

400.6
P235
51:1

TEXAS PARKS & WILDLIFE

JANUARY 1993

**Texas Winter:
A Photo Essay**

**Best Bass Fishing in
the United States:
Texas's Lake Fork**

**Fort Richardson--
Sentinel on the
Edge of the Wild**

590M
MAGS
8-21 DPL
48
CLP
BENTLEY



JANUARY 1993

TEXAS PARKS & WILDLIFE



JAN 12 1993

Depository
Dallas Public Library



Joe Cole

PAGE 12



Wyman Meitzer

PAGE 28



Stephan Myers

PAGE 36

C O V E R S

Front A pair of cardinals brightens a snowy winter scene. See winter photo essay on page 28. Photo by David Vinyard. Nikon F3 camera, 400mm lens, 1/60 second at f/3.5, Kodachrome 64 film.

Inside Front Stump-filled Lake Fork may be the nation's number-one reservoir for catching monster largemouth bass. See story on page 4. Photo by Grady Allen. Nikon F3 camera, Nikon 80-200mm zoom lens, 1/60 second at f/4, Kodachrome 64 film.

Back Cover This military medallion likely adorned the hat of a soldier serving at Fort Richardson during Texas's frontier days. See story on page 12. Photo by Bob Parvin. Contax 167MT camera, Zeiss Planar 65mm lens, 1/125 second at f/5.6, Kodachrome 64 film.

4 **WORLD CLASS FOR BASS** Over the past 12 years, Lake Fork has become the big bass capital of Texas and, arguably, the best trophy bass lake in the United States. This 27,000-acre impoundment 90 miles east of Dallas has produced the five largest bass ever caught in Texas and eight of the top 10. How big will Lake Fork bass eventually grow? As big as bass can get in Texas. *by Ray Sasser*

12 **SENTINEL ON THE EDGE OF THE WEST** On the south bank of Lost Creek, just 70 miles from Oklahoma's Indian Territory, Fort Richardson was the northernmost in a chain of federal forts established in Texas after the Civil War. Raids by Comanches, Kiowas and Kiowa-Apaches threatened westward settlement, and for 11 years Fort Richardson's troops conducted patrols and expeditions to control this volatile situation. Today, visitors to Fort Richardson State Historical Park can step back into the year 1872, when the west was at its wildest. *by Betty Starr Kirkpatrick*

16 **MAKING THE ROUNDS WITH A FRONTIER SURGEON** Doing the best he could with limited supplies and limited medical technology, Dr. John Fox Hammond served as Fort Richardson's post surgeon in 1871. Exhibits at the park recreate a December day 121 years ago when Hammond made his rounds at the frontier post. *by Arlinda Abbott and Jerry Sullivan*

24 **INFREQUENT FLYER** Tucked away in the desert mountains of the Trans-Pecos, Montezuma quail have striped clowns' faces and speckled bodies. Many people have discovered this unusual quail as it bursts into flight right in their path, then lands in the grass and scurries off. *by Mark Lockwood*

28 **NATURE'S WINTER** Enjoy the splendor of the year's harshest season in this photo essay.

36 **WINTER SHELL GAME** Winter's low tides make this season a particularly good time to search for shells. Among the best weather conditions for shellers is a minus tide accompanied by a hard freeze. Valuable traits for shell collectors are knowing the habits of the mollusks, an acquaintance with the ocean and the seashore and perseverance. *by Jean Andrews*

42 **BIRDHOUSE DAY** Take time on February 6 to set up new birdhouses and clean out old ones. It will improve the habitat for a variety of the bird species that enrich our lives. *by Jim Cox*

DEPARTMENTS

At Issue	2	Outdoor Datebook	48
Letters	3	Outdoor Roundup	54
Picture This	44		

AT ISSUE

January 1993, Vol. 51, No. 1

T E X A S
PARKS & WILDLIFE

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

GOVERNOR OF TEXAS
Ann W. Richards

COMMISSION

Ygnacio Garza, Chairman Brownsville
John Wilson Kelsey, Vice Chairman Houston
Lee M. Bass Fort Worth
Henry C. Beck III Dallas
Terese Tarlton Hershey Houston
George C. (Tim) Hixon San Antonio
Chuck Nash San Marcos
Beatrice Carr Pickens Dallas
Walter Umphrey Beaumont
Perry R. Bass, Chairman Emeritus Fort Worth

Andrew Sansom Executive Director

MAGAZINE

David Baxter Editor
Mary-Love Bigony Managing Editor
Jim Cox Senior Editor
Dwain Kelley Art Director
Mary Barminski Associate Art Director
Bill Reaves Photo Editor
Glen Mills Photographer
Chris Altendorf Circulation Director
Barbara Sloan Circulation Manager
Paulette Goertz Office Manager

