Snow-on-the-prairie by Joe Bryan

Galveston Bay Area Chapter - Texas Master Naturalists October 2025

Table of Contents

Next Chapter Meeting

October 2

Coastal Geology

By

Daniel Imrecke
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At Extension Office*
and via Zoom

President's Corner by Mary Dobberstine

Albert Einstein once said, "I have no special talent. I am only passionately curious." Curiosity truly is one of the superpowers of a Galveston Bay Area Texas Master Naturalist.

Since joining this chapter, questions have been sprouting in my mind like wildflowers after a spring rain. Why does the *Pyractomena borealis* firefly favor the south side of a tree? How can birds fly nonstop across the Gulf? How can hawks return to the very same spot across vast distances? And what's the real story with the fourth-generation monarch butterfly?

Our Chapter's Advanced Training sessions–and TMN Tuesdays–offer endless opportunities to feed that curiosity. I hope you enjoyed our August speaker, Ashley Jones, as much as I did. Her walk-through of artifacts of yesteryear introduced me to places I'd never heard of–like the Gault Site (featured in the PBS special "Stones Are Speaking"), the Harris County Boys School, and Galveston's Mitchell Ridge. My brain left buzzing with ideas and ready to "dig in" (pun intended) to learn more.

A big shout out goes to our Advanced Training Committee, led by Robin Novak, for continually finding engaging topics and organizing both Zoom and in-person workshops. Coming up, we'll explore everything from the critters living in shells to fireflies–plus our upcoming chapter meeting on Coastal Geology.

Every October, the state office hosts the Texas Master Naturalist Annual Conference, a long weekend of hands-on educational seminars, networking, and the opportunity to complete all Advanced Training requirements in one place. This year, two of our own will be presenting:

• Cindy Howard – "Jellies, Man o' Wars and Dragons: Some Toxic Marine Life Along the Texas Coast"

• Chris Anastas – "The Houston Monarch Story: A Collaboration of Art, Habitat Restoration, and Education"

Stay connected with state TMN office news by joining the Texas Master Naturalist Listserv for conference details and other learning opportunities across the state during the year.

So, bring your curiosity and join us for an upcoming Advanced Training session–you never know which question will spark your next Texas Master Naturalist adventure!

Women in Nature: Ynes Mexia by Meade LeBlanc

Ynes Mexia found her passion for the environment in middle age when she moved to California and joined the Sierra Club, the California Botanical Society, and the Audubon Association of the Pacific. Excursions with these groups inspired her love of nature and plant collecting. She enrolled at the University of California, Berkeley to study botany at the age of 51 and collected plants in Mexico and Central and South America for the rest of her life.

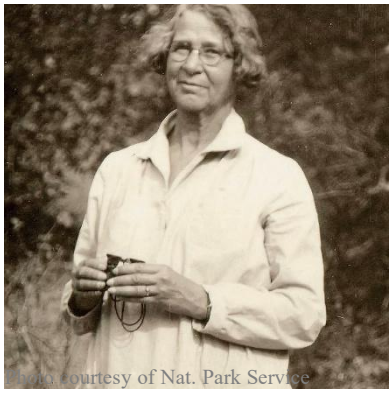


Photo courtesy of Nat. Park Service

Ynes Enriquetta Julieta Mexia was born on May 24, 1870, and spent her first nine years in Mexia, Texas. The town was founded on land granted to her grandfather, José Antonio Mexia, a Mexican general, in 1833. (Note to students of Texas history: Depending on which story you read, he was either “a Mexican hero for the Republic of Texas Army during the Texas Revolution” or “a traitor, who was executed for treason in 1839.” Both stories are true, because Mexia was originally a supporter of Santa Anna, and later fought on the side of Texas.)

Ynes had a privileged childhood, attending private schools in Philadelphia and Ontario, Canada. When not in school, she spent much of her time in solitude, reading, writing and exploring the outdoors. After she finished her schooling, she moved to Mexico to help on her father’s ranch and took over management after he died. A couple of failed marriages followed, the second of which also ruined the family business. That’s when she moved to San Francisco.

Ynes took her first plant collecting trip to Mexico on a group trip with Stanford in 1925. She quickly found out that she preferred to work alone and broke off from the group to collect independently. She collected over 1,500 specimens on this trip. One of them, *Mimosa mexiae*, became the first of many plants to be named after her. She got the funding she needed and started doing expeditions on her own. She once said, "My dryers get all filled up and still numbers of plants sit and look at me and announce that they are waiting to be collected. It is terribly trying to a greedy collector like myself."

