The Steward

Winter 2026 Highland Lakes Master Naturalists Volume 17 Issue 1

Inside this issue:

Ducks by Gary Hampton	1
Message from our President **By Al Lillis**	2
Pins and Awards	3
Hiking into the new Year by **Martelle Luedecke**	6
Team building New Class **by John Pieper**	10
Prehistoric Tool Demonstration by Julie Jary	13
The Crazy Photographer by Karen Stewart	14
Creek Banks **by Martelle Luedecke**	16
Samantha Melvin at Wild Basin	18
Phenophase: Winter Sleep by Karen Stewart	19
Westcave Preserve by Julie Jary	20
Live Oak Scare by Randy Fromberg	27
Inks Volunteer Recruitment by Martelle Luedecke	28
Phenology Update by Karen Stewart	30
Stuffed Yucca flowers by Patty Harrell	31
Sharp Shinned Hawk by Martelle Luedecke	32
R.E.D. Service at the hatchery **by Linda O'Nana**	33
R.E.D. Service at Inks by Karen Stewart	35
Where will YOUR last drop by Karen Stewart	37
Inks Clean Sweep by Steph Beardley	39
Photo Gallery	42
Mission/Officers	48

Cover: Exploring nature through the unpredictable beauty of watercolor, these pieces reflect Gary Hampton's passion for flowers, wildlife, and landscapes—shaped by his background as a certified Master Naturalist.

Top ~ Green-winged teal pair
Bottom ~ Pintail duck pair

Message from our President

By Al Lillis

Welcome to the New Year—I hope it proves to be both exciting and educational for all of us. Although we began the year with a last-minute meeting location change, we were rewarded with an impressive and inspiring Advance Training program presented by Ray Buchanan. His presentation was a wonderful way to kick off our 2026 season.

As I look ahead, I am mindful that I am following in the footsteps of some outstanding Chapter presidents. My goal is to build on their strong legacy while also bringing forward new programs and project opportunities that support volunteering and education—for our partners and for ourselves. I'll admit up front that I'm not much of a writer or journalist, but I will try to keep you informed with updates from the TMN office, our partners, and our Board of Directors.

While I don't have decades of experience in trees, flowers, insects, or other natural sciences, what truly strengthens our Chapter is that many of our members *do—and they are generous in sharing their knowledge. As President, I want to stay focused on the core mission of Texas Master Naturalists:* ***education, outreach, and service****, while working closely with our Board and committee chairs to best serve you, our Chapter members.*

We want it all—event recaps, stunning photos (with captions and credits!), inspiring articles, juicy updates, heartfelt poems, insightful book reviews, captivating stories, and important announcements!

Send them over to

becky_breazeale@yahoo.com

Mark your calendars—our next deadline is **April 19th** Let's make this edition one to remember!

I also encourage everyone to explore and share new areas of interest. A primary example that comes to mind is seeing and learning about the fascinating work Karen Stewart has studied and now leads through the Phenology Group. I'm confident that, as we head into spring, opportunities in birding, fishing, native plants, and other outdoor nature-focused programs will continue to spark curiosity and participation across our membership.

We are pleased to have our 2026 Training Class underway, led by David Tusa and Blinda McClelland. This year also brings new partnerships, including Camp Buckner, along with continued planning for GOP, HOP, Balcones Canyonlands, the Blanco 3rd Graders in the Park programs and the many other programs where we play a leadership role.

I would like to take a moment to again thank Cathy Houston for her leadership as Chapter President last year, and to extend my appreciation to this year's Board and committee members for volunteering their time, talents, and extra effort on behalf of Highland Lakes Master Naturalist. And finally, a huge thank-you to *you, our members, for contributing more than* ***19,600 volunteer hours and 3100+ AT hours,*** *in support of education and the betterment of others.*

Milestones

Photos by Krista Paul

4000 HOURS!!

Ingrid Hoffmeister
1,000 TMN hours

Left: Al Lillis accepting her award

250 TMN hours
Betty Secrest and John Pieper

Below

Margaret Schelde & Gary Sullivan
500 TMN hours

Below

2026 Recertification

Left to right: Gerri McCall, Dannialle Clayton, Matt Jary, Kaye Barr, Linda O'Nan, Cris Northup, Stephanie Beardsley, and John Pieper

Also awarded, but not pictured:

Initial Certification (2025 class)
TJ Monroe

2025 TMN Recertification
Suze Jernigan, Martelle Luedecke, Bill Nabors, Steve Scheffe, and Charlotte Willis

Hiking into the new year at our state parks

By Martelle Luedecke

As one year comes to a close and another begins, many Texans mark the transition not with fireworks or resolutions, but with hiking boots and fresh air. The tradition of Last Day and First Day Hikes, promoted across Texas State Parks, continues to gain momentum in the Highland Lakes area as residents and visitors alike choose to welcome the New Year outdoors.

On December 31 and January 1, hikers could be found on trails at Inks Lake State Park, Pedernales Falls State Park, Balcones Canyonlands Preserve, and South Llano River State Park. Some participants opted for quiet, self-guided hikes, while others joined ranger-led walks that combined recreation with education about local plants, wildlife, and geology.

At Pedernales Falls State Park, the First Day Hike drew an unexpectedly large crowd. John Pieper noted the strong turnout, saying, “HUGE crowd for New Year's Day hike. I counted 41, might have been 42. We did 3.5 miles, with lots of stops to talk about plants, animals, and how they are specialized to live in the area.”

The popularity of the hike highlighted just how much the tradition has grown. “Next year we need to either require sign-ups, or offer several hikes with different ability levels. We overflowed the parking area!” Pieper added.

Inks Lake State Park also saw significant participation. According to Abigail Clayton, “There were 87 hikers on the first day hike.” The turnout underscored the appeal of starting the year immersed in Hill Country scenery, even during winter conditions.

While Texas State Parks officially promote First Day Hikes each January, many outdoor enthusiasts have expanded the tradition to include Last Day Hikes on December 31,using the final walk of the year as a moment of reflection and closure, followed by a fresh start on January 1.

In the Highland Lakes, where granite hills, clear waters, and rugged trails define the landscape, the tradition feels especially fitting. Whether joining a group hike or setting out independently, these end-and-beginning walks offer a simple reminder that sometimes the best way to move forward is one step at a time.

Left: Pictured (l-r) in the smiling group photo by the park sign are:

Brett Mosley. Cheyenne Mack, Beverly Tobin, Wendy Johnson, Colt Johnson, Levi Johnson

Photos by Meghan James

Ranger led first day hike at South Llano River State Park.

At Pedernales Falls State Park, the First Day Hike drew a large crowd.
Photo by John Pieper

Photos by Abigail Clayton

Left: Hikers enjoyed sights not generally explored.

Right: Inks Lake State Park saw significant participation in their First Day hike.

Right: 87 hikers marked the New Year with a hike at Inks Lake State Park.

Photos by Abigail Clayton

Left; First Day hikers joined ranger-led walks that combined recreation with education about local plants, wildlife, and geology.