Texas Parks & Wildlife magazine (ISSN 0040-4586) is published monthly by the Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744. Circulation: 512-389-4830; Editorial Office: 512-389-4996. Copyright © 1993 by the Texas Parks and Wildlife Department. No part of the contents of this magazine may be reproduced by any means without the permission of *Texas Parks & Wildlife*. The following are registered trademarks of *Texas Parks & Wildlife* and use of them is prohibited: At Issue, Outdoor Roundup, Picture This. The magazine is not responsible for unsolicited materials provided for editorial consideration. The inclusion of advertising is considered a service to subscribers and is not an endorsement of products nor concurrence with advertising claims. Subscription rates: \$10 for one year, \$18 for two years and \$26 for three years. Foreign subscription rates: \$12 for one year, \$21 for two years and \$30 for three years. POSTMASTER: If undeliverable, please send notices by form 3579 to *Texas Parks & Wildlife* magazine, 4200 Smith School Road, Austin, Texas 78744. Second-class postage paid at Austin, Texas, with additional mailing offices.

Not long ago, I received a clipping in the mail from a long-time colleague in Florida about Lake Fork. Readers of this issue of *Texas Parks & Wildlife* will find, as my old friend did through the Palm Beach newspaper, that Fork is the hottest bass lake in the country today. What caught his attention, though, and made me very proud, was the Florida reporter's observation that fishing opportunities like Lake Fork don't just happen. They are provided for you by what he described as "the most aggressive fisheries managers in the United States . . . the staff of the Texas Parks and Wildlife Department."

This fall, that same staff outdid itself by forging a unique partnership with two foundations and an East Texas town to create yet another world-class facility in this region of our state where freshwater fishing is already the finest in North America. The project, to be located in Athens and called the Texas Freshwater Fishing Center, will include a state-of-the-art hatchery, an educational center featuring aquaria, a Fishing Hall of Fame and a historical museum. The new center is expected to attract up to 100,000 visitors per year, produce 5 million largemouth bass per year and house the department's highly successful Lone Star Lunker program, which gets Texas anglers directly involved in producing trophy-sized fish for our inland waters.

And it will not cost the State of Texas one dime to build.

The city of Athens and private philanthropists will put up more than \$4 million to be matched by federal funds to generate the total project cost of some \$12 million. The project represents a partnership between the city of Athens, Operation Share a Lone Star Lunker, the Texas Parks and Wildlife Department and the newly organized Parks and Wildlife Foundation of Texas, Inc., headed by former Commission Chairman Ed Cox, Jr.

The fisheries center project launches the Foundation on an incredible start in its mission to provide private support for critical efforts of the Texas Parks and Wildlife Department. In less than a year Mr. Cox and his team have generated the largest private contribution ever made to a fisheries project in Texas, and one of the largest gifts to conservation ever made in the state. They have demonstrated the promise of private sector support for conservation in Texas, and millions of future anglers will be indebted to them. ★

—Andrew Sansom, Executive Director

In February...

Dolan Falls on the Devils River north of Del Rio is the largest waterfall in Texas that covers the entire width of a river. Next month we will feature a story on Devils River State Natural Area, which is next door to the Nature Conservancy of Texas's Dolan Falls Preserve. Together, some 40,000 acres of Southwest Texas have been set aside, including Dolan Falls and a portion of the Devils River. Also in February we will have stories on the East Texas white-tailed deer herd and some of the problems it faces, a visit to Longhorn Cavern and lots more.



Leroy Williamson

Together, some 40,000 acres of Southwest Texas have been set aside, including Dolan Falls and a portion of the Devils River. Also in February we will have stories on the East Texas white-tailed deer herd and some of the problems it faces, a visit to Longhorn Cavern and lots more.



Member Regional Publishers Association

Brazos Bend Hunts

I noticed a letter in your August issue from a 13-year-old Boy Scout about hunts in Brazos Bend State Park. He is correct about only part of it. The hunts are in a part of the park that the public doesn't see. Two of the park rangers, Dennis Jones and Jan Beatty, do a very good job of keeping track of the populations of whitetails and other animals in the park.

I am a 16-year-old volunteer at Brazos Bend and I have seen two hunting seasons go by. The tame deer tend to stay toward the traveled parts of the park, and I've heard from some of the rangers that a lot of hunters go home empty-handed. My main point to this Boy Scout is that he needs to know some of what really happens at one of the most beautiful parks in the state.