Between 1925 and 1938, Ynes went on at least eight months-long collecting trips, including to Denali National Park and Preserve in Alaska, the Sierra Nevada mountains in California and Nevada, Ecuador, Peru and Mexico. She even travelled by steamship, canoe and balsa raft on the Amazon River, covering 3,000 miles in two and a half years to its source in the Andes.

She often traveled by herself or with just a guide or two, and spent months in the field, riding horseback, wearing pants, and sleeping outdoors. Needless to say, her behavior shocked many because she was a woman doing this work. She once wrote, “A well-known collector and explorer stated very positively that ‘it was impossible for a woman to travel alone in Latin America.' I decided that if I wanted to become better acquainted with the South American Continent the best way would be to make my way right across it."

Ynes was contracted by the California Academy of Sciences to collect plants for botanists at the Academy, and she became a life member. However, she did not enjoy handling the plants after she collected them, and so never described any of them herself. Fortunately, she had the assistance of N. Floy Bracelin, known as Bracie, a friend from a university field course, who curated the plants that Ynes collected on her trips.

Ynes preferred to document her travels in her own words and photographs. She was often invited to lecture about her travels, too. Accounts of her trips appeared in botanical society magazines and journals. She never finished her bachelor’s degree, despite taking classes on and off for 16 years, but botanists all over the world knew her name. She said, "I have a job where I produce something real and lasting."

She was one of the most prolific plant collectors of her time. Over her career she collected over 150,000 specimens. A new genus was named after her along with over 50 species. She identified over 500 plants. In 1938 on her last trip to Mexico she became ill and was diagnosed with lung cancer. She died shortly thereafter at age 68.

To this day, researchers use her collections, which can be viewed at the California Academy of Sciences. Portions are duplicated at the Academy of Natural Sciences, Philadelphia; Catholic University, Washington, D.C.; the Field Museum of Natural History, Chicago; Gray Herbarium, Harvard University; the University of California, Berkeley; and important museums and botanical gardens in London, Copenhagen, Geneva, Paris, Stockholm, and Zurich.

Ynes was unusual for an American botanical collector during her time. Not only was she a woman, but she was of Mexican heritage, and she was older. “Women were

actively dissuaded from doing that kind of work, because it was considered unfeminine and dangerous," says Vassiliki Betty Smocovitis, a professor of the history of biological sciences at the University of Florida. "You actually have to camp out, you couldn't wash your hair, you were living a kind of rough life, and that could be dangerous…. But, she was doing exactly the work that she wanted to do."

Bayside Regional Park: History, Updates and *What's Blooming*? by Sandy Parker

GBAC Native Plant Enthusiasts! Did you know that we have a native garden and on-going prairie restoration at Bayside Regional Park? If not, this article is for you!

The prairie consists of a half an acre. We are planting a variety of early successional native grasses in the prairie area, including Long-spike Tridens (*Tridens strictus*), Bushy Bluestem (*Andropogon glomeratus*), Splitbeard Bluestem (*Andropogon tenarius),* Little Bluestem (*Schyzacrium scoparium*), Knotroot Bristlegrass (*Setaria parviflora*), and Broomsedge Bluestem (*Andropogon viginianus*).

By planting native grasses, we are helping to build up the soil in the area. When the park was built all the top soil was scaped, leaving the remaining soil bereft of needed nutrients. So, prairie grasses to the rescue! Grass roots can extend very deep into soil, sometimes 12 feet or more. The roots will hold water and nutrients, thus building up the soil horizon.

Our next planting will be in October sometime. We will be planting gallon pot grasses in the prairie and some forbs for the garden. Come and join us!

Please email Sandy Parker at sap99@sbcglobal.net if you would like to come and help. She emails the group weekly and will let you know if our Friday workday is cancelled for weather.

We always welcome new volunteers. You will learn from some of our chapter's most knowledgeable plant experts like Martha Richeson and Cheryl Barajas! We normally meet on Fridays at 8:30 am, weather permitting. We have a very dedicated group of volunteers who perform both maintenance and planting and would love you to join us.

So, how did all this begin? In 2015 Stennie Meadours and Sandy Parker, along with Native Plant Society of Texas Clear Lake Chapter (NPSOT) members, learned about a new planned county park located at 4833 10th St in Bacliff from well-known native plant designer Mark Fox (now deceased). The property had been a Red Drum fish farm before Galveston County Parks obtained it. Mark, Stennie and Sandy decided it would be a perfect spot for a native garden and prairie restoration area.

In 2016, the county solidified plans to develop the park. In 2017, NPSOT and TMN members met with county personnel to review plans for the park and the potential for a native plant area. We got the green light to go ahead and explore options from both the County Parks and the Galveston Bay Area Chapter.

