



Wild turkeys by Jason Miles

Table of Contents	
Wetland Wanderings	2
Prairie Ponderings	3
Meet Our Partners: ABNC	4
Nest Boxes for Owls	5
State Meeting 2020 Highlights	6
State Meeting Award Winning Photos	7
State Announcements	8
AT Zooming Along	9
Safety Minute Asp Caterpillars	9
Wading Birds Top Ten	10
Sun Grant Colleges	12
Heritage Book Study - Review	13
Texas Fun Facts	14
Dec/Jan Activities	15

President's Corner by Susette Mahaffey

As this year comes to an end, we can look back at the many accomplishments that the chapter and our members have achieved this past year. Although we have not been able to log the number of volunteer service hours that we have in the past, we have been able to make forward progress and touch the environment and the lives of those around us in many positive ways.

We have two new committees that have formed and met several times via Zoom. The Emeritus Committee was formed to reach out to former members of the chapter and provide a means for them to become re-engaged with the chapter. So far, we have met through Zoom meetings. We hope to have lunch programs at Carbide when we can return to more normal times. The Diversity & Inclusion committee that likes to call themselves the A team is working to bring people of different backgrounds and interests into the chapter. Diversity and inclusion are areas that our state sponsors are asking each chapter to address, and we have stepped up to the challenge!

COVID-19 has changed the way we do business and made much of our work more difficult. The beginning of the class of 2021 has been postponed until next fall. The Beach Hero project will be going virtual this year, and the team is making a video to share with schools and other groups. Camp Wild has been postponed until 2022.

The December meeting will be held via Zoom. We may not be together to share great food, but we will be able to share fun and friendship. We will have a business meeting, elect officers for the 2021 year, have a year in review video, talk about highlights from this past year and give out Treasures of the Bay awards. We hope that all of you will put the meeting on your calendar for December 3rd.

I want to thank all of you for your support and willingness to help the chapter and me get through a difficult year. We have depended on those of you with knowledge of the history of the chapter to help make decisions. I give special thanks to the board members for their support and tireless efforts! The year 2021 will mark the 20th anniversary of our chapter, and plans are in the works to make that year a time of celebration! It will be a time to recognize those who have gone before us, the vision of our founders and the work that has been done. We are truly a remarkable group of people who share a love for the natural world around us!

I go to nature to be soothed and healed, and to have my senses put in order. ~John Burroughs



Next Chapter Meeting
December 3
Annual Awards Celebration and Officer Election
Via Zoom

Wetland Wanderings: Three Favorite Plants by Lana Berkowitz

There are approximately 40 wetland plants used regularly in our restoration projects. I'm still learning the names from Diane Humes, a longtime Wetland Restoration Team member, and Colleen Ullibari, ecological restoration program coordinator for Texas A&M AgriLife Extension Service.

Here are three shallow-water perennials I hope will stick in my memory because they have small, pretty flowers.

Echinodorus rostratus (or *bertero*) aka burhead

The small white flowers with three petals on branched panicles bloom from July through October. The seed heads are taller than the leaves, which are broadly ovate. Immature leaves are more linear and submerged in its freshwater habitat.



The flowers produce bur-like fruit, leading to its common name burhead. About this time of year, wetland volunteers often clip the seed heads for cultivation. The plants are usually about 2-feet tall, so they are easy to spot.

Burhead is a member of the water plantain family (Alismataceae).

Sagittaria longiloba aka narrow-leaf arrowhead

S. longiloba also has small white flowers with three petals, but the plant is noted for its triangular, linear leaves. The arrow-shaped leaves seem to have "long skinny ears" because the leaves' basal lobes are commonly twice as long as the blades.

It blooms from April through November.

The aquatic herb grows 1 to 3.5 feet tall in fresh water and often forms colonies. It is also part of the water plantain family.



It is sometimes called duck potato because native Americans and early settlers used the tuberous roots of the various arrowhead plants as food.

Hydrolea ovata aka blue waterleaf

Small, bright blue flowers distinguish *Hydrolea*, which blooms August and September. Flower and buds grow in clusters at the end of stems. Purplish stamens extend beyond the petals giving the flowers a dainty appearance.



The short leaves are egg-shaped and hairy. Beware: The stems also are hairy with thin, sharp spines. It gets up to 3 feet tall. The plants' rhizomes like to form clusters around wetland edges. *Hydrolea* is a member of the waterleaf family (Hydrophyllaceae).

