

Noteworthy Cards

Illustrator Clemente Guzman III renders the Wild Turkey, Black-Capped Vireo, and Clapper Rail in beautiful detail. Each card includes a description of the bird and its environmental predicament. The inside is blank to carry your own personal message. Twelve cards, four of each design, with matching envelopes. Recycled papers and packaging.

A. 2001 (4-1/8" x 9-1/2") \$7.95 B. 2002 (4-3/4" x 6-1/2") \$6.95

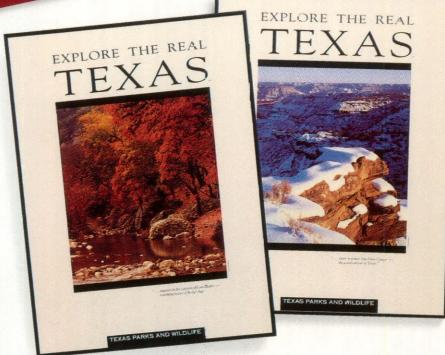
Holiday Cards

Artist Rob Fleming captures the splendor of the Rio Grande Wild Turkey. The message inside: "May the gentle beauty of nature brighten your holiday season." Twelve-card set with matching bright red envelopes. Recycled papers and packaging. 2003 (4-3/4" x 6-1/2") \$9.95





Gifts that say Texas — its beauty, its unique spirit.



Seasonal Posters

The first two in a new series of spectacular seasonal posters depict the beauty that comes to Texas naturally. Each striking 17" x 22" poster is printed on recycled coverweight paper and arrives ready to frame.

"Autumn," by Mary Ar.n Beals.
Bigtooth maples ablaze in
Lost Maples State Park.
2004 \$14.95

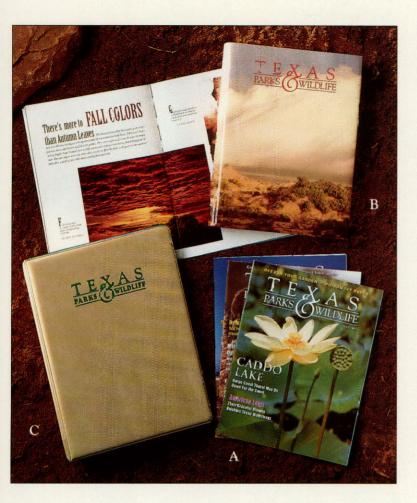
"Winter," by Wyman Meinzer.

A thin layer of snow is the only thing that can too Palo Duro Canyon State Park in the winter.

2005 \$14.95

Prices in this brochure are effective through February 1, 1994.





Texas Parks & Wildlife Magazine —

Nationally acclaimed as one of the best magazines of its kind and winner of the Ozzie award for design excellence—delivers timely news and brilliant photography.

Gift Subscriptions

Give Texas-lovers a slice of the good life every month. Fishing and hunting tips, conservation updates, recreation and travel information—everything the outdoor enthusiast needs to enjoy Texas in its natural state. Perfect for homesick Texans and would-be Texans, too.

A. 4001 \$12.95, or \$23.50 for two years

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B. 1001 \$35.00

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Start protecting and preserving your *Texas Parks & Wildlife* magazine collection today. Each durable binder holds 12 issues. And the embossed cover makes a handsome addition to your library now and in the future. C. 1002 \$13.95

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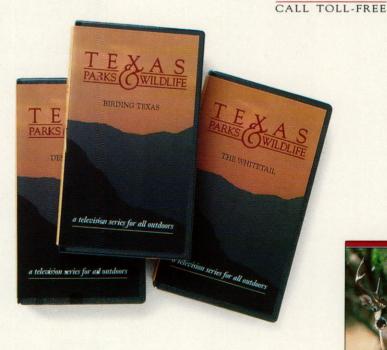
Texas Parks & Wildlife Video Collection

Selections from the award-winning PBS television series are now available on high-quality VHS cassettes Begin your collection now, and enjoy the best of Texas at home.

"Birding Texas" showcases the state's stunning selection of birds, their habitats, and migratory patterns, and provides practical tips on attracting them. 35 minutes. 6001 \$14.95

"Destinations" takes you from a tour of Central Texas swimming holes to a river rafting expedition down the Rio Grande and from Texas wildflowers to the rugged Big Bend Ranch State Natural Area. 50 minutes. 6002 \$14.95

"The Whitetail" offers information on managing land for a healthy deer herd, and examines the significance of heredity and nutrition on development. 60 minutes. 6003 \$14.95







Wildlife Expo 93 T-Shirt

Celebrate the Texas legacy of fishing, hunting, and nature loving at the Texas Parks & Wildlife Expo 93.

October 1–3, 1993, 4200 Smith School Road, Austin. Sam Caldwell depicts fly fishing in Texas bays to commemorate this annual event.

Made in Texas of 100% Texas cotton, for youth size 10-12 (Medium) and adults (S, M, L, XL, XXL).

Available long or short sleeve:

3001 Adult SS \$10.95 3002 Adult LS \$13.95 3003 Youth SS \$ 8.95 3004 Youth LS \$11.95

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Wearable wildlife featuring the artwork of Mike Stidham. This heavy weight, oversized crew neck T-shirt celebrates the success of marine fish hatcheries in restoring red drum to the Texas coast. Don't let this one get away! Short sleeve, adult sizes (M, L, XL).

3014 \$22.95

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Informative fish tales, appropriate for the boat or the coffee table. This colorful, 42-page guide provides everything you need to catch and identify saltwater fishes. Each species is identified by a large, full-color illustration, a detailed description, and pertinent details of habits and habitats. Soft cover, 8-1/2" x 11", Texas Parks & Wildlife Press. \$\frac{1}{2}\$ \$9.95



Sportsman's Guide to Texas

by Dick Bartlett and Joanne Krieger. See everything the state has to offer the angler and hunter in one comprehensive volume. Descriptions of major game animals, where to find them, and when; 200 color photos; wild game recipes; and more. Quantities limited. 320 pages, hard cover, 9-1/4" x 12-1/4".







Lifetime Licenses

If you live for hunting and fishing, we have the license for you. A Lifetime License allows you to hunt and fish in Texas for the rest of your life, even if you move out of state! You get a handsome gold wallet card and annual license in the mail. And you avoid future fee increases. The perfect gift for your children or grandchildren.

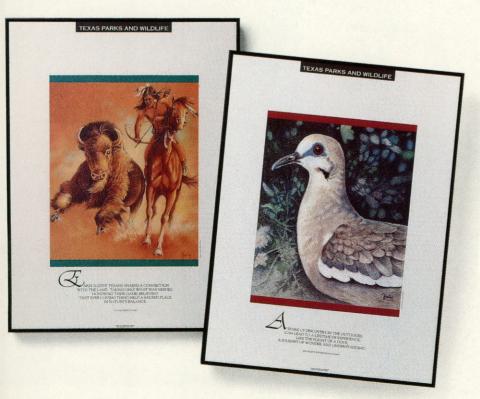
4002 Hunting \$500.00 4003 Fishing \$400.00 4004 Combination \$800.00

(There is no sales tax on these licenses.)

Funds from the sale of lifetime hunting and fishing licenses are used solely to acquire, develop, and manage public hunting and fishing areas.

> This symbol denotes items that are truly Texas — designed, manufactured and produced in Texas. They have been selected for their high quality and uniqueness.

Selections for the outdoor sportsman —



Hunting Stamp Posters

Distinctive hunting stamp art is reproduced in dramatic scale on these 17" x 22" posters. Rob Fleming's White-Winged Dove illustration from 1991 and his Archery illustration for 1993 are printed on heavy, cover-weight, recycled stock. Ready for framing. 2006 Archery \$14.95 2007 White-Winged Dove \$14.95







Bats of Texas Poster

More bats hang around Texas than any other state. This complete, colorful poster identifies and describes 21 different species. The 25"x 36" size is ideal for framing or for educational use. 2008 \$9.95

Bats of Texas

by Dr. David S. Schmidly. A comprehensive work on the life histories, distribution, and taxonomy of all 32 species of Texas bats.

188 pages, 7" x 10", 33 black-and-white photos, 16 color plates, soft cover.

Bats of Texas T-Shirt

The Mexican Free-Tailed Bat, depicted by Linda Wells, is commonly found in caves and under bridges of Central Texas. Printed on white, 100% Texas cotton. Short sleeve, youth (S, M, L) and adult (S, M, L, XL) sizes.

3005 Adult \$12.95 3006 Youth \$ 9.95

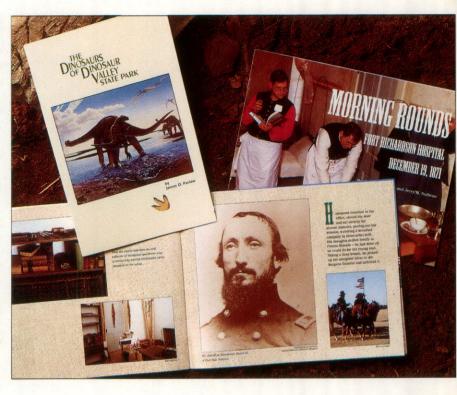
Profits from the sale of the above items go to the Nongame and Endangered Species Fund for research, education, and habitat for non-game animals.

The Dinosaurs of Dinosaur Valley State Park

by James O. Farlow. Fossil footprints from 105 million years ago and the scientific research behind them will make a lasting impression. 32 pages lavishly illustrated with photographs and drawings. Soft cover, 7" x 11", Texas Parks and Wildlife Press. 1006 \$6.00

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Follow the footsteps of post surgeon
Dr. John Fox Hammond at
Fort Richardson Hospital in
1871. Experience frontier
medicine through the doctor's
diaries. 24 pages. Soft cover,
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Explore more of the Real Texas and save! Whether for yourself, or as a gift, with Texas Conservation Passport you get all these opportunities for a full year:

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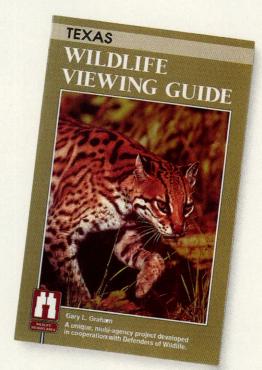
3007 Adult SS \$13.95 3008 Adult LS \$20.95

For the conservation enthusiast and friends of wildlife —

Texas Wildlife Viewing Guide

by Gary L. Craham. Now when you watch wildlife you'll know what you're seeing. The *Texas Wildlife Viewing Guide* offers maps, t.ps, and facilities guides for 142 premier wildlife viewing locations across the state. Just pack this guide and your binoculars, and you're ready for the adventure of wildlife worth watching. 6" x 9", 160 pages, 90 color photos, soft cover.



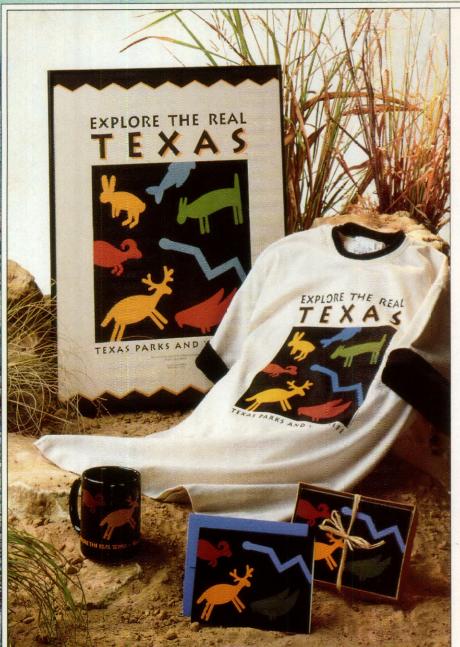


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7





Join the Dance of Life

Texas's Native American pictographs inspired this dynamic composition, "The Dance of Life," by designer Debra Morgan. Texas Parks & Wildlife protects these species, but preserving the state's biodiversity—the full range of native plant and animal life—requires every nature lover's help.

Poster

Bring the joy of the outdoors inside with this handsome five-color poster. Printed on cover-weight recycled paper, ready for framing, 17" x 22". 2009 \$12.95

T-Shirt

The "Dance of Life" design is boldly reproduced on a canvas of Texas-grown, environmentally friendly unbleached cotton. Short sleeves and neck are lined in rich black. Comfortable, oversized cut; youth (S, M, L) and adult (S, M, L, XL) sizes. 3011 Adult \$18.95

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You'll always have something important to say with these note cards. The inside is blank for your personal message. Paper and packaging are recycled. Set of 12 cards and bright blue envelopes. \$\frac{1}{2}\$ 2010 (4-3/4" x 6-1/2") \$10.95



Grandpa's Long Tail Shirt

It's the real thing! A long-cut, long-sleeve Henley made of 100% unbleached Texas cotton with wooden buttons. Bask in the past as you preserve it for the future. Ideal for the hunting lodge, fishing camp, or après ski — perfect fireside attire after a day of winter sport. Adult (S, M, L, XL).

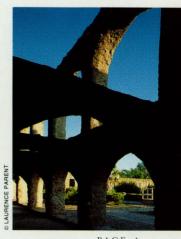
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TEXAS PARKS AND WILDLIFE

Printed on recycled paper.

TEXAS PARKS WILDLIFE

- 4 THE MISSION ERA Fearing invasion from the French, 18th-century Spaniards established a chain of missions to protect their territory in the New World and convert the native people into loyal defenders of Spanish lands. Today, four of these missions located along the San Antonio River make up the San Antonio Missions National Historical Park. by Jo Lou Spleth
- SIMPLY BEAUTIFUL Once believed to be both a plant and an animal, sea anemones are marine invertebrates with curiously floral appearances and habits. Found from shallow water to depths of 30,000 feet, these simple creatures defend themselves with barbs and paralyzing poison. by Janet R. Edwards
- BIGON TEXOMA This 89,000-acre reservoir on the Texas-Oklahoma border offers a wealth of camping, fishing and boating opportunities. Wildlife refuges in both states provide ideal places to watch birds and other wildlife, and hikers enjoy trails along the scenic lakeshore. by Laurence Parent and Patricia Caperton Parent



PAGE 4

- 32 TEXOMA SMALLMOUTHS While not native to Texas, smallmouth bass have flourished in Lake Texoma since they first were stocked in 1981. Creel surveys since 1987 have shown a 100 percent increase in the per-hour catch rate of smallmouth bass, and the lake record for the species has been broken 12 times. by Bruce Hysmith and John Moczygemba
- 34 TEXOMA STRIPERS Whether it's plastic lures, heavy slab spoons, jigs or topwater plugs, Texoma striped bass are biting. First stocked in the mid-1960s, this saltwater species has adapted to the big reservoir's relatively high salinity and favorable spawning habitat. by Phil Shook

COVERS

Front Mission Concepción, San Antonio Missions National Historical Park. Story on page 4. Photo © Laurence Parent. Linhof Technika 4x5 camera, 90mm lens, 1/2 second at f/32, Ektachrome 100 Plus film.

Inside Front Last season was a good one for trophy white-tailed deer. See story on page 44. Photo © Grady Allen. Nikon F3 camera, 600mm lens, 1/125 second at f/5.6, Fujichrome 50 film.

Inside Back Sunrise at Lake Texoma. See story on page 26. Photo © Laurence Parent. Linhof Technika 4x5 camera, 360mm lens, 1 second at f/64, Fujichrome Velvia film.

Back Rose Window at Mission San José, San Antonio Missions National Historical Park. Photo © Laurence Parent. Linbof Technika 4x5 camera, 150mm lens, 1 second at f/45, Ektachrome 100 Plus film.



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DEPARTMENTS

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On August 31 of this year, with pride and some trepidation, the Texas Parks and Wildlife Department moved into a new era. On that date we received the last of general tax dollars from the state. We now are entirely supported by fees and dedicated revenues paid to us by the users of Texas's natural and cultural resources. In other words, 100 percent of the funds necessary to maintain our conservation efforts in Texas come from fees paid to us by hunters, anglers, state park visitors and Conservation Passport holders and from dedicated taxes paid on products purchased by these outdoor "customers," including all types of sporting goods, motorboat fuels and ammunition.

The most valued of our customers are readers of this publication. In the front of the magazine you will find our inaugural gift collection that presents a line of products, many of which are inspired and created by Texas Parks and Wildlife craftsmen. These-items, which include outdoor apparel, educational materials, gifts and more, set the pace for the high standard of quality we will maintain in the years ahead. Your purchases will strengthen your own commitment to the heritage of our great state and help ensure this important initiative in entrepreneurial government continues.

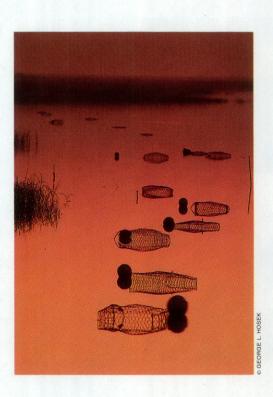
We've put our touch on a first-class offering of Texas goods that will help you remember those special experiences in the wild, make a substantial contribution to funding our most critical conservation priorities, and show your support of Texas Parks and Wildlife. Besides, Christmas is just around the corner.

