

BLINDS FOR THE BIRDS

State park structures bring birds up close for visitors

WILDLIFE ON THE MOVE

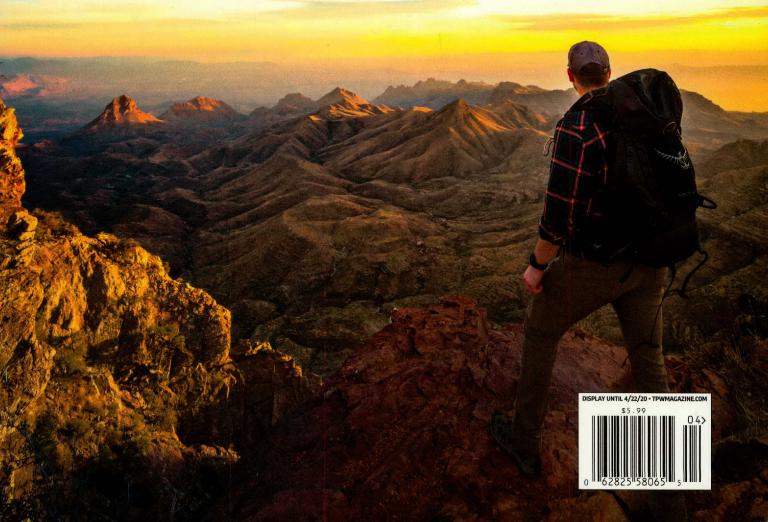
Tracking tags offer insight into animal habits, habitats

SPRING IN BLOOM

There's no better season for a garden stroll

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TWO PARKS.
TACKLING TEXAS'
LONGEST
BACKPACKING
ROUTE, THE

BIG BEND 100



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APRIL 2020 Looking for one of the bird blinds at South Llano River State Park? It's thataway. 28 Big Bend 100 TPWD trailblazer takes us across two iconic West Texas parks BLIND to create the state's longest backpacking route. by Ky Harkey 34 **Texas Tag** Tracking animals offers insight into their habits and habitats. by Melissa Gaskill 40 The View from the Blinds State park structures bring birds up close for visitors

ON THE COVER: The Big Bend 100, a 100-mile backpacking route, reaches its crescendo on the South Rim of Big Bend's Chisos Mountains. 🗟 Andrew Fisher

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of all abilities.

by Melissa Gaskill



Join us for April is Texas State Parks Month at Whole Earth!

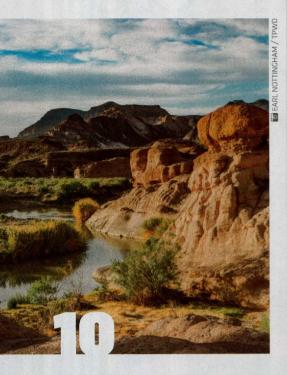




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MAIL CALL



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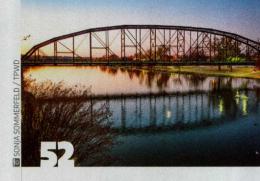
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WILD WOMEN

All the World's a Stage: Plinky Topperwein and Mollie Bailey

By Louie Bond



TRAVEL

From the Brazos to the Bosque to Baylor, Waco is an attractionpacked destination.

By Traci Anderson



WANDERLIST

There's no better way to celebrate the season than with a garden stroll. By Julia Jones and Kirsten Hahn

WHERE IN TEXAS?

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FROM THE EDITOR

"ACCORDING TO Indian legend, when the Great Creator made the earth and finished placing the stars in the sky, the birds in the air and the fish in the sea, there was a large pile of rejected stony materials left over. Finished with His job, He threw this into one heap and made the Big Bend." This quote from Ross Maxwell, the first superintendent of Big Bend National Park, graces a wall at the Museum of the Big Bend in Alpine.

I've not yet met the traveler who's unimpressed with the scope and majesty of our western paradise, Big Bend. Those who return year after year, as if on a pilgrimage to feed their hungry souls, need only to hear the name to get that faraway look in their eyes and acquire the goofy grin of a lovestruck pup. Firsttimers wonder if it can live up to the hype. It always does.

Some of us have to work our way toward that kind of desert/ mountain trek. It takes some physical stamina and agility, plus a lot of preparation. Others, like this month's feature contributor Ky Harkey, see that vista and think about how to create an amazing challenge for themselves and others. He set about designing a hike that would connect the national and state parks, the Big Bend 100 (Page 28). As you'll see in his first-person account, even a seasoned adventurer can struggle with such an epic challenge.

Melissa Gaskill shares some inside knowledge on wildlife tagging and tracking this month (Page 34). You've got to marvel at technology that allows us to track creatures as tiny as monarchs and hummingbirds while also following the travels of much larger animals on land and sea. "Doesn't it bother them?" is a question we've all heard quite often. Find out the answer to this and more as you learn about how we learn about wildlife.

We know it's April and spring is tugging at your heart, so read this issue for inspiration on how and where to enjoy it best. Besides being the perfect month to visit Big Bend, it's also a great time to check out bird blinds at state parks as the spring migration gets underway, or maybe plan a "heart of Texas" visit to wonderful Waco. Wanderlist offers some great garden getaways that may inspire you to plant for pollinators in your own backyard (check out our Flora section all year for ideas).

Happy Spring!

Louie Bond, Editor



MAIL CALL

WRITE TO US Send your letters to Texas Parks & Wildlife magazine 4200 Smith School Road Austin, TX 78744

We reserve the right to edit letters for length and clarity.

- facebook.com/tpwmagazine
- twitter.com/tpwmagazine

Blog: www.tpwmag.com



WILD WOMEN OF TEXAS

I just received my January/February issue of the magazine and wanted to let you know you had a top-shelf story on the Wild Women of Texas ("East Texas Angels: Angelina and Maxine Johnston").

You really hit the mark on that article. It was very interesting and very informative. It's exciting to think about this pair of women who seemed to be amazing personalities and who were a foundation of the wildlife conservation work of this state.

NEIL WETTSTEIN Rockdale

CLIMBING AND LYNCHING

I greatly enjoyed Julia B. Jones' detailed account of her Guadalupe Peak climb ("Peak Performance," January/February 2020). I've visited the park and often wondered what that hike was like and assumed only true mountaineers need apply! At 63, and never great at climbing, I already knew I wouldn't be attempting it, but Julia's account gave me a satisfying sense of what it would be like.

Nearing the end of Russell Roe's delightful introduction to the city of Denton ("All That Jazz," January/February 2020), I was distressed to read his version of the lynching that took place on Old Alton Bridge in 1938. This is something that actually happened! And, while Oscar Washburn, an "honest and dependable businessman, affectionately known as the Goatman," may or may not have survived the KKK's attempt to hang him from the

bridge that night, his life was certainly destroyed. The Klan killed Oscar's wife and children that night, too. Of course, Oscar was never seen or heard from in the Denton area again! Such heinous deeds cry out for justice, and ought never to be treated as mere legend.

Annie Spade Austin

PAINTINGS OF THE PARKS

I await, with great anticipation, the paintings (and related exhibit and book) of the state parks that will be painted by notable Texas landscape artists ("State Parks Enlist Artists to Help Celebrate Anniversary," March 2020). My wife and I have works by many of the artists noted in the article and already have several art books published by Texas A&M Press. So I know the paintings will be awesome, and

I certainly hope that lots of Texans (and other art lovers) will flock to the exhibits and buy the book. Thanks for the headsup on this project.

Scott Chase Dallas

WHERE IN TEXAS?



The red-rock country of the Texas Panhandle offers dramatic vistas. The location of the dramatic vista in March's Where in Texas? is none other than our very own Caprock Canyons State Park. Reader Allison Peeler of Midland knew the answer. "My husband, Bruce, and I have been traveling the state and national parks with our kids (now adults) for many years," she says. "Only recently did we discover the incredible beauty and accessibility of Caprock Canyons State Park — one of my new favorite places in Texas! Where the bison roam and the dirt is red!" Find this month's Where in Texas? on Page 58.





PHOTOGRAPHY

Solo Hiker Shoots Big Bend 'Neature'

aron Landes loves to travel. When not working his day job as a manufacturing engineer, he can be found hiking and camping solo around the world, as well as the wild places of Texas. While his treks have taken him as far as Puerto Rico, China and Canada, his first backpacking hike was a little closer to home: Big Bend National Park in West Texas.

Like many Texans who have discovered the Big Bend region, Landes was smitten by the beauty of the Chisos Mountains contrasted against the rugged Chihuahuan Desert below.

"My initial thought was 'Unbelievable!" Landes told magazine Chief Photographer Earl Nottingham. "The vegetation, the landscape, wildlife everywhere you look. It



On TV



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MARCH 29-APRIL 4

Longhorn Cavern; fishing for records; Marfa grasses.

APRIL 5-11

Kemp's ridley turtles; Powderhorn Ranch; Trans-Pecos bears.



APRIL 12-18

Rebuilding a birding boardwalk; arts at the parks; flowering prairie.

APRIL 19-25

Hunter ed proof, Caddo Lake State Park; bees and butterflies.

APRIL 26-MAY 2

Coastal birds and birders; retriever training; Hill Country fall.

On the Podcast



April segments: turkey calling, nature tourism and snacks for an outdoor lifestyle. Check out the new magazine Wanderlist episodes on parks in bloom and where to see raptors. Download at **underthetexassky.org** or major podcast platforms.

On the Blog

Want frequent content updates from *Texos Porks & Wildlife* magazine? Join up for tips to enhance your outdoor experiences! Check out our new blog at *tpwmag.com* as we help Texans find joy in the outdoors.

brought a whole new perspective on things that don't seem so glamorous when you think of a dry desert area."

Wanting to share his experiences with others, Landes purchased his first camera in 2016 and quickly honed his photographic skills enough to capture breathtaking imagery of his travels. From mountain vistas in Texas to colorful market streets in

Hong Kong, his photos eloquently capture a palpable sense of place by a masterful use of lighting, composition and color.

A prime example is this sunset photo of the South Rim Trail at Big Bend National Park taken near his campsite.

In a social media post, Landes described his love of nature and coined his own word, "neature," derived from "Isn't nature neat?"



s we get ready for Season 2 of our Great Outdoor Scavenger Hunt (GOSH), we checked back in with Virginia Woods' daughter, Caroline Miller, who told us that our 92-year-old finisher from last year was primed and ready to hit the road in 2020.

"She's really watching for the new list of what to do!"

Well, Miss Virginia (who delighted our staff by coming for a visit after the 2019 hunt) won't have long to wait as we'll unveil our 2020 GOSH destinations in the upcoming May issue. GOSH offers an inspirational list of

wondrous destinations to check off during your summer of outdoor fun. All you have to do is post a selfie with #GOSH2020 on your social media account and visit as many destinations as you like.

We were thrilled by last year's enthusiastic participation, with more than 600 entries, including a whopping eight finishers (individuals and families) who completed the entire challenge by visiting (and selfieing) all 30 locations across this big state. Shout-outs to the Valuk family, the Frasier family, the Read family, the Melvin family,

the Smith family, Mark and Kelly Blackburn, Sarah Miller (with her selfie pal Edward the plush alligator) and, of course, Miss Virginia.

Will you add your name to this year's list of GOSH champions? The scavenger hunt starts Memorial Day weekend and ends on Labor Day.

Until then, be like Miss Virginia and train, train, train. Caroline tells us that Miss Virginia plans to climb Guadalupe Peak later this month, inspired by reading about it in our January/February issue. If Miss Virginia can do it, so can you!



