



Sessions Agenda & Descriptions
Updated July 30, 2021

Please Note:

All items on the agenda are tentative and subject to change prior to event registration and the final event agenda.

Please consider the environment before printing this 40+ page agenda.

T E X A S



OUR MISSION

To develop a corps of well-informed volunteers to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities for the State of Texas.

Program State Sponsoring Agencies:



About the 2021 Annual Meeting

*Welcome to Irving, Texas! This year marks our 22nd Annual Meeting and the **23rd** year of the Texas Master Naturalist Program. We have scheduled **over 100** different presentations and field sessions with a variety of topics and speakers from around the state. Outside of the classroom, we also have a great Virtual Nature Venture to raise funds for the Annual Meeting next year, plenty of opportunities to meet new friends and old friends alike, some really beautiful artwork and photos entered into our annual contest, and a wide variety of chapter projects entered in the Project Fair. Enjoy this weekend of comradery and learning! Thank you for being here with us to celebrate another year of incredible conservation impacts on the land!*

KEY for Agenda

★ **Field Session** (Virtual attendees are NOT able to register for Field Sessions)

🖥️ **Virtual Presentation** (Session will be hosted by the speaker virtually, available to both In-Person and Virtual attendees)

🕒 **Meal** (For In-Person attendees only)

👋 **In-Person Presentation** (Because this session includes an outside portion, it will NOT be available to virtual attendees.)

Thursday, October 21st, 2021

11:00 AM - 2:00 PM

Chapter Leadership Luncheon - Crosswinds

○ Meal

- *Mary Pearl Meuth, Addison Preston (Regennitter), Cameron Kelly & Michelle Haggerty, Texas Master Naturalist Program*

This session is for Chapter Presidents, Chapter Advisors or the Chapter President Designee to attend, hear about statewide initiatives, program updates and accomplishments. There is also usually time for an open format forum.

12:00 PM - 6:00 PM

Lewisville Lake Environmental Learning Area (LLELA) **Open House**

★Field Session

- *Scott Kiester, Elm Fork Chapter*

The Lewisville Lake Environmental Learning Area (LLELA) at nearly 2600 acres is one of the largest and most diverse preserves in North Texas. LLELA is at the intersection of the Eastern Crosstimbers, the Trinity River riparian corridor, and the Blackland Prairie. Once the site of a school, a store, churches, and several families' farms, it was condemned for flood control in the late 1940's and lay neglected until the early 1990's. Now it is laced with trails and host to environmental education and naturalist activities year-round. Its extensive native plant greenhouse and nursery operations provide a wide variety of plant material for all its environments. Master naturalists, along with UNT volunteers, work daily to restore the woodland and prairie ecosystems. LLELA is home to several research projects as well as restoration work. Studies of three-toed box turtles, American kestrels, bobwhite quail, winter sparrows, painted buntings, small mammals and anoles all take place here. Bird banding at our migration banding station and the new MAPS (Monitoring Avian Productivity and Survivorship) station takes place most of the year and 60+ bluebird nest boxes are monitored by Master Naturalists during the breeding season. Drop by anytime between noon and six PM to get acquainted with the preserve. There will be Master Naturalist volunteers working around the nursery all afternoon. If you want to get your hands dirty, there are always weeds to pull and seeds and rootstock to be potted. Stop into the visitor's center. Meet some of our researchers and learn about their projects. Track radio-tagged turtles. Go for a hike along any of the trails. Walk along Jewel Wing Creek on the Blackjack Trail and see if the namesake ebony jewelwing damselflies are out. Visit the Minor-Porter Cabin and homestead where volunteers in period clothing will talk about pioneer life in the area. And everyone is welcome back after sunset, around 7 PM, when Sam Kieschnick will host a nothing event in and around the nursery until late.

1:00 PM - 5:00 PM

Texas Waters Day - Irving I

- *Melissa Felty (Alderson), Texas Parks and Wildlife Department*

At Texas Waters Day, attendees will participate in hands-on, water-based activities that connect us to Texas Waters. These activities will demonstrate how water quality and conservation practices can be done with or without surface water present in your community. Texas Waters Day activities are open to all certified, in-progress, and newly curious Texas Waters Specialists. TMN members from the past 2 years will be recognized for their dedication to the Texas Waters Specialist program, along with special awards to current Texas Waters Specialists that have gone above and beyond as ambassadors for Texas Waters.

1:00 PM - 5:30 PM

Girdling that Works: A Field Workshop @ Coppel Nature Park

★Field Session

- *Cliff Tyllick, Keep Walnut Creek Wild*

Many woody invasive plants can be killed by girdling. Even without using power equipment or herbicides, it's possible for volunteers to use this technique effectively to eradicate mature woody invasives. I have led volunteers in doing so on over 10 acres in Austin's Walnut Creek Metropolitan Park. A girdling toolkit can cost as little as \$10. If you want fancier tools, you might spend \$20. We will also try out a much more expensive tool, but you might decide that your projects don't need it. Come learn the technique while eradicating a stand of glossy privet from a local natural area. One advantage of girdling over other techniques is that canopy-level invasive trees take about a year to die. As they do, they slowly lose their leaves. As a result, native plants growing in their shade don't get burned by sudden exposure to full sun. Instead, they adjust to the slowly increasing levels of light and can take over the habitat on their own, without the need for replanting. Learn this technique and take it home to restore habitat in your own locale.

1:00 PM - 5:00 PM

Use of Prescribed Burning as a Land Management Tool

★Field Session

- *Chris Schenck, Texas Parks and Wildlife Department*

The Texas Master Naturalist Program proposes to host a Pre-Event Workshop on the Use of Prescribed Burning as a Land Management Tool, with a burn demonstration as part of the workshop. The event is designed for both TMN volunteers and resource professionals with limited exposure to prescribed fire. To make this workshop more effective, Texas Parks and Wildlife Department (TPWD) will partner with two local parks. Paired with a classroom discussion on the tools, techniques and safety factors, the plan is to conduct an actual prescribed fire, pending good burning conditions. Participants will be encouraged to be participants, not just be spectators; each will be placed into groups, or squads, led by an experienced TPWD employee. Depending on final location of the burn, weather conditions, and timing, the classroom session will either proceed or follow the burn demonstration. "Sometimes in Fire, you get the test before you get the lesson." If the weather is not of fair conditions, like any good fire practitioner, there will be an alternate plan.

2:00 PM - 6:00 PM

Behind the Scenes at the Botanical Research Institute of Texas (BRIT)

★Field Session

- *Tiana Rehman, Botanical Research Institute of Texas*

Come and celebrate the armchair botanists with a special behind the scenes tour of the BRIT herbarium. See first-hand specimens collected by legendary botanists like Lindheimer, Engelman, and Reverchon. Get some updates on the digitization process, and celebrate all the good that's been done already!

6:00 PM - 8:00 PM

Welcome Social & Dinner - Grand Ballroom (Salons E & F)

○ Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

Join us the night before it all begins for a casual and social dinner, to see everyone again in person and share experiences from the last year.

Friday, October 22nd, 2021

7:00 AM - 8:00 AM

Breakfast & Registration - Grand Ballroom (Salons E & F)

○ Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

8:30 AM - 11:00 AM

Protecting 800,000 Residents from Devastation: The Wetlands of the Fort Worth Nature Center & Refuge

★Field Session

- *Michael Perez, Fort Worth Nature Center*

Comprised of forests, prairies, and wetlands, The Fort Worth Nature Center & Refuge was established to protect the watershed of the West Fork of the Trinity River by the City of Fort Worth, in order to maintain drinking water quality and prevent massive flooding in the city. At over 3,600 acres, the Refuge encompasses river, creek, and marsh habitats rich in biodiversity, including vast numbers of macroinvertebrates, migratory and non-migratory birds, mammals, and reptiles, including alligators. Accompanied by Nature Center staff, visit different areas of the Refuge to admire and learn about this jewel of the Trinity.

8:30 AM - 11:00 AM

Prairies at the Crossroads: Fort Worth Nature Center and Refuge

★Field Session

- *Daniel Price, Fort Worth Nature Center*

Fort Worth sits at a unique crossroads of the Fort Worth Prairie and the East and West Cross Timbers ecosystems. Including over 3600 acres, the Fort Worth Nature Center and Refuge is one of the largest city-owned nature centers in the US. A shining example of land stewardship, the Refuge was recognized in 2009 by TPWD with a Lone Star Land Steward award. The Refuge encompasses forest, wetlands, savannas, and prairies. Join us as we hike several prairies, visiting seeps, home to endemic plants such as seep muhly; and rocky, dry hilltops known for pale yucca, white rosinweed, and Engelmann's sage. Learn about and observe the effects of land management techniques practiced by Refuge staff and Master Naturalist volunteers.

9:00 AM - 12:00 PM

The Eastern Crosstimbers: An Uncommon Forest

★Field Session

- *Scott Kiester, Elm Fork Chapter*

The Eastern Crosstimbers is a thin band of woodland never more than 40 to 50-mile-wide that stretches from Central Oklahoma to East Central Texas. It is an ecosystem very tightly bound to the underlying geology and the soils. It is not a continuous stand of

trees but is interspersed with prairie glades that have their own unique flora and fauna. The Crosstimbers is also a forest with a storied history in the settlement of our state. The morning will start with a short lecture on the ecology, geology, and history of the region in the LLELA classroom and then a hike along LLELA's Blackjack Trail to experience our nearly untouched bit of the "Cast Iron" forest.

8:00 AM - 12:00 PM

Texas Stream Team Riparian Evaluation Citizen Scientist Training - Las Colinas I

Virtual Presentation

- *Sandra Arismendez & Claudia Campos, Texas Stream Team - The Meadows Center for Water and the Environment*

In collaboration with the Nueces River Authority, The Meadows Center for Water and the Environment's Texas Stream Team Citizen Science program developed a Riparian Evaluation Citizen Scientist Training to monitor riparian health and potential hindrances in Texas. Texas Stream Team Riparian Evaluation monitoring includes capturing georeferenced images and using the Riparian Bull's-Eye Evaluation Tool to assess ten key indicators: Active Floodplain, Energy Dissipation, New Plant Colonization, Stabilizing Vegetation, Age Diversity, Species Diversity, Plant Vigor, Water Storage, Bank/Channel Erosion, and Sediment Deposition. Upon completion of the training, session attendees will receive the Texas Stream Team Riparian Evaluation Citizen Scientist Training certification to begin monitoring riparian areas in Texas.

8:00 AM - 12:00 PM

Grasses, grasses, grasses, everywhere, but which one is it!! – Lonestar

In-Person Presentation

- *Dale Kruse, S. M. Tracy Herbarium*

The Poaceae (grass) family is one of the largest families of vascular plants in the world, especially in a largely prairie state like Texas. Grasses are also a vital ecological, as well as economic, force across the globe. As components of every landscape in the state, grasses are a dominant component of the rich biodiversity that is Texas. In this workshop we will take a close look at the identification of grasses using two approaches. An initial lecture will delve into the basics of grass morphology, ecology, and biogeography. In the lecture the student will gain a better understanding of these topics, which can then be applied in the laboratory session that follows. The laboratory session is designed as a continuation of the introductory class. In this session we will take a detailed look at the morphology this group of plants with the aid of a dissecting scope and published references. Using dissecting microscopes, participants will observe the macro and micro morphological characteristics that are essential for accurate identification of these groups. All equipment for the class will be provided, just bring your curiosity.