In 2017 Stennie Meadours obtained a 1974 report from Dr. Floyd Waller, a well-known botanist hired by HL&P Robinson Plant to perform a plant survey of the area. What an outstanding resource to have! A group of us updated all the plant names according to the USDA Plants database, https://plants.usda.gov/ and put all the plants into a spreadsheet.

We wrote a proposal for installing gardens and a prairie and submitted it to the county parks department. The wheels of organizations move slowly, but in 2019 we signed a Memorandum of Understanding (MOU) with the county! The MOU outlines the county's responsibilities and our chapter's responsibilities. We formed a steering and planning committee to begin work planning and planting the garden and prairie.

Patty Pennington, a former chapter member, developed our garden plans and Scott Buckel developed the prairie plans. Chapter and NPSOT members grew plants for both areas. The team decided only plants included in the Floyd Waller report would be planted. By doing so, the garden becomes a repository of the plants previously found in the Bacliff area! Have you seen all the development in Bacliff? Luckily our team was able to collect local seeds from the area and used many of them in propagating the plants for the garden.


Photo by Sandy Parker

A 12-ft-wide bed is planted with prairie grasses and forbs, and an 8-ft-wide bed is planted with pollinator plants. The garden is completely planted now with the main concept that we have something blooming in every season.

The park is open to the public with parking available near the community center. Two benches along the walkway provide a place to enjoy the garden, but no shade exists in the area. In addition to the garden, there is a senior community center and a playground for kids.

There are monthly updates about the garden, *What's Blooming at Bayside,* on our GBAC Facebook page. The garden was also featured in the April 2022 issue of *The Midden* in two articles by Laurinda Kidd. Check out the archives; then go see the garden!

Invasive spotlight: Multiple Ant Species – Part 2 by Madeleine K. Barnes

Here in Texas, we have 291+ species of ants. Many are native and beneficial insects that prey upon other insects, help disperse seeds, and collectively aerate more soil when making their nests than do earthworms, (wow!) and are important parts of our ecosystem. The preservation of certain native ant species is our best defense against the Red Imported Fire ant (*Solenopsis invicta*) and, hopefully, others, such as the next ant invaders: Crazy Tawny ants, Argentine ants, Pharoah ants, and Asian Needle ants (in the news recently).

Crazy Tawny ants (CTA), also called Raspberry Crazy ants (*Nylanderia fulva),* are originally from tropical South America - Brazil and Colombia - where they are serious pests. First identified in Houston in 2002, these ants are now found in 27 Texas counties and all states along the Gulf Coast. Their quick spread is largely due to people transporting materials (i.e., potted plants, landscaping material, hay or trash) that contain CTA colonies. CTA are called "crazy" for their rapid erratic movements.

Small, golden-brown to reddish-brown ants measuring about 2.6 to 3 mm in length, CTA have large antennae with no clubs and smooth and glossy body surfaces covered with dense hairs. (For reference, ¼ inch is ~6mm.) At their abdomen they have a small circle of hairs, called the acidopore, and no stinger. While they are stingless, they can inflict an uncomfortable bite. Reproductive males and females are similar in color to worker ants but are larger and possess wings. The queens are the largest and produce millions of larvae.

CTA form colonies - not mounds - under or within places that hold moisture - rocks, stumps, soil, leaf piles, potted plants, mulch or compost piles. Less active in cooler weather, CTA resume their normal activities during warmer periods, with activity peaking during summer, typically diminishing during the heat of the day.

These ants are omnivorous, feeding on practically anything, including other insects, larger animals and sugary substances. They tend aphids for their honeydew and feed on flower nectar and fruits. CTA in Colombia have caused chicken deaths by asphyxiation and attacked cattle around the eyes, nasal passages and hooves. Grasslands have dried out because of their aphid farming habits and ant masses covering the ground can impact ground- and tree-nesting birds and other small animals. They can even displace Red Imported Fire ants.

In areas infested by CTA, large numbers have accumulated in electrical equipment causing short circuits, equipment failure and clogging switching mechanisms. Their annual rate of spread by ground migration is not known. This is an incredibly aggressive and destructive pest species, known to rapidly colonize and take over various habitats, including human-built establishments. Homeowners fear infestations because eradication is nearly impossible. The CTA does not respond well to most insecticides or pesticides, especially those useful for indoor infestations. A professional exterminator is necessary to deal with an infestation of this species. If you believe you have found a CTA crazy ant, please report this species: https://www.texasinvasives.org/action/report_detail.php?alert_id=6. (Photo courtesy of Texas A&M University.)

