turkey



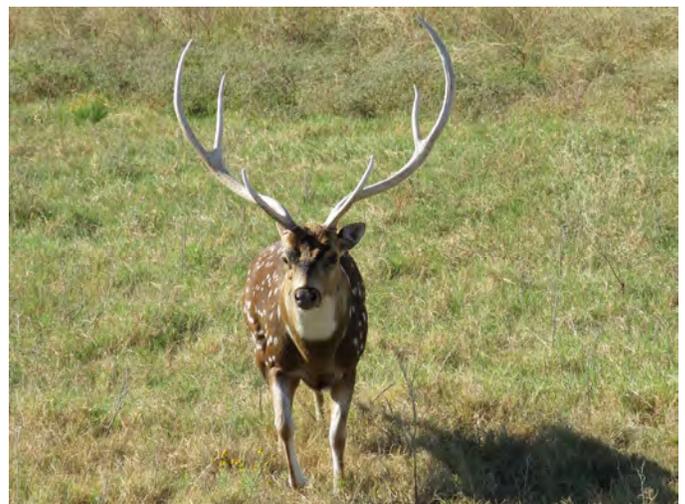
Emu



Mountain Bongo



Sable Antelope



Axis Deer



Giraffe with Duke Dillon



Giraffe with Cathy Hill



Giraffes



Fallow Deer



Greater Sandhill Cranes



Mexican Gray Wolf



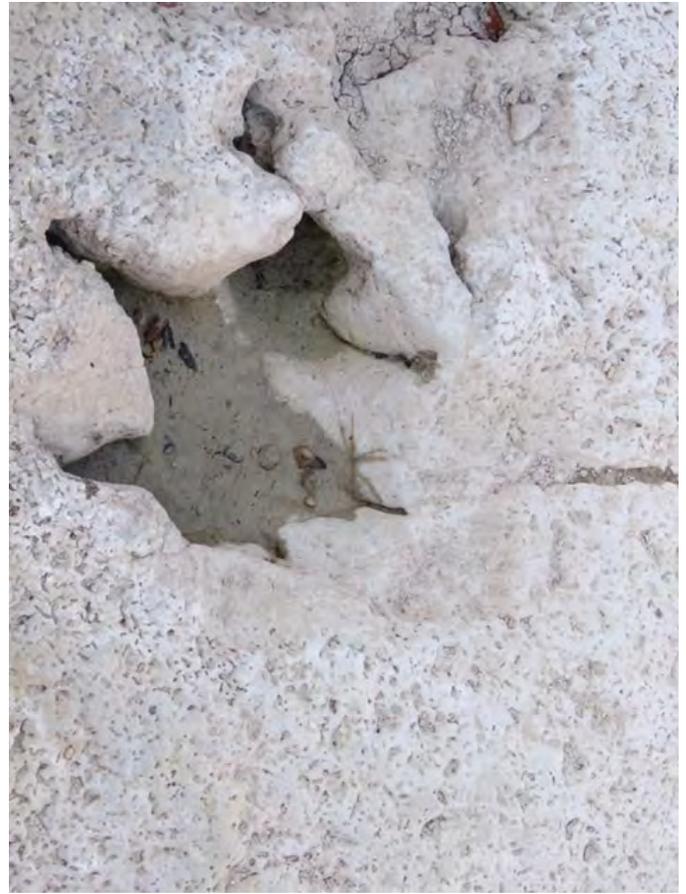
Red Wolf

Dinosaur Valley State Park



Linda O'Nan

The volunteer project on Monday afternoon was laying rocks and tree limbs along the edges of a trail to ensure hikers/runners stay on the right path for an event that was scheduled to occur on a future date. Melissa Duckworth, Linda O'Nan, Carole Hess



Carole Hess



Zach Riggs, Park Interpreter, Suzanne Adkinson with camera, Ann Edwards with walking sticks, and Kay Zagst



**Submerged
dinosaur
footprints !**



Zach Riggs, the park interpreter at Dinosaur Valley State Park



Suzanne Adkinson & Zach Riggs



Suzanne Adkinson, Zach Riggs, Cathy Hill, Linda O’Nan, Kay Zagst Bill Nabors, and Ann Edwards with walking sticks