Ross A. Martin
Dickinson

Satisfied Customer

My family and I look forward to receiving our copy of *Texas Parks & Wildlife* each and every month. I am a hunter and a conservationist and whatever you choose to print is fine with us. I do not understand the complaints of some of your readers whose letters you have printed. Some think there are too many articles on hunting, others think there are not enough. I believe that too many people like to complain. Your magazine is the best value of any hunting or nature magazine around. Keep up the good work and try not to listen to all the complaints.

Chuck Waite
New Braunfels

Property Rights

The wetlands article in the November issue states that "what a wetland is" is defined by a bunch of bureaucrats, then says that the property being defined as wetlands is 90 percent privately owned.

Owners of private property have the right to stop trespassing and protect their property from predators. Coyotes, deer, armadillos, skunks, gophers, rats, fire ants and other vermin

LETTERS

and varmints do tremendous damage to agricultural property. These pests have no more right to destroy my farm property than the parasites on society have to destroy civilized lifestyles in cities.

My farm property is about 100 miles from the Texas coastline, but it has a slough that is a collection point for the creek downhill from my property. In certain wet years it could be classified as a wetland (along with other wet spots), and therefore subject to the whims of a bureaucrat dictating what I can do with my private property.

Tom Blankenship
Seguin

Oops!

It is difficult to believe that your outstanding magazine would make an error of proportions. Colonel Fannin and his men were massacred at Goliad on Palm Sunday, March 27, 1836; not 1846 as reported in the November issue.

Scranton Harrington
Granbury

Magnificent

Laurence Parent's photograph on page 10 of the September issue is magnificent. From the rocks in the foreground to the gray hills in the far distance, the clarity is so sharp that I looked for Andrew Wyeth's signature on the picture. Mr. Parent also captured the colors of the desert so well that again I thought it must be a masterpiece painting. But it wasn't a painting, it was a superb photograph!

I have been a subscriber to *Arizona Highways* for nearly 40 years, and I have seen photos of that caliber only rarely. In our younger and poorer days I cut them out, mounted them and hung them on our walls to brighten our rooms and our lives. I haven't done that for

years, but that photograph by Parent is a keeper.

I have subscribed to *Texas Parks & Wildlife* for only a few years and I find that it keeps getting better and better each month. Even your balancing act between the hunters and nonhunters is excellent. Personally, I'm in favor of the "doodle bugs" and "horned toads."

Thomas G. Crouthamel, Sr.
Bradenton, Florida

Shock

What a shock I got when I received the September issue of *Texas Parks & Wildlife*. I've read and enjoyed your magazine, admired the superb photography and avidly digested the information about Texas scenes and sights, wildlife, fish and game. I've always felt that the advertisements for hunting equipment and leases were somewhat out of place, but was glad to have their financial assistance.

With the September issue I was confronted with a man, a boy, a dog and two guns. On the back cover is a man with a compound bow at full draw, sporting a razor-sharp arrowhead.

Friends, we have enough hunting magazines. If you want information and photography on how to kill game and what to use to kill it, take a magazine that specializes in where and how. There are plenty of them on the newsstand. I take *Texas Fish and Game* and *Field and Stream*. I enjoy hunting and fishing, and I cherish my guns, rods and reels.

Please do not make *Texas Parks & Wildlife* into another hunting and fishing magazine. Do what you always have done, and cater to the great majority who love the outdoors and wildlife, which includes most hunters and fishermen.

Robert W. Nordmeyer
USAF Retired
Plano

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

No lake grows 'em like Fork.

World Class for Bass

by Ray Sasser

I grew up in East Texas between Lakes Sam Rayburn and Toledo Bend. In junior high my class made a field trip to visit the dam construction at Rayburn before they closed the gates on that huge impoundment, thus beginning what the national magazines all heralded as the golden age of Texas bass fishing.

Rayburn filled about the time I got a driver's license and I fished it as best I could from the bank. I cast Shyster inline spinners, H&H safety-pin spinners and Injured Minnow topwaters, thinking all the while that I was hooking bass. But it was the pot-bellied street fighters that hooked me, leading me inexorably along the primrose path of sleek bass boats, graphite rods and plastic worms. During the 1970s and 1980s, similarly afflicted friends and I acted like Indiana Jones in search of the holy grail—substitute bass for grail.