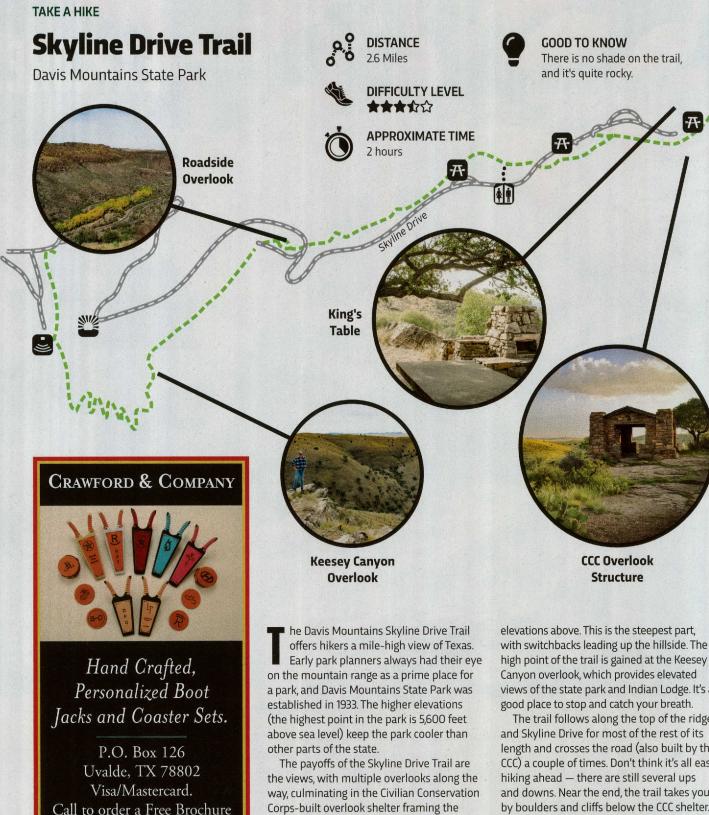


Make your stay in Corpus Christi more enlightening with a visit to the Texas State Aquarium.

You'll save more than memories - you'll contribute to rescue and conservation. The largest aquarium in Texas offers an adventure for the whole family. Explore 227,000 sq. ft. of exhibits, and encounter more than 400 species, including dolphins, otters, sea turtles, sharks, flamingos and fish. Our newest experience, Caribbean Journey, immerses you in one of Mexico's great natural wonders. Pathways wind through jungles where flamingos mingle in a lagoon, birds flutter above and sloths hang out. Peer through an underwater window into the vibrant habitats of the Yucatán Peninsula. A 400,000-gallon shark habitat lets you venture through a tunnel and a shipwreck, just inches from these predators. It's not just a vacation; it's a contribution to conservation. Your visit helps support environmental education programs, scientific research, beach cleanups and the rescue of birds and sea turtles.

So you're not just making memories...you're making a difference.





Corps-built overlook shelter framing the view of the town of Fort Davis below. The trail, passing mostly through desert mountain grasslands, gives hikers the sense of walking across the top of Texas.

The trail begins behind the interpretive center and follows along the bottom of a canyon, passing an amphitheater, before ascending the side of the canyon to the upper with switchbacks leading up the hillside. The high point of the trail is gained at the Keesey views of the state park and Indian Lodge. It's a

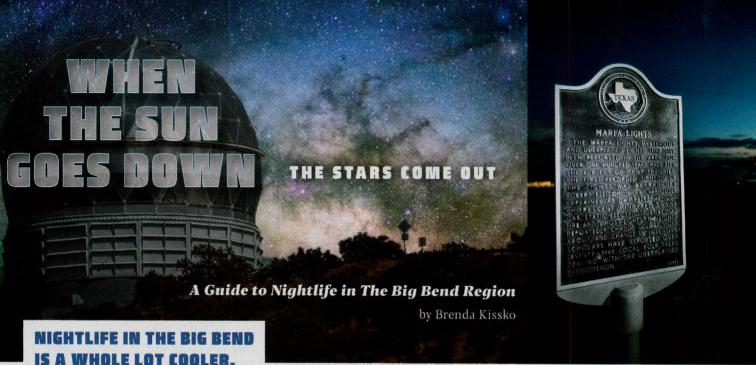
The trail follows along the top of the ridge length and crosses the road (also built by the CCC) a couple of times. Don't think it's all easy and downs. Near the end, the trail takes you by boulders and cliffs below the CCC shelter. In addition to spending time at the CCC overlook, make an effort to find the King's Table, a CCC-built picnic table tucked away in an enclave with a view of Limpia Creek.

Getting back: At the end of the trail, take the Old CCC Trail (1.6 miles) back to the starting point, or arrange for someone to drive Skyline Drive to pick you up.

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IS A WHOLE LOT COOLER.

Here in these Texas mountains.

the temperatures are lower and the skies are darker. Musicians and artists find this landscape and laid-back atmosphere inspiring, and so the region has become a magnet for music lovers, stargazers, and free spirits. Out here, time stands still and the main attraction is a long sunset. Annual events like Viva Big Bend music festival are a big draw, but there's fun to be had all year long. Make the most of your nights in Far West Texas at these hip spots along the trail.



ALPINE

Alpine has the largest population in the area, boosted especially by Sul Ross State University, and consequently has numerous bars and live music venues to enjoy when the sun goes down. Grab your boots and dance the night away at Railroad Blues, where everyone from Jerry Jeff Walker to Shiny Ribs has played. The Ritchey Saloon is new on the scene, though it's one of the oldest attractions in Alpine, originally built in 1886 as a railroad hotel. Split a bottle of

prosecco and a charcuterie board while you listen to a local band play alfresco.

The Century Bar & Grill inside the Holland Hotel on the main drag in town has frequent live music alongside inspired cocktails and delicious food. The Ole Crystal Bar is another oldie but goodie with a large dance floor and patio. Just down the road, Spicewood Restaurant has plenty of room for two stepping after you enjoy a feast from the barbecue pit. Plus, they serve a mean margarita. Old Gringo Coffee &

Cocktails features regular jam sessions and drink specials. Try their queso-it's a Texas thing, y'all.

FORT DAVIS

Visit the highest mountain range in the Big Bend region and experience epic sunsets and night skies in the Davis Mountains. Attend on of the popular Star Parties at Mc-Donald Observatory, just outside of Fort Davis. The observatory boasts one of the world's largest telescopes beneath a certified dark sky with unbelievable views of our universe. Star Parties take place just about every Tuesday, Friday, and Saturday evening. Hundreds gather beneath the West Texas stars and

are treated to a constellation tour where guests explore the current night sky. This is followed by the telescope viewing where several telescopes are set up throughout the Rebecca Gale Telescope Park. You should reserve your spot in advance, as these Star Parties frequently sell out.

Fort Davis-named a Dozen Distinctive Destination® by the National Trust for Historic Preservation® is also host to festivals throughout the year like the "Coolest" 4th of July and the Davis Mountains Hummingbird Festival.

MARFA

Marfa-that fabled Marfa where cowboys and celebrities rub elbows-is mysterious and funky. It's known as an international art destination, a hub for filmmaking, and a place to celebrate architecture. Evenings here entail literary readings, film screenings, and art gallery receptions. Live music and libations are always on tap at the many restaurants and bars throughout town.

Hang out under the stars at Planet Marfa beer garden and sip on a mezcal cocktail at The Capri. Live large like a local at Lost Horse Saloon. Gather at Al Campo Wine Garden & Rustic Bistro for South American fare served family-style. Order a mesquite old fashioned or ranch water at Bar Saint George then catch a concert at Saint George Hall.

Of course, the real bragging rights belong to those who have seen the Marfa Mystery Lights. There's a viewing center for you just east of town. They have yet to be explained, but they're a phenomenon worth looking for.

No matter where you choose to stay the night, you can rest assured a good night







Green Antelope
Horn Milkweed
Vital for Monarchs

SYLVIA GARCIA-SMITH

hen you think about planting to attract pollinators, consider color and shape. Bees seem to be attracted to blues and violets; hummingbirds prefer reds and pinks. Butterflies flock to yellows and oranges. Consider time of day: nighttime pollinators are attracted to night bloomers.

But sometimes it's neither flashy color nor rare nighttime blooming that marks a most necessary pollinator plant. The low-lying, inconspicuous, green-flowering antelope horn milkweed is one of our most important native plants, as it feeds monarchs, soldiers and queens, among other butterflies and pollinators.

With monarch demise at the forefront of pollinator news these days, there has been a lot of attention given to planting milkweed to assist this winged migrator on its journey. The slender, green leaves of milkweed are the primary food source for monarch caterpillars, while the high-glucose nectar is essential for feeding the adult butterflies. They even lay their eggs on the plant.

A bustle of green and creamy beige flowers, with purple accenting the center of each, originate from a single stem, standing in clusters along Texas roads and fields. This milkweed gets its name from seed pods that look similar to the horns of an antelope.

Green antelope horn milkweed, otherwise known as spider or green milkweed, is the most common milkweed scattered across Texas. This perennial plant flowers from May to August and is featured from the deep East into the Edwards Plateau.

Green antelope horn milkweed is in decline because of loss of habitat and the use of weed killers in agricultural fields. Luckily, milkweed seeds are commonly available and relatively easy to grow, plant in early fall.





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NextEra

Ellen Temple

Audubon's Texas Women in Conservation Program debuted in 2015 to honor the role that women play in the conservation field in the Lone Star State, and to inspire the next generation of female conservationists. The program includes the annual Audubon Texas Women in Conservation Luncheon featuring The Terry Hershey Awards, and Audubon's Conservation Leaders Program for Young Women.

Congratulations to Our 2020 Terry Hershey Award Recipients:



Anne Brown



JANETTE MONEAR



Julie Shackelford



GAIL THOMAS



NICE CATCH

Gear Up and Get Out

The weather's gorgeous and the fish are biting.



By Evan Cartabiano, Todd Robison and John Tibbs

hen LAKE FORK comes to mind, so do ShareLunker largemouth bass. But there's another species that finds these waters ideal, the channel catfish. Channel catfish in Lake Fork are numerous and achieve impressive sizes. The all-tackle lake record is 25 pounds; the rod-and-reel record is no slouch either at 18 pounds. These channel catfish are distributed throughout the lake and can be caught equally well from a boat or from shore just about all year long.

Channel cats tend to move shallower and usually spawn in May. During the spawn, the bigger fish become harder to catch, but there are plenty of eating-sized fish to be snagged.

Here are three tips to improve your odds of catching a limit.

USE CHUM. Chumming (or baiting) is a very effective way of concentrating the fish and getting them to feed. Cattle feed cubes are commonly used, as is soured field corn. If you can get out a day or two ahead of time and get the chum in, your odds of catching a fish right away improve greatly. If you can chum a couple of different spots, even better. Always be sure to fish right around your chum for best results.

IF YOU DON'T CATCH FISH QUICKLY, MOVE.

Lake Fork is full of catfish. Most of the time they're willing to eat, so if you don't get a bite within 20 or 30 minutes, try a new spot. While Lake Fork is full of timber, and the channel catfish like to be in it, they can also be caught in open water where the fishing is much simpler and tackle losses are lower.

TRY DIFFERENT BAITS. The traditional catfish stink baits catch lots of catfish, but don't overlook other baits that can do just as well, or sometimes even better. These include cut shad, shrimp, sweet corn, boilies (a European carp bait; pineapple seems to be a favorite), bread balls and worms.

Tackle can be as simple or as complex as you'd like. There are many snags, so don't use ultra-light tackle if you want to land the bigger catfish — a minimum of 12-pound test is a good idea. Standard bass fishing rods and reels work nicely when fishing from a boat if a shorter cast is all that's needed; lighter surffishing-type tackle is good for fishing from shore when a longer cast is needed.