8:00 AM - 10:15 AM

The Air Potato Patrol Marches Through the Pandemic - Salon A

Virtual Presentation

- *William Lester, University of Florida/IFAS Extension Hernando County & Emily Kraus, Florida Department of Agriculture and Consumer Services*

Florida is home to many exotic invasive organisms. One invasive plant that many Florida residents are familiar with is *Dioscorea bulbifera*, the air potato vine. This plant has a native range including much of Asia, tropical Africa, and northern Australia (Burkill 1960). Introduction into the United States occurred in Alabama during the 1700's. Since then it has spread throughout Florida, as well as Hawaii, Louisiana, Mississippi, Georgia, Alabama, South Carolina, and Texas. The vine grows rapidly, climbing tree canopies and crowding out native plant species. It is considered one of the most aggressive weeds ever introduced into Florida. Most air potato management methods have proven ineffective (Wheeler et al. 2007). Chemical control is costly and mechanical control of air potato is labor-intensive and time-consuming. Biological control is the most promising management strategy after the discovery of the air potato beetle (*Lilioceris cheni*: Chrysomelidae) (Wheeler et al. 2007). Release and establishment of the beetle in Florida resulted in a massive reduction in vine biomass, bulbil production, and spread of the vine. This program can be considered one of the major successes in the field of biological control. To better educate Florida residents about this invasive vine and how to control it, a citizen science project was created. Dr. William Lester and Dr. Chris Kerr launched The Air Potato Patrol in early June, 2017. Dr. Emily Kraus assumed responsibility for rearing air potato beetles and research at FDACS in late 2019. Participants can become citizen scientists and submit data about the vines growing on their property. During the program's first year, almost 500 individuals became members, the website received 16,000 page views and the ten educational videos have been viewed nearly 4,000 times. Kraus's team has determined that releases in previously targeted and newly identified locations across these states are warranted to ensure widespread establishment of beetles. Attendees to this session will learn how air potato beetle can be used as part of an Integrated Pest Management approach to restricting growth of the air potato vine and how the Air Potato Patrol has been used to educate the public and aid researchers. Because air potato is present in parts of Texas, Master Naturalists are welcome to participate in this program, request beetles if needed and assist with data collection and educating Texans on this environmentally damaging invasive plant.

8:00 AM - 10:15 AM

Birding by Ear - Salon B

Virtual Presentation

- *Kelsey Low, Houston Arboretum & Nature Center*

Birds are hard to see, but they're easy to hear - it's much easier to be a bird-listener than a bird-watcher! In this presentation you'll get a crash course in birding by ear. Learn how and why birds make sounds, the difference between songs and calls, the visual "anatomy" of a bird sound, how to deal with mimics, and ways to describe the beautiful and bizarre squeaks, squawks, chirps, and warbles you hear in the field. From the sweet whistle of a Carolina Chickadee to the crackling, multi-layered mess of a Great-tailed

Grackle, we'll hear plenty of examples of Texas bird sounds and go on a virtual bird walk to practice identifying local species by ear.

8:00 AM - 10:15 AM

Using Reading the Land to Gain a Better Understanding of Land Stewardship - Salon D

- *Ricky Linex, Retired Natural Resource Conservation Service (NRCS)*

This mash-up presentation first introduces how to “read the land” to understand what has happened in the past, what is happening now and what may be in the future meshing with an introduction to Land Stewardship through the years. This big picture look will tie together the need for landowners and managers to become better land stewards.

8:00 AM - 10:15 AM

The Benefits of Native Plants & Natural Home Wildscaping - Salon I

- *Roger Sanderson, Former Wildlife Biologist at the Heard Museum*

Doug Tallamy has brilliantly elucidated the critical need for using native plants in our home gardens and landscapes. Most people concerned about the natural world are well aware that we need native plants to provide food for insects, which in turn are necessary to provide food for birds and other animals. They also provide fruits to feed them directly and flowers to maintain pollinator populations to ensure their reproduction. But each species is usually benefitting only a limited number of birds and bugs. So which trees, shrubs, or wildflowers are more beneficial, and which ones provide the most uses to the most species of insects, birds, or animals - especially the ones we most want to share our backyards with? This presentation will cover a wide variety of plants and what each provides. We will review which birds, bugs, or other wildlife use them, what other advantages they provide to the home landscape, and how they sustain the local ecology and a healthy environment.

8:00 AM - 10:15 AM

iNaturalist 101 - Grand Prairie

In-Person Presentation

- *Craig Hensley, Texas Parks and Wildlife Department*

iNaturalist is a powerful data collection tool enjoyed globally by hundreds of thousands of people. Texas Parks and Wildlife Department's Texas Nature Trackers (TNT) program works with community scientists to help document the state's rich diversity of flora and fauna with an emphasis on specific species through managed projects. During this first of three presentations, you will be introduced to the TNT program and the basics of iNaturalist, from establishing an account to taking usable photos with the app. You'll even be given the opportunity to go outside to practice using the app before the end of the session. **(*Note: because this session includes an outside portion, it will NOT be available to virtual attendees.)**

8:00 AM - 10:15 AM

Dendrology 101 and Tree Identification Techniques - Irving III

- *Christopher Ebling, Blackland Prairie Chapter*

Trees are complex life forms whose form and function, while possessing similarities, vary according to the demands and pressures of the environment in which they live. Trees do not exist in isolation, but exist in relationships with the physical and living environments in which they exist. The first section of this class will focus on the physical nature of trees, including structure, food production, and nutrient cycling within a tree, as well as their adaptive characteristics. The second section will focus on how structure, form, components, and location can be used in tree identification, with specific focus on important trees found on the Blackland Prairie region of Texas.

8:00 AM - 10:15 AM

Interpretive Trail Guiding to Help Adults and Children Enjoy Being Outdoors - Las Colinas II

- *David Powell, Heard Natural Science Museum and Wildlife Sanctuary*

How to interpret nature in a way that is informative and exciting, and how to use some tools to get adults and children involved while outside.

8:00 AM - 9:00 AM

Ocelots in Texas: Conservation Challenges and Opportunities - Salon G

- *Sharon Wilcox, Defenders of Wildlife*

Once ranging across much of Texas and as far east as Louisiana, today the only remaining breeding population of ocelots in the U.S. is found in South Texas. Split into two small populations with no more than 80 ocelots total, these cats face many challenges to survival. Join Dr. Sharon Wilcox, Texas Representative with Defenders of Wildlife, to learn more about this unique cat and the innovative work underway to protect and conserve the remaining population. Discover what you can do to join the fight to save this charismatic wild Texan.

8:00 AM - 9:00 AM

The Indoor Naturalist: Introduction to Viewing Microscopic Biodiversity through Moist Chamber Cultures - Arlington

- *Ashley Bordelon, Botanical Research Institute of Texas*

There is an abundance of life living right under our noses that are waiting to be discovered. Many microscopic organisms, like fungi and myxomycetes, spend their life cycles on the surfaces of trees and other plants. Through moist chamber cultures, we can bring nature indoors to view these life cycles with the naked eye and with the help of microscopy. This presentation will cover the techniques to sample tree bark and other potential microenvironments, a live demonstration on how to create a moist chamber culture with simple and everyday items, and available microscopes and hand lenses for

viewing examples. There are relatively few scientists investigating this microscopic diversity and it is a great opportunity for community scientists to get involved.

8:00 AM - 9:00 AM

The Late Cretaceous Marine Fossils of the North Sulphur River - Fort Worth

- *Mick Tune, Dallas Paleontology Society*

Mosasaurus and more. What was going on at the (current) North Sulphur River 80 million years ago? Why is this odd (and mostly man-made in the late 1920's) slot canyon the most interesting and open fossil hunting hike in North Texas? What is the long earth history and the short human history of this place? What can you find? How do you do that? What is the future of exploring this place now that a dam and lake are under construction that will wipe out more than half of the river? And, of course, let's look at, touch, and ask lots of questions about some real fossils. Thirty minutes of presentation. Thirty minutes of hands on fossil display and questions.

8:00 AM - 9:00 AM

Historical Women Naturalists: Remembering Forgotten Pioneers - Irving II

- *Addison Preston (Regennitter), Texas Master Naturalist Program*

Take a trip through time as we spend the hour reviewing some of the pioneering women naturalists highlighted in Marcia Myers Bonta's "American Women Afield." We will explore the lives and scientific pursuits of these women in entomology, botany, ornithology, ecology, and even taxidermy! This is an informative session for any and all to join and be introduced to new (and possibly familiar) faces who all had great impacts on their respective scientific fields.

9:15 AM - 11:30 AM

Making the Case for Bird ID - Salon C

- *Maureen Frank & Emily Grant, Texas A&M AgriLife Extension Service*

Hey! I saw a... what was that bird? For seasoned birders, quickly recognizing a particular species is usually no big deal. But what if you are new to birding or are teaching someone who is new to birding? In this presentation, we will teach a "making the case" approach to bird identification, where we add up the evidence to reach our conclusion. We will spend the first hour learning about this approach and the second hour practicing, from common backyard species to tricky rare interlopers. This session is ideal for new birders who want to learn how to ID, or for experienced birders who want to learn a fun way to teach others about ID. We'll be using images in the classroom, no binoculars required!

9:15 AM - 11:30 AM

Botany Skills for Naturalists: Learning to Really See the Plants Around You - Salon H

- *Carol Clark, Native Plant Society of Texas, Monarch Watch*

Do you visit a woods or a prairie and just see undifferentiated blobs of green? Maybe it all looks pleasant, but you don't really see individual plants. You aren't alone! Lots of people experience plants that way. Maybe you already have observation skills and can even see the differences between different birds, or lizards, or model years of cars, but everything leafy looks the same to you. Knowing which plants are present can influence purchases, management plans, restoration plans, and biological survey efforts. Because the plants present influence the insects present and every other part of the food web, it's really helpful for a naturalist to start seeing plants as individuals with their own needs and stories. This entry level workshop is designed to show you where to start to really "see" the pieces of plants. We'll learn to describe the details that set them apart from each other and enable the observer to use botanical keys. The workshop will use a combination of slides and hands-on lessons with plant pieces you actually bring to class, whether attending virtually or in person. The class will include reference materials.

9:15 AM - 11:30 AM

Junior Master Naturalist Roundtable - Irving I

- *Adrienne Paquette, Heartwood Chapter*

Join other chapters from around the state to discuss the diverse and creative approaches to educating young Texans about the natural world through the Junior Master Naturalist program. The Junior Master Naturalist program is currently created and run individually by each chapter. In this roundtable session, we will discuss ways in which we can continue the legacy of the Texas Master Naturalists by educating future generations through the Junior Master Naturalist program.

9:15 AM - 10:15 AM

Operation Game Thief - Salon G

- *Danny Shaw, Operation Game Thief & Michael Mitchell, Texas Parks and Wildlife Department (Retired)*

Operation Game Thief is the nation's premier natural resource crime stoppers program, offering rewards of up to \$1,000.00 for information leading to arrest and conviction of violators. OGT was created in 1981 by the 67th legislature to protect all resources belonging to the citizens of Texas from theft and destruction. Operation Game Thief is a Texas 501 (c) (3) nonprofit corporation solely dependent on financial support from the public. Our ability to provide a direct confidential link for the public with Game Wardens has produced success in identifying and solving many wildlife crimes. OGT needs the public to become actively involved in helping us protect every species of fish and wildlife from those that are profiting from illegally harvesting for greed or sale over the black market. If you hunt, fish, photograph, bird watch, hike, or are just concerned about conservation please HELP OGT protect the most diverse and unequalled resources in the nation. Our relationship with Texas Game Wardens is critical to the success of our program. OGT also creates lasting partnerships with many other organizations and communities who believe that conservation is a team sport and requires us to focus our passion together for protection for future generations.

