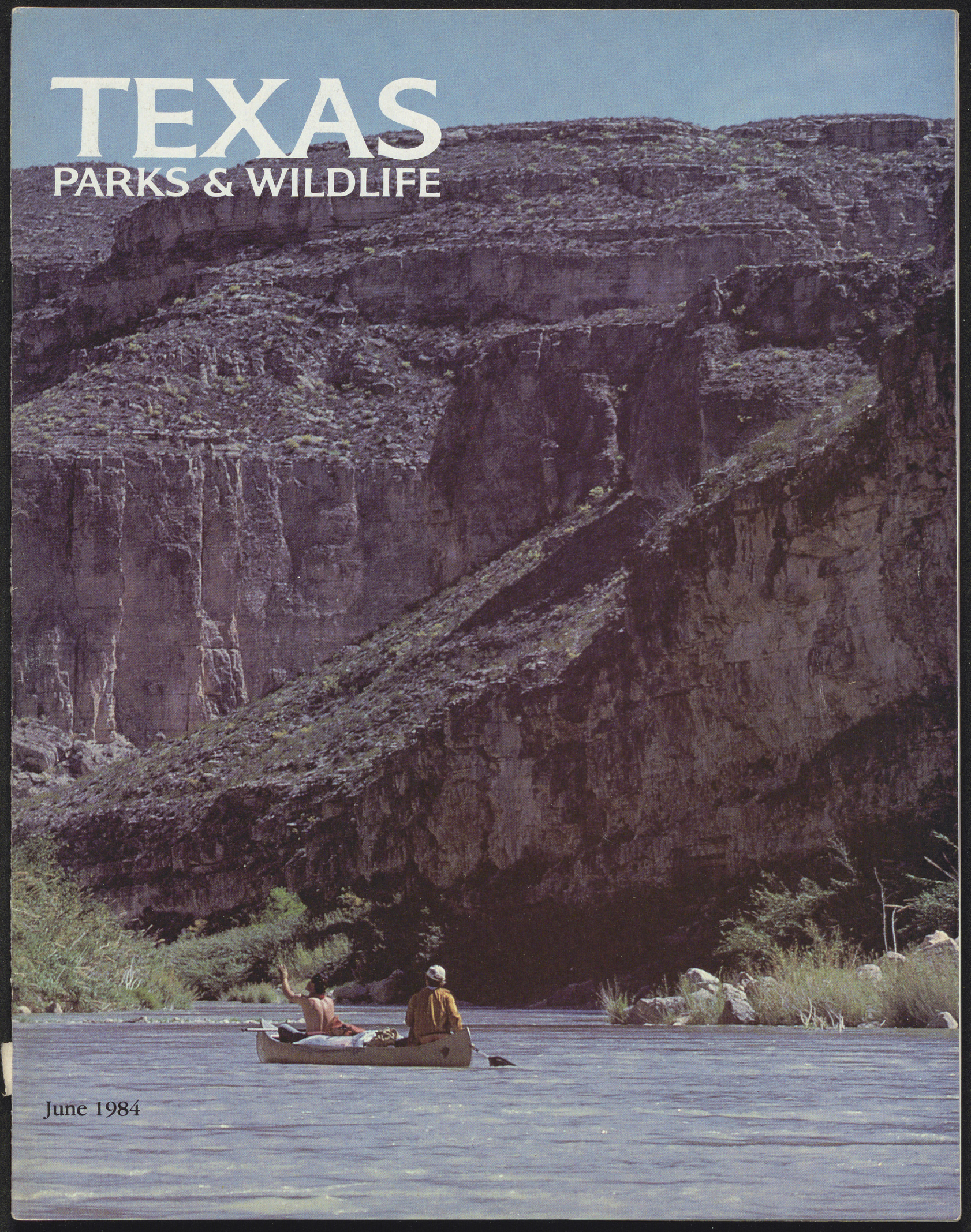


TEXAS

PARKS & WILDLIFE



June 1984



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MAGAZINE
(ISSN 0040-4586)

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

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Front and Back Cover: Canyons and mountains guard the Rio Grande as it winds through the Lower Canyons east of Big Bend National Park. June has been designated American Rivers Month. (See related story on page 24.) Photo by Bill Reaves.

Inside Front: A flock of gulls wheeling and dipping over the bay often means game fish are feeding near the surface, a fact that anglers can use to their advantage. (See story on page 14.) Photo by Bill Reaves.

Published monthly by the Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744. Circulation: 512-479-4830; Editorial Office: 512-479-4992. Republication of materials is not permitted except by special written permission. The inclusion of advertising is considered a service to subscribers and is not an endorsement of products nor concurrence with advertising claims. Rate schedule available upon request. Subscription rates: \$8 for one year and \$15 for two years. Single copies and all back issues \$1. Foreign subscription rates: \$10 for one year and \$18 for two years.

Postmaster: If undeliverable, please send notices by form 3579 to 4200 Smith School Road, Austin, Texas 78744. Second class postage paid at Austin, Texas, with additional entry at Dallas, Texas.

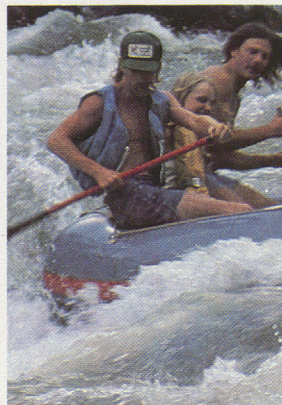


TEXAS PARKS & WILDLIFE

June 1984, Vol. 42, No. 6



Page 20



Page 24



Page 32

Fantails by *Mary-Love Bigony* 2
Carmen Mountains deer are a subspecies of whitetails limited primarily to Big Bend National Park.

Goliad Remembers by *Joan Pearsall* 8
Modern-day explorers can rediscover the colorful past at Goliad State Historical Park.

Follow That Bird by *Ray Sasser* 14
Gulls and terns can lead anglers to good catches of speckled trout.

Outdoor Roundup 18
News briefs compiled by the department's news service.

Take a Hike by *Kathryn Nichols* 20
Explore the backwoods of Bastrop State Park on the Lost Pines Hiking Trail.

Rollin' on the River by *E. Suzanne Carter* 24
A look at Texas rivers in observance of American Rivers Month.

Trumpets of the Big Thicket by *Gwen Fidler* 32
Carnivorous pale trumpet pitcher plants prey on insects on the Big Thicket's Pitcher Plant Savannah.

Young Naturalist: Feeding Response by *Ilo Hiller* 38
Learn how mouth coloration plays a role in birds caring for their young.

Letters to the Editor 48

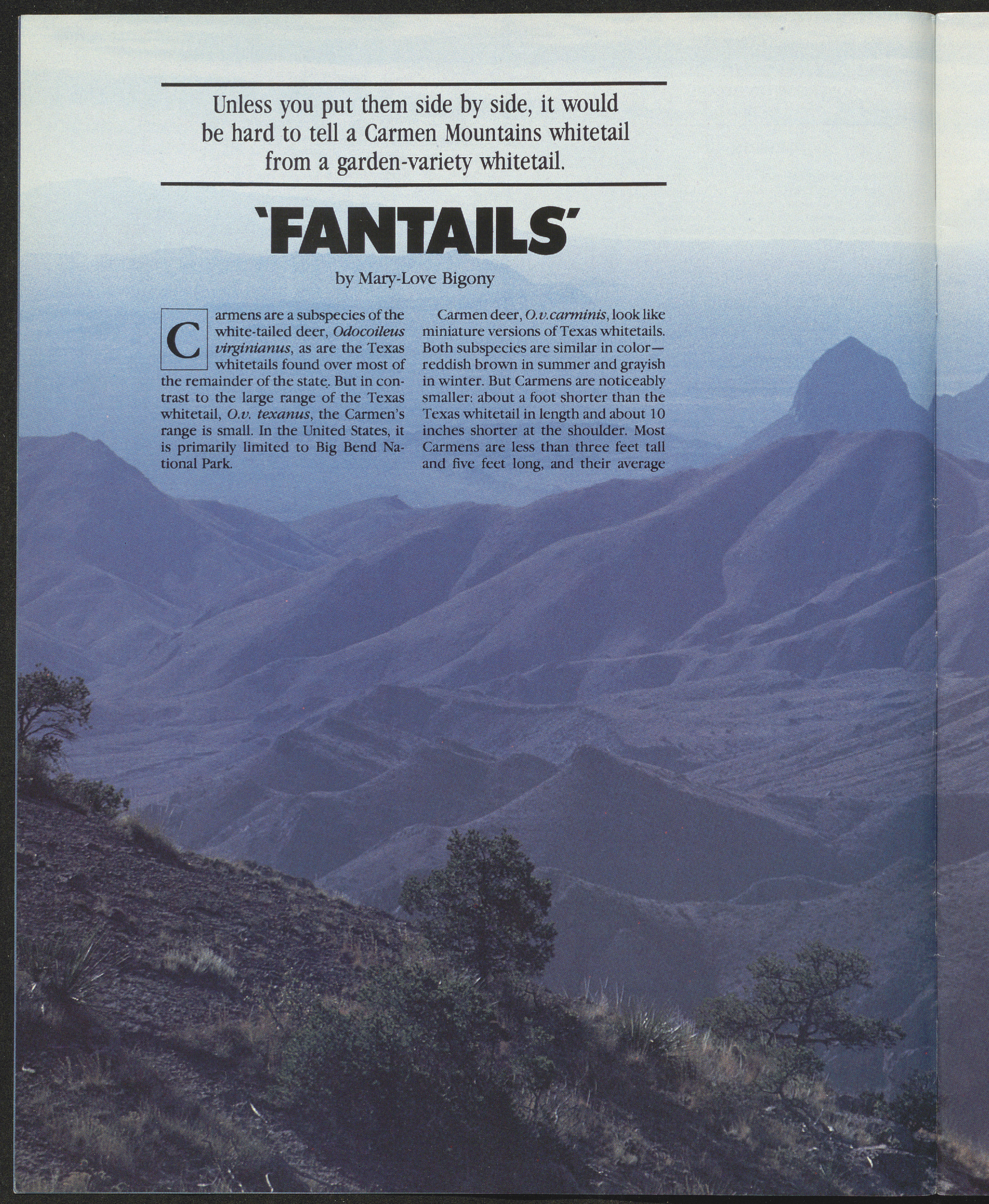
Unless you put them side by side, it would be hard to tell a Carmen Mountains whitetail from a garden-variety whitetail.

'FANTAILS'

by Mary-Love Bigony

Carmens are a subspecies of the white-tailed deer, *Odocoileus virginianus*, as are the Texas whitetails found over most of the remainder of the state. But in contrast to the large range of the Texas whitetail, *O.v. texanus*, the Carmen's range is small. In the United States, it is primarily limited to Big Bend National Park.

Carmen deer, *O.v. carminis*, look like miniature versions of Texas whitetails. Both subspecies are similar in color—reddish brown in summer and grayish in winter. But Carmens are noticeably smaller: about a foot shorter than the Texas whitetail in length and about 10 inches shorter at the shoulder. Most Carmens are less than three feet tall and five feet long, and their average



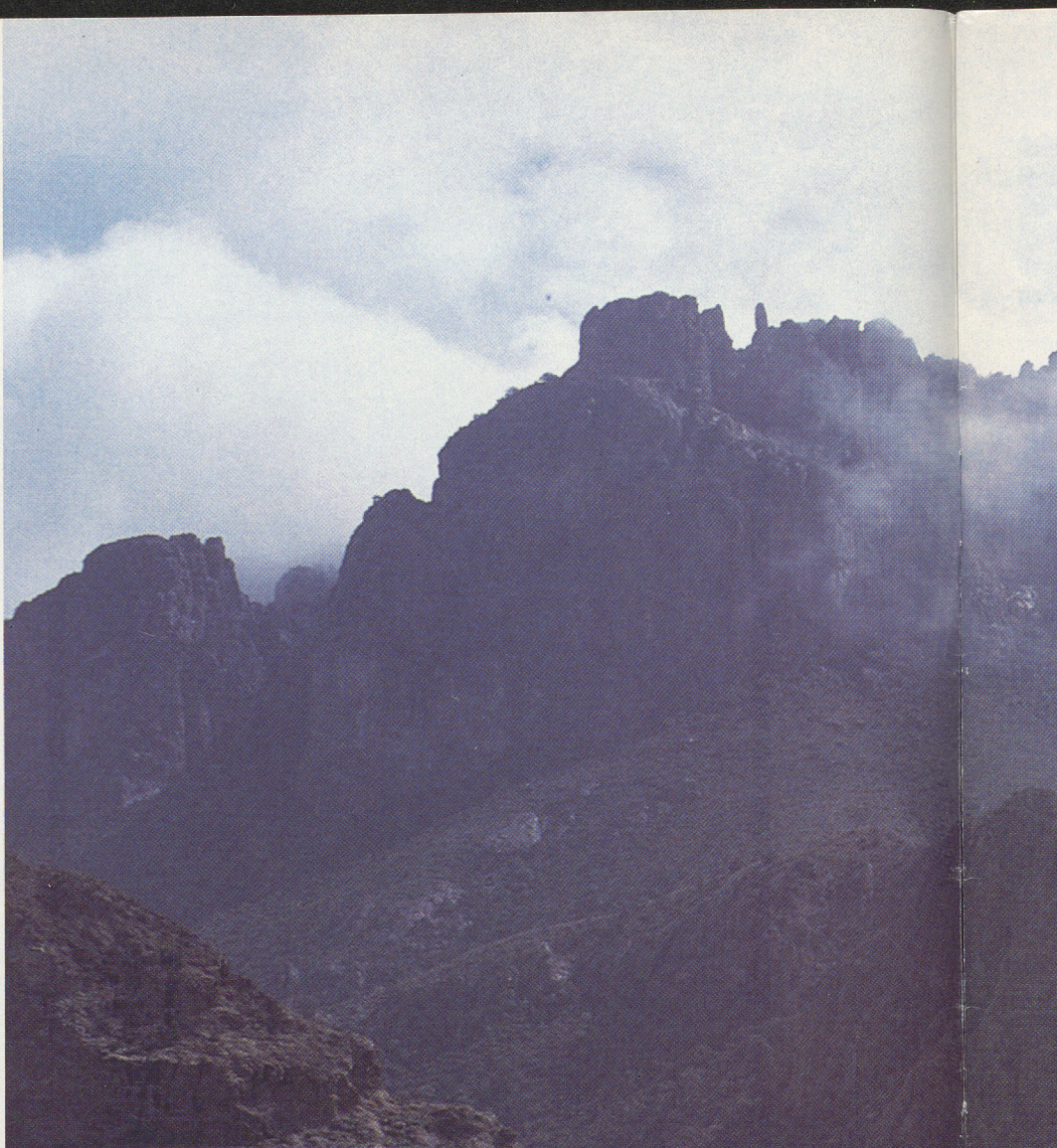
CHISOS MOUNTAINS BY ERWIN AND PEGGY BAUER

CARMEN MOUNTAINS WHITETAIL BY WYMAN P. MEINZER, JR.



live weight is 67 pounds. The Carmen deer's skull is different as well—smaller and narrower—and its antlers have considerably shorter tines. Many antlers form small baskets with the main beams curving tightly inward, while others are more sweeping and widely arched. Trans-Pecos residents call Carmens “fantails” for their long tails that are pure white on the underside. Although the Carmen's tail actually is shorter than the Texas whitetail's, it is longer in proportion to the length of the animal's body, which makes it more conspicuous. Carmens bear a strong resemblance to the Coues whitetail of southern Arizona and southwestern New Mexico, and at one time the Coues was recognized as a separate species.

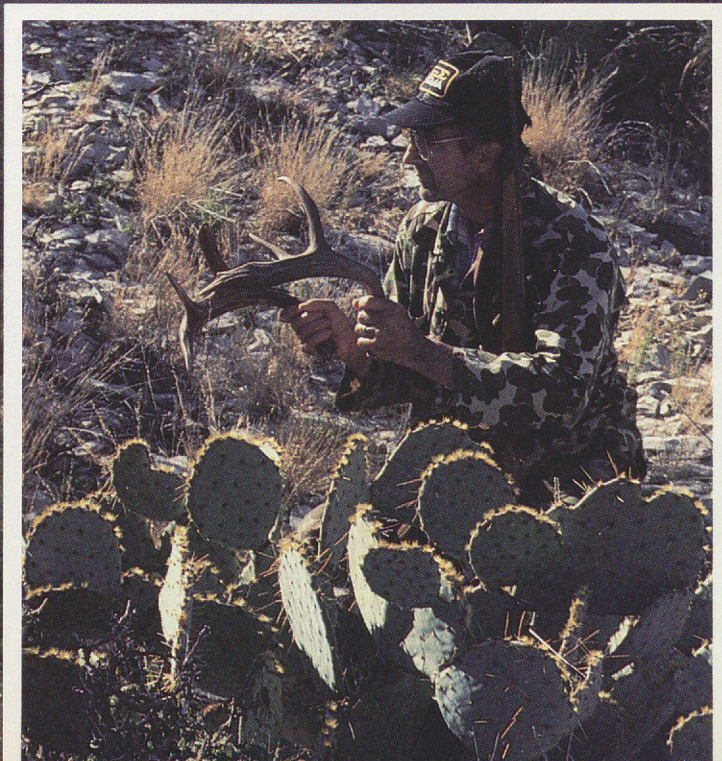
White-tailed deer subspecies are nothing unusual; there are no fewer than 30 in North and Central America and eight in South America. Nor does the Carmen Mountains whitetail occupy the smallest range of any of the subspecies. The Bull's Island, Hunting Island, Hilton Head Island and Black-beard Island whitetails are each subspecies with ranges consisting entirely of islands off the coast of South Carolina and Georgia. But the Carmen deer are interesting in that their range falls entirely within the range of another subspecies, the Texas whitetail, and



The Chisos Mountains in Big Bend (right and previous two pages) are the Carmen Mountains whitetails' main range in this country. Carmens, which look like miniature versions of Texas whitetails, are infrequently hunted in isolated mountain ranges outside the park.

MOUNTAINS BY BILL REAVES

DEER AND HUNTER BY ERWIN AND PEGGY BAUER



they are confined for the most part within the boundaries of a national park.

It seems almost appropriate that a place as uniquely spectacular as Big Bend would have its own whitetail subspecies. The park is one of the Southwest's largest unexploited ecosystems, and its desert and mountain scenery is some of the most dramatic in the United States. It also contains the only mountain range entirely within the boundaries of a national park, the Chisos Mountains, which rise from the Chihuahuan Desert floor to almost 8,000 feet. At one time it was believed that Carmen deer in the United States were confined to Big Bend's Chisos Mountains. However, additional pockets of Carmens have been confirmed in isolated mountains outside the park with habitat similar to that in the Chisos (see map), but the Chisos remain the subspecies' main range in this country. They also are found in at least two mountain ranges in Coahuila, Mexico: the Sierras del Burro and the Sierra del Carmen, for which they are named.