Also, with this issue, we've made some modifications to the magazine. In an effort to work in something in each issue for all our readers, we've added three new departments: Woods & Waters, Parks & Places to Go and State of Nature. Woods & Waters will deal with hunting- and fishing-related issues. Parks & Places to Go, as the name implies, will feature an interesting outdoor-related place to visit. State of Nature will deal with environmental issues. News items formerly carried in Outdoor Roundup—such as hunting seasons—now will be found in their respective department. In Roundup's place on the last page of the magazine is something we call Parting Shot. After more than 50 years of publication, we still are refining this product.

—Andrew Sansom, Executive Director

In November...

Crab traps symbolize the \$1 billion commercial and recreational fishing industry on Galveston Bay. How long can the bay remain healthy under the onslaught of human pepulation growth and increased industrial, commercial and recreational demands? Next month we'll take a comprehensive look at Galveston Bay and the challenges it is facing. Also in the November issue, the plight of the Attwater's prairie chicken, tips for a successful deer hunt, Tyler State Park and more.



TEXAS PARKS () WILDLIFE

Dedicated to the conservation and enjoyment of Texas wildlife, parks, waters and all outdoors.

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Caddo Lake

"Close Call for Caddo" in the July issue reminded me of a question that has bugged me for years. If a series of log jams on the Red River above Shreveport backed up water on the upper Red and its tributaries, making Big Cypress Bayou and Caddo Lake navigable by steamboats to Jefferson in the 1850s and 1860s, how did the boats get by the log jams? Was a diversion channel with locks built around the jams?

Also, I have read that the 1811-12 earthquakes centered near New Madrid, Missouri, which formed Reelfoot Lake in Tennessee, also played a part in the formation of Caddo Lake. Is there any proof of this?

Glenn M. Smith Lufkin

■ John Williams, Public Lands Division: "The New Madrid earthquakes of 1811 to 1812 did cause a change in the course of the Mississippi. There also is a Caddo Indian legend about an earthquake and a flood creating a lake. However, it is unlikely that the earthquake of the Caddo legend was the New Madrid earthquake, or that the lake created by the legendary flood was Caddo Lake, for one simple reason: Explorers from two nations, Spain and the United States, encountered Caddos living on Caddo Lake in 1806, five years before the New Madrid earthquakes.

"In 1833, the U.S. Army Corps of Engineers sent Captain Henry Mill Shreve and two snagboats to clear the log jam and open the Red River to navigation. By the summer of 1836 they had cleared the river as far as Coates Bluff, where Shreve's Town began to grow. By a small passage in the natural levee there, riverboats could turn off into Sodo or Tso'to Lake, which was the first of a series of interconnected lakes including Caddo Lake, and journey up to Jefferson which, at that time, was on the lake and not on the bayou. (The town has not shifted positions, only the lake level.)

"With each flood more trees and debris floated downstream and got snagged in the meanders of the Red River. In 1870 the Corps of Engineers used dynamite to open the river to boat traffic again. This time they blew open the mouth of Twelve-Mile Bayou at Shreveport, causing Caddo Lake to drain. But it didn't drain all the



way. There was still a small body of open water straddling the Texas-Louisiana state line called Caddo Lake, and two smaller bodies of open water to the west.

"Finally, in 1912, the Corps built a low weir at Mooringsport, Louisiana, to 'reestablish' the old lake level over the westernmost part of Caddo Lake."

Posters

The back cover of the March issue should be a poster. It would make a wonderful gift for people who don't live in Texas and don't know such sights exist.

Helen Hedden Canton

■ Good idea. Please turn to the boundin fall gift collection. Although we don't have Laurence Parent's beautiful field of West Texas bluebonnets, we have several other poster selections.

Jet Skis

I agree that the skippers of shallow-water boats need to remain in deep water until they reach their fishing destination ("Seagrass Salad," July). But at least they're going fishing. You should outlaw jet skis on salt water and restrict them on freshwater lakes. I know of some coastal fishermen who are ready to shoot the next one that roars through their fishing area. Let us hear your comments on this.

Robert F. Hyatt III Houston

■ Lynn Benefield, Coastal Fisheries Branch: "The Texas Parks and Wildlife Department is charged with the enforcement of water safety laws, and our wardens do a good job of patrolling state

Texas Parks & Wildlife magazine welcomes letters to the editor. Please include your name, address and daytime telephone number. Our address is 4200 Smith School Road, Austin, Texas 78744. We reserve the right to edit letters for length and clarity.

waters, trying to make them safe. There are three provisions in our laws that could be used to curtail discourteous boat or jet ski operators. One law prohibits reckless operation of a water vessel that might endanger life, limb or property of another person; another one prohibits a boat from circling another boat engaged in fishing; a third states that no person shall operate a watercraft within 50 feet of any other vessel or person except at headway speed. As with many laws, a warden must observe a violation in order to make an arrest. I assume that if a person could identify the offending vessel, charges could be filed by that person. If there are areas where frequent offenses are committed, call your local wardens so they can make more frequent patrols. I appreciate your concern over a problem that certainly must be frustrating."

Owl Neighbor

A barn owl established her territory around my old barn and camp house in Goliad County several years ago. She first claimed the barn and laid eggs there but did not set them. Next she set her sights higher and teamed up with a 'coon, who took the shingles off the roof of the camp house. The owl moved into the house and once again laid eggs but did not hatch them. Needless to say, I did not appreciate those characters setting up housekeeping in my house. Nevertheless, I thought, there should be a way the owl and I could use the same territory. After all, the barn owl is a friend to the farmer and rancher.

A bird expert in Corpus Christi suggested I get a box for the owl and place it on the roof for a nest. I took a strong three-foot-square crate and cut a door in it, then fastened a two-inch by four-inch perch at the door. The barn owl moved into the owl house, laid two eggs and set them, and I had two young barn owls in the owl house

Richard R. Phelps Victoria

CCC

We appreciate the coverage you have given the Civilian Conservation Corps boys of the 1930s. Tex-

(Continued on page 54)

Quiet today, Mission San Juan bustled with agricultural operations in the 18th century.

THE MISSION ERA

by Jo Lou Spleth

SAN ANTONIO MISSIONREFLECT SPAIN'S BOLD NEW WORLD INITIATIVE.

he muffled crunch of my footsteps on the soft graveled path was suddenly broken by the shriek of guinea fowl sounding an alarm. Their startling, shrill cry had a ring of irony. In Mission San Francisco de la Espada's years of glory, a chorus of guinea fowl would not have been heard over the hundreds of voices that peopled this thriving community on the frontier.

In fact, the modern tranquillity of San Antonio's five missions belie their history. Established during the 18th century, the missions represent the Spaniards' frenzied race to protect their eastern territories from a feared invasion by the French. In fact, of the five missions in San Antonio today, only two—San Antonio de Valero (more commonly known as the Alamo) and San José de Aguayo—were sited there originally. The remaining three—Missions Espada, Concepción and San Juan—came to San Antonio only after they had failed in East Texas.

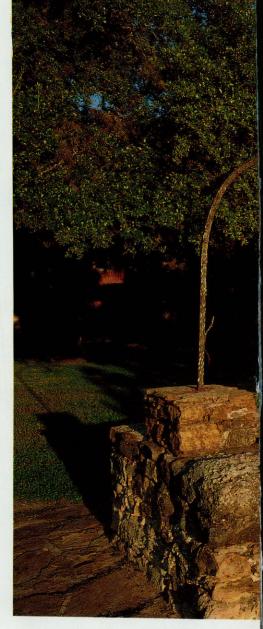
"The Spanish thought that the sheer vastness and emptiness of the area between them and the French intruders would serve as a buffer," said Dr. Rosalind Z. Rock, historian for the National Park Service at San Antonio Missions National Historical Park. "It wasn't until the Spaniards captured a couple of Dutch pirates who told them

the French had established a fort on the Gulf Coast that they knew there was a threat of invasion. It took the Spaniards four years on land and sea before they found the fort, and by then it was gone, burned to the ground."

But when they did find it, the Spaniards reacted almost hysterically. And one can understand their state of mind. It was 1689, and the Spanish still stung from the Pueblo Revolt in 1680 that had forced their successful missionary effort in New Mexico to retreat to El Paso. The idea of losing their eastern lands to the French after the New Mexico loss proved too much to bear.

The problem was that the Spanish did not have the military manpower to conquer all of their claimed New World territory. Missions were to solve the problem by converting the native people into loyal defenders of Spanish land. Presidios of small numbers of military troops bolstered the effort. But the concept, which had worked well in New Mexico until the Pueblo Revolt, hit a major stumbling block in East Texasironically for the same reason that the Spanish earlier thought would be their salvation. The vast emptiness of the area isolated the first missions in East Texas.

When San Francisco de los Tejas (which later became San Francisco de la

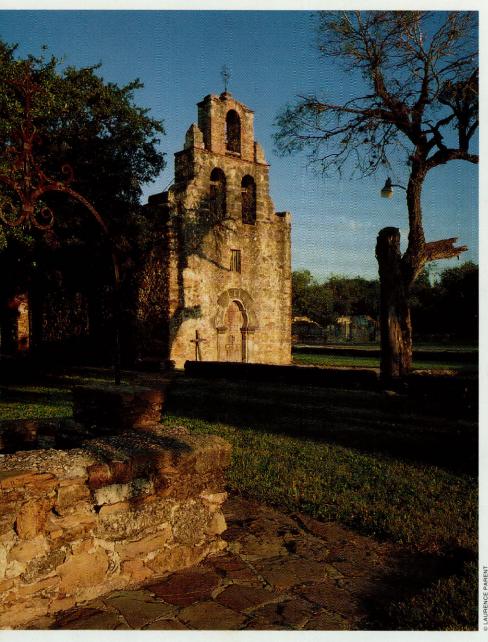


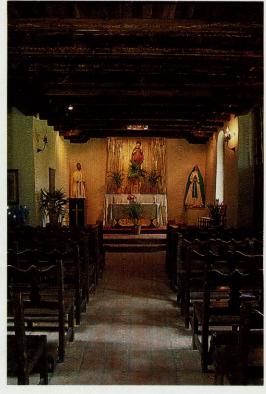
A network of irrigation ditches known as an acequia allowed water to flow within the walls of Mission Espada. The Espada Aqueduct (left) is one of the oldest surviving Spanish structures in America.



Espada in San Antonio) and Santisimo Nombre de Maria located near present-day Weches in 1690, San Juan Bautista on the Rio Grande was their supply point. The lack of supply, of being connected, ultimately caused the missions' failure. Disease and unrest took their toll. And the Spanish abandoned both missions.

However, invasion fear remained high, and the Spanish returned to East





Southernmost of the San Antonio missions, Mission Espada (left) was last in the chain and suffered frequent Apache raids. Espada's restored chasei (above) reflects its appearance in the mid-18th century.

Texas in 1716, reestablishing Mission Tejas and establishing four new missions: La Purisima Concepción de Acuna, Guadalupe, San José de los Nazonis and Dolores de los Ais. This time, however, they had learned from their mistakes. They built San Antonio de Valero (the Alamo) on the San Antonio River at Eagle Pass to serve as a halfway station between their settlements on the Rio Grande and the eastern missions.

The Alamo succeeded as a supply station. The East Texas mission effort did not. But it took the Spanish another decade to resign themselves to the facts. They abandoned the eastern missions in 1719, tried to reestablish them in 1721, and finally gave up in 1731, moving Concepción, San Francisco de los

Tejas (Espada) and San José de los Nazonis (renamed San Juan Capistrano) to San Antonio.

It was highly unusual for five missions to be located so close together, according to Rock. "Spanish law decreed how far apart missions were supposed to be, as well as their size, shape and configuration," she explained. "The basic rule was that the missions should be one day's ride apart. In San Antonio, the law was not followed to the letter."

One reason was defense. With only one presidio in the San Antonio area, the missions, in effect, formed a cluster of safety. "Those Indians who gathered in the missions and around them had enemies among their kindred people, as well as common enemies in the Apache and Comanche," said Rock. And from

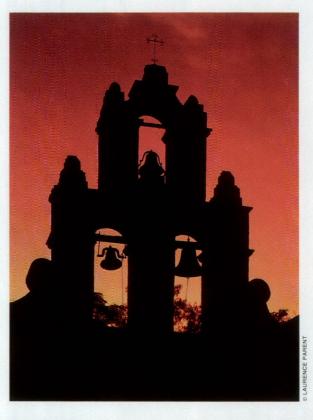
the Spanish point of view, the fear of a French invasion still remained strong. The closeness of the missions allowed for early warning of an attack.

But the nearness offered other advantages, including easy communication between the missionaries and a better trade network. "The missions provided a lot of products for other areas along the frontier, even cattle for the Revolutionary War. It was easier with the missions in proximity because they could pool their resources and have a larger amount of material to present on the market," said Rock.

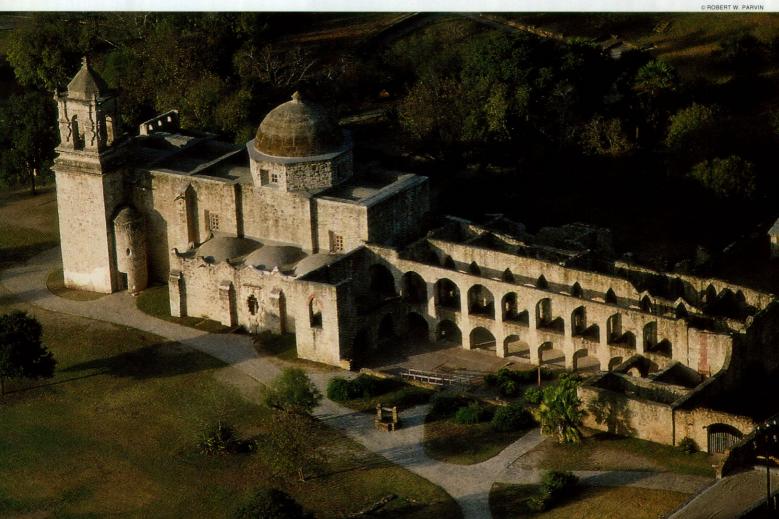
Today that proximity makes visiting San Antonio's missions especially enoyable because they lie truly within an easy day's drive. The missions are along the San Antonio River south of downtown San Antonio. A pleasant tour begins on the south at Mission Espada, working north to the Alamo, in the heart of downtown San Antonio.

The most peaceful of the missions, Espada evokes a ser.se of pastoral beauty, with live oaks punctuating a carpet of soft, green grass inside the crumbling walls. The church provides a cool recess from the Texas sun, with white stucco walls, carved wooden benches and Spanish-style candelabra hung high on the walls. Demonstrations of the spinning and weaving techniques of the mission are available on request.

In addition to the marvelous buildings they constructed, the Franciscan missionaries also designed a 15-mile network of irrigation ditches—called an acequia system—to provide water for crops, animals and the mission inhabitants themselves. Made up of gravity-flow ditches, dams and an aqueduct, the system allowed water to flow within the walls of Espada so that the precious



Mission San Juan's bell tower is an elevation of part of its east wall with open arches for the bells (left). Mission San José (below and right), Texas's largest restored mission, was known as the "Queen of the Missions" for its beauty and strength.







resource was readily available even when the mission was under attack. Today, the acequia behind the church at Espada still carries water.

etween Espada and San Juan missions lies the Espada Aqueduct, one of the oldest Spanish structures of its kind in America. Vines and ferns drape its stone arches, and water tumbles gently over smooth stones, creating a pleasant murmur.

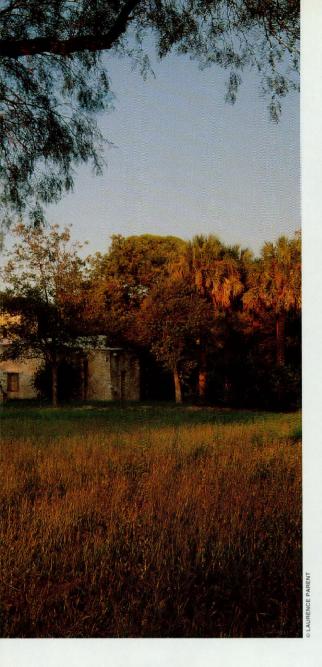
San Juan Mission demonstrates the desire of the Spaniards for each mission to have individual character. Its white, 24-inch-thick walls are topped by an open gable in which three bells are

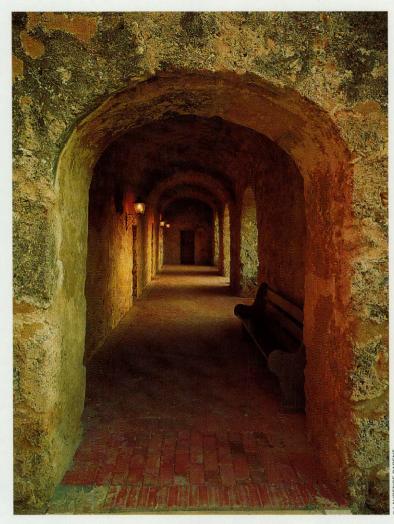


This ornate door has afforded access to the chapel at Mission San Fosé for more than 200 years. The first permanent buildings at San José were built in the 1740s, and the present church was built between 1768 and 1782.









suspended. While the square within its walls seems open and empty today, San Juan once bustled with commerce. Some 1,000 head of cattle, 3,500 sheep and goats, 100 saddle horses and 400 mares made up its agricultural operation in the mission's heyday.