Prairie Ponderings: Rewilding in the Year of the Bison by Diane Humes

In 2007, Armand Bayou Nature Center Stewardship Coordinator, Mark Kramer, envisioned an event inviting members of the public to plant native prairie species and experience the great satisfaction of prairie restoration at ABNC. Imagining the potential chaos of 100+ enthusiastic volunteers planting 2000+ plants before lunch, he dubbed it "Prairie Pandemonium".

Held at the most beautiful time of year on the prairie when prairie plants are at their peak and the weather is most pleasant, Prairie Pandemonium has proved hugely popular. Over the last 14 years of Prairie Pandemonium, volunteers have easily planted > 40,000 grasses and forbs (pretty flowers) across ABNC's 900 acres of coastal tallgrass prairie. In the world of modern prairie lands, where less than 1% remains, with the other 99% altered in some way by human activities, ABNC's large prairie acreage is exceptional.

The main factor in prairie destruction is the plow, by which prairies are quickly converted to croplands. Plowing destroys the deep root structure of prairie plants - features that enable them to withstand drought, wildfire and the grazing and wallowing of large mammals. Prairie grasses and forbs are the primary producers - converters of solar energy to food - for the main ecosystem of the North American continent since the last Ice Age.

Armand Bayou Nature Center's land was never plowed.

A prairie is a vital and vibrant web of life supported by its grasses and forbs, containing meadowlarks, snakes, rabbits, mice, bobcats, coyotes, bison, deer, frogs, prairie dogs, prairie chickens, black-footed ferrets, swift foxes - the list goes on. Many prairie enthusiasts theorize that a prairie cannot fully function without all the organisms with which it evolved - certainly not without its keystone species, which declined along with the prairies.

Keystone species may be predators, prey, ecosystem engineers, mutualists, or plants and may not be the most numerous, but are of major importance to the environment. They may not be noticed until they go missing. Prairie keystone species are prairie dogs and bison, so it follows that a true prairie restoration requires "rewilding" for full effect, and many parks in the US and Canada are re-introducing bison herds and allowing them room to roam - as much as possible.

Follow this logic all the way back to the Pleistocene when grasslands with large herbivores covered half the Earth and you might want to bring back older species, such as woolly mammoths! In Siberia, Sergei Zimov, geophysicist, has observed that, while grasslands evolved with mammoths, bison and wild horses, the Russian steppe is

now covered with mossy tundra - not grass - and warming fast. He postulates that large herbivores are needed to restore the grassland, so he and his son, Nikita, are working to reintroduce major herbivores to "Pleistocene Park", a 160 square kilometer reserve. They are determined to reverse the warming and thawing of the permafrost and thereby prevent future releases of the vast stores of methane, for now, frozen underground.

Restoration results from Pleistocene Park since 1988 have been incredibly positive. Initially using a bulldozer ("large herbivore mimic") to knock down trees and shrubs, grasses grew, shrubs declined, and soil temperatures decreased. Now Sergei and Nikita have imported 100+ herbivores, including reindeer, Yakutian horses, moose, bison, musk oxen, yak, Kalmykian cows and sheep, to trample and graze inside a 20 square kilometer fenced area. They hope to add many more large species - possibly even woolly mammoths - to restore the grasslands to resemble the Pleistocene environment. <https://pleistocenepark.org/>



Photo courtesy of Pleistocene Park Foundation

Woolly mammoths have been extinct for over 4000 years - how can they even think this? Imaginative Harvard University geneticists are working to re-create actual living woolly mammoths and intend to install them in Pleistocene Park someday. They are serious about the prospects, so hold on and wait for the news. <https://reviverestore.org/>

ABNC has no woolly mammoths, only a very small herd of 2 bison that do not roam; it is down to humans to do the work. Fortunately, ABNC has a large army of devoted volunteers in this Year of the Bison. This year's Prairie Pandemonium event, spread over 2 days to allow for social distancing, was filled up with enthusiastic humans covering the prairie with plants. In trying to imagine herds of grazing, trampling, wallowing bison, I wonder what we could do with woolly mammoths?