The subject of subspecies often causes confusion among laymen and controversy among scientists. Basically, the term species applies to a group of animals with common physical and genetic makeups that can mate and reproduce. When a portion of a species becomes isolated geographically and physiographically, the animals sometimes develop variations in response to the environment. Their size, weight, body conformation and color may adapt to the prevailing temperature, light, moisture, altitude and vegetation, thus creating a subspecies.

This apparently has been the case with the Carmen Mountains whitetails. But how did they come to be isolated on Trans-Pecos mountaintops? According to one theory, whitetails may have migrated into Mexico some 125,000 years ago, taking a northern route along the eastern escarpment of the Rocky Mountains into Texas. The deer colonized mountain ranges that provided suitable habitat, then became isolated by development of the desert. Dry conditions persisted, and ranchers began to graze livestock on the lower elevations, thus reinforcing the subspecies' isolation.

Two biological rules are borne out by Carmen Mountains whitetails. One is Bergmann's Rule, which states that the farther a geographic race is found north or south of the equator, the larger its body size will be, or conversely, the hotter the habitat, the smaller the animal. A larger body has a smaller relative surface area and therefore loses less body heat, which is important for animals in colder climates. A smaller body, such as the Carmen's, has a relatively larger surface area. This allows the animal to expend more heat

in warmer climates such as the Trans-Pecos. While Carmens are noticeably smaller than Texas whitetails, they are a great deal smaller than the northern subspecies, such as the northern woodland whitetail of the northeastern United States and Canada.

Another biological rule that is borne out to some extent by Carmen whitetails is Allen's Rule. This states that animals in warmer climates have longer extremities than those in cooler parts of the range.

ERWIN AND PEGGY BAUER



As mentioned before, the Carmen's tail is relatively longer than the Texas whitetail's, and the Carmen's hind foot is actually some three inches longer than the Texas whitetail's.

Carmens are common in the higher elevations of the Chisos and other mountains outside Big Bend. They are most plentiful above 4,500 feet and occasionally are found as low as 3,500 feet. But the Trans-Pecos is the domain of the mule deer, and muleys and whitetails appear to live harmoniously in this vast region by occupying dis-

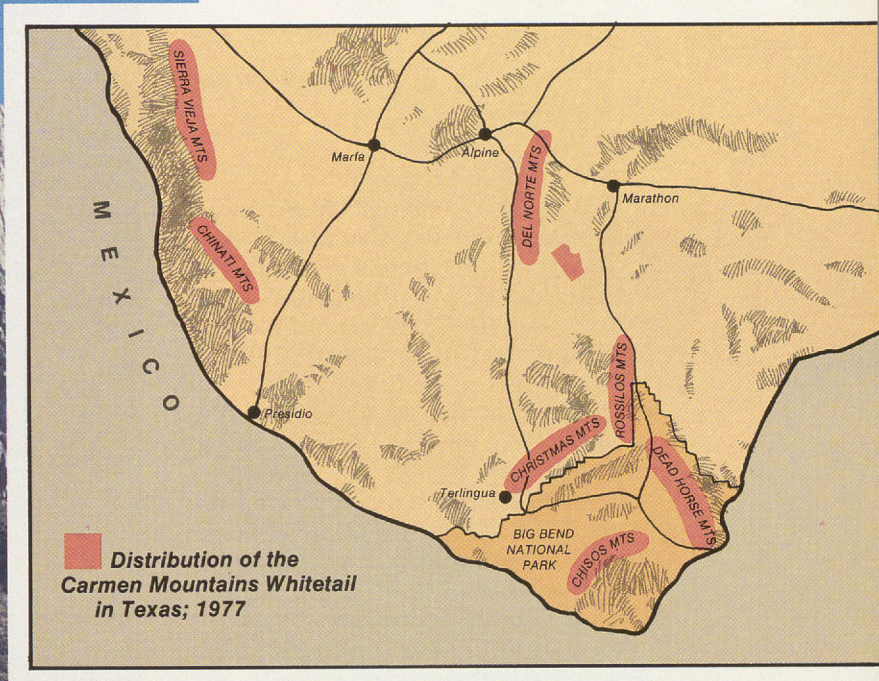
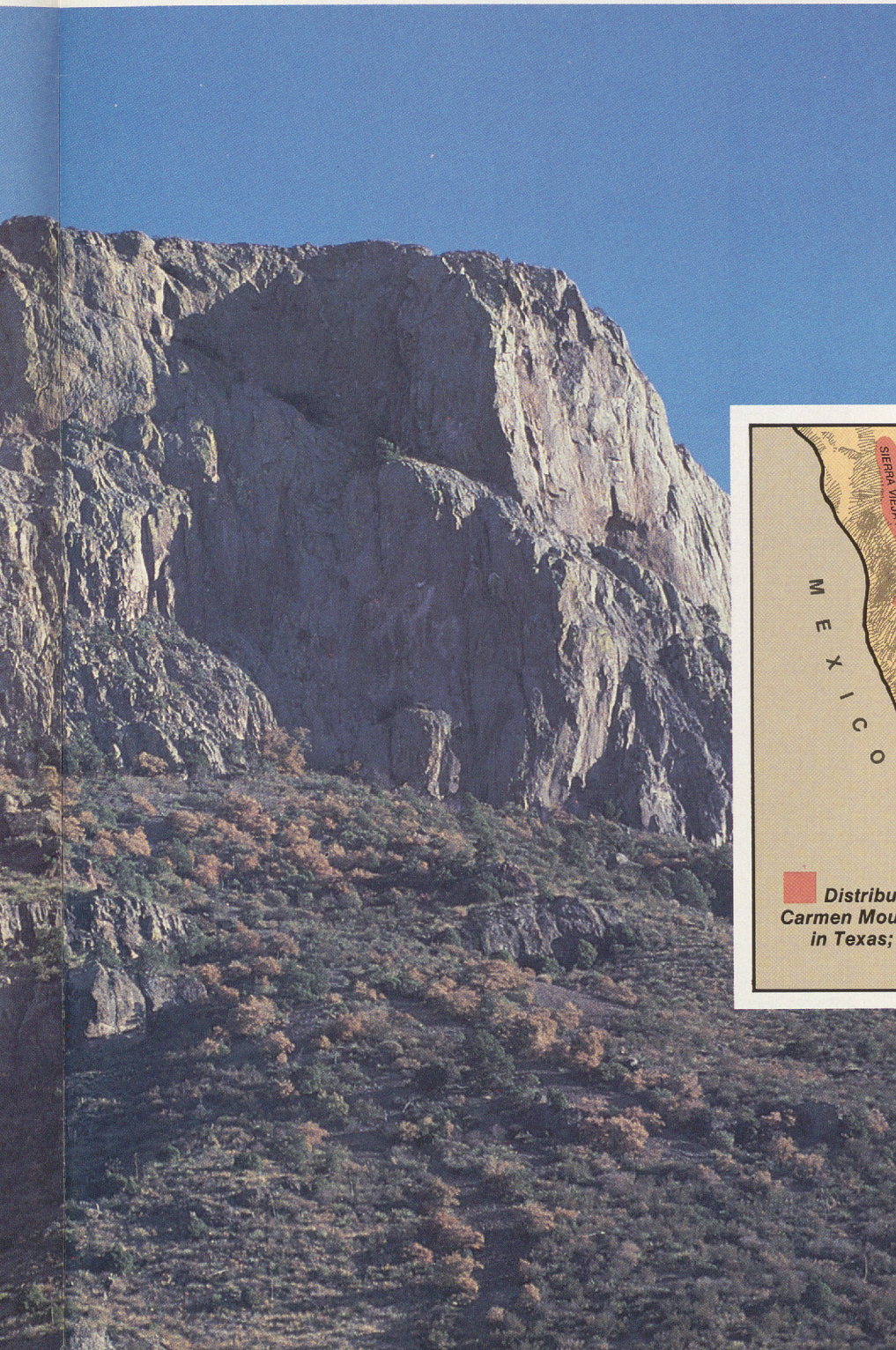
tinctly different habitats. Muleys are deer of the open spaces, which dominate most of the area, while whitetails prefer areas with dense vegetation and free-standing water that are found at higher elevations. Studies in Big Bend National Park identified a sympatric range (a portion of the range shared by mule deer and whitetails) between an altitude of 4,000 and 4,800 feet.

One difference between the two species—muleys and whitetails—is illustrated by how important this free-standing water is to the animals. Even

during dry weather, mule deer pass surface water without drinking. However, whitetails take advantage of all the water sources in their habitat, even if it makes them more vulnerable. When the two species encounter each other on this sympatric range, they usually do not react in any way.

Few Carmens are hunted, since their main range is in Big Bend and hunting is illegal in national parks. But even before the Chisos Mountains were protected in 1934 when the area was designated a state park (Big Bend became a national park in 1944), Carmens received little hunting pressure since the larger mule deer were abundant and easier to hunt. A few Carmens are hunted on mountains outside the park, but even the largest Carmen does not approach a trophy Texas whitetail in size and most hunters do not actively pursue these diminutive deer.

Unlike the Texas whitetail, the Carmen Mountains deer's importance cannot be measured in dollars and cents. But in terms in aesthetics and curiosity, the Carmen is a valuable animal. * *



Carmen Mountains whitetails have been confirmed in several isolated mountains with habitat similar to that in the Chisos. They are most plentiful at elevations above 4,500 feet, and require dense vegetation and free-standing water, whereas mule deer prefer open spaces.

GOLIAD REMEMBERS

Goliad, a gem of a small town in Goliad County, also is a trove of Texas history.

From its days as the site of an Indian village and as the third oldest municipality in the state, it has been in the center of stirring events through several centuries.

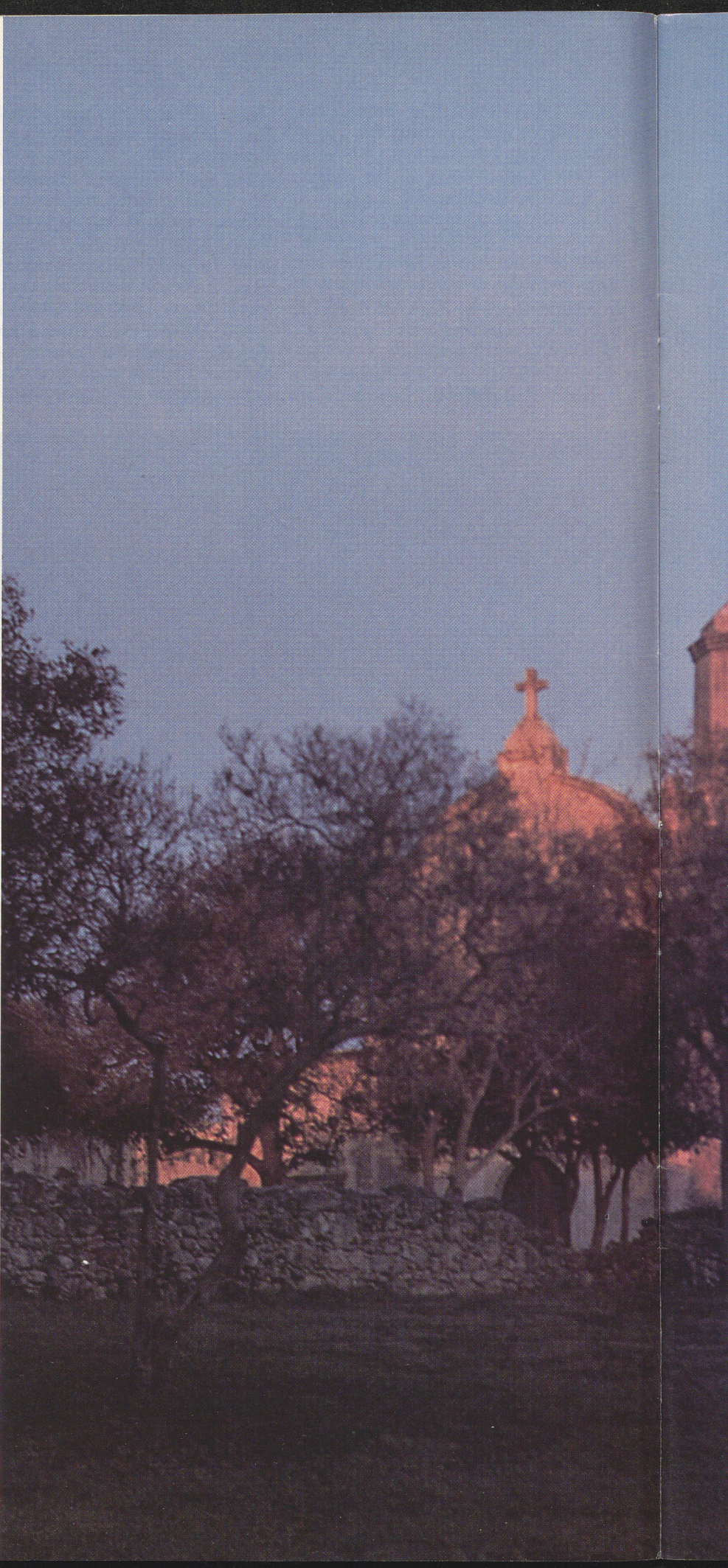
by Joan Pearsall

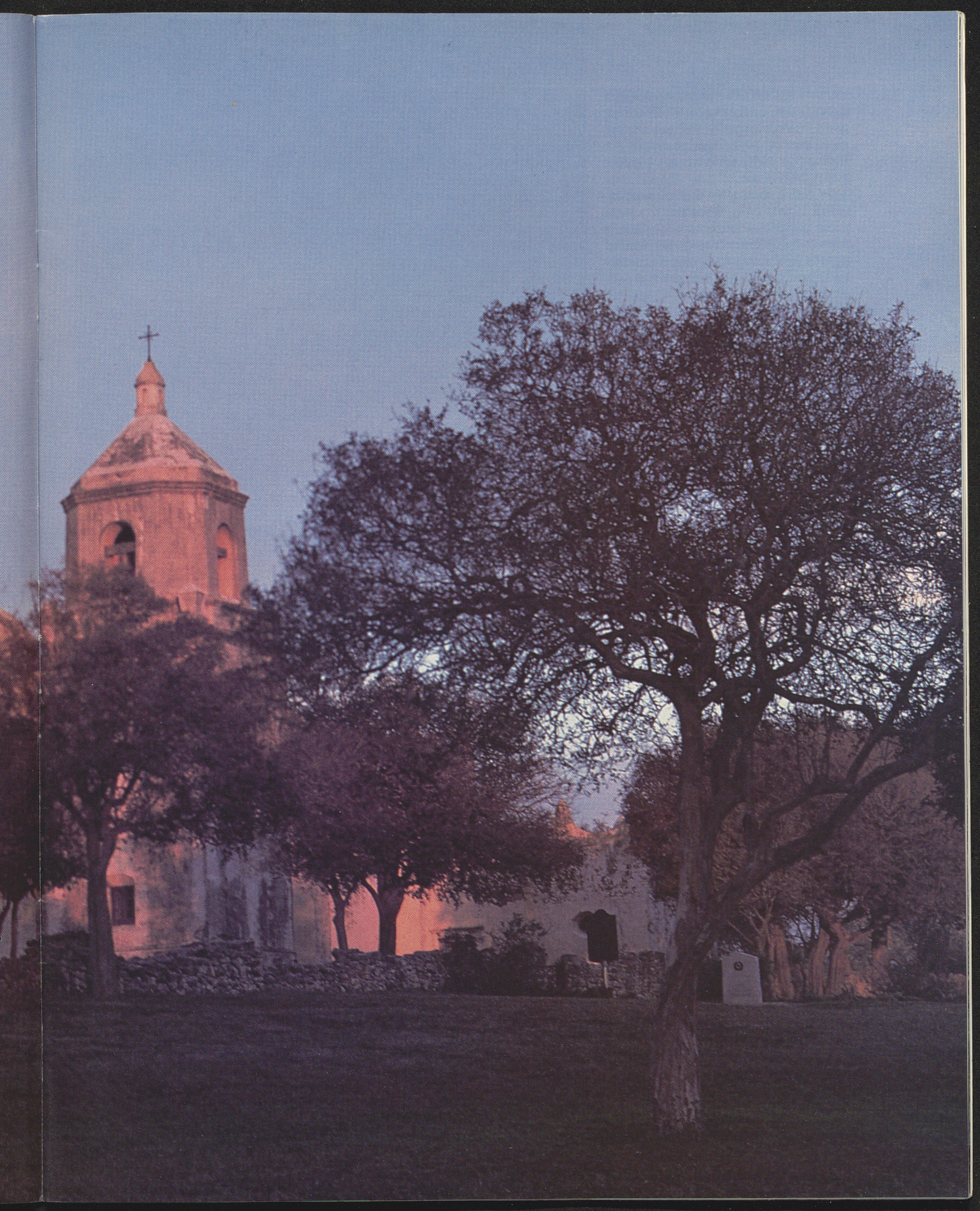
Now one of its major attractions is Goliad State Historical Park, where the colorful past can be rediscovered by modern-day explorers in pleasant surroundings that also provide for enjoyment of the outdoors.

The 190-acre park is located on the San Antonio River just south of Goliad on U.S. Hwy. 183. As one approaches, a towered stone building catches the eye, the reconstructed Mission Nuestra Senora Espiritu Santo de Zuniga, an eloquent reminder of the state's Spanish heritage. The original mission was founded in 1722 by Franciscan padres near Matagorda Bay, moved near Victoria in 1726, then in 1749 was relocated at its present site.

Purposes of this and the other missions built in this era were to Christianize the Indians, extend the fron-

Mission Espiritu Santo was founded in 1722.





tiers of Spanish dominion and aid in establishing civil law. In Texas, these goals were especially difficult for the missionaries, since practically all the Indians of the region were nomadic and many hostile.

At the Goliad site, the mission Indians mostly were from the Aranama tribe, primitive hunters and gatherers who had no agriculture or permanent homes. In the mission compound they had small family quarters and were instructed in religious doctrine, agricultural and technical skills, arts and crafts. The nearby Presidio La Bahia, manned by Spanish soldiers, provided protection for the mission and later became a strategic population center on the supply route between Copano Bay and San Antonio. Mission Rosario also was founded in 1754 some four miles southwest of Goliad. Its ruins now are included as a unit of the historical park and have been the site of intensive archaeological work in recent years.

Although crops often failed due to drought, the mission's longhorn herds flourished to become a source of sup-

ply for settlements far and wide. In fact, this was the first great cattle ranch in Texas, extending from the coast to the present sites of New Braunfels and Seguin. The vast herds eventually were reduced to a mere fraction, due to Apache raids, ownership disputes and an order that declared all unbranded cattle to be the property of the Spanish Royal Treasury. This was one of the major factors in the mission's decline.

In 1830 Mission Espiritu Santo was secularized. Repairs were made to house a public school in 1848, then the buildings were used by Aranama College, one of the first established in the state for Spanish-speaking Texans. In later years, the mission fell into ruins until it became part of Goliad State Park in 1931.