9:15 AM - 10:15 AM

The LLELA McWhorter Creek South Prairie Restoration Project - Salon J

- *Jimena Vivanco, University of North Texas, Jaime Baxter-Slye, University of North Texas & Richard Freiheit, University of North Texas*

The University of North Texas student chapter of the Society for Ecological Restoration (SER) partnered with the Lewisville Lake Environmental Learning Area (LLELA) 'Friends of LLELA' to begin a prairie restoration in the Fall of 2020. The new prairie restoration site, named 'McWhorter Creek South', is 58 acres located in the southeast corner of LLELA, south of McWhorter Creek and adjacent to Business 121 and the Lewisville Independent School District Outdoor Learning Area (LISDOLA). While over 300 acres of the northeast portions of LLELA are burned regularly to ensure prairie health, the McWhorter Creek South area had never been burned before Fall 2020. The loss of funding for LLELA due to financial pressures that were exaggerated by COVID as well as reduced volunteer availability resulted in the decision to begin prairie restoration on this site. LLELA's Restoration Manager, Richard Freiheit, and the 'Friends of LLELA' were able to fundraise \$12,500 to support the restoration process and buy seed. The first burn of McWhorter Creek South was conducted on November 12th, 2020. The ignition began at noon and lasted three hours. Purchase of native seeds and seeds harvested from previous seasons at LLELA were included in the mix of seeds spread in McWhorter Creek South in January. The area will be continuously monitored by the UNT student chapter of the SER by conducting regular percent coverage assessments of the 10 quadrats. While the work at McWhorter Creek South was dictated by low volunteer availability and funding shortages due to COVID, future restoration work, educational programs, and events are already being planned to begin in Fall 2021. As restrictions lift, we expect large volunteer events to take place in the area, including plantings of nursery-grown native plants grown by Friends of LLELA, educational field trips, and active restoration will continue.

9:15 AM - 10:15 AM

How to be Texan by Nature - Irving II

- *Jenny Burden, Texan by Nature*

Texan by Nature, founded in 2011 by former First Lady Laura Bush, advances conservation across the state by bringing conservation and business together. TxN highlights science-based, effective conservation efforts across the state through the Texan by Nature Certification program. This program is a no-cost recognition and certification that highlights projects that benefit not only our natural resources but the people and economic prosperity that depend on them. Texas Master Naturalists have the opportunity to have their hard work recognized through this program, as well as find volunteer opportunities with conservation nonprofits and businesses. This presentation will showcase examples of projects that have been certified and highlight the many creative ways Master Naturalist work could be showcased via storytelling, social media, and other channels in order to inspire other Texans to participate in conservation efforts of their own, whether through individual or large-scale community efforts.

10:30 AM - 11:30 AM

Counter Ignorance: Master Naturalists Owe it to the Environment - Salon A

Virtual Presentation

- *Mark de Kiewiet, Guadalupe Chapter*

Aim: The most important activity we as Master Naturalists can do is to counter ignorance. **How strategy:** This can be done through a two-pronged approach: Provide knowledge and facts; Develop an interpretive mind. People of all ages are going to be presented with “facts” according to someone. We are not always going to be there to help determine whether these “facts” are real. **How practical:** In order to be successful, we need to develop a holistic approach. Each generation will have their moment and therefore we need to provide them with the skills to look after our environment when their time comes. In young kids, we need to develop their love for nature and develop their sharp mind to observe, note, and see things as an interacting system. Teenagers have a lot of energy and are not scared to voice their convictions. Young adults can provide the energy and maturity to carry actions through. Middle-aged adults have the mental capability and resources to support the necessary action while the seasoned adults have time and patience to mentor each group along its journey. By being aware of the strategy, we can be highly effective to position the public, ultimately making a difference.

10:30 AM - 11:30 AM

Adopt-A-Loop - Great Texas Wildlife Trails - Salon B

Virtual Presentation

- *Joshua Lee, Texas Parks and Wildlife Department*

At the 2020 annual meeting, Joshua Lee presented on the Great Texas Wildlife Trails (GTWT) program and introduced the idea of teaming up with Texas Master Naturalist Chapters to “Adopt-A-Loop.” There are now multiple chapters across the state participating in the project to help Texas Parks and Wildlife keep GTWT information current and accurate. More help is needed, as the GTWT contains over 900 wildlife viewing sites! This is a long-term project in which TMN members will be able to earn volunteer hours by conducting site reviews, suggesting site edits, site removals or site nominations, and recording wildlife observations at their selected GTWT loops and sites. The project utilizes eBird and iNaturalist to help identify what types of wildlife can be viewed at each site. Join us to learn more about this exciting and expanding opportunity.

10:30 AM - 11:30 AM

Gardening and Propagation of Texas Native Plants - Salon I

- *Mark & Andrea Morgenstern, Coastal Prairie Chapter*

We will discuss collecting and cleaning seeds, propagation techniques by sowing seeds, dig and divide and plant rescues. Also covered are proper planting guides and descriptions of several plants.

10:30 AM - 11:30 AM

Headstarting Box Turtles: The Beginning - Salon J

- *Hugh Franks, Elm Fork Chapter*

The Lewisville Lake Environmental Learning Area (LLELA) in Lewisville is conducting a box turtle headstarting program with the goal of adding to the box turtle population at LLELA. Naturally, the beginning of such a program requires the basic input of hatchling box turtles. Raising the hatchlings from the time of hatching until they are old enough to be introduced to the LLELA facilities is different than raising or keeping juvenile and adult box turtles and this presentation attempts to explain some of the challenges in accommodating the needs of box turtles at this stage of their lives.

10:30 AM - 11:30 AM

Preserving Scientific Botanical (Herbarium) Specimens - Arlington

- *Jessica Lane & Tiana Rehman, Collections Manager, Botanical Research Institute of Texas*

Preserved plant specimens are an indispensable tool in botany. Each specimen represents a long-lasting, verifiable form of evidence of a plant's existence in space and time, and a collection of plant specimens can provide a wealth of information about the diversity and distribution of plants and plant communities. If properly preserved, the knowledge contained in these collections will last hundreds of years, and might be useful in ways we don't even know yet. Join us as we discuss the best practices in archival-quality preservation and storage, specifically regarding herbarium specimens. These techniques can be used by volunteers at their local herbaria, or applied to the preservation of other archival materials, or for art projects. Attendees will receive practical instruction and take-home resources, and create and preserve a mock herbarium specimen of their own during the session. Come prepared to work with glue and fragmented plant material!

10:30 AM - 11:30 AM

Landscape & Geologic History of Oso Bay Wetlands Preserve, Corpus Christi, Texas - Fort Worth

- *Randy Bissell, South Texas Chapter*

The Oso Bay Wetlands Preserve is beautifully at our shoreline. Considering the landscape, the Preserve is made up of three basic geologic components - the Beaumont Uplands, the Wisconsinan Unconformity, and the Holocene Bay Fill. Most of the preserve is made up of Beaumont Uplands which are comprised of the ~450,000 to 125,000-year-old "Beaumont Formation" clays, commonly containing oyster shells. The uplands host a variety of native trees, brush, and thorny thicket. Prairie grasses and cacti grow well on the slopes here. A host of songbirds inhabit and nest in the dense foliage. The Wisconsinan Unconformity is not a unit, but rather a surface. It is the gentle erosional face or slope that fronts the Cayo de Oso Bay. It is the erosional scar of a sea-level fall that occurred in the last 120,000 years to about 18,000 years ago as the Wisconsinan Ice advanced across much of North America. Global sea level fell over 400 feet! Imagine looking into a deep ravine, perhaps 60-80 ft. deep separating the Preserve from a linear sandy hill, the present-day Flour Bluff. Now, imagine the beach 60 miles east of Port Aransas! Sea-level rise in the last 15,000 years has resulted in the Holocene Bay Fill, or the flat sandy and salty wetlands of the intertidal environment.

The fine sands and silts drape onto the Wisconsin Unconformity. The present-day sea level fills the estuary and tides, or heavy rains may flood the lowlands. Placing your finger at the contact between the Beaumont Formation and the Holocene intertidal fill represents a time gap of over 100,000 years! Here at the shore are the salt-tolerant worts, grasses, and mangroves. Ducks, roseate spoonbills, terns, gulls, and herons all love the natural productivity and diversity of food sources in these wetlands.

10:30 AM - 11:30 AM

Introduction to Leave No Trace - Irving II

- *Bruce Polikoff, Central Texas Chapter*

The Leave No Trace educational program promotes skills and ethics to support the sustainable use of wildlands and natural areas. As Master Naturalists spending time outdoors, in the natural world and in wilderness, it's important to be conscious of the effects our actions may have on plants, animals, other people, and even entire ecosystems. This session is an overview of the Leave No Trace Seven Principles: Plan Ahead and Prepare, Travel and Camp on Durable Surfaces, Dispose of Waste Properly, Leave What You Find, Minimize Campfire Impacts, Respect Wildlife, Be Considerate of Other Visitors.

10:30 AM - 11:30 AM

Invasive Trees and Vines Found in North Texas

Woodlands - Irving III

- *Rick Travis, Blackland Prairie Chapter*

A review of the top invasive trees and vines found in North Texas: 1. How to identify these species; 2. Where they came from, and why they're here; 3. The environmental issues they create; 4. Recommended control methods.

11:00 AM - 12:00 PM

White-tailed Deer in the Blackland Prairies - How to Manage For or Against Them - Salon D

- *Ricky Linex, Retired Natural Resource Conservation Service (NRCS)*

While the title may show some tongue in cheek humor, this presentation shows the history of the movement of white-tailed deer into the Blackland Prairie in the past 150 years and how their presence is impacted by land management decisions in this agriculturally diverse region. Will show how Aldo Leopold's basic tools of habitat management applies to managing white-tailed deer in the Blackland Prairie.

11:00 AM - 12:00 PM

Endangered Species in Texas and How You Can Help - Salon G

- *David Powell, Heard Natural Science Museum and Wildlife Sanctuary*

Some examples of who needs your help to survive in our state, with ideas on how you can be a part of the effort to save them.

11:30 AM - 1:30 PM

Lunch & Keynote: Livestream - Grand Ballroom (Salons E & F)

Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

1:30 PM - 5:30 PM

Sedges have edges, rushes are round...well not always!! –

Lonestar

In-Person Presentation

- *Dale Kruse, S. M. Tracy Herbarium*

The Cyperaceae (sedge) and Juncaceae (rush) families of vascular plants are often considered a difficult group to identify. As components of most landscapes throughout Texas, these "grass-likes" are important members of the rich biodiversity that is Texas. In this workshop we will explore this somewhat foreign world using two approaches. An initial lecture will delve into the basics of sedge and rush systematics, morphology, ecology, and biogeography. In the lecture the student will gain a better understanding of these topics, which can then be applied in the laboratory session that follows. The laboratory session is designed as a continuation of the introductory class. In this session we will take a detailed look at the morphology of these groups with the aid of a dissecting scope and published references. Using dissecting microscopes participants will observe the macro and micro morphological characteristics that are essential for accurate identification of these groups. All equipment for the class will be provided, just bring your curiosity.

1:45 PM - 5:15 PM

Rocks tell great stories ... if you listen - Fort Worth

In-Person Presentation

- *Margaret Avard, Bluestem Chapter*

Did you know that rocks tell stories? Especially the sedimentary rocks which underlie most of Texas. In this workshop you will learn hands-on identification of basic igneous, metamorphic and sedimentary rocks. Discover the secrets of sedimentary rocks (they give us a tremendous amount of information about the history of the surface of the earth) and end with a journey back through millions of years of Texas time.

