



Our volunteers are ready to volunteer!

Our Texas Master Naturalist Volunteers are dedicated to natural resource conservation work. After the innovations of the pandemic, we're continuing to think outside of the box for how Texas Master Naturalist volunteers can assist our partner conservation organizations in their communities. At the height of the pandemic, due to extreme circumstances, our members were limited in conducting many of their typical outreach projects, technical guidance, and community stewardship service projects. Thus, our program transitioned to offer virtual and distanced service projects. This returning feature of our program has been so popular, our volunteers continue to ask for more similar projects to conduct during the hottest months of the year.

The TMN Virtual Volunteer Fair (VVF) is an opportunity for our partner conservation organizations to present service projects that need volunteers from a distance or virtually! After four successful TMN VVF events our members are asking for more! This time with the intent to provide virtual service during the hottest months of the year when service in the field becomes less desirable and hits a typical lull until cooler months come around.

The Virtual Volunteer Fair will be an opportunity for our partner conservation organizations to present volunteer service projects that need volunteers from a distance or virtually! **Registration is now OPEN** to attend our **Virtual Volunteer Fair on May 2nd and 3rd 2023**, for a series of project presentations showcasing opportunities from across the state and across the spectrum of natural resource topics. TMN volunteers will earn Volunteer Service hours for attending all project proposal sessions – please use the “TMN Virtual Volunteer Service Fair” Statewide Project Opportunity for logging service hours.

[Register to receive a WebEx Link](#)

If you've never used WebEx as a platform at all, the [WebEx 101 Guide](#) link is a great place to start – plus there are live testing sites on the Cisco WebEx page for any day-users to test their equipment and set up.

2023 Virtual Volunteer Fair Agenda

Tuesday May 2nd

9:00 AM - 9:15 AM	Introduction
9:15 AM - 9:30 AM	Butterfly Monitoring - <i>Irmi Willcockson, President of Gulf Coast Chapter and Co-Chair of Texas Butterfly Monitoring Network</i>
9:30 AM - 9:45 AM	Time to Restore: Connecting People, Plants, and Pollinators - <i>Samantha Brewer, Network Volunteer Engagement Coordinator, USA-National Phenology</i>
9:45 AM – 10:00 AM	Armchair Botanist: Mapping the Plants of Texas - <i>Ashley Bordelon, Herbarium Collections Manager, Botanical Research Institute of TX</i>
10:00 AM - 10:15 AM	Capturing Conservation: Researching Conservation Organizations, Projects, & Issues by Texas Ecoregion - <i>Taylor Keys, Program Director, Texan by Nature</i>
10:15 AM - 10:30 AM	Plants of Texas Rangelands Virtual Herbarium - <i>Megan Clayton, Professor & Extension Range Specialist, TX A&M AgriLife Ext. Svc.</i>
10:30 AM - 10:45 AM	Woody Plant Encroachment in Grasslands: Teaching by RAP 'ping - <i>Erika Sullivan, Master Student, TX A&M AgriLife Ext. Svc.</i>
10:45 AM - 11:00 AM	Review of Knowledge for Species Potentially Impacted by Wind Energy Development in the Gulf of Mexico - <i>Rachel Lange, Habitat Assessment Biologist, TX Parks & Wildlife Dept.</i>
11:00 AM – 11:15 AM	Conclusion & Wrap Up

Wednesday May 3rd

9:00 AM - 9:15 AM	Introduction
9:15 AM - 9:30 AM	Eclipse Educators! - <i>Dorian Janney, Education and Outreach Coordinator, NASA/GSFC/GPM</i>
9:30 AM - 9:45 AM	Macroinvertebrate Guide and Student Worksheet - <i>Melissa Felty (Alderson), Conservation Education Manager, TX Parks & Wildlife Dept.</i>
9:45 AM – 10:00 AM	Texas Aquatic Science TEKS Alignment - <i>Melissa Felty (Alderson), Conservation Education Manager, TX Parks & Wildlife Dept.</i>
10:00 AM - 10:15 AM	Virtual Tour of Texas: Flora and Fauna of Every Ecoregion - <i>Taylor Keys, Program Director, Texan by Nature</i>
10:15 AM - 10:30 AM	Discovering Bigtooth Maple Canyons: The Hunt to Map a Unique Texas Habitat - <i>Amie Treuer-Kuehn, Ecologist, TX Parks & Wildlife Dept.</i>
10:30 AM - 10:45 AM	Natural History & Environment of Jackson Plantation Historic Site - <i>Katelyn Landry, Program & Education Coordinator, Lake Jackson Historical Association</i>
10:45 AM - 11:00 AM	Seasonal Trifold Pamphlets for Cooper Lake State Park Complex - <i>Alicia O'Connor, Park Interpreter, TX Parks & Wildlife Dept.</i>
11:00 AM – 11:15 AM	Conclusion & Wrap Up

CATALOG of 2023 PROJECTS

NOTE: The attached Catalog of Projects lists ALL service project details along with the Project Contact and their email address. If you are interested in a particular project, please reach out to the Project Contact directly if you did not get a chance to sign up during the event.