Left to right Hank Martin, Kellie Martin, Navey Martin, Vicki Vesa joined the first day hike at Inks Lake State Park.

Many Texans mark the New Year not with fireworks or resolutions, but with hiking boots and fresh air.

Week 5 of New Training Class of 2026

Photos and information provided by John Pieper

Trainees experienced a team-building exercise - walking across a cable. The person going on the cable was to ask for support, climb on the cable, state their goal (for us, our goal in HLMN training), and then get support from the rest of the team as they walked the cable.

St. Peter's Fly

Prehistoric Hunting Tool Demonstration at Pedernales Falls State Park

By Julie Jary Photos by Julie Jary

Atlatl is a prehistoric hunting tool. It is a shaped piece of wood about 2 feet long with a handle on one end and a hook or spur on the other. It is used for launching a spear or dart by hand. Texas Park and Wildlife Ranger Steven Gorman recently talked to a group at Pedernales State Park about the evolution of prehistoric hunting tools, from spears to atlatls, to bows and arrows. There is a brief description of the program offered at Pedernales Falls State Park on the TPWD website: https://tpwd.texas.gov/calendar/pedernales-falls/prehistoric-hunting-the-atlatl_13. Then, Stephen gave a demonstration on how to use the atlatl and participants were able to practice their prehistoric hunting skills by launching the spears at dirt mounds posing as bison and plastic turkeys that had been set up on the target practice range.

Prehistoric hunting tools and artifacts

Ranger Steve chats with the group about how prehistoric hunting tools evolved

Participants practicing their Atlatl skills

More skills practice

The Crazy Photographer

Photos by Karen Stewart

During the years I have lived here at the lake, I have taken countless photos of sunrises and moonrises. I keep close track of the moon and, last night, I was ready to jump in the golf cart and head down to the water to catch the full moon—but I waited just a little too long.

In winter, the moon sets. What I mean is that it is often still visible before or at sunrise, creating spectacular photo opportunities. I first noticed this when I worked on the golf course, where we would watch it set on cold winter mornings.

Here at my home on Lake Buchanan, our park faces east, so I am lucky enough to capture stunning sunrises and moonrises. If I spot a fabulous sunrise through my picture window, I grab my keys, hop in the car or golf cart—usually still in my robe and pajamas—and head down to the water's edge. I probably have hundreds of sunrise photos by now. Some are especially incredible because of the changing water levels over the past two years, and of course, the ever-changing cloud formations. This morning, it was the jet contrails that looked so cool.

I rely on apps on my phone that tell me sunrise and moonrise times. Like I said, I keep track. I even set alarms to remind myself to head down to the "beach."

The full moon was setting this morning. With the lake full, a cove forms on the west side of the bridge near the Lakeshore Library on 261. I believe part of it may actually be on Reed Armstrong's property. For years, whenever there is water there, I have driven over to take photos from the bridge. Timing is everything—sometimes by the time I get in the car, the colors are already gone. That's how quickly things change. Taking photos from the bridge, whether in a car or on foot, can be a little treacherous.

This morning, I headed down to the water with ice crystals still clinging to my car windows and captured the sunrise. I just missed getting the geese flying in front of the sunrise, dang it. Then I hurried over to the bridge to catch the moon setting, with a few coots thrown in for good measure. An egret landed nearby, and I turned the car around to see if I could catch it too, but it must have flown to the other side of the pond. Bummer.

Here are my photos.

Enjoy.

Bare Creek Beds

By Martelle Luedecke

Rebuilding Creek Banks

Creeks and riparian corridors are some of the most dynamic landscapes in Central Texas. They shift with every heavy rain, shrink during drought, and respond quickly to how the land around them is managed. **This** past fall, winter, and continuing into the present, many local creek banks have been left bare — not from neglect, but often as an unintended result of debris cleanup and flood recovery efforts.

When organizations remove fallen trees, brush, and vegetation from creek channels, the intent is typically safety, access, and improved water flow. In some locations, however, these efforts have removed nearly everything living along the banks. What remains in many places is exposed soil — smooth, vertical, and highly vulnerable to erosion. Without roots to hold soil in place, even moderate rain events can begin cutting away at the bank, sending sediment downstream and accelerating long-term instability.

The good news is that creek banks can recover. In Central Texas (USDA Zone 8), native grasses are one of the most effective and dependable tools for stabilizing eroded banks, especially when they are planted at the right time and in the right locations along the slope.

Why Bare Banks Fail

Bare soil along a creek is rarely stable for long. During rain events, fast-moving water scours the base of the bank. Without vegetation to slow the flow and anchor the soil, banks slump, undercut, and collapse. In drought, exposed soil dries and cracks, weakening the slope even further. Native grasses interrupt this cycle by developing dense root systems that bind soil particles together and absorb the force of moving water.

Native Grasses: The Backbone of Creek Bank Stability

Grasses do far more than provide surface cover. Their fine, fibrous roots create a dense underground network that functions much like reinforcing mesh in concrete. This makes native grasses especially valuable along creek banks where flexibility, strength, and recovery after flooding are essential.

Several native species have proven particularly effective across Central Texas riparian areas:

Switchgrass (*Panicum virgatum*)
Switchgrass is one of the most widely used grasses in erosion control and restoration projects. It tolerates periodic flooding, develops deep roots, and stands upright even after high-water events. It performs well on mid-banks and slightly higher slopes with full sun.

Eastern Gamagrass (*Tripsacum dactyloides*)
Often found naturally along creeks and lowlands, eastern gamagrass thrives in moist soils and forms strong, clumping roots that hold banks together. It is especially effective where banks transition from wet to dry.

Big Bluestem (*Andropogon gerardii*) and Indiangrass (*Sorghastrum nutans*)
These tall prairie grasses are best suited for upper portions of creek banks. Their extensive root systems penetrate deeply into the soil, anchoring slopes and reducing long-term erosion.

Virginia Wildrye (*Elymus virginicus*)
Virginia wildrye is valuable for quicker establishment and tolerates partial shade, making it useful along wooded creeks. While shorter-lived than some warm-season grasses, it helps stabilize soil during early recovery.

Inland Sea Oats (*Chasmanthium latifolium*)
Common along shaded creek corridors, inland sea oats performs well in moist soils and helps bridge the gap between grassy banks and wooded floodplains.

Planting Time Matters

Timing is just as important as plant selection. In Central Texas, native grasses establish best when planted during periods that support strong root development.

Late winter to early spring (February–April) is ideal for planting containerized native grasses along creek banks. Soil moisture is usually higher, temperatures are moderate, and plants have time to develop roots before summer heat arrives.

Fall planting (September–October) can also be successful, particularly in years with consistent rainfall. Fall-planted grasses focus energy on root growth rather than top growth, giving them a head start before spring.

Seeding large areas can be effective, but plugs or container plants are often more reliable on steep or actively eroding banks. Young plants should be spaced closely enough to allow their root systems to overlap as they mature, creating a continuous stabilizing network.