This was one of the parks where federally funded work was done by the Civilian Conservation Corps in the 1930s. The old mission church and granary were reconstructed since only a few of the original walls remained standing. Floors of the priests' quarters adjacent to the granary are of original clay bricks fired at the nearby kiln. Of

the Indians' quarters that were along the inside of the compound walls, only stone foundations and a stone hearth remain today.

In 1976 the Texas Parks and Wildlife Department completed some remarkable interpretive exhibits in the granary building, to help transport the visitor back in time. Detailed miniature figures of friars, Indians and soldiers in a series of dioramas show a realistic picture of mission life, and some life-sized ones give a startling illusion that the viewer himself has become part of it. A visitor can get further insight into the area's history and natural surroundings from other exhibits, and an audiovisual program depicts the pre-colonial cultural of the Aranama Indians. One section describes the historical and archaeological research preceding the reconstruction.

Months of intensive work went into production of these exhibits, involving specialized skills of department historical planners, designers, biologists, craftsmen, artists and audiovisual experts. Former store mannequins were cut apart, rewired and resculpted to build the life-sized figures. The robe for the Franciscan was specially woven of heavy, natural wool in authentic style.

Another outstanding interpretive achievement was the refurbishing of the church, completed and opened to the public in 1978. Historical researchers in Mexico discovered an inventory of the property of Mission Espiritu Santo, dated 1783. With this as a guide, the department's Interpretation and Exhibits Branch set to work to find and purchase originals where possible or to replicate the items listed as church furnishings. Historians, artists and craftsmen devoted many hours to this project, to install the main altar, pulpit, paintings, statues and two side altars. There are no pews, since the old chapel did not have seating for the congregation, and all has been kept as authentic as possible.

With aid of the exhibits, and the old mission now looking much as it did in the 18th century, the imagination is readily kindled to the atmosphere of that era. Special events from time to time do even more to heighten that awareness, and make the participant feel uniquely involved.



GLEN MILLS

Weaving demonstrations in the reconstructed workshop employ methods used by the padres and Indians to offer a living glimpse into the past.



A mass in honor of the Virgin of Guadalupe was celebrated in 1978, exactly 201 years after dedication of the stone church on the mission compound.

Particularly significant and moving were two Masses celebrated when the church was newly refurbished. The first, after a lapse of almost 150 years at this site, was on September 15, 1978, the feast of Our Lady of Sorrows, portrayed in an old picture brought from Mexico for the chapel. Celebrant was Monsignor Harold F. Palmer who had been a pastor in Goliad at the time the mission was being reconstructed. The other was in honor of the Virgin of Guadalupe (also portrayed in one of the paintings) on December 12, 1978, exactly 201 years after the dedication of the stone church erected on the mission compound.

Since then celebration of the December 12 Mass in the evening of the feast day of Our Lady of Guadalupe has become a tradition, drawing a large crowd of townspeople and visitors. Special permission is obtained from ecclesiastical authorities on these occasions, since the chapel is not a regularly operating one, and in careful observance of the policy of separation of church and state. Local organizations and businesses contribute time and money staging them. Such events are intended to enrich the interpretive program at the park, deepening understanding of its history and culture.

Usually this annual Mass is conducted in Latin and Spanish, as in the

old mission days. For the recent one in 1983 the celebrant was Bishop Grahmann of the new diocese of Victoria. The mood was set by luminarias lining the paths and walls in and around the church and again time slipped backwards for the crowded congregation, in the candle glow and cadences of Gregorian chant. Twenty-one Incarnate Word Sisters from Victoria formed the choir and played the music, sung also in Latin and Spanish.

A different living glimpse of the past is provided by demonstrations of weaving, spinning and pottery. Exhibit Technician Janie Von Dohlen has special training and experience in these skills and continues to investigate methods used by the padres and Indians. Their wool was home-produced but cotton was brought from the San Antonio missions. Dyes came from native plants of the area, and she is experimenting with the different shades obtained when they are in bloom or dried, maintaining a chart with samples. This is on display in the reconstructed workshop, along with a loom, spinning wheel, baskets, jars and other items pertaining to the artisans.

The demonstrations vary in involvement according to the size of the group. They are very popular with schoolchildren and with the many tourists in spring and summer. Tours of the church also are conducted by park personnel, who are well-versed to answer questions and have ample reference material with which to follow up.

After this digression into the life and surroundings of 200 years ago, the present-day visitor may feel like enjoying a picnic or walking the nature trail. In the gently rolling terrain beside the San Antonio River are maintained picnic areas and a children's playground. A brushy, secluded overnight area features convenient, pull-through trailer sites, with screened shelters also available. East of Hwy. 183, in another part of the park, is a spacious group shelter, both attractive and versatile since it contains a fireplace and kitchen fully equipped to cater for large crowds. To the western side of the park, nearer to the river, are some wilderness areas for picnicking, nature study and primitive camping. Another star attraction is the swimming pool in this part of the park, operated by the City of Go-

liad. Boating and fishing also are favorite activities.

The .3-mile nature trail and 1.5-mile river trail start near the mission, cross a deep arroyo and give a close-up view of the brushy woodland and varied plant and bird life.

For the history buff there's a lot more yet to be delved into in this locality.

Goliad is a ringing name for Texas patriots. In the struggle for Texas independence it played a significant but tragic role. The Presidio La Bahia was occupied by Texan soldiers in October 1835 and the state's first Declaration of Independence was issued here on December 20, 1835. Colonel James Fannin, who assumed command of the garrison in February 1836, was ordered by General Sam Houston to retreat to Victoria after the fall of the Alamo on March 6, 1836. Evacuating in confusion on March 19, Fannin and some 300 men encountered Mexican General Jose Urrea with a force of more than a thousand about nine miles from the fort. The Battle of Coleto Creek ensued, but, outnumbered and without fortification, water and provisions, and in order to save the wounded, Fannin agreed to surrender. His terms were that the Texans were to be treated as prisoners of war and eventually sent to the United States. On this assumption, they marched back to the fort.

But General Antonio Lopez de Santa Anna, President of the Mexican Republic, took a different view, that those who took up arms against the government were pirates, the punishment for which was death. General Urrea had been honorable in his intentions but was overruled by order from Santa Anna to Colonel Portilla at Goliad to execute the prisoners in his charge. The sentence was carried out on March 27 a short distance outside the mission.

Historians believe this was a mistake for Santa Anna, since the slaughter here and at the Alamo aroused fierce sympathy and support for the Texans all over the United States. "Remember Goliad" became a rallying cry along with "Remember the Alamo."

A memorial shaft now marks the site where the victims of the Goliad massacre were buried. Another park, Fannin Battleground State Historic Site,



Fannin Battleground State Historic Site commemorates the location of Colonel James Fannin's struggle and surrender in 1836.

nine miles east of Goliad, commemorates the location of Fannin's struggle and surrender. The scene now is a peaceful one for picnickers, within view of the battle memorial. An exhibit in the gazebo interprets the battle and later massacre, and contains some artifacts and old photographs.

General Ignacio Zaragoza is another important name associated with Goliad. His reconstructed Birthplace is part of Goliad State Historical Park. It houses an interpretive exhibit which tells about Mexican history during the first 50 years of the Republic of Mexico. One room is devoted to Zaragoza's early childhood in Texas and Mexico, with historical background; the other depicts his military career, the Battle of Puebla and events that led to it. During this battle, which took place at Puebla, Mexico, on May 5, 1862, the larger, invading French forces were

turned back by General Zaragoza.

The fervor with which that date, Cinco de Mayo, is celebrated throughout Mexico is echoed in Goliad, which claims Zaragoza as a native son. At the time of his birth, March 24, 1829, Texas was still part of Mexico. The Birthplace is a quarter-mile south of the main park, in the shadow of the now-restored Presidio La Bahia. Such buildings often housed military officers and their families. Ignacio was the second son of one of the officers, Miguel Zaragoza, who was stationed in Texas several times. In 1834 the family moved to San Luis Potosi.

Young Ignacio began his military career in 1853. He soon became recognized as a liberal leader in northern Mexico, backing Benito Juarez, and was involved in a number of federalist victories. In 1861 he was in command of a division to confront troops from

Spain, France and England sent to enforce collection of longstanding debts against the Mexican government. Spain and England withdrew when Napoleon III of France decided to establish a monarchy in Mexico. In April 1862 the French commander turned his elite battalions toward Mexico City, but Zaragoza met and brilliantly defeated the invaders at the City of Puebla.

Although the French later succeeded in controlling Mexico, the Puebla victory was a beacon of hope for the Juaristas, encouraging their struggle until they finally overcame the French in 1867.

To the Mexican people Zaragoza is a hero second only to Juarez, and often is called the George Washington of Mexico. In Goliad, the annual Cinco de Mayo fiesta is sponsored by the

Zaragoza Society as a tribute to the General, to Mexican culture and history and to the many ties between Mexico and Texas.

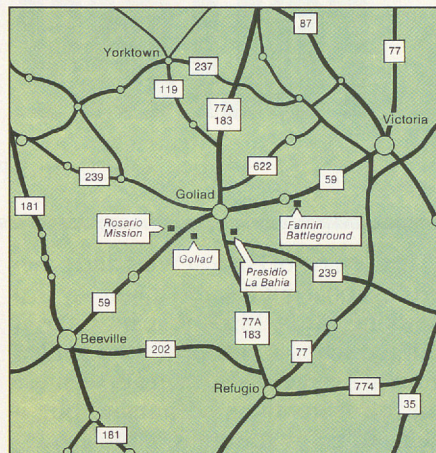
The program usually includes a field Mass, speeches by dignitaries of Texas and Mexico, floral decorations and a band, barbecue and arts and crafts booths, and a carnival with a Cinco de Mayo queen. In 1980 the festivities were heightened by the dedication of a monument in the General's honor, a 10-foot, 3,000-pound bronze statue commissioned by the Governor of Puebla as a gift to the people of Goliad and Texas. The statue stands on a plaza specially constructed by the Texas Parks and Wildlife Department.

Besides the different park units there are many other notable places to visit in the area. The reconstructed Presidio

La Bahia, owned by the Catholic Church, has a beautiful chapel and fine museum. In Goliad itself, along the shady streets and back roads of one of Texas' most historic hamlets, can be found a legacy of old homes and buildings. A gigantic oak "hanging tree" on the lawn of the venerable courthouse could tell many a tale. Among the unfortunate hanged here were the 70 after the Cart War of 1857 when Mexican and Texan teamsters battled for freight trade between San Antonio and the Gulf ports. Here also is another Fannin Monument and Old Market House Museum.

It's understandable Goliad State Historical Park has such a high repeat visitation, with so much itself to offer and set in such an inviting part of the state. * *

Historians used an inventory of mission property dated 1783 and discovered in Mexico to purchase originals or replicate items listed as church furnishings.



Goliad State Historical Park

Location: Goliad County, one mile south of Goliad on US 183 to Park Road 6 entrance.

Facilities: 20 campsites with water, sewer and electricity; five screened shelters; group trailer area with group shelter (capacity approximately 75); 24 campsites with water, electricity and sewer dump station; 10 primitive campsites (no motorized vehicles—parking provided at trail head); 40 picnic sites; one group picnic area with 13 tables and group barbecue facility; four restrooms, two with showers, two without showers; playground. For information and reservations: call 512-645-3405 or write Goliad State Historical Park, P.O. Box 727, Goliad 77963.

If they ever make a movie based on the life and bayfishing philosophy of Mont Belvieu's Forrest West, they can get Burt Lancaster to play the lead. Since Lancaster's already played the "Birdman of Alcatraz," he shouldn't have any problem adapting to the role of Forrest West, the birdman of Galveston Bay.

West, who oversees a tag team of bayfishing pros in his Los Patos Guide Service, spends more time watching birds than the Audubon Society's most rabid birder. West is not interested in how many exotic species he can identify, however. He's more interested in the antics of seagulls and, occasionally, terns, that can lead the guide and his customers to good catches of speckled trout.

One bird diving and screaming excitedly over feeding fish soon attracts other birds in the area, and if the feeding action remains on the surface for long, a huge flock of birds may assemble in a veritable feathered tornado that stays with the fish as long as the mayhem continues.

Most fishermen realize that working birds mean feeding fish. What they don't understand is how best to capitalize on the feathered guides. That's where a bearded guide, Forrest West, comes in.

"I use binoculars to help spot bird activity," explains the guide. "What I'm primarily looking for is a flock of sea gulls circling and dipping down in one spot. Terns sometimes will work over fish, but terns are often liar birds.

start out small, maybe just a foot or two across when they first appear, and drift with the wind. West likes to fish just upwind of a small compact slick because it's likely to be fresh and the fish that caused it shouldn't be far away.

If you get downwind of a feeding slick, you may note a distinctive odor that's been compared to watermelons.

When West sees a flock of sea gulls that's obviously working, screaming and diving over fish, he approaches the action with caution.

"Too many fishermen try to run their boats within casting range of a school of fish feeding on the surface and they wind up putting the school down," he says. "Actually, there's some question about whether a boat spooks the bait or the fish. That's kind of like asking which came first, the chicken or the egg?"

"How close you can run a boat to working birds and surface fish varies from day to day. I usually make a wide circle to get upwind of the birds, cut my engine about 50 yards above them, and drift in on the action. Some days, you can get closer than 50 yards. Other days you can't get within 50 yards without putting the school down."

West fishes with live shrimp as well as artificial lures. When he expects to chase working birds, he keeps one rod rigged to fish live shrimp under a popping cork. His other rod is rigged for plastic grubs, short plastic worms fished on a leadhead jig.

The grubs resemble shrimp. West rigs them in tandem to double his chances of hooking a fish, to offer the specks a choice of two different colors on the same cast and to add weight to aid in banging out long casts. In sandy or off-color water, he favors white, yellow or chartreuse grubs. In clear water, the guide likes watermelon green.

In the murky water that's often present in the Galveston Bay system, West suspends his grubs under a popping cork. The bobbing action of the cork adds action to the lures and, with a cork, the angler can leave his baits in the area where fish are surfacing, rather than having to reel in and cast again.

Sometimes, the color of a grub doesn't seem to matter. At other times, the trout show a decided preference toward a particular color. If West determines such a trend, he makes sure

FOLLOW THAT BIRD

Article and Photos by Ray Sasser

In the case of Forrest West and other professional guides, you might say that working birds, birds that hover over surface schools of fish, are the guides' guides. Average fishermen also can use the birds to their advantage, but it helps to know the rules of the game.

First, let's examine the phenomenon of working birds. Texas bay systems are home to a variety of gulls and terns. These raucous birds are scavengers and predators of opportunity. They won't turn down a free or easy meal.

One feeding opportunity the birds exploit to the fullest occurs when schools of feeding predator fish drive shrimp or baitfish to the surface. From an aerial vantage point, the birds easily can spot surface-feeding activity.

The birds hover over the action, wheeling and dipping down to the hapless bait species sandwiched between scaly predators below and feathered predators above. It's doubtful that birds catch many healthy shrimp or small fish driven to the surface, but they do mop up on cripples or bait regurgitated by predator species in a feeding frenzy.

They'll work trashlines or even bait when there are no fish present.

"If you see a flock of terns that's excited, diving, squawking excitedly, really talking to one another, they're worth a try, but I'd much rather spot sea gulls working than terns."

West will fish around sea gulls that aren't putting on the usual aerial display. He seldom bypasses a flock of gulls, or even a single gull, sitting on the water.

"The gulls may have been working surface fish just minutes before and they may just be sitting around waiting for the fish to come back to the top. In this situation, I'll run the boat upwind and drift over the spot where the birds are sitting, keeping a sharp eye out for the appearance of slicks."

Those slicks West hopes to spot are feeding slicks caused by fish, usually speckled trout, feeding down deep. The slicks probably result from the body oils of unfortunate prey species. It's also been theorized that predators gorge themselves, then regurgitate to form a sort of chumline to attract other small fish.

Whichever the case, these slicks

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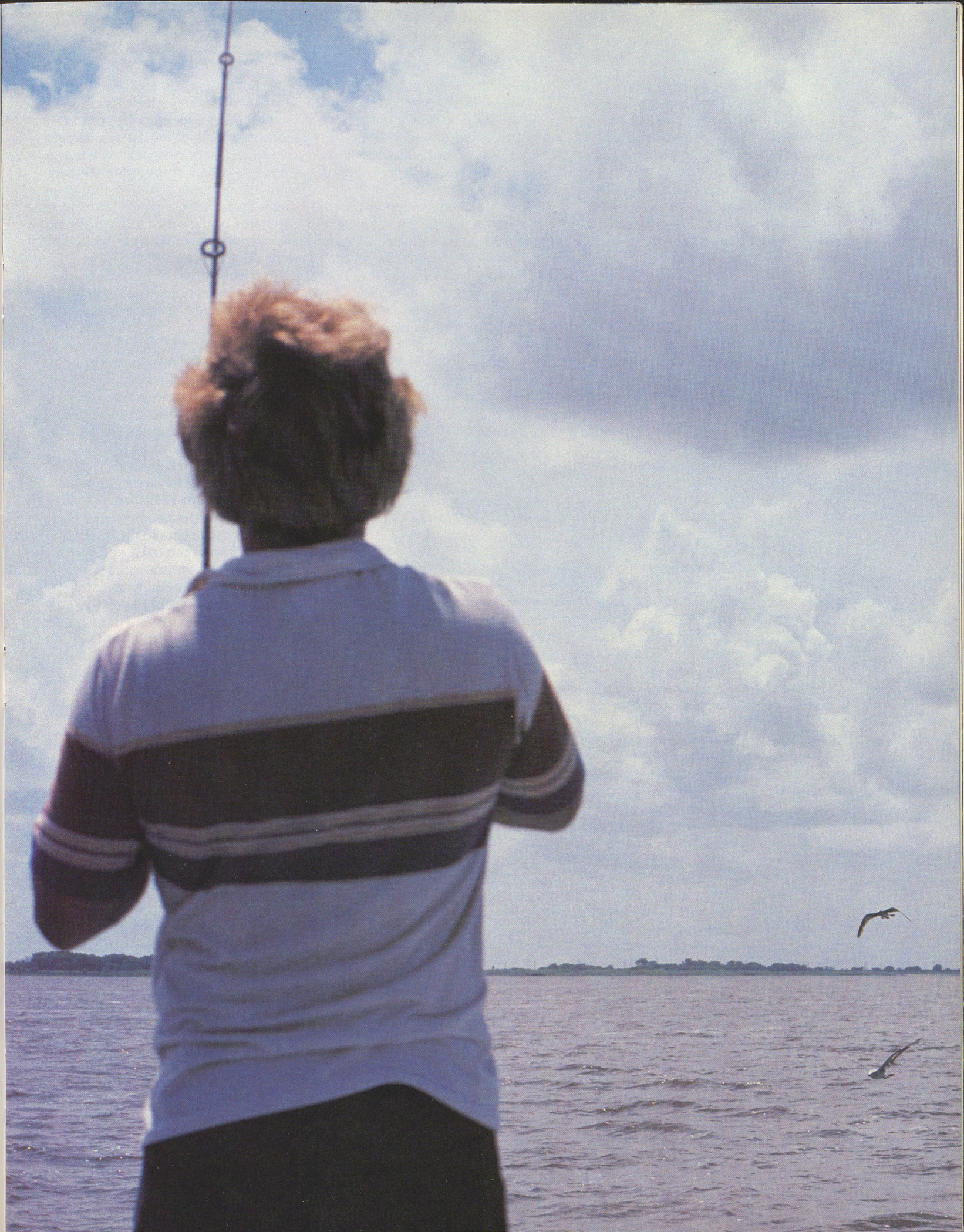
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both grubs on his tandem rig are the preferred color.