In addition, the projects are noted as statewide or by eco-region in the project description. Keep in mind that some site-based projects may offer aspects of the project that don't require your presence at the site. If they do require your presence to assist, please make sure to consider the project's location compared to your chapter's region and your training as a Master Naturalist. Be sure projects you choose are within ecoregion(s) you are trained for and are pre-approved by your chapter.

Butterfly Monitoring

Project Contact: *Irmi Willcockson, Texas Butterfly Monitoring Network*
irmi.willcockson@txgcmn.org

Enjoy walking in nature when the weather is good? Interested in learning more about butterflies or using your knowledge to help butterflies? Consider joining the Texas Butterfly Monitoring Network! Count butterflies along a route of your choosing, at least nine times per year. You can count by yourself or with a partner. Training and support provided.

Distance Based Service Project- Statewide

What could a volunteer hope to build/gain from helping your project? Increase their knowledge of butterflies. Improve butterfly conservation decisions.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? No

Is there any additional training you'd want the volunteers to complete before they assist your project? Yes, there is additional training that I will set up for those who choose to participate in my project.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project? Two hours.

What are your expectations of how and when the service would be carried out? Nine times per year during butterfly season.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? 2-3 hours per month during butterfly season. Time is flexible.

How long do you anticipate the project lasting? As long as a volunteer wants to help!

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? Contribute to butterfly conservation by generating data.

Time to Restore: Connecting People, Plants, and Pollinators

Project Contact: *Samantha Brewer, USA-National Phenology Network*
samantha@usanpn.org

Pollinator restoration has many challenges, from selecting which species to plant to provide nectar during critical periods, to knowing how these plant species will respond to changes in climate including more variable weather conditions. Better knowledge about flowering and seed timing for critical nectar plants, and the links between this activity and climate, can inform more resilient restoration plantings. To better understand the current timing of flowering and seed ripening of nectar plants, and determine how this timing will change under future climate conditions, we need more data! Help us collect data on flowering and seed timing of nectar plants this year! We are looking for people to collect data through iNaturalist (<https://www.inaturalist.org/>, great for species identification assistance and one-time observations in a place you don't plan to return to) and Nature's Notebook (<https://www.naturesnotebook.org/>, great for repeated observations of the same plants over time). We are interested in observations of flowering and seed timing for these priority species: wild bergamot (*Monarda fistulosa*), cardinal flower (*Lobelia cardinalis*), buttonbush (*Cephalanthus occidentalis*), eastern purple coneflower (*Echinacea purpurea*), common sunflower (*Helianthus annuus*), showy milkweed (*Asclepias speciosa*), green antelopehorn (*Asclepias viridis*), and tall blazing star (*Liatris aspera*). This project is organized by a team of collaborators from the Bosque Ecosystem Monitoring Program, the Tribal Alliance for Pollinators, the Gulf Coast Phenology Trail, and the USA National Phenology Network, supported by a grant from the South Central Climate Adaptation Science Center. Learn more at <https://www.usanpn.org/TimetoRestore>

Distance Based Service Project- Statewide

What could a volunteer hope to build/gain from helping your project? Volunteers will follow flowering and seed timing of one or more nectar plants throughout the year and become experts at understanding the life cycle changes of the species they track. Volunteers will be directly supporting data collection that will help conserve plants & pollinators.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? Volunteers should be able to identify the wildflower species that they track.

Is there any additional training you'd want the volunteers to complete before they assist your project? If participating in this project, we recommend taking the free online Nature's Notebook observer certification course.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project? 1-5

What are your expectations of how and when the service would be carried out? Volunteers will work independently to track flowering and seed timing of nectar plants at locations of their choosing. Volunteers can elect to either use iNaturalist or Nature's Notebook: <https://www.inaturalist.org/> or <https://www.naturesnotebook.org/> We suggest checking plants 2-3 times per week during periods of activity to capture the start, peak, and end of flowering and seeding. Volunteers can also participate as a group, either by creating a project in iNaturalist:

<https://www.inaturalist.org/projects> Or creating a Local Phenology Program in Nature's Notebook: <https://www.usanpn.org/nn/groups/local-phenology-programs>

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? The time commitment is flexible. Options range from spending a few minutes each week tracking flowering or seeds of wildflowers in iNaturalist, or establishing a Nature's Notebook site in one's own backyard or another nearby locations to track the flowering and seed status of one or more plants multiple times per week. This project will last through the end of 2023, with the potential to continue in additional years.

How long do you anticipate the project lasting? As long as a volunteer wants to help!

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? Your data collected as part of this project on nectar plant flowering and seed timing will help us understand bloom times and when to harvest seeds for important pollinator plants. Your data will also help researchers understand the relationship between climate variables like temperature and precipitation and flowering and seed timing. They will use this knowledge to understand how future climate changes will impact flowering and seed timing of these plants. These changes will then be used to create climate-informed guidance for those working on pollinator restoration.