On the end of the line, a standard running rig (Carolina rig) is hard to beat and gives good bite sensation. While channel cats have a big mouth, smaller hooks catch more fish and can still land the bigger ones — it's hard to beat a circle hook in sizes 4 to 1/0. **EC**



CHASE FOUNTAIN / TPWD

LAKE TEXOMA • CRAPPIE

When the redbuds are blooming, the crappie are booming. The crappie spawn on Lake Texoma usually coincides with the blooming of local redbud trees, an indicator to local anglers to grab their gear and head to the Hagerman National Wildlife Refuge, nestled in the southernmost end of the Big Mineral Arm of Lake Texoma.

In April, the water temperatures approach 60 degrees; this, in addition to increasing daylight length, triggers the crappie spawn. Crappie swim up area creeks and look for brush in 3 to 8 feet of water to build a nest and spawn. Big Mineral Creek offers the perfect blend of

depth and brush.

Anglers can take full advantage by dropping a minnow or soft-bodied jig in and around the brush and shore (with or without a bobber) and then ... hold on tight. If there's a crappie nearby, it's sure to strike. The refuge offers plenty of bank access and parking; if you want to launch a small boat, there's a boat ramp near the creek

Motorboats are allowed in the refuge from March 15 to Sept. 30. An afternoon of fishing here can produce limits of the most delicious freshwater fish Texas has to offer, all while taking in the scenery and wildlife of the majestic Hagerman National Wildlife Refuge. **TR**

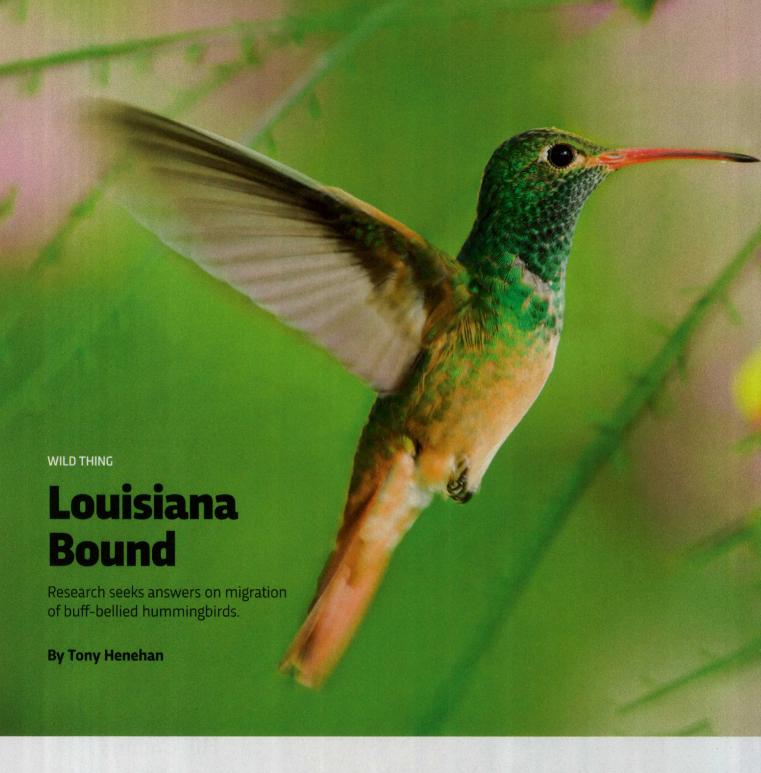


LAKE WACO • LARGEMOUTH BASS

Largemouth bass fishing has been hot on Lake Waco in recent years, and it shows no signs of stopping. Fish the backs of Hog, Speegleville or Reynolds creeks now for a chance at a big fish or try the timber and flooded strip pits around Flat Rock Access. There's so much good habitat in these areas, you could spend an entire weekend fishing them all. The water is generally stained; if there has been recent rain, it can get a little turbid, particularly in the Hog Creek and Flat Rock areas. JT



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ummingbirds have fascinated me for as long as I can remember. I love to watch these tiny birds, barely bigger than a butterfly, zooming around to flowers and chattering at each other throughout the spring and summer.

I grew up in New York, where we get only one species of hummingbird, the ruby-throated. When I moved to South Texas, where I work as a Texas Parks and Wildlife Department wildlife biologist, I was delighted to see black-chinned and buff-bellied hummingbirds, in addition to that familiar ruby-throated.

Texas also offers uncommon wintering

species like the rufous hummingbird and rare hummingbirds from Mexico like the greenbreasted mango and Mexican violetear.

In the midst of all these jewels, though, my eyes keep returning to the buff-bellied hummingbirds.

Did you know that South Texas is the only place in the United States you can find buff-bellied hummingbirds? This species is categorized as medium-sized, a little over 4 inches long and weighing about 5 grams (as much as two pennies).

Hummingbird hearts beat up to 1,200 times per minute, so they require high-energy food (like nectar) to maintain their metabolism. In

parts of South Texas, upwards of 90 percent of the buff-bellied diet is Turk's cap, a red-flowered native shrub.

The buff-bellied hummingbird also exhibits an interesting behavior in the fall and winter — it migrates north along the Gulf Coast into Louisiana. The only other bird species that exhibits a similar movement is the groove-billed ani.

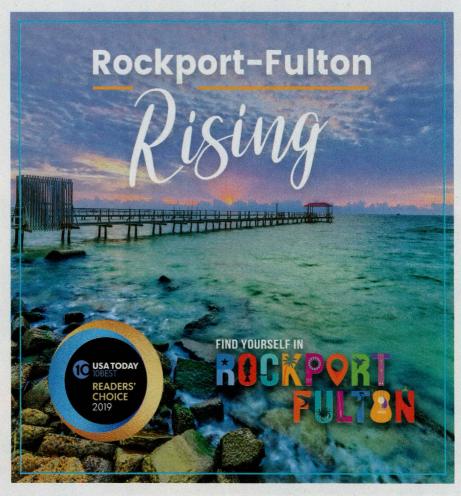
Why does the buff-bellied hummingbird migrate north in the winter? Do all buff-bellieds move north, or just some individuals? If so, is it the young that move north as they learn about their environment, or do the adults migrate, too? Do only birds in the



Valley and other parts of South Texas.

unravel over time. Stay tuned.

Hopefully, this mystery will begin to



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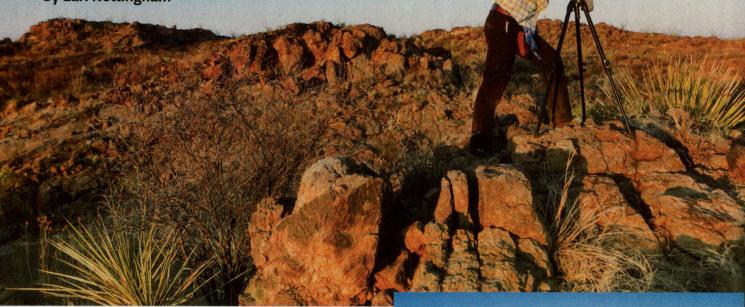
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PICTURE THIS

Shooting Big Bend

The West Texas region offers a variety of rewarding photographic opportunities.

by Earl Nottingham



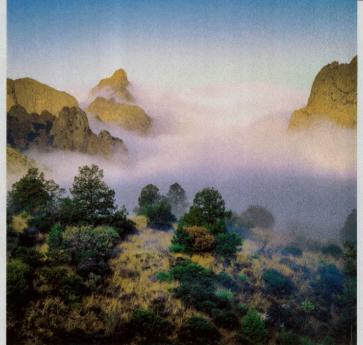
ALL TE EARL NOTTINGHAM / TPWD

'm often asked which part of Texas is my favorite to photograph, and I usually respond that it is like being asked to choose a favorite child — it's an answer that's hard to give diplomatically. Like a child, but from a photographic perspective, every corner of our state is unique in its own way, each having its own beauty and visual merits. However, if really pressed, I'll admit that my favorite location for photography is the Big Bend region. I'm always amazed by how many Texans have never visited this magnificent place.

An accurate description of the "Big Bend" and its geographical boundaries can be somewhat nebulous, but in a nutshell it's the roughly triangular-shaped part of the Trans-Pecos region of West Texas, north of the prominent bend of the Rio Grande and south of U.S. Highway 90. Some consider the Union Pacific railroad tracks, running from Del Rio to El Paso, as the northern boundary and the gateway to Big Bend. The exception is the Fort Davis area, which lies north of those boundaries but is still an important part of the Big Bend experience.

As you venture into this grand landscape you begin to notice a stark change in the geology, geography and remnants of human history, beginning with the rugged yet delicately beautiful Chihuahuan Desert, where everything is purported to either stick or sting. Within a few minutes' travel, you can be at water's edge below a towering canyon of the Rio Grande or up in the cool and lush alpine environs of the Chisos Mountains.

It is precisely this visual contrast that is part of the allure of the Big Bend landscape and what makes it a magnet for photographers. The region offers other contrasts as well: delicate wildflowers against volcanic terrain, dramatic sunrises and sunsets and towering thunderheads seen and heard miles away — the stuff of great landscape photos.



WHERE TO SHOOT

If traveling to the Big Bend region for the first time you'll want to give yourself plenty of time to truly experience the many faces of this dramatic country. A minimum of five days (not including travel time to get there) is what it will take to get an introduction to the over 1 million acres of public property as well as surrounding towns. Here are the top must-see destinations.



BIG BEND NATIONAL PARK

After checking in at the Panther Junction headquarters, your first stop should be just a few miles away in the higher elevations and alpine world of the Chisos Basin. There you'll find numerous hiking trails of various skill levels, including the iconic South Rim, Lost Mine and Window trails. Additional days can be spent in the lowlands and along the Rio Grande at several lookout points, including Boquillas and Santa Elena canyons. Camping is also available near those locations.



BIG BEND RANCH STATE PARK

The state park is one of the state's best-kept secrets, with more than 300,000 acres of desert vistas and mountains to photograph. Its southern boundary is the River Road (Texas Highway 170), which follows the Rio Grande from Lajitas to Presidio and is designated as one of the most scenic highways in America. In addition to numerous hiking, biking and equestrian trails, the park features well-maintained but rugged campsites as well as lodging options.



SURROUNDING AREAS

A trip to the Big Bend isn't complete without exploring the nearby (and photogenic) small towns. In close proximity to the national and state park you'll find Study Butte, Terlingua ghost town and Lajitas. Farther north are Marathon, Alpine, Fort Davis and Marfa, which can be driven as a loop. Fort Davis is a great place to spend a day or two, with a stay at nearby Davis Mountains State Park in either the campsites or the CCC-era Indian Lodge.

WHEN TO VISIT

The Big Bend is truly a country for all seasons, each bringing its own unique look and subject matter for photographers. Spring is, of course, the most colorful season with a multitude of wildflowers and other desert bloomers. Make lodging or campsite reservations early, though — it's a very popular season, especially at spring break. The other "best" season is one that people usually don't think about. It's late summer, when the almost-daily monsoonal rains turn the desert its greenest and a bring a variety of wildflowers not found at springtime. During this period, you'll also see awe-inspiring evening skies as thunderheads build, dissipate into Technicolor sunsets and leave you with clear, starry nights.

Please send questions and comments to Earl at earl.nottingham@tpwd.texas.gov. For more tips on outdoor photography, visit the magazine's photography page at www.tpwmagazine.com/photography.





