

The Midden



Galveston Bay Area Chapter - Texas Master Naturalists

August 2017

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Next Chapter Meeting

August 3

To Be Announced

At Extension Office

President's Corner by George Kyame, President 2017

Greetings fellow naturalists! Please join me in the celebration of this summer! I know 'tis hot, but we knew 'twas only a matter of time and season.

I have a number of speakable topics. I shall start with fun and value to the community. A fine abundance of chapter members participated in Camp Wild. Yeah, you're right, we had fun, fun, fun while sharing the gifts of knowledge in the realm of education and of wonderful outreach to an enthusiastic camp of 4th grade future us, I hope!

And I think we all must know by now, but just in case...

We have received First Place Gulf Guardian Award in the Non-Profit category from the Environmental Protection Agency. Let us be proud! I'm happy to say, a shout out to Maureen Nolan-Wilde: thanks for putting us out there with your nomination submission! Our Past President!

Just on a side note, but no side note, Sheldon Lake State Park Wetland Restoration Partnership received the EPA Third Place Gulf Guardian Award, Partnership category! Our Naturalists are there *en force*. Again, be proud.

On a final note, please think of your fellow members who may have gone above and beyond our core goals of restoration, preservation, conservation, and education. For our Chapter would love to recognize them with one of our Treasures of the Bay Awards which will be presented at the December Chapter Meeting/Awards Ceremony. Nominations open in the fall.

Until I see you again, your friend, George.

Gulf of Mexico Program
GULF GUARDIAN AWARD
1st PLACE WINNERS
2017

Business / Industry
Booyah Clean Marine Cleaners
Booyah Clean, LLC
Harahan, LA

Youth Environmental Education
Watershed Investigations: Engaging Underserved Youth in Exploring Climate Change in Tampa Bay and the Gulf of Mexico
The Florida Aquarium
Tampa, FL

Environmental Justice/ Cultural Diversity
Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Resettlement
Houma, LA

Civic/Non-Profit
Galveston Bay Area Chapter – Texas Master Naturalist Confront Plastic Pollution
La Marque, TX

Individual
Dana Pounds
Nature's Academy
Bradenton, FL

Partnership
MS Derelict Crab Trap Program
MS Department of Marine Resources
Biloxi, MS

Bi-National
Mangrove Restoration in Key Mexican Coastal Lagoons at the Gulf of Mexico
Gulf of Mexico Foundation, Mexico Chapter
San Pedro Garza Garcia, Nuevo Leon
Mexico

Be the change you wish to see in the world!

Wetland Wanderings: Wetlands Save Millions in Flood Damages During Hurricanes by Lana Berkowitz

This is the time of year when hearing the phrase “there’s something in the Gulf” makes us do a mental inventory of our hurricane supplies. Are we ready?

The National Oceanic and Atmospheric Administration’s forecasters predict a 45 percent chance of an above-normal season, a 35 percent chance of a near-normal season, and a 20 percent chance of a below-normal season.

NOAA says there is a 70 percent likelihood of 11 to 17 named storms (winds of 39 mph or higher), of which five to nine could become hurricanes (winds of 74 mph or higher), including two to four major hurricanes (Category 3, 4 or 5; winds of 111 mph or higher). An average season produces 12 named storms of which six become hurricanes, including three major hurricanes.

But rather than dwell on scary hurricanes, let’s take comfort in knowing that our work in the wetlands will help lessen area damage if a hurricane hits by slowing storm waves and reducing flooding. Although wetlands help protect coastlines every day by reducing wave energy and raising elevations, less is known about their role in extreme weather events.

Thanks to research released in October, there is more proof that natural coastal habitats provide protection during a storm, and the study quantifies the financial benefit of wetlands conservation. Most hurricane and storm surge models look at manmade coastal defense structures and architectural solutions such as elevating properties above sea level. This study is important because natural defenses are part of the equation.

Under favorable conditions, nature-based defenses can keep pace with changing environmental conditions and rising sea levels, according to the project overview.

University of California-Santa Cruz researchers led the study of Hurricane Sandy, which hit the Northeast U.S. in 2012. Scientists from conservation, engineering and insurance sectors used the latest modeling techniques to study the hurricane’s impact.

The report found that existing coastal wetlands saved about \$625 million in flood damages. This represents approximately 1 percent of the total flood damages from Sandy. However, in only the census tracts (e.g., towns) with wetlands, their reduction in property damages was estimated to be more than 10 percent on average.

“We were able to put a dollar value on the coastal protection benefits from wetlands, using Hurricane Sandy

as a test case,” project lead Michael Beck said in an UC-Santa Cruz NewsCenter article. Beck is an adjunct professor of ocean sciences at University of California-Santa Cruz and lead marine scientist for The Nature Conservancy.

The results are relevant for many other areas that have lost historic wetlands and face grave risks from future flooding, Beck said. “Our work shows how we can align risk reduction and conservation interests to identify where to do marsh restoration.”

“This work shows the unlikely yet powerful benefits of collaboration between insurers, engineers and conservationists in identifying solutions to reduce risks to people, property and nature,” Beck said.

“Identifying where coastal ecosystems can provide risk reduction is essential for facilitating decisions on county- and state-wide coastal management, insurance and conservation,” according to the report.



Photo by Lana Berkowitz

In the past 10 years, insurers globally have paid out more than \$200 billion for coastal damages from storms. This study supports developing better public and private incentives for wetland conservation and restoration for coastal risk reduction, which as Beck noted, “plainly put, is good for the environment and good for business.”

In addition to UC-Santa Cruz, the study was organized by The Nature Conservancy and the Wildlife Conservation Society, with support from Lloyd’s Tercentenary Research Foundation. To read “Coastal Wetlands and Flood Damage Reduction,” go to www.lloyds.com/ltrf.

Prairie Ponderings: Scissor-tailed Flycatcher - Bird of our Prairie

by Diane Humes

Depicted on the Oklahoma commemorative quarter and claimed as its state bird, the scissor-tailed flycatcher is also known as the Texas bird-of-paradise. Arriving in the spring from Mexico and Central America, the scissor-tailed flycatcher courts, nests, and raises young throughout Texas, before returning in the fall to its winter home.