Armchair Botanist: Mapping the Plants of Texas

Project Contact: *Ashley Bordelon, Botanical Research Institute of Texas*

abordelon@brit.org

Preserved botanical (herbarium) specimens document the Texas flora going back hundreds of years, and represent critical data sources for addressing the most pressing biological and environmental issues we face today in our state. These data are only of use if they are accessible, in a format that scientists and the public can use. Imaging and specimen label transcription were the first two priorities for this program and, with your help, we've largely achieved those. Currently, we're heading into Step 3: mapping and assigning geocoordinates to the collection localities of Texas specimens ("georeferencing"). We invite those with boots-on-the-ground knowledge of place, history, and plants, to help us assign a map location to each Texas specimen through online collaborative "georeferencing" tools.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? An understanding of the geography/history/flora of Texas, in particular the history of botanical exploration in a chosen region. An opportunity to exercise independent research skills while uncovering the history of an area to interpret location, habitat, etc. & learning to assign geo-coordinates.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? There will be specific training required, and participants will need to demonstrate successful completion of the training and proficiency with the georeferencing software before they may begin on their project.

Is there any additional training you'd want the volunteers to complete before they assist your project? Yes, there is additional training that I will set up for those who choose to participate in my project.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project? 3

What are your expectations of how and when the service would be carried out? Once volunteers have successfully completed training (multiple opportunities offered, some synchronous, some asynchronous), volunteering can be carried out at the individual's discretion, since it can all be done remotely through an online web portal which will be live 24/7.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? Hours and time period are flexible, but a recommended schedule might be the equivalent of 2 hours per week to be most efficient. Multiple people may work on a single county, so the completion of a county project will depend on the number of people and the time that individuals devote to the activity.

How long do you anticipate the project lasting? Over a year.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? Texas Master Naturalists have a specialized understanding of their local environments, and the history and geography of their areas. When presented with limited information, TMNs have the ability to engage in personal research to fill any gaps in their knowledge of an area/habitat. These special traits mean that TMNs are uniquely suited to providing the most accurate and researched efforts to apply geo-coordinates to text descriptions that may describe locations from over 100 years earlier within the state of Texas (for example, natural areas are urbanized, and political boundaries change, as do place names). TMNs understand the need to document the process and can also be trusted to describe the assumptions they may have made when assigning coordinates. Mapping these specimens informs us all of the historic presence of plant species in Texas, which can inform restoration projects, as well as basic floristic and taxonomic projects.

Capturing Conservation: Researching Conservation Organizations, Projects, & Issues by Texas Ecoregion

Project Contact: *Taylor Keys, Texan by Nature*
taylor@texanbynature.org

Through this project, volunteers would use their existing knowledge base/connections and research conservation organizations, conservation projects, and conservation issues in the ecoregion they are located in. This would support Texan by Nature, a conservation non-profit that exists to advance conservation in staying abreast of the latest in conservation as they work across the state of Texas, acting as an accelerator for conservation and as a strategic partner for business. This project would allow Texan by Nature to more deeply scan the state by ecoregion, collect the necessary information (organizations/projects/issues), conduct outreach, plug new organizations and projects into Texan by Nature's Conservation Partner program of over 130 organizations and into Texan by Nature's other programs, like Conservation Wrangler, TxN Certification, and the Texas Water Action Collaborative, where Texan by Nature's advances projects, increases investments in conservation, and recognizes meaningful conservation efforts. Being aware of top-of-mind issues by ecoregion would also help Texan by Nature identify gaps and where project/support may be needed - these are areas where we can plug in existing conservation organizations and potential funders.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? Knowledge about conservation organizations, projects, and issues in the ecoregion they are located in. Researching these topics would allow volunteers to not only learn more about conservation as a whole, but potentially evaluate what organizations/efforts they would like to get more deeply involved.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? Online research skills and Google sheets

Is there any additional training you'd want the volunteers to complete before they assist your project? No.

What are your expectations of how and when the service would be carried out? Clear instructions, along with a framework to capture/report research would be provided and volunteers could get started as soon as they are ready/available.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? Potential total time commitment is dependent on how much the volunteer would like to contribute. A minimum of 1-2 hours of research per week would be preferred to ensure the project progresses. Hours and time periods are flexible.

How long do you anticipate the project lasting? A year or less.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? Texan by Nature exists to advance conservation - we do this by acting as a strategic partner to business and as an accelerator to conservation organizations. There are over 130 conservation organizations in our network and growing, but we know there are still organizations and projects out there that would benefit from our free support and resources we provide through our programs and statewide initiatives, such as the Texas Water Action Collaborative. This project would allow us to more deeply scan the state by ecoregion, collect the necessary information (organizations/projects/issues), conduct outreach, plug new people into our network, and advance and recognize meaningful conservation efforts. Being aware of top of mind issues by ecoregion would also help us identify gaps and where project/support may be needed - these are areas where we can plug in our existing partners and bring awareness to / as an organization that operates statewide, being knowledgeable about issues is important. This work is linked to the TMN program because volunteers would be conducting research on the ecoregion they are located in and the results of these efforts would uplift those organizations and the natural resources they serve.

