Naturalist Notes

President's Note

The **Texas Master Naturalist 2020 Annual Meeting** is going virtual!

As a result of the uncertainty surrounding the ongoing COVID-19 pandemic, the Texas Master Naturalist Program has decided to suspend this year's in-person event in Houston, Texas, in favor of a fully virtual experience.

The decision reflects TMN's responsibility to protect the health and wellbeing of its members, conference attendees and the general population while still serving its mission to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas.

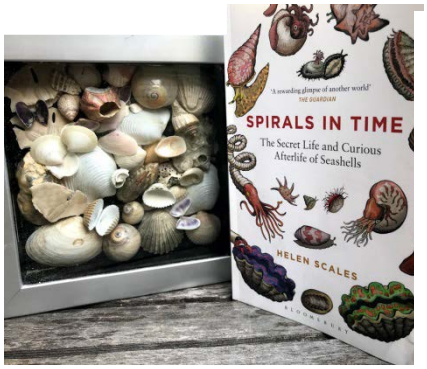
While we may not be seeing you in Houston this fall in person, we are committed to creating a valuable and engaging educational and networking experience that mirrors our in-person Annual Meeting. In fact, we're quite excited about all of the new possibilities that a virtual conference opens up for our event!

Please save the dates for us now! We've shifted the dates to **Wednesday through Saturday** to accommodate the virtual setting. We'll be online with you **October 14th through 17th** with four days of sessions, interactive programs, and some surprises we'll be sharing later this summer.

For news, updates and details about the Annual Meeting as our plans for the virtual conference develop, please check out our website - https://txmn.tamu.edu/2020-annual-meeting/

Don't worry about missing out on Houston. We'll make sure to get back there soon!!

Thanks, Mary Pearl & Michelle



Book Review

Spirals in Time" The Secret Life and Curious Afterlife of Seashells

Helen Scales, Bloomsbury, 2015. Amazon and Houston Public Library

"As well as being something elegant to look at, and a small treasure we found for ourselves, the shells whisper tempting questions. Where do all the shells come from? Who or what sculpts them? How are they made, and perhaps more intriguingly, why?" (Prologue)

Helen Scales, a marine biologist, answers these questions, and many more in her book. From what makes a mollusk to how shells are made to common and strange human uses (ever heard of sea-silk?), the book is written clearly and engagingly. The chapter entitled "Bright Ideas" reviews some of the modern uses of mollusks, such as cone snail venom as a source of new molecules to study the nervous system, using mussel glue, and what the nacre's role is in seashell strength. The effects of climate change on shell-producing animals occupies the last chapter.

While this book is not directly related to Gulf Coast, it provides a great overview of many challenges common to all shell makers. I recommend it as a wide ranging and enjoyable read.

Flower Garden Banks Status Report - NOAA Coral Reef Conservation Program

"One hundred miles from the nearest beach in the Gulf of Mexico, Flower Garden Banks, a vast expanse of reef habitat, sits just below the ocean surface. These reefs are teeming with marine life and densely covered by large corals. Corals continue to thrive at Flower Garden Banks for three critical reasons:

1. Distance from the shore reduces some human impacts such as water quality degradation;
2. Its reefs sit in deeper, cooler waters than many coastal reefs, making corals less susceptible to events like coral bleaching; and,
3. The Flower Garden Banks are a designated national marine sanctuary, a status that offers additional protections to the benthic habitat such as enforcement of bans on anchoring, discharge, and bottom-impacting fishing activities.

While it benefits from isolation, this reef is not immune to the impacts other reefs across the globe experience today. Coastal runoff from extreme rain events, illegal fishing, and vessel anchoring still occur. Shifts in water temperature may induce bleaching events, and invasive species threaten the region's delicate food web dynamics. Yet, Flower Garden Banks has shown remarkable resilience to such impacts, and its protected status allows that resilience to endure."