Establishment Is the Critical Phase

Even drought-tolerant native grasses require watering during their first growing season. Regular moisture during establishment allows roots to grow deep and wide. Once established, these grasses require little supplemental care and can withstand both extended dry periods and periodic flooding.

Re-Vegetation Is Restoration

Debris removal plays an important role in creek management, but **leaving creek banks as bare soil creates long-term erosion problems that extend beyond the immediate area**. Reintroducing native grasses restores the natural function of creek banks — slowing water, holding soil in place, improving water quality, and creating resilient landscapes that adapt to Central Texas conditions.

Creek banks were never meant to remain bare. With native grasses planted at the right time and in the right places, even heavily disturbed waterways can begin to stabilize and recover, one root system at a time.

St. Edwards University Artist in Residency at Wild Basin

Spring 2026 Artist in Residence

Samantha Melvin is an artist, art educator and advocate. Her research-based, multi- disciplinary artistic practice includes drawing, painting, and printmaking that focuses on the interaction between humans and nature. A nationally-recognized art educator, she is a contributing author to STEAM Education: An Interdisciplinary Look at Art in the Curriculum (2024). She has a M.A. in Art Education from the University of Florida (2015), and a M.F.A. in Painting from the Savannah College of Art and Design (2023).

Samantha teaches printmaking workshops at Flatbed Press, Center for Contemporary Printmaking in Austin, TX and will co-host a workshop/residency on cyanotype and monotype at La Romita, in Umbria, Italy in August. She is a master naturalist and loves to travel. Samantha lives in the hill country outside of Austin, TX.

Artist Statement

From the lens of a gardener and an artist, my work investigates the dynamics of landscape and space. The colorful mixed-media languages of drawing, painting and printmaking speak vibrantly about these environments where the grid reflects the human imprint. Through layered botanical abstractions and patterns, gestural conversations of color, light, and form explore materiality and the biophilic interrelation of interior and exterior to broaden our view of the "landscape." My work explores our interaction with nature by focusing on regional native species of wildflowers, plants and tall grass species. Botanical shapes reference the varieties of plant species from my home and my travels as a celebration of place. Their wild diversity is natural to where they root, a living web of interconnected parts in which we plant ourselves. It is their adaptability in this web that reflects the ingenuity of the species in each locality. Everything is connected.

Encounters with nature remove us from the manufactured spaces of our day-to-day existences. It is in these environments that nature, especially in her wildness, demonstrates her calm resilience adapted to that place. The quiet energy that pulses from the roots to the tips of branches, through stems, leaves and petals is a life force with an ever-adapting focus on being. Here, I will develop a body of work celebrating the Wild Basin Wilderness Preserve: Holding Stillness.

Phenophase: Winter Dormancy

by Karen Stewart

Phenophases are the stages plants and animals move through in response to seasonal changes in temperature and daylight. Phenology is the study of those changes.

If a plant (and maybe us, too) is lucky, it drops its leaves, shuts down, and stays that way until something resembling "spring" finally arrives. Plants, particularly trees, need this period of rest.

Winter in Texas—now that's a conundrum. Thirty degrees today, seventy tomorrow. When people complain about Central Texas weather, I remind them that we live right in the middle: warm air drifting up from the coast, cold fronts slamming down from the plains. Rinse and repeat, all year long.

This temperature fluctuation is hard on plants (and us.) Plants are not able to "harden off" or go dormant. Plants exposed to cooler temperatures begin to slow down and prepare for winter. Ideally, they enter dormancy—ready for cold weather when it arrives.

I love watching the weather. I have seven weather apps, but the one I watch most is MyRadar, that shows the wind. Yesterday, even though temperatures in the Panhandle were in the 40s, the wind was blowing from the south. Weird. Sometimes, even in winter, our strong prevailing southerly winds push all the way up to Lake Michigan. I watch cold fronts march toward us, clearly outlined on the radar. When I open the Storm Radar app, I am able to tap anywhere on the map and see wind speed along with high and low temperatures. Fascinating—though I still hate the wind.

As most of us know, these constant ups and downs wreak havoc on plants. They can't decide whether to grow or rest. Normally, cooler temperatures and shorter days signal plants to shut down: sap flow slows, leaves drop, chlorophyll and sugar production decrease, branches stand bare, and flowering stops. This rest period—**dormancy**—is essential for plant survival.

But weather in Texas doesn't always cooperate.

Here, a stretch of warm days can trigger plants to leaf out or bloom too early. Buds open—then *zap*—a freeze hits and they're gone. Peach growers in Fredericksburg and across the region are struggling with this reality, a challenge made worse by climate change. The USDA Hardiness Zone map for Burnet County was updated in 2012, reflecting warmer average temperatures across much of Texas. That often means our first freeze comes later or isn't as cold as it used to be. We are all seeing weird things among plants. We are watching their phenophases and are realizing they are "off." Bluebonnets in July and January. Mesquite trees that still have leaves in January are just a few examples.

And yet, as we learned during Snowpocalypse (or Snowmageddon), when the cold does arrive, it can arrive hard. It was 70 degrees before it hit, and I was out there mulching my plants to try to protect them.

Plants may be happily growing in 40–60 degree weather, never fully shutting down. Then suddenly, a deep freeze hits. Water that should have stayed protected in the root zone freezes within the plant tissues, causing severe damage or death. If the plant has already begun to bloom, those buds are especially vulnerable.

I was in Kerrville in November and noticed the contrast immediately. The grass was tan, trees were showing beautiful fall color—clear signs of dormancy beginning. Back home on Lake Buchanan, though, everything was still green and blooming, with hardly a hint of fall color. Interesting, considering Kerrville is farther south. They had already experienced a hard freeze; we had not.

As gardeners—and phenophase watchers—in Texas, we have to stay alert. The weather keeps us guessing, and plants respond accordingly. How many times have you heard, “but I didn’t know this (the cold) was going to happen!” and people don’t dress accordingly.

Check out these articles to explore how highs and lows, chill hours, and the difference between first *frost* and first *freeze* shape what we see in the landscape. In Texas, watching the seasons isn’t passive—it’s an ongoing experiment.

https://www.plantmaps.com/hardiness-zones-for-burnet-county-texas

https://garden.org/apps/frost-dates/Burnet%2C+TX/

Westcave Preserve Offers Unique Service Opportunities in an Idyllic Setting

By Julie Jary Photos by Julie Jary

On a Hill Country backroad in southwest Travis County, 30 miles west of the hustle and bustle of Austin, lies a hidden gem that attracts nature-lovers from all over the world. Westcave Preserve (a.k.a. Westcave Outdoor Discovery Center) is a natural wonder with a rich geologic and sociological history. It is situated within one of the most biodiverse regions in central Texas: the Edwards Plateau ecoregion. The Live Oak/Ashe Juniper savannah that dominates the preserve supports a variety of endemic avian and specialized species, including the endangered Golden-cheeked Warbler and Texas Barberry. The crown jewel of the preserve is a collapsed limestone grotto that forms a lush canyon with a small cave and spring-fed, 40-foot waterfall that replenishes an

emerald pool below. Access to the canyon, cave, and grotto is restricted to guided tours to protect the fragile ecosystem. The preserve offers 76-acres of ecologically diverse land restored and protected for the responsible enjoyment and edification of current and future generations. For five decades, Westcave Preserve's restoration, conservation, education, research, and outreach efforts have been inspiring people to develop a lifelong practice of enjoying and protecting nature. The Discovery Center is host to an abundance of unique experiences and opportunities for visitors, staff, and volunteers, including educational programs for children and adults, tours of the grotto, specialty hikes, scientific research, prairie restoration, environmental stewardship, and more. **Texas Master Naturalists are uniquely qualified to assist in those efforts, and the Westcave Outdoor Discovery Center is an idyllic setting to put our knowledge and skills to work.**