The next invasives, **Argentine ants** (*Linepithema humile)* are light to dark brown medium-sized ants with slender, shiny, smooth bodies. Winged male and female reproductives are produced during the spring. They may mate in the nest because mating flights have never been observed. Worker ants are 2-3 mm long and monomorphic. Queens are larger (4-6 mm long) and with a few workers, a queen may start a new colony of her own. Larvae appear the same as other ants. Due to physical similarities, Argentine ants may be confused for Pharaoh ants.

The Argentine ant is also a tropical native to Argentina and Brazil. Found in New Orleans, Louisiana in 1891, it spread to Arizona, California, Illinois, Maryland, Missouri, Oregon, Texas, and Washington. The ant is scattered throughout central and eastern Texas and has been identified in the Lower Galveston Bay watershed in Harris County. It is common in urban settings but has also become established in rural areas.

Argentine ants are pests largely in urban areas due to the availability of water. This ant lives in back yards with

high densities associated with landscape features (favorable microclimates), such as potted plants, walkway bricks or stones and near plumbing (pipes, sinks, sprinklers). They enter homes through cracks and other spaces, in search of food or water. They also nest in tree cavities and rotting wood. Like CTA, Argentine ants tend plant pest insects for their sweet honeydew secretions and protect them from natural enemies.

Argentine ants are difficult to control within structures on a long-term basis. When colonies are eliminated from a building, new colonies quickly move into the area. (Photo courtesy of Wikimedia Commons)

The next invader is the **Pharaoh ant** (*Monomorium pharaonic),* also called the Sugar ant, with a tiny body measuring from 1.6 to 2 mm long. The workers are monomorphic in size, color varying from golden yellow to reddish-brown, and have a life span of about 70 days. Reproductive males (black in color) are the same size as the workers but are rarely found in the nest. The queens are 4mm in length and slightly darker than the workers, living for roughly a year and laying up to 35 eggs per day. Larvae are typical looking. Workers develop in 36 days, and winged males and females develop in 44 days. They are not known to bite or sting.

The Pharaoh ant is probably native to Northern Africa and has become one of the most widespread ant species in the world, found on all continents except Antarctica. The Pharaoh ant can be found throughout the United States, especially in the south. As a tropical species, the ants have been found in northern states, nesting within heated buildings. The Pharaoh ant is the most commonly occurring indoor ant in Texas and is attracted to sweet and greasy foods. (Photo courtesy of Wikimedia Commons)

Additionally, this species of household ant is the most difficult to eradicate or control as ants can nest almost anywhere, inside buildings and in cracks and crevices. They can nest between sheets of paper or layers of linens inside houses, so they are also a pest in hospitals and nursing homes.

Colonial species adaptations of the CTA, Argentine ant, and Pharaoh ant are the same, each species living cooperatively within various sized nests, from those with one queen (small) to enormous colonies consisting of several nests, numerous queens and thousands of workers covering a large area. Members move freely between their own species' colonies without any antagonism or aggression; therefore, population losses due to fighting are low. Another major adaptation is colonial distribution. A new colony can be established from as little as one queen and 10 workers. Forming colonies in this way is called budding and allows for much farther and faster distribution of these invaders.

The most recent invader now being sighted in Texas, **Asian Needle ants** (ANS) (*Brachyponera chinensis*) are important to identify before you get too close. These can cause **life-threatening allergic reactions** in humans and pets, including anaphylaxis and/or localized pain, redness and hives.

Asian needle ants (ANS) are small, shiny, dark brown to black insects measuring about 5 mm in length with the end of their antennae and legs a lighter orange or brown color. This species can be confused with similar species in the eastern U.S., making them more challenging to positively identify. Living in wooded areas like forests and parks, nesting under logs, debris, stones, landscaping timbers, pavers, wood chips and mulch, ANS can invade populated areas near homes and buildings using these same materials. These ants do not form easily visible foraging trails, and their population normally increases in warmer months, often appearing as early as March. If gardening or working outdoors, gloves, long sleeves, pants, and socks are suggested protection from possible stings. (Photo courtesy of Wikimedia Commons)

Originating in China, Japan and Korea, they were first found the U.S. in the 1930's. Now detected in at least 21 U.S. states, they are concentrated in the northeastern and southeastern regions.

These invasive ant species impact both natural and agricultural ecosystems; they can outnumber and outcompete other insects when foraging for food and habitat, displace native ants, and disrupt natural food webs and cause local extinction of native ants. They also impact us in numerous ways. For ant management protocols, please see these websites:

- https://texasinvasives.org/pest_database/index.php
- https://urbanentomology.tamu.edu/urban-pests/ants/

I hope this has given you brief descriptions of invaders that are having a huge impact on our natural resources and our agriculture. It certainly has made me more aware of how destructive and pervasive invasives can be in the environment. Learn and share the knowledge.