The present-day church at San Juan lcoks unusually narrow and tall because it originally was a granary. Regularly used as a parish church today, its cool interior is modest in appearance, with

plain wooden pews and filtered light channeled through three round windows set high in the walls.

Just three miles farther north along the Mission Trail, the most elaborate example of Spanish mission architecture in San Antonio leaps into view in an otherwise normal neighborhood. Called the "Queen of the Missions," San José is Texas's largest restored mission, representing the fort-city concept that dominated such outposts. Occupying American troops in the mid-1880s used its sturdy walls for target practice.

Four noria—water wells—located within the walls of the compound, as well as an acequia, provided water. Restored granaries, small rooms for Indians and soldiers, and Indian adobe ovens (called hornos) all combine to recreate a feeling of what life must have been like in a mission during the 18th century.

The extraordinary church features vaulted ceilings, arches and a dome richly decorated in a diamond pattern of dusty blue, terra cotta and soft mustard shades. Of special note is Rosa's Window, also called the Rose Window, which exemplifies the work of skilled craftsmen who were available to the missionaries even in a frontier setting.

But Mission Concepción perhaps evokes the deepest sense of the missionaries' work, for within its sturdy church walls, far above the transert a loft looks down over the sanctuary. Built especially for Indians who were ill, it provided a high vantage point where the sick could sleep, recover and still be part of regular mass. The missionarieswhose goal was to win souls, not silver-ensured that no one was left out.

Brightly colored geometric designs once covered Concepción's massive

Mission Concepción (abrve) has seen little restoration over the years. A number of original frescoes remain inside the churck (left). The tranquility of Concepción's cloisters touches modern-day visitors 'above right).

How to Travel the Mission Trail

The Mission Trail stretches for nine miles south of downtown San Antonio along the banks of the San Antonio River. While the trail is marked by signs, obtaining a map beforehand will alleviate any confusion and help plan your route.

If you are beginning at the south end of the missions, take the Villamain Road exit off Interstate 410. Proceed south on Villamain, turning west onto Camino

THE ALAMO

10

HISSION CONCEPCION

Houston

Commerce

[87]

Coahuilteca, which will wind around the southern boundary of Mission Espada.

Take Espada Road north for 1.5 miles, past the Ashley Road turnoff, to reach the Espada Aqueduct. After you've enjoyed the Aqueduct, backtrack to the Ashley Road turnoff and follow it west, then north, then east to Mission San Juan, watching for Mission Trail signs along the way.

From San Juan, travel north on Mission Road for 1.5 miles to reach Espada Dam, an important part of the acequia system. Once back on Mission Road, you'll drive another 1.6 miles, turning left onto Napier Avenue to arrive at Mission San José.

If you follow the Mission Trail farther, it will take you north on Roosevelt Avenue, east on White Avenue, and north/ northwest on Mission Parkway and, again, Mission Road, to reach Mission Concepción.

Finally, you can follow the trail signs up Mission Road to South St. Mary's Street and Alamo Street to end up at the Alamo.

Each of the missions is open from 8 a.m. to 5 p.m. daily, except during Daylight Savings Time, when the hours are 9 a.m. to 6 p.m. National Park Service rangers are present at each site to answer questions. Because each mission is an active parish, be aware that on Sundays and Holy Days religious services may be taking place.

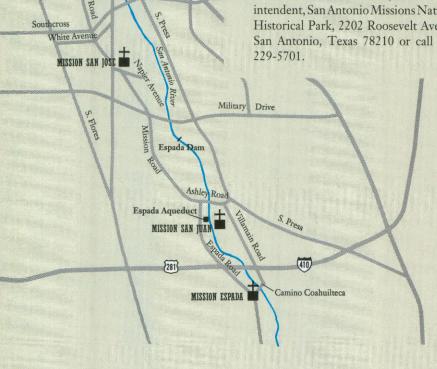
For further information, write: Superintendent, San Antonio Missions National Historical Park, 2202 Roosevelt Avenue, San Antonio, Texas 78210 or call 210structure. The theory was that such colorful art would appeal to the curiosity of the Indians whose souls the missionaries sought. While those outside artworks long since have faded, original frescoes—some of a religious nature, others simply beautiful designs—survive inside the church.

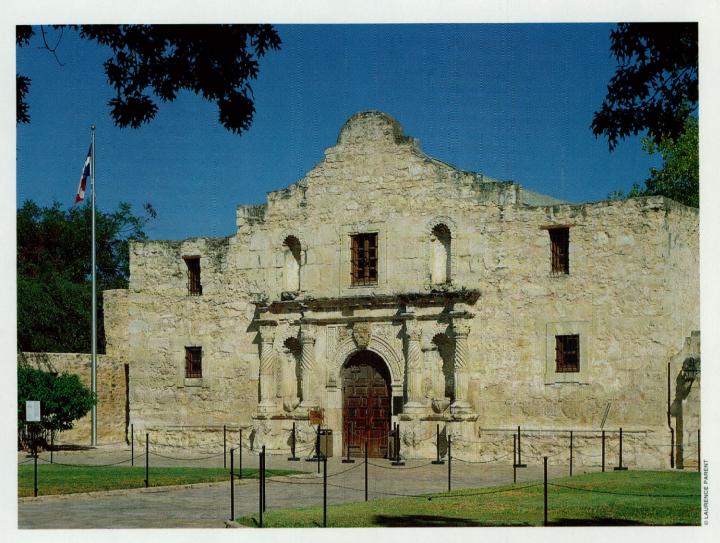
Like the spiritual foundation the missionaries wished to leave with the Indians, Concepción's foundations remain amazingly intact. Its thick walls have seen little restoration over the years. And it still serves as a parish church, with regular mass on Sunday and special mass on Holy Days.

While the Alamo is an inspiration to Texans and a focal point for visitors from throughout the world, San Antonio's other four missions are a tribute to the dreams of an earlier generation of frontier people. All the missions embody a true sense of what "hope" means. In the face of numerous conflicts, illness and attack, "hope" fed the souls of those who survived. And while the walls they built may crumble, their legacy remains.

70 Lou Spleth is a freelance writer living in Scottsdale, Arizona.







San Antonio de Valero Mission, also known as the Mission, also known as the Alamo (pictured on these two pages), was established in San Antonio in 1718, with the present sit? selected in 1724. Aithough not part of the San Antonio Missions National Historical Park, it can be visited in conjunction with a tour of the other missions. After mission activity began to wane in 1765 the Alamo became a 1765 the Alamo became a fortress and was the scene of rnany conflict. The most famous conflict was the siege and fall of the Alamo from February 24 to March 6, 1836. The rnly day of the year photos may be taken inside the structure is on the anniversary of the fall of the Alamo.



STATE OF NATURE



Volunteers help agencies monitor

t's early morning on the first Tuesday of the month and, as is their custom, 20 residents of the Central Texas town of Salado head to the creek. Are they going fishing? Birdwatching? Do they plan on picnicking? Not by the look of the gauges, vials and notebooks they carry.

These early risers are members of the Salado Creek Preservation Committee. They're part of a growing army of citizen water quality monitors—individuals (1.000 at last count), civiz and

by Kristi G. Streiffert

environmental groups, school children and retirees who are learning about and promoting healthy, natural waterways.

Citizen water quality monitors provide valuable data to grateful resource managers who are responsible for assuring the quality of Texas's waters. The information these volunteers provide allows managers to act quickly and efficiently in response to and in the

prevention of environmental problems.

More than 4,500 volunteer groups monitor our nation's waterways. The Environmental Protection Agency, a variety of state agencies and private organizations (such as the Izaak Walton League's "Save our Streams" program) all work together to train and support the volunteer monitors.

In Texas, monitors work with a program called Texas Watch, directed by the Texas Water Commission.

"Monitors provide environmental



School students keep a watchful eye on Brays Bayou.

Teams perform a variety of tests, depending on their adopted waterway's situation, the group's goals and training they have received.

Some monitors make physical and chemical measurements, recording water and air temperature, water transparency, turbidity, river height and flow. They may also test for pH, dissolved oxygen, nitrates, phosphates and other parameters. Some volunteers survey living resources, looking at the number and variety of insects, fish, birds and plants. They may report on fish kills and algal blooms and concentrations of certain bacteria.

Texans' expanding participation in citizen water monitoring grew out of massive fish kills that occurred during 1985, 1986 and 1988 on the Pecos River, during which more than 2.5 million fish died. Resource managers and local residents were appalled and baffled. What

> Volunteers perform a variety of tests to determine water quality. Dye is used to measure how fast a stream is flowing (left), which affects the stream's ability to maintain the proper oxygen level.

had happened? Was there an oil spill? Or was toxic algae killing the fish?

"We realized there was a lot going on that we weren't aware of, a lot of information that we didn't have," said Dave Buzan, former Texas Watch program coordinator who now is pollution assessment team leader in the Texas Park's and Wildlife Department's Resource Protection Division. "That is an isolated area; the Texas Water Commission's closest office is three hours away."

But local citizens can jump into their pickups and bump down the nearest river access road. In 1989, trained volunteers, known now as the Pecos River Watch, began collecting measurements and providing information to the Texas Water Commission.

"Local citizens are closer to the water and can get to the river quickly. They have a much better local and historical perspective; they're like scouts in the old cowboy movies—they know the terrain," said Buzan. "The Pecos River Watch originated out of public and agency concern about the environment, and encouraged cooperation and communication. We in the governmentstate or federal—are not going to protect the environment by ourselves. It's going to take the active, positive coopera-

water quality

information we otherwise would not have access to," said Gayla Campbell, program coordinator.

Volunteers, usually organized into teams, test the waters frequently: some every week. others every two weeks or once a month. Monitors hail from all corners of Texas-Amarillo to Beaumont, Brownsville to Alpine. Citizens from Granbury monitor Lake Granbury: students at Angelo State University Tri-Beta Chapter monitor Lake Nasworthy; Rees Elementary





WHY TEST FOR:

pH?

To record the acidity of the water and monitor the effects of acid rain.

Dissolved oxygen?

A healthy oxygen content is necessary for aquatic life, especially fish.

Nitrates and phosphates?

These are nutrients. Too many nutrients, such as fertilizers, can contribute to algal blooms, resulting in lowered dissolved oxygen and possible fish kills.

Turbidity?

Low turbidity means clear water.

Bacteria?

The bacteria fecal coliform may indicate the presence of untreated sewage.

To learn more about Texas Watch, call 512-463-8206.

tion of all Texans."

The mystery of the Pecos River fish kill still has not been completely solved. No oil spill has been documented. Toxic algae are present each fall, but no fish die-offs have occurred since 1988. Local residents have collected more than 450 measurements, providing baseline data from which to evaluate further developments.

Resource managers are confident that

citizens collect credible and valuable information. To be certified, Texas Watch volunteers undergo an intensive, three-session training course. Two classroom sessions outline the various procedures. A

third session is conducted in the field, often at the site each volunteer will monitor regularly.

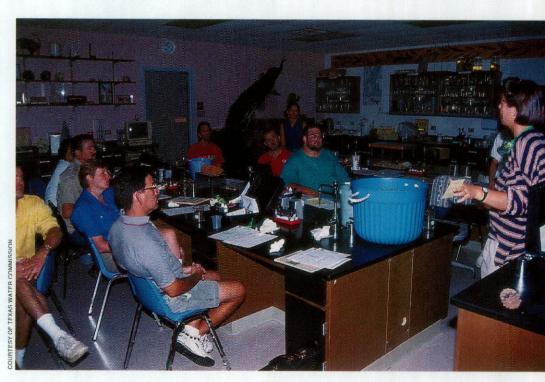
Although the tests are quite simple to master, monitors have to learn a few new terms, such as "titration," 'sodium thiosulfate" and "fixing agents." They use thermometers that measure in Celsius and scoops marked off in grams. Many of the tests involve taking a measured sample of water, adding certain

reagents, shaking, waiting and then watching for certain color changes.

The dissolved oxygen test, for example, involves color changes from clear to amber, black to blue, then back to clear. The amount of reagent needed to achieve that range indicates the milligrams per liter of dissolved oxygen.

Some tests require laboratory analysis. Friends of the Frio spends almost \$1,000 a year for fecal coliform analy-

Volunteers attend two classroom training sessions and one session in the field. Local citizens are valuable to water protection efforts because they can get to the scene quickly and they have a nistorical perspective on waterways near their homes. Texas Watch officials say that volunteer water monitors provide information that environmental agencies otherwise would not have.



ses. Other groups are fortunate to have labs available to perform the tests free. Pecos River Watch benefits from volunteers at nearby Pennzoil Sulphur Company, who have performed \$3,000 worth of analyses in recent years.

Salado Creek Preservation Committee members use their training to moni-

tor a variety of parameters.

"We test pH, total dissolved solids, dissolved oxygen, and other variables such as the depth and the weather conditions," said Pat Merrill, committee chairman.

Objectives of the committee also include writing a history of the stream and educating others about the creek and surrounding watershed. "We are working with school children," said Merrill. "Next month we have an entire fourth grade class coming out to observe."

Education of school age children is an important component of volunteer water monitoring. The Colorado River Watch involves more than 30 schools. Project del Rio, on the Rio Grande, involves about 1,000 students from New Mexico, Texas and the Republic of Mexico.

The concept of volunteer water monitoring encourages creative variations. One Texas Parks and Wildlife project plans to involve canoeists, who will identify possible spawning grounds for endangered paddlefish. Ronnie Pittman, TPWD biologist, said, "We need more canoeists interested in helping with the project; they should contact Texas Watch." (See box.)

Another program, Operation Skywatch, involves pilots who use their aerial perspective to report potential water quality problems. One pilot recently reported junked cars in the Brazos River. The Texas Water Commission district office now is investigating from

the ground.

Like the pilot-to-Water Commission communication, citizen water monitoring in Texas fosters many types of positive interaction. Organized groups participate in protection of waterways with environmental agencies and industrial waste handlers. Local businesses cooperate with local government. Conflicts between the public and regulated organizations are resolved with mutual participation.

Mike Bira, the Environmental Pro-

tection Agency's Clean Lakes Coordinator for this region, said, "Volunteer monitoring provides baseline data; we'll be able to detect changes over time. But," he added, "just as important, monitoring gives people a sense of ownership in a water body. They become participants, knowing that their daily activities have an impact on water quality."

Kristi G. Streiffert is a regular contributor to the magazine.

Volunteers to Participate in Volunteers for **Conservation Research**

by Mary Candee

The Texas Parks and Wildlife Department soon will launch its own citizen's environmental monitoring program called Volunteers for Conservation Research (VCR). Through this new program, the department's Endangered Resources Branch will seek the assistance of volunteers in monitoring the status of rare plant and animal species in

VCR will focus on more than 300 species that are not yet listed as threatened or endangered, but which may be at risk of decline. The current group of candidate species includes 24 mammals, 26 birds, 11 reptiles, 10 amphibians, 19 fish, 58 invertebrates and 159 plants. The ultimate goal of the monitoring effort is two-fold: to recognize species in immediate danger of extinction, and to determine and promote proper management of less-imperiled species and their habitat so that listing as threatened or endangered may not become necessary.

VCR will provide an opportunity for public schools, universities, conservation organizations, youth groups or interested citizens to participate in the conservation of the state's natural heritage. Monitors will gather valuable baseline information on the status of the species and their habitats, and also may identify long-term trends and ways in which local communities can conserve their own natural heritage. TPWD biologists will train the volunteers in monitoring techniques and help them locate study sites where landowners are willing to participate.

To learn more about this monitoring program and find out how you can assist with the conservation of candidate species in your area, contact Volunteers for Conservation Research, Mary Candee, coordinator, Texas Parks and Wildlife Department, 4200 Smith School Road,

Austin, Texas 78744.

"Barton Springs Eternal" Celebrates Austin Swimming Hole

Periodic water quality problems have plagued Austin's Barton Springs for the past several years, sounding a call to arms for the beloved swimming hole. Barton Springs's clear, 68-degree spring water has captivated generations of

A new book, "Barton Springs Eternal, The Soul of a City," is a collection of essays and oral histories celebrating the springs. More than 50 people, including Robert Redford, Jerry Jeff Walker, Governor Ann Richards and Jim Hightower, share their thoughts and feelings about the springs. Edited

by Turk Pipkin and Marshall Frech, "Barton Springs Eternal" is filled with historical photos, offering a look into the lives of past generations and their relationship with this unique water resource.

"Barton Springs Eternal" is available for \$24.95 at many bookstores. It may be ordered by mail for \$29 (includes postage and handling) from Softshoe Publishing, P. O. Box 160430, Austin, Texas 78716. Profits from book sales will go to the nonprofit Hill Country Foundation for the purchase and preservation of land in the Barton Springs watershed.





etal-like tentacles sway in a ballet upon a gentle Gulf current. Beguiling to the eye, the sea anemone is also captivating—and often deadly—to the touch, combining artistry and utility with its cluster of delicate appendages.

Originally named for the Greek word for wind, anemones at first were classified as plant-animals. Seen in their natural marine habitat, the sea anemone's tube-shaped tentacles indeed look like chrysanthemums on shallow-water rocks and jetties, concrete pilings, coral formations, artificial reefs and even crabs.