Meet Our Partners: Armand Bayou Nature Center by Meade LeBlanc

Imagine a place where the bison roam, prairie plants bloom, and alligators thrive. Imagine that the place has our historically important ecosystems represented: wetlands forest, marsh, and Texas tallgrass prairie. Imagine that this place is right in the middle of the fourth largest metropolitan area in the United States. By now, you probably know that the place is Armand Bayou Nature Center, right in the Galveston Bay neighborhood. Armand Bayou has over 2,500 acres and is home to more than 370 species of birds, mammals, reptiles, and amphibians. Their mission is: "Through preservation and education, we strive to reconnect people with nature."

The land was not always a nature center, of course. Like other land nearby, it was first settled by Native Americans, as far back as 8,000 years ago. Excavations have found pottery, arrowheads, flints, and shell middens (trash piles) in the area. Hmmm. The name of our newsletter is the Midden, but we are certainly not a trash pile. The newsletter might be better characterized as a collection of items. The Akokisas lived in the area, hunting and fishing, until the mid to late 19th century.

The early European settlers who arrived in the mid-19th century also hunted and fished in the area. Farming also took place, and goods were floated to market in barges down the bayou. Later cattle ranching and preserving land for hunting were added to the mix by area residents.

Things were pretty quiet until NASA started developing land for what is now called Johnson Space Center, and that brought lots of people, jobs, and the related residential and commercial development to the area in the early 1960s. Armand Yramategui, a visionary conservationist, saw the need for parks, particularly along bayous, and his efforts were successful in 1974, when Armand Bayou Nature Center was incorporated. Sadly, Mr. Yramategui was not alive to see that event, but the nature center and bayou were named for him.

Armand Bayou features a rich array of activities and attractions for visitors of all ages and abilities, including an education center, children's discovery native plant garden and a re-creation of a 19th century farm complete with farmhouse, garden, pole barn, and outbuildings. There are trips galore: night hikes, pontoon boat tours, kayak tours, photo hikes, firefly hikes, owl prowls, and bat hikes. ABNC hosts special events throughout the year such as the Martyn Farm fall festival, Christmas bird count, and a pollination celebration. Due to current COVID-19 restrictions, the list of activities and resources available is in a state of flux, so it is best to keep an eye on their website to see what is being offered.



Preservation activities are ongoing, and there are ample opportunities to get your hands in the dirt. You can be part of a team to restore the prairie, by planting wildflowers and native grasses. Or you can help in the Martyn Farm garden, if tamer vegetation suits your fancy.

For those who want to get outdoors at night with a small group of visitors, there are socially-distanced and mask-wearing guided night hikes which showcase the wonderful nocturnal treats on display, such as bats, owls, coyotes, armadillos, and fireflies. I especially enjoy looking for wolf spiders, whose emerald eyes shine back at you from the Prairie Platform when you place flashlight on the side of your head by your eyes. Another fun find is "glow in the dark" lichen, obviously only visible at night.

There are many other ways that volunteers help support the center, from maintaining equipment to maintaining documents in the library to organizing events. Last year there were over 300 active volunteers.

Armand Bayou is truly an oasis in the middle of our urban/suburban landscape. If you haven't been there, or haven't been there lately, give yourself a treat and enjoy some moving meditation in nature, or even give forest bathing a try! And if you are looking for a variety of volunteer opportunities, check their website:

<https://www.abnc.org/volunteer>

Nest Boxes for Owls by Doris Heard

(originally printed in *The Midden*, January 2003)

Several years ago, my husband built a screech owl nest box from some vague directions given to me during a brief conversation with a fellow birder.

We selected a suitable tree - large, in a wooded area, little foot-traffic, easily seen - and attached the box about 15 feet up.

What a nice surprise when, only a few weeks later, we noticed a red-phase screech owl peeking its head out of the nest box!

Every Spring the owl returns; we have thoroughly enjoyed watching its fledglings adapting to the ways of the world.



Photo by Ben Hulsey

Last year we put up another nest box on the opposite side of our "soon to be occupied by a grey-phase owl" box.

Building a nest box

Because screech owls are common in this area and adapt readily to nest boxes, you might enjoy building your own. The U.S. Fish and Wildlife suggests the following dimensions for the nest box:

- Floor 8 inches X 8 inches
- Height 12 - 15 inches
- Entrance hole diameter 3 inches,
height 9 -12 inches
- Placement 10-30 feet up the tree

Installation

Install your nest box as soon as possible. Give the screech owls time to find it before they begin nesting in early Spring.

If you have a birdbath, watch for the screech owls to use it around dusk. When you are out and about around sunrise, listen for their soft, low calls.