Squirrel climbs feeder
Looking for an easy meal
Back door slams, scared off.

By Beth Frohme

Binoculars rise
Hawk watchers gasp together
5000 Broadwings

By Verva Densmore

TMN Travels: Preserving Spain's Native Flora by John Jons

Last spring, I had the opportunity to visit the botanical gardens in Valencia and Barcelona, Spain. What surprised and delighted me was that both gardens share a common mission: preserving and promoting native flora.

These two historic institutions are quietly leading an inspiring conservation movement, one that echoes the core mission of the Texas Master Naturalists: to protect and promote native biodiversity through education, stewardship, and citizen science.

While Spain and Texas may differ in climate, geography and species, they share strikingly similar conservation challenges: habitat loss, invasive species, and the fading public memory of native plants.

The Botanical Garden of Valencia: A Living Archive of Mediterranean Biodiversity

Tucked within the lively cityscape of Valencia lies a centuries-old horticultural gem, the Jardí Botànic de la Universitat de València, or the Botanical Garden of the University of Valencia. Founded in 1567, it began as a medicinal herb garden and has since grown into a dynamic center for plant conservation, scientific research and environmental education.

At the heart of the garden's mission is the protection of native Mediterranean flora, particularly endangered and endemic species. The garden now cultivates over 4,500 plant species, including more than 800 Iberian Peninsula natives, making it a vital reservoir of genetic diversity. Its Seed Bank of Mediterranean Species collects, catalogues and conserves seeds from rare and threatened plants, ensuring their survival and availability for future habitat restoration.

Equally impressive is the garden's commitment to public engagement. It offers workshops on native gardening, guided tours focused on drought-tolerant landscapes and citizen science programs that involve the public in plant monitoring and data collection. This hands-on, inclusive approach empowers everyday people to become stewards of their local ecosystems.

The Botanical Garden of Barcelona: Where Science Meets Culture and Climate

The Jardí Botànic de Barcelona sits in a public park, high on Montjuïc Hill, offering sweeping views of the city and the Mediterranean Sea. Designed as a landscape of global Mediterranean-climate regions, the garden showcases ecosystems from the Mediterranean Basin, California, Chile, South Africa, and southwestern Australia.

Yet it is the garden's dedication to preserving Catalonian and Iberian flora that stands out most. It houses more than 1,500 Mediterranean species, many adapted to arid and semi-arid conditions–plants that face growing threats from urban development, climate change and wildfires, challenges we Texans know all too well.

Through its collaboration with the Catalan Plant Conservation Strategy, the garden is deeply involved in habitat restoration, especially in degraded coastal and mountain areas. It also plays a vital role in ex-situ conservation, reintroducing native species into protected habitats and supporting long-term ecological monitoring.

Perhaps most unique is how the garden connects native flora to cultural heritage. Informational signage includes not just scientific names, but also local Catalan and Spanish names, often paired with traditional uses in medicine, cooking, and folklore. This blending of botany and cultural history gives the conservation effort deeper meaning, reminding visitors that to preserve a plant is also to preserve a piece of cultural identity.

Though Spain's eastern coast and the Texas Gulf Coast lie an ocean apart, the conservation ethos of their botanical gardens feels like familiar ground. Both Valencia and Barcelona demonstrate that native plant protection isn't a luxury, it's an ecological and cultural necessity. These gardens are not simply collections of beautiful plants; they are living laboratories, training centers for citizen scientists, and vital tools for building climate resilience. They model how biodiversity preservation can be practical, local, and profoundly hopeful.

As we turn our attention to our own Texas prairies, coastlines, and woodlands, we can take heart–and take notes–from our Mediterranean counterparts. The work of native plant conservation continues quietly, steadily, and necessarily… one species at a time.

Connections: A Tale of Two Birds: Whoopers and Spoonies by Diane Humes

Fall bird migration has begun and, for us along the Texas coast, we await the return of whooping cranes *(Grus americana)* to their wintering home at Aransas National Wildlife Refuge. Five-foot-tall white birds with red caps and long, dark, pointed bills, they are secretive and wary, nesting in vast northern wetlands, omnivorous, but fond of blue crabs on their coastal wetland wintering grounds. Parents mate for life and usually have one chick each year, forming a family unit until next breeding season. In flight, they hold their heads out straight in front of them, with feet trailing behind and black wingtips showing. Not to be confused with wood storks, great egrets, or a white morph great blue heron, whoopers are 30% larger than any of those.