ALL THE WORLD'S A STAGE! OULD WOOME

TRICKSHOOTER PLINKY TOPPERWEIN



MOLLIE BAILEY • CIRCUS QUEEN OF THE SOUTHWEST



By Louie Bond

"I love to see a young girl go out and grab the world by the lapels." - Maya Angelou

TAKING HER BEST SHOT

In the days before television, movies and computers, entertainment came to small towns in Texas by boot or hoof, wagon or train. The tedium of long days

of toil and endless summer heat would be broken by the sounds of excitement and gunshots when The Tops — the husband-and-wife team of Ad and Plinky Topperwein — brought their traveling Winchester trick-shooting show to town.

"In those days, hunting and recreational shooting were everyday activities," John Stein, Buckhorn Museum curator, reminds us. "Outdoors was where all life was spent, and trap and sporting-clay shooting were big."

For 40 years they toured North America, making audiences gasp at their antics. She would shoot shotgun shells from his hands or things dangling from his lips. He'd

shoot glass marbles off her palm. They'd ask the tallest man in the audience to toss objects high into the air — cans, cards, coins, eggs, marbles and more — and then

hit each one. They won every shooting contest around and were featured in *Ripley's Believe It or Not* several times.

They met in that old-movie-setup kind of way. Adolph, born in Boerne, was a

COURTEST OF TSHA

sales representative for the Winchester Repeating Arms Company, and Elisabeth, 20, ran a cartridge-making machine for the company. Ad, the son of a gunsmith, had become enchanted with the Wild West shows and taught himself all the shooting tricks he had seen. Though he'd found some renown as a shooting star, Winchester kept him away from his

> passion and more involved with business. On a trip to New Haven, Connecticut, the pair met and wed a year later, in 1903. Elisabeth called her new husband "Daddy."

Soon, Winchester relented and allowed Ad to travel around as an exhibition shooter, promoting their products to enthusiastic crowds. When Elisabeth grew bored at home, Ad taught her to shoot, discovering she had a real knack for the sport.

"I plinked it!" she proclaimed proudly when she hit her first can, and her famed nickname was born. She was known as Plinky for the rest of her life.

Ad was amazed at his new wife's talent and took her

out on the road. At first, Winchester didn't pay Plinky's expenses, and money was tight, but they persevered, and the company eventually hired her, too.

Their big debut as a show couple came at a six-month stint at the St. Louis World's Fair in 1904, just after their only child was born. First known as the Famous Topperweins or the Wonderful Topperweins, they eventually became known as The Tops.

The couple toured extensively: it was a rough, grueling life. They traveled on trains nearly every day, performed in the harshest of weather and then stayed in modest hotels, gaining some local notoriety when they shot a rat at one. Their young son was raised by his grandmother and aunt while they toured.

Plinky scored a lot of firsts during her career. She was the first U.S. woman to qualify as a national marksman using a military rifle. She was the only female member of a national championship team. She set individual records for both men and women, some of which still stand today. She also held the world endurance trap-shooting record of 1,952 of 2,000 targets in five hours and 20 minutes. Plinky was the first woman to break 100 straight trap-shooting targets; she accomplished this feat more than 200 times.

She was so talented that even the most famous female sharpshooter of the day was a fan.

"Mrs. Top, you're the greatest shot I've ever seen," Annie Oakley once told her.

Perfection can get boring, this entertaining couple learned, so they spiced up the act a bit for the audience. They occasionally missed on purpose, to heighten suspense. To everyone's delight, Ad would stop and kiss Plinky every time he missed. But it was all an act — the skilled couple never suffered an accident in their decades of performing.

During World War II, the Topperweins took their act to many military installations; it would be their final tour together. In 1945 Plinky died at home in San Antonio after a heart attack. Ad never remarried and kept touring for Winchester until 1951. There's a display of Topperwein memorabilia at the Buckhorn Saloon and Museum in San Antonio.

Plinky Topperwein, left, and Mollie Bailey, above, were pioneers of Texas entertainment road shows in the 1800s and 1900s.

SEND IN THE CLOWNS

Born in the middle of the 19th century, "Aunt" Mollie Bailey brought lively entertainment to small towns across the country in the form of a traveling circus. Not content to merely be an extraordinary entrepreneur, Mollie's also remembered as a Civil War nurse and spy, mother of nine and, perhaps unintentionally, a

land conservationist.

Born in Alabama. strong-willed Mollie was an actress from a young age, staging shows with her sisters, but also liked to follow her father around and watch him manage their plantation. Hoping she'd outgrow her tomboy ways, her parents sent her off to boarding school. But while home on school vacation in 1858 at age 14, Mollie met

Gus Bailey, the son of a circus owner, and asked for permission to marry him. The young couple eloped, and Mollie's father never forgave her.

While traveling with Gus' father's show, Mollie convinced Gus that they needed their own show, and she snuck home to the family plantation to "borrow" a few horses and wagons they needed. Their subsequent vaudeville show, the Bailey Family Troupe, featuring the couple and their sister and brother, was short-lived.

In 1861, Gus enlisted in the Civil War and was transferred to a regiment in Hood's Texas Brigade, performing with Hood's Minstrels, a group of musicians, singers and actors. Mollie, who had volunteered as a nurse, and her sister Fannie joined the minstrels to entertain the troops. During this time, though she

never spoke of it later, Mollie acted as a spy. She hid packets of badly needed quinine in her large pompadour hairdo and smuggled them back to the soldiers. Another time, she disguised herself as an old woman and infiltrated the enemy camp to get information while handing out cookies.

After the war, the Baileys settled in Arkansas and started a tent

show with trapeze, singing/dancing, contortionist and orchestra.

and orchestra.
The couple's
talented sons
and daughters
all performed.
Mollie was 32,
and since Gus
was in poor
health, she ran
the show. They
longed to move to
Texas after hearing
about the land and
opportunities there, and in

Dallas and lived there for 30 years. The new tent show they formed there had three bona-fide rings — a real circus, "A Texas Show for Texas People."

1885, they bought a home in

This show played only in small towns, so there would be no competition and no advertising expense. Folks in those towns stopped everything when the circus came parading into town: Mollie in the lead, daughter Birda on a black horse with long skirt sweeping, a painted wagon filled with trained birds, one son's trained dogs and another's trained horses, followed by clowns and a menagerie of animals.

Gus had to return home, and the show became the Mollie A. Bailey Show and was extremely popular. Mollie paid everyone from her big black purse and came up with a brilliant idea that made her quite the land conservationist, perhaps unintentionally. Instead of paying steep rent, Mollie bought town sites for the show, then let the communities use the land the rest of the year for baseball games and camp meetings. Everywhere Mollie Bailey traveled, she preserved parkland. She died in 1918.



TEXAS IS BLESSED WITH A DIVERSITY OF WILDLIFE, WATERS AND ICONIC LANDSCAPES THAT ARE THE HEART AND SOUL OF OUR NATURAL HERITAGE, WILD THINGS AND WILD PLACES DEFINE WHO WE ARE AS TEXANS.

Jarvis Boards founder TONY SMITH has built a business around his passion. The handmade wooden paddleboards he crafts in his Austin studio have found homes around the world. When he's not making them, you can find him on top of one.

"I love being outdoors. There's just something magical about spending time on the water. You're surrounded in nature, and you can let your mind just roam."

Tony grew up in Houston, where his family owned a construction company. He and his brothers learned the value of hard work from his parents, and the boys entertained themselves by building things, from model rockets to remote-control cars. They also spent a lot of time outdoors. Tony went off to college, got a degree in finance and did the corporate thing for more than ten vears.

"During that time. I was looking for a hands-on project to reignite that part of my brain," he said. "I found a how-to guide for building canoes and I built one after work as a hobby. I really fell in love with it and wanted to build something else. So, I started tinkering around with wooden paddleboards and people started to take notice and say they wanted one. And I built a company around it."

Tony's customers are from around the world, and many of them share their paddleboarding experiences with him.

"To know that a product we're building is creating these lifelong outdoor memories for some of these families is very meaningful," he said.

Tony is thrilled to join the ranks of TPWF's We Will Not Be Tamed ambassadors.

"Spending time outdoors has been such an integral part my childhood and defines who I am today," he said. "If I can help give back and spread awareness and get more people outdoors and in nature, I'm all for it. The more that people are in nature, the more they will care about protecting it."

BECOME A TPWF MEMBER

AND BE ENTERED TO WIN A HANDCRAFTED WOODEN JARVIS BOARDS PADDLEBOARD, THANKS TO AMBASSADOR TONY SMITH!



"I LOVE BEING OUTDOORS. THERE'S JUST SOMETHING MAGICAL ABOUT SPENDING TIME ON THE WATER. YOU'RE SURROUNDED IN NATURE, AND YOU CAN LET YOUR MIND JUST ROAM"



Texans are some of the wildest, most rugged, independent, and freedomloving people on Earth. So is our land and the life on it. Find out how you can join Tony and other Texans who are standing together for the land that has given TEXAS us so much.

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WEWILLNOTBETAMED.ORG



THE BIG BEND TH

TPWD trailblazer takes us across two iconic West Texas parks to create the state's longest backpacking route.

by Ky Harkey

Terlingua

Big Bend Chisos Basin National Park

Mesa de Anguila

Chisos Basin Chiso Chisos Basin Chiso Chisos Chisos



TRAVPERK_PHOTO

Quitting after just two days would be failure, but my ankle was swollen and my optimism fading. My hiking partner Anna Claire and I were about to begin day three of our nine-day trans-Big Bend hike, a new adventure we dreamed up. Here we were, pioneering the longest backpacking trip in Texas, connecting Big Bend Ranch State Park with Big Bend National Park, and now I was scared I couldn't make it.

I inventoried our broken bodies. A thorn had made itself at home in my ankle 8 miles ago. I couldn't tell which of a dozen weaponized desert plants it had come from. My calf now merged seamlessly with my foot, which was reluctant to hold my weight. My wilderness medicine background and a propensity to imagine the worst convinced me that I was nurturing the beginning of a nasty infection.

Anna Claire's poor feet were decorated with a set of matching blisters, hard-earned from 10 miles of hiking through thick desert sand. Functional feet were an important component of navigating the unforgiving Chihuahuan Desert ahead of

us, and we had just one between the two of us.

A beautiful and brutal yesterday brought us to a broken today. Our second day along this Big Bend through-hike was that rare dichotomy of loving an experience while being completely miserable doing it.

And, oh, the beauty we found. Ethereal beauty in the unlikely stream we traced for miles through the desert, the canopy of cottonwoods with their golden leaves hanging on for life, the surprised expressions of wildlife unaccustomed to human contact. The patient beauty of time, stacking geologic layers for millions of years, eventually giving water the

opportunity to sculpt the rock into the remote canyons we wandered.

But, oh, the brutality, too. The relentless sand hiking — plodding along on a beach where each step was a fight. The brutal realizations that chipped away at our innocence as the day progressed:

"This is only halfway."

"Actually, THIS is only halfway."
"I'm not sure this is the right

direction."

Downstream from Madrid Falls

JUSTIN ALVARADO

the third day's destination comes into view at Big Bend Ranch.

And later: "I don't think we'll make camp by dark."

We could have been in worse accommodations to labor over our decision whether to continue. Day two had concluded with headlamp-illuminated hiking on the welcoming dirt road into the Sauceda Bunkhouse, the bull's-eye of 300,000-acre Big Bend Ranch State Park and an obvious choice for lodging on our itinerary. We had the benefit of beds and bacon (thank you, kind strangers!) to lift our spirits.

As we deliberated back and forth, eventually Anna Claire offered the wisdom she'd been keeping to herself for most of the morning.

"If it were just me, I'd keep going."
Gulp. Nothing like realizing that you're the one being a baby to put a fire under you. We loaded our backpacks, topped off our water and hobbled 12 miles past rock art, desert waterfalls and rock cairns — the only faint signs of hikers before us. Morale waxed and waned, but peaked midday as we got our first glimpse of the Chisos Mountains, which would be in our crosshairs for the next week.