Addendum to original:

The photo is from Ben Hulsey, Houston Audubon, who says, "The owl box in the photo is also a favorite. I have one in the front yard and one in the back and always have one pair of tenants and often have two. The large, square opening not only seems to be appreciated by owls, but also makes it much easier for humans to see them." <http://www.owlshack.com>

Doris adds: Cliff & Julie Shackelford are professional biologists living and working in Texas. Cliff is an ornithologist and has published widely on birds, including the book *Hummingbirds of Texas* by Texas A&M University Press released in 2005. Julie works for a non-profit land conservation organization. They are both avid birdwatchers who enjoy traveling.

"Cliff has been making *Owl Shack* owl houses since graduate school, but really got started during Christmas several years ago when we made over 35 as gifts for officemates. These owl houses were such a hit that folks started to order more for family and friends. And the interest kept growing and growing so our hobby has gone gangbusters. The design has evolved over the years to what we believe is the best owl house ever. Every *Owl Shack* owl house is handmade by us in our garage. They are made out of a mix of new and retired fence wood. The old wood is perfect for owl houses – it still has considerable strength and integrity, it's lighter for mounting, and reusing it keeps the wood out of the local landfill. Best of all, the owls love it." say Julie and Cliff.

Editor's note: If you prefer to do it yourself, the National Audubon Society provides plans.

<https://www.audubon.org/news/how-build-screech-owl-nest-box>



Photo courtesy of Audubon.org

State Meeting 2020 Highlights by Diane Humes

In my time as a Texas Master Naturalist, I have probably attended about half of the 20 annual meetings, including this year's amazing virtual meeting.

In the early years, we traveled to meetings at outdoor locations in central Texas - Mo Ranch (Hunt), Camp Allen (Navasota), T bar M Ranch (New Braunfels) - then switched to more urban settings and resorts - San Antonio and Marble Falls - as attendance grew. This year's gathering was planned for a large hotel along the freeway in Katy, practically in our backyard. As in years past, we would have had opportunities for field trips (most likely our chapter members would have led some!) - probably the most memorable and instructive portions of the meetings.



Texas Master Naturalist | **2020 VIRTUAL Annual Meeting**

Nevertheless, the 2020 virtual meeting, spread out over 5 days with 93 technical sessions, did have its perks. Attendance soared to >1165 participants from every chapter - a reflection of the lower expenses and no travel time. We were also treated to inspirational and informative presentations from folks located far from reasonable travel distances to normal meetings. So, although the energy of a room full of master naturalists was lacking, still we had many benefits. And, registrants can view all meeting events until April 2021 on the Event Guide. Reruns!

The annual state meeting is the time to revel in the acclaim of your peers, and Marie Asscherick received the highest accolades for earning 15,000 volunteer hours from coordinator, Michelle Haggerty. It is a very big deal to stand up in front of all assembled chapters across the whole state - congratulations again, Marie! Well done.



Marie Asscherick, Galveston Bay Area

Jo Monday was honored for earning 4000 hours; please give her your congratulations, also! She is one of only 230 master naturalists ever to receive this award.

Chapter members took honors in the photo contest. Please congratulate Gene Fisseler for "Squid On" and Maureen Nolan-Wilde for "Oyster" and Debbie Repasz for "Snack Time" AND "Pretty Boy". Good job, all!

Giving credit where it is also due, I admired Coastal Prairie Chapter member Amber Leung's drawing "Gone But Not Forgotten", a beautiful depiction of the Eskimo Curlew, Carolina Parakeet, Passenger Pigeon, and Ivory-Billed Woodpecker.

Meeting statistics are pretty impressive. Attendees collectively contributed 194,290 volunteer hours in 2020 (so far). Of these, 126 earned their first year certification, 79 earned 250 hour awards, 59 earned 500 hours, 40 earned 1000 hours, 19 earned 2500 hours, 8 earned 4000 hours (yeah, Jo), 3 earned 5000 hours, 2 earned 10,000 hours, and only 1 - Marie - earned 15,000 hours. Pat yourselves on the back, everyone.

At every state meeting we get to learn the "power of our collective awesomeness". To date, >13,000 people have completed master naturalist training and contributed 6.2 million volunteer hours - worth \$150 million, if they had to hire us. We have reported 6.4 million contacts, built 2230 miles of trails, and enhanced 229,000 acres of habitat. We number 48 chapters - soon to be 50. And, our master naturalist concept has spread to most other states and into Canada!