Plants of Texas Rangelands Virtual Herbarium

Project Contact: *Megan Clayton, Texas A&M AgriLife Extension Service*
megan.clayton@ag.tamu.edu

The Plants of Texas Rangelands Virtual Herbarium (rangeplants.tamu.edu) was started and is managed by the Rangeland, Wildlife, and Fisheries Management Extension Unit. Over 400 plants reside on this site, including a searchable database and many fantastic pictures of up-close plant parts and growing in a field. TMN Volunteers have been working to add new plants to the database, as well as edit plants already in the virtual herbarium. There is no specific time/plant requirement, though we would like our volunteers to remain engaged and complete additions or reviews each quarter.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? Volunteers are helping to create one of the most-used online plant databases for Texas. They ensure accurate and up-to-date information is shared and work at their own pace. Individuals will gain plant knowledge and be a part of an AgriLife Extension Plant Nerd Team. No experience necessary.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? No

Is there any additional training you'd want the volunteers to complete before they assist your project? Yes, there is additional training that I will set up for those who choose to participate in my project.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project?
One-hour webinar with ME!

What are your expectations of how and when the service would be carried out? There are no hard numbers as to how many plant reviews or additions must be made in a year, but I would like to check in every quarter to monitor our progress.

What is the potential total time commitment (i.e. # of hours/week or per month)? Are hours flexible? Is the time period flexible? The hours associated with volunteering on this project are completely flexible.

How long do you anticipate the project lasting? As long as a volunteer wants to help!

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program?
Plant people are constantly changing plant names, opportunities for new/better pictures of plants often come up, and there are 5,000 plants in Texas...so it's unlikely that we'll ever get bored! This website (rangeplants.tamu.edu) is a virtual education tool used by MANY professionals, volunteers, and land managers in Texas. TMN are premiere educators of everything natural, plants included!

Woody Plant Encroachment in Grasslands: Teaching by RAP 'ping

Project Contact: *Erika Sullivan, Texas A&M Agrilife Extension*

erikans2010@hotmail.com

Upon the influx of European settlers in the 1850's, the Southwestern Great Plains (SGP) has experienced a rapid takeover of woody plants. Woody plant encroachment (WPE) disrupts the hydrology, biodiversity, production, and overall nutrient cycling of rangelands. However, tools and techniques such as multi-species grazing, prescribed burning, patch-burn grazing, and pyric herbivory offer a cost effective, long-term solution to help manage and prevent these woody invaders from spreading into core grassland landscapes. In addition, new technology applications such as the Rangeland Analysis Platform (RAP) has been created to help assist in the managing/monitoring of America's rangelands in efforts to target seedling stage of woody species. We developed a step-by-step educational curriculum illustrating how to use the RAP to assess WPE and overall effectiveness of climate-smart management practices across demonstration ranches in West Texas. Participants are also encouraged to use the RAP curriculum to determine cover estimates across different plant communities and ecosystems as well. While completing this curriculum, participants will use the RAP to analyze the effects of specific management practices like prescribed fire, patch-burn grazing, and multi-species grazing on grasses, forbs, shrubs, and tree cover on our demonstration ranches. Consecutively, participants will also answer questions related to what they observe in the RAP, download virtual cover data, and form graphs with their data in Excel showing the data from the RAP. Benefits of completing this activity include learning how prescribed fire and grazing impact grasses, forbs, shrubs, and tree cover from year-to-year. In addition, participants will learn how to create graphs in Excel and how to use RAP to collect data on their own or other properties. We are seeking Texas Master Naturalist participants to complete this curriculum while also completing pre- and post-assessments to determine overall knowledge and attitude changes. We would also like participants to provide us with feedback on the curriculum's readability, usefulness, and overall user-friendliness.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? Benefits of completing this curriculum include learning how prescribed fire and grazing impact grasses, forbs, shrubs, and tree cover from year-to-year. In addition, participants will learn how to create graphs in Excel and how to use RAP to collect data on their own or other properties.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? No

Is there any additional training you'd want the volunteers to complete before they assist your project? No.

What are your expectations of how and when the service would be carried out? **If virtual:** Participants who complete the Rangeland Analysis Platform (RAP) curriculum and surveys virtually will do so on their personal or public computer. Virtual RAP workshop(s) will be offered to TMN participants. The virtual workshop will include a presentation on rangeland topics and demonstration on how to complete the curriculum. Curriculum completion would need to take between sometime between May-September 2023. **If Distance Based Service:** Participants who choose the distance-based service option will complete the Rangeland Analysis Platform curriculum and surveys in a computer lab. A presentation on rangeland topics and a brief demonstration on how to complete the RAP curriculum will take place at the beginning of this workshop. Hands on assistance will be provided to those TMN participants who may be struggling with the RAP curriculum. Computer lab sessions with TMN participants would need to take between sometime between May-September 2023.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? I estimate the RAP curriculum to take between 3-5 hours in total to complete. The hours it takes to complete the activity if "virtual option" is flexible. The hours it takes to complete the activity if "distance based" is not flexible. The time period of when the curriculum needs to be completed by (May-Sept) is not flexible.