Anglo settlers named the area "West Caves" because of its location west of the Pedernales River. The land changed ownership multiple times through the decades and was much abused by trespassing tourists and campers in the late 60s early 70s. In 1974, Austin resident, environmentalist, and architect, John Covert Watson, purchased the original 25 acres of heavily trespassed land on the banks of the Pedernales River. Two years later, he founded the Westcave Preserve Corporation, a nonprofit entity, to protect the environmentally vulnerable area and share it responsibly with the public. At that time, the nonprofit had two goals for the preserve: keep it open to the public and manage it to allow for public enjoyment with minimal disturbance to the environment. Resident Manager and naturalist, John Ahrns, dedicated nearly four decades of his life to restoring the land and vigilantly protecting it. Today, his daughter, Amber Ahrns Gosselin, who grew up on the property, continues that legacy by serving as the Preserve Director. The preserve, which has been expanded to 76 acres since it's initial purchase, is now owned by the Lower Colorado River Authority with a 99-year lease to the Westcave Preserve at a nominal rate.

The mission of Westcave Preserve is to inspire people to develop a lifelong practice of enjoying and protecting nature, and it achieves that mission through education, conservation and collaboration. Westcave provides hands-on learning experiences to 4,000 students and over 16,000 visitors annually. Students and adults alike learn key scientific concepts at the nationally-renowned Skaaren Environmental Learning Center, observe hundreds of thousands of years of geologic formations as they hike down the canyon to the cave, and witness the water cycle in action as they walk behind the spring-fed waterfall that replenishes the pool below. Specialty hikes, such as forest bathing, photography hikes, night hikes, meditative hikes, and bird hikes offer unique opportunities for outdoor enthusiasts. Westcave also hosts scouting events, homeschool days, and star parties. Volunteers are needed to assist with greeting and checking-in guests, leading group tours of the grotto, and assisting with school field trips and other special events.

Conservation efforts include research projects focused on birds, dragonflies,cave ecosystem health, water qual-

ity, and weather and land management projects, such as invasive species control and prairie restoration. Westcave maintains two wildlife viewing stations, two rainwater ponds, pollinator gardens, a bat house, a chimney swift tower, and a weather station. Citizen scientists can help by participating in butterfly/dragonfly surveys (spring through fall), bat emergence surveys (summer), Chimney Swift counts (summer), *Project FeederWatch* counts (November through April), and Christmas Bird Counts. Volunteers are also needed for trail maintenance, pollinator garden work, prairie restoration, and small construction projects.

Collaboration is a key component of Westcave's mission. The staff have formed strategic alliances with a wide variety of community organizations that encourage environmental stewardship and education, including but not limited to LCRA, the City of Austin, Travis County, the University of Texas, Master Naturalist chapters, local businesses, and non-profit organizations. Westcave initiated the Children in Nature Collaborative of Austin (CiNCA), a network of nonprofits, environmental educators, health professionals and community leaders to work together on common goals. That network blossomed into its own entity: Texas Children in Nature Network (TCiNN). Westcave is a proud member of the Network and continues to form strategic alliances through Girls+ Outside, Austin Outdoors, and others that share a love and commitment to outdoor education and nature preservation. Volunteers can assist with special outreach events. This year marks the 50th anniversary of the Westcave Preserve, which will be celebrated at the Golden Bloom Festival on May 2nd.

For more information about Westcave, please visit their website at https://www.westcave.org/. If you are interested in getting involved, please contact Matt Jary at mattjary@gmail.com or (512) 423-2450.

Evolution of Westcave – Where the tour begins

Left: Matt Jary giving a tour

Right: Matt Jary pointing out native species along the tour

Left: Visitors to one of Westcave's bird blinds

Left: Approaching the Grotto

Left: Powdered Dancer from Westcave dragonfly survey July 2025

Right: Guests entering the cave

View from inside the cave

Behind the waterfall

Another view from behind the falls

Left: Another peaceful bird blind at the Preserve

Right: Westcave Skaaren Learning Center

Live Oak Scare

By Randy Fromberg

By the first weeks of February, when the days start to grow longer but the mornings still carry a chill, the live oaks at Desfiladero begin their annual deception. We think of them as evergreen. But this time of year, some of the oaks thin suddenly, as if sickened. One tree holds its canopy steady while another, a few yards away in the same limestone soil, lets go all at once. Leaves fall in a soft rattle. In a gust they come down like rain. I have seen a year of growth drop in a single afternoon.

The first instinct is worry. In this country, worry often carries a name: oak wilt. Caused by the fungus Bretziella fagacearum, oak wilt has reshaped whole ridgelines in Central Texas. It spreads through the interconnected roots of a mot and by sap-feeding beetles drawn to fresh wounds. Once established in red oaks, it can kill within weeks. Live oaks are more resistant and may succumb slowly over months or years if the fungus takes hold. Some survive with resilience or careful intervention. The disease blocks xylem—the vessels that carry water from root to crown—starving the foliage even while the soil below remains damp. Veinal necrosis in leaves—browning that follows the veins—is the classic live oak wilt symptom in Central Texas.

Knowing this, it is difficult not to read catastrophe into every thinning crown.

But the February leaf drop of live oaks is something else entirely. Live oak holds its leaves longer than most broadleaf trees, but not indefinitely. Each leaf persists for roughly twelve months, give or take depending on exposure and microclimate. Just before the spring flush, the tree reclaims what it can. Nitrogen and other mobile nutrients are withdrawn from the aging leaves and stored in twig and trunk. Only then are the leaves released. What looks like decline is, in fact, transition. The tree is making room.

The inconsistency from one tree to the next is no accident. Timing is influenced by microclimate, genetics, soil depth, and water availability. A tree rooted in deeper pockets of caliche-streaked loam may respond differently than one gripping a fractured limestone shelf. South-facing slopes warm sooner. Cold snaps delay bud break. Some trees shed to nearly bare before pushing new growth; others overlap old and new leaves for weeks, so the exchange passes almost unnoticed. From a distance, it can look like a sickness moving unevenly through the canopy. Up close, it is choreography.

