The Hills Above Possum Kingdom Nature Committee Newsletter
Fall/Winter Season 2019

INTRODUCTION (Lynne Aldrich): Well, fall is here and we are getting ready to move into winter. But before we do, there are lots of things around The Hills that just seem to love the Fall time. First, the fall bird migration is just beginning. On this day (September 14), as I sit writing this article, we seem to be having a mini-fallout. Have seen Wilson's Warbler, Yellow Warbler, Nashville Warbler, Blue-headed Vireo and a Baltimore Oriole (which is a rare migrant to our area) - and the day and season is not yet over!!

And spiders - Wolf Spider and Orb spider always seems to arrive in the late summer/early fall and this year we seem to have an abundance of them. The Orb spider (their full scientific and common name/s are Orbweaver Agriope aurantia Lucas/Yellow Garden Spider or **Golden Orb Spider** - the one we have here in The Hills and are incredibly colorful with massive webs that are very unique. We have many around our place who have woven massive webs and sit in them day in day out waiting for their favorite pray which includes grasshoppers. We spotted one at precisely the right time as a grasshopper got blown into the web and less than a second the spider had wrapped it in his silky webbing for a future dining experience. The webs are very unique as you can see from the pictures below. The spiral rolling vertical web you see is called stabilimenta and is a web decoration which is unique to this species. This spiral band is thought to decrease the visibility of the silk web itself. The spider hangs with its head downward (the white part of the spider in these pictures) with the striped colorful body up meant to attract their prey. We've had a lot of rain this year which has brought us a lot of insects - the main dietary wish of the Orb Spiders. They are harmless to people BUT - if you walk into its web unknowingly be prepared to find yourself entangled in a VERY sticky web that is hard to dislodge from your body. The spider will likely be long gone as soon as you get caught so don't worry as they will flee quickly when they think they are being threatened.!!!

After mating in the late summer to autumn, the female Golden Orb Weaver wraps her single egg sac in a mass of golden silk, which is then hidden on foliage away from the web, disguised or hidden in a cactus paddle as is the one below we got here at The Hills.

Wolf Spider

Orb Spider

Orb spider on web with stabilimenta

Orb Spider with food

Orb Spider with egg sac

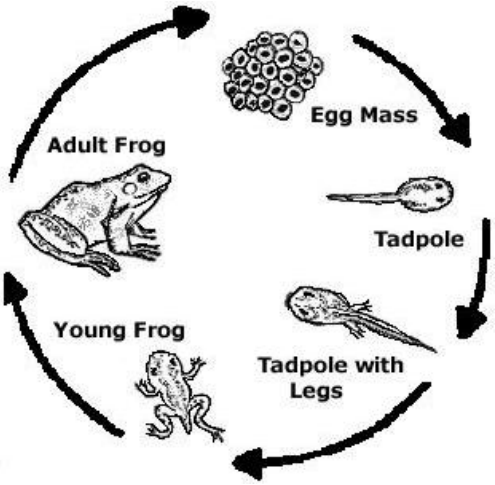
Two egg sacs in cactus

Egg sacs showing intricate webbing

Tadpoles: And then we did have some rain earlier this year and the standing pools of water we've had as a result bred not only mosquitoes but Tadpoles!! We had literally THOUSANDS of them in our yard where the water never seemed to dry up. Those little water loving things grew up into frogs and toads which abound on our front and back porch. Particularly entertaining was having the frog spending his/her day glued to our windows (yes, they are MESSY) all day long only to disappear over night and then reappear the next day. The **Toads** on the other hand just hung around growing bigger and bigger pooping bigger and bigger poop (yes, dog size). We didn't get pictures of our toads but we got a few pictures of the cute frogs hanging around on our windows.

The life cycle from tadpole to frog is quite interesting. Tadpoles are amphibian and start from a fertilized egg which soon hatch into a tadpole. It has no legs but it has gills that allow it to live underwater and it eats tiny water plants. It is fun to see them all swimming around in those pools of water. It begins to develop lungs

that will allow it to live out of water, it starts growing legs and the tadpole has a long tail which is its food supply until the tail is gone. It is now ready for its life on land and it hops out of water to live that life as a frog or toad. Below is the life cycle of a frog/toad - starting as an egg mass. The interesting thing is that it takes up to two to four years for a frog to get full size. We had a TON of very small frogs for a very long time and we now know why they lay so many eggs to help in making certain someone lives to grow up - stepping on those little things was a daily hazard!!!