How long do you anticipate the project lasting? At least through the fall season.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? This project is a part of a Master student's data collection. The expected outcome of this project is to positively change TMN participants knowledge and attitudes towards prescribed fire, multi-species grazing, and pyric herbivory. The rangeland analysis platform is a great tool for landowners interested in collecting cover estimates across different plant communities, ecosystems, or their own property. Completing this activity will gift TMN participants the ability to use the RAP and teach other interested folks how to use it.

Review of Knowledge for Species Potentially Impacted by Wind Energy Development in the Gulf of Mexico

Project Contact: *Rachel Lange, Texas Parks & Wildlife Department*

rachel.lange@tpwd.texas.gov

TMN Volunteers are needed to assemble existing knowledge for a variety of wildlife species that live in or migrate through the Gulf of Mexico and nearby coastal regions of Texas. Wildlife of interest will include species of neotropical migrant songbirds, shorebirds, pelagic seabirds, gulls and terns, migratory bats, sea turtles, sharks, and others. Because of the migratory nature of many focal species for this project, TMN from across the entire state should be able to find a "local connection" to fauna included within our proposal.

This internet-based exercise will support the efforts by Texas Parks and Wildlife Department's Ecological and Environmental Planning Program (Wildlife Division) and Ecosystem Resources Program (Coastal Fisheries Division) aimed at providing the best available information and technical guidance as this unique category of energy development expands into Texas' gulf coast.

Virtual Service Project

Ecoregion: Blackland Prairie, Cross Timbers, Edwards Plateau, Gulf Prairies, High Plains, Piney Woods, Post Oak Savannah, Rolling Plains, South Texas Plains, Trans-Pecos

What could a volunteer hope to build/gain from helping your project? A volunteer can expect to gain a better understanding of the existing science surrounding individual wildlife species (primarily birds and bats as well as estuarine/marine species such as sea turtles or sharks) as they participate in this project. Satisfaction from helping with a "team lift."

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? Proficient use of internet search engines and ability/willingness to learn how to upload documents to a SharePoint site

Is there any additional training you'd want the volunteers to complete before they assist your project? Yes, there is additional training that I will set up for those who choose to participate in my project.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project? Approximately 1 hour virtual training is anticipated

What are your expectations of how and when the service would be carried out? The project is time-sensitive, being driven by the emergence of great interest for offshore wind development in the Gulf of Mexico. We greatly need a summation of knowledge for many resident and migrant species that are likely to experience impacts from wind energy development within the Gulf of Mexico.

Our preference is to initiate training and empower volunteers to help summarize our knowledge of the focal species ASAP. The number of volunteer participants in this effort will affect both the lifespan of the project and available workload for each volunteer. Some focal species will have more published literature than others, so time commitment per species will vary.

Being a virtual project, the season and time of day will not affect the ability of volunteers to participate. With many species traversing the Gulf of Mexico being migratory, wind development in this region will affect species found throughout the state of Texas.

Volunteers would choose (or be assigned if no preference) a single focal species at a time for which to conduct a literature review utilizing an internet search engine. The volunteer would locate peer-reviewed literature and create a record (using MS Word or Excel) documenting the article's citation, a link to its location online, and if possible a 1-3 sentence/bullet list summary of the abstract. If a volunteer is not comfortable summarizing the abstract, they may copy/paste into their record the entire abstract as written by the author. Updated records should be uploaded to the provided SharePoint site at least bi-weekly (once every two weeks) until completion of the species review. Upon completion of a species, the volunteer is welcome to pursue another species from the list and repeat the exercise.

Volunteer check-ins will occur quarterly and will be for whoever is able to attend the virtual get-together (anticipate 0.5-1 hour). At least one TPWD point of contact will be available throughout the duration of the project to field questions, provide needed clarification, or otherwise support volunteer efforts.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? Hours are very flexible, as are the time of day and days of the week. The hours required to conduct a thorough review of each species will vary, depending on how well-researched the species is. If desired, TPWD biologists can help advise a volunteer as to what species might be a good fit based on their available time to help us.

It would be ideal to have a big "push" for these literature reviews initially, because the time available to TPWD and other natural resource agencies to comment and inform the process for review and approval of wind development in the Gulf of Mexico is finite. "Sooner is better", but the assembling of knowledge for application in conservation is never wasted! We welcome and appreciate all volunteer efforts.

How long do you anticipate the project lasting? A year or less.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program?

Offshore wind development appears imminent within the Gulf of Mexico, with lease blocks already identified and moving through the approval process. These facilities will be located within the Central Flyway, and the same climatological attributes that make wind energy economically feasible make those same areas vital for the migration pathways of flying wildlife. Likewise, the Gulf of Mexico along with its bays and estuaries host a multitude of species of conservation concern.

