We Discovered Earth Science
By Melody Holm

We did it! We successfully provided a first-ever opportunity for people in our three-county chapter area to Discover Earth Science! Over 140 people, including lots of children, participated in this public outdoor, hands-on learning event at the Acton Nature Center on October 6, 2018.

Earth Science Week, an international recognition of Earth science organized each year in October by the American Geosciences Institute, provided the context for our local event. To carry out the 2018 Earth Science Week theme of “Earth as Inspiration”, the Rio Brazos Chapter event featured Earth-inspired art by Acton Elementary School fifth grade students and a plein air art demonstration. Interactive exhibits included Every Rock Tells a Story, Ancient Life of North Texas, Reefs Then and Now, Rocks That Glow in the Dark, What’s In a Rock?, and the Texas Agrilife Stream Trailer. Special invited exhibits included the Upper Trinity Groundwater Conservation District Aquifer Model, Cleburne State Park, and Fossil Rim Wildlife Center.

Participants learned why we can’t live without rocks, what moving water does both on the surface and underground, and what creatures lived in the sea that covered North Texas millions of years ago. Nature hikes focusing on local geology and soils were a big hit, as were special learning activities for children, including making edible sedimentary rocks (layered cereal and chocolate “cemented” with syrup in a cup), discovering and recovering a fossil (local fossil oysters imbedded in plaster-of-Paris mixed with potting soil), and creating art with different sizes, colors, and textures of pebbles.

As for all our events, it’s the dedicated chapter members who make them successful, especially when they involve interaction and children’s learning activities. A most sincere and hearty “thank you” to all who made this first-time event happen. Special recognition also goes to our sponsors and partners, the Acton Nature Center and Hood County Development District #1, and to the Somervell County Extension Office that enabled us to have the Stream Trailer onsite.

About Earth Science Week: Earth Science Week is organized yearly by the American Geosciences Institute (AGI) and recognized nationally and internationally to help the public and especially children gain a better understanding and appreciation for the Earth sciences and to encourage stewardship of the Earth. Community groups, educators, and interested citizens organize celebratory events associated with Earth Science Week each year under the leadership of AGI. More information about Earth Science Week is at https://www.earthsciweek.org/about-esw.
Volunteers are Needed at Our State Parks
By Dayna Inbody

A new volunteer opportunity you say? Where, When, What, How and Why are the next thoughts in the mind of a Texas Master Naturalist.

Today four Rio Brazos Master Naturalist chapter members and approximately twenty-five park visitors walked to the Paluxy River in Dinosaur Valley State Park where a Cross Timbers Master Naturalist chapter member and park volunteer stood in Dinosaur tracks eagerly waiting to share what he knew about those who walked before us.

While there I had a thought about what makes us Texas Master Naturalists different than the average citizen. Here we were in a river bed anticipating a story, explanation or lesson on those who roamed this area long ago. We all had our reasons to be drawn to that spot on this day.

After a few minutes standing there together it began to lightly rain which turned into a downpour that lasted fifteen minutes. One by one everyone next to us hurried away climbing over slippery river rocks to get to the stairs to exit the river. All but the five Texas Master Naturalists that is. We stood in the river soaking wet and listened to the Track Talk and had of course questions as any Texas Master Naturalist does at the end of it. Lots of interest and appreciation for the part of nature we were standing in.

Chris Hill, Cross Timbers Master Naturalist Chapter member, past President of Friends of Dinosaur Valley State Park, and a Dinosaur Valley State Park volunteer saw a need at the park and jumped in as a park host, volunteer interpreter and a guide. Chris currently leads the Moonshine Hike, Track Talks, and Dutch Oven demos just to name a few of the volunteer hats he wears. The park is very fortunate to have him and all the volunteers who devote their time and hard work to our local State Parks.

As we all know there is a shortage of these types of volunteers so people like him are spread thin to cover the many needs our state parks have. Chris is one who is trying to encourage more to join the forces and make a difference. The Tracks Talk is an opportunity that we think some of our members might enjoy doing. Families attend these talks which last about fifteen minutes the kids get down in the river bed and literally stand where dinosaurs stood. There is not much that can complete with that in a six year old life.

Seeing five Texas Master Naturalists in the pouring rain in a river bed surrounded by tracks sharing information and opportunities says a lot about what a Texas Master Naturalist is. We work in the heat, cold or rain and getting dirty is often our goal. Are we simply tapping into our six year old selves when outside was the best place, our own laboratory where everything was possible? Whatever the reason we do what we do there is a huge need for more of us to volunteer at our State Parks. In our chapter we are fortunate to have two State Parks right in our backyard so to speak. So when we are recruiting new members, teaching new training classes, presenting programs and creating educational opportunities within our chapter it’s important that we share and pass on the needs for volunteers in our parks. There are so many things that are available and created already at the parks that just need a volunteer to fill the spot. They are often open to new things that volunteers are willing to bring to the park to share with the visitors. So lots of things for us to think about, consider and volunteer for right in our own communities.

And the icing on the cake so to speak of what a volunteer can do for a park; since this day in the park Chris Hill has accepted the job as Assistant Park Superintendent at Dinosaur Valley State Park. So you never know how far volunteering can take you, perhaps to your dream job as it has for Chris.

“No act of kindness, no matter how small is ever wasted.”
Aesop
Friends of Cleburne State Park Awarded COOP Grant
By Cathy Crocker

It’s been a banner year for RBMN’s partner Friends of Cleburne State Park. They were honored as the Distinguished Friends Group of the Year by Texans for State Park. They were also awarded a Texas COOP Grant valued at more than $17,000.

Formed as a non-profit organization four years ago by Jim and Cathy Crocker, the Friends Group’s main purpose is to help support and protect the natural beauty of Cleburne State Park. Since its inception, the Friends Group has opened a park store (located in the park headquarters), helped facilitate the donation a $38,000 fishing pier for the park, hosted or helped at numerous public events held at the park, led nature hikes, and assisted the park with purchases above or beyond the park’s budget.