THE DREAM

I keep a detailed map of Big Bend recommendations. If we meet and you mention you're heading to Big Bend, within a few minutes I'll have a map pulled up to share everything I know. I'm "that" guy. I collected these recommendations while doing things like leading backpacking trips on the Rancherias Loop and the South Rim, and mountain-biking Big Bend Ranch State Park (including the 56-mile, world-class Epic trail in one day).

I guess you could describe me as hungry for adventure. I rappelled remote canyons in remote stretches of Big Bend, one of the most remote national parks. I spent two days paddle-boarding through the thousand-foot walls of Santa Elena Canyon, and another 10 days canoeing the Lower Canyons of the Rio Grande. I rang in the new year while snowed-in on the Chisos Mountains.

Each of these trips scratched my adventure itch, but for years I kept coming back to the idea of something bigger. My imagination wove together big-sky mesas, remote canyons and the sky island of the Chisos into what could become the longest backpacking route in Texas.

"Because it's there!" That's what trailblazing mountaineers respond when asked why they climb Mount Everest. So why pioneer the longest backpacking trip in Texas? Because suffering with friends makes a better campfire story than playing video games. I yearned to find the edge of my comfort zone, and then push past it. I wanted to milk every ounce of adventure out of our state.

It brings me joy to play some small role in helping others discover the Big Bend that I love. Basically, because it's there.

THE ROUTE

Planning the route was like a crude game of connect the dots — researching the limited water sources linked by rarely traveled stretches of trail. I spoke to people who knew the area, scanned the forums for online wisdom and drew on a decade of memories.

The route we settled on began in the northwest panhandle of Big Bend Ranch State Park. On old jeep roads and in and out of sandy arroyos, we traveled through



Read This to Stay Alive!

This tour of Texas' largest state park and national park offers 100 miles of the best backpacking in Texas, truly one of the best winter escapes. But heed this warning: Everything in Big Bend is trying to kill you!

Every year, hikers die by getting lost or over-trusting desert water conditions. The Big Bend 100 requires a LOT of planning and knowledge of current conditions. Never risk your life on fleeting desert water sources — always have a backup plan for what you will do if an anticipated water source is dry.

This route offers exceptional navigational challenges. Expect off-trail navigation hazards through rarely traveled remote sections of these parks.

If you seriously consider attempting this route, or something similar, we highly recommend first backpacking the Outer Mountain Loop, the Mesa de Anguila or the Rancherias Loop as minimum tests for your preparedness for the Big Bend 100.

Find more information on this route at *BigBend100.com*, at the Big Bend 100 Facebook group and by speaking to experienced Big Bend hikers.



canyons and low mountains that cradle a rich ranching history (feral longhorns are shy reminders of these times). On the southeast side of the Sauceda Bunkhouse, we followed our GPS units, map and compass closely on rarely traveled routes past Mexicano and Madrid Falls. Our fourth and final day in the state park took us along the tail-end of the park's world-class mountain-biking trails.

Lajitas, the sleepy resort town tucked neatly between the state and national parks, marked our halfway point.

We entered the national park through the Mesa de Anguila, another serious navigational challenge that rewarded us with sweeping views of the Rio Grande and into Mexico. Getting off the mesa and through a 9-mile trail-less stretch of Chihuahuan Desert had me particularly nervous. A high-mileage day took us across the park roads, dotted with families in their cars, and found us approaching the Chisos from the west, with the South Rim, Texas' pride and joy trail system, as our crescendo.

THE ADVENTURE BEGINS

On a cold morning in late December 2017, we took the first steps of our adventure. Our bodies were fresh, and enthusiasm was high. For the next nine days, our job was the simple act of moving from one spot in the desert to

another, while surviving.

We walked trails, arroyos and dirt roads and blazed cross-country. We envied the grace of invasive aoudad on steep terrain. We talked; sometimes we moved in silence. We felt big and we felt small. While we walked, we dreamed of our sleeping bags and imagined what the next day would hold.

We lived out of our backpacks and lamented every ounce of unnecessary weight. We cursed the sun in record heat and begged for the sun through frozen tent walls. We admired the miracle of water, the miracle of trees, the miracle of the waxing moon and the miracle of delicious trail snacks.

We were humbled when we thought about how our "vacation" was a way of life for the Native Americans and ranchers who had called this home; our route was often the same as that of migrants seeking a better life.

The path had plenty of challenges.

On day seven, I chipped back ice and stowed my gloves — no sense in getting them wet for the task before me. On the banks of icy Terlingua Creek, I submerged our leaking sleeping pad.

Submerge, flip, inspect, flip, submerge, inspect ... there it was.

The pin-sized hole letting the air escape. The one blemish on this pad that meant waking up cold, the dimples of the

ground having found their way through the flaccid pad.

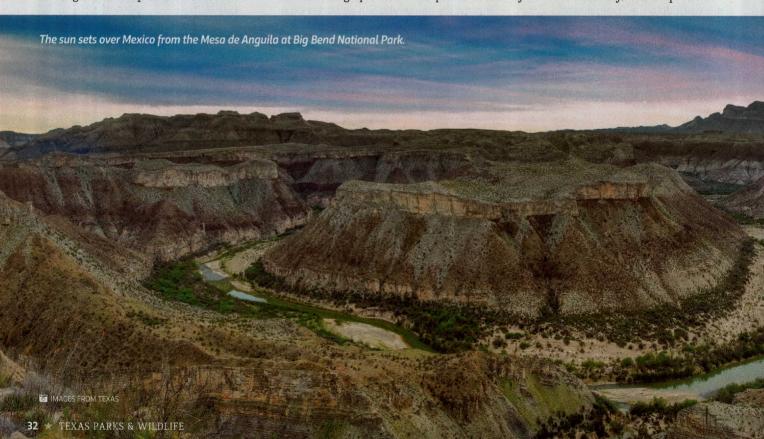
I marked it and took one last glance at the setting full moon and glowing morning sun on the cliffs behind me, the same we gingerly descended the day before. Of all the days I've sweated and sunburned in Big Bend — it's just my luck that the day I get elbow-deep in a creek is the coldest of the year.

Last night we slept poorly, suffering from a nasty combination of 15-degree temps, the soon-to-be-mended hole in the pad and coyotes waking us to howl at the full moon.

The cold front had frozen most of our water. Even our filter had ice in it, limiting its use. There is no gratitude for the sun like waking up cold and waiting for it to rise.

With clumsy, cold fingers, we shook the frost off our tent and packed our bags. This familiar morning process marked a week on the trail for us.

Coming off the Mesa de Anguila the day before tested all of our navigational skills as we followed faint game trails, watched the GPS and looked for the rumored break in the cliff line. Even with 17 miles ahead of us, this morning's dirt road and well-worn trail would be a welcome change from the tedious off-trail navigation we'd faced getting here. By the end of the day, we'd step foot on



the foothills of the Chisos — the only mountain range entirely inside a national park — that had been our beacon all week long.

THE END IS NEAR

For 90 miles, we've walked our way toward the South Rim of these Chisos Mountains. We've suffered through sand, worried over maps, gotten lost, found our way again, made fresh tracks in virgin desert dirt, sometimes even crawled and finally climbed our way toward the greatest view in Texas.

When we finally sit down on the South Rim, it's more than a week's work coming to a close.

We did it!

We warmed tea on our small stove and devoured another dehydrated dinner. Exhausted and tired of being tired, we watched the sun set on the Despoblado, the uninhabitable land we had just inhabited for a week.

When we first set out, our aim was a 120-mile stretch that spanned the length of both parks. "The Big Bend Both Route" was what we had in mind. Our original plan had us finishing east of the Chisos, bushwhacking through creosote and side-stepping sotol stalks to finish in Rio Grande Village.

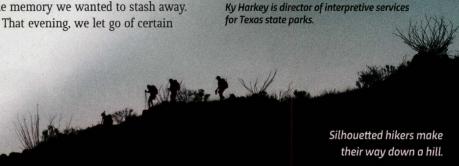
this? Why does anyone set out to suffer across the desert?

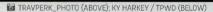
In the architecture of our experience, we had miscalculated. Migrating from the South Rim back into more pain and uncertainty was not the bitter taste we wanted from this experience.

We had spent 90 miles approaching one of the greatest destinations in Texas. This was the experience we were looking for, the memory we wanted to stash away.

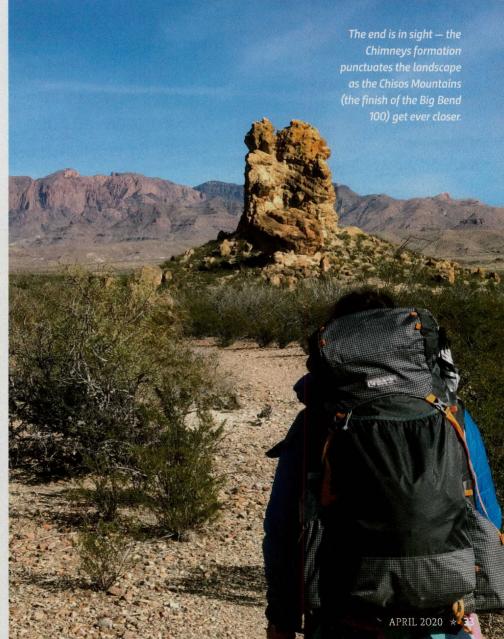
aspirations and reworked our plan to let this experience come to a close in the Chisos Basin, walking one of Texas' greatest trails.

Alligator junipers and century plants cheered us through the finish line as we took the final steps of what is now the Big Bend 100, Texas' longest backpacking route.









Whale sharks conserve energy by gliding.

A mako shark swam from Texas waters to those off the coast of Virginia — twice.

Tracking animals offers insight into their habits and habitats.

Texas

One bighorn sheep traveled from Black Gap Wildlife Management Area 40 miles into Mexico, then returned a few weeks later.

Once male whooping cranes establish a territory, they stay in it for life.

Female Kemp's ridley sea turtles stay near the coastline when traveling across the Gulf of Mexico, while green sea turtles head straight across, hopping the Gulf Stream into the Atlantic Ocean.

How do we know?





Texas scientists and conservationists learned these valuable nuggets of information thanks to tags, collars and other methods of tracking animals. Such insights into where animals go and how they behave can help protect them and their habitats.

Whale sharks follow their prey, plankton, in ocean depths during the day and nearer the surface at night.

"These are large marine animals that eat small food," says Lee Fuiman at the University of Texas Marine Science Institute. "There's not a lot of energy in individual plankton, and large animals require a lot of energy, so how do they survive? Part of the answer is that they regulate the energy they use while swimming — by gliding, for instance. We learned that from accelerometers."

Accelerometer tags report the speed and direction of an animal to which they are attached, as well as its movements, including how frequently and how fast a shark moves its tail. That, in turn, reveals how much energy it uses when swimming.

Scientists at the Center for Sportfish Science and Conservation (CSSC) at the Harte Research Institute for Gulf of Mexico Studies have placed numbered tags on more than 6,000 sharks off the Texas coast, satellite tags on about 50 and acoustic tags on another 100 or so.

When scientists tag an animal and that tag is recovered, usually by anglers, it provides two locations and a rough approximation of the animal's travels. Acoustic tags emit a sound detected by listening stations scattered along the coast, creating connect-the-dots routes. Satellite tags transmit their position to a satellite in real time, providing the most accurate picture of an animal's movements. Acoustic tags last longer, however, because they are surgically implanted inside the animal's body.