HLMN volunteers are “brushing” to remove silt and debris (gently!) from the dinosaur tracks underwater



Group Photo

Texas Master Naturalist Conference, Rockwall, October 2019

Photos by Sheryl Smith Rodgers



Left to right Bill Sewell, Mary Lott, Robin English, Lisa Marler, Susan Montgomery, Celia Escamilla, Sheryl Smith-Rodgers



Sheryl Smith-Rodgers son, Patrick Rodgers, and his wife, Gavvy, who live in Fort Worth, showed up to hear her new presentation, "From Trash to Treasure: The Saga of the Uncommon Mornin-Glory".(First grandchild Grayson James Rodges is due mid December.)



Mary Pearl Meuth and Sheryl



Michelle Haggerty, State Coordinator and Sheryl



Mary Lott and Robin English



Celia Escamilla and Sheryl



Kristin Rodgers and Lisa Marler



Susan Montgomery, TPWD biologist Sam Kieschnick, and Bill Sewell



Left: Dr. Brooke Best, botanist with the Botanical Research Institute of Texas, presented "Botanical Latin: a Language unto itself".



Christopher Ebling presented “Dendrology and Tree Identification Techniques”.



A washboard mussel, one of many samples shared during “Livers of the Rivers” session.



Michelle Haggarty concluding the Convention on Saturday night.



THE HLMN GANG having a grand time

Reducing our “Plastic Footprint”



Evelyn Nugent - Reducing plastic is an important issue and we can all help. We have carried reusable grocery bags for years. We recently bought mesh bags for produce from amazon.com To find them click [HERE](#). They are working nicely. We have also decided to quit buying water in plastic bottles. For group outings like trail work days, we ask everyone to bring their own water container. We have a big jug of ice water they can use to fill their containers.

Ray Buchanan - At every restaurant that gives you a plastic straw, ask for a paper straw instead + short lecture, if appropriate. Ask to speak to the Manager about the problem.



Sheryl Smith-Rodgers- I take my own to-go boxes to restaurants and decline straws. Like this one from a Chinese Restuarant. I carry silverware (bought from thrift stores and stowed in zippered pouches) in my car and luggage so I don't have to use plastic utensils. I've used canvas shopping bags since the 1990s. I use a shampoo soap bar for my hair. Click [HERE](#).to see the bar she uses.

Not plastic related but I've used cloth napkins (bought at thrift stores) instead of paper napkins since I was in my 20s



Shirley Winslow - We still recycle our plastic in Johnson City, and we do not buy bottled water. We installed a UV light and a house filter to treat our well water when we do not have enough in our rain catchment tanks.



EDITOR'S NOTE: AARP Magazine article, *Win the plastic war*, stated that balloons are the “top litter item” in the oceans. They suggest celebrating with reusable items such as flags and banners.



Becky Breazeale - My family reuses or recycles single use bags at HEB or Walmart. These bags can be transformed into items such as composite lumber that is used to make park benches, backyard decks and fences – even playground equipment. They also can be recycled into new plastic bags.

I sent letters to HEB regarding their huge displays of plastic straws and advertised specials for plastic straws. I haven't seen straws displayed since the summer. I'd like to think I had something to do with their taking down the display but it could be coincidence. I use a Water Pic instead of those disposable floss picks.

Lori Greco - We used to recycle our Number 1 and 2 plastic here in our Transfer Station in Burnet, HOWEVER, they quit taking plastic last month. But, I do reuse the ziplock bags over and over by washing them.



Anonymous - My family is doing everything we can think of to reduce our plastic use. We use glass containers with reusable lids for our food storage. Here is a product that has exceeded our expectations: Click [HERE](#) to view the product. When we go to the bakery to buy cookies or to Anderson's Coffee for coffee beans, we take along a glass jar to receive the cookies or coffee. The first time we get a funny look, but after that they know us and are happy to use our containers. Of course, we use reusable cloth grocery bags—and we use them for a very long time. Our current oldest is from a conference I attended in 2004.