Photo courtesy of TPWD

Native to North America, former whooper populations probably never exceeded 10,000 birds, but by the mid-20th century, the species nearly became extinct before biologists even learned the locations of the nesting and breeding sites; their numbers had plummeted to 16 birds, due to habitat loss and hunting. Birds now number between 600 and 1,000 individuals living in the wild in separate flocks in Texas, Florida and Louisiana. Much more is known today, thanks to heroic and dedicated work by many people from US Fish and Wildlife Service, Canadian Wildlife Service, National Audubon Society and International Crane Foundation.

The Texas whooping cranes (our birds) are the last remaining wild, migratory flock of 557 birds which are, as of this writing, still on the nesting grounds of Wood Buffalo National Park in northern Alberta and the Northwest Territories of Canada where adult cranes nest and raise this year's cinnamon-colored chicks. The families will soon begin returning to Aransas National Wildlife Refuge. Watch for their arrival back to Texas in October and greet the new chicks! Boat tours to see the whoopers run from mid-October until April.

Louisiana historically was home to migratory and non-migratory whooping crane flocks and probably had the largest populations in the country, but its bird numbers dwindled severely due to wetland loss and unregulated hunting. The entire remaining population was scattered in a 1940 hurricane and the sole remaining bird relocated to Aransas in 1950. In 2011, state officials re-introduced birds from the International Crane Foundation's captive breeding population to re-start the flock, which has now grown to over 70 individuals with a few nesting pairs. Birds have expanded into southeast Texas and even tried nesting.

If they keep moving west, we might have the possibility of watching whoopers closer to home!

A third whooper flock, introduced in Florida by the International Crane Foundation, has birds that migrate to nesting grounds at Necedah National Wildlife Refuge near the International Crane Foundation in Baraboo, Wisconsin. Initially, some of these birds followed ultralight aircraft to learn the migration route, but they now follow experienced birds for their journey. This flock has also been quite successful, and having 3 separate flocks ensures against possible future disasters.

Whoopers have been saved from extinction but remain listed as "endangered". To be downlisted to "threatened", according to the Whooping Crane Recovery Plan, there must be 40 nesting pairs in the current (Aransas) population plus 25 nesting pairs in two additional locations, or 100 nesting pairs at one location

and 30 at an additional location. The birds are doing well, but they're not there yet. We hope for further good news soon when the migrants return home to be counted.

Taxonomists and geneticists are busy people and keep finding new data to explore, so the actual number of birds (and their affiliations) keeps changing; however, there are probably about 11,000 bird species on Earth and of these, possibly 2319 can be found in North America. So, if you really NEED to see LOTS of different birds, you will have to TRAVEL, as my husband and I did.

In the fall of 2023, we went to Thailand for the spectacular fall raptor migration of hawks, eagles and others at Khao Dinsor and our guides found us a bonus bird – one small spoon-billed sandpiper busily digging in the salt flats, surrounded by at least 30,000 other birds: we would never have found this busy little bird without our local guide who knew exactly where to look. Sighting this bird was special, but what do hawk watchers know about shorebirds? Not too much.


Photo courtesy of Wikimedia Commons

Spoon-billed sandpipers (*Calidris pygmaea)* affectionately called "spoonies," are small and cute and critically endangered shorebirds, about 5-6 inches long with pale brownish-gray backs, white bellies and black legs. During breeding their heads are reddish-brown and breasts streaked with black. The most distinctive feature is their spatulate bill, which they swing back and forth in the mud while feeding in shallow water.

Teetering on the brink of extinction, spoonie population numbers have been in free-fall for more than 15 years due to habitat loss along their migratory stopover sites and hunting and trapping at their winter homes. A 2016 estimate suggests that a maximum of 228 breeding pairs remain on planet Earth.

Spoonies fly 8000km between their winter sites along the coasts of Thailand, Vietnam, and Myanmar to the coastal tundra of Siberian Russia where they nest. Making this incredible journey twice a year requires stopover sites for rest and refueling; unfortunately, about 65% of these sites have been claimed by human development. As the drop in spoonie numbers became known, wildlife biologists also realized that the remainder of spoonie coastal habitat was slated for development.

Bird lovers have not been idle, however. A captive breeding program got underway in the U.K., in cooperation with scientists in Russia, creating a spoonbill ark that has now hatched chicks! Also, key migratory shorebird habitats are now protected along the Yellow Sea coast as World Heritage Sites, particularly Tiaozini in China, a vast and vital mudflat for half the spoon-billed sandpiper population each fall. We certainly hope it helps.