1:45 PM - 5:15 PM

Hook, Line, and Sinker: Secrets to Engaging and Educating Through Interpretive Programs - Las Colinas II

- *Carol Brinlee, USDA-NRCS, Linda Brinlee, Texas Parks and Wildlife Department, & Reah Easley, Bois d'Arc Chapter*

From running a booth at a county fair to presenting a Nature Day program to second graders, delivering a compelling program can be challenging. Learn how to create interactive interpretive programs for parks, schools, and other community groups. These three presenters will walk you through how to break down a topic to reach all ages and appeal to a multi-aged group, how to create activities for sense engagement, and how to make concepts such as conservation concrete and understandable. Most of all, learn how to make an interpretive program entertaining, engaging, educational, and

effective. Plan on getting your hands "dirty" and add to your interpretive tool bag during this hands-on workshop. Along with presentations and activities, participants will have the opportunity to practice their new skills by developing "micro-programs".

1:45 PM - 4:00 PM

Collecting Scientific Botanical (Herbarium) Specimens - Arlington

- *Ashley Bordelon & Tiana Rehman, Collections Manager, Botanical Research Institute of Texas*

Preserved plant specimens provide us with important information about plant diversity and distribution, and represent an observable, relatively permanent, and verifiable form of evidence of a plant's existence in time and space. If these specimens are properly preserved and maintained, they can last for several hundred years for reference and sampling. Join us in exploring the best practices for collecting scientific specimens, specifically for deposit in herbaria. We will discuss methods for data collection and plant sampling (pressing and drying) of vascular plants specifically, with some hands-on opportunities to practice.

1:45 PM - 4:00 PM

Native North Texas Trees Highly Prized by Wildlife - Irving III

- *Rick Travis, Blackland Prairie Chapter*

A discussion of key native trees found in north Texas that are highly utilized by wildlife, reviewing their physical characteristics, where they range, preferred habitat, natural history, and their value to the woodland ecosystem.

1:45 PM - 4:00 PM

Introduction to Entomology - Las Colinas I

- *Christopher Ebling, Blackland Prairie Chapter*

Insects are the most ubiquitous life form on the Earth, occupying virtually every ecosystem, terrestrial as well as aquatic. Entomologists estimate that there are approximately 5.5 million insect species with only 1.1 million having been described. Insects are a key component of the food chain, and are responsible for millions of dollars of economic benefits as well as losses, are vectors for animal and human diseases, and are being considered as a future source of human protein consumption. This class will provide detailed information on the classification of insects, insect morphology, lifecycles, the role of insects within the global ecosphere, and their impact on human society. This introductory-level class will count as a make-up entomology Basic Training credit.

1:45 PM - 2:45 PM

Chronic Wasting Disease in Texas - Salon A

Virtual Presentation

- *Ryan Schoeneberg, Texas Parks and Wildlife Department*

Coming to a town near you? What is it, where is it, and what do you need to know about it? CWD is an insidious disease, and is the only disease that once you get there is really

no way to get rid of it. So an ounce of prevention is worth an immeasurable amount of cure! As CWD is being found in more corners of Texas we need to educate ourselves and our neighbors on what it is and what it takes to stop it. Come learn about CWD so we can help educate others and slow the spread.

1:45 PM - 2:45 PM

War of the Worlds: Insects vs alien invaders - Salon B

Virtual Presentation

- *Laurie Gonzales, U.S. Fish and Wildlife Service*

While the story of War of the Worlds by H.G. Wells may be fictional, alien invasions are occurring all over our world. At Trinity River National Wildlife Refuge, a 30,000-acre bottomland hardwood forest in Liberty County, TX, the battles wage on water (*Alternanthera philoxeroides* vs *Disonychia argentinensis*, *Eichhornia crassipes* vs *Neochetina eichhorniae*, and *Salvinia molesta* vs *Cyrtobagous salviniae*) and on land (*Triadica sebifera* vs *Bikasha collaris* and *Gadirtha fusca*). The struggle is real and more harrowing than *Mothra* vs *Godzilla*! In this presentation, you will learn about the insect biocontrols behind the fight against invasive aquatic vegetation (water hyacinth, alligatorweed, giant salvinia) and invasive terrestrial vegetation (Chinese tallow). Also, ever heard of trifoliate orange? You probably have it in your backyard and it is the zombie YOU need to kill before it spreads like the apocalypse!

1:45 PM - 2:45 PM

Prescribed burns in suburban areas - challenges, benefits and lessons learned - Salon D

- *Lorelei Stierlen, Blackland Prairie Chapter, Blackland Prairie Raptor Center*

The population of the Blackland Prairie ecoregion continues to grow, resulting in our precious remaining fragments being surrounded by suburban neighborhoods and businesses. The grasslands are a disturbance-maintained ecosystem, and prescribed fire is one of the most critical tools for our conservation and restoration efforts. Although on the surface it may appear too risky, conducting prescribed burns in suburban settings reduces risk, and is as much a benefit to the residents as it is to the ecosystem. The Blackland Prairie Raptor Center (BPRC), located on 66 acres of U.S. Army Corps of Engineers land, is one such prairie island surrounded by homes. Our prescribed burns over the past several years demonstrate that with education and cooperation, controlled burns in a suburban environment are a proven win-win scenario. We will highlight the challenges faced at BPRC, the benefits these burns provide to everyone and the lessons learned from our experiences. Our goal is to demonstrate that the use of prescribed fire in suburbia is necessary and achievable.

1:45 PM - 2:45 PM

Advocacy for Nature: Volunteers Can Educate Elected Officials Too! - Salon G

- *Jen Powis, Alliance for Justice*

As volunteers, we all value Texas landscapes and open spaces. But as we volunteer in support of our local spaces, we can also advocate for policies and budgets to protect,

preserve and enjoy these spaces even more. This presentation talks about how every nonprofit public charity can advocate and lobby for causes and provides a background to help Master Naturalists understand the nonprofit sector more. After this workshop you will have a clear understanding of how nonprofit advocacy works, the kinds of advocacy activities 501(c)(3)s can engage in, and when a communication is considered lobbying.

1:45 PM - 2:45 PM

Applying Ecological Concepts and Modeling to Stop the Next Invaders - Salon H

- *Hanna Bauer, Holly Grand & Katie O'Shaughnessy, Texas Parks and Wildlife Department*

Invasive species can have profound impacts on native species, environments, and the people and economies that rely on those ecosystems. Marine invaders are no exception to this, and can be extremely difficult to find and remove due to their habitat. For example, a lionfish living 600 feet deep in the Gulf of Mexico is certainly harder to detect than a feral hog on the edge of a suburban park. Thus, there has been a focus on the prevention and early detection of new invasive marine species before they become established in a new environment. We will present the non-native species most likely to invade the northern Gulf of Mexico so that Master Naturalists are familiar with these novel organisms. The objective is to identify which species pose the greatest threat to our coasts and oceans, then prepare to respond effectively if and when they appear. In the first part of the talk, we will discuss how we can forecast potential marine invasive species in the Gulf of Mexico. This process considers similar species that live in other parts of the world and uses ecological assessments and tools like the Aquatic Species Invasiveness Screening Kit. This process is based on the biology of the organism, the likelihood it could live in the introduced environment, and potential pathways it could physically reach the new ecosystem. Using these techniques, we will then discuss the species that pose the greatest threat to the northern Gulf of Mexico. The second part will focus on identification of these species and where to report them when encountered. Master Naturalists will walk away with a deeper knowledge of the science of invasive species, and learn the tools to prevent new species from becoming established on the Texas coast.

1:45 PM - 2:45 PM

Texas Turtles: A Cradle of Turtle Diversity across the Lone Star State - Salon J

- *Viviana Ricardez, Texas Turtles*

Within the boundaries of Texas there are 268,581 square miles, 7 biotic provinces, drained by 15 major river systems with a combined length of 80,000 miles, 25 native species of freshwater and terrestrial turtles (including 3 endemic species), 5 marine species, at least three major universities with strong academic herpetology programs, 16 zoos and yet a Texas-sized hole in our knowledge pertaining to the ecology and natural history of our chelonians! Fortunately, this is being remedied. Most species are abundant in the wild and relatively easy to study. In the past 10 years there has been a major increase in the amount of research focus applied towards Texas turtles. This also coincides with laws enacted to end all of their commercial trade. Social media, citizen

science participation and academic endeavors are all being used to enhance our understanding and celebrate turtles while deliberately leaving an indelible impression among the youth in our state. This presentation will provide a visual celebration of Texas' turtle diversity and many of the people who are translating their experience and knowledge towards tangible conservation and understanding of a true Texas treasure.

1:45 PM - 2:45 PM

iNaturalist 201 - Grand Prairie

- *Craig Hensley, Texas Parks and Wildlife Department*

This is the second of three iNaturalist sessions. During this one-hour presentation, we will take a deep dive into the iNaturalist website, exploring the possibilities of everything from uploading photos from your camera, editing observations, searching for taxa, performing identifications for others, and lastly, creating places for developing your own personal projects. The third session will dive into projects, filtering options, data pulls and other details of iNaturalist. You can join this session even if you didn't attend the first session, particularly if you are already familiar with the basics of the app.

1:45 PM - 2:45 PM

Texas Water Specialist: Who, What, Where, Why, and Hows - Irving II

- *Melissa Felty (Alderson), Texas Parks and Wildlife Department*

Whether wanting to start TPWD's Texas Waters Specialist certification process or have been certified since the start of the program, this session will provide updates and answers to VMS admin and member questions. Lists of approved AT and service opportunities will be provided, along with highlights of chapter projects and member accomplishments that have improved water quality to Texas Waters.

3:00 PM - 5:15 PM

The Houston toad still needs you! Annual update - Salon A

Virtual Presentation

- *Paul Crump & Elizabeth Bates, Texas Parks and Wildlife Department*

The Houston Toad was one of the first amphibians placed on the Endangered Species List. Despite over 40 years of research and conservation, this native Texan has disappeared from vast swaths of its historical range. While we have lots of knowledge about what the Houston toad needs to survive, it can be difficult to turn this knowledge into action and implement conservation to benefit the toad. To assist landowners in helping us recover the Houston Toad, the Texas Parks and Wildlife Department worked with the U.S. Fish and Wildlife Service to create a Safe Harbor Agreement program. This program works by enrolling landowners in the Houston toad's range that want to voluntarily improve habitat conditions for the species. Houston toads occur in deep sandy woodlands and savannas in Austin, Bastrop, Burleson, Colorado, Lavaca, Lee, Leon, Milam, and Robertson counties. We need the help of Texas Master Naturalists, particularly those from the Brazos Valley, El Camino Real, Gideon Lincecum, and Lost Pines chapters, to recruit landowners into this program. At this session we'll provide an overview of the Safe Harbor Agreement program and an update on enrollments, describe the ecology and habitat needs of the Houston toad, and talk about habitat

management practices that are needed to help recover this species, as well as the financial incentive programs that are available to assist landowners achieve the desired management. Our goal is to provide the session participants with information so they feel confident in talking about the Houston toad and the Safe Harbor Agreement and with helping TPWD recruit more landowners into the program. Please help us get this native Texan off the endangered species list!

3:00 PM - 5:15 PM

Kingfishers: Masters of Two Mediums - Salon C

- *Scott Kiester, Elm Fork Chapter*

A globe spanning family of 114 species, they range from the tiny bejeweled river kingfishers of Africa and Asia to the raucous Kookaburra of Australia. Learn about the natural and cultural history of the birds that have fascinated both naturalists and engineers, and become closer friends with the three kingfisher species native to our home state.