Overall Status: Good (Data 2014-2018)

Point of view is everything

On television, we watch a show about lions. We watch a lioness raise her cubs. They are cute. But the narrator says in his slightly hushed narrator voice, “If she doesn’t find food soon, she will be forced to abandon her cubs.” Then, we see footage of a lioness taking down a young antelope. We nearly sob with joy when that antelope hits the ground.

On a different show, we are watching migration on the Serengeti. We have been following a herd of antelope and got to watch the females calve and the youngsters frolic in the endless grass. But water is getting scarce. The herd is in trouble. Now, we see that same lion footage, this time watching an antelope we imagine we know get slaughtered. We are shocked, filled with horror.

Same footage, but the shifting point of view completely changes how we see it.

This does have something to do with the carpenter bees and honeybees that are no doubt in your yard at this very moment, but it’s going to take a little while to get there.

Carpenter bees are named for their woodworking. Females will chew a small tunnel with a lovely circular entrance in a dead branch, old log, or deck riser and therein lay eggs. Because she has to chew through wood, she comes equipped with an impressive set of jaws.

Honeybees are named for the honey they store away to keep the hive fed during seasons without food. Honeybees must have the best PR agent in the natural world. They are sold to us as the very embodiment of good citizenship. Always cooperative with the hive, always working hard, always knowing their place in the hierarchy. They are solid citizens. We put them on kid’s toys even though the odds of getting stung by a honeybee are easily a hundred times higher than getting stung by a carpenter bee. You practically have to step on a carpenter bee to get stung.

Despite their demonstrably docile nature, carpenter bees get “profiled” a lot. Google a species of native bee (we’ve got 600 of them here in Texas) and the word *pollination* and you will get a flurry of links extolling how this or that plant is danged thrilled to have a leafcutter bee, or long-horned bee, or whatever bee visiting.

Not carpenter bees. Google carpenter bee and *pollination* and you get agricultural journals studying whether carpenter bees do or do not benefit this or that plant. Other bees do not come in for this level of suspicion, but carpenter bees aren’t like other bees and ag scientists sometimes can’t decide whether they should regard the large carpenter bee as more of a pest than a pollinator.

The reason for this vilification is that carpenter bees “steal” nectar.

Flowers arrange themselves so that insects have to crawl or fly through pollen in order to get to the sweet nectar that they are after. It’s a fair deal. The plant needs help reproducing, the insect needs sugar.


Left - She's never going to fit in that tube;
Right - This honeybee is nectar robbing.

credit Alisa Kline

Large carpenter bees, however, are exactly that. Large. Really, really large. They don't fit into the delicate tubes that flowers can use to draw bees to the nectar pot at the base. Those flowers are designed for a butterfly tongue. Carpenter bees are built like left tackles.

But a bee's still got to eat. So carpenter bees use those strong jaws to bore a hole from the outside of the flower right into that nectar pot. Then, the carpenter bee holds on and gets a few sips.

This behavior is referred to in the literature as nectar robbing or, even better, illegitimate pollination. It makes it sound immoral. Carpenter bees violate the equal-shares morality of I-help-you-reproduce-and-you-give-me-food deal that plants and pollinators worked out eons ago. They don't play fair.

I stumbled upon the agricultural world's suspicion of carpenter bees because I saw something unexpected and wanted more info.

I saw honeybees nectar robbing! This is new in my yard. I've been watching the carpenter bees do it for years, particularly with the salvia that grows with abandon everywhere. Of course, all these photos are on hamelia. They like that a lot, too.

I thought I might be misunderstanding what I saw, so I asked the Internet. Turns out, honeybees learn the behavior from carpenter bees. And there are journal articles discussing whether the presence of large carpenter bees "corrupt" legitimate pollinators and reduce the productivity of a field. Again, the language of morality.

The honeybees don't learn to chew holes in flowers. They don't have the jaws for that. They look for holes already drilled by the larger bees and stick their tongues in for a few quick nips. In this footage, the good-citizen honeybee not only nectar robs, she seems to bully a carpenter bee off the hole she just made.

Of course, none of these bees are good or bad. Some plants are pollinated best by carpenter bees. Others by honeybees. It has even been determined that some plants do better if they are not only nectar robbed by carpenter bees but when honeybees join in. Everyone gets more food so they stay around the plant for more time.