Photo by Lana Berkowitz

A member of the tyrant flycatcher family, *Tyrannidae*, the scissor-tailed flycatcher, has the beautiful, long, streaming tail feathers, for which it is named. Its scientific name is *Tyrannus forficatus*, formerly known as *Muscivora forficata*.

If you remember your Latin, these names explain a lot. *Musca* is Latin for "fly"; *vorare* means "to devour"; therefore, *muscivora* means "fly-eater" or "flycatcher." *Forficata* and *forficatus* are adjective forms of *forfex*, meaning "scissors"; *tyrannus* means "tyrant." Tyrant flycatchers, including kingbirds, also genus *Tyrannus*, are ferociously aggressive.

Scissor-tailed flycatchers breed from Colorado and Nebraska south, east to Louisiana and Arkansas, and west into eastern New Mexico. These are prairie birds, preferring grasslands, prairies, rangeland – semi-open habitat with trees or shrubs nearby (even utility poles and bridge girders) for perching and building their nests.

During courtship the male puts on a spectacular aerial display, showing off his tail feathers – twice as long as the female's. The female builds a cup-like nest and lays three to six creamy white eggs with reddish-brown spots or blotches. After an incubation of about two weeks, the young hatch and are ready to fly in two to three weeks. Usually one brood is raised per year.

Paired males and females defend their territories vigorously; they have attacked much larger birds, including red-tailed hawks, Swainson's hawks, turkey vultures, mourning doves, great-tailed grackles, common grackles, Northern mockingbirds, Western kingbirds, loggerhead shrikes, house sparrows, American crows, blue jays, and lark sparrows.

Scissor-tailed flycatchers sally forth from a perch to hunt their prey, hovering with tail spread or making abrupt turns. Mainly dining on insects – robber flies, dragonflies, grasshoppers – they may supplement their diet with mulberries and hackberries. Males and females share feeding duties for their young. Pairs are monogamous, at least for the season.

Be sure to get out your binoculars and observe these beautiful birds. Adults are 14 inches long – more than half their length is carried in the long and deeply forked black and white tail – with salmon-pink sides and belly. The head, upper back, and breast are pale grayish white. Young birds are similar, lacking the bright pink of sides and belly and with shorter tails.

Although population numbers have declined 31 percent over the past 50 years, scissor-tailed flycatchers are a species of least conservation concern. Current studies suggest a global population of 9.5 million birds. Their range may be expanding due to forest clearing on breeding and wintering grounds. The greatest threats to these birds are severe thunderstorms and tornadoes occurring during nesting season destroying the nests.

Look for these long-tailed beauties perched on wires and fences. We are fortunate to host these wonderful birds from about Easter until Halloween. Texas bird-of-paradise, indeed!

Beach Patrol: A Great Year (and still going)

by T.J. Fox

As the wind and clouds increased, the urge grew stronger. Finally, she could wait no longer and began making her way through the breaking waves and onto the beach. She pulled herself up the beach until conditions felt right and then she began to dig. First, she dug down into the sand with her front flippers until she was in the

cooler sand. Satisfied, she used her back flippers to dig a round hole about six inches across and six inches deep. At the bottom, she scooped out a cavity about the size of a basketball. Now she became very still as she deposited 87 eggs into the cavity. Next, being careful not to pack the sand too tightly, she filled the hole. Only at the top did

she take extra effort to see that the sand was packed firmly in place, even using her body to rock back and forth over the initial hole. A few sweeps back and forth over the entire area with her front flippers and she was finished. She turned toward the surf and made her way back into the Gulf of Mexico.



Although this is a scene that has been played out countless times over many thousands of years, this time it held symbolic significance. Found later that day, March 30, 2017, this egg-filled nest cavity was the first documented nesting of a Kemp's ridley sea turtle (*Lepidochelys kempi*) on a Texas beach prior to April.

People associated with the "Kemp's Ridley Recovery Program" hoped this heralded the start of a record year after several disappointing off years. We didn't have long to wait. The next nest was found on April 8. Since then, nests have been found weekly. Sometimes in ones and twos but, also, in groups of 8, 14, 17 and 43.

It all began in 1978 with the translocating of 2,000 eggs from the main nesting beach at Rancho Nuevo, Mexico, to Padre Island National Seashore for incubation. The resulting hatchlings were released into the Gulf along the Texas coast. This transfer of eggs from Mexico to the U.S. lasted for over ten years. In future years, it was hoped, the adult females would return to Texas beaches to nest, creating a secondary nesting beach for the critically endangered Kemp's ridley sea turtles.

In 1986, patrols were started along Padre Island National Seashore (PINS) in hopes of finding a nest. The first documented nest of a Kemp's ridley was in 1996. Since then patrols have expanded along the entire coast, excepting Matagorda and San Jose Islands. Patrolling is done by volunteers in most areas but, includes both volunteers and paid staff (25) at PINS; patrols are daily from 6:30am to 6:30pm starting April 1 and last through mid-July. Our area, the northernmost, extends from Bolivar to Surfside. Patrols here are twice daily except for Sunday; other areas patrol as resources permit. The total number of paid and volunteer participants now exceeds 400. Miles patrolled is expressed in the thousands.

Following that 1996 find, nest numbers increased in most years. For example, in 2001 there were eight nests; by 2004 ... 42 and in 2006 ... 102. Between 2004 and 2009, six consecutive records were set. In 2012, 209 nests were excavated and everyone was anticipating 300 but, then the nesting stopped. In 2013 only 153 nests were found; 2014 was worse with only 119. The next year, 2015, the number of nests jumped to 159 and last year to 185. But no one anticipated anything approaching the 348 found this year with four weeks of patrols remaining at the Midden deadline.

So, what should we hope for? Could we reach 400 this year? Who knows... but then no one expected 345 with the season not yet over.