The Awards Ceremony concluded with special announcements. First, Richard Heilbrun and Todd Sink announced creation of the Exemplary Service Award, designed to honor a person, group, or chapter for their extraordinary efforts during a short time or crisis. Recipients were Michelle Haggerty and Mary Pearl Meuth and the Coastal Prairie Chapter for their amazing hard work, dedication, and creativity during the COVID crisis in making this meeting happen.

Mary Pearl announced a special additional recognition for all master naturalists reporting at least 1 volunteer hour this year - a pin recognizing our "Service Against All Odds Through Grit and Distance". Pins will ship by the end of the year. We will wear it with pride.

Other announcements included the new TMN license plate, 2021 Re-cert pin, and location and dates for the 2021 state meeting. See State Meeting Special Announcements article on page 8 for more details. See you next year.

State Meeting Award Winning Photos



State Meeting Special Announcements

2021 TMN Certification Pin Sideoats Grama



In 1971 sideoats grama was named the State Grass of Texas. Sideoats grama is a perennial, warm-season, native - 12 to 42 inches tall. Good grazing for both livestock and wildlife.

New Master Naturalist License Plate



- Available Winter 2020/2021
- Purchase price \$30 (\$22 goes to TMN Program)

Other Announcements

Texas Master Naturalist Program Accomplishments

- Over **13,000** People trained
- **6.2 MILLION** Hours of Service
 - valued at **\$150+ MILLION** to date
- Nearly **6.4 MILLION** people reached to date
- **2,230 miles** of trail developed and maintained
- **229,000 acres** of habitat enhanced

2021 State Meeting



Special Recognition for 2020

Everyone who logged at least 1 hour of Volunteer Service and 8 hours of AT will receive this pin. It is expected to ship in LATE in December so hopefully we will have it for the Feb. meeting...

An additional recognition for 2020

Ships in LATE December

- Every hour matters!
- Every hour is important!
- Every hour is valued!
- Your **HUSTLE, PASSION** and **PRESERVERENCE** have not gone unnoticed!
- *"YOU are an important cog in the Wheel of Conservation"* and Stewardship!
- **YOU are Valued and YOU Belong!**



Advanced Training Zooming Along by Madeleine K. Barnes and Verva Densmore

This year is truly zooming by as we continue with our virtual Advanced Training offerings. Here is a review of the classes presented since our last Midden issue.

- **October 21** (Wednesday 1PM) Green Team: Discussion of documentary film *Straws*.
- **October 26** (Monday 2 PM): Texas Oyster Mariculture Industry with Mario Marquez, Oyster Aquaculture Specialist, Sea Grant/Texas A&M, Palacios TX.
- **November 2** (Monday 10AM) Heritage Book Study: The first half of Victor Emanuel's book *One More Warbler: A Life with Birds*.
- **November 4** (Wednesday 2 PM): Native Coastal Prairie Restoration with Brian Robert, Education Coordinator, Wildlife Habitat Federation.
- **November 11** (Wednesday 2 PM): Bastrop State Park, Then and Now with Todd McClanahan, TPWD, Texas State Parks-Region 3 Director; Jamie Creacy, Superintendent of Bastrop & Buescher State Parks; Greg Creacy, State Parks Natural Resources Director.

- **November 19** (Thursday 2 PM): Galveston Bay Diamondback Terrapins with Mandi Gordon, Senior Biologist EIH-UHCL.
- **December 7** (Monday 10AM) Heritage Book Study: The second half of Victor Emanuel's book *One More Warbler: A Life with Birds*.

This will wrap up this year's GBAC sponsored AT. Some of these presentations were recorded with the permission of the presenters with the understanding that they can be used for educational purposes. Please note that you cannot receive AT or VT credit for watching the recording. However, if you are interested in the material you can access the recordings via the chapter website www.TXMN.org/GBMN. Click the Membership tab at the top of the page, then Advanced Training, and finally Presentations.

If you have suggestions for future classes, please share your ideas with Ellen Gerloff at egerloff@sbcglobal.net. And, as always, continue to watch your email for information about upcoming classes. Even if you have completed your required hours of AT, you won't want to miss these interesting and informative presentations.

Safety Minute: Watch out for Asp Caterpillars! by Meade LeBlanc

They look cute and cuddly, soft and fuzzy like a little stuffed animal. They could be just hanging around on a railing, right at eye level for curious children who want to pet them. Or they could be on a doorknob where someone can touch one without looking.