Life cycle of Tadpole

Frog on screen

Frog hiding!!!

Frog on window

There are other things that seem to appear in the fall, for instance the **Praying Mantis.** We get some big ones, some little ones but they are always interesting to observe.

Praying Mantis

Praying Mantis

They are typically green or brown (and you can see we've had both). They use their front legs, which are spiked to snare and hold their prey. They eat our moths, crickets, grasshopper and flies so are plenty beneficial to us!!

So, fall and what it has to offer us in on the wane and we now will be bracing ourselves for winter - and along with it the things it has to offer. Be on the lookout for our Great-horned Owls (and be listening for them) as they will be at the start of their breeding season now with the males setting up their territory and getting their nests ready. Soon they will be hooting back and forth to one another, getting their mate and in January/February begin sitting on their nest with their fledgling emerging in very early spring.

The thoughtful management of our habitat will continue to allow the wonderful wildlife we have in our midst and continue to bring us joy and wonder. The turkeys, the Bobwhites, the deer - all that we see surrounding us need habitat to survive - the cover and the food. With our stewardship we can help in assuring that The Hills continue to be what we have advertised - **"The Hills Above Possum Kingdom Lake contain some of the most breathtaking, unspoiled private land in Texas".**

So, enjoy this new season upon us as well as this newsletter brought to you by the Nature Committee (Lynne Aldrich, Lynne Brown, Peter Gottschling, Wolf Patrick). We are featuring another article on the history of our area that follows below along with an update on the dark skies and a reminder on fall/winter landscaping chores. And finally, the last article on Bobwhite that shows the importance of habitat preservation and how managing through judicious mowing and cutting along with preservation of food plants and brushy cover **(without stripping and clearing)** we can play a role in keeping The Hills that "unspoiled" land we see surrounding us.

Life in Palo Pinto County 1865-1940 (Lynne Brown) Reconstruction, the rebuilding of the economy after the Civil War, was a difficult time for Texans in Palo Pinto County. Soldiers returning from the war found their farms abandoned due to Indian predators and lack of manpower. Poverty was rampant, partly due to Texas's allegiance to the Confederacy. Paper money was virtually worthless, and gold was scarce. The last known Indian murder of a white man in the county was in 1873. As the threat of Indian attacks decreased, farmers and ranchers renewed their efforts.

Most farms were small, only large enough to supply a family's needs. Larger farms grew wheat, corn, oats and cotton. But in the 1870's, cattle ranching became the lead source of income. During the Civil War, the number of unbranded cattle wandering freely grew significantly. Smart ranchers began rounding up the free-roaming cattle and driving them to market. The gold earned in these sales helped the flow of money circulating in the county, and the population expanded.

In 1872, the average price of land per acre was 60 cents. Ranchers were able to purchase larger and larger tracts of land to satisfy the needs of their increased herds. These herds were driven north to market along several of Texas's famous trails, including the Goodnight-Loving Trail. These cattle drives continued until the 1880's, when rail lines were extended into the county.

In 1874, the introduction of barbed wire dramatically changed the ranching industry. Palo Pinto County saw its first barbed wire in 1880. Many reaped the benefits of this type of fencing, which allowed them to control herds and increase production. Others promoted free open range cattle. As the price of cattle rose, cattle rustling became a major issue with ranchers. Vigilante justice prevailed, with offenders often hanged. In 1877, the Texas Rangers were no longer tasked with pursuing Indians. Instead, they began pursuit of cattle rustlers, enforcing the law with their own brand of often ruthless justice.

The 1880 census showed 648 farms in Palo Pinto County. Crops included corn (#1), cotton (#2) and wheat (#3). Cattle and sheep highlighted the ranching. Three major contributors to increased production in all areas included the introduction of barbed wire, the windmill (which allowed for water wells to provide for irrigation and watering livestock), and the railroad. Now farmers and ranchers could more easily ship their products to other markets.

The communities closest to the Hills in the mid-1800's were Old Christian and Cokelan, just north of present day Graford. Both began along the Ft. Worth-Belknap military road. Established in the 1870's, trading posts here supplied the needs of travelers going to and from Fort Belknap and Ft. Worth. Cokelan became an agricultural center, with a post office established in 1877. In 1884, the population was 150, with 2 general stores and 2 churches. In 1894, the town of Graford was founded and Cokelan's post office was closed. The name "Graford" was chosen because it is halfway between Graham and Weatherford. Farming and ranching interests turned to Graford, which soon provided a bank, grocery store, drugstore, livery stable, blacksmith, cotton gin and numerous other businesses. In 1900, Graford's first school was moved to town from 4 miles north.