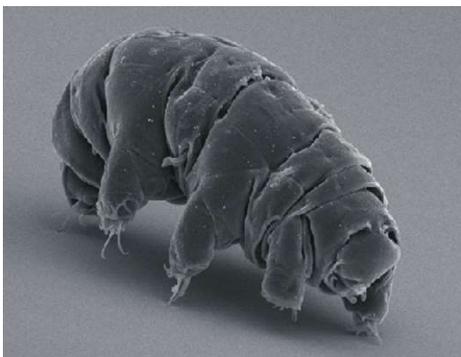
Mud Monsters of Galveston Bay by Verva Densmore

"Mud monsters" is a wonderful and dramatic name for the invertebrate animal world residing in the benthic zone - the sediment layer - of our oceans, bays, and fresh water lakes. Cindy Howard, professor at the University of Houston-Clear Lake and fellow master naturalist, shared her enthusiasm for these creatures with 30 chapter members at a recent advanced training class. She led us through a survey of benthic organisms in Galveston Bay and beyond, while stressing the value these organisms have to our environment and our ability to assess the health of the bay.

In size, benthic organisms range from meiofauna, which are less than 0.5mm, to the giant ribbon worm that has

been recorded at 177 feet - this one does not live in our area. Roundworms - nematodes - belong to what is probably the largest phylum of benthos on Earth, with 21,000 species just around Galveston Bay.

Why do we study them? How are they important? First, benthic organisms are food for birds, fish, shrimp and crabs. They are nutrient recyclers and decomposers, disturbing and oxygenating the sediment, enriching the zone in which they live. Some species are sensitive to pollution; their presence or absence can indicate pollution levels in the bay.



By Schokraie E, Warnken U, Hotz-Wagenblatt A, Grohme MA, Hengherr S, et al. (2012) - Schokraie E, Warnken U, Hotz-Wagenblatt A, Grohme MA, Hengherr S, et al. (2012) Comparative proteome analysis of *Milnesium tardigradum* in early embryonic state versus adults in active and anhydrobiotic state. *PLoS ONE* 7(9): e45682. doi:10.1371/journal.pone.0045682, CC BY 2.5, <https://commons.wikimedia.org/w/index.php?curid=22716809>

One of the tiniest and most amazing of the benthic organisms is the tardigrade, also called the water bear. When Cindy mentioned this creature, I was so interested in it that I came home and did further research. This small creature has adapted to extreme drought

conditions. Tardigrades have the ability to lose all but three percent of their body's water and slow their metabolism to nearly zero. They may remain in this desiccated state for months or years, yet, once water becomes available, they can re-hydrate and resume life.

I was astonished to learn about a 2007 European study in which a team of researchers placed living tardigrades on the surface of a FOTON F-3 rocket and sent it into orbit for 10 days. Upon their return to Earth, 68 percent of the tardigrades were still alive. They had survived in a desiccated state through high radiation, lack of oxygen, extreme temperatures, and total lack of moisture for the duration of the trip. For a description of this experiment, see:

<http://www.popularmechanics.com/space/a11137/secrets-of-the-water-bear-the-only-animal-that-can-survive-in-space-17069978/>

I began this class completely unaware of the benthic zone and the life forms that reside there. Now I will never be able to step in the mud in the bay without thinking of these creatures and the work that they do for us and for our bay.

Cruising Galveston Harbor with TAMUG by Frank Budny

On May 30 and May 31, 2017, about 40 master naturalists, in two groups of 20 each day, had the opportunity to explore Galveston Harbor aboard the Texas A&M Galveston (TAMUG) research vessel *Earl L. Milan*. The purpose of the trips was to learn about the harbor and investigate marine organisms in the water and in the mud. Originally planning on one trip, the interest within the chapter was so high that we added a second trip.

Our guides, Mark for the first trip and Christian for the second, are graduate students at TAMUG. And, we had Cindy Howard on board, with her knowledge of the benthos. Cruising through the harbor, our guides described the various commercial and industrial facilities along the harbor channel. Oil rigs - under repair, modification or dismantlement - dominate the Pelican Island side. Commercial shipping sites bustled with automobiles and tractors, wind turbine components, industrial sulfur and grain being loaded or unloaded. We passed by the fishing and shrimping fleets, the cruise terminals, and tourist attractions such as the Elissa, Seaport museum, oil rig museum and restaurants.

However, we were mainly there to investigate life in and below the water. The captain stopped the boat near the Galveston yacht basin. The guides deployed a Peterson dredge, which is a spring-loaded clam-shell claw that grabs a bottom sample as soon as it hits the mud.

Brought to the surface and filtered through a fine mesh sieve, the mud contained worms that Cindy identified as *Nemertea*. Since benthic sample can be hit or miss, Cindy brought sample of other worms, including *Laeonereis*, *Alitta*, *Capitella*, and nematodes to share with the group.



Photo by Frank Budny

Our guide and the deck hand then released a trawl net at the back of the boat and dragged it in the area around the yacht basin for 20 minutes. The net does not have a turtle excluder device, so 20 minutes is the limit of the

drag time. Unfortunately, the drag on the first day apparently hit a snag and when the net was pulled in after 20 minutes, it was torn and most of the animals had escaped. We were able to recover a mantis shrimp, blue crab, and white trout from the torn net.



Photo by William Breaux

The net was replaced on the second trip and the drag was more successful. There were sand trout, lizard fish, pinfish, anchovy, sea nettles, comb jellies, hermit crab, shrimp and squid. After examination and discussion, the organisms were released overboard.

We concluded our cruise by sailing around the concrete ship *SS Selma*. It was built in 1919 after a feasibility study verified the practicality of a concrete vessel. Steel was in short supply during WWI. The ship never saw service during the war, but was in use as a merchant vessel before running aground, cracking the hull. Repair wasn't practical. It was towed to its present location and scuttled, where it now rests as a local landmark.

As we cruised through the harbor, we saw a number of the ubiquitous resident dolphins. We heard that there are about 2000 that occupy Galveston Bay. On the first trip, we observed them at a distance. During the second trip, they almost came within touching distance of the boat. Although it was not our main focus, you can't help but notice the birds occupying the harbor, including pelicans, cormorants, gulls, and terns. On the first trip we also saw a frigate bird.