But I keep being struck by the moral dimension we seem to attach to the poor carpenter bee, forever accused of theft because she is too large for some flowers.

I would like to propose that we rethink the carpenter bee. All the concern about carpenter bees has to do with how much money a farmer can get for her crop. There's not so much a moral dimension as self-interest. Let's tell the story from a different point of view. The honeybee. (I said I would get back to it!)

Honeybees are captives of their overlord the Queen who makes them work from sunup to sundown collecting food for her new children. The poor honeybees have to survive on whatever they can sip from the flowers as they labor, but it's never enough because they always have to bring some home for "the winter."

Carpenter bees are the gentle giants who help the honeybees by giving them access to enough food so they are not hungry anymore. Their activity will now be forever known as nectar-giving.

The point of view is everything.

Alisa Kline

Help Harris County Monitor West Nile in Our Community

Hello Fellow Naturalist, mosquito season is here, and with mosquitos come diseases such as West Nile Virus. One way to help Harris County Public Health monitor West Nile Virus in Harris County is to report dead birds. Some species of birds are severely impacted by the virus and can act as reservoirs. If you notice a recently dead bird in your yard one morning that looks odd you can report it to the Harris County Mosquito and Vector Control - Dead Bird Hotline.

The bird should not display signs of being attacked (ruffled up or torn apart) and should have died in the last 24 hours (rotting or decomposed birds cannot be tested). If the bird meets the criteria you can call the dead bird hotline at (713) 440-3036 or fill out and submit the online form (https://secure.hcphes.org/MC/DeadBirdReport.html).

A best practice is to place the bird in a plastic bag and place that bag on ice in a disposable container (shoebox, cardboard box, old coolers), etc. This ensures the specimen stays cool for pickup instead of baking in the Houston heat and also prevents insects, cats, etc from accessing the specimen before pickup.

Thank you for doing your part in keeping our community safe! Adrian Medellin

A New Economy for the Climate

Imagine a circular economy, one powered by photosynthesis, which takes carbon dioxide out of the atmosphere and puts it into biomass such as trees and grasses, releasing oxygen. In the draft of an article, “Soil Carbon and Economic Transformation into the 21st Century”, that was provided to me, Jim Blackburn of the Baker Institute at Rice University presents the idea of a future economy that will help avert the climate crisis. "This process of photosynthesis will become a cornerstone of the economy of the future.” It will be a “circular economy”, “…an economy where the waste of one economic activity becomes the feedstock for another process. ...such is the situation with carbon where the waste from the combustion process – carbon dioxide – becomes the feedstock for producing more biomass and soil carbon." He goes on to say that “…the circular economy is about reorganizing the human economy along the lines of nature. The Earth as an ecosystem functions as a series of cycles. ....The more our human economy incorporates nature’s economy into its design, the more stable that economic system will be in the long term."

According to Jim, "...nature-based solutions involving forests and grasslands are emerging as the potential giant in carbon capture and storage." “There are approximately one billion acres of prairie grassland and farmland that could be utilized for nature-based soil carbon storage.” The key to the success of this idea is ensuring that timberlands and grasslands are managed correctly.

But how do we incentivize landowners to manage their land in a way that promotes this natural carbon storage process? This is where economics come into play. If we create a market of “carbon credits” for natural carbon capture and storage (as opposed to the very expensive industrial carbon capture and storage methods, which are “…difficult if not impossible to implement at a large scale.”), landowners will have the needed incentive to manage their lands properly for the period of time covered by the credits. Carbon credits were included in the 1997 Kyoto protocol, but not widely implemented.

But on the national level, right here in Houston, the Baker Institute Soil Carbon Working Group is developing a proposed United States Soil Carbon Storage Standard. The standard would have provisions for ‘assemblers’, “…private corporations who work with landowners and put together properties that are eligible for credits under the standards" and an "...entity that will certify compliance with the standards and issue the credits." The group is currently finalizing 10 principles that will govern the proposed standard. So this is a promising work in progress.