With funds from the COOP Grant, the Friends Group will host different day-long programs for underserved, at-risk youth at the park. Participants will learn outdoor skills that foster self-confidence, teamwork skills and environmental stewardship when they participate in kayaking/water safety, archery, fishing, geocaching and Dutch Oven cooking.

The grant funds have purchased 10 kayaks and paddleboards with all the needed paddles and life jackets, 7 compound bow sets along with targets and maintenance kits, Garmin GPS’s, 6 complete Dutch oven cook stations, and a 16-foot trailer to house it all.

It was recently decided to add binoculars to the list of supplies, so youths can be taught basic birding skills at the events. Participants will also work on projects that help protect the park’s natural resources and receive information about career opportunities with TPWD.

Outdoor skills will be taught by park staff, certified instructors, members of our own Rio Brazos Master Naturalists and members of the Chisholm Trail Dutch Oven Society. All Master Naturalists are welcome to help at the youth events and no experience is necessary.

The Friends Group meets periodically throughout the year at the park, usually in conjunction with an event such as a nature hike. The group will have a brief business meeting, then break to join one of the many events held at the park such as Take a Homeless Dog for a Hike, Learn to ID Animal Prints, Trick or Treat in the Park, or a guided nature hike. These events are all open to the public at no charge, and members are encouraged to come up with their own event, such as a nature hike or wild flower walk.

To volunteer for one of the youth events, or to join the Friends Group, contact Jim Crocker at jim@jimcrocker.com. Dues are $15 annually, and each paying member receives a voucher good for a free shirt or hat the park store.

All hours spent attending meetings and helping with Friends Group events are approved for Master Naturalist hours.

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.” Margaret Mead

Local rocks and fossils with a captive audience. Note the picture on shirt and personal rock collection in hand of a future geologist/paleontologist. Photo: Chris Inbody

Grant funds will be used for at-risk youth to learn outdoor skills such as Dutch oven cooking. Photo: Cathy Crocker

Grant funds have purchased 10 kayaks and paddleboards, with all the needed paddles and life jackets. Photo: Cathy Crocker
Trans Pecos Field Trip
2018
By Wendy Moore

This year our President Gary Hinds organized a field trip to the Trans Pecos region of Texas. Included were a trip to Davis Mountains State Park, the Madera Canyon Nature Conservancy Preserve, a star party at the McDonald Observatory and Big Bend National Park. As is usual on these big trips some participants did a portion of the offerings while others the whole trip. Some camped and some stayed in hotels and lodges. The participants were Gary and Catherine Hinds and Catherine's mother Mary Jane (a most popular regular on our trips), Diane Humphries, her sister Nancy (and of course Sierra, Diane's faithful companion), Bob and Sherry Walker, David and Cece Hubbard who although not Master Naturalists are part of our annual star party, Al and Kate Robertson, Kathie Bruce, Sonna Sanders, Billy and Phyllis Teels, Madison McGlathery, Beth and Tim Eschbach, Melody Holm and Stan Caldwell Tom and Bonnie Colgin and David and Wendy Moore.

The trip to Madera Canyon was led by Tara Poloski with The Nature Conservancy and Martin Havran who is a volunteer at the Preserve and also a member of the Tierra Grande Master Naturalists. This field trip was advanced training and absolutely informative, especially about the botany. Tara had shown us the differences between Emory and Gray Oaks and Diane found a hybrid between the two. The Wright's Eryngo was fun to see as it was obviously an Eryngo but smaller and different than the Leavenworth Eryngo we see at Acton Nature Center. The variety of grasses was wonderful to observe and we found out that fire has been used to great effect on the preserve.

The Star Party was held on a perfectly clear night and we enjoyed the moonless sky. The pre-presentation of the entire night sky was excellent and the contrast of the big picture and then looking through the scopes was superb.

I know the group continued to enjoy hiking and birding in the State Park but Dave and I left the next morning for Big Bend. We had a rendezvous with Madison to go overnight backpacking in the Chisos Mountains. Billy and Phyllis brought Madison up to the basin where the 3 of us headed out with our back country permit. We hiked up the Pinnacles trail, and after stowing our backpacks in a bear box, we climbed up to the top of Emory Peak. Madison hikes a lot faster than us but she patiently awaited our arrival as we climbed hand and foot up the last 25 feet. On the way down we finally saw a bear and then Madison's knee dislocated itself but popped back in. It had happened to her before and she was quite sure she wanted to continue. Luckily it was only a little over a mile to our campsite in a lovely, quiet spot. We set up our tents, watched two deer walk through, ate, and played Farkle till dark. In the morning Madison's knee seemed ok to her and we hiked out Boot Canyon Trail to the South Rim Trail and enjoyed spectacular views off to Mexico. We lucked out with another bear sighting and many more deer. The Laguna Meadows trail got pretty long as Madison's knee began to hurt but she was a trooper never complaining and we finished the entire trail, 21 miles after leaving.

The rest of the group from Davis Mountains showed up and during the week members participated in various hikes, drives, excellent AT from ranger Don Corrick on the geology of the park, group dinners, and bird watching AT down at the Rio Grande Village area. The weather at the beginning was beautiful with recent rains giving the park a green feeling and many, many flowers in full bloom even in November. Then a cold front with huge winds arrived for a few days and for those that stayed it was followed by beautiful weather again!

Dave and Wendy made it an international trip with a visit to Boquillas, Mexico. It is an easy border crossing 2 miles from the Rio Grande Village. The town is delightful with good restaurants. This should be a regular stop for us on our Big Bend trips. If you come, bring your passports.

It was nice having some newer members join us this year. We try to plan many field trips every year and hope everyone will try and make some. We love having so many different perspectives and interests and never fail to learn from one another. They are truly great fun so JOIN US!!!!!!
“Don’t Let the Bugs Bite!”
By Maryann Mathews

Fall is in the air! Our minds go to the fun of Halloween, chilling costumes and things that go bump in the night. Working where I do I am reminded that every trip outside can be just as scary as the holiday. “Don’t let the bugs bite!” According to a nationally based pest control company, Dallas-Fort Worth is the eighth worst city in the country for mosquitos, which is concerning since mosquitos carry serious illnesses like West Nile virus, malaria, yellow fever, dengue fever, and chikungunya. And don’t think it can’t happen to you!