Photo by Elisa Medina O'Neal

This critter is the larval form of the Texas southern flannel moth, scientifically called (*Megalopyge opercularis*). The harmless adult moths lay their eggs in trees; larvae hatch and feed in wooded areas for about 6 weeks in late summer and fall. They are about an inch long, and can be beige, tan, grey, or orange, with fuzzy hair-like spines.

Do not try to touch or pet them, though, because the spines contain a venom that can sting and potentially lead to an allergic reaction that may include swelling, burning and numbing. If you do contact one, place and rip off adhesive tape over the sting to remove the spines, then apply ice packs. However, if an allergic reaction develops, get right to medical attention.

The Midden Deadline for the next issue

December 28

If you have Advanced Training or Volunteer Opportunities, please submit information to Mike Pettitt, mpettitt_houston1@comcast.net.

Top Ten Quiz

Herons and Egrets by Sheron Evans



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____



7. _____



8. _____



9. _____



10. _____

Possible Answers

- Black-crowned Night-Heron
- Cattle egret
- Green heron
- Great blue heron
- Great egret
- Little blue heron
- Reddish egret
- Snowy egret
- Tricolored heron
- Yellow-crowned Night heron

Photos 1-9 by Sheron Evans. Photo 10 by Debbie Repasz.

Did You Know There are Sun Grant Colleges? by Carolyn Miles

As master naturalists, we are familiar with Sea Grant colleges, but did you know there are Sun Grant colleges?



Concept

The Sun Grant Initiative is a national network of land-grant universities and national laboratories partnering to help build a bio-based economy.

Land-grant universities have over 150 years of experience in agricultural and natural resource research, with a network of field-based research sites in every major biogeographic zone in every state and territory of the country. They are at the forefront of research and innovation involving bioenergy and biofuels production and have a unique tradition of sharing the results of their research by working with farmers, ranchers and foresters through extension outreach in the community and classroom education efforts.

The Sun Grant Initiative builds on this successful history and harnesses the land-grant network to tackle the new challenges of developing bio-based transportation fuels, biopower, and new bio-based products.

The Sun Grant Initiative facilitates communication and partnership development between universities, national laboratories, federal and state governments, the private sector and public interest groups to lead the nation towards a renewable, sustainable, domestic energy industry. Sun Grant Centers are also charged with reviving America's farming communities by placing an emphasis on rural economic development through the production of biobased renewable energy feedstocks.

Mission

Through development, distribution, and implementation of bio-based energy technologies, the Sun Grant Initiative will:

- Enhance national energy security.
- Provide opportunities for rural economic development in America's traditional agricultural communities.

- Promote environmentally sustainable and diversified production opportunities for agricultural and forestry resources.
- Encourage further bioenergy research collaboration between government agencies and land-grant colleges and universities.

Establishment

Congress authorized the Sun Grant Initiative in the 2002 and 2008 Farm Bills. Sun Grant efforts are supported with funds from the U.S. Departments of Energy, Agriculture and Transportation.

Charged with implementing the Initiative's goals for furthering a bio-based economy are five regional land-grant universities that have each lead the way in researching bioenergy and biomass production. The National Sun Grant Association is comprised of representatives of each of the Sun Grant Centers. The Association coordinates activities on a national level to ensure that the regional centers are as effective as possible. The regional Sun Grant Centers operate through:

- Pennsylvania State University
- Oklahoma State University
- Oregon State University
- South Dakota State University
- University of Tennessee



In addition to enhancing its own efforts in bioenergy and biomass research, each regional Sun Grant Center is charged with administering a regional competitive grants program for land-grant institutions. Multidisciplinary and multi-state projects are encouraged, and the Sun Grant centers have formed an association that will share research results and report findings on a national scale.

This information is from the Sun Grant Initiative.

Heritage Book Study - Review of *The Worst Hard Time: The Untold Story of Those Who Survived The Great American Dust Bowl*

by Madeleine K. Barnes

When you think of epic environmental disasters, what comes to mind? Maybe the 1900 Galveston Hurricane or the wildfires that are happening currently in various states to the West or, maybe, the Deepwater Horizon oil spill in 2010. Granted all of these are environmental disasters, however only one that has been labeled as our nation's greatest environmental disaster - The Great (meaning the most devastating) American Dust Bowl.