Despite their floral appearance and the fact they generally remain fixed in one spot for most of their life as plants do, sea anemones cannot make their own food by photosynthesis as plants do. Therefore we recognize them today as animals, belonging to phylum Cnidaria (Coelenterata), a group that includes jellyfish, coral and hydroids. Cnidarians are sac-like animals with radial symmetry (having no distinct left and right side), stinging capsules and no true organs (groups of specialized tissues).

Although a rich Cnidarian fossil record dates from the Cambrian period, some 9,000 species live today with all except the hydra and a few other hydrozoans strictly marine in habitat. All Cnidarians have an internal gut or gastrovascular cavity for digestion with only one opening to the outside. The mouth (which also serves as an anus) is ringed by tentacles that extend from the body wall to capture and draw food into the digestive cavity with the aid of a simple network of nerve cells and sometimes tiny, hairlike cilia.

The phylum has two different body types: a tube or cylindrical shape known as a polyp and a bell or umbrella shape called a medusa. Hydras, coral and sea anemones bear the polyp body plan whereas jellyfish may exhibit polyp and/or medusa forms in their life cycle.

Sea anemones live as solitary polyps much larger and heavier than the multiple polyps of hydrozoans. Consisting of a stalk encircled by tentacles at the oral end and a disk-shaped base at the foot, anemones may be bright red, yellow, green, blue and even multi-hued.

THE SEA ANEMONE IS ONE OF THE SIMPLEST AND MOST DELICATE CREATURES IN THE SEA.

Although most are distinctly flower-like, some look more like mushrooms or stalks of cauliflower. When large numbers grow close together, they may resemble patches of undulating grain. Most abundant in warm waters, sea anemones normally reach a size 1½ to 10 centimeters in length and one to five centimeters in diameter. However, species found on the North Pacific Coast of the United States and the Great Barrier

Tentacles surrounding the mouth and a simple network of nerve cells allow the anemone to capture prey such as this fish and draw it into the digestive cavity.

Reef of Australia may exceed a diameter of one meter.

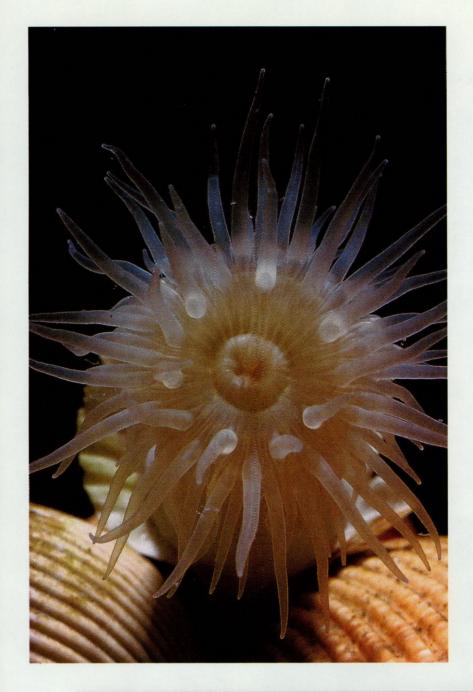
Some 800 species of sea anemones, grouped in order Actinaria, exist today in habitats ranging from the tidal zone, where they may endure hours of exposure and wide variations in salinity, to depths of 30,000 feet or more in oceans worldwide. At least nine species commonly are found in Gulf waters along the Texas coast.

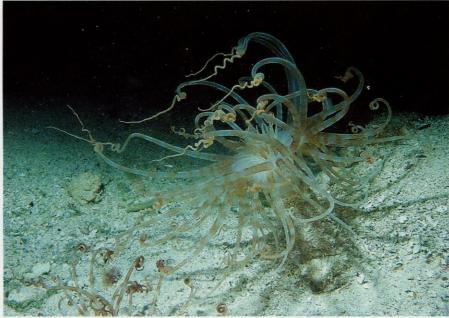
Without sight, smell, hearing, brain or the muscular, jointed appendages found in larger animals, the sea anemone is one of the simplest and most delicate creatures in the sea. Yet this diminutive marine invertebrate holds its own with

an arsenal of stinging capsules called nematocysts, which are concentrated on the outer surface of the anemone's numerous tentacles. Double-walled and egg-shaped, each nematocyst contains a long, coiled, hollow thread bathed in a corrosive or poisonous fluid. A trigger tip called a cnidocil, which often is barbed or thorn-like, protrudes into the water, firing a tiny harpoon at the slightest touch. The thread turns inside out as it shoots forward, piercing the skin of predator or prey and injecting the paralyzing poison.

Other types of nematocysts lack barbs. Instead, they are coated with a sticky substance they use to hold the victim or







with extra length to wrap around the victim's body. Some nematocysts also fire in the presence of certain chemical and electrical stimuli. Immobilized fish, shrimp, mollusks, plankton, organic debris and even other anemones then are drawn into the mouth and gut, where strong enzymes bring about prompt digestion. The nematocysts also help protect the anemone from predators such as sea-slugs, starfish, sea spiders, crabs and fish.

espite this impressive defense, certain species of fish, shrimp, crabs and starfish live in a close relationship with sea anemones without injury to either organism. (See accompanying article.) Humans can suffer serious wounds from nematocysts in the tentacles of certain Cnidarians, including the Portuguese man-of-war. However, sea anemone venom usually goes unnoticed, causing little more than local redness, swelling or itching. But a few species found in remote parts of the globe such as Samoa may cause fever, stomach pain, chills, vomiting, general malaise or death, particularly if eaten.

Sea anemones secrete sticky mucus or burrow to attach themselves to rocks, shells, plants or other animals, making removal in one piece a difficult task. But patient observation reveals they can creep about. Threats from predators, the drive to reproduce and adverse en-

> vironmental conditions (such as changes in light, temperature, food, salinity, oxygen or pollution) may cause them to move.

Wavelike muscular contractions enable the body to glide on its base at a slow

Creatures with radial symmetry, such as the sea anemone, have no distinct right and left side (above left). Tube anemones such as the one at left sometimes are seen on night dives in the deeper waters of the Flower Gardens, 110 miles southeast of Galveston.

Strange Bedfellows

In a life needled by nutritional necessity, lambs do not willingly lie down with lions. Yet sea anemones can experience a close relationship with a variety of organisms upon which they normally might prey. Algae, shrimp, brittle stars, crabs and several types of fish enjoy a symbiotic (mutually beneficial) or commensal (one benefits, the other remains unaffected) rapport with anemones.

Many shrimp species seek protection in coral crevices or sandy muds of the ocean floor. But two species of shrimp found in shallow, warm waters off the Yucatan Peninsula, Florida and the West Indies set up housekeeping in or near the deadly tentacles of sea anemones:

Pederson's cleaning shrimp and the spotted cleaning shrimp.

"The shrimp are protected from the nematocysts of the sea anemone in much the same manner as are clown fish that live in sea anemones," wrote Robert D. Barnes in his text "Invertebrate Biology." "Following behavioral acclimation to the anemone, the altered mucous coat on the surface of the fish apparently raises the threshold of nematocyst discharge, making it possible for the fish to live in an otherwise lethal habitat." Cleaning shrimp may glean scraps from meals gobbled up by their hosts, but they make their living primarily on external parasites and other unwanted organic material found on the bodies of certain types of reef fish.

Perched like a neon sign against its host's tantalizing tentacles, the shrimp keeps a close eye on the parade of life swimming by. With the approach of a likely candidate, the crustacean signals the fish with a welcome wave of its tentacles and a wriggling dance. If the fish returns the courtesy with a nonthreatening, stationary pose at a site nearby, the cleaning shrimp first calms its customer with several strokes of its long antennae, then hops aboard its body. Moving freely about the head, mouth and even gill slits, the shrimp snips away external parasites and other waste material with a clip of tiny, pincer-like claws called chelipeds. When the job is done, the shrimp beats a hasty retreat, returning to the anemone's protective embrace as the fish resumes its hunt for food.



Small, nearly transparent shrimp clean parasites and other unwanted organic material from an anemone in the waters off the Yucatan Peninsula.

centimeter per hour. Some species prefer to somersault, slide along on their side or assume the shape of a balloon and float away. If they live in a habitat with lots of waterborne sand or shell debris, sea anemones sometimes collect small pieces to form a protective coat that may help ward off predators, dehydration, abrasion or even sunburn.

long with their deceptively floral appearance, sea anemones mimic plants in their ability to reproduce both sexually and asexually. According to the text "Invertebrate Zoology" by Robert D. Barnes, most species of anemones are hermaphroditic (both sexes present), but produce only one type of gamete (sex cell) during any one reproductive period. As do many marine invertebrates, anemones often shed clouds of tiny sperm and eggs (through the mouth) into the sea. Fertilized by chance, the eggs fasten themselves to something firm and soon develop tentacles for feeding. In some types, the larvae develop inside the parent body.

Some species produce asexual clones



(identical copies) by splitting their bodies either longitudinally or horizontally. Still others develop a ring of new tentacles around the middle, with the too section breaking off to create a new individual. Tiny duplicate juveniles also may bud from the parent's stalk, then crawl off and colonize the immediate area. Fully formed offspring can arise even from tiny fragments broken or torn away as an anemone moves from place to place.

Saltwater aquarium enthusiasts count sea anemones among their most prized specimens, a lucky few nurturing individual animals as long as 80 years. Although we no longer think of it as a blend of animal and plant, the sea anemone invites us to imagine what such a remarkable creature might be like.

Janet R. Edwards is a regular contributor to the magazine.

Colorful 1/4-inch creatures known as zoanthid anemones cover various sponges at Stetson Bank (above) about 30 miles northwest of the Flower Gardens.

PANOR

In the September 1990 issue I told you how to create panoramic pictures with a tripod-mounted camera, panning the camera for each succeeding shot. With a little overlap on each frame and some expensive lab work, a print suitable for display could be made from your series of shots.

Another option is to make your series of shots with little or no overlap, have enlargements made, and frame each one individually, creating an impressive panorama by hanging the series with little space between the frames.

Why go to all this trouble? One big reason is that panoramas are impressive. Instead of using either of the above methods, one could purchase a true panorama camera and create superior wide photographs. The trouble was, in years past these cameras started at \$1,500 or so and could cost as much as \$6,000. Most amateur photographers just didn't have that kind of money.

How things have changed. Today, panoramas are available to everyone. Disposable panorama cameras in the \$10 to \$12 range are available at your local grocery, drug, discount or camera store. There are point-and-shoot camera models that can change from standard to panorama at the flip of a switch. And panorama adapters are available for some sophisticated 35mm single-lens-reflex models.

All these methods have two things in

common. First, to obtain panoramic proportions, only one-half inch of the center section of a one by 1½-inch 35mm frame is utilized, yielding a negative or slide ½ inch by 1½ inches for a ratio of three-to-one. Prints will come back from the lab 3½ by 10 inches or four by 12 inches. Of course, larger prints are available.

The second thing common to these amazingly simple ways to create panoramas is the result. The pictures that come out of the disposable cameras are magnificent. And the results are even better from the more expensive point-and-shoot panoramas and the SLRs with panorama adapters.

One thing that makes quality pan-



Photos © Leroy Williamson

ANA

Article and Photos by Leroy Williamson



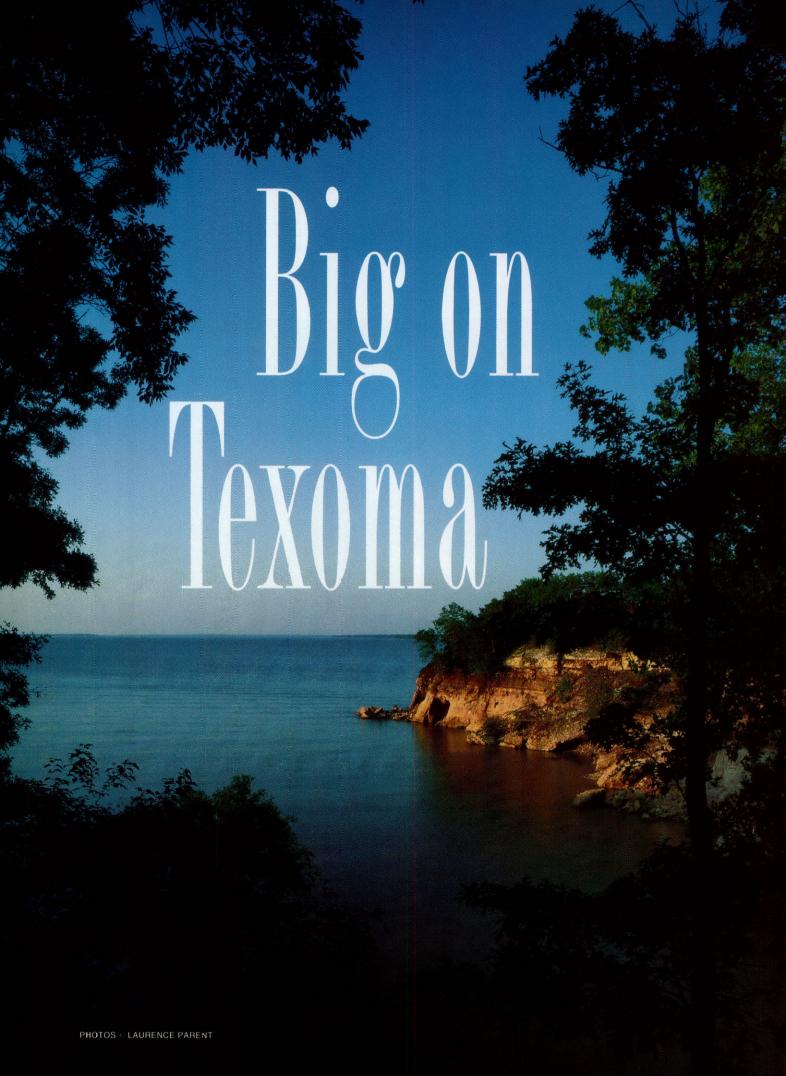
oramic pictures possible from such a small image is recent improvements in film. Film quality has improved so much that grain is difficult to find even in 400-speed films.

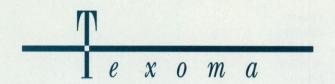
Disposable cameras have no lens choice, but SLR cameras with panorama adapters may have a variety of lenses to choose from. One of the most highly recommended lenses to use with such a setup is a 24mm. However, other interesting compositions and effects can be obtained with other focal lengths, including ultra-telephoto lenses.

The word panorama seems to imply horizontal, and true, most of our panorama compositions will be horizontal. But don't forget, your panorama format camera can be turned to the vertical position for waterfalls, buildings or people. So stretch your imagination and your pictures.

I can hear you now, saying, "Wow, this looks like cinemascope." ★

Leroy Williamson is former chief photographer for Texas Parks & Wildlife magazine. A panorama of the San Gabriel River at Georgetown eliminates much of the sky and foreground and concentrates on the grasses and trees lining the river (left). Black-eyed susans are the center of interest in the stretch photo above. Both photos were made with a Minolta 9x1 equipped with a \$19.95 panorama adapter and a 28-105mm lens. Kodachrome 64 film, auto exposure.





The virtues of this border lake are one thing Texans and Okies can agree on.

lthough an early government publication described the Cross Timbers region of Texas as "uninhabitable to man or beast," today a broad expanse of water beckons boaters, fishermen, hunters, birders, campers and hikers. Lake Texoma, the tenth largest reservoir in the United States, provides a broad range of activities for millions of visitors.

The U. S. Army Corps of Engineers created Lake Texoma in 1944 by building the earth-fill Denison Dam just north of Denison. The impoundment, located on the Texas-Oklahoma border, has 89,000 acres of water surface and a sinuous 580-mile shoreline. The Red River, named for its heavy burden of red silt and clay, is the principal water source, but the Washita River in Oklahoma also makes a significant contribution. The two rivers and numerous creeks drain a watershed of almost 40,000 square miles.

The region has a colorful history. In the 1850s, the Butterfield Overland Stage had several water stops in the area. The Chisolm and Shawnee cattledrive trails crossed the Red River nearby. Colbert's Crossing, located just below the dam, was a busy ford where Indians, Fort Washita soldiers, outlaws, settlers and cattle crossed the Red River. A ferry replaced the ford, and a toll bridge eventually replaced the ferry.

Long before human history began in the Cross Timbers, seas covered what now is North Texas during the Cretaceous Period. The 90-million-year-old rocks those seas deposited are exposed today in bluffs along the lakeshore. Ammonoids and other fossils are plentiful in the rock layers.

"The rocks around the lake are called marl, which is made of interbedded layers of limestone and shale," said Dr. Paul Hudak of the University of North Texas. "The fossil-bearing rocks at Lake Texoma are part of the Washita group of formations."

The 40-mile-long lake meanders through the eastern belt of the Cross Timbers, a gently rolling, north-south band of brush and stunted trees such as blackjack oak, cedar elm, post oak, hackberry and hickory. Unlike the fertile Blackland Prairie soil to the east, Cross Timbers soil is sandy and thin, and sometimes washes away to reveal clay outcroppings and rocks.

In the early days, the Cross Timbers was a major travel and cultural barrier to Indians and settlers alike, despite the determined efforts of both to eradicate it. It was such a formidable obstacle that in 1832 Washington Irving described travel through the Cross Timbers growth as "like struggling through a forest of cast iron." Despite the steady encroachment of modern civilization. much of the tenacious forest still exists.