As of Aug. 10, Texas has had 99 reported cases of the Zika virus disease according to Texas Department of State Health Services. This count includes three pregnant women, two infants infected before birth and one person who contracted the virus through sexual contact. These infections were not transmitted from mosquitos in our area, but acquired as a result of travel to countries where infected mosquitos are documented, which now includes the U.S. with infected mosquitos in Miami-Dade County, Florida. How many of us vacationed in Florida this year?

As you plan outside events with your family and friends, please remember that personal protection is essential to reduce the risk of infection. Consider all of the preventive measures you can take. Cover up with long sleeves and pants. Wear hats to protect from ticks in trees (cedar/juniper are a haven for ticks). Wear EPA-approved insect repellent. Drain all standing water in and around your home. Avoid travel to regions where the Zika virus is active.

Of the many different species of ticks found throughout the world, only a select few bite and transmit disease. There are about seven human-biting species of ticks in the contiguous United States, and unfortunately for us, North Texas is home to four:

- American dog ticks – transmit Tularemia and Rocky Mountain spotted fever
- Blacklegged ticks – transmit Lyme disease, anaplasmosis, ehrlichiosis, babesiosis, Borrelia miyamotoi, and Powassan disease
- Brown dog ticks – transmit Rocky Mountain spotted fever
- Lone star ticks – transmit ehrlichiosis, Heartland virus, tularemia, and STARI

The black widow spider can be identified by its jet-black color and its globular abdomen with a red or yellow hourglass shape in the underside. Black widows are frequently found in wood piles, boxes, outdoor toilets and meter boxes, under eaves, and in other undisturbed areas. The brown recluse can be identified by its golden-brown color and dark brown to black fiddle-shaped pattern on their head. Brown recluse are usually found hiding in basements and garages, in between boards, boxes, and old towels or clothes in dark, undisturbed areas. Both spiders are non-aggressive and usually do not bite unless disturbed or threatened.

Fall is a great time to schedule outside activities in Texas, but remember to reinforce the safeguards, and pack insect repellent to share so everyone will want to venture out again!

“Why can’t mosquitos suck fat instead of blood.”
Anonymous
Plant Families: Family Anacardiaceae (Sumacs)
By Billy Teels

Members of the sumac family are quite common in this area, and although marr by some of the toxic species, the family has many species that brighten the landscape, and several species that have commercial value as landscape plants.

The family is characterized as small trees, shrubs, or woody vines with alternate pinnately compound leaves, or 3 leaflets. Two of the most common species in the area with pinnately compound leaves are prairie flameleaf sumac (*Rhus lanceolata*) and smooth sumac (*Rhus glabra*). Both are either small trees or shrubs that grow in open pasture or rangeland often at the border of woodlands. Both species spread by root stalks and generally form clusters, or motts, that are often 100 feet or more wide. Prairie flameleaf sumac is the taller of the two, often reaching 15 feet or more in height. The leaflets are narrow and lance-shaped, greenish underneath with narrow wings along the mid-rib. As its name indicates, it is spectacular in the fall with its brilliant flame reds, yellows, and oranges. Smooth sumac is smaller, generally reaching no more than 10 feet in height. Leaflets are both broader and shorter than flame-leaf sumac and without a mid-rib, and whitish on the underside. Both species have terminal fruiting clusters of hairy, berry-like drupes that are about 8 to 10 inches long that ripen in the fall and turn maroon as they persist into the winter. The fruits of these species are sour and have been crushed to form a lemonade-like drink. They are also used by wildlife, particularly birds, but they are woody and have low nutritional value.

*Rhus* shrubs in the area with tri-foliate leaves are aromatic sumac (*Rhus aromatica*) and skunkbush sumac (*Rhus trilobata*). The two are difficult to tell apart with aromatic sumac generally being more eastern in distribution and skunkbush more western. Both species have a distinct skunk-like odor when the leaves or stems are crushed. Although they can spread by root stalks, they generally don’t form large clusters like the pinnately compound-leaved species, and often occur as individual plants or in small clusters. Both the browse and mast of skunkbush are extremely important deer foods in the Cross Timbers region during all seasons.

The family is also represented by some of the most toxic plants of all. Poison ivy, poison oak, and poison sumac are all extremely toxic and can be deadly to those with severe allergies to them. Poison sumac is an uncommon plant that doesn’t occur here naturally. However, poison ivy and poison oak do and people should be able to identify and avoid them. The old saying “leaves of three let them be” is a gross oversimplification of their identification; however, it is a pretty good starting point. Any shrub or vine with three leaflets should be suspect. However, as we just discussed with the trifoliate sumacs, there are a number of non-toxic woody vines, shrubs, and small trees with 3 leaflets as well. There are many guides that help identify poison ivy and poison oak; however, a picture is worth a thousand words and probably the best way to proper identification is to look at enough photos until you are familiar with the plants.

The official term that is used in poison ivy/oak poisoning is allergic contact dermatitis, which can be severe depending on the dose and susceptibility of the person. Physical contact with any part of the plant, exposure to fumes or smoke, or with pets that have touched the plants are common means of exposure. Usually symptoms don’t occur for 12 to 24 hours, and include swelling and redness of the skin, followed by fluid filled blisters. The fluid from the blisters cannot spread the dermatitis; however, there can be additional spread by touching clothing or other objects that have been contaminated. The active ingredient is a compound called urushiol which is contained in all parts of the plant. The compound can persist in the plant even decades after the plant has died. There are reports of several hundred year-old herbarium specimens affecting people that have handled them. When initially exposed to urushiol, the skin alerts the immune system of the contact. However, it is common for no visible reaction to occur the first time a person is exposed. But, with that exposure the immune system prepares a defensive reaction for the next time the skin encounters the substance. This sensitizes the skin so that new contact causes an allergic reaction which cannot be cured, only treated. Cool showers, or over the counter “itch creams” can relieve the symptoms. Severe reactions may require medical attention requiring prescription drugs or injections of steroids, such as prednisone, to help control the reaction.
Brazos River Clean-up
By Tim Eschbach

The 2nd Annual RBMN Brazos River Clean-up was held on Sunday, September 9. The event organization efforts were led by Robert Walker. Clean-up participants included Boy Scout Troop 673 (6 scouts and 2 scout masters), Ed Lowe (President of The Friends of the Brazos), two of Ed’s friends, and 15 members of the RBMN Chapter. Robert was also kind enough to turn his ranch, Little L Ranch, into “command central” for the clean-ups.