3:00 PM - 5:15 PM

Monitoring Avian Productivity and Survivorship (MAPS) Stations Across Texas - Salon D

Virtual Presentation

- *Nicole Alonso-Leach, Texas Parks and Wildlife Department*

Protecting and monitoring bird populations is an area of concern to government agencies and land managers. While threatened and endangered species may take higher priority for many government and nongovernment entities, many species that are currently not listed under state or federal guidelines are at risk as well. Monitoring Avian Productivity and Survivorship (MAPS) stations are one tool to monitor migratory bird population sizes and trends. MAPS stations utilize a standardized constant-effort protocol in which birds are caught and banded during the summer nesting season. Data collected from MAPS station, such as capture/recapture and ratios of adult to juvenile birds, is then used to gain insight to population statuses and trends. Currently, there are about 45 established MAPS stations in Texas, and new MAPS stations can be established by anyone with a banding permit. Volunteers that don't have a banding permit are welcome and encouraged to assist with established MAPS stations. This training will provide the information needed to assist with a MAPS station including what data to collect, bird handling, and banding techniques.

3:00 PM - 5:15 PM

Laws and Ethics 5.0 - Salon G

- *Michael Mitchell (Retired) & Richard Heilbrun, Texas Parks and Wildlife Department*

Open to previous attendees and newcomers, in 2021 we'll explore all new ethical dilemmas and legal situations that a Master Naturalist might encounter. This interactive exercise will discuss ethical and legal dilemmas that every Master Naturalist should know and understand. Some situations may be straightforward, and some may ask you to dig into your life experiences and training to apply your conservation ethic to real world situations. Brought to you in a friendly, entertaining, common sense dialogue, the

speakers will challenge each other and the audience to answer conservation's most challenging quandaries. This activity will supplement the newly published Laws, Rules & Ethics module in the TMN curriculum. Now in their fifth year teaching this topic at the annual meeting, Richard Heilbrun and Mike Mitchell put a new spin on this interesting discussion.

3:00 PM - 5:15 PM

Lurking Leviathans in Texas Waters - Salon J

- *Carl Franklin, Texas Turtles*

Alligator snapping turtles are uniquely American and the largest freshwater turtle in the western hemisphere. These reptilian icons inspire awe and respect but until recently much of their ecology and natural history has remained shrouded within a depth of mystery exceeding that of the waters in which they dwell. This presentation will illuminate a better understanding of these 'mythic' turtles with insights gained through field work conducted throughout much of their range as well as the challenges currently threatening their very existence.

3:00 PM - 5:15 PM

Restoring Native Prairie Habitat on Public Land - Salon I

- *David Powell, Heard Natural Science Museum and Wildlife Sanctuary*

Join me as I discuss how we have dealt with cities to restore the habitat in Wylie and Erwin Park in McKinney, Texas. We'll take a visual tour of what is growing at both sites and will then discuss how we are completing the restoration and the challenges we have faced along the way.

3:00 PM - 5:15 PM

Small Acreage, Big Opportunity - Irving II

- *Amanda Gobeli, Texas A&M Natural Resources Institute, Iliana Peña, Texas Wildlife Association, & Maureen Frank, Texas A&M AgriLife Extension Service*

Land ownership in Texas is changing. Rising populations and increasing demand for land mean that the number of land holdings is increasing even as average parcel size decreases, resulting in more small-acreage properties. Many of these new landowners simply want a "little slice of Texas" to call their own, with management goals that prioritize pollinators, birds, and other native wildlife for recreational enjoyment. These small-acreage landowners will be important allies in land stewardship and wildlife conservation in the future, but current education and outreach initiatives often fail to meet their needs and offer management advice that is only applicable to large properties. In this talk, we will further explore the trends that are leading to the rise of small-acreage landowners, the potential and significance of this group to conservation, and ongoing efforts to better support them in their land stewardship goals.

3:00 PM - 5:15 PM

Take-aways from training 64 new Texas Master Naturalists amid a pandemic - Irving I

- *Jean Suplick, Blackland Prairie Chapter*

In 2020, with thirty-two trainees half-way through classes, the pandemic shut down the Blackland Prairie Chapter's training program. In this presentation I will relate how we retooled in mid-stream to graduate the 2020 class, and how the lessons we learned led to an entirely revamped 2021 training program. I will discuss how we "flipped" our classroom and its implications, how and why we restructured our Training Committee and asked more of our guides/mentors, the Internet tools/applications we found to support our new way of doing things, the home-based pre-work we assigned each week, and how our speakers responded when asked to do things differently. I will also share my thoughts on carrying many of these practices forward into the post-pandemic future. In-person and virtual attendees are invited to participate in the semi-structured discussion so all Training Committees and New Class Directors can learn from each other's experiences.

3:00 PM - 4:00 PM

Managing grasslands for pollinator conservation - Salon B

Virtual Presentation

- *Elinor Lichtenberg, University of North Texas*

This presentation will discuss insect pollinator biology and behavior, and how this information can help us conserve pollinators. We will talk about several different pollinator conservation practices that are used in Texas. The presentation will also give an overview and preliminary results from a project studying the impacts of different prairie management practices on plant and pollinator communities in the Cross Timbers ecoregion.

3:00 PM - 4:00 PM

Friends Don't Let Friends Spread Invasive Species - Salon H

- *Matthew McClure, Lamar State College Orange*

Invasive species are non-native organisms introduced by human activity into a new area, become established, and cause environmental and/or economic harm. More than 800 aquatic and terrestrial invasive species are currently known in Texas. This presentation will focus on various Texas examples with modes of introduction, spreading, and various harmful effects, and will provide resources and information on what you as citizen scientists can do to help.

3:00 PM - 4:00 PM

iNaturalist 301: Advanced Applications & Exploring Data in iNaturalist - Grand Prairie

- *Tania Homayoun, Texas Parks and Wildlife Department*

The iNaturalist platform is so much more than just a place to share your nature observations and contribute to others' community science projects. Moving beyond the iNaturalist basics, this session will explore topics such as creating Projects and using them to collect and organize observations; using filters and URL searches to explore observations; and how to download iNaturalist data and use it to fuel your own investigations and projects. This session is for advanced iNaturalist users and assumes that participants are comfortable using iNaturalist to make observations and identifications and are familiar with the website. Participants are encouraged to bring

their own laptop or tablet to the session. New iNaturalist users should attend iNaturalist 101 and 201 sessions first.

4:15 PM - 5:15 PM

Becoming Zen: How cattle can benefit wildlife - Salon B

Virtual Presentation

- *Megan Clayton, Texas A&M AgriLife Extension Service*

Texas was, and still is, known for its beef production. As nature enthusiasts, we may worry that cattle are having a negative impact on wildlife species...and they could! But - there are scientifically proven ways to use cattle as a beneficial tool for wildlife and maintain productive livestock operations. We'll look at novel projects that can demonstrate the use of cattle to improve plant diversity through creative management.

4:15 PM - 5:15 PM

Stop the spread! Using Texasinvasives.org for Invasive Species identification, management and report - Salon H

- *Ashley Morgan-Olvera, Texas Invasive Species Institute, Sam Houston State University*

Texasinvasives.org knows that the more trained eyes watching for invasive species and managing them, the better our chances of lessening damage to our native landscape. Our goal is to inspire strong stewardship practices through the detection and invasive species while encouraging all into manageable action in their local area; and we need the help of involved individuals like you! This presentation will introduce important invasive pests and plants in Texas while also providing the tools for identification, management and how to report these species using the texasinvasives.org website or phone app. Other initiatives will be included in the presentation like our Citrus Greening detection program, Aquarium Watch! and how to schedule workshops for your TMN Chapter.

4:15 PM - 5:15 PM

Tarantula Time in Texas - Las Colinas I

- *Leah Patton, Texas Tarantulas*

When you were younger, do you remember those spring and fall evenings when the roads were covered in creepy-crawly things - namely, male tarantulas on the move? Ever wonder why you don't see them anymore? How is the population faring? Have the extremes of cold, wet, and now heat had an effect on the population? Are people seeing more or just noticing more with the wider spread of Social Media? Don't be scared of our brown, 8-legged friends! We will educate you about local and even exotic Tarantulas! Join the mother/daughter team of the Spider Queens in learning about the native species of Texas and surrounding states, as well as these fascinating creatures in general. We will lecture on the habitat, lifespan, reproduction, and need for conservation of these ancient arachnids.

5:30 PM - 6:30 PM

Quiz Bowl/Trivia Contest VIII - Salon G

- *Richard Heilbrun, Texas Parks and Wildlife Department*

How are you with wildlife trivia? Join us for a fun-filled, low-stakes, but high energy battle! Participants will compete for prizes and bragging rights by answering science questions, wildlife facts, and Master Naturalist trivia. Test your knowledge or come to learn! Bring the beverage of your choice or just bring yourself and a sense of humor and represent your chapter in a contest of knowledge or battle of wits. Teams are encouraged this year. Bribes are welcome, but not guaranteed to work in your favor! Assemble your team beforehand, or during the session, or participate individually.

6:30 PM - 8:30 PM

Dinner - Grand Ballroom (Salons E & F)

Meal

- *Michelle Haggerty & Mary Pearl Meuth, Texas Master Naturalist Program*

Keynote: The Wonders of North Texas Nature - Grand Ballroom (Salon E & F)

- *Amy Martin, North Texas Chapter*

Hardwood bottomland forests. Soaring limestone escarpments. Vast wetlands. Rich riparian corridors. Rivers with rapids and waterfalls. Rare remnants of Blackland and Fort Worth Prairies. Well-preserved swaths of the “cast iron forest” of the Eastern Cross Timbers. North Central Texas has all this and more. Three immense preserves from 2,600 to 3,600 acres. Two large lake-based state parks. A huge national wildlife refuge for water-loving birds. And a host of smaller specialty parks with their own unique wonders. All of it linked by the many forks of the Trinity River, home to a 127-mile long nationally recognized paddling trail. Discover the astounding ecological diversity of the North Central Texas ecotone that transitioned eastern deciduous forest into the western plains. Get a first glimpse of material from *Wild Dallas-Fort Worth: Explore the Amazing Nature of North Texas*, to be released by Timber Press (Doug Tallamy’s publisher) in 2022, while enjoying spectacular photographs of the region’s nature and wildlife.

8:00 PM - 9:00 PM

Moths and moth-ers.

 **In-Person Presentation**

- *Sam Kieschnick, Texas Parks and Wildlife Department*

Join us on the hotel conference lawn for a not-to-be-missed mothing experience. Watch as moths moths moths moths moths moths moths and some other bugs come to lights. Yippee!

Saturday, October 23rd, 2021

7:00 AM - 8:00 AM

Breakfast & Registration - Grand Ballroom (Salons E & F)

○ Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

7:30 AM - 10:30 AM

Birding At Lewisville Lake Environmental Learning Area (LLELA) and Lakeside Park

★ Field Session

- *Maureen Frank & Emily Grant, Texas A&M AgriLife Extension Service*

Get an early start on the day with Sue, Maureen and Emily as they walk through LLELA looking for some of the 275 plus species that have been identified on the property and visit Lakeside Park to see what shorebirds are migrating through on their way south.

8:00 AM - 12:00 PM

Camera Trapping for Science - Grand Prairie

- *Tania Homayoun & Craig Hensley, Texas Parks and Wildlife Department*

Camera trapping - using stationary game cameras to detect wildlife - is a great way to document observations of animals we often miss with traditional surveys and counts. This workshop will introduce the basics of camera trapping, how to set up and manage a camera trap, and how to process and share your observations on iNaturalist. As part of the workshop, we will practice setting up cameras in the field, so participants should wear sturdy hiking shoes and comfortable clothes.