Meanwhile, as the title of a recent press release, “Texas Coastal Exchange Makes Initial Grants to Texas Coastal Landowners for Capture and Storage of Carbon Dioxide”, announces, we now have the beginnings of a regional implementation of a circular carbon economy. There is a new entity, the Texas Coastal Exchange, “…originally conceived as a coastal flood damage reduction concept at the SSPEED Center at Rice University”, which connects donors who want to offset their carbon footprint with landowners who, in exchange for a grant, will maintain their lands according to

agreed upon principles so that their function of sequestering carbon dioxide through photosynthesis continues unimpeded year after year for a minimum of 10 years.

"The Texas Coastal Exchange established a system through their web site (https://www.texascoastalexchange.org/) in 2019 whereby individuals and corporations could make donations to TCX in the amount of their carbon footprint. "To determine grant amounts, TCX reviewed the scientific literature and determined that each year a Texas coastal marsh could store a minimum of two tons of carbon dioxide per acre."

The first company to make use of this new opportunity to offset its carbon footprint was Kirksey Architecture of Houston and Austin, which is sequestering their footprint through TCX on lands owned and managed by the Galveston Bay Foundation. In addition to the Galveston Bay Foundation, two other Texas coastal landowners, Scenic Galveston from the Galveston Bay system and the privately-owned LaBelle Ranch in Jefferson County, which is part of the Sabine Lake system ", are the other recipients of grants from the exchange in the first year of its operation.

“TCX plans to expand into the coastal prairies and bottomland hardwood forests later in 2020, greatly expanding our available carbon storage inventory,” continued Blackburn. “We invite interested citizens to go to our web site (https://www.texascoastalexchange.org/) and donate to cover their footprint. We invite any corporation interested in removing carbon dioxide and protecting our ecological jewel – the Texas coast – to come and work with us.”

The circular carbon economy has come to our part of Texas, meaning we can now offset our carbon footprints right in this area where it makes a difference!

Bob Romero

SKY OF THE MONTH

Altocumulus clouds are mid level clouds, typically at altitudes of 6,500 - 18,000 feet. The regular spacing between these clouds is due to convection cells, regions of rising air separated by regions of sinking air. The clumps of clouds mark the rising convection cells.

If you want to distinguish the three types of clumpy clouds - stratocumulus, altocumulus and cirrocumulus - size is the best way. Holding your hand at arm’s length, if the individual cloudlets are between one and three fingers wide, they are altocumulus.

Precipitation is rare, and only light when it falls.

This picture was taken 21 May 2020.

Invasive Removal Provides Material for Pioneer Village

In addition to Adopt-a-Trail efforts, staff and volunteers at Jesse H. Jones Park have been opening up the thick forest understory choked with Privet and Yaupon adjacent to trails. Once opened, native grasses, forbs, and trees are allowed to develop and mature. Normally, cuttings associated with removal activities have been stacked adjacent to trails and then shredded back onto the forest floor. During one recent removal activity, staff member Katrina Yordy mentioned she could use much of the removed material for fencing in the Redbud Hill Homestead Village in the Park. And, voila! What was being recycled is now being reused. Please see associated photos showing GCMN volunteers Chris Arceneaux, left, and Ted Andrews, right, along with Cory Noble, center, Jesse Jones Park Volunteer Board member. Also shown are photos of the removal activity and the material being used as poles for the fencing. - John Egan



Organism of the Month

Prairie Parsley (*Polytaenea texana*)

Prairie parsley is in the *Apiaceae* (Carrot Family). A biennial or perennial herb up to 3 feet tall, its leaves look like giant parsley. In April through June, umbrels of yellow flowers attract many different pollinators. It is a host plant for the black swallowtail butterfly. The seeds are flat, resembling rolled oats.

Sources: Wikipedia, Ladybird Johnson Wildflower Center



Left: Wasp; Middle: Fly; Right: Lady Beetle. All pictures were taken in the pocket prairie at Nature Discovery Center, Bellaire. credit Irmi Willcockson