"If the fish are feeding hot and heavy, you can catch more fish on lures, particularly lures with a single hook, than you'll catch if you have to fool with unhooking trout from treble hooks and rebaiting with live shrimp. With shrimp, you may make a perfect cast into feeding fish and sling the shrimp off before it ever hits the water."

What West does, even when he's furiously catching trout on artificial lures, is sacrifice a few of his precious shrimp to hold fish around his boat.

As soon as he drifts within casting range of the surface school, he reaches into his baitwell and nabs a handful of crustaceans, gives 'em a little squeeze to injure them so they'll be easy pickings for the trout, then tosses 'em overboard. Then every 30 seconds to a minute, he'll grab two or three more shrimp, give 'em a good luck squeeze, and toss 'em to the fish. West believes the increased cost of shrimp is money well spent, since you box more fish by sacrificing a few crustaceans.

Once a fishing boat drifts within casting range of working birds, it should be apparent what all the excitement is about. Small fish or shrimp will be jumping on the surface and predators will be obvious as they slurp, swirl and pop at the fleeing bait.

Even if the birds choose to seek a handout elsewhere, and they sometimes will, a fisherman who can see the fleeing bait and swirling fish can stay in the action, birds or no birds.

It's when the birds leave and the fish disappear that West thinks average fishermen make their most critical mistake.

"Too many people come up to a flock of birds, drift through the school, catch two or three fish, then leave when the birds break up and the fish disappear from the surface. Just because the birds leave and you no longer see the fish doesn't mean the fish aren't there."

Depending upon wind conditions and how well a school is holding in an area, West usually anchors as soon as he catches a couple of fish. If the wind is up and the fish are moving downwind, he'll cinch his anchor on a 10-foot line, just enough to slow his drift so he won't outdistance the fish.

If the fish go down, then come up

again beyond casting range, judicious use of the outboard is definitely called for. Again, it's a matter of circling upwind, giving the fish a wide enough berth so they're not spooked by the engine sound, then cutting the engine and drifting within casting range.

Smaller bay boats equipped with an electric motor are ideal for staying on top of surfacing fish. Electrics are not powerful enough to handle larger craft, particularly when called upon to buck a stiff bay wind.

When the apparent surface feeding frenzy goes the way of cheap gasoline, which is to say, disappears, West falls back on old reliable—live shrimp under a popping cork.

Working birds mean feeding fish, and the angler who knows how to capitalize on this often can land a good speckled trout.

"Once the fish go down and the birds break up, I go back to live shrimp. You can bet there are still fish in the area, even if you can't see 'em and the birds won't point them out. By using live shrimp once the fish are down, I can improve my catch by 25 to 30 percent.

"Lures are more efficient when the action is fast and furious, but when things slow down, nothing beats a live shrimp for catching trout."

Though West catches a lot of fish under flocks of working birds, he really prefers not to fish that way. For one thing, he knows that big speckled trout are less likely to chase bait to the surface than are smaller specks. Big trout sometimes will hang out under a school of small fish, so you should occasionally let a lure or bait sink near the bottom in hopes of tempting a whopper.

For the most part, however, West and his fellow fishing guides catch bigger speckled trout by fishing slicks and structures than by chasing sea gulls. There's also the problem of etiquette associated with such a visible fishing technique.

In the bay, there's no such thing as

your flock of birds and my flock of birds. If there are other boats in the vicinity, the angler who first reaches a working flock of birds can expect company in short order. As long as everyone stays a respectable distance from the fish so as not to put them down, and as long as everyone respects the rights of the other fishermen, several boats can effectively work the same flock of birds.

Invariably, however, one fisherman will insist on running too close to the fish, usually cutting other boats off in the process.

Sadly, rudeness is not restricted to rush hour traffic on the freeway. In fact, breaches of etiquette are so common when chasing birds in the bays that there's some justification to using crackers to bait seagulls and, eventually, other fishing boats.

Peak periods for fishing under working seagulls tend to vary from bay system to bay system. Peaks seem to hinge on the gulfward movement of brown shrimp from the bays in the spring and white shrimp in the fall.

Though the migration routes of shrimp remain something of a mystery, specific patterns seem to crop up during good fishing periods. For instance, if you catch fish under the birds in a specific part of the bay at a particular time one day, chances are good they'll be near the same area about the same time the next day.

Some bay systems have more predictable bird action than others, but marinas and bait camps near the water should be able to tell you if birds have been working the area you plan to fish.

Incidentally, bird action is generally slower in bays where shrimp boats are working. Sea gulls would rather collect handouts from the bountiful shrimp boat cull, than chase the ever-moving fish.

Despite the sporadic and sometimes frustrating aspects of catching speckled trout under flocks of working birds, fishing the birds in Texas bays is the closest thing to a sure bet a novice angler is likely to find.

If the birds are working, the fish are certainly there. Not only do working birds spell fish, they spell actively feeding fish. The hardest part of any sport-fishing effort is locating fish in a feeding mood. Once they're located, catching 'em is the easy part. * *

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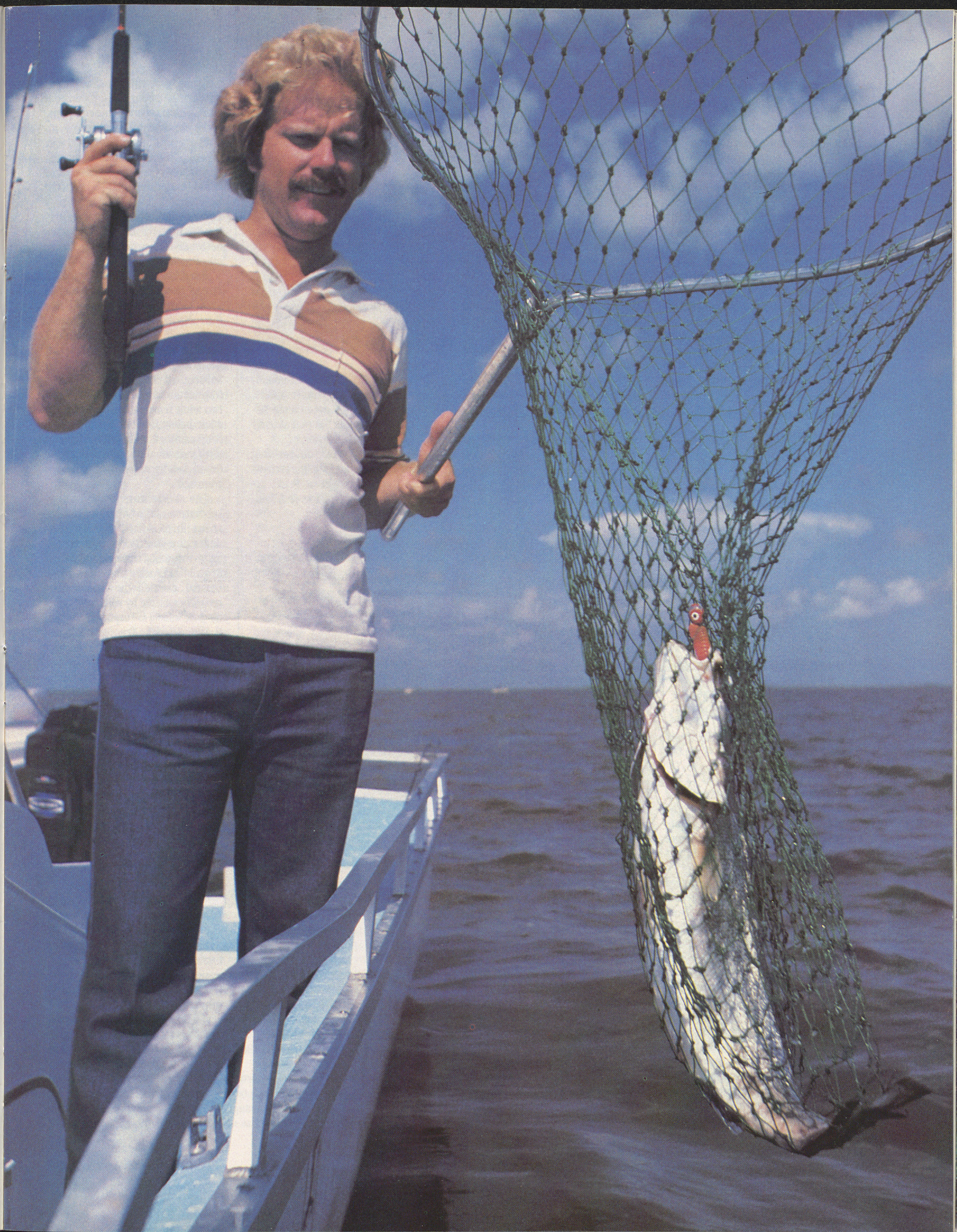
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Teenager Sets Record For Brook Trout

A Lake Jackson teenager has established a new category in the state fish record book with a 10.6-ounce brook trout caught from the Guadalupe River below Canyon Reservoir Dam.

Bryan Hendricks, 17, was using a fly rod and a wet fly on February 19 when he caught the 12-inch-long brookie.

Hendricks' catch was notable in that only a few of the fish were included in a shipment of rainbow trout from Arkansas stocked in the Guadalupe by Texas Parks and Wildlife Department hatchery crews.

There was no previous entry in the state record book for brook trout.

Railroad between Palestine and Rusk will not change, but lease charges for filming purposes and charter rates will increase.

Several important changes in the reservation system for overnight facilities also were effective May 1.

As in the past, reservations will be accepted daily at the park headquarters where the facility is located, by mail, telephone or in person between 8 a.m. and 5 p.m. Reservations for cabins, screened shelters and campsites cannot be made more than 90 days in advance of the occupancy date.

The new reservation procedure will require a deposit equal to one day's user fee for reservations made more than 10 days in advance of the occupancy date for cabins, screened shelters, more than two campsites

Big Striper Almost Sets New Record

Austin boat mechanic Charlie Meyers figured the best way to catch a big fish is to go where they've been caught before.

But he was not prepared to deal with the 37½-pound striped bass which hit his shallow-running crank-bait April 29 in Lake Austin just below the Mansfield (Lake Travis) Dam.

The big striper he fought to the bank was only 12 ounces shy of the current state record striper which was caught at almost exactly the same spot in March 1981.

"I couldn't believe I was able to bring it in," said Meyers of the battle waged with light 12-pound-test line in the swift tailrace waters. "The biggest fish I ever caught before was only about 3½ pounds, so I was really in new territory."

The fish, weighed on certified scales in Austin, ranks as the second-largest striper caught in Texas, according to the Texas Parks and Wildlife Department.

Major Archeological Discovery Documented at Seminole Canyon

Recent investigations sponsored by the Texas Parks and Wildlife Department at Seminole Canyon State Historical Park have revealed the oldest human remains ever found in the Lower Pecos region of West Texas. A team of paleontologists and archeologists from the University of Texas at Austin have discovered what may prove to be a 7,000-year-old burial site containing the remains of at least six human skeletons.

The objective of the investigation was to sample ancient deposits within a sinkhole cavern for animal re-

mains which could reveal scientific information about the environment over the last several thousand years. These deposits are particularly interesting to scientists because they contain discrete capsules of ancient environments. The capsules occur as sinkholes open up, plant and animal material fall into them and they close again. The material caught during the time the sinkhole was open becomes an environmental time capsule.

The team began digging on March 10 and immediately found a human tooth and skull fragments rather than the expected animal remains. The second day's investigation produced a complete projectile point which indicated the 7,000 year age. Subsequent digging revealed jaw fragments and teeth of five people—two adult females, one juvenile, one adult believed to be a male and a fifth adult of undetermined sex. A sixth individual whose remains were found nearby apparently had been cremated.

The Vertebrate Paleontology Laboratory of the University of Texas at Austin conducted the excavation under the direction of paleontologists Ernest L. Lundelius and Robert Rosenburg. Archeologist Leland C. Bement directed the human bone recovery assisted by volunteer archeologists Solveig A. Turpin and Herbert H. Eling, Jr. of the Texas Archeological Survey. About a dozen volunteer spelunkers assisted in the excavations. Archeologist Ron Ralph coordinated the investigations for the Texas Parks and Wildlife Department.

Since the investigation was limited to the brief university spring break, the digging was discontinued and the cavern secured on March 19. Park officials indicated the human remains will be thoroughly studied and are hopeful that funding will permit excavations to be resumed in the near future.

Redfish, Trout Limit Reminder Issued

Saltwater fishermen are reminded by Texas Parks and Wildlife Department officials that the emergency bag, size and possession limits for red drum (redfish) and spotted seatrout (speckled trout) imposed after the mid-winter fish kill now are in effect on a permanent basis.

The daily limit on red drum is five, possession limit 10. Only reds between 18 and 30 inches may be retained. The spotted seatrout limit is 10 per day, 20 in possession, with a 14-inch minimum length limit.

The late December freeze took a heavy toll on redfish and trout in the state's shallow bays, and subsequent surveys indicate losses were high enough to justify extending the emergency limits, according to Gary Matlock, chief of coastal fisheries for the department.

Matlock added that in East Matagorda Bay, where the retention of red drum and spotted seatrout had been temporarily prohibited under the emergency rule, anglers may now retain legally caught fish of those two species. The same regulations apply to East Matagorda as in all other Texas bays, he said.

OUTDOOR ROUNDUP

COMPILED BY
THE PARKS AND WILDLIFE
DEPARTMENT'S NEWS SERVICE

State Park User Fees Increased by TP&WD

User fees for most facilities in state parks increased effective May 1, 1984.

The daily entrance fee of \$2 per vehicle and the \$15 annual entrance permit will remain unchanged. The only exception is at Big Spring State Recreation Area at Big Spring, where the entrance fee rose from 50 cents per vehicle to \$1.

The overnight fee for standard campsites increased from \$3 to \$4, and campsites with electricity from \$4 to \$6. Campsites with electricity and sewer connections increased from \$5 to \$7, and screened shelters are \$8 instead of \$6.50.

The state park system offers a wide range of facilities, including group shelters, recreation halls, auditoriums, group picnic areas, swimming pools, golf courses, fishing piers and a full-service hotel at Indian Lodge in Davis Mountains State Park. Fees for using most of these facilities will be increased.

Fees charged at the Texas State

and all group facilities. Reservations made by telephone will be held five days pending receipt of the required deposit. If the deposit has not been received by the end of the five-day period, the reservation request will be cancelled.

All reservation deposits will be applied to the total amount due at the time of registration. If a reservation or any part of a reservation is cancelled 72 hours or more prior to 2 p.m. on the arrival date, the deposit will be refunded; otherwise it will be forfeited.

No reservation fees are accepted when reservations are made for one or two campsites. However, the reservation will not be held beyond 6 p.m. on the arrival date, instead of 8 p.m. which was the previous policy. Late arrival privileges will be granted to those who call the park headquarters on the day of arrival or the day before between 8 a.m. and 5 p.m.

For more complete information on the reservation system and fees, call the park you are interested in visiting.

Two State Record Fish Certified

A new state record has been set for freshwater blue catfish and a new category has been established for saltwater cubera snapper, according to the Texas Parks and Wildlife Department.

Trotline fishermen Noble Condra, Raymond Campbell and Haily Condra used a minnow-baited trotline to catch an 89½-pound blue catfish at Lake Conroe during February.

The big cat replaces another Lake Conroe catch in the record book—an 86-pounder caught during 1982 by J.H. Vick of Conroe. The record is listed in the unrestricted division, since it was caught by legal means other than rod and reel.

The fish was 52 inches long and 36 inches in girth.

A 131-pound cubera snapper caught by Ricky H. Preddy of Port Mansfield 15 miles north of that port has been approved as a new species category.

The fish was caught in August, 1983 but problems associated with identification of the fish's species caused a delay in certification. A department biologist identified it as a cubera snapper after examining the fish. It first was believed to be a dog snapper.

The fish was 56 inches long and 46 inches in girth. The dog snapper record is 128 pounds.

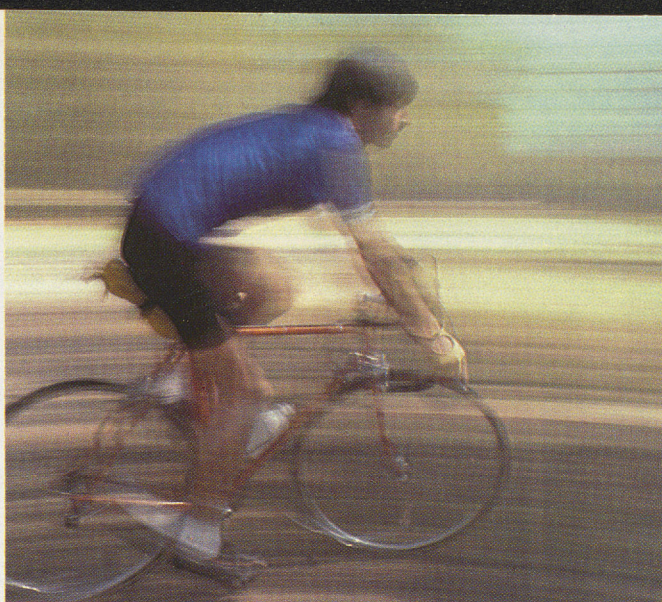
Fatigue, Alcohol Deadly to Boaters

Persons who condemn drunk drivers on the roadway often figure drinking while operating a boat is permissible.

But U.S. Coast Guard researchers have found that alcohol consumption, especially when combined with fatigue from long hours on the water, can have just as disastrous effects as drunk driving.

Officials said most boating accidents are operator related and vision related. "Drinking and fatigue cause the field of vision to become narrower," said John C. Bernhartsen in a Coast Guard publication. "In other words, several hours of boat operation can develop something similar to tunnel-vision or highway hypnosis."

In a Coast Guard study of boat operators who consumed controlled amounts of alcohol, researchers noted that with a blood-alcohol content of .10 the individuals often missed signals from either side of the boat. "When fatigue and alcohol



JANET GELPHMAN

Bicycle Route Maps Available Free

Bicycling enthusiasts may obtain free maps from the Texas Parks and Wildlife Department outlining more than 400 miles of interconnecting bike routes through the Hill Country and other areas of Central Texas.

Prepared by the department and the Austin Cycling Association, the 10-map packet shows state and local parks, hazardous areas, road conditions, points of interest, mileage, basic and full services and important telephone numbers.