8:00 AM - 12:00 PM

Bryophytes: taking a closer look at biodiversity – Lonestar

 **In-Person Presentation**

- *Dale Kruse, S. M. Tracy Herbarium*

Bryophytes (mosses, liverworts, hornworts) can be rather inconspicuous components of many ecosystems, especially in many of the drier regions of Texas. However, these organisms serve many vital functions in nature and are present in most habitats within the state. In this workshop we will explore this miniature world using two approaches. First, in the lecture we will delve into the basics of bryophyte systematics, morphology, ecology, and biogeography. In the lecture the student will gain a better understanding of these topics, which can then be applied in the laboratory session that follows. The laboratory session is designed as a continuation of the introductory class. In this session we will take a detailed look at the morphology of mosses, liverworts, and hornworts to gain a basic understanding of their intricate morphology. Using dissecting microscopes participants will observe the macro and micro morphological characteristics that are essential for accurate identification of these groups. All equipment for the class will be provided, just bring your curiosity.

8:30 AM - 10:45 AM

Lights Out Texas: A conservation effort for the birds double-feature - Salon C

- *Heather Prestridge, Texas A&M University & Tim Brys, Perot Museum of Nature and Science*

Avian migration is one of the most extraordinary events in all of natural history. Every spring and fall, an estimated one billion birds soar high above Texas, like a superhighway in the night sky. For many birds, migration is the most hazardous period of their lives, and collision with buildings is a major contributor to bird mortality. Most migratory birds travel at night and the growing intensity of urban lighting often attracts them from migrating elevations down toward cities where they risk collisions with glass. Last fall, a small group of environmentally concerned citizens established a “Lights Out for the Birds” project in Dallas. Partners from the Perot Museum and Texas Conservation Alliance have garnered support from the Mayor of Dallas and former First Lady Laura Bush. Building owners, businesses, developers and homeowners were encouraged to help protect migrating birds by turning off non-essential nighttime lighting on buildings and other structures from 11:00 p.m. to 6:00 a.m. during peak migration in Spring and Fall. To document the effectiveness of the program, volunteers surveyed assigned routes each morning to check for fatalities. They recorded where they found strike victims (dead birds) and saved their carcasses for future integration into the Collection of Birds (BRTC) at Texas A&M University. The potential impact of the program is exciting and important for wildlife, and the team has a unique opportunity to influence policy, engage with citizen scientists, and opportunistically utilize casualties in research projects across the University and beyond. With a potential of generating 6,000 specimens per year for the BRTC, we have an enormous opportunity to integrate University research with citizen science while engaging and enhancing the experiences of our students. Our cross-disciplinary university partners will be able to use the specimens for a multitude of projects that involve hands-on student training in research, museum techniques, and science communication. From our efforts to maximize research opportunities on these birds, conservation partners across the state will be able to relay real results back to their city partners and decision makers to influence policy and participation in Lights Out programs. In our presentations, we'll highlight our successes, lessons learned, the utility of casualty specimens, and ways that you as Texas Master Naturalists can become involved.

8:30 AM - 10:45 AM

Fifty Shades of Green; Neat Natives for your Landscape - Salon D

- *Ricky Linex, Retired Natural Resource Conservation Service (NRCS)*

This presentation will show 50 species of native plants that are beautiful and sometimes unusual and can be used in your native landscaping. Some of these can be purchased but many are uncommon and will have to be collected in the wild. A one-page listing of the 50 plants including common and scientific names will be provided for distribution to attendees. This list also includes whether the plants provide values for pollinators. The list will be useful as you begin your search for these neat natives.

8:30 AM - 10:45 AM

Armchair Botanist: Community Scientists Digitizing Specimens - Fort Worth

- *Ashley Bordelon, Tiana Rehman, & Diego Barroso, Botanical Research Institute of Texas/Texas Oklahoma Regional Consortium of Herbaria*
- *Clay Barrett, Oklahoma State University/Texas Oklahoma Consortium of Herbaria*

While more than 3 million botanical specimens exist in Texas herbaria, providing important verifiable material for reference and sampling, only a small fraction of these are digitally accessible for observation or inclusion in scientific studies. Join us in working towards liberating these specimens for research and education. This session will cover the following: (1) a discussion and update on the status of digitization of Texas specimens across North America, (2) learning the skills necessary to interpret herbarium specimen labels and data, and (3) actually transcribing herbarium specimen labels. We'll do some virtual botanizing and talk botany, geography, history. A computer with internet access is required; alternate devices with internet capability may be adequate if large images can be navigated across and text entry into dialogue boxes is achievable.

8:30 AM - 10:45 AM

Interpreting for Kids and School Groups - Irving III

- *Katie Raney, Texas Parks and Wildlife Department*

Working with kids can be a whole different experience than working with adults! Their brains are still developing, their behavior can be unpredictable, and they can have an unsatiable curiosity. This session will discuss how kids' brain development influences their behavior, best practices for working with different age groups, interpretive techniques that are effective with kids, group management techniques, and more. Just like a good program for children, this session will be highly interactive.

8:30 AM - 9:30 AM

What's in a Name? More Nature of Naming - Irving III

- *Matthew McClure, Lamar State College Orange*

This presentation expands on the basic curriculum of the Nature of Naming. An overview of the theory and practice of scientific naming will be discussed along with a brief history of taxonomy and classification from the Two-Kingdom view of Linnaeus to the 3-Domain system of today. Learn the various ways that scientific species names are written in the scientific and naturalist literature and of the rules of naming species. The process of discovering and describing new species and various ways to solve taxonomic discrepancies will be presented using zoological examples. The importance of scientific naming not only provides a global standard for both the scientific community and for naturalists but avoids language barriers and avoids the ambiguity of common names and regional naming discrepancies.

8:30 AM - 9:30 AM

Invasive Aquatic Plants - Salon A

 **Virtual Presentation**

- *Brittany Chesser, Texas A&M AgriLife Extension Service*

This presentation will briefly cover what it means to be "invasive" in an aquatic world and impacts on the surrounding environment. The presentation will mainly focus on background information and how to identify 8+ aquatic vegetation species on the Texas Prohibited List.

8:30 AM - 9:30 AM

Your Outside Voice: NatureCorps Oral History Project -

Salon B

Virtual Presentation

- *Randy Bissell & Michelle Alvarez, South Texas Chapter*

How might we preserve the wisdom and experience of our Chapter in a fun and exciting way? Like many chapters, South Texas is changing with every annual class. Interest in our program is strong, despite the COVID hiccup, and anticipated growth will bring new faces and thoughtful ideas into our organization. Recording our history through documents and meeting minutes seems an essential function - but what of the rich wisdom and breadth of personal experience that made and sustain our Chapter? The South Texas Master Naturalist's NatureCorps project was developed to beautifully capture the stories of Chapter members in their own words. Inspired by NPR's StoryCorps, the project aims to serve both as an archive of Master Naturalist experiences and to highlight the journeys of current members so that we may better connect with one another. Attendees will gain insight on how to incorporate simple multimedia into chapter archive efforts using the TMN WordPress website toolkit. We will talk about the benefits and customers of a living oral history. Hopefully, we provide the means to empower your members to share their stories.

8:30 AM - 9:30 AM

Hiding Nuts: The Life and Times of Squirrels - Salon I

In-Person Presentation

- *Jerrel Geisler, Harris County Precinct 4*

Did you know squirrels can lie? Join us as we learn more about our favorite little forest friends and find out how, when, and why squirrels hide nuts, learn a little more about their lives and why we don't keep them as pets. Join us for an in-depth look at squirrels and find out what other animals are actually squirrels, that you never thought were squirrels. Depending on the location, some portions of the program may take place outside. (***Note: because this session includes an outside portion, it will NOT be available to virtual attendees.**)

8:30 AM - 9:30 AM

First Steps in Tree ID - Salon J

- *Lisa Travis, Blackland Prairie Chapter*

This presentation will offer a basic introduction to the identification of Texas trees. After an introduction to some basic terminology and techniques, participants will use a Trees of North Texas brochure for some hands-on practice identifying trees using leaf, branch, and twig samples.

9:00 AM - 4:00 PM

Lewisville Lake Environmental Learning Area (LLELA) Restoration Day

★ Field Session

- *Richard Freiheit, University of North Texas*

From nine until noon, join in and help instruct the students of UNT while planting natives on Barn Owl Ridge for their annual Make a Difference Day. Then have a box lunch provided by the Friends of LLELA. After lunch join Richard Freiheit and some of our Elm Fork Master Naturalist volunteers for a tour of four of our restoration units. Barn Owl Ridge and the Bison Range are examples of restoration 15 years on. McWhorter Creek North is an area with very similar initial conditions that is in its second full year restoration, and McWhorter Creek South, also a new restoration project, but with different initial conditions and a slightly different goal requiring a different approach to restoration.

9:00 AM - 11:30 AM

LISDOLA: The Lewisville Independent School District Outdoor Learning Area

★ Field Session

- *Scott Kiester, Elm Fork Chapter*

Come experience how LISDOLA engages K-5 students with nature, science and fun! In 1995, the U.S. Department of Education supplied LISD with 84 acres to use for environmental learning located where the Blackland Prairie and Crosstimbers meet. Today LISDOLA hosts over 10,000 students each year and provides a foundational outdoor experience for LISD elementary students. Join us to explore our new indoor facility, engage in 4th and 5th grade lessons, and hit the trail for an interpretive hike to our Paleo Park. Each area of our tour will also highlight the ongoing commitment of the TMN Elm Fork Chapter and how our partnership has furthered student engagement at LISDOLA.

9:00 AM - 11:00 AM

The Making (and Sustaining) of a Nature Park

★ Field Session

- *Cynthia Contreras, City of Coppel: Biodiversity Education Center and Rick Travis, Blackland Prairie Chapter*

Join North Texas Master Naturalists community stakeholders for an indoor/outdoor field experience at Coppel Nature Park on Saturday, October 23rd, from 9-11am. Trickle in from 8:30-9am for a light breakfast and socializing. The journey begins indoors with stories about the evolution of Coppel Nature Park and the Biodiversity Education Center, an overview of the programs and services it offers to the community, and introduction to the stakeholders who continue to sustain it. We're telling our story with the hope it will inspire similar opportunities in other communities. The adventure continues outdoors as we explore the biodiversity found in CNP, which includes a riparian zone, Cross Timbers forest, and prairie restoration. Dress for outdoor activities

and moderate terrain, which may involve crossing a shallow creek! Registration is limited to 50 participants.

9:00 AM - 11:00 AM

Bob Jones Nature Center - History & Ecology

★ Field Session

- *Hannah Nyquist, Bob Jones Nature Center and Preserve*

Join us on a historical and ecological walk of the Bob Jones Nature Center. The preserve is made up of 758 acres of Cross Timbers ecosystem. Bob Jones was a former slave (granted freedom after the Civil War) that became a prosperous and highly respected rancher and farmer in what's now Roanoke and Southlake. Learn about the history of the land, the former landowners, and some of the nature too!

9:45 AM - 12:00 PM

Forest Ecology - Salon J

- *Christopher Ebling, Blackland Prairie Chapter*

A very large percentage of the Earth's surface is covered by forests. But what makes a forest a forest? How is a forest different from other kinds of ecosystems? This course will cover the fundamentals of ecology, such as energy flow and nutrient cycling, and how these ecological concepts apply to a forest environment.

9:45 AM - 12:00 PM

Native Texas Shade Plants - Irving III

- *Roger Sanderson, Former Wildlife Biologist at the Heard Museum*

When seeking plants for shaded areas, choices are limited. But for those who prefer to use native Texas plants - as is recommended by Doug Tallamy and so many other environmentalists - the selection is even more reduced. However, in this PowerPoint program one may find many more options than expected! The class will cover woody shrubs/small trees, perennials, and even some annuals. Additionally, the benefits and uses of these species will be discussed.