We spent an interesting three hours learning about Galveston harbor. Our guides were informative and knowledgeable. We observed first hand that the harbor is a very busy area. There is lots of human activity and yet the marine life appears abundant and healthy.

CoCoRaHS AT by Madeleine K. Barnes

I remember being at Galveston Island State Park during a recent camping trip and heavy torrential rains moved across that part of the island. Parts of the park were underwater due to the heavy rainfall and I had to wade through the water to get to the truck. I wanted to know how much rain had fallen and went online to the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) website to find out. The problem was there were no reports online from that area about that specific day's precipitation. In fact, there were only four precipitation entries for that day in all of Galveston County. Given the size of Galveston County as 874 mi², that is a lot of area with unreported precipitation data for any day. This was one of those epiphany master naturalist moments. An opportunity had presented itself! Here was a need for citizen scientist volunteers in our area to help with precipitation monitoring.

On Saturday, May 6, 2017, thirty-two master naturalists/master gardeners met at the Agrilife Extension office for the CoCoRaHS presentation. The objective of this training was to learn about precipitation monitoring in order to participate in an additional service opportunity by collecting and reporting precipitation on this nationwide network. There were two presenters, Bill Runyon, CoCoRaHS Statewide Coordinator, who provided an overview of the history, mission, and the



Photo by Carolyn Miles

various users of the collected data. After the break, Ronnie Harvan, CoCoRaHS Regional Coordinator for Harris/Galveston Counties, went into the details of rain gauge installation, collection procedures, and instructions for reporting the data online. Thanks to both Bill Runyon and Ronnie Harvan for their time and

effort, we now have more volunteers conducting precipitation monitoring in Galveston County. Woo hoo! Thanks to everyone who made this training a success! If you were unable to attend the training and still want to participate in this approved volunteer service, go online to www.cocorahs.org and learn more about this nationwide network and view the tutorial to learn how you can collect and report precipitation from your

location. You will need an official rain gauge from one of the retailers identified on the website. The installation instructions are also on the website as part of the tutorial.

This website is also a great place to learn more about weather and you can also access the precipitation data for Galveston County and the surrounding area.

Chapter Volunteers Win Two Gulf Guardian Awards by Maureen Nolan-Wilde

We are excited to announce that our chapter volunteers have won two of the EPA Gulf of Mexico Program - Gulf Guardian Awards. The chapter won first place in the Civic-Non-Profit Organization category based on our multi-faceted approach to combating plastic pollution. The Wetland Restoration Team was third place winner in the Partnership category for its Sheldon Lake State Park Partnership.

The prestigious Gulf Guardian Award was created in 2000 to recognize extraordinary environmental stewardship within the 31 states that comprise the Gulf of Mexico watershed. It also takes into consideration bi-national efforts and cooperative projects between US, Mexico and the Caribbean. Award winning solutions have to be innovative, beneficial, measurable (thanks VMS!), educational and exceptional.

We won first place because of our efforts in 2016 to confront plastic pollution, which included:

- Leading 178 educational events with 3,250 direct contacts that focused on the impacts of plastic pollution (at GISP, NOAA, TCPP and more)
- Hosting 12 clean-ups where we worked with partners by land, boat and kayak to take over 3,500 pounds of plastic out of circulation
- Constructing, installing, and monitoring the recycling bins that are placed at popular fishing spots to collect used monofilament
- Participating in the TX DOT Adopt-A-Highway Program to remove litter from State highways
- Creating and leading the Plastic Prevention Partnership, which includes 11 Federal, State and non-profit entities and has been so successful that it was recognized as the Texas Master Naturalist project of the year in 2016

Winning the Gulf Guardian Award took almost 1,900 service hours. Our thanks and congratulations go out to everybody that participated. This is your award!



Photo by Chuck Snyder

Because we are a first-place winner, the EPA will be creating a three-minute video that underlines our commitment to reducing plastic pollution. The video will be shared by the EPA across the Gulf of Mexico watershed, highlighting work that is - and can be - done by citizen-scientists like ourselves. The video will be premiered in November at the Gulf Guardian Award ceremony to be held in Alabama.

The Wetland Restoration Team's third place win recognizes the Team's restoration of 300+ acres of wetland habitat at Sheldon Lake State Park. Team members, working for 14 years, have planted more than 150,000 wetlands plants. Also, this is actually the Team's second Gulf Guardian award; it won first place in 2006 for wetland restoration at Mason Park on Brays Bayou. These awards represent many, many happy hours spent in the mud by a winning team!

Human Noises - Where is Quiet? by Diane Humes

Haiku by Aaron Naparstek in *Honku: The Zen Antidote to Road Rage* - "Though impressive; your vehicle sound system; triggered my migraine."

I finally set up my Brazilian hammock, purchased in Manaus on my last Amazonian adventure. It took some effort, as I had to adjust the new stand and make it fit - just barely - on my balcony. Looking forward to a

pleasant afternoon, remembering the Amazon trip, gently swaying, enjoying a book or, perhaps, a nap, I settled in on a perfect day.

But the wind was blowing from the south. I heard the loud roar of traffic noise from NASA Road 1, a half mile away, sounding louder than howler monkeys on the river. I got a bit upset – so much for my nap.

How much noise was I hearing, anyway? Since Google knows all, I inquired about decibel meters and in less than five minutes had a free decibel meter app installed on my phone and measured 65 decibels of traffic noise at my hammock. Now I can check noise levels everywhere I go, and I have.