These two birds, one large, one small, and living half a world apart, each inspired people to take action to save them from extinction. Decades of effort have paid off. However, since 1970, wildlife populations world-wide have declined by 73%. In 2019 perhaps one million species were considered threatened; furthermore, some think that Earth's oceans may be effectively depleted of fish by 2048. These are sobering thoughts, because human actions are the cause and will need to be the solutions.

Scientist and naturalist Edward O. Wilson (1929 – 2021) proposed that to manage sufficient habitat to reverse the species extinction crisis and ensure the long-term health of our planet, humans would need to set aside half of Earth's land and seas for nature. Read more in his book, *Half-Earth*, about the specifics of how this might be done. He said, "Look closely at nature. Every species is a masterpiece, exquisitely adapted to the particular environment in which it has survived. Who are we to destroy or even diminish biodiversity?"

The human population reached one billion in about the year 1800 for the first time in history and doubled to two billion by 1925. People now number over eight billion and are expected to exceed ten billion by 2050, then possibly reach a plateau and start to reduce in numbers after 2100. If it took 100 humans about 100 years to save one species – whoopers – then it will take ALL ten billion of us consciously doing something to save one million species!

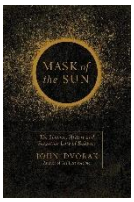
Aldo Leopold formulated the Land Ethic which placed man within nature and recognized the problem of species loss when he wrote, "The first rule of intelligent tinkering is to keep all the pieces." John Muir advocated for wilderness preservation and said, "Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul alike."

So, nature needs people and people need nature, as our friends the whoopers and spoonies may have been trying to tell us for quite some time. Good thing Texas is well-stocked with Master Naturalists to help put the pieces back together. Perhaps it starts here.

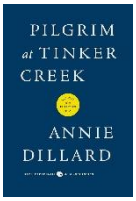
Thanksgiving is here
What should I be thankful for?
Cats, dogs, friends and wine!

By Bets Anderson

Heritage Book Study by TJ Fox



The Heritage Book Study Group has just finished a two-month discussion of *Mask of the Sun* by John Dvorak, an interesting book about our human history with solar eclipses.



Beginning in November we will be discussing Anna Dillard's book *Pilgrim at Tinker Creek*. Dillard likens her book to Thoreau's book *Walden*. If the reviews are any indication, we will find a wide diversity of opinion about the book. Here is a taste of the reviews.

Definite opinions

- An exhilarating meditation on nature and its seasons.
- A personal narrative highlighting one year's exploration on foot in the author's own neighborhood in Tinker Creek, Virginia.
- I can't understand why this book won the Pulitzer Prize.
- Nice feeling after reading the book.

Mixed feelings

- Amazing use of words, descriptive, beautiful. But nothing happens. I gave up, wanting a story. At page 23 I began to wonder where it was going.

As concerns us as Texas Master Naturalists

- Her style is full of wild exaggerations, **but the natural history she points out is fascinating**. And…
- Dillard's characteristic way of engaging with the world is an intoxicating combination of **hard biology** and religious or mystical awareness, the numinous and the natural in harmony.

Obtain a copy of the book or listen to a recorded version, form your own opinion and join us on the first Monday of November and December for lively discussion.

The Midden

The Midden is published bimonthly by the Galveston Bay Area Chapter - Texas Master Naturalists to inform, communicate and educate chapter members and the community about our natural world and serve as an archive of chapter activities. To submit an article or join the team, please contact Diane Humes, treimanhumes@gmail.com.

Texas AgriLife Extension Service
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The Midden is posted on the GBAC-TMN chapter website: https://txmn.org/gbmn/ two weeks prior to chapter meetings. Archived issues also on chapter website. If you prefer to receive *The Midden* in hard copy and are not currently receiving it, please contact the extension office at 281-534-3413.

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The Midden Deadline

for the next issue

October 27

Galveston Bay Area Chapter, Texas Master Naturalist

DRAGONFLY BINGO

Print name:_____

1. Wetland Workday ☐	2. Water Quality ☐	3. Animal Conservation or Research ☐	4. Chapter Meeting in Person ☐	5. Beaches & Bayous ☐
6. Submit a social media post ☐	7. Chapter Outreach ☐	8. Citizen Science ☐	9. HEB Pollinator Garden ☐	10. Board or Committees ☐
11. Watch a TMN Tuesday Video ☐	12. Prairies ☐	TEXAS Master Naturalist	13. Submit an item to the Midden ☐	14. Camp Wild ☐
15. Heritage Book Club ☐	16. AgriLife Extension/ Sea Grant ☐	17. Recycling ☐	18. Youth Education ☐	19. Attend a chapter AT ☐
20. Send Pictures to SmugMug ☐	21. Volunteer at a nature center ☐	22. Bird Survey ☐	3. Animal Conservation or Research ☐	23. Gardens ☐

DON'T FORGET TO LOG THOSE HOURS INTO VMS

Dragonfly BINGO

Submission Link QR Code

GBAC Dragonfly Bingo entries due Oct. 31 – play, try something new, and you could win at our December meeting!