The packets are available from several sources, including the state parks along the routes. They also may be obtained by writing the Comprehensive Planning Branch, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744 or by calling Kathryn Nichols at 512-479-4900.

They also are available from the Austin Cycling Association, Box 5993, Austin, Texas 78763, and the Bicycle Information Committee, 5526 Dyer, #111, Dallas, Texas 75206, 214-368-1791.

Fishery Commission Agrees with TP&WD Redfish Data

The Gulf States Marine Fisheries Commission, (GSMFC) a compact of fishery managers in the five Gulf Coast states, has agreed with the Gulf of Mexico Fishery Management Council (GMFMC) that red drum (redfish) in Texas waters have been overfished.

The two organizations in recent meetings approved a "red drum profile" after examining data collected by the Texas Parks and Wildlife Department, and agreed with the department's findings on the status of red drum. Recognized scientists from all the Gulf states participated in the review, officials said.

The red drum profile will be provided to fishery managers in the Gulf states for developing management strategies for the species.

The GSMFC is a nonregulatory compact created by state legislatures in the five Gulf states, and it has the responsibility for distribution and coordination of information on fishery management in state waters of the Gulf of Mexico. Its counterpart on the federal level, the GMFMC, is responsible for developing management plans in federal waters of the Gulf of Mexico.

Officials said the red drum data from Texas was the most comprehensive of any of the participating states because of routine monitoring programs conducted during the past decade. Because of these programs, a scientifically valid assessment of red drum status is possible for the state, they said.

were combined, it became apparent that alcohol interacted with and increased the effects of fatigue," Bernhartsen said. "Operators who were fatigued and whose blood-alcohol content was .10 or more missed 10 or more times as many signals as operators that were merely fatigued."

Another finding of the study was that among the operators asked to

rate their performance after the tests, those who had been legally drunk tended to over-rate their ability, while sober operators were more conservative.

For information and materials on boating safety, write the Water Safety Section, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744.

Brazos Bend Park Opens

The new Brazos Bend State Park located about 28 miles south of Houston has opened for visitation.

The park, formerly known as the Hale Ranch site, contains 4,897 acres of oak ridges, coastal prairie, river bottomland and lakes in Fort Bend County.

The park's development was tailored to preserve the site's abundant wildlife resources which include more than 225 species of birds, alligators and a variety of other reptiles, mammals and fish.

Birders, hikers and other outdoor enthusiasts can enjoy an observation tower, observation platforms and almost 15 miles of trails, including nature trails, a hike/bike trail and a three-mile trail along the Brazos River.

Because of the high population of alligators, boating and swimming will be prohibited in the park. However, fishermen will have ample bank access and two lighted fishing piers.

Facilities include 120 picnic sites, 35 tent camping sites, 42 multi-use campsites, 14 screened shelters, 20 primitive campsites and a large group dining hall.

The park entrance is on Farm Road 762. From Houston, the park may be reached by going south on State Highway 288 to Rosharon, then west on Farm Road 1462, turning north on Farm Road 762 for one mile. From Richmond, take U.S. Highway 59 south, then Farm Road 762.

For overnight camping reservations or other information, contact the park superintendent by mail at Route 1, Box 840, Needville, Texas 77461, or by calling 409-553-3243.

July in . . .

TEXAS PARKS & WILDLIFE


Stalking a fish that is visible can be just as exciting as playing it after it's hooked, and next month we'll have some tips for catching redfish and trout in shallow water along the coast. We'll also tell you about some summertime problems—ticks, chiggers, fire ants and heat-related illnesses. We'll visit the Texas Zoo in Victoria and the Kleingunther Co. in Seguin, where a .22-caliber rifle is manufactured that will be used in the 1984 Summer Olympics. Other stories in July include the black bass of Texas and the ocotillo.



Bastrop State Park

TAKE A HIKE

Article by Kathryn Nichols and Photos by Glen Mills



Volunteer trail enthusiasts have added a new attraction to Bastrop State Park, the Lost Pines Hiking Trail. Members of the Texas Trails Association and the Sierra Club spent two years planning and pruning this 8½-mile loop through the park's backwoods, a narrow footpath that does not distract from the area's natural beauty.

The northern leg of the trail takes off from the Scenic Overlook, a sturdy stone structure built during the Depression by the Civilian Conservation Corps. From there the trail passes through areas of mixed pine and hardwood. There are six ponds along the route where the observant hiker can glimpse the birds and animals of the park or at least the signs of their visits. The trail follows a tributary of Alum Creek, at times on a ridge 50 feet above the creek. Farther on, the trail criss-crosses a creekbed that is usually dry, but during a rainy spell, hikers must use their puddle-jumping abilities. Bluffs along the cut banks of the creek display colorful layers of red sand and chocolate mud.

Heading back on the southern leg, the trail tunnels through yaupon thickets and passes a burned-over area where the surviving pines are some of

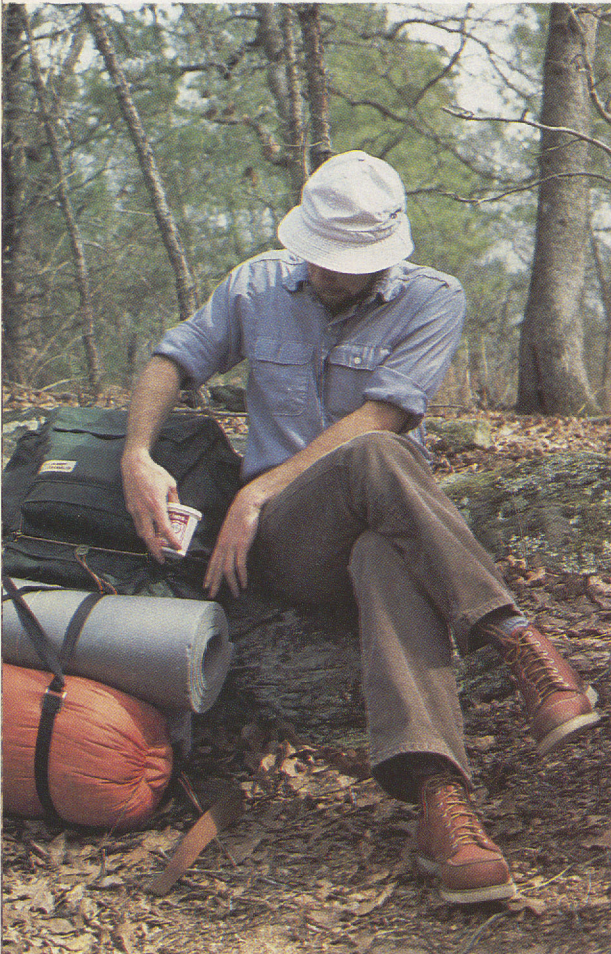
the biggest in the park. The path crosses fields of thigh-high ferns and areas covered with attractive, but ominous poison ivy. A mossy rock outcropping near a trail junction marks the spot where the hiker can head back to the overlook or take the other option to the trailhead at Copperas Creek Campground.

A group of proud trailworkers gathered at the trailhead on February 19, 1983, to declare their pet project complete. A brief dedication ceremony was held, and a length of fluorescent surveyor's tape stretched between two big pines was cut with a Swiss army knife. By June 1, the park staff finished a site for overnight parking and began to allow backpack camping along the trail. The backpacking procedures on this trail are new for the state park system, as there are no designated primitive campsites.

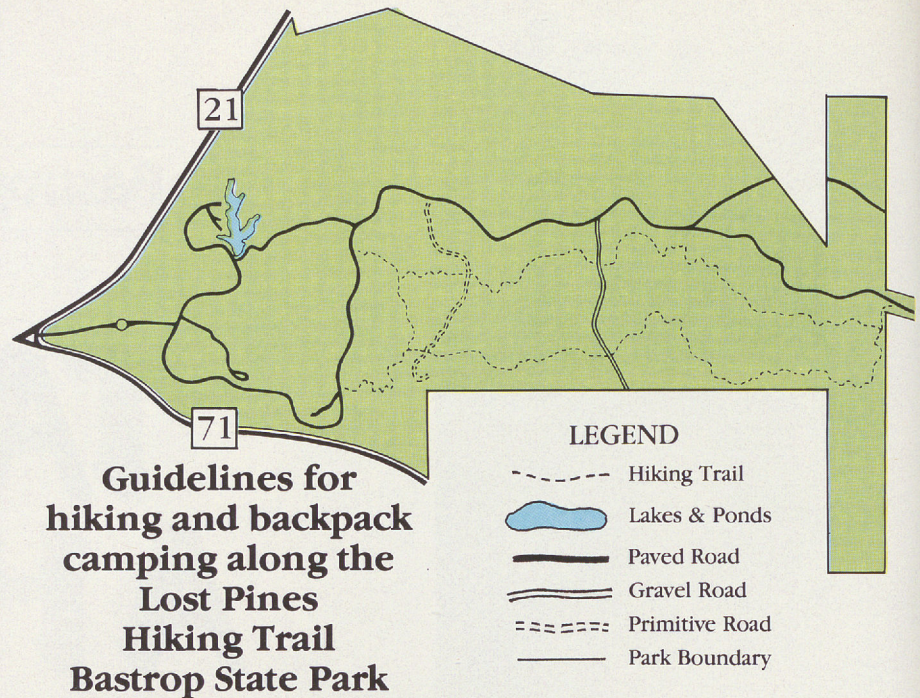
Backpackers must first check in at the headquarters and pay the usual entrance and camping fees (\$4 a night for a camping party of up to eight people and \$2 a day per vehicle). The backpackers select their own campsites anywhere along the trail except in the areas near the trailheads. This procedure is being tried on a trial basis.

Overnight users have the opportunity to experience true backpack camping, a self-sufficient practice in which the hiker carries everything he needs on his back. There are no toilet facilities, water faucets, or trash receptacles along the trail. Campfires are not permitted, and all cooking must be done on containerized fuel stoves. When the next hiker comes down the trail, he should not be able to tell that a backpacker spent the night nearby.

Maps of the trail are available at the park headquarters. Day hikers will find there are several options for shorter hikes than the 8½-mile loop. If you want to use the trail for backpack camping, you may wish to call the park (512-321-2101). The 90-day reservation procedures are available for this type of primitive camping. * *



Backpackers may select their own campsites anywhere along the trail except for areas near the trailhead. There are no designated primitive campsites. The Lost Pines Hiking Trail provides a true backpack camping experience, a practice in which the hiker carries everything he needs on his back. Campfires are not permitted, and all cooking must be done on containerized fuel stoves.



Guidelines for hiking and backpack camping along the Lost Pines Hiking Trail Bastrop State Park

This 8½-mile trail has been constructed primarily through the efforts of volunteers from the Texas Trails Association and the Sierra Club. The trail is intended to be a primitive footpath which offers the least intrusion into the natural beauty of the area. Future plans are to continue the trail east along the right-of-way for Park Road 1 and into Buescher State Park about 10 miles away.

Backpack camping is allowed along the trail on a trial basis. This means you may select your overnight campsite anywhere along the trail east of the first primitive road (see map). **BACKPACKING USE WILL CONTINUE ONLY IF USERS FOLLOW THE GUIDELINES AND RULES LISTED BELOW.**

Regular fees apply to the use of this area: \$2 per day entrance fee and \$4 per night for primitive camping. Be sure to park your car in a designated parking area; check with park staff for appropriate overnight parking. Affix your camping fee receipt on the inside of your windshield.

Selecting a Primitive Campsite

1. Overnight camping is permitted only in the area east of the primitive road (see map). Camp at least 50 feet from the trail and 100 feet from any open water.

2. **DO NOT CONSTRUCT YOUR CAMPSITE.** Avoid disturbing the groundcover and topsoil, and remove all traces of your camp when you leave.

Water

There is no drinking water available along the trail. However, there is a faucet near the trailhead. You must carry in water for all your drinking, cooking, and washing needs. Creek and pond water in this area is not suitable for consumption, even when boiled or treated. Do not wash dishes or bathe in the creeks or ponds.

Fires

Campfires are not permitted in the area where primitive camping is allowed because of ground scarring and possibility of wildfires. Gathering firewood in the park is prohibited in order to allow downed wood to contribute to the natural forest floor. **COOKING SHALL BE DONE ONLY ON CONTAINERIZED FUEL STOVES.** During severe droughts, stoves may also be prohibited.

Sanitation

Solid waste—**ALL GARBAGE AND LITTER SHALL BE PACKED OUT** of the area for disposal in trash receptacles located at the trailhead parking area. Burying garbage is not permitted. Please consider picking up litter left by others.

Human waste—No toilet facilities are located adjacent to the trail. Alternative disposal of human waste should follow standard field disposal practice. Do not deposit waste within 100 feet of any open water. Attempt to pick a spot that is basically flat. Bury waste in the biologically active topsoil area not deeper than 10 inches nor less than three inches below the surface. Replace the groundcover over your pit. Completely cover your waste. The next person will appreciate your consideration.

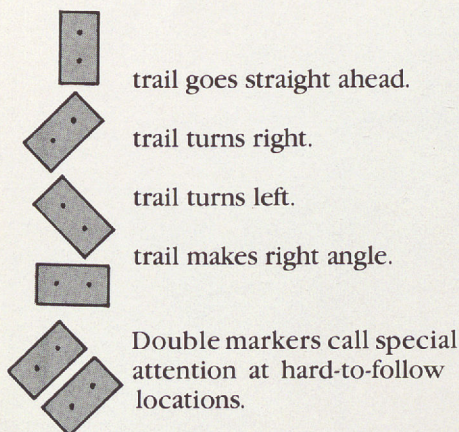
Trail Rules

We ask your help in conserving the park's resources—please observe these few trail rules:

1. Do not cut corners or cut across switchbacks.
2. Do not disturb or take any type of plant.
3. Do not disturb or harm any type of wildlife.
4. It is unlawful to disturb historical or archeological sites or features.
5. The gathering of rocks, flint chips, arrowheads, etc., is prohibited.
6. ALL OTHER PARK REGULATIONS APPLY, including the prohibition against the public consumption of alcoholic beverages.

Trail Marking System

Aluminum markers 2x4 inches are attached to trees approximately at eye level. Their position should indicate the direction the trail goes.



Standard wooden park signs are used to mark the major intersections.

INSECTS—Ticks, chiggers and mosquitos; remember, they bite and can sometimes carry disease. **BE CAREFUL!**





rollin' on the river

by E. Suzanne Carter

June is American Rivers Month, and special events have been scheduled across the country and state to bring river people together for outings and to consider long-term conservation goals.

Here in Texas, recreationists have been in the water since April, because by June many Texas rivers are dry. But Texas rivers are like Texas weather—changeable. The first time I saw Howard's Draw, a tributary of the Pecos River, it was no more than a dry ditch. We drove across the prairie and suddenly descended into a wide, gravel river bed about 15 feet deep. The road went through the draw and came up on the other side. But one day, about a month after I had become used to seeing a dry Howard's Draw, the sky became black with clouds and I knew it was raining hard in the watershed. As I approached the edge of the draw, I heard the water before I saw it. The upstream runoff raged and boiled mightily, but by noon Howard's Draw was dry again.

Another summer, I saw the Rio Grande so low that river runners were pushing their rafts out of Santa Elena Canyon. And one June, after dinosaur tracks were found in the Paluxy River, I was out looking for them in water only ankle-deep at midstream.

At flood stage, the Pedernales River sends standing waves as large as houses over its boulders and rocks. Walls of water 20 feet high have been observed on the Rio Grande, washing everything

before them to the Gulf. Spring rains in North Texas drain into the Trinity River channels and, when they reach Dallas, are contained between two giant levees. Driving across the city's highway overpasses you can look down and see a half-mile wide, smoothly flowing river surface; roils and churning water indicate a powerful turbulence below. Crossing those same bridges at mid-summer you would be hard pressed to see any water at all.

Water flows in seasonal cycles on all Texas rivers—low in summer and winter, higher in spring and fall. Although the change from drought to sudden flooding can occur at any time of the year, in general, the cycles persist and recreationists may find stream flow too low for canoeing during the summer months.

Texas boundaries cut across several major environmental zones and the rivers that drain the different regions each have individual identities. Western rivers can be either dry ditches or wild torrents. North-central Texas rivers are broad, flat streams headed toward the East Texas woodlands where they become slowly moving waters, at times causing the land to resemble a swamp and at other times a jungle. Hill Country streams are narrow, clear and cold.

Rio Grande, Devil's and Pecos Rivers

West Texas is dry from the mountainous regions of Big Bend to the High Plains of the Panhandle; however, many of the state's rivers can first be identified as streams on these arid plateaus. They are derived from runoff and, like Howard's Draw, may be dry most of the year. Ephemeral trickles of water begin to collect in the high elevations and flow southeasterly toward the coast. Such rivers are unreliable and do not have a sufficient flow for recreational use.

There are, however, three West Texas rivers that collect adequate water from mountains and springs to provide recreational outlets for the experienced canoeist—the Rio Grande, the Pecos and the Devil's Rivers. They flow through rugged canyon country and around massive rock falls, providing rough waters for skilled outdoorsmen.

Progressively deeper canyons line the Pecos as it winds downstream (right). The Guadalupe (inset) is many Texans' favorite river.

Texans rank the Rio Grande as one of their two favorite rivers. It starts in Colorado and becomes a Texas river at El Paso. From there it flows southerly until it takes its big bend to the north. Canyons and mountains guard the Rio Grande all along the Big Bend route and are premium places for river rafting. But dams in both Mexico and New Mexico now divert so much water to agricultural uses that the mighty Rio Grande is frequently too low for rafts in the summer.

In the spring and fall the Rio Grande usually is high enough for rafting, kayaking and canoeing needs, and there are a number of outfitters who can plan river outings for groups. Trips through Big Bend National Park and the lower canyons are the best in Texas.

The Devil's River is a truly wild river with uncertain flow and numerous rapids. The upper waters cross sands and gravels that strain out sediments

and leave a clear, clean stream. Downstream, the river flows through a narrow valley that becomes almost canyonlike at times with hazardous areas that must be portaged. In many places the riverbed is solid rock, channeled and fluted by water action. The 44-mile section of river above the National Park Service's Rough Canyon Recreation Area is one of the finest wilderness waterways in Texas, but it is surrounded by private lands and is virtually inaccessible.

The Pecos River begins in New Mexico and flows south to the Rio Grande. Its headwaters are in flat, semiarid lands with cacti, yucca and sagebrush, but as it reaches South Texas it enters canyon walls. Flash floods are not uncommon since the river drains millions of acres far to the north of the main stream and hundreds of dry ditches feed into it. Western settlement has been dependent on the Pecos for more than 100 years and now the river flows through agricultural lands and oil fields, a circumstance which leads to some pollution of its waters.