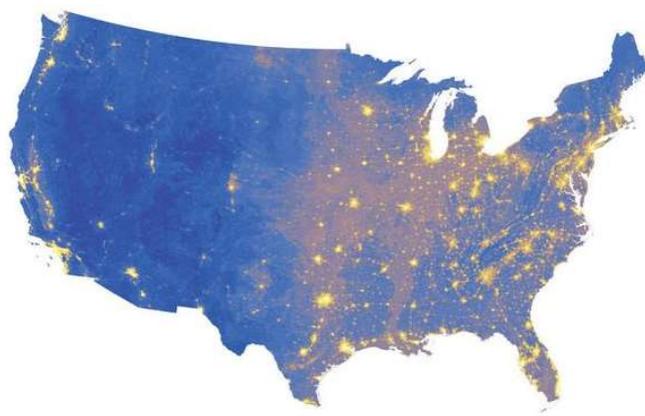
I didn't really understand decibels, and still don't, but it is a complex system of measuring sound named after Alexander Graham Bell to measure the sound loss along transmission lines for telephones. Human ears hear a large range of sounds from incredibly quiet to very loud, so to accommodate this very wide span of intensity, the decibel scale is logarithmic.

The threshold of human hearing is set at 0 dBA and every 10 decibels represents a tenfold increase in sound intensity. So, 20 dBA measures sound intensity 100 times more intense than the threshold of hearing and 30 dBA represents a 1,000-fold increase in intensity. dBA is the more accurate scale; my phone measures just dB.

In the heyday of legislative protections for public and environmental issues, Congress passed the Noise Pollution and Abatement Act of 1972, which sought to protect human health and public annoyance due to "noise pollution." This act set noise standards for nearly everything – airplanes, motor vehicles, HVAC equipment, and major appliances. Think about this Act when you buy a quiet dishwasher!

The 1978 Quiet Communities Act also regulated noise levels and their mitigation for community planning purposes and listed a comprehensive database of health effects at various sound levels. Prolonged exposure to loud noise damages the hair cells of the inner ear and can cause permanent hearing loss, affecting over 10 million people in the U.S. To protect against such hearing loss, National Institute for Occupational Safety and Health (NIOSH) regulations restrict noise levels of 85 dBA to eight hours within a 24-hour period.

This means that eight hours of workplace noise levels measured at less than or equal to 85 dBA will be just fine for most people. But, for every additional 3 dBA, your safe listening time is cut in half, so you must consider the entire day. At 91 dBA, the sound of a gas lawn mower, your safe listening time is two hours. At 98 dBA, the sound of a band saw, better wear ear protection!



The brightest yellows show the noisiest places in the U.S. with the highest noise levels at 55-67 dB. The quietest places are deep blue with levels down to less than 20 dB. Noise levels are based on median daytime summer sound levels, expressed in decibels (dB), which are on a logarithmic scale: A 10 dB increase corresponds to a tenfold increase in sound energy. Source: NPS Natural Sounds and Night Skies Division

Normal human speech is about 60 dBA. 85 dBA is the sound of a busy street corner. Our gas mower blasted 89 dB in the backyard; inside the kitchen with the door shut, I measured 69 dB. At the mall I measured various levels: 70 dB in the hair salon with voices, radio, and phones; the food court was 80 dB; the parking lot registered 60 dB; inside my car with no motor the sound was 40 dB; cicadas in my backyard registered 60 dB; the background quiet at Armand Bayou Nature Center was 30 dB; inside my house with nothing on was quietest – about 11 dB.

Do I need to live closed up behind my double-pane windows to have quiet? With planes, trains, automobiles, boats and the rest of human machinery, is there anywhere a Master Naturalist can find the sounds of natural silence? I had been meaning to read *One Square Inch of Silence* by Gordon Hempton for some time and this was the time.

Hempton is an acoustical ecologist who traveled from his home state of Washington to Washington, D.C., to meet with officials to discuss ways to declare Olympic National Park the first designated "quiet park" and to preserve the last square inch of natural quiet in America. With him he carried the One Square Inch stone, temporarily removed from its moss bed in the interior of Olympic National Park where it marks the quietest spot in the quietest place in the United States. See onesquareinch.org

Olympic NP is a primeval wonderland of varied natural soundscapes mostly undisturbed by human intrusions; unlike other parks, it has no major road and few tourist over flights. If the three flight paths crossing the park could be re-directed outside its boundaries, a major source of noise in the park would be reduced. As described in the Wilderness Act of 1964, "a wilderness, in contrast with those areas where man and his own

works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammled by man, where man himself is a visitor who does not remain." Hempton is on a crusade to maintain the natural wildness of Olympan NP.

Taking his recording equipment, he took a soundscape of America along his trek. He recorded prairie chickens on their leks and the dawn chorus of Western meadowlarks, tested acoustics in the state-of-the-art Microsoft Auditorium, measured decibels at the Indianapolis Symphony and Indy 500, and visited the E-A-R earplug factory. Hear his recordings of this trip and others at: www.soundtracker.com.

On Hempton's journey, noise intrusions became more frequent as he traveled east; he found it impossible to go longer than 15 minutes without a human-caused noise and difficult to find quiet at all the closer he got to Washington D.C. Hempton fears that the world is in great danger of losing all of its quiet places and invites everyone to contemplate what we may be losing.

The question also becomes: What about the other creatures on the planet? If we can't hear the birds, can they hear each other? Like us, animals have their daily routines and may take their cues from each other. Hempton relates, for example, "In the Amazon, recording the daily cycle of sounds, I met locals who could listen to my days' 'catch' and correctly tell the time within five minutes of when I made the recording." What disruptions might our noises be causing?

And we may be on the verge of adding more noise. A recent news item stated that our government wishes to lift the ban on seismic air gun surveys along our Atlantic coastline. This type of testing involves towed arrays firing 250 dB bursts of air at the seafloor every 10 seconds, 24/7, for as long as it takes, to map the underlying strata. Five companies wish to explore for oil and gas.

The threshold for pain from noise is 130 dB; at 160 dB the human eardrum is instantly punctured. Will the

whales and dolphins hear each other over all that noise? Will they survive it? What about sea turtles, sharks, and fish? What will the real cost be to wildlife for a bit more oil or gas?

Places with noise pollution – that's what it is – correlate very well with light pollution, so, if you can see dark skies, you will probably experience natural sounds. I suggest Master Naturalists always take time to listen to the natural sounds of our world – perhaps on World Listening Day on July 18.