The event was originally scheduled for Saturday, September 8, but excessive rains and the threat of lightning forced a one day postponement to Sunday, September 9. As it turned out, the one day postponement was a blessing in disguise. Here is why.

The Boy Scouts proudly demonstrated the motto, “be prepared” and braved the rainy Saturday to clean a two mile stretch from the Little L Ranch to the Brazos Point Bridge. The Scouts, led by Alan Sarver, located and removed 56 tires and assorted trash from the river. Thank you Scouts! Following the clean-up the Scouts enjoyed a BBQ at the Little L and slept soundly in the bunk house barn.

This left Sunday for the RBMN to clean a second section of the river. The section selected to clean was a 4 mile stretch from River Bend Resort to the Little L take-out. Due to the previous day’s rain, the river was deeper and faster than normal. This hampered the tire finding efforts. But the rain did wash a significant amount of debris from the banks into the river. As a result only 10 tires were found but 8 large bags of miscellaneous trash, 2 plastic chairs, a section of a boat bow, a 3’ x 7’ slab of 4” thick polystyrene, and one very pink shoe were removed.

Following the clean-up the group retired to the Little L Ranch for camaraderie and wonderful food prepared by Chapter members and friends.

Trick or Treat Gets Serious at Cleburne State Park
By Cathy Crocker

One of the most popular events at Cleburne State Park is the annual Trick or Treat in the Park.

The purpose of the event is to encourage families to come experience the beauty and natural areas of the park by providing them a safe and fun place to bring their children to trick or treat. It’s become a big event at the park with sites booking up almost a year in advance. Those camping during the event take their campsite decorations very seriously, with sites become more elaborate and imaginative each year.

The Friends Group hosted their booth, complete with scary touch table finds, with members and Master Naturalist volunteers providing outreach and leading nature-based games for park guests.

More than 1300 people entered the park between 5:30 and 8 pm for the event, setting a new park record and leaving volunteers exhausted but feeling rewarded.

“Eye of a newt, and toe of a frog, wool of a bat, and tongue of a dog, adder’s fork and blind worm’s sting, lizard’s leg, and owlet’s wing. For a charm of powerful trouble, like a hell-broth boil and bubble. Double, double toil and trouble; fire burn and cauldron bubble.” William Shakespeare
Is it Ever Just a Birding Trip?
By Dayna Inbody

Recently this question was presented to me, “That chapter trip in January is just for birders isn’t it?” I was almost quick to respond but paused and wondered “Is it possible that any chapter trip can be just for (fill in the blank)?” Chris and I have had the pleasure to join in many chapter trips over the years and as I recalled some of them an answer was forming in my head by first asking another question. Who DOES go on our birding trips?

Birding trips have been attended either by profession or passion; geologists who can point out and explain the materials and processes acting upon them as we hike new and different terrain; botanists who can identify and explain our native, non-native and invasive species along the trails; chemists who can take you back to sixth grade science class and the periodic table of elements building on the geology lessons mentioned above... engineers, teachers, health care workers who can mend the occasional boo boo, musicians who can help us learn to listen to natures symphony, artists who can capture natures beauty on a canvas, photographers who can let you see up close details you might not be able to see at a glimpse,... all of the forever students of our world. And oh yeah, birders.

Birders are an interesting group and like those they choose to study can be colorful, bold, shy, territorial, endothermic, patient, competitive, weather specialists, and long distance travelers. Warning: birding can become addictive and pretty soon you are showing off a photo of a leucistic Dark-eyed Junco proudly like you previously showed off a grandchild’s photo.

So yes, our chapter trip in January is focused on birding but I still can’t say it’s just for birders. We welcome anyone with an interest or passion for birding to join us at any time. First Saturdays of each month we meet at the Acton Nature Center at 7 a.m. for the joys of birding with friends. This upcoming trip to the Valley will be for many of us a chance to see birds we don’t normally see in our backyards, and also to see a different area of Texas. There will be opportunities no doubt for all those above mentioned experts to share and educate us on the unfamiliar things we find along the way.

Contact Billy Teels for trip information. If you are not able to make this trip, make plans for the next one, you won’t be disappointed.

“The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction.” Rachel Carson
One of the many advantages of the iNaturalist app (using wi-fi or cell reception) is the “view suggestions” option in the “what did you see?” field.

It’s useful to teach yourself identification, as well as to learn more about the organism. I find it particularly helpful when traveling, as I’ll often photograph a fast observation of “something” that caught my eye for the 300 seconds or so I had available. Usually it’s an insect, and I use “view suggestions” in the evening back at the hotel room where reception is best.

On a November trip to Salado I was walking around the perimeter of the old Aiken cemetery between bagpipe competitions on the property surrounding it. What IS that odd mushroom? Quick, single shot observation and back to the Highland Games.

The mushroom turned out to be the most unusual organism I’ve seen to date. iNaturalist promptly identified it as the rare Texas Star Chorioactis geaster, which has been identified in only a few counties in Texas (and in a very limited region in Japan). Oddly enough for a rare mushroom, it does have an additional, descriptive common name of Devil’s Cigar. The dark brown cylindrical shape (that gives the Devil’s Cigar its name) is the fruiting body/capsule from which the spores will emerge with an audible hiss and a visible puff similar to cigar smoke. The capsule will split open (dehiscence) and the mushroom cap emerges, then splits into the distinctive star shape as it opens.