Despite the broad and generally-understood importance of the Gulf of Mexico to Texas wildlife, based on the novel impacts that can be anticipated from wind energy development we presently cannot predict with much confidence the exact nature or magnitude of impacts to many of our Species of Greatest Conservation Need. A literature review for these species is a first step towards both more accurately predicting impacts and making informed choices regarding potential impact minimization or mitigation approaches that are effective and meaningful for these species.

By facilitating natural resource managers', and indirectly energy developers', ability to best steward Texas' natural resources of both terrestrial and marine wildlife, this project directly links to the TMN mission of positively affecting the management of the natural communities and natural areas of Texas. Our project provides a unique opportunity to actively engage with existing science on this topic that can both help identify data needs/gaps and provide information to inform technical guidance around wind energy development in the Gulf of Mexico.

Eclipse Educators!

Project Contact: *Dorian Janney, NASA/GSFC/GPM*
dorian.w.janney@nasa.gov

This virtual project will enable you to become an "Eclipse Educator" for the upcoming Oct. and April eclipse events. I will develop a "StoryMap" resource packet that will have a variety of different resources to help you learn all about eclipses, do activities to help explain the process behind both annual and total solar eclipses, and be prepared to share the wonder and safety practices to completely enjoy these two exciting one-in-a-lifetime events!

Each week I will send out an email and add new resources to review to the StoryMap. I will have office hours and be available for questions and discussion once week, and we will also have a "BaseCamp" to be able to share and collaborate within that virtual space.

The goal will be to empower Master Naturalists across Texas to be able to respond to requests from schools, libraries, community organizations, senior centers, scout groups, etc. to help engage fellow Texans in the wonders of these two eclipse events.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? A volunteer who participated in this project would have the background knowledge and pedagogical skills to train others in understanding and safety observing the two upcoming solar eclipses.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? No

Is there any additional training you'd want the volunteers to complete before they assist your project? Yes, there is additional training that I will set up for those who choose to participate in my project.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project?
Attend the two-hour webinar on July 11, 2023

What are your expectations of how and when the service would be carried out? Volunteers would need to have internet access and be able to access and interact with the resources within the "StoryMap" (which is just a website) and the BaseCamp (also a website). They could do this as often as they like, with the expectation that they kept with the new resources and interacted within the BaseCamp as often as they needed. They would then be ready to respond to requests in the fall or next spring to help their local community be ready to safely observe and understand the annular eclipse on Oct. 14th and the solar eclipse on April 8.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? I would imagine that the potential time commitment would be about 10-15 hours per month, and can be done at the times that work best for the participants.

How long do you anticipate the project lasting? At least through the fall season.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program?
The two upcoming solar eclipses are going to pass right through many parts of Texas, both this fall and next spring. This offers a one-in-a-lifetime opportunity for citizens across Texas. By learning more about the scientific background behind eclipses, seeing a variety of activities to do before and during eclipses to safely observe and understand them, and having the on-going opportunity to ask questions and share ideas, volunteers will be ready to serve as Eclipse Educators. We will also learn from experts about what to expect in the natural ecosystems before and during eclipses- and learn the science behind these behaviors. Volunteers will learn how they can add to this body of research during both eclipse events.

Macroinvertebrate Guide and Student Worksheet

Project Contact: *Melissa Felty (Alderson), Texas Parks and Wildlife Dept.*

melissa.alderson@tpwd.texas.gov

The current, outdated TPWD 'Bug Picking' student worksheet needs improvement. This project will include searching for images to add more aquatic invertebrate species and interpretation of results for assessing health of the waterway. Eligible for Texas Waters Specialist service hours.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? Macroinvertebrate guide: learn the aquatic life of Texas waterways and to provide higher quality field experiences for students

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? Knowledge of aquatic macroinvertebrates

Is there additional training you'd want the volunteers to complete before they assist your project? No.

What are your expectations of how and when the service would be carried out? 3-4 months

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? 20-40 hours total

How long do you anticipate the project lasting? At least through the fall season.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? Projects are related to educational needs to increase knowledge of Texas natural resources and will assist TPWD with offer higher quality programming to all Texans.

Texas Aquatic Science TEKS Alignment

Project Contact: *Melissa Felty (Alderson), Texas Parks and Wildlife Dept.*

melissa.alderson@tpwd.texas.gov

Aquatic Science TEKS were updated and TPWD is seeking a volunteer to review first draft of newly aligned activities for accuracy.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? Become more familiar with the connection between informal and formal education

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? If volunteer is interested in TEKS review, they will need to be familiar with middle school and high school Aquatic Science TEKS

Is there any additional training you'd want the volunteers to complete before they assist your project? If volunteer is interested in TEKS review, they will need to become familiar with Aquatic Science TEKS

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project? 2-5 Hours

What are your expectations of how and when the service would be carried out? 3 months

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? 20-30 hours total

How long do you anticipate the project lasting? As long as a volunteer wants to help!