An annual global event – worldlisteningday.org – the 2017 theme is "Listening to the Ground" in memory of Pauline Oliveros, composer, author, and philosopher. She said, "Sometimes we walk on the ground, sometimes on sidewalks or asphalt, or other surfaces. Can we find ground to walk on and can we listen for the sound or sounds of ground? Are we losing ground? Can we find new ground by listening for it?"

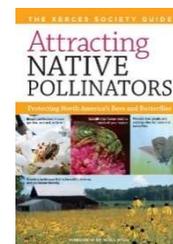
I will be in a very wild place far from town on World Listening Day, upstream on the Rio Negro with little ground in a watery environment. Perhaps in a hammock, I'll listen for howler monkeys and let you know how loud they really are.

Heritage Book Study - Review of *Attracting Native Pollinators* by Madeleine K. Barnes

This article comes out just before we meet for our final discussion of *Attracting Native Pollinators*. When you receive this newsletter, we will be meeting on Monday, Aug. 7, at 10am, for the final discussion of this book along with a panel discussion. If you have read the book, we encourage you to join us at that time for both the discussion and panel presentations. If, however, you wish to join us for the panel discussion only, approved for AT also, we will convene promptly at 11am with brief presentations on native bees, butterflies, and some of

our local native pollinator plants, with an opportunity for questions afterwards.

This book was written by the staff of the Xerces Society for Invertebrate Conservation, an international nonprofit organization, which protects wildlife through the conservation of invertebrates and their habitats. Their core programs focus on habitat conservation and restoration, species conservation, protecting pollinators, contributing to



watershed health, and reducing harm to invertebrates from pesticide use. The name Xerces Society comes from the now extinct Xerces blue butterfly (type *Glaucopsyche xerces*), the first butterfly known to go extinct in North America as a result of human activities.

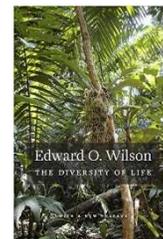
Are you aware that roughly 75 percent of all flowering plants rely on pollinators in order to set seed or fruit, and these plants produce one-third of our food?

The majority of this guidebook focuses on pollinators and the function of pollination. It is directed at identifying species and outlining actions that can be taken to conserve pollinators. I was amazed to learn that flies are the main pollinators for strawberries, onions, and carrots. Evidently carrot flowers are not attractive to bees. Think of that the next time you put strawberries on your cereal or cook with onions and carrots. The last portion of the book addresses how you can create a pollinator friendly landscape, providing sample gardens and plant identification to use.

This is an excellent reference book for anyone to learn more about pollinators of all kinds and about the need to

conserve and protect them. Steps that you can take to help include: supporting pollinators by providing the plants and habitat that they need; refraining from pesticide and herbicide use in your yard; and learning more about our amazing and diverse pollinators! There is additional information on the website, www.xerces.org, including lists of native pollinator plants, endangered species, and bee house construction for your yard.

Our next reading selection will be *The Diversity of Life* by E.O. Wilson for the next three months, September - November. Due to the September 4, Labor Day holiday, the Heritage Book Study group will meet on Monday, September 10, to discuss the first 117 pages of Dr. Wilson's book. We welcome your participation each month for two hours on the first Monday of the month (except September as mentioned above) starting at 10am at the Agrilife Extension office. We look forward to seeing you and please let us know if you have read any good naturalist books lately! Happy trails!



Camp Wild 2017 by Rick Becker

One of the sure signs that summer is here is the sound of 60 exuberant fourth graders arriving at the state park for Camp Wild. Camp Wild, which is offered free of charge to fourth grade children from Galveston, is a partnership between Galveston Island State Park, Texas Master Naturalists and the Friends of Galveston Island State Park.

The opening of camp this year was delayed by one day due to thunderstorms and, while we did have some wet weather at the end of day on Tuesday, the weather was perfect for the remainder of the week. The motto this year was "Fun with a Purpose" and the theme for camp was habitat. The activities focused on the importance of understanding and preserving habitat to maintain a healthy environment.



Photo by Helle Brown

This year's activities included kayaking, seining in the bay, a solar-enabled art project, bird walks, skins &

skulls, fish printing, a turtle obstacle course that focused on the impact of trash in the environment, a Ranger-led nature walk, owl pellet dissection and an innovative Frisbee game that was a fun way to demonstrate the devastating impact of habitat loss. Along the way, the campers learned about common shells found on our beaches, discovered that they and a bird share the same wingspan and were taught how to properly raise and lower the American and Texas flags.

For the first time in Camp Wild history, we had a surf swim activity on Friday, in addition to the interpretive beach walk and sand castle competition. Professional lifeguards were hired and, judging by the delighted smiles of our campers, this activity was a huge hit.



Photo by Frank Budny

More than 70 volunteers came together to make this camp a truly memorable experience for these children and, hopefully, to help develop the next generation of environmental stewards. Thanks go to the planning team who worked for months to prepare for Camp Wild and our wonderful volunteers who cheerfully donate their time and enthusiastically share their experience. Without them, this camp would not be possible. Special thanks go to Chris Anastas and Lynn Smith, whose tireless efforts ensured that camp would be a success.

We are also grateful to the Moody Foundation, whose grant helped fund Camp Wild and our awesome partners at What-A-Burger who donated food, back packs, cool sunglasses and provided fun for our campers and volunteers. Whataguy even made an appearance!



Photo by William Breaux

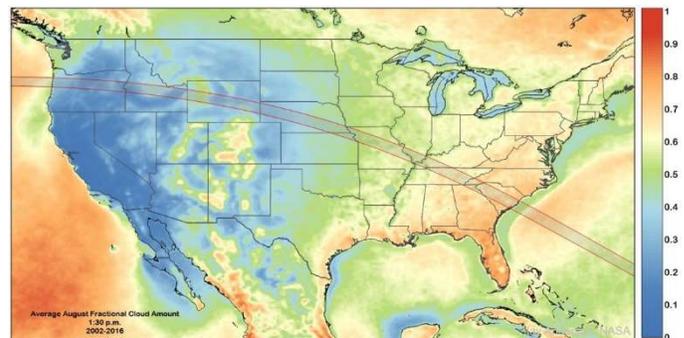
Total Solar Eclipse by Diane Humes

In a few short weeks, on Monday, August 21, 2017, everyone in North America, parts of South America, Africa, and, Europe will be treated to the spectacle of a solar eclipse. A total eclipse will be visible to observers in a broad swath from Lincoln Beach, OR to Charleston, SC. Observers outside this path will see a partial eclipse.