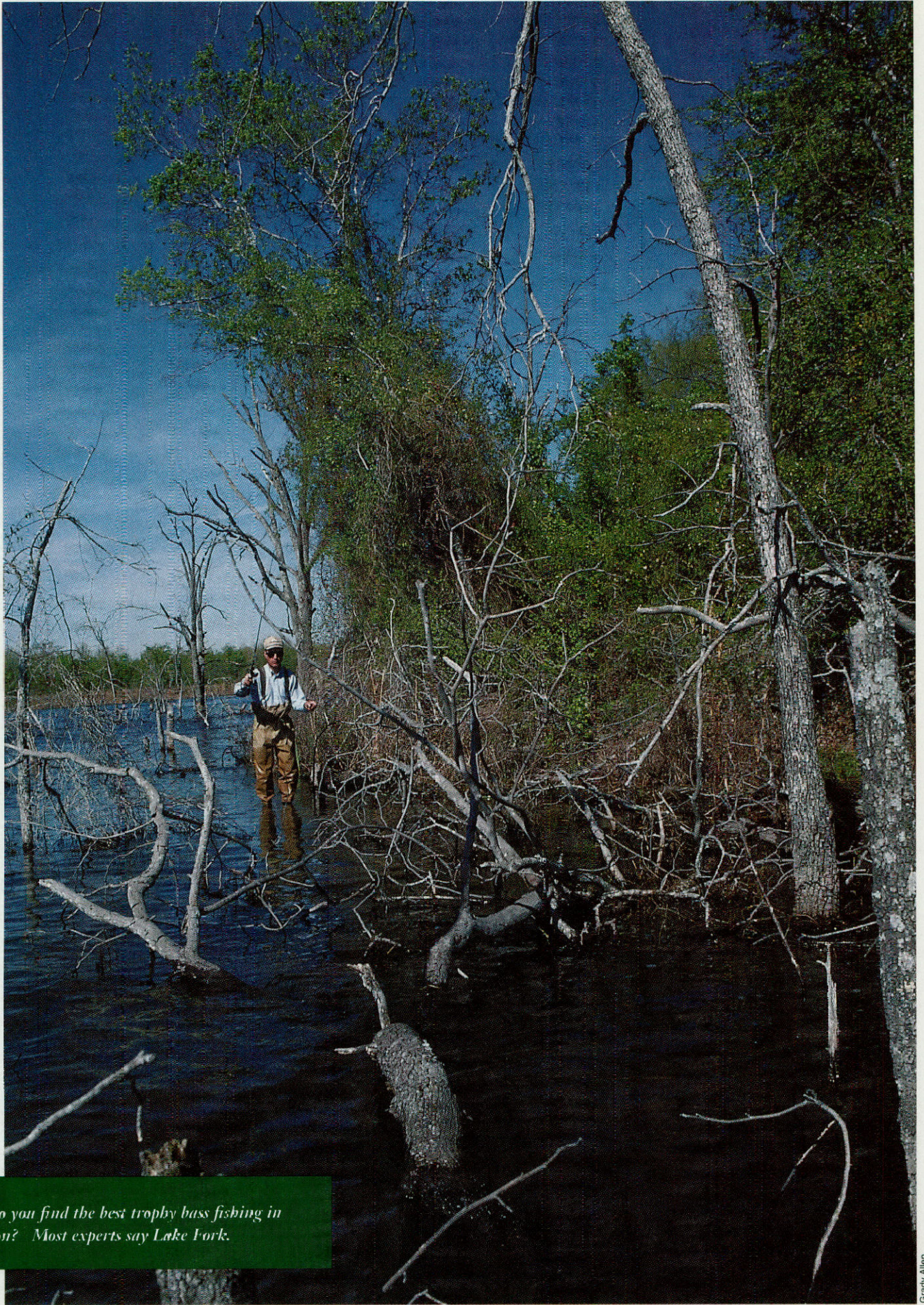
We hitched up our sparkling steeds and raced to each new reservoir, eager to sample the best fishing that the various water authorities and Texas Parks and Wildlife could deliver.

I make those simple statements by way of introduction. I have written about bass fishing for nigh onto 20 years, have fished almost every good lake in Texas, quite a few in other states and several of the top spots that Mexico has contributed in the past two decades. I have been to a goat roping, a state fair and a nutria barbecue but I have never seen anything like Lake Fork, the 27,000-acre impoundment about 90 miles east of Dallas.

Consider these numbers. As this was written, Fork had produced the five biggest bass ever caught in Texas, eight



Grady Allen



Where do you find the best trophy bass fishing in the nation? Most experts say Lake Fork.

Grady Allen

of the Top 10, 15 of the Top 20 and 34 of the Top 50! The oldest Lake Fork bass on the Top 50 list is a former state record, 17.66 pounds caught in November 1986. Only one other Top 50 bass from Fork was caught in 1986. Eight of Lake Fork's Top 20 bass have been caught since 1990.