SHARKS

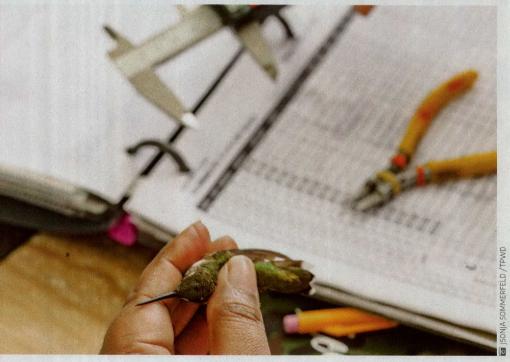
CSSC director Greg Stunz says all tags help fill information gaps about shark distribution, feeding habits and movement patterns. With many shark populations in serious decline, filling those gaps is critical to properly managing them.

"Sharks are key apex predators important to the ecosystem," Stunz says. "One of the first questions when managing them is, where do they go? We also want to know where they come from and whether they move through or, for example, come here to pup."

Texas sharks don't stay in Texas, he adds, as proved by that mako, named Pico.

Knowing that sharks travel through a lot of territorial seas and jurisdictions, where regulations vary wildly, highlights the importance of international cooperation on protection efforts.

In 2019, Nature Conservancy of Texas scientist Jorge Brenner tagged along, pun intended, with Texas Parks and Wildlife Department fisheries managers collecting catch data. He fitted two bull sharks with satellite tags and two black-tipped



Animals as large as whale sharks and as small as hummingbirds are being tracked by scientists to learn about their movements.

reef sharks with acoustic tags. In the past several years, Brenner has tagged a number of other sharks off the Texas and Florida coasts.

One of his main findings is that, even though considered offshore animals, bull sharks spend a lot of time near the coast. Management must therefore take into account both areas. He also observes that individuals of a species have unique behaviors.

"You need to tag a lot of animals to be able to infer aspects of their biology," he says. "You can't just tag one animal and expect to learn all you need to know."

The value of tagging for a conservation organization is to find the most specific, relevant sites to protect.

Another CSSC project, the Great Red Snapper Count, aims to provide an estimate of the size of that population in U.S. waters of the Gulf of Mexico.

"Without knowing how many are out there, we can't allocate the resource properly," Stunz says. "Our role is to provide science to improve conservation and management of the species."

The project tagged 4,000 fish from Brownsville to Florida and offered \$250 for returned tags. Data collection for the two-year project went through the end of 2019, with a final report on fish numbers due this spring.

Follow tagged sharks at www. sportfishcenter.org/outreach/meet-our-sharks.

SEA TURTLES

At Padre Island National Seashore, Donna Shaver, chief of the Division of Sea Turtle Science and Recovery, has tagged some 700 nesting Kemp's ridleys and more than 3,000 stranded sea turtles. Her data came in handy when TPWD revised the shrimp fishery management plan in the late 1990s.

Shaver also developed a computer model to distinguish foraging and migratory movements and define what areas the sea turtles use for each. She uses passive integrated transponders, or PITs, microchips with unique barcodes detected by a reader (also used by people to mark their pets). The tags provide the same point-to-point data as numbered tags, but last much longer because they are injected under the skin.





BLACK BEARS

Across the state on dry land, Louis Harveson at Sul Ross State University's Borderlands Research Institute (BRI) spent five years monitoring 13 radio-collared black bears in Big Bend National Park to find out what kind of areas they used for dens. The bears chose dens in high, remote areas easy to defend. The Big Bend region is likely home to 50 to 100 bears currently, Harveson says, although during a recent drought, tracking data showed that many retreated into Mexico.

Bighorn sheep are fitted with satellite collars to monitor their habitat use. Tags on purple martins reveal their migration patterns.

BIGHORN SHEEP

BRI also used satellite collars to determine habitat use by bighorn sheep at Elephant Mountain Wildlife Management Area. Current research tracks the animals at Black Gap WMA.

"One thing we're interested in is what may be keeping populations from reaching their potential. We investigate





Tracking of whooping cranes helps solve how the birds die during migration. Numbered stickers allow monarchs to be tracked.

mortality, just like CSI," Harveson says.

Things that kill the sheep include pathogens, mountain lions, poisonous plants and even falling off cliffs.

"It's amazing what we can learn from collars — travel corridors, how often they go to water, group size, mortality," he says. "We look through a certain lens and think we know good habitat, but track an animal, and they'll tell you. This is a chance to learn why they choose, say, this water source versus another."

A major takeaway for Harveson is the amount of space required by large animals such as bears and mountain lions, another species BRI has collared.

"The sheer vastness of what they require to survive is an important message from a landowner's perspective," he says. "We need to do better working with our neighbors."

WHOOPING CRANES

Scientists know that the journey endangered whooping cranes make from Canada to the Aransas National Wildlife Refuge in Texas for the winter accounts for 40 percent to 60 percent of deaths in the population. To find out exactly what kills them, they began tracking chicks from Canada to Texas. The project also identifies stopover areas along the route that may need protection. Wade Harrell, whooping crane recovery coordinator at the U.S. Fish and Wildlife Service, says the newest tracking devices use cellular towers to provide locations every few minutes. Previously, satellite tags provided only three or four locations a day.

"Now we can basically see flight paths, and whether the birds choose a path to avoid something," he says. "It gives us more info, literally day and night."

MONARCHS

Compared to a large whooping crane, diminutive butterflies might seem impossible to tag. But hundreds of thousands have been, through Monarch Watch, a citizen science project initiated in 1992 to define the iconic butterfly's fall migration. Thanks to tiny numbered stickers, scientists discovered that

monarchs overwinter in Mexico, flying there from across the U.S. Each fall, the program distributes some 250,000 stickers to volunteers across North America who use them to tag monarchs and then submit data to Monarch Watch.

Craig Wilson at Texas A&M University provides tags each year to elementary students who capture monarchs passing through a garden he developed outside the USDA Building in College Station. The goal is to work out the butterflies' paths and the time it takes them to fly south.

DO NO HARM

Scientists who tag or collar animals put a lot of effort into not harming their subjects, following established protocols and obtaining required permits.

"We want to answer scientific questions without taking a toll on the overall population," Brenner says. "We know how fragile animals are. We work quickly and don't handle the animal any more than we have to."

Technological improvements have made a difference.

"There has been a lot of thought given to the design of the tags themselves," Brenner says. "Tags are smaller. They also collect data for longer, so new ones don't have to be applied. And multiple researchers share tracking data."

Tagged sharks return to normal behavior within minutes of their release, says Stunz. Harveson notes that if a collar seems to bother an animal, it can be programmed to drop off.

Experts have developed guidelines for the percent of body weight for a tag so it won't handicap an animal; for birds, Harrell says, it is 3 percent. Better battery technology makes a difference as well.

Tracking has taught scientists things they otherwise wouldn't know, Harveson says. "For forever, we only got a glimpse. It's still a glimpse, but now a much bigger one. As the Texas human population grows, we have to be better at managing our natural resources, and this technology allows us to do that. What we do and how we do it needs to be driven by data, by science-based decision making."

Melissa Gaskill is an Austin-based writer, blogger and wildlife enthusiast.



MONARCH

BUTTERFLY

Submit tag

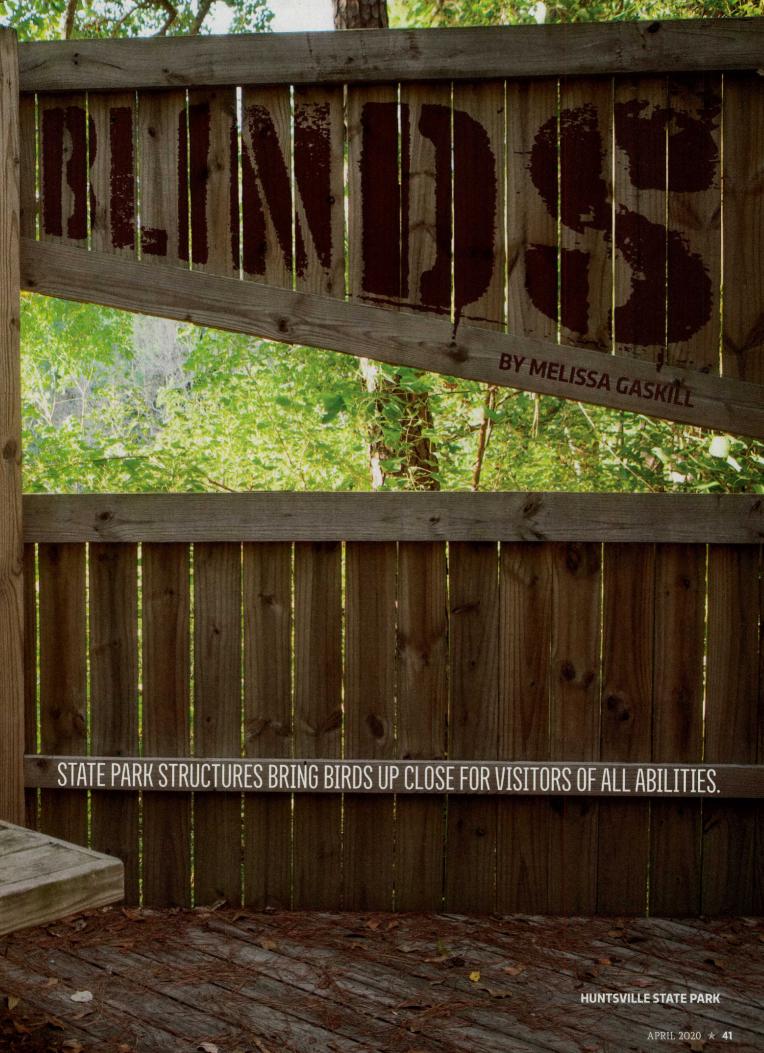
information via monarchwatch.

org/tagging and scroll down to

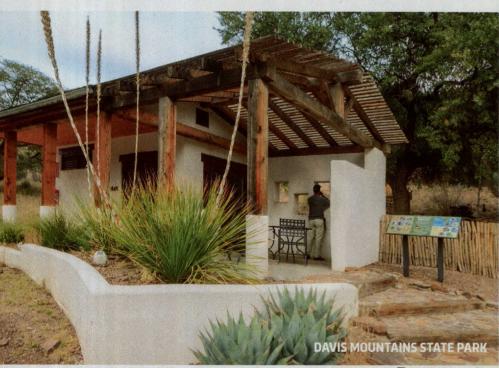
"Recoveries of Tagged Monarchs."

PUNNAWICH LIMPARUNGPATANAKIJ | DREAMSTIM





A chorus of chitters and cheeps enlivens the trees around the Francell Blind in Davis Mountains State Park. Inside the L-shaped building, rows of chairs and stacks of bird books await beneath photos of colorful birds lining the wall. The windows face a trickling stream of water and a hodgepodge of bird feeders, wooden planks piled with seeds, blocks of suet and a large piece of bark smeared with a thick, buttery substance. Birds land on the feeders, hop about on the ground, stand on the rocks and perch on the limbs of a hefty oak in the middle of it all. Woodpeckers light on yucca stalks stuck into the ground.





It's a nature enthusiast's dream come true. This blind and those in more than a dozen other state parks make wildlife watching easier than ever before.

Blinds bring birds and other wildlife up close, and that gives visitors an appreciation for the animals and their habitat, says Ben Horstmann, a Texas Parks and Wildlife Department regional interpretive specialist.

Blinds also bring birds to people who are unable to walk trails.

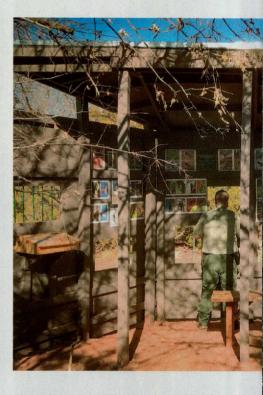
"Some people are physically not able or maybe have little kids who can't hike a mile," says Holly Platz, park interpreter at Guadalupe River State Park. "One of the goals of state parks is to get people in nature, and it's important to have this as an option, a different way to experience nature. Plus, even if it's bad weather, you can sit in the blind and experience the fun of seeing birds up close."