In 1891, train service arrived in Graford, provided by the Graford, Mineral Wells and Northwestern Railroad. But during the years of 1890 to 1930, the population of Graford slowly diminished. Cotton crops nearby reduced. Products were moved more by roadway than train. Graford also had no underground water available, and therefore it was lacking easily accessible water. In 1938, the railroad tracks were removed.

What happened to cause a significant increase in the population of northern Palo Pinto County in 1939? Stay tuned to find out.

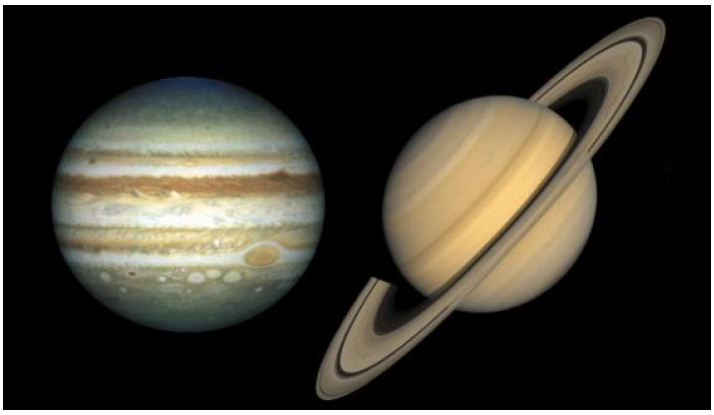
Fall/Winter Landscaping Reminders (Lynne Brown)

1. Wildflowers – this is the perfect time to plant your wildflower seeds. Planting now gives the roots time to establish themselves for possible Spring flowers (remember sometimes it takes more than one season to see results. Be sure to read up on the best way to plant your seeds.
2. Tree planting – October-February are optimal months for planting new trees. Ideally, our invasive cedars should be removed whenever possible and **replaced** with native hardwoods. Two that are well suited to growing in The Hills are the live oak and the cedar elm. The live oak, once established, creates wonderful shade and stays green all year long. The cedar elm has leaves that turn beautiful colors in the Fall then drops those leaves.
3. Shrubbery – October-February is also the time to trim back any shrubbery that has gotten too large.
4. December/January is the best month to mow tall grasses and native flowers back to ready for new Spring growth.

The Nature Committee Star Party Report (Peter Gottschling)

If you are an amateur astronomer you know that these people should not be smiling. The sky behind them at about 7:30 PM at the September 28 Nature Committee star party is almost completely cloudy.

Predictions were that it should be clear by now. So, what to do now? Bring out the snacks and talk about the dark sky in The Hills and how we can keep it that way by adjusting outdoor lights to shine down and not up or over into your neighbor's eyes. All it takes is a simple shade to keep the light going down where you want it and prevent it from adding to the light pollution which is increasing from the nearby developments in the Weatherford and DFW area. 20 people came to enjoy the night sky and look through telescopes set up by Joe McMichael and Peter Gottschling.



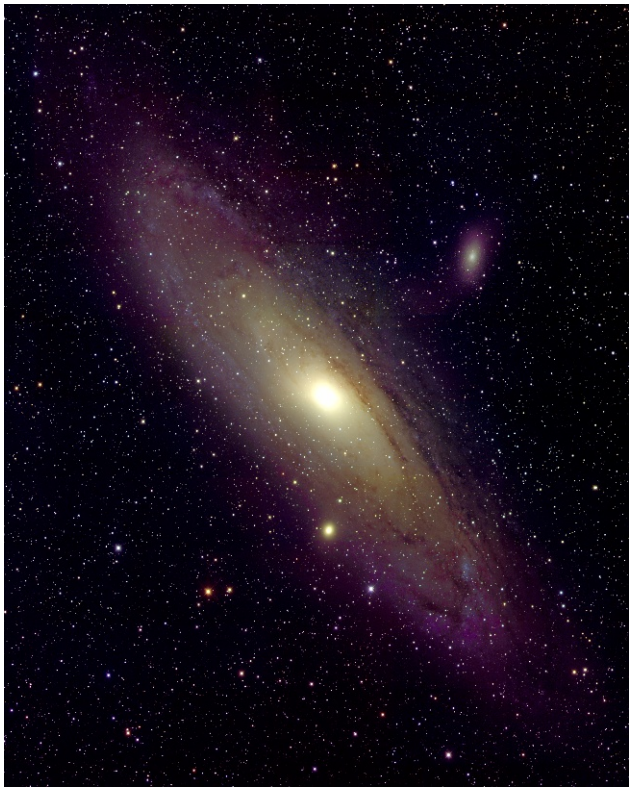
And the clouds parted about 8 to reveal the bright planets Jupiter and Saturn.