There is a physiological logic to the timing. Late winter in the Texas Hill Country is a narrow corridor between frost and drought. By shedding older leaves just before bud break, the tree reduces transpirational demand at the very moment it is preparing new growth. Fewer leaves mean less water lost through stomata, less risk if March winds arrive dry. When the new leaves emerge—small, pale, and faintly furred—they are built for efficiency. They harden quickly into the thick, leathery blades that can endure summer heat and persistent wind. Evergreen does not mean static; it means strategic.

Living among these trees has recalibrated my sense of what trouble looks like. Real oak wilt announces itself differently. The browning often follows the veins, with a sharp line between living and dying tissue. Leaves drop prematurely in spring or summer, not in that late-winter hinge when buds are already swelling. There may be a faint fungal mat under loosened bark on a red oak nearby. Learning to distinguish disease from seasonal leaf-drop matters. It keeps a person from cutting too quickly, from mistaking adaptation for decline. We prune sparingly, careful not to tempt the beetles that carry disease, but mostly we watch and learn.

The land teaches this lesson repeatedly: not every loss is a failure. Some thinning is preparation. On the ranch, there are years when the grasses look spent in August, only to green fiercely after a September rain. There are seasons when the tanks shrink to cracked margins, and yet the aquifer below continues its quiet accounting. In early February, the live oaks appear vulnerable precisely because they are investing in what comes next. They release what has served its term so that new tissue can form without overtaxing the whole.

There is something instructive in the unevenness as well. Each native tree carries its own history of stress and abundance, insect damage and lightning scars, shallow roots or deeper seams of soil. Their responses diverge. Standing among them, I am reminded that resilience is not identical across any population. It is distributed, varied, and sometimes surprising. A tree that looked weakest one winter may hold longest in drought. I have mistaken thinning in my own life before.

The February rain of leaves has its own sound, a dry whisper against rock and cedar litter. It gathers along fence lines and in the corners of the water gaps. Those fallen leaves will not go to waste. They soften into mulch, feed fungi, shelter invertebrates, and return nitrogen to the thin soils they came from. Even the shedding participates in a cycle that strengthens the grove. At scale, it is continuity.

Over time I have come to welcome the brief disarray. It sharpens attention. It forces me to look more closely—at buds swelling red at the twig tips, at the faint sheen of new growth hidden within what looked like a thinning crown. Evergreen is not immunity, and health in a landscape is often expressed through change.

By March the oaks are leafed again, the canopy dense and dark, the illusion of permanence restored. If I had not watched the leaves fall, I might believe nothing had happened at all. But I know better. I have seen the exchange. The trees did not fail; they adjusted. They let go in order to continue. That may be the most dependable pattern of all.

Volunteer Recruitment at Inks Lake State Park

By Martelle Luedecke

On Sunday afternoon, February 15, Texas Parks and Wildlife Department welcomed community members to Inks Lake State Park headquarters for a volunteer recruitment event focused on one simple message: there is a place for everyone in Texas State Parks.

From 2 to 5 p.m., attendees learned how they could join forces with TPWD and become volunteers at their favorite state parks. Whether someone's interests lean toward kayaking, fishing, archery, hiking, nature programs, citizen science initiatives, or even simply sitting quietly and watching birds, organizers emphasized there is a volunteer role to match nearly every passion. The mission, speakers shared, is clear: help others enjoy nature while promoting environmental conservation across Texas.

Guests heard from Park Superintendent Daniel Stauffer, Interpretive Ranger Andrew Berezin, and the park's volunteer coordinator about the many ways volunteers strengthen park operations. From assisting with educational programs and trail support to helping with special events and conservation efforts, volunteers serve as ambassadors for both the park and the outdoors.

Following the indoor presentation, Ranger Berezin led attendees to the Devil's Waterhole Trailhead for a guided walk that offered a closer look at the natural treasures within the park. The highlight of the tour was a viewing of the Texas Star mushroom, *Chorioactis geaster*, the official State Mushroom of Texas. The unusual fungus, known for its star-like shape when it opens, served as a fitting symbol for the afternoon: distinctly Texan and best appreciated up close in the natural world.

The event blended information with inspiration, reminding participants that stewardship begins with simple steps; showing up, lending a hand, and sharing a love of the outdoors. For those considering how to give back while spending time in nature, Sunday's gathering made it clear: Texas State Parks are ready to welcome them.

Photo by Tara Humphreys Left to right: Krista Paul, Karen Stewart, Daniel Stauffer, Deanna Lehman, Lori Birkhead, Stephanie Beardsley, Lonnie Guest, Tammy Guest, Mike Brode, Tori Leggett, Andrew Berezin

Left: Volunteers at Devil's Waterhole Trailhead
Photo by Krista Paul

Right: Andrew Berezin took us on a tour to see the Texas Star Mushroom (State Mushroom)
Photo by Krista Paul

Texas Star Mushroom (Chorioactis geaster) Photo by Krista Paul

Inks Lake Phenology Update

By Karen Stewart

Eight HLMNers have joined their fearless leader (Karen Stewart) on the Inks Lake Phenology Program journey. They met the first week in February for additional training on what frozen plants look like. The native plants and animals being monitored are located at the Inks Lake Wildlife Viewing Station and are logged using the Nature's Notebook app. Baby bluebonnets and a cedar elm tree, a dead (for now) pickerelweed, and leopard frogs are just a few of the species being monitored on the Nature's Notebook App.

This project is associated with the USA National Phenology Network and is also part of the *Time to Restore* program, which focuses on Texas, Oklahoma, Louisiana, and New Mexico. Because phenology data has historically been limited in these four states, a special effort was made to initiate monitoring programs in this region. *Time to Restore* emphasizes priority pollinator species and works with a limited plant list. (Funding for the Time to Restore program will be ending soon.)

By launching this phenology program at Inks Lake—with other Highland Lakes Master Naturalists joining the effort or creating programs of their own—we are making a significant contribution to the regional phenology data set. This data will be used by scientist and others studying climate change and/or the relationships that are changing with the pollinator/plant relationships due to climate change. USA-NPN data is open to anyone wanting to research it and the Network's website features a "data visualization" tool that answers queries and makes various graphs and charts.

Left: As always, our Local Phenology Program (LPP) participants enjoyed getting together and visiting with classmates. Pictured here looking at baby bluebonnets and recording the data are Cindy Dietz, Julie Jary, Matt Jarry, Krista Paul, Stephanie Beardsley, and Dana Ross. (Not pictured: Kaye Barr and Holly Morris.) Photo by Karen Stewart.

Right: Photo in the Bird Blind—participants are counting cardinals and white winged doves –also species on the project. —Photo by Wei Hong (a Burnet County Master Gardener, who has joined the project.)

Stuffed Yucca Flowers

Submitted by Patty Harrell

After traveling the world for 20 years, Chef Finn Walter has returned to Lubbock to open his own restaurant – The Nicolett. He is famous for incorporating familiar plants into his High Plains cuisine. A quick glance at his menu reveals the use of cactus, juniper aioli, piñon, yucca root, okra flowers, mesquite bean, lavender, and mustang grapes. Since not everyone has an opportunity to visit Lubbock, Chef Finn shared the following recipe for stuffed yucca flowers with Texas Coop Magazine (in November 2024).