Not only birds can be viewed — other wildlife comes, too.

"At Davis Mountains, you may see mule deer or fox," Platz says. "You'll see some bird species you wouldn't otherwise, too, as they stay in the brush. In the blind, you can look at them for a long time."

Volunteer park hosts Steve and Sue Whitmer fill feeders and help keep the blinds shipshape.

"You have to put out the right feed, depending on the season," Steve Whitmer



says. "We use a lot of different types of seeds, and oranges in spring for orioles and finches."

Volunteers also put out hummingbird feeders from late March to early November to help migrating hummingbirds make the long journey between flowers in West Texas.

Whitmer tells me the substance they put on bark is called, appropriately, bark butter, which volunteers produce year-round.

"We rely entirely on the generous support of our visitors for our supplies, including seed, peanut butter, corn meal, sugar and oranges," he says. "In busy times, we go through 50-pound bags of sunflower seed and mixed bird seed in

less than a week and more than a dozen oranges. We also mix our own peanut butter suet, because there isn't anywhere in at least 100 miles where we can buy the quantity we need."

Volunteers also provide interpretive services, leading bird walks and talking to people in the blinds about the area's birds.

"Visitors stop into headquarters and ask about birds, and we help them figure out what they are seeing," Whitmer says.

The Francell Blind occupies a former park host site that had bird feeders, so birds grew used to visiting the location.

"The birds don't need us to feed them, but we want to attract them so people can see the variety and color out there," Whitmer explains.



Visitors to Palo Duro Canyon State Park's blind may see golden-fronted woodpeckers, canyon wrens and black-crested titmouse year-round; Mississippi kites, Bullock's orioles and painted buntings in summer; and cedar waxwings and spotted towhees in winter and spring. Deer and raccoons frequently visit as well.

The blind represents a joint effort of the park's friends group, the Audubon Society and local volunteers. It occupies a secluded former outdoor amphitheater behind the Trading Post that already had seating and a water feature.

"A couple of local photographers redo photos on the walls every few

SOUTH LLANO RIVER STATE PARK

South Llano River State Park has four bird blinds.

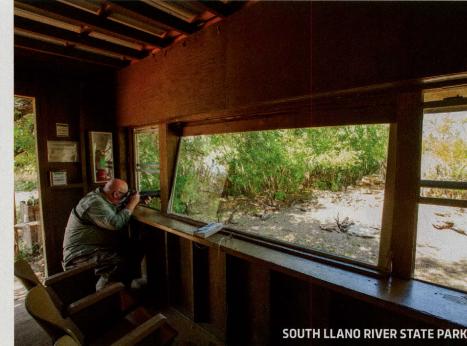
"The first one used to be an employee's kid's fort," says park Superintendent Scott Whitener.

Each features a different natural setting, with two near the river and two in the higher, drier uplands. Turkeys roost seasonally in pecan bottomlands near the river. The uplands provide good habitat for black-capped vireos and golden-cheeked warblers, and the odds of seeing those are good, according to Whitener. The park has recorded more than 250 bird species, with quite a few migrants in spring and fall.

"We abide by the strict policy that if you start feeding something, you have to



LINDSAY PANNELL / TPWD



SONJA SOMMERFELD / TPWD

years," says Jeff Davis, assistant park superintendent. "We added a cork pushpin board so visitors can put up their own photos. We keep a logbook so people can record what they see."

Staff or volunteers stop by to fill feeders once a day and often "talk birds" with whomever is there.

"We recently redid all the feeders to make them look more natural, replacing metal hooks with natural materials," Davis says. "We also put the posts in Christmas tree stands and cover those with rocks, which makes it easy to shift things around and keeps them from rotting. We changed from cylinder feeders to plate style, so people can see the birds better."

keep it up, take care of it," he adds.

Every day, two park hosts fill the feeders and make sure each blind's water feature is running. The friends group buys seeds in bulk and makes its own suet.

Becky Morris spends several months a year as a park host here and several at Davis Mountains.

"I was not a birder before. I knew a cardinal and a blue jay," she says. "I learned as I went and then did a Master Naturalist class. Mornings when I go at 8 a.m. to put feed at one of the blinds, there may be four people there already. They have huge binoculars and huge cameras, waiting for certain birds to show up. Blinds are a great way to get people to the park."



GUADALUPE RIVER STATE PARK

An Eagle Scout created the first blind at Guadalupe River State Park about 10 years ago. Then it sat unattended for several years and became an eyesore.

"That's one of our pet peeves," say volunteers John Prentice and Linda Gindler, who helped the park's friends group revamp the structure to make it easier to take care of and create a volunteer team to manage it.

"If we're attracting birds or other wildlife to an area in concentrations greater than what would normally be there, we have a great responsibility to take care of it," says Platz. "When people and birds get used to coming to an area, we have a responsibility to keep that area

power and rain catchment systems to fill water features by gravity. Considerations such as where water and power come from are important facets of wildlife blinds, says Prentice, along with accessibility and even parking.

Prentice and Gindler are writing a guide, "So, You Want to Build a Wildlife Blind?" that includes tips on these and other important factors for parks considering blinds.

Guadalupe River is transitioning to using more natural sources of food, such as mulberry trees, Mexican buckeyes, wildflowers and native grasses with seeds.

"I'm not a big fan of feeding wildlife, but I see the value of it in our blind," says Prentice. "I can't tell you the number of

jokingly call it the kissing booth."

Birds commonly seen from the blind include white-winged doves, scaled and Gambel's quail and, during migration, hummingbirds, finches and sparrows. More than 100 different species of birds in all have been recorded here.

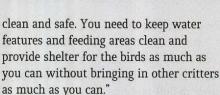
OTHER PARKS

More than 358 species of birds have been recorded at Bentsen-Rio Grande Valley State Park, which has some of the best bird blinds in the state, says Horstmann. Its facilities include two enclosed bird blinds, a birding wall, several water features and a hawk tower.

There, visitors can see flocks of hawks that number in the thousands in the



TPWD EARL NOTTINGHAM / TPWD



Guadalupe River has nearly 250 species on its bird list; many people come to see golden-cheeked warblers and painted buntings in spring. A second blind planned for a more remote area will offer chances to see vermilion and scissortailed flycatchers, blue grosbeaks and eastern bluebirds. Platz especially enjoys cedar waxwings that come in winter and says American robins are a winter staple at the blind.

Guadalupe River's blinds use solar

times a child has seen a cardinal or a hummingbird for the first time. That's possible because of the feed. We are close to San Antonio, and a lot of urban families and children come here who just wouldn't have an opportunity to see that otherwise."

FRANKLIN MOUNTAINS STATE PARK

The bird blind near Franklin Mountains State Park's nature trail was designed to blend in with its surroundings, says Superintendent Cesar Mendez.

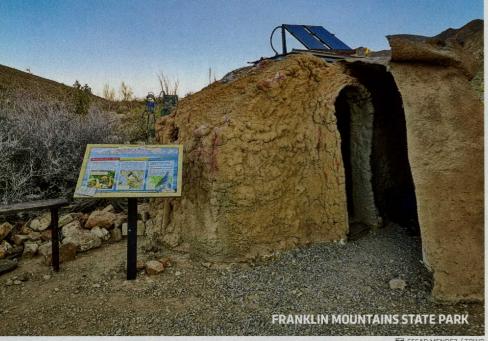
"We didn't want a building that detracted from the surroundings, so we made a structure that looks more like a boulder using painted foam," he says. "It's just the size of a few phone booths. We



spring and fall. This is the only place in the country to see green jays, buff-bellied hummingbirds, great kiskadees and Altamira orioles.

Nearby Estero Llano Grande and Resaca de la Palma state parks also have blinds along with abundant semitropical habitat and water that attract many species of birds and other wildlife

Pedernales Falls State Park has bird blinds for viewing its more than 150 species, including owls, roadrunners, wild turkeys, rufous-crowned sparrows and western scrub-jays. Endangered goldencheeked warblers nest in the park in spring. A Master Naturalist group built the bird blind at Inks Lake State Park on



CESAR MENDEZ / TPWD

the Devil's Backbone Nature Trail. Visitors may see flycatchers, swallows, quail, red-tailed hawks and ospreys. Because of its abundant water, the park also sees migratory Canada geese as well as pelicans, great blue herons, snowy egrets, mallards and wood ducks.

BLIND AMBITIONS

Individual parks typically decide whether to put in a wildlife blind, but plans go through review with regional staff and park planners to make sure a blind is appropriate for the site. Generally, says Horstmann, blinds go in places already popular for birding.

Each park follows procedures for appropriate feeding for its location.







TPWD



"Some places only feed in winter, for example," says Hortsmann. "Generally, birds are nesting in summer or have enough food. During spring and fall migration it is important to just have a water source."

Interpretive elements, including volunteers who spend time in the blinds and guided bird walks, are important.

"It is critical for children to learn about nature," says Morris. "So much of Texas land is in private hands, if we don't make state parks into places kids can do that, they aren't going to." After all, nature enthusiasts are made, not born.

Melissa Gaskill is an Austin writer and wildlife watcher.







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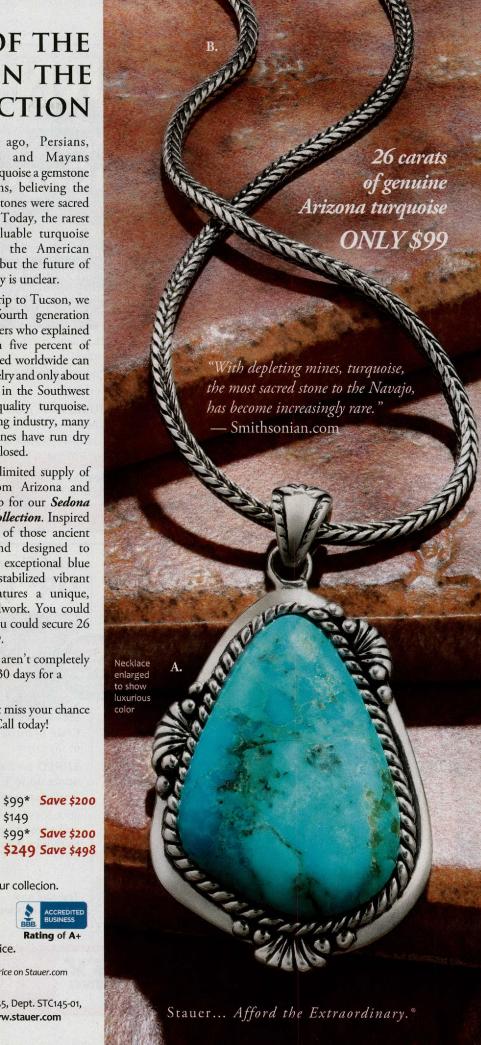
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Destination

Deep in the Heart of Texas: From the Brazos to the Bosque to Baylor, Waco's an attraction-packed destination.