A NASA website, <https://eclipse2017.nasa.gov/eclipse-who-what-where-when-and-how>, describes what will happen:

The path of totality is a relatively thin ribbon, around 70 miles wide, crossing the U.S. from West to East. The first point of contact will be at Lincoln Beach, Oregon at 9:05 a.m. PDT. Totality begins there at 10:16 a.m. PDT. Over the next hour and a half, it will cross through Oregon, Idaho, Wyoming, Montana, Nebraska, Iowa, Kansas, Missouri, Illinois, Kentucky, Tennessee, Georgia, and North and South Carolina. The total eclipse will end near Charleston, South Carolina at 2:48 p.m. EDT. From there the lunar shadow leaves the United States at 4:09 EDT.

Its longest duration will be near Carbondale, Illinois, where the sun will be completely covered for two minutes and 40 seconds.



The last time the contiguous U.S. saw a total solar eclipse was in 1979. Time to do your anti-rain dance and watch the eclipse!

Galveston Bay Injured Bird Response Team by Tim Long

In the early morning of May 4, 2017, a tragic migratory "bird building collision" event occurred in Galveston, followed by a similar incident in Clear Lake. The Galveston Bay Injured Bird Response Team members reacted rapidly. Sandy Parker and other chapter members identified and catalogued the 400 dead birds from both events. A member of the Galveston team transported the six surviving birds to the wildlife center. While building strikes by migrating birds are quite common, the magnitude of this event captured national media attention. Building managers volunteered to turn off the exterior lighting for the remainder of migration and have agreed to such changes during future migrations.



Fortunately, our ability to respond to this incident was well established. Members first noticed the need to be able to rescue and treat area birds in the fall of 2014, when many Brown Pelican juveniles became sick or entangled in hooks and fishing line. Volunteers rescued the birds, transporting them for rehabilitation to the Wildlife Center of Texas (WCT) in Houston. However there was no system in place to rescue or transport injured birds, especially on the Bolivar shoreline, which is not covered by Galveston County Animal Control and is a particularly troublesome location due to the ferry crossing and distance to WCT. In the summer of 2016, the one local permitted wildlife rehabilitator in Galveston was overwhelmed by the number of calls and injured birds and had to stop accepting birds.



In January 2016, the Plastic Pollution Prevention (P3) Partnership presentation at the Galveston Bay Estuary Program's "Back the Bay" Symposium included an "Injured Bird Response Plan." The first component in the plan was to conduct injured bird rescue training. As more injured birds came to our attention via social media, observations, and phone calls, P3 Partnership and Keep Bolivar Beautiful made a formal request to the P3 members to provide rescue training for Bolivar Peninsula residents.

In the fall of 2016, chapter members Sandy Parker and Stennie Meadours asked Sharon Schmalz, executive director of WCT, to conduct injured bird rescue training for Bolivar residents and interested parties. Sharon agreed to conduct the training with one condition: that we would set up a robust injured bird transportation system as a top priority. Knowing our chapter's volunteering character, Sandy and Stennie agreed in a heartbeat!

Kari Howard, chapter member, representing Audubon TERN, did the advertising and online registration for the injured bird rescue training, which was held in January. Seventy people (WOW!) registered for the first training, including Galveston Animal Control (GAC) officers, who were interested in getting some assistance with birds they rescue on a daily basis. Attendees signed up for rescue and/or transport teams. Modeled after the Texas Emergency Incident Response Plan, the Galveston Bay Injured Bird Response Team (GBIBR Team) was born!

Divided into three teams – Bolivar, Galveston, and Mainland/Clear Lake – the initial goal is to relay birds from Bolivar through Galveston to Clear Lake and to WCT. The Facebook group page, Reporting Injured Birds Found in Galveston County, facilitates reporting of injured birds by the public and team members, and our activities. The page has almost 500 members and is growing.

Over the past five months each team has changed in scope and responsibility. The Bolivar team (three active members), led by Patti Roznovak, has become the primary bird rescue team on the entire peninsula. To date, more than 45 injured or sick birds have been transported from Bolivar to Galveston. The Galveston team, with 20 active members, is led by Tim Long. About 70 percent of its injured birds have been rescued on Galveston Island, usually by Galveston Animal Control officers. Rapid communication is key, using group texts, phone calls, emails and a weekly schedule, as transport must usually be arranged on fairly short notice.

The Mainland/Clear Lake team, led Sandy Parker, serves as the primary transport for birds rescued in upper Galveston County. They recently transported some birds from the Galveston County Animal Control shelter in Texas City. There is certainly opportunity to expand the Mainland team's influence and scope of work across the entire Dickinson/Texas City/Kemah/League City area.

GBIBR teams got progressively busier with spring migration. Through May, members rescued nearly 200 injured birds of 40-plus species, along with a number of opossums, baby raccoons, and rabbits! We expect these numbers to increase, fluctuating around the migration and nesting seasons.

The GBIBR Team has identified ways to expand coverage and improve methods of wildlife rescue. One possibility would be to identify chapter members or friends who already volunteer at WCT who would be willing to transport injured birds on their volunteer days. For example, Dorothy Hogg volunteers at WCT on Wednesday and Sunday mornings, and is now the go-to person for those mornings. If you are willing to help rescue or transport in any capacity, contact Stennie, Sandy, or another team leader.

None of this could have been accomplished without the support of Sharon Schmalz and the Wildlife Center of Texas with training and almost daily receipt of injured birds from our teams; Galveston Animal Control officers, with Supervisor Josh Henderson, a welcoming partner, experienced with bird capture; the Galveston Humane Society, the primary drop-off/pickup point for the birds; and Charli Rohack, local rehabilitation expert, continuing overnight care of fragile birds prior to transport.