Ingredients:

25 rinsed yucca flowers, pistils and stamens removed and reserved
¼ cup onion, chopped
Olive oil
½ teaspoon salt
½ teaspoon ground sumac
2 tablespoons green chile, chopped
½ cup cream cheese, room temperature
1 egg, beaten
All-purpose flour

Instructions:

Chop the yucca pistils and stamens and the onion into small pieces (approximately ¼ - ½ inch) and sauté in olive oil until the onions are translucent. Add the salt, sumac powder, and chopped green chile, and stir to combine. Remove from the heat.

Place the cream cheese in a bowl and fold in the warmed ingredients to distribute them evenly.

Fill each yucca flower with a teaspoon of the cream cheese mixture and gently press the flowers closed. Dip each one in the beaten egg, then dredge in the flour and set aside.

Fry the stuffed blossoms in oil until they are a crispy golden brown and serve warm.

Sharp-shinned Hawk

By Martelle Luedecke

Small, fast, and remarkably precise, the sharp-shinned hawk (*Accipiter striatus*) is one of North America's most agile birds of prey and a species local birders can spot right here in the Highland Lakes area. Often seen as a sudden blur slipping through trees or flashing past backyard feeders, this compact raptor is built for speed, stealth, and split-second turns.

The sharp-shinned hawk takes its name from the narrow, sharply edged bones of its lower legs. It is the smallest hawk in North America, measuring just 9–13 inches long, with females noticeably larger than males, a common trait among raptors. Short, rounded wings and a long, squared tail make it exceptionally maneuverable, allowing it to weave through dense woods in pursuit of prey where larger hawks struggle to follow.

Sharp-shinned hawks are often confused with the slightly larger Cooper's hawk, especially during quick backyard sightings. Key differences include size and shape: sharp-shinned hawks are smaller and slimmer, with a more compact build and a small head that barely extends beyond the wings in flight, while Cooper's hawks appear bulkier with a broader chest and a noticeably larger head. Tail shape is another helpful clue—sharp-shinned hawks typically show a squared or slightly notched tail tip, compared to the rounded tail of a Cooper's hawk. Their flight styles are similar, marked by several quick wingbeats followed by a glide, but sharp-shinned hawks tend to look faster and more frenetic, while Cooper's hawks appear stronger and more deliberate in the air.

Birds make up the majority of the sharp-shinned hawk's diet. Sparrows, finches, chickadees, and warblers are frequent targets, which is why these hawks are often drawn to backyard bird feeders. While a sudden strike can

Sharp-shinned Hawk; Photo by Meghan James

Rick Edwards Day of Service

By Martelle Luedecke

Rick Edwards, a respected local businessman and devoted community leader, dedicated his life to serving Marble Falls. From 2009 to 2022, he faithfully served Marble Falls Independent School District as a member of the Board of Trustees, where he worked tirelessly to support students, families, and educators.

Rick was deeply passionate about his community, especially the vital role schools play in shaping the lives of children. He believed in investing not only in strong educational systems that foster safety and academic excellence, but also in the well-being of each child as an individual, a young person with unique hopes, dreams, and potential.

Through the Rick Edwards Day of Service, his legacy of service continues in a meaningful and lasting way. This special day will guide Marble Falls students in learning the value of service, compassion, and teamwork while working together to strengthen our community.

All MFISD students have the opportunity to participate. Our youngest learners serve within their classrooms by making cards, writing letters, drawing pictures, and assembling care packages. Secondary students extend their impact beyond the classroom by serving at Inks Dam National Fish Hatchery, Inks Lake State Park, and other nonprofits and businesses throughout the community.

@Inks Dam National Fish Hatchery

By Linda O'Nan

Photos by Linda O'Nan and Jerry Stacy

Two bus loads of Marble Falls High School students participated in Rick Edwards Day of Service @IDNFH. They separated into groups for various projects, one group helped extend the Pollinator Garden, added woody cuttings to the bird blind brush pile, and cleaned up a trail area. These kids were great—we thank them for their hard work & community service! Thanks to IDNFH staff for organizing this opportunity.

Marble Falls high school students @Inks Dam National Fish Hatchery

@Inks Lake State Park

By Karen Stewart Photos by Karen Stewart

On Friday, February 20, students from Marble Falls visited the wildlife viewing station at Inks Lake State Park for the annual Rick Edwards Day of Service, with support and organization provided by the Ark of Highland Lakes.

During their visit, the students assisted with trail maintenance and spread mulch in the garden area. Master Naturalists and Friends of Inks Lake members Karen Stewart and Steph Beardsley led them in their projects. After completing their work, the group learned about the bird blind and the various bird species that can be observed there. Only one student had previously visited the Park.

Marble Falls high school students and volunteers @Inks Lake State Park. Pictured are: School representatives Laura Etheridge, Julie Sadler, and students: Ava Martin, Ayden Rioja, Zara Bustos, Mariah Maldonado, Jesus Salinas. Alexa Solorzano, Ezequiel Alvarado, Mathew Sandoval ,Alejandra Flores, Adriana Marin and Zeiry Dominguez.

Pictured are: School representatives Laura Etheridge, Julie Sadler, and students: Ava Martin, Ayden Rioja, Zara Bustos, Mariah Maldonado, Jesus Salinas. Alexa Solorzano, Ezequiel Alvarado, Mathew Sandoval ,Alejandra Flores, Adriana Marin and Zeiry Dominguez. Marble Falls high school students and volunteers @Inks Lake State Park.

Where Will Your Last Drop Come From?

Water Wells and Aquifers

By Karen Stewart

People love green. So do I. My neighbor overwaters with his well water and his yard is always green. He also has many more trees than I do and, looking at his yard, I feel cool. Looking at my yard, except for my natives that are blooming, I feel hot and tired, and in fact, his house probably IS cooler, and I am jealous.

I have heard that drilling a well in my neighborhood is hit or miss. The granite underneath has pockets of water, but you have to find it. We are close to Lake Buchanan, which means there might be more available ground water. Many people all over Texas have drilled wells just to water their lawns. It helps with not using potable drinking water for irrigating plants, but since it is draining many small aquifers, it may cause a crisis for those who use groundwater for drinking. Some of these wells are not regulated and their water could be used in wasteful and inefficient ways.

Many years ago, I went to a program about the Edwards Aquifer at a State Park and it really stuck with me. The presenter had a bucket he was filling with a water hose. He said to pretend the water in the bucket is an aquifer. He pulled a plug near the top of the bucket and said this represents the water going to the City of San Marcos. He went on to describe pulling plugs for several other cities down the bucket, mimicking the water these cities are pulling from the aquifer. I believe he kept filling the bucket with water as it leaked out. Then he pulled a large plug at the bottom and a significant amount of water poured out and the water for San Marcos stopped running. He said the large hole represents water pulled from the Edwards Aquifer by the City of San Antonio. His point was that, by San Antonio drilling a larger, deeper well, it resulted in running other cities dry. I don't know if that really happens or not, but it is a good point and it made an impression.