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? The TMN program develops corps volunteers to provide educational opportunities. Aquatic Science is one of many courses that teaches middle and high school students to protect aquatic resources. TEKS are highly recommended for lessons to be used by formal and informal educators in their classroom or the field.

Virtual Tour of Texas: Flora and Fauna of Every Ecoregion

Project Contact: *Taylor Keys, Texan by Nature*
taylor@texanbynature.org

Texas Master Naturalists know that education and outreach are critical for the conservation of our natural resources and natural areas. Nature access is not always available in cities and urban areas, and studies have shown newer generations are spending less time outdoors. But an increasingly digital world presents the opportunity to educate more people in different areas all at once! Through the Virtual Tour of Texas project, Texan by Nature seeks to leverage the expertise and passion of Texas Master Naturalists across the state to get more people excited about the world outdoors and conservation. With the help of Master Naturalists, Texan by Nature will share 15-30 second educational features of flora and fauna in each ecoregion of Texas to an audience of over 30,000 across digital platforms. Under the direction of the Texan by Nature marketing team, Master Naturalists will be provided a content plan, content creating tips and content writing prompts to aid in the creation of these educational features. By having on-the-ground content creators who are experts in their field, Texan by Nature will engage people of all geographies in Texas with fun education about the natural world in their ecoregion and beyond.

Virtual Service Project

What could a volunteer hope to build/gain from helping your project? Volunteers will gain experience in developing social media content for their area of expertise and learn creative ways to get the public excited about conservation.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? No specific experience is needed but photography and video recording experience is highly valued as the volunteer would be required to capture photos and videos of flora and fauna in their ecoregion.

Is there any additional training you'd want the volunteers to complete before they assist your project?
No

What are your expectations of how and when the service would be carried out? A content plan with clear instructions and tips for capturing content will be provided. Volunteers will begin as soon as they are ready.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? Hours and time period is completely flexible, but content production is deadline driven.

How long do you anticipate the project lasting? A year or less.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? Studies continue to show an increasing gap between the human connection to the outdoor world. The average American spends 7 hours of screen time per day. This project aims to create captivating digital media content that educates and inspires Texans of all geographies to go outside and discover the wonders of their ecoregions and beyond. This project goes hand in hand with the Texas Master Naturalist's mission 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.

Discovering Bigtooth Maple Canyons: The Hunt to Map a Unique Texas Habitat

Project Contact: *Amie Treuer-Kuehn, Texas Parks and Wildlife Department*
amie.treuer-kuehn@tpwd.texas.gov

Canyons may serve as important habitats for the Bigtooth Maple (*Acer grandidentatum*) dominated plant communities which often include other species of conservation concern. However, Texas currently lacks enough location information to accurately predict this unique habitat type throughout its range. The Landscape Ecology Program is currently working on updating Texas' statewide vegetation map, the "Ecological Mapping Systems of Texas". The goal of this project would be to gather enough location information to be able to accurately predict where bigtooth maple canyons occur throughout the Edwards Plateau and Cross Timbers ecoregions. Volunteers would be asked to document where stands of Big Tooth Maples occur within canyons using iNaturalist. Data collection could occur both on public or private lands with landowner permission. Accurate location information and landowner permission to share is required. This information will be used to improve TPWD's vegetation map and better target on the ground conservation of these unique plant communities.

Distance Based Service Project- Ecoregion Specific

Ecoregion: Edwards Plateau, Cross Timbers

What could a volunteer hope to build/gain from helping your project? Learn about Bigtooth Maple plant communities and how we map and model the vegetation of Texas.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? Need to be able to accurately identify big toothed maples

Is there any additional training you'd want the volunteers to complete before they assist your project? If needed, we could host a 1 hour training in a big toothed maple canyon.

If yes, how many hours of AT would need to be completed before being able to carry out the service of the project? 1 hour

What are your expectations of how and when the service would be carried out? Data could be collected at any time over the next year.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? The hours are flexible and the amount of time commitment is dependent on the location of the canyons. If the canyon is located on a volunteer's property and they would like to share that information not much time is required.

How long do you anticipate the project lasting? A year or less.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? This information will be used to improve TPWD's vegetation map and better target on the ground conservation of these unique plant communities. This will allow TMN volunteers to assist TPWD with the conservation and beneficial management of natural resources.

Natural History & Environment of Jackson Plantation Historic Site

Project Contact: *Katelyn Landry, Lake Jackson Historical Association*

programs@ljhistory.org

Background: The Lake Jackson Historical Association (LJHA) manages the Jackson Plantation Historic Site, a State Antiquities Landmark where archaeological remains of the Lake Jackson Plantation are open for public tours. The Lake Jackson Plantation was a sugar and cotton plantation that operated from the early 1840s through the end of the 19th century. Prior to the arrival of Spanish and later Anglo settlers, the Indigenous Karankawa people lived in the area. After the decline of the plantation, the land was purchased by the Dow Chemical Company in the early 1940s and used as a public park known as Dow Park until the 1990s. Archaeological investigations were conducted at the site in the 1990s, at which time the site came under LJHA's ownership.