Level 1: Get four corners or a straight bingo – a completed line horizontally, vertically, or diagonally.

Level 2: Form a T or an X on the bingo card.

Level 3: Create a frame around the edge of the card or fill in the entire card.

We've added a new twist to Dragonfly Bingo! If you've marked 5 or more squares, you can now submit your card into Level One. Plus, the card with the most squares marked will earn a prize!

October and November Activities

ADVANCED TRAINING OPPORTUNITIES

Chapter Meeting – October 2; Coastal Geology
Presenter: Daniel Imrecke
6pm Social, 6:30pm Meeting, 7pm Speaker
At Extension Office* and via Zoom; 1 hour AT

What the Shell? Ecology of Critters Living in Top Ten Shells
Tuesday, Nov. 11 at 6:00pm via Zoom
Presenter: Cindy Howard

Ongoing

Heritage Book Study Group
First Monday of every month via Zoom ; 2 hours AT
Contact: TJ Fox, tj.fox39@gmail.com
See Pg. 9 for meeting dates and books.

STEWARDSHIP OPPORTUNITIES

For a complete list of stewardship activities, see our chapter website, https://txmn.org/gbmn/what-we-do/.

EDUCATION - OUTREACH OPPORTUNITIES

For a complete list of education - outreach activities see our chapter website, https://txmn.org/gbmn/what-we-do/.

CHAPTER INFORMATION AND RESOURCES

Calendar - https://txmn.org/gbmn/gbac-events-calendar/
Includes meetings, AT and volunteer activities

Board - https://txmn.org/gbmn/board-of-directors/
Contact information for the Board of Directors. **Board Meetings** – usually first Tuesday of each month (via Zoom), verify on the calendar

Committees - https://txmn.org/gbmn/board-of-directors/
Contact information for the Committee Chairs

Volunteer Service - https://txmn.org/gbmn/volunteer-service/ Volunteer Opportunities

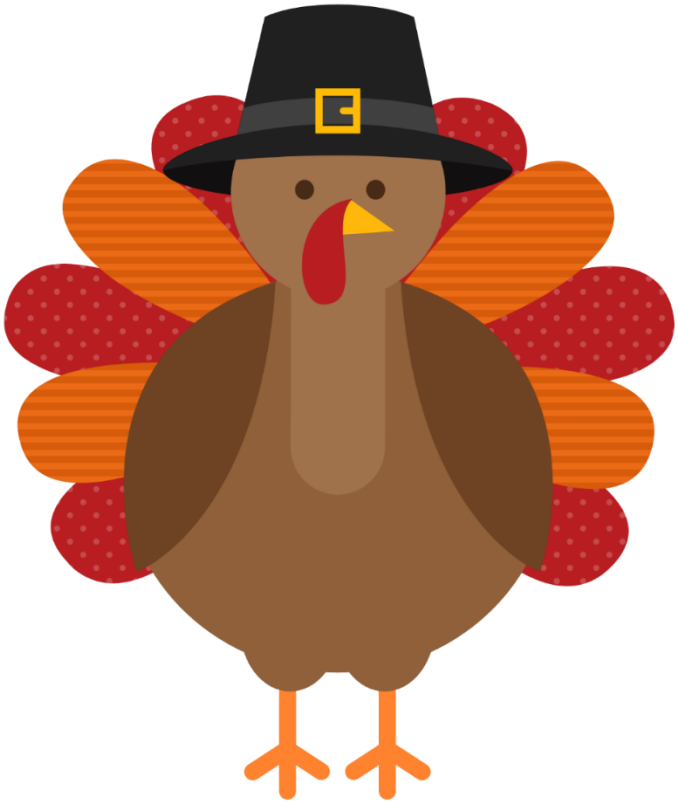
Advanced Training - https://txmn.org/gbmn/advanced-training/

Midden Archives - https://txmn.org/gbmn/ Go to The Midden on the top menu.

Facebook - https://www.facebook.com/gbactmn

TEXAS A&M AGRILIFE EXTENSION

Sea Grant Texas
Science At Work For Texans
http://TexasSeaGrant.org
Master Naturalist ™



Happy Thanksgiving

*Extension Office = Texas A&M AgriLife Extension Service – Galveston County Office (Carbide Park)

GALVESTON BAY AREA
MASTER NATURALIST