The Cross Timbers region is habitat for a wide variety of wildlife, such as cottontail rabbits, fox squirrels, opossums, white-tailed deer, skunks and raccoons. Armadillos did not appear in the area until relatively recently, but have thrived ever since migrating north from Mexico. Predators such as bobcats and coyotes stalk smaller animals, but rarely

are seen by the casual observer.

Hagerman National Wildlife Refuge in Texas and Tishomingo National Wildlife Refuge in Oklahoma provide excellent opportunities to view wildlife. The 11,320-acre Hagerman Refuge, which lies on the upper end of the Mineral Creek arm of the lake, was established in 1946, shortly after the lake was created. The refuge contains open water, marshes, upland woods and farmland. The mix provides ideal habitat for many species of waterfowl. Thousands of mallards, pintails, redheads, green-winged and blue-winged teal and many other ducks visit the refuge to winter or rest while migrating in fall and spring. As many as 10,000 to 15,000 Canada geese stop at Hagerman.

In summer, wading birds flock to the shallow marshes. Many songbirds also reside at or pass through the refuge. Even a few bald eagles sometimes appear in winter. In all, more than 300 bird species have been sighted at Hagerman. The Tishomingo Refuge in Oklahoma provides similar habitat on the upper end of the Washita River arm of Lake Texoma. For information about Hagerman call 903-786-2826. For information about Tishomingo call 405-371-2402.

Probably the most popular forms of wildlife found at Lake Texoma live in the reservoir waters. John Moczygemba, a biologist with the Texas Parks and Wildlife Department, has lived and worked at the lake for 21 years. He has watched the fishing opportunities evolve with time.

by Laurence Parent and Patricia Caperton Parent

Photographs by Laurence Parent

Most of the game fish at Texoma were introduced after the lake was impounded. Before the dam was built the Red River was a muddy and sometimes shallow waterway. Native fish included flathead, blue and channel catfish, goldeye, paddlefish, alligator gar and several other species. The lake created a much larger, deeper and cooler body of water that allowed other fish species to survive.

"Striped bass are the most popular and successful game fish at Lake Texoma," says Moczygemba. "I've watched them turn into a major game fish since the Oklahoma Department of Wildlife Conservation introduced them in the late 1960s and early 1970s."

ater flowing into Lake
Texoma from the Red
and Washita Rivers is
relatively saline, allowing striped bass, a
saltwater fish, to reproduce. The lake
record striper, caught in 1984, weighed
35 pounds, two ounces.

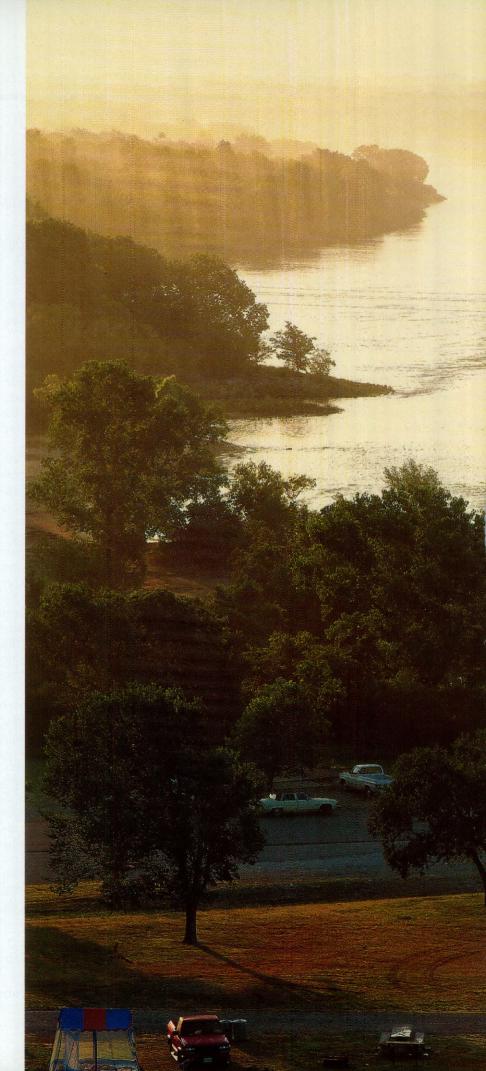
Although they are not beavily febed

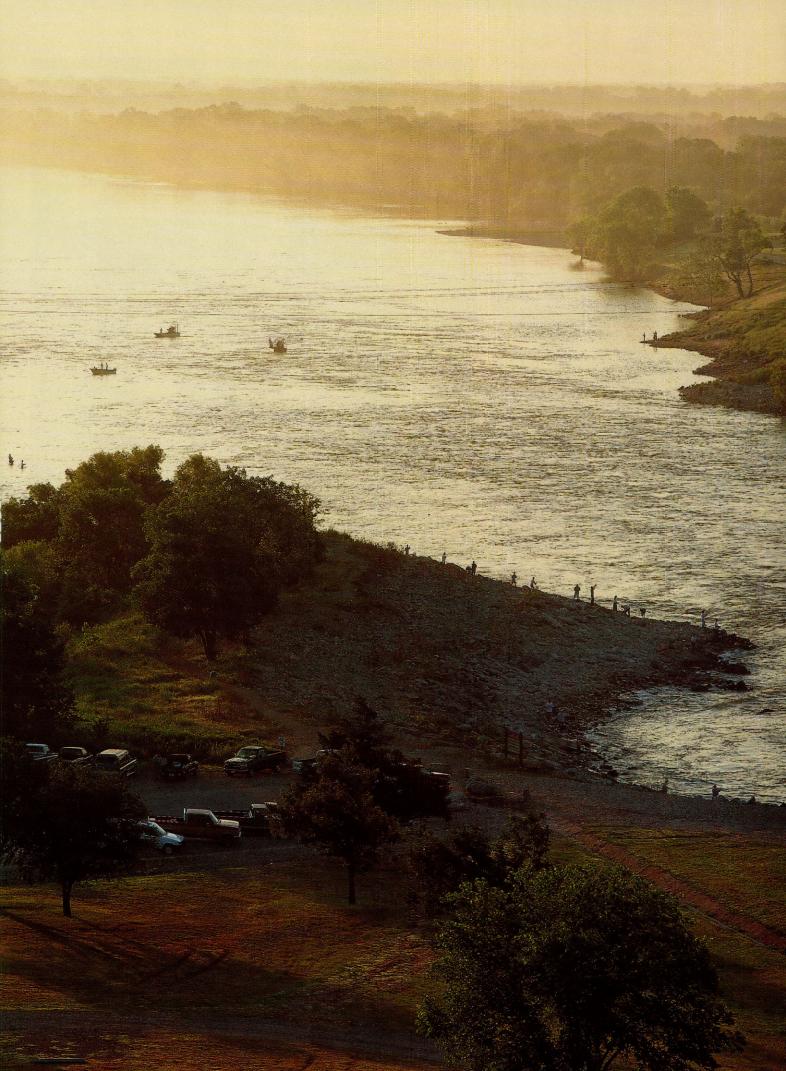
Although they are not heavily fished, large catfish lurk deep in the waters of the lake. In 1985, an angler pulled a record 116-pound blue catfish from the

Fishing guides Yarri and Wendy Schreibvogel spend most of their time helping anglers find striped bass in the lake. But on their own time they like to fish for smallmouth bass, a species introduced by the Texas Parks and Wildlife Department in 1981-1983. Smallmouths favor rocky habitat such as that found under the limestone bluffs at Eisenhower State Park. Although the Texas record smallmouth was caught at Lake Whitney, the Oklahoma record of six pounds, eight ounces was caught at Lake Texoma.

"The smallmouth bass fishing is probably the best I've seen since I've been here," said Yarri Schreibvogel. He and his wife have been guiding at Texoma for 12 years, long enough to have some stories to tell. Besides the

At right is a view of the Red River below Denison Dam, an area long known for its excellent fishing for striped bass and other species.





EISENHOWER STATE PARK

Eisenhower State Park is named for President Dwight David Eisenhower, who was born in Denisor in 1890. The park is located one mile west of the south end of Denison Dam. Within the 457-acre park are four wooded campgrounds perched on bluffs overlooking the lake. Groups can take advantage of screened shelters, a dining pavilion and a recreation hall complete with heating, air conditioning and cooking facilities.

A swimming area in a protected cove with a sandy bottom provides relief from the summer sun. Anglers can test their skill at four fishing piers (one lighted) located within the park. Hikers enjoy exploring a 4.2-mile hiking trail that winds along the bluffs and through the campgrounds. Views of the lake refresh the hiker at several points.

Eisennower Yacht Club, a concession within the park, offers a full-service marina and 450 boat slips. Visitors bringing a boat can use the boat ramp in the park.

For more information or reservations, call 903-465-1956 or write Eisenhower State Park, Route 2, Box 50K, Denison, Texas 75020.

usual fish stories, they talk most often about the violent weather that sometimes strikes the lake.

"I've seen tornadoes skip across Texoma and lightning hit the water and bounce over to the bank," said Yarri. "With all the open water on this large a lake the waves can get 10 feet high in a storm. If you're down in a trough between the waves, you can't see shore. I've also seen it rain so hard that you're blinded."



Other fish caught at Lake Texoma include largemouth bass, spotted bass, white bass and white and black crappie. The fishing variety is reflected by lake records for 15 species of fish.

Land bordering the lake provides plenty of opportunity for the hunter as well, with more than 80,000 acres available for public hunting. Many species of waterfowl winter in and around the reservoir. White-tailed deer are numerous in some areas, but the most abundant game include quail, mourning doves, squirrels and rabbits.

Boaters find plenty of space at Lake Texoma. Sailboats glide across the lake,

propelled by the frequent North Texas breezes. Powerboats zip over the expansive waters, often towing skiers. Jet skiers crash through boat wakes, creating plumes of spray. The mild climate allows a long season for water sports, with various lake events and competitions attracting visitors. Several large marinas provide slips for boats permanently moored in the lake, some of which approach 60 feet in length. Multiple public and private boat ramps make the lake easily accessible for launching boats brought from elsewhere.

For campers, there are more than 50 campgrounds scattered around the

lakeshore. Two state parks, Eisenhower State Park in Texas (see accompanying article) and Lake Texoma State Park in Oklahoma, attract thousands every year. Both have boat ramps, showers and group facilities, among many other amenities. The Corps of Engineers also provides many camping areas on the lake, including some with boat ramps and showers. Juniper Point, with wooded campsites perched on rocky ledges overlooking the lake, is one of the most popular. Call 903-465-4990 for Corps of Engineers information, and 405-564-2566 for Lake Texoma State Park in Oklahoma. Many private campgrounds also are available, with facilities for recreational vehicles and

tent campers alike.

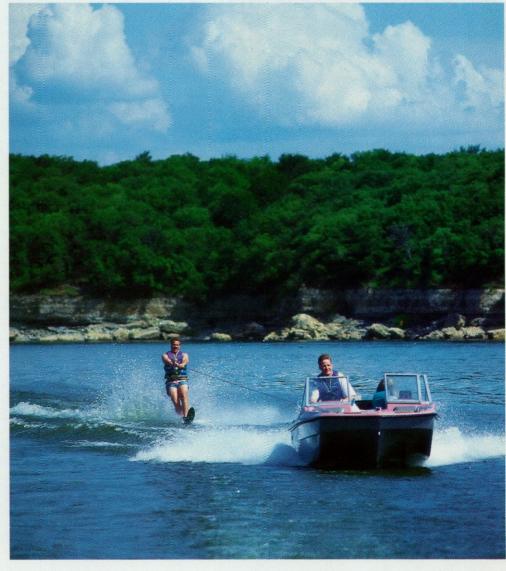
Hikers enjoy two trails along the Texas shores. A four-mile trail winds through hills and rocky bluffs at Eisenhower State Park. The Corps of Engineers built the 14-mile Cross Timbers Trail in 1969. The path begins at the western side of the Juniper Point Campground near the Willis Bridge on Highway 377 and ends at Rock Creek Camp. The trail climbs up and down bluffs along the lakeshore, making some stretches of the trail relatively strenuous. Alternate trailheads at Cedar Bayou, Paw Paw Creek resort and Paw Paw Point make short hikes possible. Primitive campsites between Cedar Bayou and Paw Paw Creek resort attract backpackers to the wildest part of the route. The trail passes through dense thickets of oak, cedar elm and other trees and shrubs, giving a feel of the original Cross Timbers terrain. Poison ivy thrives on the hilly, wooded slopes, so hikers should take care to avoid it.

From hiking to boating, Lake Texoma offers all kinds of outdoor activities. An 1834 government map designated the Cross Timbers as the "western boundary of habitable land." No longer hostile territory, the rolling hills and sparkling reservoir attract millions of visitors every year.

Laurence Parent is a regular contributor to the magazine. Patricia Caperton Parent teaches at Southwest Texas State University. This is her first contribution to the magazine.



Hiking at Eisenhower State Park (opposite page) and water-skiing on the lake (below) are popular pastimes at Lake Texoma.



Texoma Small mouths

Decade of stocking pays off for anglers



Smallmouth bass (above) are among the sportiest game fish in Texas waters. Lake Texoma's rocky shoreline areas (opposite page) are just the kind of habitat preferred by smallmouths, which are not native to the state.

s the morning sun peeks over Armadillo Hill on the eastern side of Eisenhower State Park, a lone boat slowly makes its way across Eisenhower Bay toward open water. Still some 100 yards inside the bay, the outboard motor stops and the boat, pushed by a gentle breeze, drifts along parallel to the shore. When the boat is about 60 feet from the still-shaded eastern shoreline, where a shallow rock shelf extends 15 feet into the cove, the angler

casts a topwater lure.

With a solid plop the lure hits the water's surface about a foot from the bank. All is quiet as the last ripples fade into the rocky shoreline. After a couple of minutes the angler slowly raises the rod tip just enough to give a slight twitch to the motionless bait. In the next instant the water under the lure explodes and a bronze flash engulfs the bait and heads for deep water. Feeling pressure from the line and the bite of steel hooks, the fish shoots to the surface in an attempt to rid itself of this source of irritation that, only seconds before, looked like a frog, a wounded baitfish or an insect. In a frenzied effort to shake the lure the fish tail-walks across the water. Such is smallmouth bass

fishing at Lake Texoma.

This kind of experience would not have been possible a couple of decades ago, because the smallmouth bass is not a Texas native. Its natural range extends from Canada to the southeastern U.S. In fact, the only naturally occurring smallmouths anywhere near Texas are in a few northeastern Oklahoma streams. Fortunately for Texas anglers, efforts by the Texas Parks and Wildlife Department to introduce the northern imports have been successful in a number of Texas lakes and streams. One of the biggest smallmouth success stories is 89,000-acre Lake Texoma on the Texas-Oklahoma border.

First introduced to Texas in 1916, smallmouth bass were reared in department fish hatcheries beginning in 1974. Early stocking efforts relied upon fish from streams in northern Arkansas. These efforts were marginally successful and it was not until Texas hatcheries began to use a strain of brood fish adapted to southern reservoirs that any measure of success was noted. Brood fish used to produce fingerlings for Lake Texoma were collected by biologists using electrofishing equipment in Center Hill Reservoir in Tennessee.

Article by Bruce Hysmith and John Moczygemba Photos by Grady Allen

Biologists identified a niche for this nonnative species after studying the results of a comprehensive fisheries survey of Lake Texoma in 1978. Not only did they note an abundance of bait fishes such as shad, sunfishes and minnows, they also noted a sizable population of crawfish, a preferred food for smallmouths. The reservoir also had excellent habitat for smallmouth bass, with miles of rocky shoreline and many acres of shoals and shallow gravel beds.

Smallmouth bass were first stocked at Texoma in 1981 by the TPWD. With the encouragement of the late Bob Kemp, former Fisheries Division director and frequent visitor to Lake Texoma, Texas's entire hatchery production of one million small mouth bass fingerlings was consigned to Lake Texoma in 1981, 1982 and 1983. Since then they have claimed a place among the most popular sport fishes in the lake.

In 1982 department biologists began electrofishing surveys to track the progress of this developing fishery. Results were slow, but by 1987 significant numbers of smallmouths began showing up. Texas and Oklahoma biologists joined forces in 1988 to obtain as much information as possible on small mouths in Texoma. Their efforts paid off with samples showing a tenfold increase in numbers since 1982. A natural spawn occurred in 1985 and has occurred each spring since then. The growth rates of individual smallmouth bass in Lake Texoma is slow the first year, but thereafter is much faster than that of smallmouths in other reservoir populations throughout their range.

Smallmouths have had a measurable impact on recreational angling at Lake Texoma. Creel surveys since 1987 have shown a 100 percent increase in the perhour catch rate of smallmouth bass; by 1989 the number of angler-hours spent fishing for them almost quadrupled. The first lake record smallmouth (two pounds, four ounces) was caught by Steve Baugh of Denison, Texas in 1984. Since then the lake record has been broken 12 times. The Oklahoma state record for smallmouth bass has been broken three times by fish from Lake Texoma. In 1988, Tommy Hitchcock of Durant, Oklahoma first broke the record with a six-pound, five-ounce fish. In 1989 the record again was broken by a six-pound, 13.5-ounce smallmouth

caught by Steven Mills of Denton. Finally, in 1990, Steve Bruton of Broken Bow, Oklahoma, caught a six-pound, 14.7-ounce smallmouth that is the current state record in Oklahoma and the largest smallmouth caught at Lake Texoma.