Timothy Egan, author of *The Worst Hard Time: The Untold Story of Those Who Survived The Great American Dust Bowl*, writes about the beauty and the starkness of this unsettled land as he takes us back in time to before the "dirty thirties" for an in-depth examination of the factors that led up

to this disaster for so many people, livestock, wildlife, and the life altering impact to the soil and great plains environment. Egan is a Pulitzer Prize winning journalist and has won numerous other awards for his articles and books. His writing style comes from his experience as a New York Times reporter and he developed this book through historical research, people's daily journals, and investigative interviews with survivors of this disaster by incorporating their stories.

How did America's great grassy plains become dust? As master naturalists, we learn how everything is connected in nature. If you understand and appreciate the value of the prairie, the native grasses and forbs with their amazing root systems and the interconnections of the life forms that exist upon and with it, then this book serves to reinforce the need to share this knowledge with others as an example of what can go so wrong when you damage the environment. This event was not a one and done - it lasted for years (almost a decade) with some impacts lasting far longer. It covered over 100 million acres across 5 states (Texas being one), picking up and blowing 6 feet deep topsoil across the U.S. through Chicago, New York City, Washington D.C. and even out into the Gulf and Atlantic Ocean. Thousands of people died from "dust pneumonia".

Egan outlines the events such as shifting weather patterns and human factors that contributed to the American Dust Bowl. Many of the human actions are based on the concept of Manifest Destiny, the country and people's economic success and then the Great Depression, agricultural misconceptions, changes to federal land policies, farm economics and changes in banking, cultural factors including war and the influx of settlers, and new farming technology (tractor with plow,

disc cultivator, etc.). I am including a couple of related websites that you may find interesting:

<https://www.nasa.gov/centers/goddard/news/topstory/2004/0319dustbowl.html#:~:text=Abnormal%20sea%20surface%20temperatures%20>

https://www.youtube.com/watch?v=hzaV5FdZMUQ&feature=emb_logo

This is an easy book to read with a human-interest storyline that helps you relate to the challenges that the people who stayed endured, their hopes and dreams, and the fallacies that they believed. Could this happen again in our future? This book is a powerful depiction of what can happen when we ignore nature. I did not know the magnitude of this devastating disaster, the loss of life and the insurmountable environmental damage before I read this one. I hope you will add it to your reading list.

The book study participants have done a great job, thanks to everyone, and have completed the book selections for next year. The 2021 reading selections with meeting dates are:

January 4 - *Gathering Moss: A Natural and Cultural History of Mosses* by Robin Wall Kimmer, 168 pages (1-month reading)

February 1 - *The Sea Around Us* by Rachel Carson, 256 pages (two months reading)

March 1 - Continuation of *The Sea Around Us* by Rachel Carson

April 5 - *Out of Eden: An Ecological Invasion* by Alan Burdick, 354 pages (two months reading)

May 3 - Continuation of *Out of Eden: An Ecological Invasion* by Alan Burdick

June 7 - *Bringing Nature Home: How You Can Sustain Nature with Native Plants* by Doug Tallamy, 360 pages - 2 months reading

July 12 * - Continuation of *Bringing Nature Home: How You Can Sustain Nature with Native Plants* by Doug Tallamy

August 2 - *Citizen Scientist: Searching for Heroes and Hope in an Age of Extinction* by Mary Ellen Hannibal, 432 pages - 3 months reading

September 13 * - Continuation of *Citizen Scientist: Searching for Heroes and Hope in an Age of Extinction* by Mary Ellen Hannibal

October 4 - Continuation of *Citizen Scientist: Searching for Heroes and Hope in an Age of Extinction* by Mary Ellen Hannibal

November 1 - *Prairie Time, A Blackland Portrait* by Matt White, 272 pages - 2 months reading

December 6 - Continuation of *Prairie Time, A Blackland Portrait* by Matt White

The annotation of an *asterisk from above is as follows: July 12 and September 13 dates have been moved to the second Monday due to holidays during the weeks of the first Monday of the month.



Our next Zoom AT meeting will be on Monday, December 7, to conclude our discussion of *One More Warbler: A Life with Birds* by Victor Emanuel with the second half, pages 127-252.

On January 4, we will meet to discuss the book, *Gathering Moss: A Natural and Cultural History of Mosses* by Robin Wall Kimmer, 168 pages. If you want to join us for either or both of these AT opportunities, please contact Madeleine Barnes at Mad2Btmn@aol.com to be added to the list



for additional information and receive the Zoom meeting link and password.