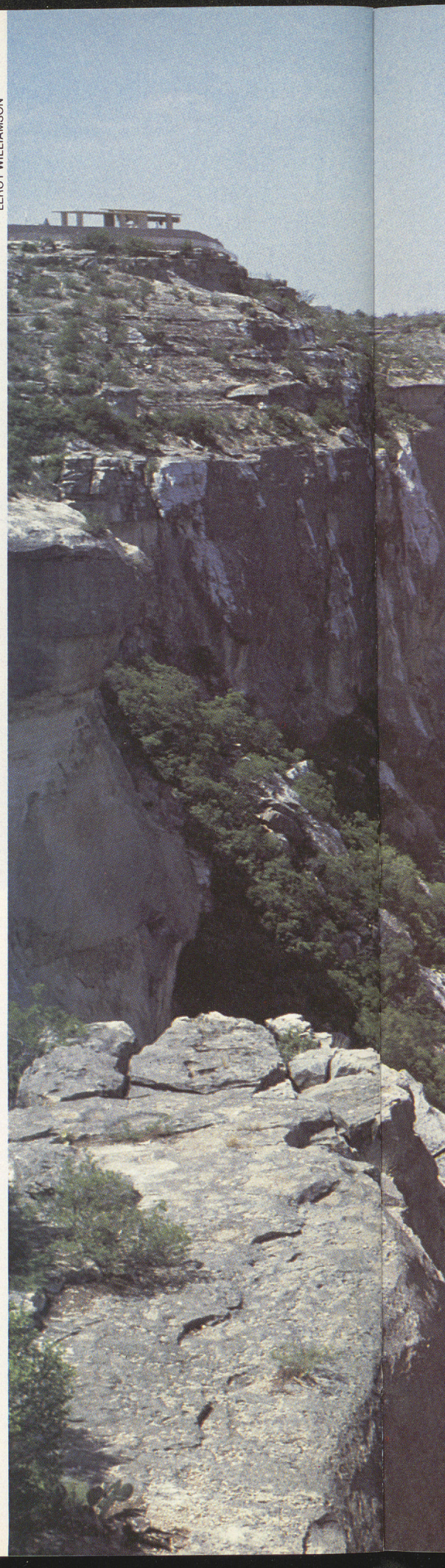
Nevertheless, the isolated 55-mile section of the Pecos River in Val Verde County is the best section on the entire river for recreational use. The Pecos River and its tributary creeks have worn away at the Chihuahuan Desert to form a spectacular network of canyons. These canyons progressively increase in depth downstream from the Panhandle Crossing, eventually to rise several hundred feet above the river in the vicinity of the U.S. Hwy. 90 high bridge.

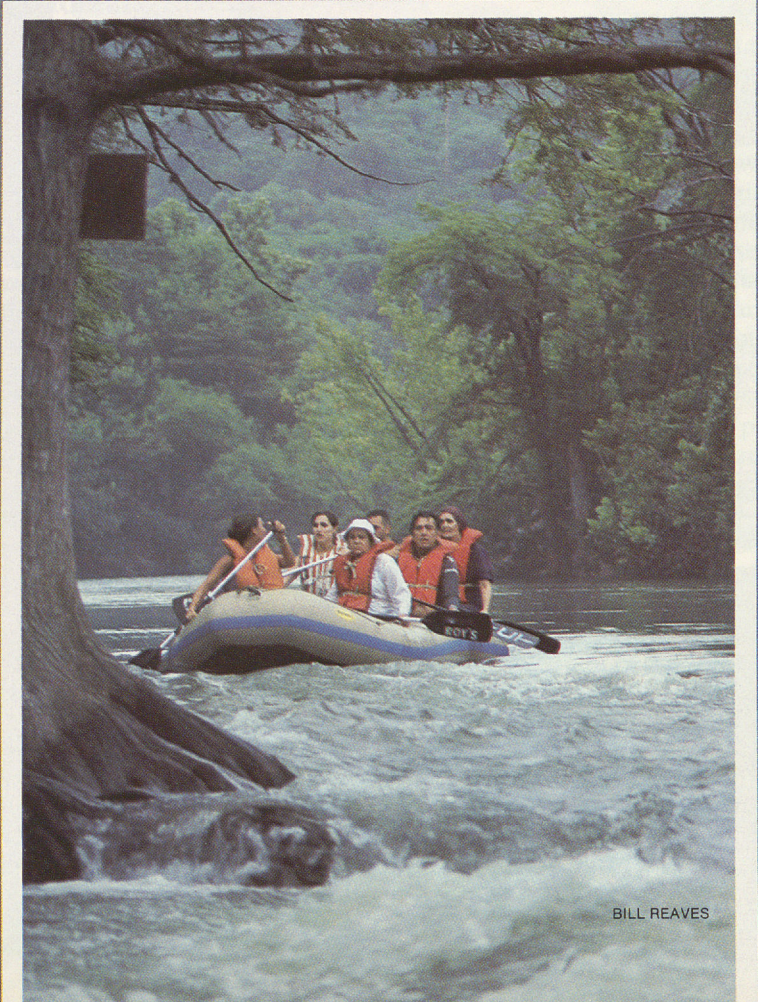
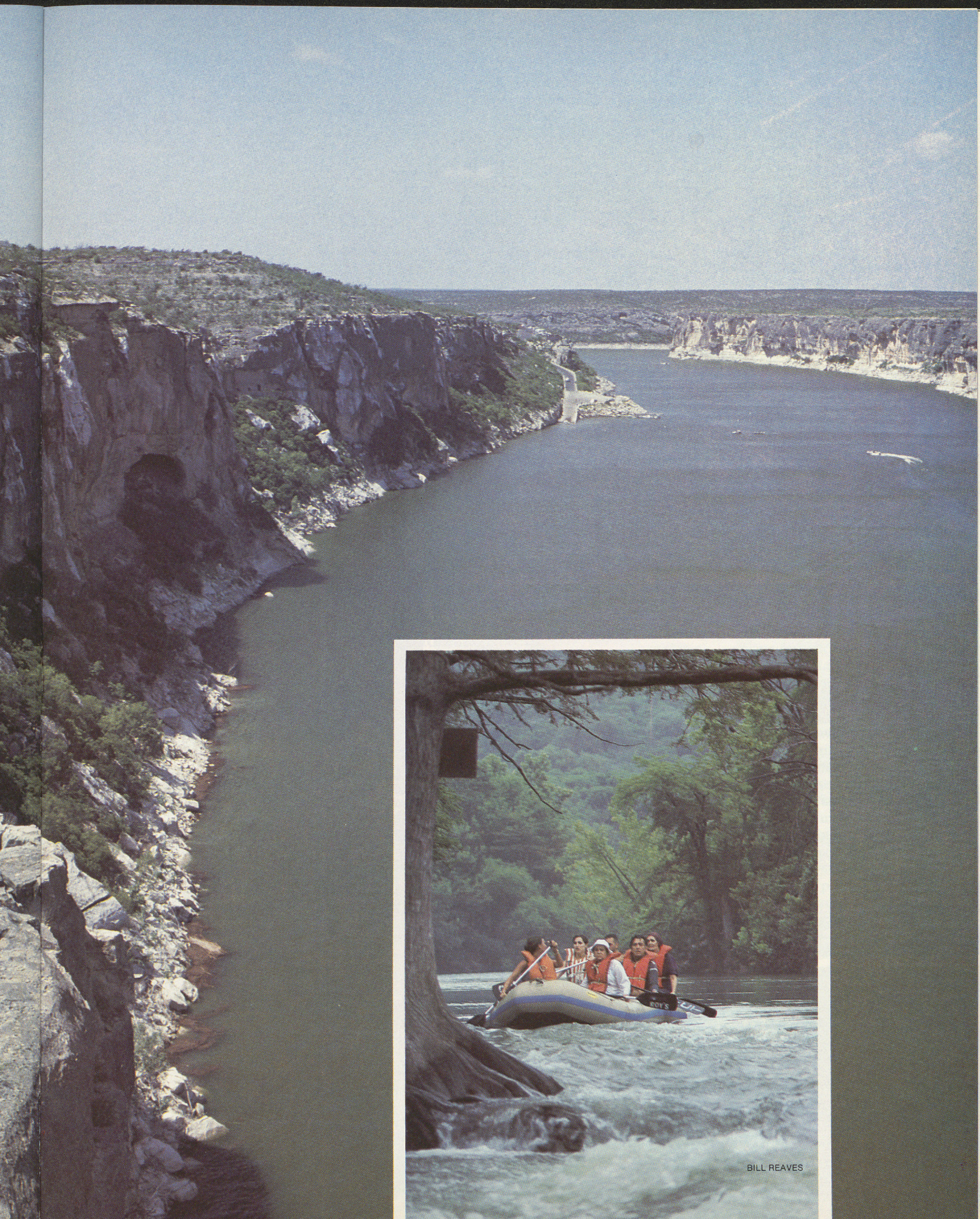
Brazos River

Far to the north, stream flows that begin in the higher, western elevations pass through the western cross timbers and pick up enough water to provide prime recreation opportunities. In the north-central region canoeable streams flow through rolling farmlands. These waterways have earthen banks and present nonhazardous, leisurely trip possibilities. But keep in mind that in summer the release from dams may not be sufficient and some walking may be required.

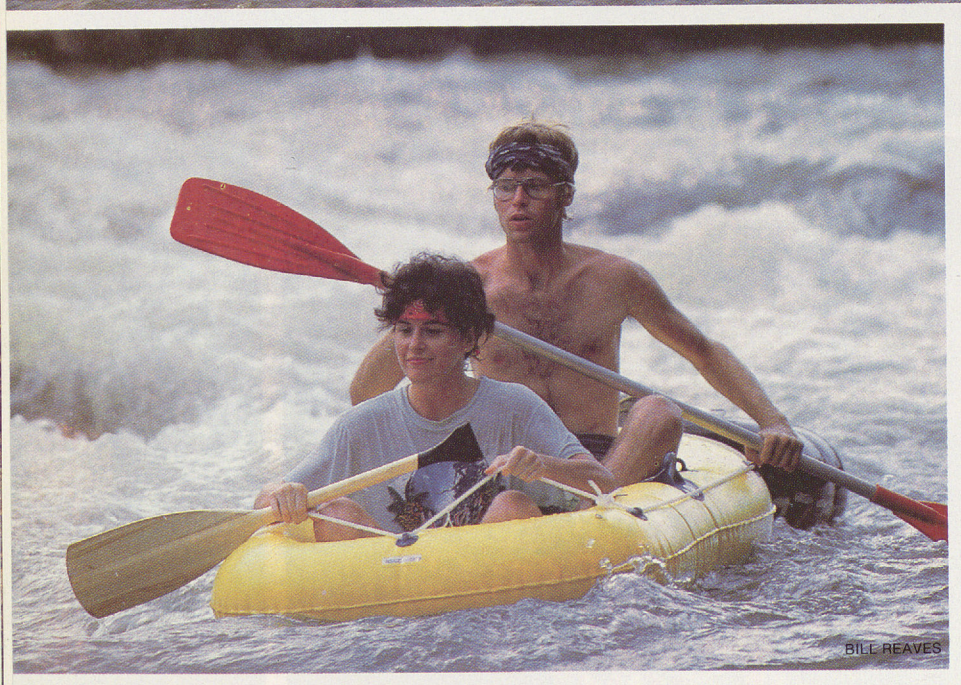
The Brazos is the largest river between the Rio Grande and the Red and has been recognized as one of the state's most scenic. It flows for about 840 miles to the coast, passing through

LEROY WILLIAMSON





BILL REAVES





GUADALUPE RIVER BY BILL REAVES

most of the major physiographic regions of Texas. The main stream begins in Stonewall County at the junction of two of its forks, the Double Mountain and the Salt Fork. However, the river has insufficient water for recreational use until the Clear Fork enters the main stream in Young County. Three major reservoirs are located on the main stream, and the best sections for recreation are found below Possum Kingdom Dam. Few major hazards are found on the entire river.

Below Possum Kingdom Dam, a 41-mile stretch of the Brazos provides an isolated trip through rugged, cedar-covered hills where Comanches once roamed. Generally the river is extremely wide with heavily vegetated banks consisting of elm, willow, oak and cedar, along with outcroppings of rock, high bluffs and panoramic views of the Palo Pinto Mountains. There are many gravel bars and islands that often lend themselves to camping and day use. The suitability of this section of the Brazos for recreational use depends upon water being released from Possum Kingdom Dam. Finding points of access and negotiating steep banks can be a hindrance.

Guadalupe, Medina and Frio Rivers

The most popular canoeing rivers in Texas are those in the Hill Country. While their headwaters begin on the Edwards Plateau from runoff, by the time they reach the Hill Country they are fed by springs and creeks. Clear, cold waters tumble over limestone beds, creating small waterfalls, shallow rapids and sparkling pools. Banks vary from limestone outcroppings to grassy lawns shaded by bald cypress, pecan and live oak. Exciting, fast moving yet relatively safe for rafting, these rivers attract more visitors than any others.

Above all others, Texans love the Guadalupe River. It has attracted so many visitors that the Corps of Engineers estimates there were a quarter of a million recreationists on the Guadalupe one record-breaking weekend in the summer of 1981. Its spring-fed waters flow out of Kerr County into Kendall and Comal Counties and then south to the Gulf of Mexico. With the exception of its extreme upper reaches, the river is scenic and has enough water for canoeing and rafting along

its entire length.

For 22 miles downstream of FM 3160, the Guadalupe provides scenic views and sufficient flow for recreation. The banks are lined with giant bald cypress, pecan, cottonwood and oak interspersed with limestone bluffs. Guadalupe River State Park, opened in 1983, provides river access for canoeists and rafters. When completed, the park also will provide overnight camping for river travelers. There are at least 55 rapids on this stretch of river, most of which are navigable. However, there are four areas that demand inspection before entering. Rock Pile Rapid and Dog Leg Rapid have large rocks and sharp turns. Mueller Falls and Rust Falls are both dangerous.

Trees and limestone bluffs make the Guadalupe scenic (left and inset) and water flow is adequate for canoeing and rafting.

River runners should go ashore and examine these obstacles from dry land to determine how best to pass them before making the attempt.

The Medina is spring-fed and is a typical Hill Country river, containing crystal clear waters, bald cypress-lined banks and limestone outcroppings. It is small, with an average width of approximately 30 to 40 feet. However, since the Medina has its origins in springs, it normally has a sufficient flow of water for recreational use. The stretch of river between Medina City Park and Bandera Falls passes through a scenic portion of the Hill Country. Here the water flows swiftly over numerous small rapids. If caution is exercised, none of these rapids are potentially dangerous. The river is readily accessible at road crossings, city parks and private camps.

The Frio River rises in Real County and flows southeast. It is spring-fed in its upper section and passes through picturesque canyons. Since there are no major impoundments or reservoirs along its course, it is a free-flowing river, and the 31-mile section in Real and Uvalde Counties is one of the most scenic in the state. The stream is generally very narrow, and water flow at

normal levels is relatively low. However, adequate water for recreational use is available and there are many shallow but excellent rapids and an occasional low-water dam. Garner State Park and several private camps are located on the river and good access can be found at road crossings.

Neches River and Village Creek

The high plains of West Texas and rolling prairies of Central Texas steadily give way to the East Texas woodlands and the Gulf Coast plains. At these lower elevations wide, slow-moving rivers wind through forests between earthen and sand-covered banks. Flash flooding is not a serious problem on the eastern rivers, as they are controlled with dams and reservoirs. The water is frequently murky because runoff carries the natural debris of the forest down river. An abundance of public lands are available for camping.

Formed in Van Zandt County, the Neches River flows southeast for some 416 miles and empties into the Gulf of Mexico. It runs most of its course through pine woodlands and has only two major reservoirs. Between Rhine Lake and Lake Palestine and immediately below Lake Palestine, the Neches has a limited flow and recreational usage is restricted to periods of heavy rainfall. However, the flow increases downstream and is adequate for recreational use. Occasional log jams in the upper reaches of the Neches serve to hinder full recreational use.

The 32-mile section of the Neches forming the partial boundary between Cherokee and Houston Counties is a scenic and popular waterway. Adjacent to the right bank are portions of Davy Crockett National Forest, which contain a wide variety of vegetative types, including oak, hickory and pine. There the Neches River is wide and free-flowing, and it has maintained its natural character. This section has considerable merit for recreational activities due to the existence of the Big Slough, a small channel that goes off from the Neches then returns to the river about four miles downstream, creating an eight-mile waterway loop. The Big Slough, contained wholly within Davy Crockett National Forest and adjacent to the National Forest, has

been marked as a loop canoe trail by the U.S. Forest Service.

Village Creek, formed in northwestern Hardin County, joins with Big Sandy Creek then flows southeast where it meets the Neches River near Silsbee. This stream flows through cypress swamps and pine and hardwood forests. Because of its remoteness, outstanding scenic qualities and lack of impoundments, Village Creek retains its wild and pristine characteristics.

The 37-mile section of Village Creek located in Hardin County between the towns of Village Mills and Silsbee consists of still or slow-moving water. Normally the creek is 20 to 30 feet wide and is characterized by overhanging brush, limbs and an occasional log jam. This section of Village Creek provides an exciting float trip through a dense forest typical of the Big Thicket.

Village Creek is noted for its outstanding scenery. Large bald cypress trees and freshwater swamps exist just yards back from the main stream. Clear water flows over white sand and gravel, and sand bars lend themselves to camping and day use. The almost impenetrable thicket bordering the creek holds a remarkably wide variety of plant life, much of which is rare or endangered. In much of this area, na-

Events

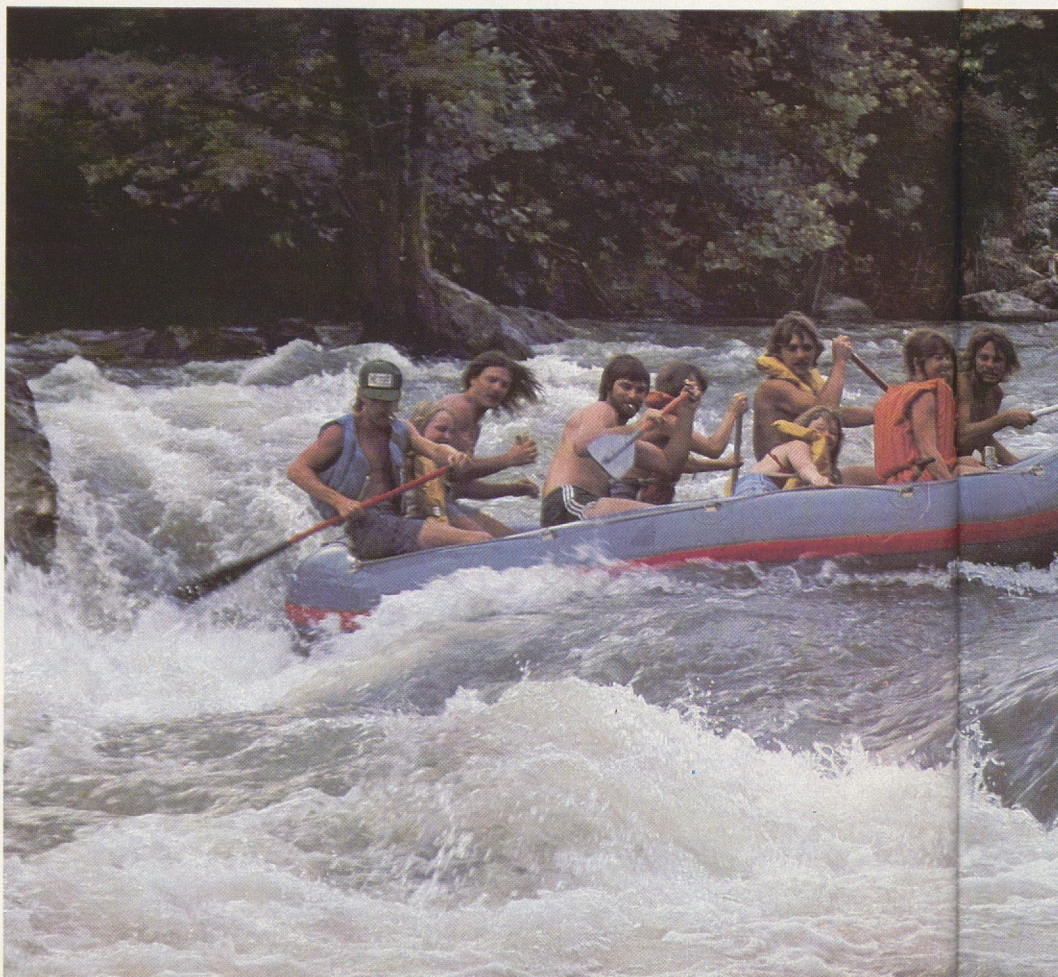
June 1-5: San Marcos River - Texas Water Safari, 260 mile non-stop canoe race. Sponsored by: Tom Goynes, Goynes Canoe Livery, Route 1, Box 55R, Martindale, Texas 78655, (512) 357-6113. \$25.00 per team member.