9:45 AM - 12:00 PM

Girdling that Works: Managing Woody Invasives with Volunteers, on a Budget - and without Herbicides - Salon H

- *Cliff Tyllick, Keep Walnut Creek Wild*

Vast expanses of glossy privet and other invasive trees often move resource managers to solutions too hazardous to consider using volunteers. So what can Master Naturalists do to help eradicate these invasives as the necessary first step to restoring an ecosystem? In Austin's Walnut Creek Metropolitan Park, we have built a record of success in eradicating invasive privets using inexpensive toolkits and techniques that are fun for everyone but also safe enough that tweens and even younger children can participate in some of the steps. When we can get large groups of volunteers, we make big strides. Between the big events, we use regular projects by small groups of volunteers to ensure that we don't lose any of the ground we gained. Resource managers, chapter leaders, and individual Master Naturalists can all learn ways they can do more to solve the

problem of invasive trees and shrubs. I will cover more than the technique. I will explain variations that seem to make sense but don't work. I'll tell how we monitor results and what we have had to do to follow up. (It's less than I had expected.) Girdling is only part of the answer, so I'll tell about our experience with every tool on the market made for uprooting trees and shrubs. With that information, you can make better decisions about what to borrow or buy. I will share a few tips that make restoration easier and more successful. You will see results of our work. And we are always testing new ideas, so I guarantee you will learn things that I don't yet know as I write this abstract.

9:45 AM - 12:00 PM

Neighborhood Nature & Social Media - The Time for Education is NOW! - Salon I

- *Jerrel Geisler, Harris County Precinct 4*

How many times have you commented on a Social Media post regarding an animal, insect or snake identification? Have you made the correct ID, only to be supplanted moments later by someone who turns the simple post into a nature bashing session? Let us look at some situations, how they might have been handled better, and let's look at what might be done to further educate the public about the thing that we as Master Naturalists love. We will discuss local and online resources that can help as well as applications that we could share with the public so they might be able to make proper identifications themselves. Join us for some surveys of actual situations, hear a couple funny stories, and share some discussion how to improve within our own communities.

9:45 AM - 10:45 AM

Using Swim Tunnels To Assess Whether Urban Development Is Threatening Our Native Texas Fishes - Salon A

Virtual Presentation

- *Cameron Emadi, University of North Texas*

Texas is experiencing substantial population growth and accompanying the urban development are structures associated with stream crossings. These can lead to zones of high-velocity water flow that impede the passage of fishes and harm native fish populations by negatively impacting migrations critical to their life history strategies and cause habitat fragmentation and local extirpation. To address this concern fish swimming performance tests such as maximum sustained swimming speed (Ucrit) and maximum burst swimming speed (Umax) can be measured which inform recommendations of maximum water flow velocities in the design of future stream crossings and barrier modifications. A demonstration of these physiological tests and an explanation of their importance for protecting native species will be provided in the presentation.

9:45 AM - 10:45 AM

Youth Outreach: Fight for the Stars: Be a Knight for the Night - Salon B

Virtual Presentation

- *Cindy Luongo Cassidy, International Dark-Sky Association Texas Chapter*

Want to teach youth in your community about the hows and whys to reduce light pollution? Want a great program you can lead or you can share with teachers in your community? THIS IS IT! You'll see a real-life example of using the Fight for the Stars: Be A Knight for the Night program in a youth day camp. This engaging training, created by Emma Schmidt for her Girl Scout Gold Award project, has videos and downloadable activity sheets for you to learn from (or teach others) about light pollution, why you should care about it, and how to solve it. It even provides the complete curriculum with standards alignment. Each lesson includes a lesson-specific activity with a culminating activity in the final lesson. You may also use the detailed curriculum and activity handouts to lead your own in-person lessons. Lessons may be self-led or led by a teacher, volunteer, family member or friend. Level One, for elementary level students, uses vocabulary and concepts appropriate for elementary students. It culminates with participation in the Globe at Night Citizen Science project. Level Two, for middle school students to adults, has age appropriate vocabulary and concepts. Participants prepare a lighting inventory, assessment, retrofit plan and cost analysis for their culminating activity.

9:45 AM - 10:45 AM

Coronavirus should awaken us to fight wildlife trafficking - Salon G

- *Michael Mitchell, Texas Parks & Wildlife Department (Retired)*

COVID-19, also known as Corona virus, sent tremors around the world, grounded a billion people in their homes, cost trillions, and killed millions. Originating likely in a wet market in Wuhan, China, most people attribute the origin from an illegally traded wildlife animal. The specific animal remains in debate, but is suspected to have originated with a bat or pangolin. According to the Chinese scientists, the pangolin, for example, carries a virus that is 99 per cent similar to the COVID-19. The bats there carry hundreds of viruses. The exact wild animal, and the science linking the animal to the human outbreak, remains in debate. But the world's attention should be drawn to the practice of illegal wildlife trafficking. The pangolin, for example, is an endangered species with high demand in China. While the Corona virus has brought this to the world's attention, more must be done as human lives, endangered species, and zoonotic disease risk are at stake. Africa is the primary source; Asia is the primary consumer. But there are no moats around modern countries in our modern world. International conservation efforts must stop the devastation of species, such as pangolins, rhinos and elephants, birds, reptiles, timber and medicinal plants. Wildlife trafficking is big business. But the stakes for the world couldn't be higher. The time to act is now, and the reasons are stronger than ever. The speaker discusses the trends, the cash flows, and the possible solutions.

9:45 AM - 10:45 AM

Identifying Texas Freshwater Fish - Irving II

- *AJ Senchack, Good Water Chapter*

As a trained, certified Texas Master Naturalist, can you identify any Texas freshwater fish that your child, relative, or friend happened to ask you to identify? If not always,

this session plans to help solve this potential dilemma. This session provides an introduction to the 3-4 most prominent features and distinguishable characteristics necessary to individually identify the most common Texas freshwater fish (25 species). The fish included are classified as either forage, game, or rough fish. Furthermore, a unique aspect of this session draws on my experiences as a Texas freshwater fisherman. Thus, I will be able to add personal experiences with these fish not normally found in studying a natural history book.

11:00 AM - 12:00 PM

KARST - The Role of Water in Shaping the Texas Hill Country - Salon A

Virtual Presentation

- *Tom Jones, Hays County Master Naturalist Chapter*

The Texas Hill Country is the destination for many visitors and residents attracted by the numerous hills, deep valleys and multiple water features throughout the area. Karst is a topography or terrain formed by rainfall entering into and dissolving the abundant limestone formations. Common characteristics of karst terrain include sinkholes and caves which create pathways to the subsurface aquifers. It also forms vast underground drainage systems within the aquifers that allow ground water to easily enter and move through the rock layers. Karst features are abundant in the Texas Hill Country. My presentation examines a region in Hays County and the area surrounding the Wimberley Valley about 25 miles northeast of San Marcos. The Wimberley Valley is home to wide variety of karst related features including many iconic springs and water attractions. Karst influences land use and water resources. Potential impacts include sinkhole collapse, increased risk of groundwater contamination and an unpredictable water supply. Karst gives this region its iconic Hill Country look and enables the numerous creeks and springs that attract people to live and visit the Texas Hill Country.

11:00 AM - 12:00 PM

Ready, Set, Start Out WILD! - Salon B

Virtual Presentation

- *Wendy Drezek, Alamo Area Chapter*

Today children are on screen time, learning virtually, from the earliest months. Children rarely get time to encounter, investigate and engage in nature. We need to start early. Starting Out Wild is an application of Growing Up WILD for children aged from birth to 3, used in diverse settings to bring outdoor learning to children from the beginning. The Family Nature Guides extend the curriculum into homes and families. The program will present the curriculum, and how to use it. It can be used in Junior Master Naturalist programs and as an addition to TMN training to include children and families in our programs.

11:00 AM - 12:00 PM

Wildflowers of the Blackland Prairie - Salon D

- *Carol Clark, Native Plant Society of Texas, Monarch Watch*

This is a visual tour through the seasons of some of the common and less common wildflowers that inhabited broad swaths of the Blackland Prairie before European settlement. Now mostly relegated to small remnant prairies and wild spaces throughout the region, the flowers are still there and still beautiful if you know where to find them.

11:00 AM - 12:00 PM

Partnering for Change: The Journey to Secure a Better Future for Texas Mountain Lions - Salon G

- *Monica Morrison, Texas Native Cats*

Texas mountain lions face incredible odds. Hunting and trapping remain unregulated and unlimited as habitat shrinks across the state. There is no data on how many exist, and no mandatory requirement to report harvested lions as there is in every state with a mountain lion population. Ironically, they're classified as imperiled (S2)/threatened (S3) by TPWD. Yet, they persist in spite of our actions, especially in west Texas. Learn how Texas Native Cats is building an effort to help our apex predator, through education, collaboration, and strategic partnerships.

11:00 AM - 12:00 PM

Texas State Parks are here for you! - Irving I

- *Ben Horstmann, Texas State Parks - Region 2 & Annie Hepp, Texas State Parks - Region 5, Texas Parks and Wildlife Department*

This session will explore how Texas State Parks can help enrich your training and volunteer experiences. Join State Park staff for a brief description of the types of training opportunities at Texas State Parks. Training topics include interpretation, outdoor recreation, resource protection and management, and just about anything else! We will discuss current sites near you offering training as well as identify sites that you may want to contact. We will also discuss the types of chapter volunteer project opportunities at your local state park.

11:00 AM - 12:00 PM

Managing Pond Ecology: Understanding The Aquatic Food Web - Irving II

- *Todd Sink, Texas A&M AgriLife Extension Service*

Join us for a how-to educational program on managing pond ecology for fisheries management as we cover the pond food chain, what it takes to grow abundant or large fish, fertilization programs, water quality, and many common problems that can be found within a fish population, and how to determine if your pond is suffering from stunted fish. We will also discuss what is water quality, how do you determine water quality, the link between water quality and chemistry, and why you should care about water quality for fish. We will conclude with the types of structure and fish attractors that can be added to a lake to improve fishing.

12:00 PM - 1:00 PM

Lunch & Keynote: Science Fair Winners - Grand Ballroom (Salons E & F)

○ Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

1:15 PM - 3:30 PM

The Wonderful World of Cardinals - Salon A

Virtual Presentation

- *Allison Copony, Heartwood Chapter*

How much do you really know about the Northern Cardinal? Located throughout the United States, the Northern Cardinal is considered one of the most beautiful birds.

Although viewed in a variety of outdoor habitats, cardinals are known to be shy and are not normally aggressive birds. This training will help TMN understand the behavior of cardinals and the characteristics of this amazing songbird. TMN will learn how cardinals mate and breed. Some anomalies that will be discussed include color differences. The training will also cover how to attract cardinals to your yard.

1:15 PM - 3:30 PM

Texas Master Naturalists gone WILD - Salon B

Virtual Presentation

- *Kiki Corry, Texas Parks and Wildlife Department, Diane Baxter, Lynda Folts, Ashley De Leon Torres, Harris County Precinct 4 Parks, & Cynthia Contreras, City of Coppel: Biodiversity Education Center*

What could you do with WILD? Project WILD is a rich and powerful tool, but when push comes to shove what will you really do with it? After a brief orientation to WILD, this session will dig down into how Project WILD has and can be used by TMN to enhance your education and outreach programs. We will experience an activity together as a taste of WILD and to give us a unified starting place for discussion. We will hear how TMN are already using Project WILD in their programs. Most importantly, we will brainstorm and plan ways to use it in your own programs.