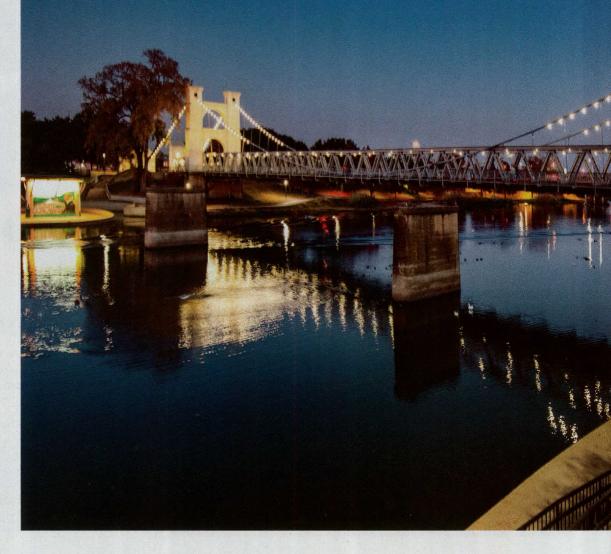
by Traci Anderson

Photos by Sonja Sommerfeld his isn't fun for anyone but 5-year-olds," my 21-year-old son grumbles. He's hungry and slightly annoyed at his younger brother, who's repeatedly trying to encase himself in a giant soap bubble.

"Give me the handle," he demands, and laughs delightedly as he draws a 6-foot-high bubble up over his brother's head, grumpiness forgotten.

We're on the campus of Baylor University in the Discovery Center of the Mayborn Museum, and, by design, it really is fun for 5-year-olds. A field trip has just cleared out, and no one stops my adult sons from letting their inner children free. They tap out simple tunes on a walk-on piano, refract colored lasers across walls, project their movements as life-sized stick figures and try to out-squeeze a boa constrictor pound for pound. (They fail at that last bit, in case you were wondering.)

On the first floor, there's a version of the Waco Mammoth National Monument. We've been to the actual monument before, but this is just as entrancing, walking on glass flooring suspended far above the fossil replicas. We pass through halls housing Cretaceous giants and oddities of nature and peek inside life-sized dioramas of the flora and fauna of Texas. The boys play a video game at each exhibit,



MACO 0 excited that unveiling all the clues will garner them a prize in the gift shop.

"I would have loved playing this game when I was a kid," one tells the other wistfully and without a trace of sarcasm.

We started our day in Waco in a less chaotic fashion. Just north of the city is Homestead Craft Village, the public face of a 550-acre farm operated by an agrarian collective. I've heard that Cafe Homestead, their on-site, farm-to-table restaurant, is worth what is often a long wait. A line of cars waiting to turn in after us bears this out, but we're seated quickly and enjoy over-



easy eggs with yolks so rich they're almost orange.

After that hearty breakfast, we walk around the village. In the gristmill, flour is ground from organically grown grain, powered by a working water wheel. A 15-foot-long canoe is hand-created, strip by strip, from western cedar in the woodworking shop. And, as we enter the pottery shop, we see several children learning how to work with clay. We try for a hayride but learn that the horse is just not cooperating today.

Heading back into Waco, we stop at Lula Jane's for dessert. The bakery is packed; moms with strollers, a work group with laptops and some college students jockey for tables in the bright space.

Opened in 2012, Lula Jane's is a harbinger of revitalization in this historically black neighborhood. A free popup art festival, Art on Elm, happens here each April. A charter academy occupies the former campus of Paul Quinn College, brilliant colors adorn the midcentury architecture of the East Waco Library, and Elm Avenue itself is a straight shot to the Doris Miller Memorial along the banks of the mighty Brazos River.

As we finish up our treats, I add must-dos to the day's itinerary. I'm something of a planner by nature, and I've stumbled onto Waco's official "Heart of Texas" app. A Things To Do screen lets me browse places that intrigue us, then add them to My Plan. I have to admit, My Plan is already overflowing, but since the app maps out each stop with point-by-point directions, I feel confident that we can fit it all in.



Leaving Lula Jane's, we follow Elm Avenue across the river to the Downtown Cultural District. Many savvy home decorating aficionados will immediately associate the Cultural District with Magnolia Market at the Silos. And indeed, a national craze of home renovation — not to mention shiplap — got its start here with HGTV's Chip and Joanna Gaines, but the country chic charm isn't really in the wheelhouse of my two college students.

We backtrack toward the Brazos and find ourselves staring at a behemoth of a building made of red brick and mullioned windows that covers a city block. A Waco landmark, the former McLendon Hardware Company The Waco Hippodrome Theatre has beer part of Waco's cultural life for more than 100 years.

Opposite page: The Waco Suspension Bridge, completed in 1870, crosses the Brazos River near downtown.

Destination

MORE INFO:

WACO CONVENTION AND VISITORS BUREAU

wacoheartoftexas.com

MAYBORN MUSEUM

www.baylor.edu/mayborn

HOMESTEAD CRAFT VILLAGE

homesteadcraftvillage.com

SPICE VILLAGE

spicewaco.com

LAKE WACO WETLANDS

www.waco-texas.com/cmswetlands

ART ON ELM

artonelm.org

was built in 1908. Today it's home to Spice Village, a collection of boutique shops and vendors spreading across the entire top floor. The boys cannot get enough. They dart from display to display — heathered T-shirts overprinted with pithy phrases, engraved silver flasks, wooden carvings shaped like bears. They find something they like everywhere they look.

While they're testing an array of scented beard oils — and no, neither of them has one — a woman unexpectedly holds out two tins of hair

side of town to the Lake Waco Wetlands. We come in from the south; as we cross the lake, the water tapers off to the horizon where the Waco Dam holds back the flow. It's entirely unexpected to see this expanse of water suddenly appear, but this water is the reason the wetlands exist.

At the turn of the 21st century, the water level of Lake Waco was raised by 20,000 acre-feet, and significant wildlife habitat was lost. To mitigate this, the City of Waco partnered with the U.S. Army

coordinator, tells us that 20 duck species are routinely sighted here, along with herons, owls, woodpeckers, wrens and other species that use the wetlands as a food source and for breeding.

The wetlands are upstream of Lake Waco and are not on the Brazos but are instead along the Bosque River — the North Bosque, to be precise. The North Bosque passes the wetlands and feeds into Lake Waco. As it curves around below the lake, the Bosque meets the Brazos in one small part of the very large







pomade and asks, "My grandson is 16, which one of these should I get?" The boys oblige with helpful advice.

On the other side of Baylor University, we devour old-fashioned burgers at tiny Cupp's Drive-Inn. Like much of what we encounter in Waco, this place has been around for a while (since 1947), and they've clearly worked out the right recipe for a superior cheeseburger on a beautifully toasted bun.

Needing to walk off some calories, we head to the far

Corps of Engineers and the U.S. Fish and Wildlife Service to construct a wetlands covering 180 acres. The wetlands naturally treat 11 million gallons of water a day, in addition to providing a variety of habitats, including marsh, riparian forest, upland forest and open water.

A network of trails fans out through the wetlands. Pontoon walkways end in piers and bird blinds, perfect for catching a glimpse of a soaring raptor or paddling duck. Nora Schell, program Cameron Park.

Something that the casual Waco visitor or a Silos-bound fan may never realize is the extent of Waco's park system. The city maintains more than 1,200 acres across 60 public parks. As we move around the city it's clear that green space is never far away, and Cameron Park offers more green space than most.

My family, even with multiple visits to the Cameron Park Zoo under our belt, is continually surprised at the size of the park. One of the largest city parks in the state, it boasts access to multiple playgrounds, sports fields, pavilions, two rivers, vertiginous cliff views and 20 miles of intricately laid trails on its 400 acres.

It's so large, in fact, that we aren't sure exactly where the Bosque and the Brazos merge. Luckily, as we stop at Lover's Leap to take in the sweeping views of the Bosque, park ranger Nestor Leon is able to give us an idea of where we need to go.

Reaching that spot, we sit on the bank and watch

bottom left.
Cafe Homestead
serves farm-totable food at an
organic farming
community; the
steps of Jacob's
Ladder climb
a hillside in
Cameron Park,
Baylor's Mayborn
Museum offers
natural history
exhibits and
hands-on
discovery rooms;
the Lake Waco

view and, just at the edge of our visible line of sight, we see McLane Stadium, home of the Baylor Bears.

We stop to chat with another family we pass. The Kulaba Hanan family live here in Waco and visit the park as often as they can.

"Almost every Saturday," Mr. Hanan tells us. They see a lot of young adults on the trails and pathways, as well as families. Daughter Danielle loves it here.

"The park is full of secret trails," she confides to us. "You can always find a new one



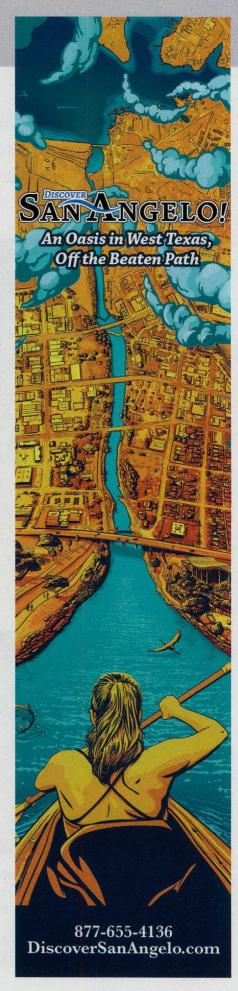
pleasure boaters and anglers leave trailing wakes in the water. It's a bit of an anticlimax after seeing the same boats from Lover's Leap, but it's also peaceful here. The two rivers meet, intertwine and move along downstream.

Nestor suggested one other stop, Circle Point, boasting another breathtaking panoramic view, and the spiraling path to its raised observation point adds a touch of zen. From here, we can see parts of the Cultural District. East Elm lies within

you've never noticed before."

We settle back in for the drive home, the boys starting their playlist on the radio while my husband navigates my turns out of the park and onto the highway. Our day in Waco has been more than full and, while it's true that we didn't hit up everything on My Plan, I've saved the rest in my app for future visits.

Waco, as it turns out, is much like its beautiful park
— there's always something new to see that you've never noticed before.

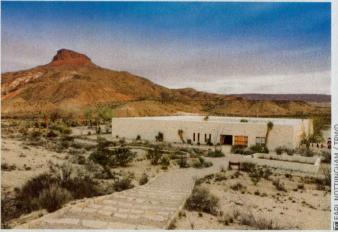


SPRING ABLOOM

Beauty is in the eye of the beholder, but it's hard to imagine any beholder not seeing the beauty of blooming native Texas plants. With displays that attract colorful birds and butterflies, these four gardens showcase nature at its most magnificent.

by Julia B. Jones and Kirsten Hahn





MAST ARBORETUM - NACOGDOCHES

Nestled in the Stephen F. Austin State University campus, Mast Arboretum has hundreds of plant species, including many Texas native pollinators. See bee boxes, greenhouses and sculptures while walking around the 18-acre grounds. If you have a hankering for more flora, the East Texas campus also offers three other gardens, including the Pineywoods Native Plant Center.



LADY BIRD JOHNSON WILDFLOWER CENTER • AUSTIN

The Lady Bird Johnson Wildflower Center is home to 900 native plant species and is recognized as the official state botanical garden and arboretum of Texas. The 284-acre center is well known for its Texas wildflower collection as well as native pollinator plants, which can be explored on multiple walking trails.

BARTON WARNOCK VISITOR CENTER • LAJITAS

As the eastern visitor center for Big Bend Ranch State Park, Barton Warnock Visitor Center has plenty to offer. The selfguided tour of a 2-acre Chihuahuan Desert garden showcases living examples of plants adapting to the harsh desert climate. Walk the garden to learn more about how the first inhabitants of Big Bend lived off the land. Inside, see Warnock's herbarium collection of 1,692 specimens.



QUINTA MAZATLAN • McALLEN

Lovingly branded as a "luxury birdhouse," Quinta Mazatlan is a 20-acre estate in the heart of the city, surrounded by sprawling, themed gardens overflowing with birds. The adobe mansion and urban sanctuary are part of the World Birding Center.

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