June 2-3: San Jacinto River - Casey Ridge Canoeathon (Run, Canoe, Bike Teams). Sponsored by: Bob Daigle, Rt. 1, Box 2060, New Caney, Texas 77357. (713) 689-5457. \$55.00 per team - benefit for American Rivers Conservation Council.

June 2-9: Rio Grande: Lower Canyons - Desert Ecology Seminar. Sponsored by: Steve Harris, Far Flung Adventures, Box 31, Terlingua, Texas 79852. (915) 371-2489. \$550.00 per person.

June 10: Colorado River - Cruise with the disabled. Sponsored by: River Recreation Association of Texas and City of Austin Parks and Recreation Department.

June 16: Brazos River - Family Day, 8½ mile river trip. Sponsored by: Dick Weinkauff, Dicks Place, P.O. Box 414, Laguna Park, Texas 76634. (817) 622-8364. \$20.00 per canoe.



June 16-17: San Marcos River - Annual Meeting of the River Recreation Association of Texas. Sponsored by: David Price, Goynes Canoe Livery, Route 1, Box 55R, Martindale, Texas 78655. (512) 892-1109. \$1.00 per person.

June 17: Colorado River - Canoeing Instruction, 9 a.m. - 1 p.m. Sponsored by: Alfred Stanley, Austin Nature Center, 401 Deep Eddy, Austin, Texas 78703. (512) 474-4738. Free.

June 17: Cool off with Canoe Films - 1 p.m. - 3 p.m. Sponsored by: Alfred Stanley, Austin Nature Center, 401 Deep Eddy, Austin, Texas 78703. (512) 474-4738. Free.

June 24: Guadalupe River - Congressional Float Trip. Sponsored by: Lower Guadalupe Business Association, Betty Walls, President, 121 River Terrace, New Braunfels, Texas 78130. (512) 625-3375. \$10.00 per person.

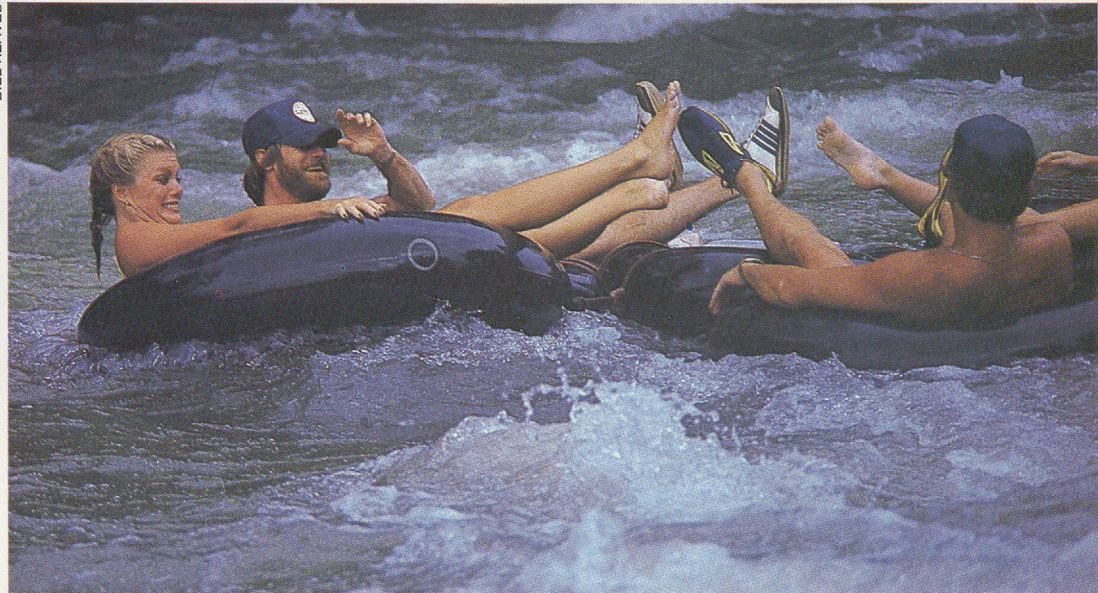
June 30: Guadalupe River - Cysticfibrosis Floating Fund Raiser. Sponsored by: Lower Guadalupe Business Association, P.O. Box 2191, Canyon Lake, Texas 78131. (512) 625-3375 - (512) 964-3800 - (512) 494-9288. \$30.00 per canoe - benefit for Cysticfibrosis Foundation.

ture is in very delicate balance and should be carefully protected. Water levels are sufficient for recreational use at any time, although the drier summer months cause a substantial reduction in flow. Summer months are often uncomfortable to recreationists because of heat and insects.

Texas rivers are as varied as the

state's environmental regions. Each kind of river offers a different recreation experience. Texans can roar through wilderness canyons on the most dangerous classes of whitewater, they can burble along on inner tubes with crowds of fun seekers or float down a lazy river through primeval forests. It's all there to be enjoyed. * *

BILL REAVES



Paddle Friendly

More than one river recreationist has been confronted with an angry landowner demanding that the traveler, "Get off my land." Such an experience doesn't add to the enjoyment of the great outdoors. In truth, Texas water law is confusing to recreationists and landowners alike. All rivers and waterways are public property and available to anyone to use and enjoy. The problem is getting into and out of the river or camping along the way, because most of the land bordering rivers is privately owned.

Access to rivers can be found in the right-of-way beside highway bridges, at public parks, at boat ramps and through commercial river outfitters. Everything else is off-limits, and a canoeist crossing private land to reach a river violates the trespass laws. However, once in the river, the recreationist is on public waters and is free to go anywhere the river goes. Landowners frequently believe that they own the river, its sandbars and bridges. They

do not. Landowners are forbidden by law from blocking public waters with fences, or demanding that recreationists leave the river adjacent to their property. The best rule for all concerned is to "Paddle Friendly."

It is especially important to keep an open mind and friendly attitude on summer holidays. The experience of tubing, rafting or canoeing the Guadalupe River on the Fourth of July is similar to a trip to Six Flags or Astroworld. Expect to encounter thousands of Texans also enjoying the sun and water. Homeowners whose backyards border the river often sit in lawn chairs and watch one of the most amazing shows in the state as canoes, rafts and inner tubes bump and jostle each other on the lower stretches of the river near New Braunfels. It's not unusual to find 10 rafts and tubes simultaneously making a bend in the river while a string of canoers attempt to wait for the main channel to clear of traffic and families having backyard barbecues wave and joke from ashore. The only thing to say in a situation like that is, "Hey neighbor, paddle friendly."

GUADALUPE RIVER BY BILL REAVES





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As a rule, animals rely directly or indirectly on plants for food. However, there are a small number of intriguing plants that trap and digest small animal prey. One such carnivorous plant, the pale trumpet pitcher-plant, *Sarracenia alata*, dominates the Pitcher Plant Savannah of the Big Thicket National Preserve. This savannah is a terrific place for observing and photographing nature, and has been my objective on many trips into the Big Thicket country of East Texas. For directions, stop in at the Big Thicket Information Station, on FM 420, 2½ miles from the junction of Hwy. 69

A savannah is a flat grassland with few trees. This one is classified as a wetland savannah because the area is lower than its surroundings and remains wet most of the year. Boots or waterproof shoes often are necessary, and mosquitos are always present.

Thousands of the pale green hooded trumpets of the pitcher plant cover the area. These trumpets are actually the leaves of the plant modified for trapping prey. Intermixed with the traps are the persistent and aging blossoms that have lost their bizarre drooping petals.

Titi, the predominant shrub of the Thicket, grows here in abundance. Its elongated clusters of white blossoms appear in early summer and persist until producing seed in fall. Longleaf pines also dot the area and a succession of wildflowers bloom. Other species of trees have been removed by the National Park Service in an effort to allow more sunlight to enter and return the area to a more original state. Prescribed burning may be necessary to control the titi and other encroaching species, which historically have been controlled by wildfires that have been suppressed in recent years.

Early morning visits to the savannah are the most productive, since mosquitos and midday heat make later trips extremely uncomfortable. The savannah's inhabitants are least active in the morning and are easier to observe. You can watch stick insects, grasshoppers, katydids and butterflies at close range. Some mornings these

insects will peer back at you from eyes sparkling with dew.

The small reddish blotches underfoot are sundew, another carnivorous plant. If you don't mind wet knees, a close examination of these plants will reveal many tiny, sticky-tipped tentacles that sparkle in the sun. These are used to attract and trap small insects and spiders. You may be lucky and find a sundew sporting its tiny blossom.



A green lynx spider is well camouflaged under the pitcher plant's hood.

Scan the area further for the less common pale green and waxy leaf rosette of the butterwort, also carnivorous. These two tiny plants, along with the pitcher plant, represent three of the four kinds of carnivorous plants native to the Big Thicket. Only five kinds exist in the United States. Carnivorous plants generally colonize poor soil and supplement their diets by digesting

TRUMPETS OF THE BIG THICKET

animal prey. The soil here has been leached of most nutrients by years of rainwater runoff.

The trumpet-shaped trap of the pitcher plant is passive and does not move; however, the leaves of the butterwort and the leaves and tentacles of the sundew actually move slowly to enfold their already trapped victims. This leaf movement is difficult to observe as it takes up to 48 hours to complete. A rolled leaf may not reopen for as many as five days and then only the external skeleton of its victim remains. Interestingly, a leaf tricked into action by some indigestible morsel will unroll overnight.

In early summer, the beautiful and delicate blossom of the rose pogonia orchid may be seen near the trumpets—a sort of beauty amid the beasts. Another delicate beauty that blooms on the savannah is the grass pink orchid. Its scientific name, *Calopogon*, is derived from the Greek words meaning “beautiful beard.” Its bearded lip is used to attract insect pollinators seeking nectar, although it offers none.

Many spiders inhabit the savannah. Some do not build webs, but lurk on the trumpets and prey on the same insects attracted by these plants. Large eyes peering around the side of a trumpet are those of a small jumping spider. Nearby, a green lynx spider watches from beneath the hood of a trumpet. The lynx likes this pitcher plant hunting ground since its color blends well with that of the pitcher making it difficult for a wary insect to see. It will chase its prey with great speed across the plants, hence the name “lynx.” This leggy green spider may even build its egg case beneath the trumpet hood to shelter it from rain and insure a source of food.

Insects are attracted to the pitchers by sweet-smelling nectar produced by glands under the trumpet hood and just below it. There is a sure foothold beneath the hood, but a hungry creature venturing lower soon will find the footing slippery. The lower surfaces are waxy and covered with digestive juices that clog the victim's feet and wings. Its doom finally is sealed by long, sharp, downward pointing hairs

Article and Photos by Gwen Fidler

near the bottom of the trap. There is no escape, and trapped victims soon die. All soft parts of their bodies are digested, leaving only their wings and hard external skeletons. Their nutrients are absorbed by the plant, and a large trumpet traps thousands of victims in its lifetime. Gently lift several of the hoods for a peek, taking care to avoid injuring the plants.

Pale green hooded trumpets actually are leaves which trap prey for the carnivorous pitcher plant.

The tiny black and white moth found inside some trumpets is the pitcher plant moth, *Exyra* sp. This moth hides inside the traps by day and can escape at will. It also uses the trumpet trap as a breeding chamber, laying its eggs singly, one per trap. Upon hatching, a colorful black, white and red caterpillar grows to maturity inside the trap, to which it is amazingly impervious. The pitcher plant is its only food and it wreaks havoc. It weaves a web, barring the entrance of the trumpet to further intruders, and then feeds on the inner layers of plant tissue. The top of the weakened trumpet collapses, enclosing the safe and now dry pupation chamber. Before pupation the larva cuts two holes in the trumpet—one to be used by the adult moth for its escape, and a lower one for drainage. A look in a similarly damaged plant may reveal one of these caterpillars. Other insects also breed inside the pitcher plant trumpets, including a fly whose larva has been used for fish bait, and a wasp whose larva consumes the trapped prey intended for digestion by the plant.

These are but a few of the secrets of the savannah. Each season has its own rewards for the observer. The reds of aging pitchers and titi leaves bring fall color to the savannah in October, and you also can look for the egg cases of summer spiders and the caterpillars of summer butterflies. A return in mid-March is a must to view the upside-down umbrella blooms of the pitcher plants. * *







Pitcher plant blooms (right and top right) sport bizarre drooping petals. Sundew and the green waxy butterwort (below) also are carnivorous. The grass pink orchid (above) adds beauty to the area in June while fall wildflowers (opposite page) cast a different hue on the savannah.





young naturalist

Feeding Response

by Ilo Hiller

Like a brilliant bouquet of flowers, the colorful gaping mouths of hungry baby birds greet parents returning to the nest with food. This open-mouth color display by the young seems to serve two main purposes—it provides an easy-to-see target, reducing the chances that the adult bird will miss the nestling's mouth, and it stimulates the adults to feed the young.

Birds that leave the nest shortly after hatching have no need for mouth decorations, but young songbirds that must remain in the nest for a while, often in relatively dark places, usually have quite colorful mouths.

In its simplest form, this display may consist only of light-colored, swollen flanges (projecting rims or folds) at the corners of the mouth. However, in some species the mouth's interior may be a vivid color with contrasting spots, borders or flanges. Interior colors include black, brownish-gray, yellow, orange, purplish-red, crimson and all shades in between. The contrasting markings are usually black, blue, white or shades of yellow and orange.

The inside of the young roadrunner's mouth is red with yellow markings, and the mockingbird's is bright yellow bordered with a lighter yellow rim. The cardinal has a somewhat rose-colored interior with a creamy border, but the flycatcher's is more of an orange shade. Light yellow seems to be a strong enough mouth color for the hummingbird.





MOCKINGBIRDS BY GLEN MILLS



CARDINALS BY LEROY WILLIAMSON

RED-WINGED BLACKBIRDS BY LEROY WILLIAMSON



Brightly colored gaping mouths make these hungry baby birds hard to miss, and evidence indicates these mouth colors trigger the adult birds' feeding response. Young birds peck at the red spot on the herring gull's bill and the laughing gull's red bill (opposite page), which stimulates the parent to feed them.



Evidence that the adult bird is stimulated by the sight of a gaping mouth can be seen in the following two examples.

In one instance, a male cardinal was observed feeding goldfish in a backyard pond. For several days he flew regularly to the edge of the pond and stood there poking food into the gaping mouths of the fish when they came to the surface for his handouts. The insides of the goldfish's open mouths, similar in color to that of young cardinals, probably drew his attention and triggered the feeding response.

On another occasion, the attention of an adult bird was directed toward some begging young thrushes when it flew over their nest. Even though the adult bird was not a thrush, it turned in mid-flight, landed at the nest and gave the open-mouthed young the food it probably was carrying to its own nestlings.

Since mouth coloration displays are so closely connected to the feeding activity, it is not surprising that young birds approaching adults for food also may rely on mouth markings.

Gulls are good examples of this type of feeding. The adult herring gull has a red spot near the tip of its heavy yellow bill. If the young wants to be fed, it must tap on this red spot to stimulate the parent to bring up part



BEWICK WRENS BY MARTIN T. FULFER

of its last meal. Since failure to peck at this red spot could result in starvation, the instinct to peck before receiving food is well developed in the young gull. This is illustrated by the following incident. An injured baby gull refused all attempts made to hand-feed it until the would-be rescuer put a spot of lipstick on her thumb and allowed the gull to peck at it. This red spot reassured the young gull everything was normal, and it allowed itself to be fed.

Adult laughing gulls have a wine-red bill on which the young birds peck to stimulate feeding. Experiments conducted with cardboard models of the parent's beak produced some interesting results. When improperly colored bills were presented to the chicks, they pecked at them, but showed no real enthusiasm for the task. However, correctly colored bills were pecked with vigor even though the bills were not attached to anything that even remotely resembled the adult bird's head.

Hand-puppets and other such props have been used successfully to fool injured birds and rare species being raised in captivity into accepting food from humans.