Galveston County is a bird paradise! We are in the middle of a major north/south bird migration flyway and numerous resident and nesting species call our part of the Texas coast home. With such a concentration of birds, we hope to do all we can to rescue injured, sick, and orphaned birds. Would you like to help?

Great Summer Reads by Diane Humes

Our Heritage Book Study group has read some amazing books in the last few years. If you are looking for a book to help you while away the hot summer days, here are some you should consider.

- *Last Child in the Woods; Saving our Children from Nature-Deficit Disorder* by Richard Louv
- *Walden: Or Life in the Woods* by Henry David Thoreau
- *Voyage of the Beagle* by Charles Darwin
- *The Big Thicket: A Challenge for Conservation* by P.A.Y. Gunter
- *An Unreasonable Woman* by Diane Wilson
- *Voice of the Coyote* by J. Frank Dobie
- *Karankaway Country* by Roy Bedichek
- *Undaunted Courage: Meriwether Lewis, Thomas Jefferson and the Opening of the American West* by Stephen Ambrose
- *Paddling the Wild Neches* by Richard M. Donovan
- *Matagorda Island: A Naturalist's Guide* by Wayne H. and Martha McAlister
- *The River of the Mother of God* by Aldo Leopold
- *Edge of the Sea* by Rachel Carson
- *Animal, Vegetable, Miracle* by Barbara Kingsolver
- *The Wilderness World of John Muir* edited by Edwin Way Teale
- *The Book of Texas Bays* by Jim Blackburn
- *Land of Little Rain* by Mary Hunter Austin
- *Texas Earthquakes* by Cliff Frohlich and Scott D. Davis
- *Aransas: A Naturalist's Guide* by Wayne H. and Martha McAlister

- *Bats of Texas* by Loren K. Ammerman, Christine L. Hice, and David J. Schmidly
- *Wilderness and the American Mind* by Roderick Nash



The Midden

Published bimonthly by the Galveston Bay Area Chapter - Texas Master Naturalists. The purpose of *The Midden* is to inform 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: www.gbamasternaturalist.org 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@agnet.tamu.edu.

Midden Team

| | |
|------------------------------|------------------------|
| Madeleine K. Barnes | Linda Welzenbach Fries |
| Lana Berkowitz | Carolyn Miles |
| Verva Densmore | Chuck Snyder |
| Diane Humes, Managing Editor | |

Adopt-a-Beach - September 23 by Texas General Land Office

The Adopt-a-Beach Program began back in 1986, sponsored by the Texas General Land Office. Since its inception, more than 513,000 volunteers have removed more than 9,495 tons of trash from Texas beaches.

Due to tide patterns in the Gulf of Mexico, trash dumped anywhere in the Gulf is likely to end up on a Texas beach. Volunteers record information such as the source and type of debris collected on data cards. This data has been instrumental in the passage of international treaties and laws aimed at reducing the amount of offshore dumping.

Keeping Texas beaches clean and safe is an economic as well as environmental priority. Coastal tourism, a \$7

billion industry, and commercial fishing, a \$1.9 billion business, demand clean beaches and a healthy Gulf to thrive.

The Texas Adopt-A-Beach program, an all-volunteer effort, is dedicated to preserving and protecting Texas beaches. The program's success is due to the generous efforts of dedicated volunteer county coordinators, coastal community leaders, sponsors and citizens. Strong support from the private sector helps carry our message to Texans all across the state.

The next beach clean-up will take place on September 23, 2017. Registration will begin in August. Check out the website: <http://www.glo.texas.gov/adopt-a-beach>.



August and September Activities

ADVANCED TRAINING OPPORTUNITIES

Chapter Meeting - August 3; To Be Announced
Presenters - To Be Announced
6:30pm Social, 7pm Meeting, 7:30pm Speaker
AgriLife Extension Office; 1 AT hours

Ongoing

Galveston Island State Park
10am at the Welcome Center
Every Saturday- Beach Explorations
Every Sunday- Bay Explorations
Tours 1 to 1 ½ hours long. Bring water and family.

Heritage Book Study Group

First Monday of every month. AgriLife Extension Office
10am-Noon; 2 hours AT
Contact: Elsie Smith (409) 392-7003
See Pg. 9 for meeting dates and books.

STEWARDSHIP OPPORTUNITIES

Ongoing Activities:

Mondays - Galveston Island State Park, Contact: Chatt Smith chattsmith@gmail.com

Tuesdays -

- Sheldon Lakes State Park, Contact: Tom Solomon crandtr@sbcglobal.net
- Texas City Prairie Preserve, Contact: Jim Duron wishkad@yahoo.com
- Environmental Institute of Houston at UHCL, Contact: Wendy Reistle reistle@uhcl.edu

Wednesdays - Wetland Restoration Team, Contact: Marissa Llosa mllosa@tamu.edu

Thursdays -

- Stormwater Wetland Team, every Thursday, 9am - Noon. Contact: Mary Carol Edwards mary.edwards@agnet.tamu.edu
- San Jacinto State Park, Contact: Jim Duron wishkad@yahoo.com

Fridays - Prairie Friday, ABNC, 8:30 - 11:30am,
Contact: Chatt Smith chattsmith@gmail.com

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 - Lots of work to do and we can use your help developing a speakers bureau; responding to requests for exhibit booths, fieldtrip guides and presenters, planning Camp Wild and 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 - First Tuesday, 2-4pm

Committee Meetings

Communication - August 28, Monday, 9-Noon
Advanced Training - Third Monday, 10-Noon
Education/Outreach - Third Tuesday, 10 to 11:30am
Stewardship - Meets quarterly



Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, religion, national origin, age, disability, genetic information, or veteran status.. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Court of Texas cooperating.

The Midden Deadline for the next issue

August 25

If you have Advanced Training or Volunteer Opportunities, please submit information to Tim Long, tikibloke@yahoo.com