So, visualize the glass of water with lots of straws. That is an aquifer being pumped by many people. The more people, the less everyone is going to get overall, and more likely the aquifer will not replenish at the same rate and potentially dry up.

Now, with your cup of straws, picture one of those large bubble tea straws sucking up even more away from other people. That is what happens when an industry, agriculture or other entity drills deeper and larger and pumps more. Large users and more people that use landscape water during a drought will trigger an unsustainable situation. Regulations, water conservation, water restrictions, and a water budget—where a user is only allowed to pull so much—are the only things that will save our water resources for the future.

Step 3 Water Conservation

In a typical home, the toilet is the most water-consuming equipment. Older toilets can use up to 3-5 gallons per flush or leak water constantly from the rubber diaphragm. Depending on the amount of laundry done, if the home has an older clothes washer that the tub fills up, it may use 30 to 40 gallons every time it operates. Running the water doing the dishes can use up to 3 gallons per minute where a new dish washer only uses seven to nine gallons in total for the entire wash. You can't beat that washing dishes by hand unless you make a soap sink and a rinse sink with stoppers or dish pans. Contrary to recent commercials, run the dishwasher only when it is full.

When toilet companies were mandated to use less water, they messed it up by just reducing the tank making the toilet not work, so everyone hated low flow toilets. The current toilets will even flush golf balls, and they work much better. Flawed ones still exist and a defective one will come out of the factory just like anything else so do your homework before buying one. More expensive doesn't always mean better. And there are some weird toilets out there.

All clothes washers are better now, but front-loading ones are the best as far as reducing water use. They also reduce dryer use, because they spin out more water. There was a time where a ton of water stayed in the machine and caused mold. Again, make sure you do your homework if buying one and don't get one that holds water or has bad reviews. Use cold water as much as possible, that saves on gas or electricity to heat the water, and is generally fine for washing most clothing. These days, we don't get that dirty or sweaty.

You just need to pay more attention to everything going on in your house. Collect water in a bucket or pitcher that otherwise just runs down the drain while waiting for it to get warm. Use a small receptacle for hand washing water rather than allowing the faucet to continue to run. I throw mine out the back door on my Blue Mist flower. We have all heard the common recommendations: turn the water off when you brush your teeth, fix water leaks quickly, and take five-minute showers. Believe me, I miss my long hot showers. Every drop counts!

Pay attention to water usage outside the house. The average water hose runs eight gallons per minute and a small sprinkler head (hose-end or automatic) uses four gallons per minute. When watering your yard, use a timer. Use a simple manual timer and set it for 15 to 20 minutes. I have often inadvertently left on a water hose! With automatic irrigation systems, run sprinkler heads 15 to 20 minutes and larger rotor sprinklers (that may lose a lot in the air) to 30 to 45 minutes. Cut runtimes in half and use two start times, such as 2am and 4am, allowing each run to soak in better.

Here is how to audit your own irrigation system. https://www.austintexas.gov/sites/default/files/files/Water/Conservation/Rebates_and_Programs/IrrigationEvaluation-Resident.pdf

LCRA and many property owner associations and water utilities will send out an irrigation technician or auditor for free. Contact your water provider.
You may also use tuna or cat food cans to measure the amount of water. In most cases, one-half to one inch per week should be sufficient. Evapotranspiration or ET represents water loss from the plant by respiration and air temperature (heat) evaporation. See https://texaset.tamu.edu/ to find your area's ET. If you have an automatic sprinkler system, use only licensed irrigators to service them. They SHOULD be trained on proper use and water conservation, but that's not a guarantee. One run from an automatic system could use up to 4-10,000 gallons depending on the amount of area. Shrub areas should only be watered twice per month. It is recommended to not water from 10am- 6pm when evaporation is at its highest. Did I mention my neighbor waters in the middle of the day?

Next, this country needs to work on using greywater (sinks, bathtubs, and washing machines) or other non-potable water to water the yard. This may require changing laws and regulations.

Where does your used water go?—Graywater

Unfortunately, in this country our household sink and shower graywater usually runs down a sewer line. Some of us have septic tanks where at least the water might leach out into the ground eventually, but for most of the US population wastewater goes to a treatment facility. Using graywater in apartment blocks would be difficult without careful management, or without a large green area for irrigation. Many communities use reclaimed water (water that has almost been purified to drinking level standards, but doesn't look like it) on golf courses and parks.

The most efficient use of wastewater—graywater, not black (sewage)—would be to keep it on your land and flush with it or use it for landscape watering. Use of graywater is a controversial subject and is highly regulated to insure correct usage. Use of graywater has to be done properly or can be a mess, as you can imagine. It would be great if we could run our clothes washer water out the door onto our landscape. Some of you probably do. My house owners did before I got my new septic system.

This is a useful article from the University of New Mexico. https://pubs.nmsu.edu/_m/M106/

Use of graywater in Texas:https://www.tceq.texas.gov/permitting/wastewater/graywater

We can all do our part. Happy saving and water conservation!

Clean Sweep at Inks Lake State Park

Photos by Steph Beardley

Clean sweep is an annual event which started in 2004. It is a project coordinated by Friends of Inks Lake (FOIL) and Texas Master Naturalist Program, Highland Lakes Chapter (HLMN) members to help the park get ready for spring. We had a beautiful day with lots of volunteers.

Left to right: Krista Paul, Kaye Barr, Ross Rogers, Derek Ross, Steph Beardley, Michael Schakley, Cindy Dietz, Jerry Stacy, Linda O'Nan, DJ Sanders, Keff Rhodes, Teri Rhodes, Matt Jary, and Julie Jary

Friends of Inks Lake (FOIL) and Texas Master Naturalist Program, Highland Lakes Chapter (HLMN) members to help the park get ready for spring . Photos by Steph Beardley

Texas Master Naturalist Program, Highland Lakes Chapter (HLMN) and Friends of Inks Lake (FOIL) help the park get ready for spring.. Photos by Steph Beardley

Left: Clean Sweep at Inks Lake State Park. Photo by Steph Beardley

Photo Gallery

Sphinx moth at Home Depot when flowers were in short supply in the wild. Photo by James Reimer