Some of the best areas to fish for smallmouths on Lake Texoma include the bluffs from Navigation Point, along Eisenhower State Park to the dam and north along the dam. The Willow Springs area has produced some of the biggest smallmouths for biologists during routine electrofishing surveys. This area has a history of producing big smallmouths for anglers as well. In general, smallmouths can be found from Willow Springs in the Washita River Arm to the west end of the islands near Mill Creek in the Red River Arm. They prefer rocky or gravel shorelines and sandy points or beaches with submerged structure, such as large rocks, stumps, brush or logs. During most of the year this structure is visible in depths to five or six feet.

Smallmouths hit a variety of baits depending on the season, and sometimes for no reason at all. Crawfish usually are active in the summer and fall; therefore, live crawfish and crawfish-pattern artificial lures pay off during these seasons. On overcast days cast the lure close to the shoreline and retrieve it along the bottom, generally in five to 10 feet of water. On bright midsummer days locate submerged structure such as rock piles, stumps or points, and use deep-diving crawfish-colored crank baits. Chartreuse, red and orange crank baits and chartreuse/black, chartreuse/blue, orange/brown, and black/ orange jig and pork rind baits work well in the winter and early spring. This type of lure should be fished around the bluffs or along the dam by casting toward shore and retrieving it slowly along the bottom, and bouncing it off submerged rocks. Stumps, logs and other submerged structures on sandy points and beaches should be fished with spinner baits and topwater baits in the spring and early summer.

In addition to smallmouths, Lake Texoma is home to excellent populations of two species of native black basses, largemouth and spotted bass.

PHOTOS @ GRADY ALLEN

Bruce Hysmith and John Moczygemba are fishery biologists with the Texas Parks and Wildlife Department.

lexoma Stripers Bait 'em, jig 'em, spoon 'em

long the rocky cliffs and across the deep open water of Lake Texoma's 89,000 acres, the pursuit of Morone saxatilis—the striped bass—has become a year-round passion for a growing number of anglers.

Pursuing stripers across this huge lake and its tailwaters are anglers drifting live shad from anchored boats, trolling artificials, throwing six-inch-long plugs with surf rods or flycasting with popping bugs. From spring through summer, sometimes as many as 300 boats begin lining up at daybreak near Denison Dam, ready to give chase as the fish make their daily run down "striper alley." Past boulder-strewn shorelines and grandly landscaped lake retreats, the striper hunters play leapfrog with the fast-moving fish.

"You drop one of those big Hopkins spoons overboard and a striper often will nail it before it gets down," said veteran Texoma guide Polly Polishuk.

With an armada of outboards chasing stripers, the behavior of the anglers sometimes is more frenzied than the fish. "One time I had to crawl into another boat to get to my fish," Polishuk recalled. "The guy in the other boat never even looked up and still doesn't know it."

As the sun gets higher, anglers and guides move into the open water, looking for fish feeding on the surface. Others drop anchor and fish with live bait, using electronic fish finders to locate deeper schooling fish.

Guide Bill Campbell, a five-year veteran on Texoma, prefers the live bait approach. "I don't care to have a bunch of people in my boat all throwing lures at the same time," he said.

Dropping rigs baited with live gizzard shad straight down into the depths of Texoma gives younger and less skilled fishermen a chance to catch a trophysize striper, Campbell said. He noted a recent trip in which a youngster caught an 11¹/₂ pounder. "Now that kid is a fisherman for life," he said.

Other anglers live for the savage strike that comes on artificial lures. Whether it's plastic swimming minnow lures, heavy slab spoons, jigs or topwater plugs, Texoma stripers are accommodating.

Dallas angler Norm Goheen is among a small but dedicated group of flyfishers who have taken lake stripers on fly tackle. Light tackle, topwater action with surface plugs or flies is one of the most exciting ways to fish Texoma in the spring and fall, said Polishuk.

Beginning in September and continuing through fall, the swarming presence of seagulls and other birds is an easy tipoff to stripers attacking baitfish on the surface. This is the time of year when topwater plugs bring explosive strikes. "All you have to do is find some birds flying and it's automatic fish," said

> Article by Phil Shook Photos by David J. Sams

one guide. "I tell my clients that if you can't catch fish around the birds, I'll pay

During the winter when the fish are lying deeper, a jig is the lure of choice. "The fish are lying on the bottom and you have to aggravate them to get them to hit," Polishuk said. He said the fish will only tap a lure the first time it passes by. "When a big striper gets mad, it will flat tear that jig apart."

While the seasons change and angling techniques vary, fishermen continue to enjoy an amazing level of success with Lake Texoma stripers.

According to Texas Parks and Wildlife Department data, 398,170 anglers harvested 973,188 striped bass at Texoma in 1991 with 146,076, or 15 percent, of those fish 20 inches or longer. The 1991 harvest figure, the most recent available, hit a five-year high, topping the 970,817 fish caught in 1988. The striper catch has grown steadily during the last five years from .46 fish per hour to .73 fish per hour.

But while the catch rate per hour has increased significantly over that period, the number of larger fish—20 inches and longer—has declined from a peak of .19 per hour in 1987 to .11 per hour

in 1991.

The data suggest that stripers are reproducing in such prolific numbers at Texoma that heavy fishing pressure and the present generous bag limit of 15 fish per day for fish under 20 inches is not depleting the resource.



The data also suggest that even with a limit of only one per day for fish cf 20 inches or more, fewer and fewer stripers are living long enough to grow to "trophy" proportions.

Phil Durocher, director of Inland Fisheries for TPWD, said there is some concern about the population of big striped bass at Texoma. "It's no secret what it takes to raise big fish," Durocher said. "They have to live long enough."

With the level of fishing pressure at Texoma, Durocher said the chances of a striper surviving long enough to attain large size are slim. He said there is nothing the department can do to make the fish larger on Texoma. "We have about as restrictive a regulation as possible, allowing only one fish over 20 inches. The next step would be no fish

over 20 inches and I know (anglers) are not going to buy that."

What the lake does have going for it is lots of stripers. Curiously, at Texoma the large numbers of predator fish combined with the heavy angling pressure have created an ideal environment for recreational fishing.

Durocher said there is potential at Lake Texoma for the predator population to reach its maximum level or above. resulting in declines in forage fish, a healthy situation for fishing. "That is what we would like to have on all our lakes because we can always adjust the regulations to let people keep more fish," he said.

Striped bass, whose sea-run range stretches from Maine to Florida on the East Coast and from Washington to

Lake Texoma's saline waters support a reproducing population of striped bass (above). Stripers' popularity is partly due to the fact that they can be caught with a variety of gear, including flyfishing.

California on the West Coast, have thrived in a number of freshwater impoundments across the country since the species first proved to be self-sustaining at the Santee-Cooper Reservoir system in South Carolina.

Bruce Hysmith, management biologist for TPWD at the Lake Texoma Fisheries Station, said that at the time the department sent crews to get Santee-Cooper stripers in the mid-1960s for introduction into Texoma, it wasn't certain the fish would reproduce and thrive in Texas. Hysmith said it was in 1974, nine years after stripers were stocked at Texoma, that natural repro-

The Red River Striper

Armed with 12-foot surf rods, early arrivals to the Red River below Denison Dam climb the steps to a small fenced platform and fling big pencil popper lures into the boiling current below.

An angler braces for an explosive strike as he teases the plug across the current and into a section of slack, eddying water. On this day, the stripers are running from five to 20 pounds.

For a solid month, water has been released through the floodgates, dumping stripers and baitfish into the river,

creating a fishing bonanza.

"Slide to the right," says a caster who is next in line as he prepares to make a throw across the current toward a retaining wall 100 yards distant. Other anglers who still are retrieving lures dutifully move down to make room. On this late spring day, it doesn't take long before a rod bends and someone shouts, "Fish on."

The ground rules then call for everyone to make room so the lucky angler can work his way down the steps and beach his catch along the rocky shoreline below.

The wall at Denison Dam is no place for the timid. Newcomers slow to react to the signals get yelled at until they learn the drill. When the action is hot it is well worth the effort.

"This is a good time to fish, when the flood gates are open and the baitfish are up here with a lot of big stripers," said Phil Walbeck of Dallas as he struggled with a fish he estimated would scale 12 pounds.

Across the river on the Oklahoma side, river outfitter and guide Harold Speed and his assistants were loading clients into airboats to fish the river. Some of them would travel downstream as much as 20 miles to fish the deep holes off the rocky shoals. Others would make the short run upriver where they would tie their boats to an overhead cable just below the dam, the farthest upstream point that boats are allowed to travel.

From the broad-beamed airboats, anglers drifted live shad downstream in the heavy current, getting strikes or hookups on almost every cast. The larger shad were taking stripers up to 20 pounds and there was little difficulty in getting five fish—the limit on the river—in less than an hour.

The roar of the water pounding over the spillway and the frenzied striper action was in sharp contrast to the calm and flat surface of Lake Texoma just on the other side of the dam.

As in other recent springs, heavy rains temporarily muddied the water on the lake and slowed striper fishing. But as always, the lake fishing was expected to heat up as soon as water levels subsided.

On the Red River below the dam it was a different story. For days this stretch of river had been full of stripers moving upriver to feast on the large numbers of gizzard shad being funneled into the narrow waterway.

At dusk the schooling stripers provide exciting action for flyfishers casting streamers from the bank.

The tailwater striper fishing is an example of the diversity offered anglers visiting Lake Texoma and the Red River.

The river below the dam is an exciting option for anglers seeking trophy stripers, said Bruce Hysmith, management biologist for the Texas Parks and Wildlife Department's Lake Texoma Fisheries Station. He says he has verified a 41-pound striper taken from the river, which he said is much larger than any caught on the lake.

When the river is at low levels, Speed, who operates his airboat charters out of Dave's Ski and Tackle in Denison, also takes flyfishers downstream to cast for stripers in the deeper holes.

Speed said his clients have caught 70 stripers weighing more than 30 pounds

during the past two years.

duction was observed on a wide scale. "The original strategy was not for a self-sustaining fishery," Hysmith said. "It was envisioned as put, grow and take but it just happened that it took hold."

The fish adapted to Texoma's large size, relatively high salinity and favor-

able spawning habitat.

In 1967, anglers were limited to one striper per day with no size limitations. The bag limit gradually has been increased since then. In 1982, the daily limit was raised from five to 15 fish per day, five of which could be more than 20 inches.

In 1989, after observing data that indicated an overharvest of big fish by anglers, the daily bag limit on fish of more than 20 inches was reduced to one. Hysmith said the daily bag limit was kept at 15 because of excellent reproduction in the lake.

TPWD biologists monitor the fishery through gill netting each February, and they conduct creel checks with anglers throughout the year. The department has 15 check stations set up from the upper Red River to the upper Washita River arm.

TPWD also pools its data with ongoing research projects conducted by the Oklahoma Department of Wildlife Conservation.

One of the most widely debated issues among anglers, guides and biologists is the use of live bait on the lake and what it might be doing to the larger stripers. Creel data indicate that anglers who use live bait, regardless of season, are about three times more successful than those using artificials, Hysmith said. Live bait anglers are extremely efficient in targeting the larger fish by using gizzard shad that are five to eight

inches long. "They are not likely to catch the little fish with that fishing style," he said.

Another concern with live bait fishing is the condition of fish returned to the water. Hysmith said studies have shown that six of every 10 stripers caught on live bait do not survive after release, compared to four of every 10 caught on artificials.

The use of live bait such as gizzard shad, which are thought to emit an odor that serves as a strong attractant for stripers, was recently reviewed and continues to be allowed on Texoma. However, the practice of chumming—the use of fish or fish parts to attract stripers—recently was banned on the lake.

Hysmith said TPWD will continue to monitor the live bait issue along with any other practices that could have an



Boats gang up in "striper alley" near the dam to intercept schools of feeding striped and white bass. The economic impact of striper fishing at Lake Texoma is estimated to be in the millions of dollars annually.

impact on the Texoma striper fishery.

At stake is the continued high quality of an exceptional recreational fishery that, according to an Oklahoma State University study, attracted almost \$26 million in annual revenue for the smalltown economies along the Texas-Oklahoma border 75 miles north of Dallas. According to the study, striped bass fishing was linked to almost \$23 million of that expenditure.

Motel and tackle shop operators say fishing license records indicate the regular visitors from Texas and Oklahoma are being joined with more frequency by out-of-state anglers, including some from as far away as Alaska, New York and California.

To meet the needs of visiting anglers, Jim Dunkle, owner of the Tackle Box, a fishing and boating equipment store in Pottsboro, has expanded his facility from a 14-foot by 25-foot shop in 1984 to a 2,400-square-foot store with \$170,000 in inventory.

In addition to the stripers, Durkle said largemouth and smallmouth bass and catfish also have a strong following at Texoma. He estimates there are now more than 150 fishing guides on the

Ron Ivey, a motel operator in nearby Fink, said he has seen business grow by as much as 50 percent in recent years because of striper fishing. "We have guides coming from other lakes, giving up their own lakes because the striper fishing is so good here," he said.

Phil Shook is a Houston-based outdoor writer.

Texoma Fishing License Rules Better read the fine print

Anglers planning to sample Lake Texoma's considerable fishing opportunities should be aware that fishing regulations and license requirements are a bit more complicated on the Texas-Cklahoma border reservoir than on reservoirs entirely within Texas.

Texas Parks and Wildlife Department officials point out that Texas residents with resident fishing or combination hunting/fishing licenses can legally fish only waters on the Texas side of the reservoir. However, a special \$7.50 Lake Texoma Fishing License enables the holder to fish anywhere on the lake proper. Unlike other Texas fishing licenses, the Texoma license expires on December 31 each year instead of August 31.

Below Denison Dam on the Red River, Texas residents holding a Texas fishing license may fish from the bank on the south (Texas) side of the river between the dam and Shawnee Creek. a distance of a half-mile or less, according to Bruce Hysmith, TPWD fishery biclogist at Denison. However, to fish from a boat in the river, or from the bank on the north side, an Oklahoma

fishing license is required. The special Lake Texoma fishing license is not valid in the Red River below the dam.

On the lake proper, bag and length limits for sportfish species vary between the two states, except for black (largemouth, smallmouth and spotted) basses and striped bass. The daily limit for black bass throughout the lake is five in the aggregate, with a 14-inch minimum length limit. The striped bass limit is 15 per day with no minimum length limit, except that no more than one striper 20 inches or more may be retained each day. Chumming with fish or fish parts that are not attached to a hook and line is prohibited in Lake Texoma effective September 1, 1993.

Below the dam, there are variations between the two states' bag and length limits on virtually all species of fish.

Prospective Texoma anglers are advised to write, call or visit the TPWD's Lake Texoma Fisheries Station, Route 4, Box 157, Denison, Texas 75020, 903-786-2389. Station personnel have a variety of literature, including complete Texas and Oklahoma fishing regulations and fishing advice for visitors.

Anderson's Fanthorp Inn served 19th-century travelers

by Mary-Love Bigony

he horses' hooves beat a hypnotic *clip-dop* against the hard ground as the coach rocks gently from side to side. Gradually the welcome sight of an inn comes into view, and at the driver's signal the horses slow their gait. The stagecoach stops and one by one the weary, dusty passengers step down into the cool of an early fall evening. Golden flames from the fireplace glow softly through the inn's windowpanes and the aroma of cooking food drifts from a nearby outdoor kitchen.

Scenes such as this were repeated time after time during the heyday of stagecoach travel in Texas in the mid-19th century. Originally developed for the Post Office to carry mail, stage-coaches soon were being used for public transportation. Stage routes covered thousands of miles in Texas and way-side inns offered travelers hot meals and shelter for the night.

One of those inns belonged to Henry Fanthorp, a British immigrant who came to Texas in the 1830s. In 1834, he built a double-pen log house in the rolling hills of the Blackland Prairies. Over the next three decades Fanthorp became a leader in what would become the town of Anderson, founding the Masonic Lodge in 1842 that still meets today and serving as a school trustee. He provided meeting places for the Methodist Church, founded in 1839, and the Baptist Church, founded in 1844. In 1846 Fanthorp led a successful campaign to have Anderson named the county seat of Grimes County, donating land for

the courthouse and inviting voters to a dinner at the site.

The home where Henry Fanthorp lived with his wife Rachel and their children was beside a heavily traveled road and people passing through often stopped there, more or less forcing Fanthorp into the innkeeping business. Sam Houston's name appears on the guest register of Fanthorp's, as it came to be called, and legend has it that Robert E. Lee, Jefferson Davis and U.S. Grant stayed there as well. Fanthorp added the dining ell in the 1850s to accommodate the increasing number of travelers passing through Anderson, and the inn became a gathering place for the community as well as a stopping place for travelers.

Today Fanthorp Inn looks much as it did to travelers passing through Grimes County in the 1850s. Now a state historical park, the inn has been meticulously restored and furnished to allow 20th-century visitors to step into the past. And visitors to Fanthorp Inn not only can step into the past, twice a month they can ride into it in a Concord stagecoach that is a replica of the coaches that once stopped at Fanthorp's.