There may be old tree roots, a decayed border or a rotting fence made of the fungi’s preferred host of cedar elm, Ulmus crassifolia under the present concrete cemetery border.

The species was first observed and described in Texas near Austin in 1893 (and in Japan in 1937) in what has been termed “disjunct distribution.” Scientific speculation (due to slight differences in the DNA sequences of specimens) is that spores were wind-borne from one continent to another some 19 million years ago, rather than spread by humans.

From a single iNaturalist observation in Austin in 2009, both the number and frequency of observations by Citizen Scientists has grown. Just this year in 2018 there have been more than 70 observations! Citizen Science makes a tangible difference in our knowledge of an organism. Ten central to south Texas counties, from Bell to Bexar, have had observations. Another cluster of observations is in the six counties just to the north and east of our RBMN Chapter area. Parker and Tarrant counties are included, so keep a lookout and you may be the first observer to spot this unique mushroom in the RBMN Chapter’s three-county region next October and November.

Sadly, the 75th Legislature of the State of Texas in 1977 did not pass a resolution in the House (excerpts below) for the Texas Star be recognized along with the bluebonnet, armadillo, longhorn, Mexican free-tailed bat, Texas horned lizard, mockingbird, pecan tree and other official Texas organisms. However, you now know a piece of wager-worthy trivia regarding the almost-Official State Fungus of Texas!

WHEREAS the Devil’s Cigar Fungus is as uncommon and striking as the state that serves as its home, and its unique attachment to Texas makes it a fitting symbol of the Lone Star State; now, therefore, be it

RESOLVED That the 75th Legislature of the State of Texas hereby designate the Devil’s Cigar Fungus as the Official State Fungus of Texas.

Part of the flotilla at the Brazos River Clean-up. Photo: Tim Eschbach

The chunky caterpillar of November 5 was a shrunken shell by November 14 that never had the opportunity to diapause. Photo: Valerie Taber
Notes from a Butterfly Morgue
By Valerie Taber

Our Texas weather oscillations may seem inconvenient (and for many of our events, downright frustrating). However, the double whammy of an early hard freeze -- the night of November 12th and throughout the evening of the 13th -- took a toll on our butterfly population and the flowering plants upon which the adults depend.

I had hoped a fat black swallowtail larva would finish devouring its host plant of rue in time to create a chrysalis and overwinter. Alas, it began a J-hang just a few hours too late. The chunky caterpillar of November 5 was a shriveled shell by November 14 that never had the opportunity to diapause.

Diapause is the usually-effective strategy (bar unseasonably early freezes) for a moth or butterfly caterpillar to survive winter. For some insect larvae, the diminishing day length and cooler temperatures of fall trigger a literal pause in their growth and development as a pupa, to emerge in the spring.

While the big green eating machine (5th state instar) pictured may look like the inspiration for a Sandworm in sci-fi’s Dune, it should now be safely pupated in diapause to overwinter in its snug silk cocoon till emergence in spring.

Silk cocoon? Yes, that particular instar is one of the largest (with a four- to six-inch wingspan) and most striking of our Texas silk moths, the Polyphemus moth. The prominent eye spots on the hind wings are a tribute to the Cyclops Polyphemus in Greek mythology, and may be flashed to successfully startle and distract avian predators from an initial attack when the moth is at rest in the day.

But the Polyphemus moth must be one of the most Very Hungry Caterpillars ever. Once it finishes eating as an instar, it has consumed its last meal that must sustain it for the rest of its life. Adults have vestigial mouthparts and do not eat. No eating, no nectar seeking, no pollination! The male will follow a pheromone trail left by the female to find her and mate to complete the life cycle.

According to the observations in iNaturalist for Hood, Johnson, Somervell and Tarrant counties, past year’s sightings of adult Polyphemus moths began in March. (Tarrant is included because there are many more observers in an urban/suburban area, hence more observations. There were 42 sightings in Tarrant alone, while our three-county area combined had nine observations.) Be sure to record your sightings in iNaturalist, and your volunteer time doing so in VMS under RBMN:Field Research!

Finally, many adult butterflies shelter in the trees among the leaves for overnight survival in late fall. Queens and American Snouts are among the brush-footed butterflies that did not fare well during the freezes.

Still, there’s the optimistic note that NO Monarchs were among the fallen frozen. The Queens and American Snouts will not be worm food. They have a new task as practice dummies to help humans learn to properly pin, spread wings, mount and tag butterfly specimens (and create slide mounts) without the necessity of chasing, catching and killing them first.

“Love is like a butterfly, hold on to it too tight and it will crush, hold on to it too loose and it will fly off.” Anonymous
I was 8 or 10 years old when I first heard that deep voice announce over the airwaves that I was the only person on earth that could prevent forest fires. Yes Smokey, your famous quote, “ONLY YOU CAN PREVENT FOREST FIRES” has created a lot of guilt in the minds of impressionable young children. Flash forward 60 some odd years and I finally get the chance to redeem myself for 6 decades of scorched forest.

On October 25, 2018 I attended a “prescribed burn workshop”, taught by the Texas Parks and Wildlife Department, hosted at the 20th annual state meeting of the Texas Master Naturalist. I signed up for the class, not only to redeem myself of the sins that Smokey accused me of, but to answer a host of burning questions (pun intended) concerning fires. Of particular interest to me, was whether I alone was responsible for all those wildfires, or whether the policy of “not burning” the forest might be equally responsible. Like myself, most participants of the workshop were also interested in whether/how fire could be used as a tool for land and habitat management.