Over 25 years ago, I took a Dillard's plastic bag on a vacation to use for dirty clothes. Twenty five years later, I am still using that same bag. The lesson here is that plastic takes a really long time to break down, whether it's in my suitcase or in a landfill.

Although it doesn't reduce plastic use, we carefully take our used plastic bags to some HEB stores where they have recycle bins for plastic.

What A Difference A Few Weeks Make!

By Phil Wyde

Here it is November 13th and it is 26°F. Just weeks ago it was over 100°F and I was taking images of butterflies (e.g., Images 1 and 2 taken 9/11/2019 and 9/22/2019, respectively), hummingbirds (e.g., Image 3 taken 9/12/2019) and fascinating insects (e.g., Image 4 9/21/2019). Moreover, I did not have to traipse very far to get these images. It is very different now. My yard that was full of flowers and color is now dull and dismal. Most of the creatures seem to have died, fled,-- or, at the least, taken cover. In order to satisfy my desire to take worthy photographic images, I have to work much harder.

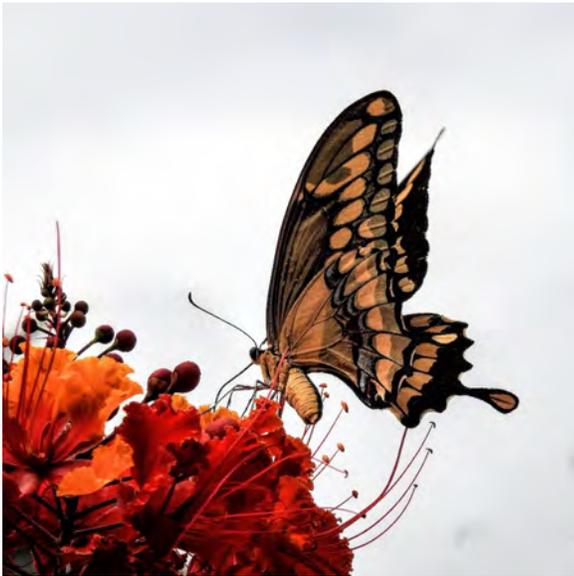


Figure 1 Giant Eastern Swallowtail



Figure 2 Gulf Coast Fritillary



Figure 3 Female Black Chin or Ruby Throat Humming Bird



Figure 4 Katydid

Luckily dawns happen every morning regardless of the season or the temperature. Figures 5 and 6 are of the dawn seen on 11/13/2019 in front of my house. Think timing is important? These two images were taken minutes apart. Regardless of their differences, I think that both images back up my assertion that dawns can be just as spectacular as sunsets. (You have to get up early to test my hypothesis.)

It appears that vultures and Red Tail Hawks also do not care about how cold it is. As seen in Figures 7 and 8, pairs of these birds were observed in the last two weeks at Inks Dam National Fish Hatchery calmly surveying the November landscape for breakfast.