Superintendent Jo Frances Greenlaw and an enthusiastic and talented cadre of volunteers introduce park visitors to

> Bride Diana Deeter rode from Fanthorp Inn to her wedding in a stagecoach much like the ones that stopped in Anderson during the 1850s. Stage driver Herb Campbell (pictured) offers rides on alternate Saturdays.

conditions facing travelers on the Texas frontier. "We are unique because this is an authentic stagecoach inn on its original site being shown as it was used in the 1850s," said Greenlaw. "It's not adaptive, it's not a restaurant, it's not a bed and breakfast. It is restored to almost



totally original condition."

The largest room in the inn-indeed in the town of Anderson in the 1850sis the dining room where travelers and boarders ate and townspeople danced to the music of a fiddler. As the stagecoach approached, slaves carried food from the outdoor kitchen into the dining room. Minutes later the dinner bell rang and travelers, boarders and guests rushed through the door, found a place at the table and piled their plates with pork, eggs, grits, cornbread and molasses. Coffee and salt were among the few foods Fanthorp bought; he raised much of the food on his property. Travelers who had to be back on the stagecoach when it left had only about 10 minutes to bolt down their meal.

After dinner, travelers staying the night might wander into the parlor to visit with Henry Fanthorp. Part of the original log house, the parlor was a gathering place for the community as well as for travelers. Anderson residents voted there during the decade of the Republic of Texas. Townspeople caught up on the news by visiting with travelers and reading newspapers delivered to the inn. And with two stage stands across the road from Fanthorp's, the parlor offered a convenient place to wait for the mail.

Travelers staying overnight carried their trunks or carpetbags up the steep stairs by candlelight to room No. 7. Traveling men shared this room. Few women traveled in frontier Texas, but the occasional woman who arrived at Fanthorp's stayed in one of the rooms down the hall. For \$1.50 a night a man could get two meals, stabling and food for his horse and a sleeping space in room No. 7. Beds had ticking mattresses stuffed with hay, corn shucks, feathers or Spanish moss. Travelers slept two or more to a bed, with later arrivals bedding down on the floor, lying on hides or on their saddlebags and blankets. People wandered in and out all night looking for candles or blankets, or holding a candle to the sleeper's face to see who he was. Bedbugs plagued the travelers, as did fleas and lice. Efforts to eradicate the pests by smoking the walls and rooms were temporarily successful at best.

Early the next morning in the predawn darkness, travelers washed up at the common wash area outside room No. 7 before continuing their journey. Knowledge of personal hygiene and its connection to health was still half a century away, and inn guests shared a towel, basin, cup and comb.

Down the hall from the travelers' bedroom were six, eight-foot-square rooms that Henry Fanthorp reserved for paying boarders and women travelers. Settlers flocked to Texas following its annexation to the United States in 1846, and some of them rented a room

at Fanthorp's for \$10.33 a month while they worked to accumulate enough money to build a home. Shopkeeper Amos Beardsley and his wife Jane lived at the inn with their two sons—who considered inn life quite an adventure-for a year and a half before building his own home. Stonemason William Taylor, who built Fanthorp Inn's stone cistern and dining room fireplace, rented a room from Henry Fanthorp. Records show that six stagecoach drivers lived at the inn and were listed on the 1860 census rolls.

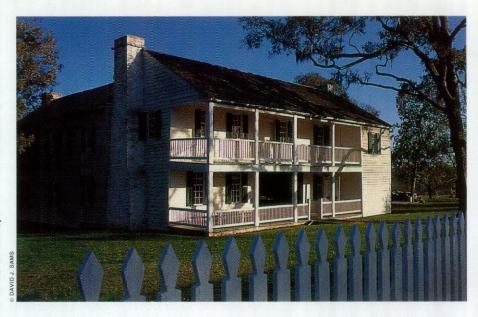
Fanthorp Inn today looks frozen in time from the 1850s. Visitors walk on the same pine plank floors in the dining room where inn guests danced to fiddle music almost a century and a half ago. The glass panes in the windows are original, too, as are the mantel and fireplace. Hungry 19th-century travelers could have just stepped away from the table in mid-meal, thanks to realistic food items created by Texas Parks and Wildlife artists. Furniture in the dining room, including cowhideseat chairs, is typical of items found in Texas during the mid-19th cen-



tury. Shards excavated at the site showed that the Fanthorps used Staffordshire dishes and lacy Sandwich glass cup plates like those on the table. Staffordshire dishes were manufactured in England in the 1840s, and Sandwich glass came from Sandwich, Massachusetts in the 1840s and 1850s.

Checkers, dominoes and a card game are in progress in the parlor, with a traveler's carpetbag resting near one of the chairs. The mantel clock belonged to the Fanthorps, as did the American Empire style gaming table. The parlor and the Fanthorp bedroom across the dogtrot made up the original log house built in 1834. The bedroom has the original pine floors, windowpanes, fireplace, hearthstone and mantel. Fanthorp belongings on display in the bedroom include two wardrobes, a pine washstand, a Masonic ceremonial sword and a walking stick with an engraved silver handle dated January 1, 1853.

Upstairs, room No. 7 looks as though the men who slept there have just tossed the covers aside and continued on their journey. Three quarter-size pine beds built between 1855 and 1870 are typical of Texas furniture of the era, although not original to Fanthorp Inn. The common wash area outside room No. 7 has a pitcher and bowl, a twill cotton towel, tin cup, horn comb, gourd dipper and tin basin. Three of the boarders' rooms are furnished and on display, with a woman and her children represented in room No. 6.



Outside, across a shady lawn where park visitors may picnic, is a barn that houses the stagecoach replica. Built by J. Brown of Weatherford, the coach is a reproduction of the Abbott & Downing stagecoaches built in Concord, New Hampshire, between 1840 and 1850. "The builder acquired an original Concord coach body," said Greenlaw, "made a form of that original body and cast the reproduction with fiberglass. So ours is an authentic reproduction with the authentic specifications. The size is exact—a nine-passenger Concord coach. Fiberglass makes it lighter and ball bearings in the wheels make it easier to pull." The coach's glossy finish, interior upholstery and carpeting give it the look of a new stage coach upon its arrival in Texas in the 1850s.

Fanthorp Inn looks much as it did to travelers passing through Grimes
County in the 19th century. The parlor (below right) is one of several rooms open to the public. The clock and American Empire gaming table (with domino game) belonged to the Fanthorps. The parlor, like other rooms in the inn, has its original windowpanes.

The coach is always on display in the barn, but every other Saturday afternoon inn visitors can ride in it for a unique sense of what stagecoach travel was like. Area resident Herb Campbell drives the coach, which is pulled by his two black Percheron horses, Dolly and Molly. Under gentle coaxing from Campbell, the two draft horses trotalong the streets of the quaint town of Anderson. The 10- to 15-minute ride wends down the old stage roads of the 1850s, or occasionally around the brick courthouse. Fare is \$5 for adults and \$3 for children under 12 years old. Rides normally take place between 1 p.m. and 4 p.m. on alternate Saturdays. Call the park for more information.

Fanthorp's stagecoach has captured the fancy of the community. Last February the coach made an eight-hour, 17-mile journey from Anderson to Washington-on-the-Brazos carrying passengers and mail, just as in the 1800s. The letters bore a special one-day stage-coach cancellation from Anderson. In April, Arkansas residents Bryan Hale and Diana Deeter chose Anderson as the site for their wedding. The stage-coach delivered the bride to the church and carried the newlyweds back to the



Farthorp Inn is located on the south end of Main Street in the town of Anderson in Grimes County, approximately 70 miles northwest of Houston. It is open Wednesday through Sunday from 9 a.m. to noon and 1 p.m. to 4 p.m. Admission is \$3 for adults and \$1.50 for children.

Stagecoach rides usual vare available or alternate Saturdays from 1 p.m. to 4 p.m. The fare is \$5 for adults and \$3 for children under 12.

For more information call 409-873-2633.

Fanthorp Inn for the reception.

Adjacent to the inn is the family cemetery where Henry and Rachel Fanthorp are buried. Both contracted yellow fever in 1867. He died on October 31 and she died two days later. The Fanthorp children and grandchildren are buried there: Sarah Elizabeth, who died in 1844 at the age of two; John Henry, who died in 1863; Mary Ann Fanthorp Stone, who died in 1901; and the five children of Mary Ann and William Stone. Also buried there is Kenneth L. Anderson. last vice president of the Republic of Texas who died at Fanthorp Inn in 1845. The town of Anderson was named in his honor. Fanthorp descendants still use the cemetery.

Today Fanthorp Inn rings with the sights and sounds of antebellum Texas, thanks to volunteers who contribute their time and talents to introduce park visitors to 19th-century skills. On any given day, dulcimer music may float across the grassy lawn, and volunteer Jo Higginbotham offers dulcimer lessons. Basket makers or weavers might be practicing their crafts, and other demonstrations can include shingle-making,

quilting or log-hewing.

Greenlaw enjoys working with schools to develop special programs to meet their Texas history interests. "Henry's Wake," a history program for high school students, offered an interpretation of the yellow fever epidemic of 1867 and burial customs in 19th century Texas. The inn has games, songs and other recreational programs for four- to 10-year-olds, as well as Project WILD and Learning Tree activities to complement Texas history studies. Greenlaw also works with groups interested in seeing more of the area. "We can arrange all-day field trips in this area complete with tours of historic structures and sites, lunch, sightseeing and shopping," she said. Call the park for more information.

A bicycle ride through the rolling countryside complements a visit to Fanthorp Inn, and a map of nearby hike-and-bike trails is available at the park office. There are three routes of varying length. The 16-mile Apolonia Trail goes alongside the Sam Houston National Forest; the 13-mile Anderson Loop and the 22-mile Richards loop

use paved county roads near the inn.

In a recent letter to Texas Parks & Wildlife, a subscriber in England wrote that Texas history "...is so recent you can almost reach out and touch it." This is indeed the feeling at Fanthorp Inn, where visitors can gaze through the same windowpanes the Fanthorps did, and walk on the same pine floors where early Texans walked.

"Texas Country Reporter" Visits Five State Parks

Five Texas state parks will be featured on the television show "Texas Country Reporter" during October.

The dates for each park's segment are: Enchanted Rock near Fredericksburg, October 2 and 3; Ft. Griffin near Albany, October 9 and 10; Davis Mountains near Fort Davis, October 16 and 17; Honey Creek State Natural Area near Bulverde, October 23 and 24; and Balmorhea near Balmorhea, October 30 and 31. Check local listings for exact times of broadcasts in your area.



Oct.: * Twin Falls nature rail walk, each Saturday in October, Pedernales Falls State Park in Blanco County, 210-858-7304

Oct.: * Bird-banding observation each Tuesday, Thursday and Saturday, Davis Mountains State Park near Fort Davis, 915-425-3337

Oct: * Lower Edwards Plateau ecosystem tour, each Saturday in October, Haney Creek State Natural Area near Bulverde, 210-438-2656

Oct.: * Roundup and brancing of longhorn calves in late October, Fort Griff in State Historical Park near Albany, 915-762-3592

Oct: Entry period open for Valley Land Fund's Wildlife Photo Contest, with cash awards to photographers and landowners; profits dedicated to habitat acquisition in the Lower Rio Grande Valley. Entry deadline is Dec. 31, 1993. For information call 210-381-1264.

Oct. 1: Javelina hunting season opens

Oct. 1-3: Texas Wildlife Expo '93, Texas Parks and Wildlife Department headcuarters in Austin, 1-800-792-1112

Oct. 1-31: Archery season for deer and turkeys Oct. 1, 2, 7, 15: # Green Cove interpretation and bat flight observation. Kickapoo Cavern State Natural Area near Uvalde 210-563-2342 Oct. 2-10: Pronghorn antelope hunting season Oct. 2: * Ethnobotany trail walk, Honey Creek State Natural Area near Bulverde, 210-438-

Oct. 2, 9: * Raptor migration watch, Candy Cain Abshier WMA at Smith Point in Chambers County, 409-736-2551 or 409-736-2540 Oct. 2: * Bird-banding observation, Kickapoo Cavern State Natural Area near Uvalde, 210-563-2342

Oct. 2, 7, 9, 14, 16, 21, 23, 28, 30: * Bat emergence observation, Old Tunnel WMA near Fredericksburg, 210-868-7304

Oct. 3, 10, 17, 24, 31: * Birding walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Oct. 3: * Bike riding and birding tour, Matagorda Island State Park, 512-983-2215 Oct. 6, 13, 20, 27: * Nature trail walk, Bentsen-Rio Grande Valley State Park near Mission, 210-585-1107

Oct. 6, 13, 20, 27: * Nature trail walk, Las Palomas WMA in Lower Rio Grande Valley, 210-383-8982

Oct. 7, 15: * Cavern tour, Kickapoo Cavern State Natural Area near Uvalde, 210-563-2342

Oct. 9: * Birding walk and hatchery tour, GCCA/CPL Marine Development Center at Corpus Christi, 512-939-7784

Oct. 9: * Mountain bike tour, Fairfield Lake State Park near Fairfield, 903-389-4514

Oct. 9: * Birding tour, Matagorda Island State Park, 512-983-2215

Oct. 9-10: * Marbleizing class for

woodworkers, Landmark Inn at Castroville, 210-538-2133

Oct. 10: # Guided horseback tour, Hill Country State Natural Area near Bandera, 210-796-

Oct. 10: * Flint knapping workshop, Sebastopol State Historical Park in Seguin, 210-379-4833

Oct. 16: * Sinkhole and bat flight observation, Devil's Sinkhole near Uvalde, 210-563-2342 Oct. 16: * Nocturnal predator calling ride, Gus Engeling WMA in Anderson County, 903-928-

Oct. 16: * Birdwatching and hatchery tour, A. E. Wood State Fish Hatchery in San Marcos, 512-353-0572

Oct. 16-17: 20th Annual Fall Festival at Jourdan-Bachman Pioneer Farm near Austin. 512-219-6868

Oct. 16-17: * Horseback trail ride and campout, Hill Country State Natural Area and Lightning Ranch, 210-535-4096 or 210-535-

Oct. 17: * Beachcombing and shelling tour, Matagorda Island State Park, 512-983-2215 Oct. 19: * Electrofishing demonstration, Lake Mineral Wells State Park near Mineral Wells. 817-328-1171

Oct. 20: * Birdwatching along the Rio Grande, Las Palomas WMA in the Lower Rio Grande Valley, 210-383-8982

Oct. 21: * Fishery sampling with electrofishing

TEXAS CONSERVATION

> TEXAS PARKS & WILDLIFE

PASSPORT

gear, Lake Ray Roberts near Denton, 817-637-

Oct. 23: * Wildflower and native plant tour, M. O. Neasloney WMA near Luling, 210-875-9230

Oct. 23: * Plant and wildflower tour, Matagorda Island State Park, 512-983-2215 Oct. 23: * Slide and nature photography

presentation and hayride, Fairfield Lake State Park and Richland Creek WMA near Fairfield. 903-389-2216

Oct. 23-24: Annual orienteering meet, Bastrop State Park at Bastrop, contact Carolyn Ortegon,

* The activities marked with this symbol are available to people who have a Texas Conservation Passport, which may be purchased for \$25 at most state parks, Parks and Wildlife offices, Whole Earth Provision Co. locations in Austin, Houston and Dallas and RFI in Austin.

The subtle becuty of a deer track among the acorns is typical of what you might see on Conservation Passport nature walks.



713-484-1391

Oct. 26-28: * Restoration techniques for historic structures, Landmark Inn State Historical Park in Castroville, 210-538-2133

Oct. 29: * "A Halloween Thing" movie, Eisenhower State Park on Lake Texoma, 903-465-1956

Oct. 30: Quail season opens

Oct. 30: * Nature walk and slide presentation, Caddo Lake State Park near Karnack, 903-679-4006

NOVEMBER

Nov: * Bird-banding observation each Tuesday, Thursday and Saturday in November, Davis Mountains State Park near Fort Davis, 915-426-3337

Nov. 3: * Birding tour of Lower Rio Grande, Las Palomas WMA/Lower Rio Grande Valley Units, 210-383-8982

Nov. 3, 10, 17, 24: * Importance of the existence of wildlife management areas, Las Palomas WMA-Penitas Unit in the Lower Rio Grande Valley, 210-585-1107

Nov. 3, 10, 17, 24: * Discover South Texas wilderness areas, Bentsen-Rio Grande Valley State Park, 210-585-1107

Nov. 6: White-tailed deer and turkey hunting season opens in most of the state

Nov. 6: * Beachcombing and shelling tour, Matagorda Island State Park, 512-983-2215 Nov. 6, 13, 20, 27: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area near Bulverde, 210-438-2656

Nov. 6: * Native grasses walk, Honey Creek State Natural Area near Bulverde, 210-935-2656

Nov. 6, 13, 20, 27: * Twin Falls nature walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Nov. 7, 14, 21, 28: * Birdwatching walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Nov. 10: Wildlife Planning and Tourism Workshop sponsored by the Texas Parks and Wildlife Department, Sheraton Corpus Christi, 1-800-792-1112

Nov. 11-13: 2nd Annual Watchable Wildlife Conference, Bayfront Plaza Convention Center, Corpus Christi, 1-800-460-5400

Nov. 13: White-tailed deer and turkey general hunting season opens in South Texas

Nov. 13: * Birding and hatchery tour with slide show, GCCA-CPL Marine Development Center at Corpus Christi, 512-939-7784

Nov. 14: * Whooping crane tour, Matagorda Island State Park, 512-983-2215

Nov. 14: * Hill Country birding, Kerrville-Schreiner State Park, 210-257-5392

Nov. 14: * "Ridin' the Hills." Hill Country State Natural Area near Bandera, 210-796-

Nov. 20: Mule deer general season opens in Panhandle

Nov. 20 & 21: * Hill Country ride and campout, Hill Country State Natural Area near Bandera, 210-535-4096 or 210-535-4136

Nov. 20, 27: * Bald eagle boat tour, Fairfield Lake State Park near Fairfield, 903-389-2216 Nov. 20: * Whooping crane tour, Matagorda Island State Park, 512-983-2215

Nov. 27: Mule deer general hunting season opens in the Trans-Pecos

Nov. 27: * Bald eagle photography tour, Fairfield Lake State Park near Fairfield, 903-

Nov. 27: * Birding and nature walk, Caddo Lake WMA, 903-679-4006



Because of restocking programs and protection, pronghorn antelope now are abundant in many parts of the Trans-Pecos region of West Texas. This year's antelope hunting season is October 2-10.