We welcome your participation each month for a maximum of two hours on the first Monday of the month starting at 10am for these AT meetings. Please note that we welcome anyone to participate whether you are TMN certified, recertified, or just want to remain a chapter member. We look forward to seeing you and let us know if you have read any good naturalist books lately. Happy trails!

The Midden

Published bimonthly by the Galveston Bay Area Chapter - Texas Master Naturalists. The purpose of *The Midden* is to inform, communicate and educate chapter members and the community. If you have an article that contributes to this purpose or want to join the team, please contact Diane Humes, treimanhumes@gmail.com.

Texas AgriLife Extension Service
4102 B Main (FM 519) Carbide Park
La Marque, TX 77568

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: Julie Massey, julie.massey@ag.tamu.edu.

Midden Team

Madeleine K. Barnes	Lana Berkowitz
Verva Densmore	Sharon Evans
Meade LeBlanc	Carolyn Miles
Chuck Snyder	Diane Humes, Editor

Fun Texas Facts by Diane Humes

- Texas is larger than any European country - total area 268,581 square miles.
- Texas is the second most populous state in the US - about 29 million people.
- Texas has 962 cities.
- Texas has 10 natural ecoregions.
- Texas is home to 5,000 plant species.
- Texas is home to more bird species than any other state - 540 species
- Texas lists 140 species terrestrial mammals plus 30 marine mammals.
- Texas is home to 225 reptile and amphibian species.
- Texas is home to at least 30,000 insect species.
- Texas is home to the largest bat colony in the world - Mexican free-tailed bats, also the fastest bats in the world.
- There are 16 million cattle living in Texas.
- Invasive species in Texas include: 27 aquatic animal and 36 terrestrial animal species; 73 insect species; 26 aquatic plant and 168 terrestrial plant species; and 15 pathogens.
- Texas has 80 state parks.
- TPWD has 3500 permanent employees.
- Texas has 2 national parks and 12 national refuges.
- Texas has 470 game wardens.
- Texas has 13,000 Texas Master Naturalists.



Locally

- The Greater Houston Area (9 counties) covers 9,444 square miles, an area larger than New Jersey.
- In the Greater Houston Area, more than 145 different languages are spoken.

December and January Activities

ADVANCED TRAINING OPPORTUNITIES

Chapter Meeting - Year-end Celebration! (No AT)
6:15 Social Time, Elections, Awards, Fun

No AT is currently planned for December or January.

Ongoing

Heritage Book Study Group

First Monday of every month. Extension Office*
10am-noon; 2 hours AT
Contact: Madeleine Barnes 281-474-9406
See Pg. 13 for meeting dates and books.

STEWARDSHIP OPPORTUNITIES

For a complete list of stewardship activities, go to our chapter website at <https://txmn.org/gbmn/what-we-do/>.

EDUCATION - OUTREACH VOLUNTEER OPPORTUNITIES

Bay & Island Adventures - Volunteers teach six in-class hands-on modules on a once a month basis in Dickinson and Galveston Schools. Presenters and helpers are needed for eleven 4th and 5th grade classes. Contact: Sara Snell snellsw@verizon.net.

Education and Outreach Committee - We can use your help in supporting outreach efforts, responding to requests for exhibit booths and presenters, planning Treasures of the Bay; and developing a library of education-outreach materials. Contact Sara Snell snellsw@verizon.net.

Partner and Associate Programs - Many organizations sponsor guided walks and education programs or need volunteers to staff their nature center. Go to <http://txmn.org/gbmn/partners/> for the list, then click on the link to the organization's website.

BOARD AND COMMITTEE MEETINGS

(At Extension Office* monthly unless specified)

Board Meetings - usually First Tuesday, see the chapter calendar at <https://txmn.org/gbmn/events/month/>

Committee Meetings (most now virtual)

Advanced Training - Third Monday, 10-noon

Education/Outreach - As needed

Communication - Meets quarterly, check calendar

Midden Team - December 28, Monday, 9-noon



Texas A&M AgriLife Extension provides equal opportunities in its programs and employment to all persons, regardless of race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation, or gender identity. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.



Answers to Herons and Egrets Top Ten Quiz

1. Reddish egret
2. Great egret
3. Yellow-crowned Night heron
4. Black-crowned Night-Heron
5. Cattle egret
6. Tricolored heron
7. Snowy egret
8. Great blue heron
9. Little blue heron
10. Green heron