Figure 5 Dawn



Figure 6 Same Dawn Minutes Later



Figure 7 Black Vultures At IDNFH

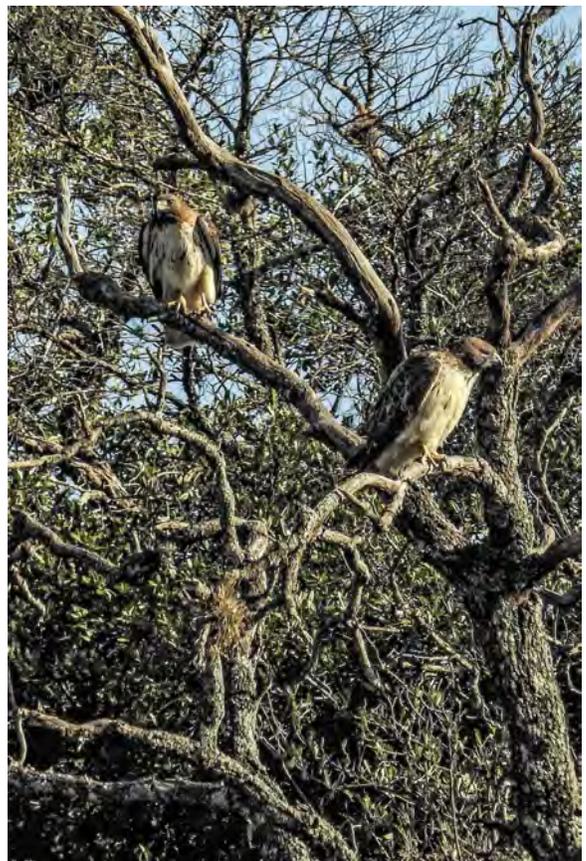


Figure 8 Pair of Red Tail Hawks at IDNFH

The Laddered Back Woodpecker in Figure 9 also appears impervious to the cold. She was working away as I took her picture. Interestingly this image makes me wonder what happens to insects in dying and decaying trees. Do they decline precipitously in winter and cold weather? If so, does this affect woodpeckers? Regardless of the answer, I will continue to put suet out for these birds.

Looking at the image in Figure 9 I can also see why many woodpeckers have black and white patterns in their feathers. I think that this bird is in complete harmony with her environment

My last image is of a very small moth huddled by the door of our house. He looks like a very cold, lonely moth that wishes he was born a few weeks earlier. I just know that he is thinking "What a difference a few weeks make!"



Figure 10 Very Cold Sorry Morth



Figure 9 Laddered Back Woodpecker

Project Feederwatch Winter Highlights from 2018 - 2019, Southeast Region

You can compare other regional reporting for 2018-2019 as well as view reports from previous years of Project FeederWatch at <https://feederwatch.org/pfw/top25>

Greig, Emma, November 2019, Regional Roundup, *Focus on Citizen Science*, Volume 15, Page 10.

The top species reported in the Southeast last year is one of the all-time favorites of many participants, the Northern Cardinal, reported at 97% of sites. Northern Cardinals have been slowly expanding their winter range north and west during the past several decades and have remained abundant in the Southeast all the while. One of the most endearing characteristics of this species is food sharing that happens between males and females, called “allofeeding.” Mates will often share food with one another, enhancing the pair bond.

Another flashy resident of the Southeast that is also expanding its range north and west is the Red-bellied Woodpecker. According to the FeederWatch behavioral interaction data that participants have been collecting over the past several years, Red-bellied Woodpeckers are more aggressive than we would expect based on their body size alone, and perhaps this aggression has helped them to spread into new areas on the edge of their range. Notice how the proportion of sites visited by Red-bellied Woodpeckers has increased in the Central and Northeast regions, catching up to the proportion of sites visited in the Southeast.

Southeast region



TOP-25 LIST: 1,536 SITES REPORTING

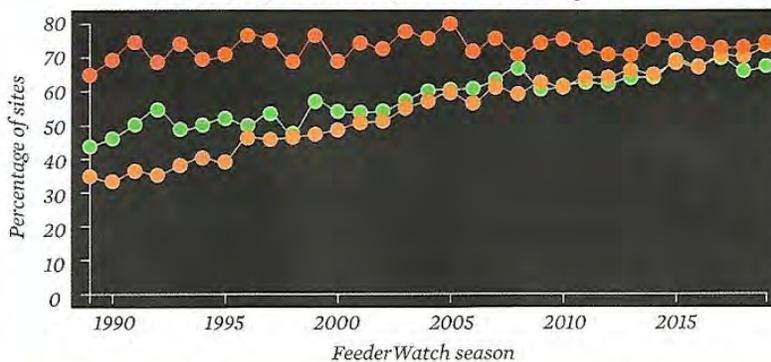
Rank	Species	Average flock size	Percent of sites	Trend
1	Northern Cardinal	3	97	
2	Carolina Chickadee	2	88	
3	American Goldfinch	4	85	
4	Mourning Dove	3	84	▼
5	Carolina Wren	1	82	
6	House Finch	3	82	▲
7	Tufted Titmouse	2	81	
8	Blue Jay	2	76	
9	Red-bellied Woodpecker	1	75	
10	Downy Woodpecker	1	70	
11	Northern Mockingbird	1	64	
12	Dark-eyed Junco	3	60	
13	American Robin	3	57	▼
14	Chipping Sparrow	5	55	▲
15	Eastern Bluebird	2	53	▲
16	White-throated Sparrow	3	49	
17	Yellow-rumped Warbler	2	48	
18	White-breasted Nuthatch	1	46	
19	Brown-headed Cowbird	4	40	
20	Red-winged Blackbird	6	40	
21	Pine Warbler	2	40	
22	American Crow	2	39	
23	Purple Finch	3	39	▲
24	Brown Thrasher	1	38	
25	Spotted/Eastern Towhee	2	38	