LEVISION

Watch for our companion television series, "Texas Parks & Wildlife," on your local PBS affiliate. All times p.m. unless otherwise noted.

In stereo where available

CITY/STATION	DAY	TIME
Amarillo		
KACV, Ch. 2	Sunday	4:00
Austin, KLRU-TOO	Tuesday	9:30
Cable Ch. 21	Thursday	2:00
College Station	PRODUCTION	
KAMU, Ch. 15	Saturday	6:30
Corpus Christi	Thursday	7:30
KEDT, Ch. 16	Friday	10:30
Dallas/Ft. Worth		
KERA, Ch. 13	Friday	6:30
El Paso	C 1	2.00
KCOS, Ch. 13	Sunday	3:00
Harlingen KMBH, Ch. 60	Caralan	(20)
	Saturday	6:30
Houston KUHT, Ch. 8	Catandan	4:30
Killeen	Saturday	
KNCT, Ch. 46	Tuesday Thursday	3:00 1:30
Lubbock	Thursday	1.50
KTXT, Ch. 5	Thursday	1:00
Odessa	Marsuay	1.00
KOCV, Ch. 36	Saturday	7:30
Waco	,	
KCTF, Ch. 34	Thursday	11:30
		. 1.00

Programming schedules are subject to change, so check your local listings.

Look for these stories in the coming weeks

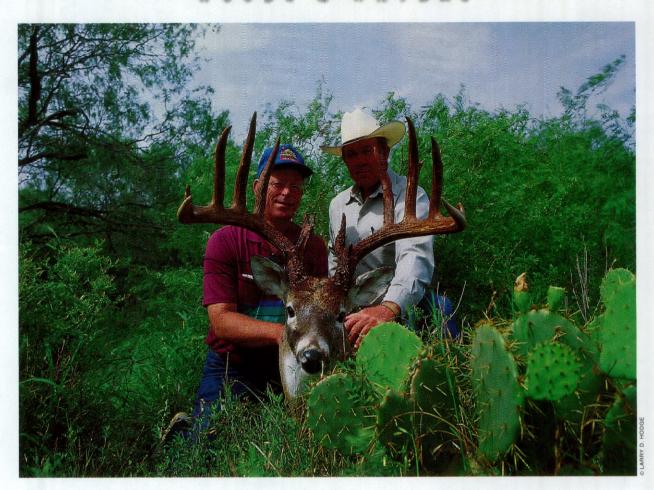
SEPTEMBER 26-OCTOBER 3: Increased fuel prices, government regulations and fluctuating shrimp populations have been tough on the Texas shrimp industry. Spend a few days on a shrimp boat in the Gulf of Mexico, and see what life is like for Texas shrimpers. Also, a canoe rendezvous and botanist Barton Warnack.

OCTOBER 3-10: The hardwood forests of East Texas are rapidly being cut, even though many wildlife species depend on these bottomlands for food and shelter. Join us as we examine the growing concern over this disappearing natural habitat. Also, rock climbing and rafting on the Rio Grande.

OCTOBER 10-17: At the western edge of Texas, just outside the sarawling metropolis of El Paso and Ciudad Juarez, lies a forgotten land that has remained unchanged for centuries. We'll visit this unique frontier along the Texas/Mexico border. Also, redfish and why breaking tradition is good news for today's zoos.

OCTOBER 17-24: What happens when the thousands of offshore petroleum platforms in the Gulf of Mexico no longer are producing oil? We'll show you how these rigs are recycled to preserve and enhance marine habitat. Also, Project WILD and alligator farming.

OCTOBER 24-31: Throughout history, bats have been perceived as mysterious and dangerous. We'll take you on a bat research expedition that brings you face to face with this often misunderstood animal. Also, fire ants and migrating geese.



Big Game Awards salute hunters and land managers by Larry D. Hodge

exas hunters entered 20 Boone & Crockett quality white-tailed deer in the Texas Big Game Awards program last season, and if any conclusion could be drawn from their experiences, it would be there are many ways to bag a trophy buck. A sampling of the top entries taken by rifle in the eight regions revealed that hunters took their deer while walking, stalking, rattling, sitting in tripods and box blinds, hiding in shinoak motts and even alongside a barbed wire fence.

Just what kind of buck can be surprised by someone lying on the ground behind a barbed wire fence? Katrina Jackson of Andrews took a Terrell County whitetail that netted 145 2/8 points as a typical—the top-scoring buck for Region 1, which encompasses far West Texas. One thing she had in common with a number of other top entrants from across the state was targeting a specific deer. "We spotted the deer early in the morning when we drove by a feeder," she said. "I went back to the

feeder at three o'clock. There was very little cover, so I lay on the ground behind a barbed wire fence post." Two hours later she felled the buck with a single shot when it reappeared at the feeder.

Using available natural cover in the form of a shincak mott worked for Region 2 winner Jerry Coplen of Aspermont. The bushy cover stood 75 yards from a wheat field, and Coplen was confident the location would produce. "The wheat field was the only

food plot for several miles, and I had seen the buck there about a week earlier. I figured he probably would be coming there. I situated myself in the shinoak mott and had not been there 15 minutes when he and several does came into the field." Coplen's Motley County monster netted 170 2/8 points as a typical and was the highest-scoring typical buck entered in the program that was taken outside the South Texas region. In fact, Coplen's 11-pointer with 251/8inch spread was the only Boone & Crockett typical that was not from South Texas.

In addition to the leading typical racks, South Texas (Region 8) grew three of the six B&C nontypicals. Minnie Dora Bunn Haynes of Laredo shot a massive La Salle County 31-pointer that spread only 152/8 inches but netted a whopping 229 6/8 B&C to lead the list. Close behind was John Robertson of Arlington with the top Region 3 nontypical, a 20-pointer that amassed 202 4/8 points.

Robertson's experience with the Stephens County deer should inspire hunters to heed the adage that few deer are killed from the comfort of a warm bed. The last morning of the season, drizzling rain, fog and a temperature in the mid-30s made sleeping late inviting to hunters in north-central Texas. But Robertson stationed himself in a box blind overlooking a corn feeder some 70 yards away, and about 8 a.m. the buck strolled in for a snack. Moments later Robertson had the number-two

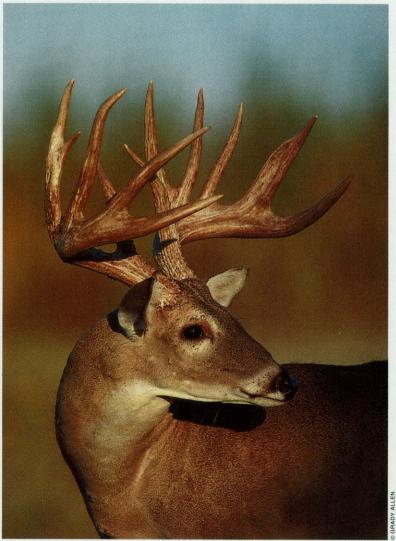
> Don Brock of Kingsville (opposite page, left) displays a mount of the third-ranking typical buck in the TPWD's inaugural Big Game Awards program in 1992-93. With him is Butch Thompson, wildlife manager for the King Ranch in South Texas. The new program recognizes wildlife managers who develop good habitat, as well as hunters who take trophy whitetails.

nontypical buck.

East Texas efforts to produce quality deer are paying off, and James Golden of Chandler was last year's chief beneficiary. His 11-point Henderson County buck netted 159 5/8 points to become the top typical taken in Regions 5 and 6. Aretired school superintendent, Golden has hunted for years, and he put that experience to work, beginning with preseason scouting for tracks along a recently built pipeline. He built a tree stand overlooking a hot area and on opening morning, he was ready. "About 7:30 on opening day, the buck crossed the pipeline right-of-way following a doe," Golden recalled. "When I first saw him, I realized he had a heavy rack. I missed with the first shot," he said. Then Golden got lucky when the buck came back into the clear, still pursuing the doe. The second shot dropped the buck at just over 250 yards.

Whether typical or nontypical, the big ones lurk in the South Texas Brush Country that makes up Region 8. Sixteen of the top 20 deer entered in the Big Game Awards program last season roamed the mesquite thickets and prickly pear flats south of San Antonio.

Many South Texas hunters prefer to hunt the rut, and the two bucks that tied for the number five typical spot with identical scores of 173 2/8 both were shot while chasing does. Both also were taken in La Salle County. Wayne Webb of Baytown positioned himself in a camouflage chair hidden in the brush at the junction of two senderos. A doe dashed across one of the senderos, but the buck hot on her heels stopped to look both ways before crossing, and Webb sent him crashing to the ground. Joe Krolczyk of Bryan had a similar tale.



His topless box blind overlooked a sendero and low hill. A doe closely pursued by a buck darted across an opening and disappeared. "For an eternityabout four minutes—both were gone, for good I assumed, as this had happened to me in the past," Krolczyk said. "For a long, long four minutes I waited. Finally, the doe reappeared at approximately the same spot. She never broke stride, vanishing as quickly as she appeared. The buck, being a little farther behind her than when I first saw them, stopped in a partial opening, trying to decipher which direction she went. His short stop proved to be long enough."

"Never give up," could be Don Brock's motto after taking the thirdranking typical, a Kleberg County brute that scored 177 5/8. The deer was first spotted during the 1991-92 season a quarter-mile from camp. Brock hunted the same area in 1992-93 from opening day on, but neither he nor any of the other hunters on the lease caught a single glimpse of the deer the entire season. Twenty days spent studying the knotholes on the inside of his box blind had Brock plenty discouraged and ready to call it quits, but on the last day of the season he decided to try one more time. With just 15 minutes of legal shooting time left, Brock's vigil paid off.

The Texas Big Game Awards program recognizes white-tailed deer, mule deer and pronghorn antelope legally taken in Texas, along with the hunter and the landowner or manager of the property on which the animal was taken. A special category honors hunters harvesting their first animal. For information, contact Pat Karns at TPWD, 1-800-792-1112.

Larry D. Hodge is a freelance writer living in Mason.



only" list. Also, a majority of the 75county area will be under an antlerless permit system tied to the new LAMPS (Landowner Assisted Management Permitting System), designed to issue permits to landowners based on actual habitat capacity.

A minor change deer hunters should be aware of is they must cut out, rather than mark with a pen, the day and month of kill on their deer tags.

Most season dates for major species are basically unchanged this year. The archery season for deer and turkey is October 1-31, and the general whitetail season starts November 6 in most of the state, November 13 in South Texas.

One fairly significant change allows hunters to take three Rio Grande turkeys during either the fall or spring season. Last year, only two could be taken in any one season.

Mourning dove hunters should take note that the winter season has been moved up in the Central and South

> Zones, starting the day after Christmas to allow more hunting opportunity during the holiday season.

While most of Texas's wildlife habitat is privately owned, public nunting opportunities on depart-

What's New For Hunters In 1993-94

By now, many of Texas's 1 million or so licensed hunters already have been afield to hunt doves and teal, but the headliner seasons that make Texas the nation's number-one hunting state are yet to come.

Prospects for non-migratory game animals such as deer, turkey, javelina and quail appeared about average at press time, depending ultimately on the seriousness of drought conditions that were nagging some areas of the state through the summer. But "average" in the Lone Star State, put into perspective, means excellent hunting opportunity. Veteran deer hunters still are talking about the number of bona fide trophy whitetail bucks taken during the 1992-93 season. While this year's season may not produce as many Boone & Crockett entries, it still should be an excellent one, with an expected harvest of more than 350,000 animals.

Hunters who have not yet obtained one of the department's free 1993-94 Texas Hunting Guides at a TPWD office or sporting goods outlet should do so, because a number of significant changes in season dates, bag limits and other requirements will affect Texas hunters, especially deer hunters.

Those planning to hunt South Texas will notice that they are allowed to take, or at least attempt to take, three bucks in their total of five whitetails, instead of the two bucks allowed last year. This change affects 14 counties.

Hunters will notice the opposite in the Pineywoods and Post Oak Savannah regions of East Texas, where more counties have been added to the "one buck



Texas quail hunters (left) are hoping for a repeat of last season, when the estimated harvest of 1.9 million bobwhites was the best since 1987. This year's statewide quail **runting** season is October 30 through February 27.

ment-owned or leased land continue to

play a major role.

One change for the upcoming season should be of interest to East Texas deer hunters. During the first two days of the general deer hunting season on 13 specified units of public hunting lands in Sabine, San Augustine and Jasper Counties, holders of the \$35 Public Hunting Permit (formerly called the Type II Permit) can take two antlerless deer in addition to one buck. Harvest of does is not allowed during the remainder of the season on these units, which comprise approximately 110,000 acres. Check the map booklet you receive when you purchase your Annual Hunting Permit for locations of the units, and be aware that some units in the three counties may not be included in the antlerless regulation. In all, the public hunting lands program offers some 1 million acres for permit holders to enjoy throughout the hunting season. An additional bonus to the \$35 permit is that when you receive your map booklet you also get application forms for a number of hunts whose participants are selected by drawing.

New Book Showcases Top 1992 Trophy Deer

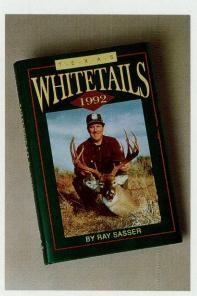
Texas hunters interested in learning more about record book deer taken during the outstanding 1992-93 hunting season can find a wealth of information in a new 300-page book entitled "Texas Whitetails 1992."

Authored by Dallas outdoor writer Ray Sasser, the publication features pictures and accounts of how and where the top whitetail, mule deer and pronghorn antelope trophies were taken.

The book, priced at \$24.95, also lists hunters and ranches that qualified for the Texas Parks and Wildlife Department's Big Game Awards program. Other sections of the book feature a list of official scorers for the awards program, plus articles on big buck contests, top hunting outfitters, tips for photographing trophy animals and how Tyler restaurant owner Earl Brady achieved the first "triple crown"

under the Big Game Awards program in 1992 with qualifying trophies in all three categories-white-tailed deer, mule deer and antelope.

Available at many hunting equipment retail outlets across the state, the book also can be ordered by sending \$30.75 to Collectors Covey, P.O. Box 561203, Dallas, Texas 75356-1203.





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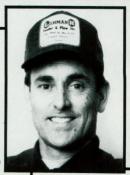
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LETTERS

(Continued from page 3)

ans and others have benefited tremendously from the efforts of those young men who built 60 parks in Texas.

The ex-CCC boys have formed the National Association of Civilian Conservation Corps Alumni. Five of us from Austin attended the national convention in Washington, D.C. and took part in a rally urging the president to "Bring Back the CCC in '93."

The local chapter of NACCA. Lost Pines Chapter #167 at Bastrop State Park, meets quarterly. Our next meeting is October 9 and 10 and guests are invited. I welcome inquiries at 512-453-1291 regarding registration and meals.

> William L. McDonald Austin

Traveling Texas

I work part time in a shop in one of the Metroplex malls that sells Texas souvenirs and gifts. I'm proud to tell tourists shopping there that I am a native Texan. and to pass on some travel spots featured in your magazine. Texas is a wonderful state.

> Jameye Jones Arlington

I enjoy your magazine very much. A poor man gets to travel only in his mind, and this magazine helps quite a bit. Great photography.

> Jimmy Comer DeQueen, Arkansas

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PARTING SHOT

Among the changes begun in this issue is dedication of the last page to a photograph of special merit. This monthly glimpse of Texas is not meant as a paean to photographic skills, but rather a scene we feel evokes a special feeling for our outdoor heritage. Parting Shot views will range from the spectacular to the zany; some may even be a bit disgusting, since we aren't wed to a lollipop perception of Texas's resources and the challenges they face. This month's scene of a father and son fishing on a crisp October morning is eloquent in its simplicity, perhaps a call for us to remember that appreciation for the outdoors is a privilege to be given as well as received.