The workshop started with a morning of classroom presentations and one of my questions was quickly answered with a definition. A “prescribed burn” is the planned and deliberate application of fire as a management tool for land stewardship. Unlike wildfires, prescribed burns are conducted under predetermined environmental conditions to achieve specific resource management goals and objectives. Conditions such as temperature, humidity, wind speed, fuel moisture and condition of vegetation are carefully selected to ensure a safe and effective burn designed to maximize desired benefits. Precautions, such as adequate firebreaks and fire control equipment are used to ensure the fire burns only within the predetermined area to be treated. A “prescription” check list must be filled out with all the required parameters met before the fire can be set. Although a “prescribed burn” is sometimes called a “controlled burn”, it differs somewhat from the so called “controlled burn”, where Billy Bob and Bubba meet on Saturday morning, stick a wet finger in the air to test the wind, then take a flame thrower to ignite the field. Budweiser in one hand, flame thrower in the other (and trying hard not to get the two mixed up) BB and B keep their fingers crossed in the hope that the fire remains in the targeted area, or that a neighbor will call the fire department if it doesn’t.

It was explained that fire plays an important role in the ecosystem and is a vital component of its function. Since fire was a natural factor on Texas rangelands and forestlands before European settlement, native vegetation and wildlife are well adapted to burning. As Aldo Leopold wrote in his 1933 textbook titled GAME MANAGEMENT, “the central thesis of game management is this: game can be restored by the creative use of the same tools which have heretofore destroyed it - ax, plow, cow, FIRE, and gun”.

Prescribed burns are most often used to accomplish one or more of the following objectives:

1. enhance habitat diversity by increasing plant quality/vigor and increasing the quality of wildlife food (forbs) by suppressing non-native grasses
2. improve watershed function, thereby increasing water quantity and quality
3. increasing nutrient cycling by fixing nitrogen in the soil from burn debris, thereby having a fertilization effect on the range
4. control invasive vegetation which is not fire tolerant, such as mesquite, juniper, greenbriar, and pricklypear cactus
5. open vegetative over-story to allow light penetration to the soil for forb and browse production
6. since research indicates that about 7 times more insects are usually found in burned native grass areas compared to unburned areas, spring and summer will offer more high protein food for quail, turkey, and grassland birds
7. (and Smokey, to make our shared responsibility easier) the removal of “thatch” and vegetation accumulation, will remove the hazardous fuel loads that can lead to out of control fires.

Objectives should be carefully evaluated in order to develop a fire plan, since different objectives require different type fires to achieve the desired response. IE: The use of prescribed “cool season” fires during the winter months and prior to spring green-up is preferred to minimize the impact on wildlife species and critical nesting habitat for birds.
As a general rule for "woodland sites", a prescribed burn during late November (after frost and leaf drop) through February (before green-up) should be accomplished on about 20% of the area on a rotational basis, thereby burning each area every 5-6 years. This should remove old growth and stimulate new growth of browse and forbs (weeds and wildflowers).

For “native grass” areas, a prescribed burn is recommended on about 33% of the area every three years on a rotational basis. This will remove accumulated dead grass litter and control young invasive woody species, while stimulating new growth of plants that may have become dormant due to the absence of fire. Like the woodland sites, the native grass fires are often accomplished in the fall and winter, however late summer or early spring can be very effective in controlling invading woody species, if that is the primary reason for burning.

General instructions for conducting a prescribed burn include:
(1) Prepare a bare-ground fire guard around all sites before burning. These could be reduced to mowed or wetted strips if conditions aren't too extreme. Roads and streams also work well as fire guards.
(2) Humidity should be between 25-60 percent.
(3) Wind speed should be between 5-15 miles per hour.
(4) Do not initiate burns until 1 hour after sunrise, and finish the burn by 1 hour before sunset (this is to avoid temperature inversions that keep smoke low to the ground).

Generally, fire intensity and rate of spread increase with drier fuel, lower RH and higher air temperature, wind speed and fuel quantity.

Our afternoon was to be spent assisting with a prescribed burn at a grassland prairie area that is being restored as near as possible into a native prairie. Unfortunately, the moisture content in the grass, and high relative humidity put the burn outside the parameters of a prescribed burn. Fortunately, the TPWD fire instructors had an alternate plan. In a cleared bare dirt area, dry hay was brought in and strategically placed to represent a grassland burn unit. Various scenarios were created to demonstrate where fire breaks should be placed and how a fire could be set to cause a fire to burn fast/slow/hot/cool. My favorite scenario demonstrated how safe a fire could be if it is set as a (backing fire), a fire that is set on the downwind side of a burn unit... as opposed to a (back fire), which is what happens to Billy Bob and Bubba at a camp fire on a cold night. In this scenario you start the fire just upwind and against the firebreak. Due to the fire break, the fire only has fuel to burn in one direction, into the wind. Although it is harder to start, the fire burns slow as it works against the wind. As this fire adds a “blackened line” to the fire break behind it, there is a larger safety margin created for the next steps. Fire can then safely be set in successive lines ahead of the original fire that will primarily be burning downwind (head fire), into the original fire. Since several of these fires can safely be set (each one 20 to 30 feet upwind of the previous one), the fire unit can be quickly and safely burned down.

After the burn demonstrations it was into the vans for our 30 minute ride back to the hotel. Once in the class room a Q&A session followed along with a recap of the day.

"A lack of fire over the last century has led to an imbalance in fire adapted plant and animal communities and an increase in extreme wildfires. A key to reclaiming and restoring fire adapted ecosystems while also reducing the risk of extreme wildfires is TPWD's focus on implementing prescribed burning". As Chris Schenck (Statewide Fire Program Leader) for TPWD said, “we want you to have fun, be safe and learn”. Hey...isn’t that our motto at RBMN?

Although Smokey may still hold me responsible for all those forest fires, I think he may be relieved to learn he has a partner in TPWD and the practice known as “THE PRESCRIBED BURN”.

DISCLAIMER: Billy Bob and Bubba are fictional characters and any resemblance to people dead or alive is strictly coincidence. (Okay, you got me…my grandmother, mother, brother, and sister all called me Bubba).
Texas Master Naturalist State Meeting: Perspectives from a First-time Attendee.
By Melody Holm

The Texas Master Naturalist Annual State Meeting (October 25-28, 2018, Georgetown, Texas) was an adventure, an unmatched naturalist learning experience, a networking event, exciting, exhausting, inspiring, and at times overwhelming all at once for this first-time attendee. I had little idea what to expect, even after vicarious introductions from previous attendees. I was pleasantly surprised at how much it resembled professional science conferences common to my previous life in the working world of geoscience. What a powerhouse of knowledge, experience, common interests, dedication to the understanding and care of our natural world, and camaraderie!