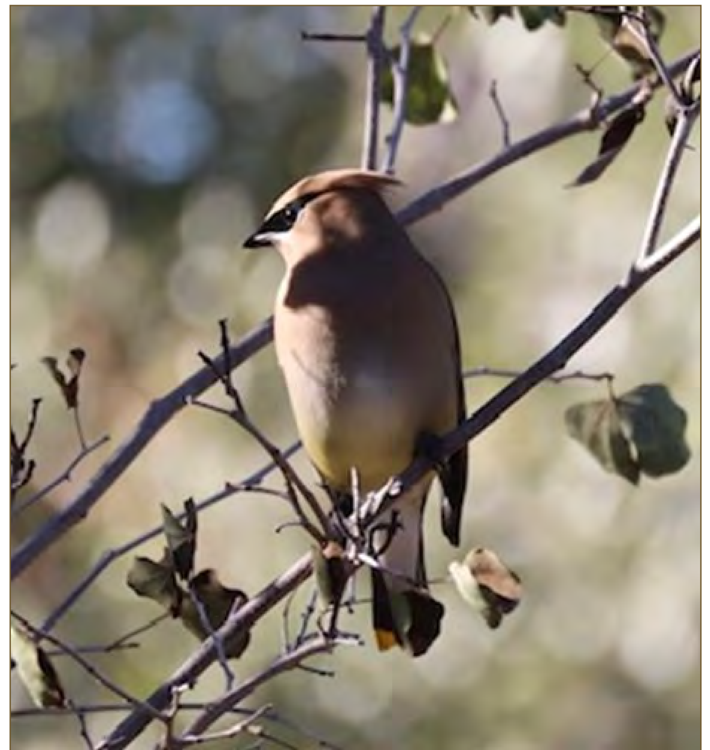
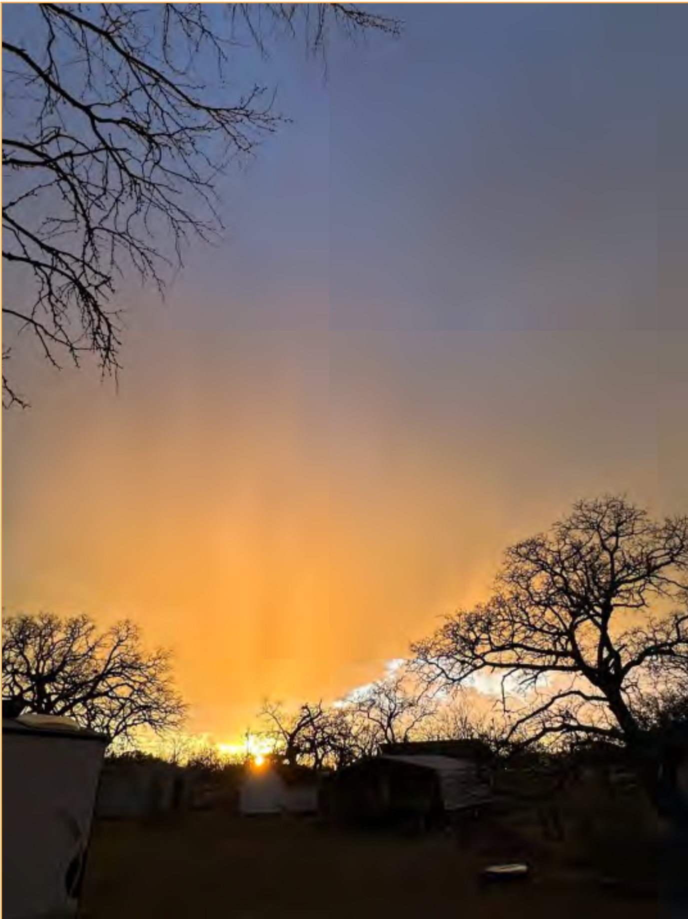
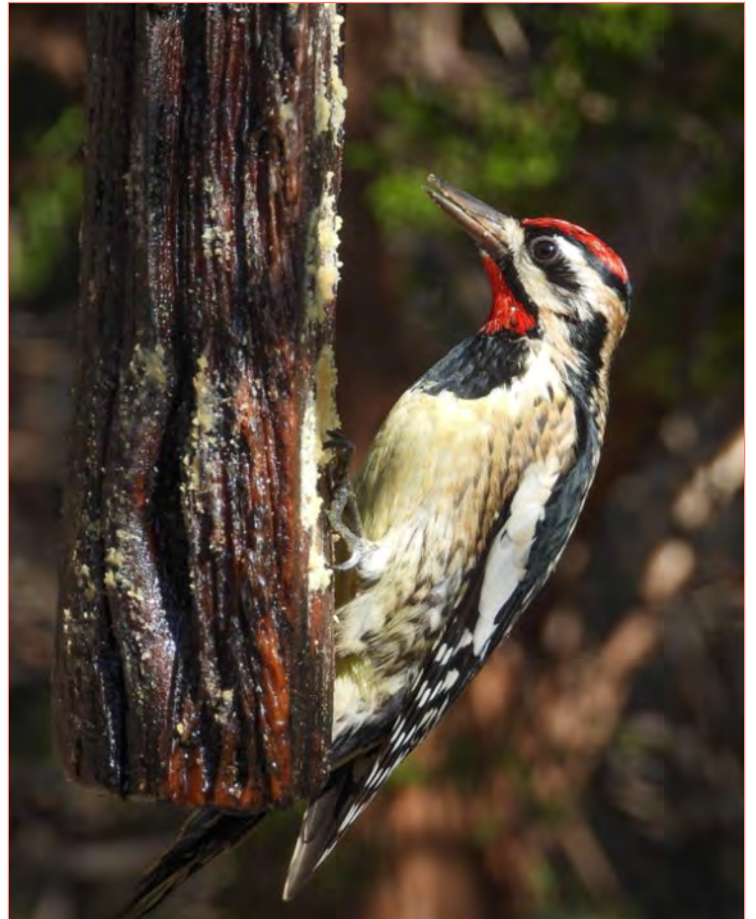


Photo by Julie Jary of Cedar waxwing - her “spark bird” that got her into birding, and eventually becoming a Texas Master Naturalist….! Matt Jary

Left: Friends of Inks Dam National Fish Hatchery clean up the gardens at the Education Building—thanks to James, Cris, Pam, Bill, Karen, Linda, not pictured Gary, Sherry, Kaye & Jerry



Lake Buchanan by Hollis Neier



Yellow-bellied Sapsucker at South Llano River State Park Photo by Meghan James

Golf cart birding at Hidden Falls golf club in Meadowlake (Marble Falls) with many HLMN members
Photos by Matt Jary

Left: Photo by Matt Jary: Golf cart birding at Hidden Falls golf club in Meadowlake (Marble Falls) with many HLMN members

Right: Juvenile Crested Caracara in Lampasas Photo by Meghan James

Olive Sparrow at South Llano River State Park Photo by Meghan James

Solitary Sandpiper at Cooper Spring Nature Park in Lampasas Photo by Meghan James

Left: American Porcupine at South Llano River State Park Photo by Meghan James

Right: Aoudad at Davis Mountains State Park Photo by Meghan James

Top ~ Wood duck; Bottom ~ Mallard Drake. Paintings by Gary Hampton

Raccoon at South Llano River State Park Photo by Meghan James

MISSION

The Texas Master Naturalist program is a natural resource-based volunteer training and development program sponsored statewide by Texas A&M AgriLife Extension and the Texas Parks and Wildlife Department.

The mission of the program is to develop a corps of well-informed volunteers who provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Texas

Officers:

President:	Al Lillis	(512) 680-2580 cell
V.P.	Carol Guthrie	(512) 940-2273 cell
Secretary	Dannialle Clayton	(512) 968-1922 cell
Treasurer	Robin Miskimins	(605) 670-9343 cell