THOMAS CASULLA

These Northern Cardinals are engaging in allofeeding—sharing food as a way of enhancing the pair bond.

Percentage of sites reporting Red-bellied Woodpeckers in Northeast, Southeast, and Central regions



Red-bellied Woodpeckers remained abundant in the Southeast (red) and increased in the Northeast (orange) and Central (green) regions as their range expanded.

Jaguars, and Caimans, and Birds! Oh my!

By Robin English

In October I had the privilege of traveling to Brazil with Monica Morrison (Master Naturalist and founder of Texas Native Cats) and 4 others to see jaguars in the wild. What an amazing experience! First, we took a side trip to see Iguazu Falls, both from the Brazil side and the Argentina side. Stunning, just stunning.

Then we headed out to the Pantanal for the real excitement. After driving for 5 hours down the Trans-Pantanal Highway (read: dirt road with 113 bridges crossing swamps) we arrived at Fazenda Jofre Velho. This cattle ranch/eco tourist lodge is owned by Panthera, an international organization devoted exclusively to the conservation of the world's 40 wild cat species and their ecosystems. We were greeted by our host, Rafael Hoogesteijn, DVM. Rafael is the Conflict Program Director, Jaguar Program for Panthera. We put our bags in our rooms and immediately got in the boat and went looking for wildlife. We didn't have to go far!

Capybaras, caimans, river otters, birds, birds, did I mention birds??, foxes, jumping fish, peccaries, tapirs, howler monkeys, capuchin monkeys, coatis, anacondas, and JAGUARS. We saw 7 jaguars! For the 6 days we were there, I felt I was living in a National Geographic special. Everywhere I looked there was an exotic animal or a bird. An amazing guide, Raphael could spot the smallest bird way up in a tree and tell us all about it or explain the habits of river otters or caimans or you-name-it. What a goldmine of information!

On two of the nights we went out spotlighting. One night we saw a jaguar with 2 juvenile cubs, the other night we saw an ocelot and 2 oncillas. (The experts are still determining if they are ocelots or oncillas.) One morning we took a walk through the ranch and learned about the plants the animals eat, the mud wallows for the animals, and saw a beautiful "palm cathedral". What an amazing trip! Someday, I would love to go back.

I am a very amateur photographer and almost all of the pictures were taken from a boat, but I hope you can enjoy them anyway!



Iguazu Falls



Unknown female



Ti, male



Capybara and cowbird



Hyacinth Macaw



River otters

Photo Gallery



Leaf cutter bee with pollen on its abdomen. Photo by Melissa Duckworth



Eastern Meadowlark Photo by Sue Kersey





Sir Owlton Photo By Sue Kersey



Northern Cardinal by Sue Kersey

Answers to Photo Quiz

1 American Kestrel, 2 Peregrine Falcon 3 Osprey (Bird Photos courtesy of Cornell Labs)

a. Frostweed *Verbesina virginica* b. Prairie goldenrod *Solidago nemoralis* c. Gayfeather *Liatris punctata* var. *mucronata* (Plant Photos courtesy of Lady Bird Johnson Wildflower Center)

T E X A S

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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Gary Hampton says he painted this Monarch from a photograph that was sent to him by a fellow artist that knows he loves to paint butterflies.