As forewarned, I found the meeting schedule packed with so many interesting sessions and field trips that I didn’t know where to start. But I ploughed through it the minute the notice appeared in my inbox, made my choices, and registered within hours of registration opening. Getting right on it paid off – I got a spot in all my first choices, many of which filled up by the next day. (Take note, future first-time attendees. 😊)

As those who have come to know me might expect, field trips were first and foremost on my list, especially those with an Earth science component. I thought about broadening my horizons, learning about things I know little about. The choices were endless. But then I thought, what better opportunity will I have to get ideas on how to introduce the complexities of geology and the role it plays in ecosystems to a non-technical audience?

The simplest and most direct answer to the question above is … go on a geology field trip! (Or several.) So, I did. I can’t say that handouts, diagrams, and descriptions completely overcame geologic complexity for the uninitiated, but I can say that there’s no better way to understand an aquifer than go inside one! Yes, the field trip highlight (for me) was going inside the Edwards Aquifer, seeing geology from the inside out, noting how and where free water emerged from “solid” rock, and observing the circuitous routes water took to get through that rock – which, by the way, is not ever completely solid, especially when it’s limestone in a humid climate. For the record, I have toured several Texas caverns in the past, but had not been in either Inner Space Cavern (Georgetown, TX) or Longhorn Cavern (Burnet, TX), the two that we toured at the State Meeting.

Each of these caves developed differently in different geologic settings that again were best demonstrated through back-to-back visits to each location. I’ll spare the lengthy, technical details here, but emphasize the common message that each trip conveyed and that is how closely linked the surface is with the subsurface, how quickly water (and all other liquids and microscopic solids, a.k.a., contaminants, it carries) can enter vast and extensive underground spaces, and how equally quickly water (and what it carries) can emerge on the surface or into wells some distance away. Also important is the unique environment caverns and caves provide for certain species of fauna and flora, including those from past millennia. In fact, Inner Space Cavern is one of the most important paleontological sites for Pleistocene (Ice Age) fauna in Texas.

Another all-day field trip to the Llano Uplift (a.k.a., Central Texas Uplift or Central Mineral Region) was a welcome reintroduction to my favorite part of Texas, my outdoor hang-out in the..., well, a long time ago. In the world of geologic complexity, the Llano Uplift is a relatively simple example of the relationships among the three major rock groups based on origin: Igneous, metamorphic, and sedimentary. The geologic relationships and their influence on landforms, plant communities, hydrology, and human development can be illustrated and observed easily within the span of a few hours. What a perfect area in which to learn about how geology influences not just landforms, water, and plants, but human history as well! I’m glad to have chosen this trip, as it was a perfect reminder of how great a naturalist’s paradise the Llano Uplift is. Future chapter field trip anyone?

I also attended three classroom sessions, all well-presented and full of useful information. “Make Your TMN Chapter Wild!”, presented by the Texas Wildlife Association (TWA), started with participants sharing information about the successes in their educational
programs, particularly youth-oriented programs – very informative. The high point of the session was learning how to present a lesson in bird adaptations by dissecting a real (dead) quail and identifying internal and external structures that enable quail to thrive in their environment. For the squeamish among you, it was bloodless, and far more instructive than pictures on paper or a screen. Takeaways: Free programs and tools available through TWA (just have to look and ask), ideas for successful marketing, ideas for working with teachers and integrating TEKS into chapter-offered learning activities, and the value of hands-on learning.

“Bryophytes: Taking a closer look at biodiversity” took us into the often-overlooked world of mosses, liverworts, and hornworts – all important, but inconspicuous, members of the diverse ecosystems of Texas, even the driest of environments! Takeaways: They’re almost impossible to identify and classify without a microscope (but quite beautiful and sometimes intricate under the ‘scope); for most of us, they’re largely impossible to identify without having an expert look at them; and most importantly, there are lots more of those important little hidden gems out there than we think, and they play an important role in ecosystems.

There were SO many other sessions, events, networking opportunities, displays, contests, and more that kept attendees going from dawn to well past dark from Thursday morning through Monday noon. If you’re curious about details and what a TMN Annual Meeting offers, check the “How to Get Outside” guide at https://txmn.org/files/2018/06/GettingOutsideGuide_6-27.pdf.

Finally, the grand finale – the Saturday evening awards ceremony and Sunday morning contest awards. Saturday evening featured recognition of chapter anniversaries, first year certification attendees, service hour milestones, and other special recognitions. Contest awards were announced on Sunday morning. Awards for Rio Brazos Chapter went to Gary Hinds for the 2,500 Service Hours Milestone, Melody Holm for 500 Service Hours Milestone, and to the chapter for achieving third place ($300) in the Exemplary Project Contest. A special thanks to Gary Hinds for developing the display for sharing our project, the Acton Nature Center, and to Stan Cadwell, for creating the panorama (pastel drawing) of the Nature Center as the top piece for the display.

From a first-time attendee’s perspective, the Annual Meeting is well worth the time and expense to share with and learn from Master Naturalists from around the state. Mark your calendars for the next one – October 17-20, 2019, in Rockwall.
Fall Semester with the Homeschool Program
By Madison McGlathery and Jake Balmuth

The ANC Homeschool Program has kicked off to a great start as we have gone into this year. It has definitely been a learning experience for everyone involved including myself (Madison). This exciting and fun program has all been worth the work and effort put into it. As the director of this program, I have gotten to connect with amazing and inspiring people. We have only had to cancel two classes for this semester, but that didn’t stop the rest of the classes from being insightful and fun filled for everyone. There is never a dull moment in these classes! There is nothing better than being a part of a program that is hands on and full of fun while learning about different topics within nature. I am looking forward to the rest of this semester with the Homeschool Program.