Project Narrative: We are interested in learning more about the natural environment of the plantation site so we may develop our historical interpretation at the site to include its natural history. Thus, we may educate our visitors about the natural environment's history in addition to the site's history of human occupation. We would like TMN volunteers to assist us in researching the following questions:

- *What kinds of flora and fauna existed in the Lake Jackson area in the pre-historic period of Karankawa occupation?*
- *What kinds of flora and fauna existed on the Lake Jackson Plantation in the 19th century? How would sugar and cotton cultivation have changed or disrupted the natural environment?*
- *What kinds of flora and fauna exist at the site today? Which species are native? Which species are invasive?*
- *How did Lake Jackson (the lake itself) develop and change over time?*
- *How were plant & animal species used by the different social groups who lived here (e.g. food, medicinal resources, clothing)?*

The LJHA staff would provide TMN volunteers with historical research materials that will outline the occupational and social history of the area. We would rely on the TMN volunteers' expertise to identify flora and fauna at the site as it exists today by visiting the site and taking photos of plants and animals there. We would also rely on TMN volunteers to conduct additional online and/or archival research to determine how the natural environment may or may not have been different in the pre-historic Karankawa period, the 19th century Abner Jackson period, and the mid-century Dow Chemical period.

Distance Based Service Project- Ecoregion Specific

Ecoregion: Gulf Prairies

What could a volunteer hope to build/gain from helping your project? Volunteers will gain skills in historical research, collaboration with a non-profit museum, development of public-facing educational resources, and appreciation for the connection between the natural environment and human history.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? Experience with historical/anthropological research is a plus but not required

Is there any additional training you'd want the volunteers to complete before they assist your project? No.

What are your expectations of how and when the service would be carried out? We expect that volunteers would coordinate with LJHA staff to visit the Jackson Plantation Historic Site to observe and photograph flor and fauna. We expect to regularly check-in with volunteers via Zoom so we can assist with research as necessary and answer questions. We expect volunteers to be self-motivated and conduct research on a consistent basis.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? Hours and time period flexible

How long do you anticipate the project lasting? At least through the fall season.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? We would like the project to culminate in **1)** a written report detailing the site's natural history, **2)** social media posts spotlighting interesting research highlights as they develop, and **3)** visitor handouts with guides to present day flora and fauna at the site. The written research report will also be used to develop informational signage at the site in the near future. This project is important to educating our community about local natural history and how the environment has played an important role in the development of local history, cultures, and societies. This project is linked to the TMN Program's mission because it will culminate in public educational resources that emphasize the importance of understanding and preserving natural environments of historic places.

Seasonal Trifold Pamphlets for Cooper Lake State Park Complex

Project Contact: *Alicia O'Connor, Texas Parks and Wildlife Dept.*

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Help Cooper Lake State Park create seasonal trifold pamphlets that will become handouts as part of the interpretive resources. We'd like each of the following items broken down into information for each of the individual units per season (Spring, Summer, Fall, and Winter) – Doctors Creek Unit and South Sulphur Unit. We also want accompanying images for each of the following items included in the seasonal pamphlets.

1. Wildflowers - flowering plants and trees and their respective fruits and/or nuts

3. Fauna – focus on birds, reptiles, amphibians, fish, and mammals

4. Flora – Trees, grasses, leafy and woody plants

5. Fungi

6. Aquatics – each unit's shoreline fishing areas highlighted & the possible fish that may be caught from that location

Distance Based Service Project- Ecoregion Specific

Ecoregion: Post Oak Savannah, Blackland Prairie

What could a volunteer hope to build/gain from helping your project? Volunteers will gain a greater understanding of the flora and fauna that consists of Blackland Prairie and Cross-Timber regions. Also, volunteers will contribute to the interpretive experience of Cooper Lake State Park Complex by compiling these resources for our visitors.

Beyond the standard Texas Master Naturalist training, is there any specific expertise or experience needed? No additional expertise or experience needed

Is there any additional training you'd want the volunteers to complete before they assist your project? No.

What are your expectations of how and when the service would be carried out? We expect that this project will be completed seasonally and will take about a year to a year and a half to complete. We expect that the volunteers come out to the park during each of the respective seasons to assess and notate the flora and fauna.

What is the potential total time commitment (i.e # of hours/week or per month)? Are hours flexible? Is the time period flexible? Hours to complete the project are flexible - based upon the volunteers' availability. Volunteers will want to be present during certain peak periods of the blooming plants and or trees. The completed project will take a year to a year and a half to complete.

How long do you anticipate the project lasting? Over a year.

Why is this project needed, what are the expected outcomes? How is it linked to the mission of the TMN Program? This project will help our park visitors have a better understanding of the flora and fauna of each of the park units. The pamphlets will be used as an interpretive resource handout. This project will have a long-lasting impact upon our park and its visitors.