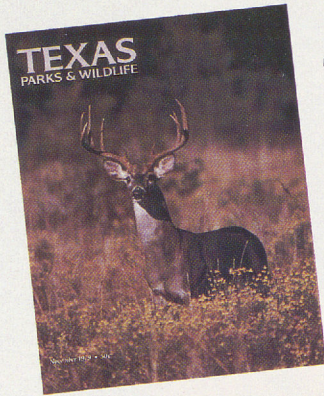
It makes no difference whether the color stimulator occurs on the young or on the adult. It serves its purpose well and insures that a new generation of birds will continue to brighten our lives with their presence. * *



HERRING GULL BY JOHN L. TVETEN



LAUGHING GULL BY BILL BEAVES



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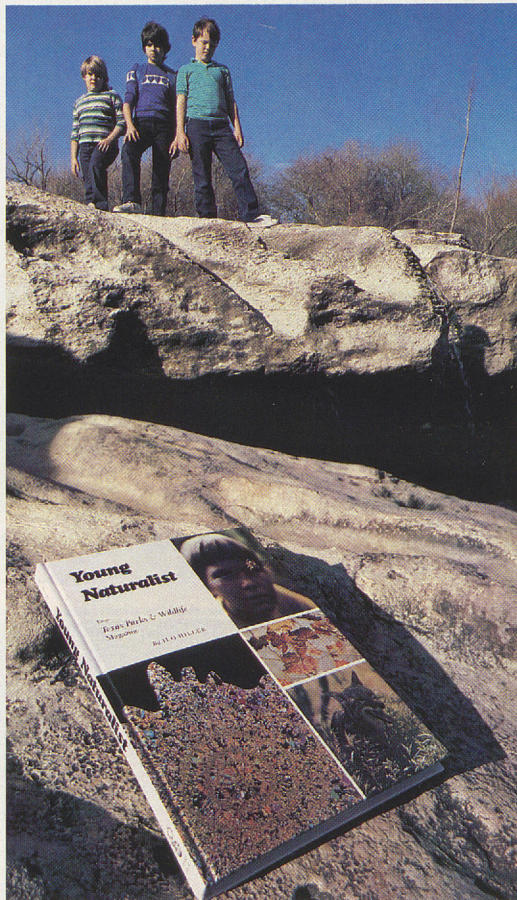
young naturalist

By Ilo Hiller

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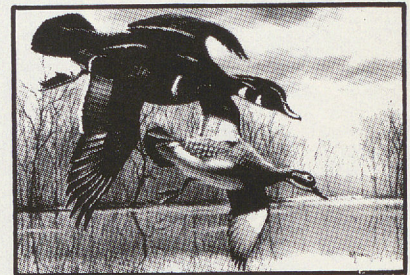
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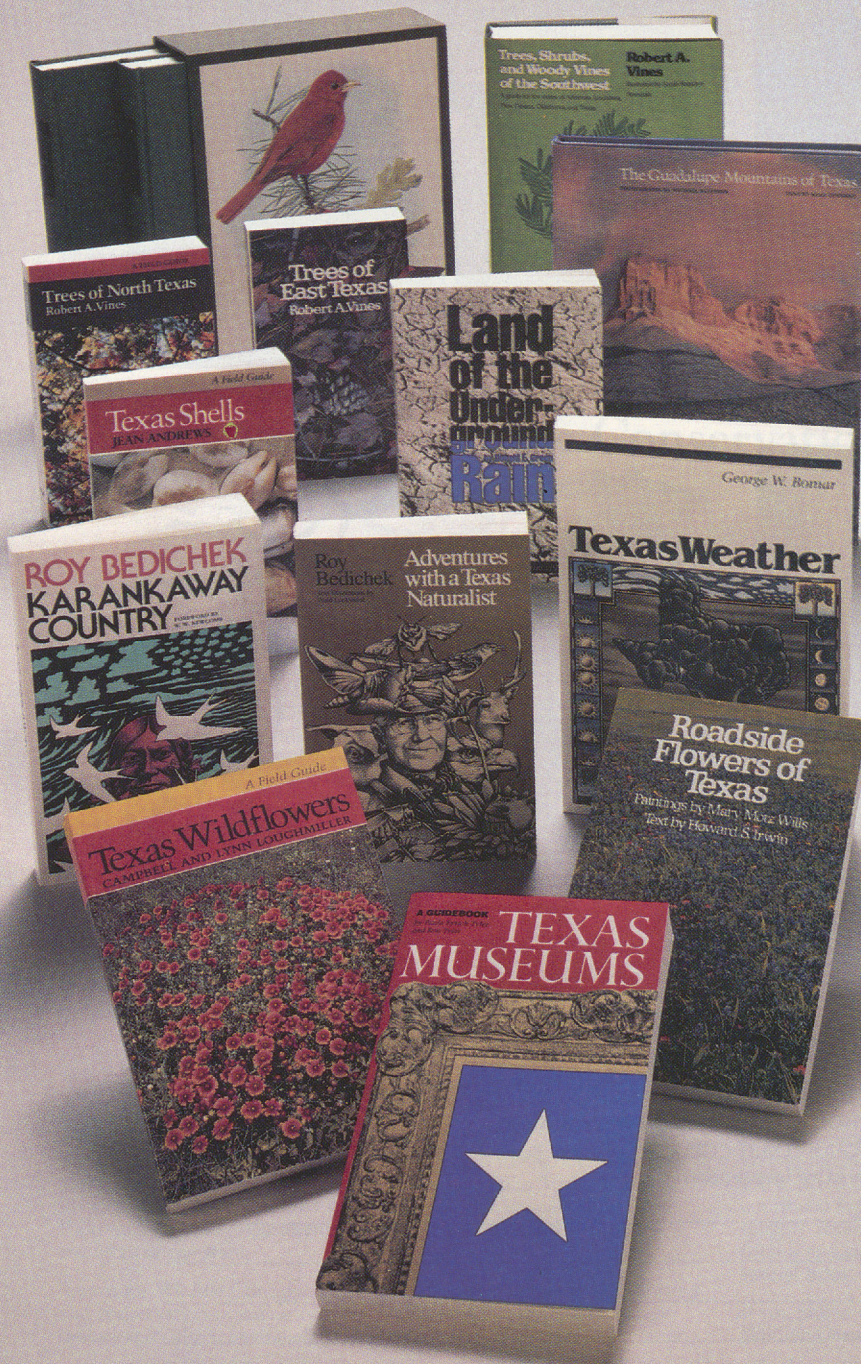
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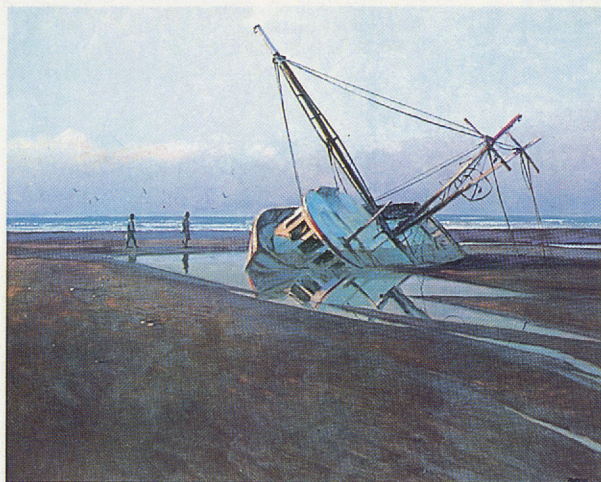
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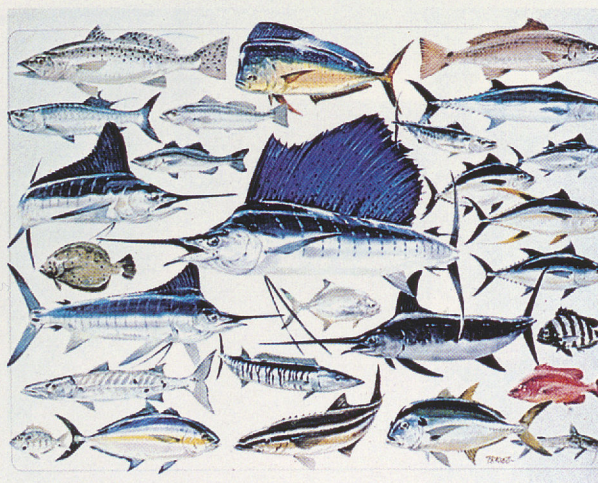
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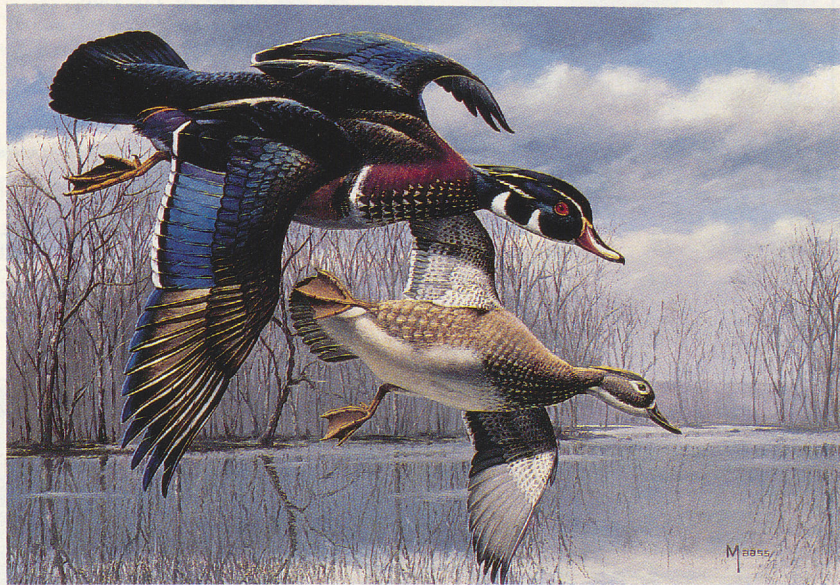
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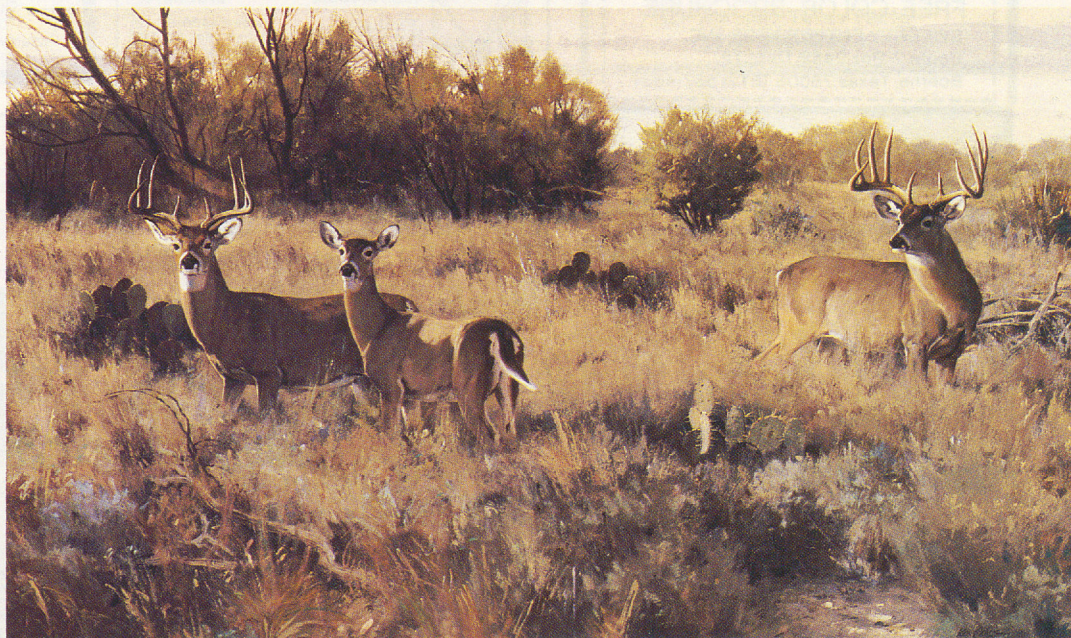
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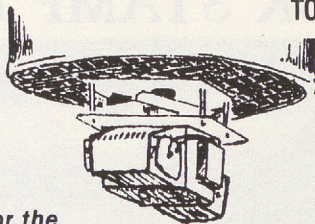


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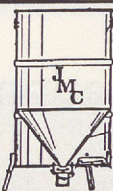
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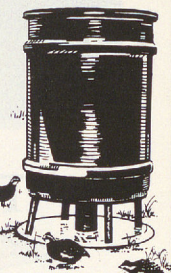
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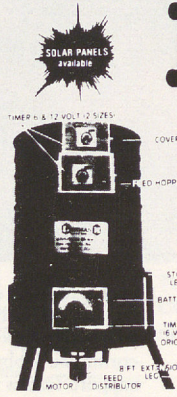
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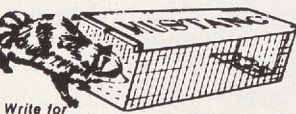


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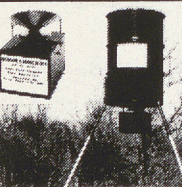
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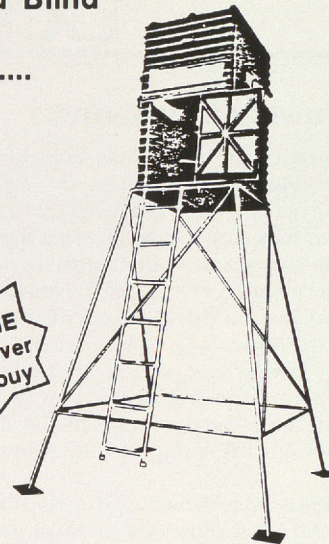
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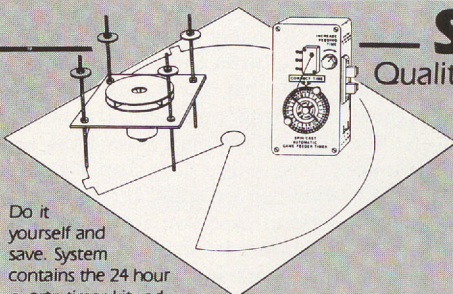
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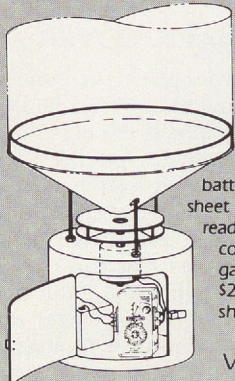
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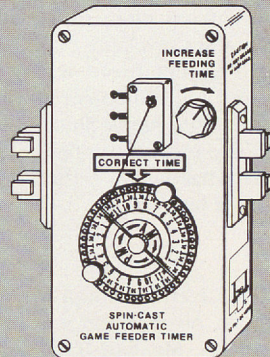
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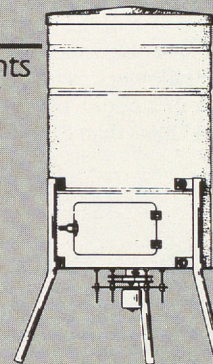


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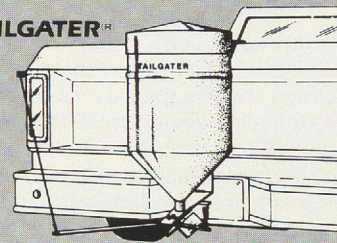
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Letters to the Editor

Growing Bluebonnets

I enjoyed Ilo Hiller's article "Bluebonnets—Growing Your Own" in the April issue. As a native Texan I've loved them all my life but have just started growing them in the last two years. As the seeds are not easy to germinate I would like to pass on a technique that the article did not mention.

We in the Mineola-Quitman area of East Texas are having success with transplanting bluebonnets. Just find someone with an abundance of very young plants in the late winter or early spring and dig them up carefully.

They have even shown up for the first time at the local nurseries in small pots like tomato plants.

Rickey Rowe
Mineola

Introduction to Texas

Please make sure that the first issue of the enclosed gift subscription is the April 1984 issue. You see, the subscription is for my elk hunting buddy. He's a great guy and a good sportsman but he thinks the only beautiful country is in Colorado. When I got my April issue of *Texas Parks & Wildlife* I thought it was one of the best photographic issues in a while, especially if you love the Texas wildflowers, as my wife and I do. I can't think of a better way to introduce someone to Texas than through your magazine.

Steve Jones
Plano

Watch Those Masts

With this year's recreation season here, I read with great interest Mary-Love Bigony's article "Boating Safety Primer" in the March 1984 issue. As I am vitally interested in water safety and in reducing the number of accidents and deaths from water-related activities, I would like to mention one often-overlooked topic missing from this article: overhead electrical lines and sailboats.

Overhead electrical lines are a potentially lethal hazard for sailboaters on any lake and create a special problem on lakes with fluctuating pool levels. The increasing popularity of freshwater sailing, coupled with increasing heights of aluminum masts, has greatly increased exposure to this hazard in recent years. This can also be a problem on shore, where the mast may come in contact with an electrical line while beaching the boat or while trailering to or from the lake. Masts or trailered sailboats

should be taken down prior to departing boat ramps to avoid the possibility of line contact during overland transport.

Thank you for the fine article on boating safety and your concern for the boating public.

Theodore G. Stroup
Colonel, Corps of Engineers

Thanks, Mrs. Johnson

I do believe the beautiful April issue of *Texas Parks & Wildlife* is the best one ever. I especially appreciated learning about the gift of the National Wildflower Research Center from Mrs. Lady Bird Johnson. This is the only way I know to thank her. She is a lovely, unselfish person.

Since moving to East Texas I have noticed so many beautiful, tiny wildflowers growing in my own yard. I had never seen most of them before. After living in Houston since 1935, it's a real treat to live in a quiet place.

Mrs. Anna Murchison
Frankston

San Jacinto Monument

Congratulations on your excellent article in the April issue on the San Jacinto Monument and its history. You might like to know that the sculptured frieze around the monument's base was designed by William McVey, an eminent Texas sculptor now living in Cleveland, Ohio. The San Jacinto Monument frieze was done at the time of the original construction with the support of WPA funds. Since that time Bill has become even more nationally prominent, and what you see there is the first evidence of his genius.

S.I. Morris
Houston

In the nice article about the San Jacinto Monument, no mention was made about the architect. Mr. Earl R. Gilbert was the architect for the monument. He is in his 80s and lives in Houston. Recently the "Eyes of Texas" TV program did a short feature on him.

Philip D. Hinton
Houston

Matagorda

The article "Matagorda Island" by Buddy Gough in the March issue is a good one and the photography is excellent. I must, however, raise one small objection.

After leading off with the name "Matagorda Island," the writer subsequently re-

fers to it about 25 times as just "Matagorda." Besides Matagorda Island there is the adjacent Matagorda Peninsula and Matagorda Bay. The peninsula and bay are part of Matagorda County. Then there is the historic little town of Matagorda, which is located on the mainland and dates back to the mid-1830s or earlier. It was an important port in the days of the Republic of Texas. When people on the Texas coast just say "Matagorda," they are referring to the town of Matagorda.

Woodlief Brown
Abilene

Photo Captions

The February article on Padre Island National Seashore was very enjoyable. Photo captions naming the birds were especially helpful. But why limit the captions to bird names only? I'm sure the fish on page 4 and the flower on page 7 have names. Why not tell us what they are? If you can identify a particular species in a photo, you might consider printing the name.

Johnny Sherman
Pipe Creek

■ We get so many requests for identification of the birds and mammals used in the magazine that our minds may be too oriented to identifying them. The small fish at the top left of page 4 is an Atlantic bumper. The other fish, top right, is a striped burrfish or spiny boxfish, one of the puffers. In case you are interested in shells, the lower left-hand photo features gooseneck barnacles. The pink flower on page 7 is a beach morning glory called the goat-foot morning glory.

INSIDE BACK COVER

Carnivorous pitcher plants surrounded by colorful autumn titi leaves exemplify the unusual vegetation of the Big Thicket National Preserve. The pitcher plant dominates the preserve's Pitcher Plant Savannah and titi is the Thicket's dominant shrub. Although the pitcher plant devours most insects that make their way below its trumpet hood, the tiny pitcher plant moth hides inside the trumpets by day, escapes at will and uses the trap as a breeding chamber. (See story on page 32.) Photo by Gwen Fidler.