1:15 PM - 3:30 PM

In Search of a Perfect Red: How Cochineal & Prickly Pear Forged a Dyeing Industry - Salon D

- *Ricky Linex, Retired Natural Resource Conservation Service (NRCS)*

Presentation looks back through American and foreign history as nations sought to find the greatest red color dye. 500 years ago, Spanish explorers discovered a bright red dye in the markets of the Aztecs in Central America. This dye was made from the scale insect known as cochineal and had been in use as a dye and medicinally for 1,000 years. Follow the intrigue as the Spaniards shipped the dried cochineal back to Spain and how other foreign countries fought to obtain the dye. Cochineal insects depend upon prickly pear cactus for their food and shelter. Learn about this interesting insect and its relationship with prickly pear.

1:15 PM - 3:30 PM

Making Connections: Pollination Ecology, Native Plants and Their Pollinators - Salon H

- *Craig Hensley, Texas Parks and Wildlife Department*

Pollination is a critical process that makes much of life on Earth possible. Interactions between plants and their pollinators are both complex and fascinating. During this presentation you'll be introduced to the ecology of pollination from adaptations of plants to enhance pollination chances to the pollinators that contribute to the effort. We will also address the issues facing pollinators and ways in which you can help.

1:15 PM - 3:30 PM

No Mow Zones: Convince the park folks to reduce mowing - Salon I

- *Sam Kieschnick, Texas Parks and Wildlife Department*

One day, you enjoy the margins of your favorite local park. Lots of plant diversity, interesting insects buzzing around, birds flying and singing around the tall grasses and wildflowers. You come back the next day, and it's all mowed! How can we, as Master Naturalists and nature enthusiasts, deal with this?!? In this presentation, we'll go over some ways to convince and guide management of public parks. It's a long process to develop the necessary relationships with park management, but we'll show you some positive ways to encourage and entice management to allow some of the parks to go 'wild.' We'll also talk about ways to deal with discouragement! Not all stories end with success, although we will mention some positive cases here in Dallas/Fort Worth.

1:15 PM - 3:30 PM

Intro to Interpretation, WHO CARES? - Irving I

- *Ben Horstmann, Texas State Parks - Region 2 & Annie Hepp, Texas State Parks - Region 5, Texas Parks and Wildlife Department*

Someone lit the spark of passion for the outdoors in you and now it's your responsibility to pass on that passion. This session will give a brief overview of what interpretation is, some tools to help you and how we use it to move people to stewardship in our wild places.

1:15 PM - 3:30 PM

Symbiotic Relationships in Texas and How to Teach it - Irving III

- *David Powell, Heard Natural Science Museum and Wildlife Sanctuary*

Explanation of the types of Symbiosis with examples of them and a game that can be used to teach them for most ages.

1:15 PM - 2:15 PM

Owls, Nest Boxes, and Cameras - Salon C

- *Michael Mitchell, Texas Parks & Wildlife Department (Retired)*

Eastern Screech Owls are amazing creatures. And no matter what toys we gift to our children, children will always be the most amazed at another living creature. Thus owl box construction is described, including details how to build or buy them readily. Placement and proximity are covered. Eastern Screech Owl biology is described in easy terms, including courtship, mating, nesting, and eating habits. The real fun comes in the

cameras. Wired and wireless. Inside or outside the box. All these cameras are obtained at a reasonable cost and viewable via a mobile phone. Having cameras in his backyard for several years, the speaker walks through several annual cycles of owls. Numerous videos (with audio) and stills are examined, along with timelines of how things occurred. Sometimes nature is harsh, and things do not go as planned for the owls. This is a unique and personal look into the how to's of owls, owl boxes, and their stories in an urban setting. It is specifically geared to help you set up your own owl boxes and be amazed at what can occur.

1:15 PM - 2:15 PM

Surviving in the City - Salon G

- *Rachel Richter, Texas Parks and Wildlife Department*

It's not easy to be a wild animal living in the city. Human development creates many challenges for wildlife and they must find a way to adapt in order to persist. In spite of this, our communities are filled with amazing species and breathtaking natural areas that are worthy of celebration and protection. This presentation will discuss the unique dynamics of urban ecosystems, how the fascinating creatures that live in urban areas manage to survive, and why they are so important.

1:15 PM - 2:15 PM

Mapping Landscapes on the Go - Salon J

- *Wendy Anderson, Texas Parks and Wildlife Department*

Texas Parks and Wildlife Department's Landscape Ecology Program has developed a mobile version of TEAM (Texas Ecosystem Analytical Mapper) called TEAMgo to allow Texas citizens to utilize and contribute to the Ecological Mapping Systems of Texas (EMS) data on handheld devices. The TEAMgo application is a free, easy to use, interactive mapping tool accessible on a mobile phone that assists users in understanding Texas habitats and integrates vegetation data with land management and resource planning of all types. Wildlife biologists, land managers, naturalists, planners, and conservationists can use TEAMgo to view the EMS data in relationship to their current location or property. Users can use TEAM to view and print the EMS data in relationship to other natural feature layers such as soils, geology, hydrology and ecoregion.

1:15 PM - 2:15 PM

Youth Conservation Award Winning Research Projects - Irving II

- *Lynn Seman, Rolling Plains Chapter*

The future of conservation depends on the involvement of young people across our state. That is why we must encourage and reward research projects conducted by Texas junior and senior high school students on environmental conservation issues. To accomplish this, the Texas Master Naturalist program sponsors two special awards at the Texas State Science and Engineering Fair each spring. This session will showcase the 2021 winners of these awards chosen by a panel of Texas Master Naturalist judges. Come show your support and hear about their research!

2:30 PM - 4:45 PM

Journey Into Field Photography -- The Art and Science of Nesting Birds - Salon C

- *Betsy Cross, Hays County Chapter*

Every year bird enthusiasts and citizen scientists monitor bird boxes, nest cams, and other nesting habitats to get an intimate glimpse into the secret lives of birds. Utilizing high quality field photographs taken over the past four years, **Part 1** will cover the basics of nest box monitoring along with species-specific behaviors, nest construction, eggs, young, and fledging. I will show how photography is a key element of my documentation and how I have used it to improve my field observation skills. **Part 2** will focus on photographic case histories of different species of birds utilizing woodpecker holes for nesting. It will emphasize the importance of leaving snags in place and will show the nest cycles supported by one dead tree over several years as habitat for a variety of cavity nesting birds. **Part 3** will take a deep dive into the nesting habits of Black-chinned Hummingbirds. If you've never seen an active hummingbird nest, watched a mother hummer building her nest or feeding babies, or observed newly fledged hummingbirds in training, you will not want to miss this presentation. Using video recordings and photographs taken in my own yard, Part 3 will cover successes, failures, and challenges of nesting hummers. I will share how to spot an active nest and will demonstrate the techniques I've used to capture the patterns of these resilient little birds in action. I will discuss how to create and preserve prime nesting habitat and will help participants understand the behaviors of nesting females so you too may be able to find, observe, and document nesting hummers in your yards.

2:30 PM - 4:45 PM

Texas Hummingbird Plants and Gardens - Salon J

- *Roger Sanderson, Former Wildlife Biologist at the Heard Museum*

Texas is home to 18 different species of hummingbirds, more than any other state! This is due not only to the diverse habitats and climates found across our huge territory, but probably also because of the extensive plant diversity found here within our borders. This presentation illustrates the tremendous array of native Texas flowers visited by hummingbirds and focuses on those preferred by these amazing aerial acrobats! To help understand why this ecological interrelationship exists, the biology of hummingbirds is also investigated.

2:30 PM - 3:30 PM

The Critical Role of Nature in Childhood Development -

Irving II

- *Jennifer Stuart, Seedschool*

We will discuss the key role that time in nature plays in childhood development and how it influences social and emotional growth into adulthood. We will explore the creation of meaningful outdoor spaces in urban and suburban environments. There will be interactive activities. There may be mud.

2:00 PM - 4:00 PM

Botanical Research Institute of Texas - Site Visit

★ Field Session

- *Tiana Rehman, Botanical Research Institute of Texas*

BRIT, an international scientific research and learning center, has a mission to conserve our natural-world heritage by sharing knowledge of the plant world and helping the public understand the value plants bring to life. The research institute serves as a think tank and a catalyst in conservation. The Botanical Research Institute of Texas is one of the largest herbaria in the United States with over 1.4 million plant specimens from around the world. On this field trip, learn about the natural history collection, see how researchers use the specimens, explore the LEED platinum building, and get engaged with botanical collections!

3:30 PM - 4:45 PM

Exploring the Night Sky as a Natural & Cultural Resource - Salon G

- *Katie Raney, Texas Parks and Wildlife Department*

The night sky is both a natural and cultural resource, but it can be overwhelming to explore. Get an overview of how to start stargazing in this session, from the tools you can use to great viewing targets for beginners. We'll also talk about why the night sky matters to plants and animals, and why light pollution is an important issue in our increasingly-urbanized state. Weather permitting, we'll also look at the sun through a specially-equipped telescope. Bring your questions about equipment, apps, wildlife-friendly outdoor lighting, and stargazing!

3:45 PM - 4:45 PM

Nature Journaling - The Power of Words - Irving II

- *Irmi Willcockson, Gulf Coast Chapter*

The theme of this workshop is "Words are a familiar yet powerful way to record, and reflect on, your personal experience of nature". According to John Muir Laws, the three languages of nature journaling are pictures, words, and numbers. In this workshop we'll focus on words. Beginning with a review of Law's questions (I Notice, I Wonder, It Reminds Me Of), we'll add a Reflection, then go into metadata recorded in words. Next we'll add some creative writing, poetry in particular. Poetry in nature journaling is for you to express your truths, your experience, your feelings. If you want to share it, great. If not, great. We'll finish up with a brief introduction to a different kind of metadata, metadata about your journaling practice. This workshop is geared towards beginning nature journalers as well as those looking for new inspiration.

6:00 PM - 8:00 PM

Dinner & Evening Awards Reception - Grand Ballroom (Salons E & F)

○ Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

Enjoy a final dinner with us and join us for the first part of our Awards Ceremony while it's livestreamed virtually.

Sunday, October 24th, 2021

7:00 AM - 8:00 AM

Breakfast - Grand Ballroom (Salons E & F)

○ Meal

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

8:00 AM - 10:00 AM

Contest & Awards Presentation: Livestream - Grand Ballroom (Salon E & F)

- *Mary Pearl Meuth & Michelle Haggerty, Texas Master Naturalist Program*

This morning we celebrate the winners of our Contests & Awards to round off our 2021 Annual Meeting. We'll also be announcing our 2022 Recertification Pin! This event will be synchronously livestreamed to all virtual attendees.

9:00 AM - 1:00 PM

Kayaking the Elm Fork of the Trinity from LLELA to Trinity Fork Park

★ Field Session

- *Scott Kiester, Elm Fork Chapter*

Join Erin and Jonathon on a kayak trip down the Trinity from LLELA to Lewisville's Trinity Fork Park. The trip will wind south through LLELA and the adjacent riparian corridor. This segment is the northern end of the 127-mile/22 trailhead Trinity River Paddling Trail project being led by Dallas Downriver Club. It is being considered for inclusion in the National Park Service system, including a possible national recreation area. Participants must bring water to drink and are encouraged to carry a snack and apply sunscreen and insect repellent prior to arrival. Kayaks are provided by our guide Mike Swope of Kayakpower. Pick up at Trinity Fork Park and the return to LLELA are included in the \$50.00 charge. Please be prepared to pay Mike on Sunday morning; cash, check payable to Kayakpower or credit card. All participants must sign a waiver prior to paddling.