Due to inclement weather the programs on Grasslands and Seeps, led by Alan Sarver and Sharra Kucera at Covia Mines, and Birding, led by Billy Teels at the ANC, had to be cancelled. However, there was lots of participation in the three other classes and overall the Fall Semester was a huge success.

Melody Holm and Wendy Moore led the October program centered on the Earth Week activities that were going on at the ANC that week. One of the themes of Earth Week was earth-inspired art, and Wendy used her skills with the homeschoolers to have them create murals with water colors on what inspired them most about the earth. Everyone had a good time and some quite impressive pieces of art were produced that were later displayed at the public at the main Earth Week event on Saturday.

Valerie led the November program on Seeds and Native Bees. A large group of 2nd and 3rd graders from Lakeside Baptist Academy attended the session and had a good time with hands on lessons using ears of corn and seeds from other plants. Valerie also led a walk around the butterfly garden and discussed the importance of native bees to native plants, like the ones on display in the butterfly garden.

She also talked about the importance of attracting native bees and showed the class native bee houses that had been erected as part of previous homeschool activities.

The January ANC Homeschoolers class was a walk at Fall Creek Ranch identifying trees. Courtney Blevins, Forester with the Texas A&M Forest Service, led the class in the challenge of identifying trees without leaves, fruit, or flowers. Bark, branch size, shape, and habitat was used to identify American elm, cedar elm, sugarberry, Texas ash, American sycamore, bald cypress, bur oak, and bois d’arc among others. Courtney also discussed tree root systems, mistletoe’s effect on trees, oak wilt, the emerald ash boar, how to tell the age of a tree, and the importance of a tree’s bark. We would like to thank Courtney Blevins for sharing his knowledge and expertise, Joe and Karen Langdon for letting us use their beautiful ranch, and Karen Langdon and Bonnie Colgin for helping lead the walk.

“In every walk with nature, one receives far more than he seeks.” John Muir

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Citizen Science in My Backyard
By Valerie Taber

“In my backyard” and “Citizen Science” are two favorite phrases for volunteer hours. Add butterflies, and you’ll have our newest opportunity coming this spring for Chapter-approved AT and volunteer hours – the Texas Butterfly Monitoring Network.

This Citizen Science project is designed for long-term monitoring of Texas butterflies to gather data on population movements, species sighted and changes in abundance in various habitats.

It’s as simple as learning the protocol and parameters for butterfly counts, then choosing a 30-minute walking route though your neighborhood, or any favorite walking trail (preferably through multiple habitats).

While you may enjoy bird watching at dawn, butterfly surveys begin after 10 AM & before 4 PM, on sunny days when it is at least 70 degrees F. / 21 degrees C.

Data is collected using a modified Pollard walk protocol, which will be part of the AT training, along with entering the data collected in the PollardBase database.

Watch for a Chapter email with scheduling information for the one-hour AT class in March, weather permitting.

Dead Bug Everybody
By Valerie Taber

No, it’s not the shouted challenge of youth to fling one’s self on your back with all your arms and legs frozen in mid-motion, but a really dead insect.

Why does a dead insect cross its legs? Why are most dead insects found on their back?

Chemistry, anatomy, hydraulics, humidity and gravity all combine for the possible answers.

Grip something securely in your fist. You are using your flexor muscles, which are much stronger than the extensor muscles you’ll use next. With your palm facing you, open your hand and extend your fingers out as flat as you can, then place your knuckles and arm on the table. Let your extensor muscles completely relax.

Did the backs of your fingers remain flat against the table?

What happened? Your hand’s strong flexor muscles promptly overpowered your weaker extensor muscles, even when both muscle groups were at rest/relaxed.

You’ll remember that all insects have an exoskeleton with jointed legs. The legs have paired sets of flexor and extensor muscles. When an insect dies, entomologists think two separate processes are happening in the legs.

First, a chemical reaction involving calcium takes place after an insect dies. The bigger, stronger flexor muscles have the dominant effect of contracting the legs and (to simplify) the calcium in a flexed/contracted position is not counteracted after death.

Second, you’ll remember that insects have a chitinous exoskeleton. That exoskeleton has soft cuticles at the leg joints. When an insect dies, the cuticles immediately begin to dry out and contract the legs.

Finally, back to the back. When a crawling insect is alive, its body is suspended between six legs. Once an insect is injured, diseased, attacked by parasitic wasps, or pesticides, or even is slowly freezing to death, it loses the ability to maintain balance and it topples to one side. The relatively heavy thorax and

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abdomen obey the law of gravity, and are now on the bottom. It’s a familiar scenario for flying insects such as cockroaches and beetles, too. Frozen butterflies collected were an exception, as the tall grass blades kept the wings vertical and the butterflies were upright in death. Smaller butterflies, such as the American snout, were found either upright or with their closed wings flat on the grass.

The Class of 2018 receiving their awards at the December Awards Banquet. Welcome. Go do good work. Photo: Dayna Inbody
Upcoming Chapter Field Trips/Events


- First Saturday Bird Walks at the ANC. Meet in parking lot of ANC at 7:00 am. February Bird Walk Cancelled. See Billy Teels for more information.

- February 16 and 17, 2019. Great Backyard Bird Count at the ANC. Join Rio Brazos Master Naturalists at the ANC for the local count and walk (free to the public). Program to follow on Feb. 16 at 10 am “Birds of the Rio Grande Valley.” Contact Billy Teels for details.

- March 23, 2019, 10 am – 2 pm. Feather Fest at the ANC. A celebration of birds and to welcome the wildflower season (free admission). Contact Dave Moore for details.

- April 20, 2019, 8 am – noon. 11th Annual Nature Run at Revolver Brewery. See Karen Langdon for volunteer opportunities.

- May 4, 2019. 10 am – 4 pm. ANC Reptile Fest (free admission). Contact Mark Pyle for more information.

- July 20, 2019. Time to be announced. Mothing Event at the ANC. Contact Valerie Taber for more information.

For more events or information go to our chapter Events Calendar at riobrazosmn.org