No, they were not this close together but with multiple telescopes, everyone saw the bands around Jupiter and the amazingly beautiful rings of Saturn. The four Galilean moons Io, Europa, Ganymede and Calisto (appropriately discovered by Galileo) were spread out two on each side of Jupiter and we showed sketches of which moons were where. The moons were named by another contemporary of Galileo's for the lovers of Zeus (the Greek God Jupiter). Full disclosure: At the star party I told people incorrectly they were named for the children of Jupiter which is obviously quite different.

Milky Way Photo by Paige Weber on Unsplash

As the evening went on, people marveled at how bright the milky way looked. Above is an approximate view of what we saw. It did get quite clear but if you live out here and don't have nearby lights shining in your eyes everyone reading this newsletter can get a view of the summer milky way just by stepping outside an hour after sunset. By the time you read this article, the moon will still be close to full so the milky way will be almost non-existent (just like when bright lights shine in your eyes). You will have another chance at the summer milky way by about 8:30 PM on October 16 when the moon does not rise until after 9 PM. The summer milky way is much brighter than the winter milky way which will be what you see starting around mid-November. If you can pick out the summer triangle of 3 bright stars overhead you are still seeing the summer milky way.

Our next target was the Andromeda galaxy, M31. In the picture below taken by the Calvin University physics department you can see the entire large galaxy which spans about 2.5° which is the width of 5 full moons. It is 2.5 million light years away and approaching our milky way galaxy with which it will probably collide in about 4 billion years or so. But right now, you can see it with your naked eye under our skies if you know where to look. It is the farthest object you can see without optical aid. Think about it. The light you are seeing started its journey when the first australopithecines started walking in Africa. It arrived just in time for us, Homo sapiens, to have the instruments to detect and study our nearest large galaxy. As a philosophical question, since the light is millions of years in travel, how do we know that the galaxy still exists in the present? We won't know for another 2 million years in the future! Compare that to only 8 minutes and 20 seconds it takes for us to see light after it leaves our sun.



M31, The Andromeda Galaxy

There are two small galaxies in the above picture of M31 which some of us also saw because we were looking for them but could not get all 3 at once into the telescopes. The upper right small spiral is M110 and the round fuzz on the lower edge of M31 below center is M32. Both are companions of M31, kind of like the large and small Magellanic clouds are companions of the Milky Way, our galaxy. The Magellanic clouds can only be seen from about southern Mexico at 20° north latitude and further south. Our star party is about 33° north.

When it got truly dark (technically, astronomical twilight is about 1.5 hours after sunset when the center of the sun is 18° below the horizon at sea level) we looked at globular clusters. The two bright ones in our northern hemisphere are M13 in Hercules and M22 in Sagittarius. There were splendid views of both in the telescopes.

M13 Globular Cluster

M22 Globular Cluster

Globular clusters are dense masses of mostly old stars that formed about 12 billion years ago just after the universe came into being. They formed from dense clouds of gas into hundreds of thousands of stars that have been gravitational bound together ever since. Globular clusters are usually 10 to 150 light years in diameter and 10 to 30 thousand light years distant both above and below the plane of our galaxy. There is nowhere in our galaxy today that dust clouds are dense enough to form new globular clusters, only open clusters of a few hundred widely spaced stars have been or are being formed since the Milky Way collapsed into a flat spiral galaxy. Edwin Hubble back in the late 1920's used variable stars found in globular clusters in other "fuzzy nebulae" to prove that these faint clouds were actually distant galaxies like our Milky Way and started the modern study of the universe. He also showed the universe is expanding.

We also had our version of an astronomical fire drill. The great red spot of Jupiter was predicted to be visible sometime after 9:39 PM or so. Jupiter sets behind a hill on the south of our house much earlier than its true set time of about 11 PM at the horizon. So four of us or more raced up the steps (safely holding the hand rail) to the upstairs telescopes because they could see Jupiter a few minutes longer than from the ground. Alas we could not spot it before Jupiter entered the trees at the top of the hill to disappear from view. So that prize got away from us

5 WAYS TO IMPROVE NORTHERN BOBWHITE HABITAT (Written by Kaleb Ward, Programs Intern, Texan by Nature

https://texanbynature.org/2019/08/5-ways-to-improve-northern-bobwhite-habitat/?fbclid=IwAR3EDUFp9V0WHW5uFN-TxcnoGvO8kLGIhBk8yA-JC-yn9yGP4qEBAXjaLMg

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Northern Bobwhite Quail are a staple native wildlife species in Texas, but their habitats are being degraded and destroyed at an alarming rate, and with habitat reduction comes a massive decline in overall population numbers. With so many native grassland habitats being converted into agricultural fields and turning into more urbanized areas, the Northern Bobwhite quail population has declined roughly 89% since 1966. Conversion and destruction of habitat, coupled with a growing pattern of drought conditions have made it a rough going for the Northern Bobwhite, but luckily, various conservation organizations have discovered ways to recover and restore Bobwhite habitats. At Texan by Nature, we recognize the impact that every single person can make. That's why we're kicking off our #TxN5WayFriday series, providing weekly insight on being Texan by Nature. Below are 5 ways to improve Northern Bobwhite Quail habitat:

1. **Prescribed Burning:**
Historically, naturally-occurring wildfires managed and helped to restore native habitats by controlling the spread of invasive species, stimulating new plant growth, and burning dead plant litter. As the human population has begun to grow at an exponential rate, we have suppressed these fires, thus negatively impacting the health of the land and increasing the risk of large fire events. A prescribed burn is an intentionally set fire aimed at helping to restore health to an ecosystem. In the Northern Bobwhite's case, a prescribed burn can help stimulate the germination of food-producing forb plants and mimic the type of habitat it needs, which are shrubs, bare ground, and grass cover.

2**. Planting Food Sources:**
As invasive species that are low on nutrients have started to take over, it is becoming harder and harder for the Northern Bobwhite to find energy-rich food sources. The main staple of the Bobwhite's diet are seeds from grasses, agricultural crops, weeds, and native rangeland vegetation. In order for the birds to thrive in a restored habitat, a diversity of food sources that coincide with the changing seasons must be planted.

3. **Providing Supplemental Water:**
Although Bobwhites get most of their water from the food they eat, supplemental water sources such as rain guzzlers are extremely beneficial. Supplemental water sources will not only be influential to the success of Northern Bobwhite populations, it will also positively impact other native wildlife species. Rain guzzlers are an eco-friendly way to increase chances of Bobwhite survival, because they do not pull directly from other water sources, they collect rainwater which then flows into holding tanks where it is stored for later consumption.

4. **Half-Cutting:**
Northern Bobwhites, like most prey species, require cover if they want to avoid predation. Along with planting shrubbery and grasses, half-cutting is an effective method to produce additional cover necessary for the bird's survival. Half-cutting is the process of cutting tree trunks halfway through and then pushing over the trunk and branches until they touch the ground. This practice is most effective when clumps of 4-5 trees are half-cut within 15-30 feet of each other, and during growing season when sap is flowing. On top of coverage, half-cutting is also great for protecting nesting sites as well as allowing for other beneficial herbaceous plants to grow.

5. **Educate Yourself:**
Northern Bobwhite habitat restoration is not an overnight job, as it usually takes at least one full growing season before any change is evident. The process takes time, but the benefits are worth it if you make the effort to research the correct methods for each restoration activity. Take time to examine proper practices, such as tilling and disking, grazing rotation, and correct food and cover development before undertaking quail habitat restoration. If you would like help or want to learn more about ways to manage your land for Bobwhite, or many other grassland species of birds, you can contact 2019 Conservation Wrangler, Oaks and Prairies Joint Venture, for guidance!

Listed below are organizations that specialize in the conservation of birds, namely quail, and the preservation of their natural habitats. These organizations provide tips on proper habitat restoration methods, raising quail, and helping spread awareness to their important causes.

Pheasant Forever/Quail Forever
American Bird Conservancy
Texas Quail Coalition
Audubon Texas