Because of Fork's influence, it takes a bass bigger than 15.5 pounds just to make the Texas Top 20 list. Most bass fishermen do not require a fish of such massive size to qualify as their personal best bass. Even in the era of Florida-strain bass, any largemouth that weighs

10 pounds is still a whale of a bass to most fishermen.

In an effort to quantify how many 10 pounders Lake Fork produces in a good year, I called most of the lake's marinas after the 1988 spring spawn, the time frame that produces most of the big fish, and asked for estimates on how many double-digit bass they had weighed that year. Some marinas keep photos of big fish and have fairly accurate data. Though this number is strictly unscientific, I extrapolated that Fork had produced more than

1,000 bass of 10 pounds or larger in 1988!

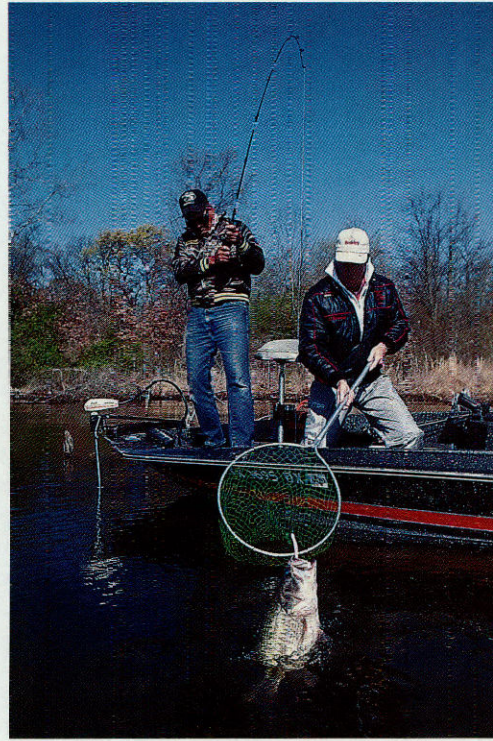
What makes Lake Fork, which opened to fishing in 1980, the big bass capital of Texas and, arguably, the best trophy bass lake in the U.S.? According to Allen Forshage, Florida bass program leader for Texas Parks and Wildlife, there is a combination of factors.

"In the early stages of the Florida bass program, we were having trouble getting the Florida bass gene established quickly in new lakes," said Forshage. "When you stock a new lake with fingerlings, it works fine, if you get good



survival. The bigger the fish stocked, the higher the survival rate. One thing we did differently at Fork was stock surplus Florida-strain brood bass along with the usual stocking of Florida bass fingerlings. The area inundated by the lake had plenty of stock tanks that made pre-stocking relatively easy. We put the brooders into old stock tanks and they were well established when the lake flooded the tanks.

"I can't say enough good things about the role Sabine River Authority (the water agency that constructed the lake) played at Lake Fork," said Forshage.



Grady Allen

Minimal clearing by Sabine River Authority left plenty of brush and timber, providing excellent largemouth bass habitat (left). Huge bass like the one above have brought national attention to Lake Fork, located about 90 miles east of Dallas.



Grady Allen

"They took a minimal amount of timber out of that reservoir."

Except for boat lanes, said SRA project manager David Parsons, timber was cleared from only 15 percent of Lake Fork and most of that timber was cut from the area directly in front of the dam. Water authorities typically clear much more timber from a new lake on the grounds that removing the trees improves water quality, but Parsons says SRA can't tell that the water quality at Lake Fork would have been better had they taken every last tree from the lake bed.

Forshage said Fork is situated in an excellent watershed in terms of water quality. "It has produced more big bass than any Texas lake and that productivity has been sustained now for 11 years with no sign of a decline. Fork is one of those lakes where everything clicked into place."

It didn't hurt that Fork came on line the same time TP&W's Fisheries Division, convinced that fishing pressure played a major role in reservoir productivity and longevity, was experimenting

with more restrictive bag limits.

Fork was one of the first lakes in Texas to have a five-bass-per-day, 14-inch minimum size limit. In fact, Lake Fork opened to fishing with the 5-14 limit in place.

"There were probably just three other Texas lakes at that time with limits other than the statewide 10 bass per day, 10-inch minimum size limit," recalled fisheries biologist Barry Lyons, who monitors Fork for TP&W. "We were concerned with the impact of fishing pressure on the new lake, so we opened with a 5-14."

Fork's limits have been fine-tuned twice since opening day. As small fish began to stockpile under the 14-inch size limit, Fork was switched to a slot limit that protected brood fish between 14 and 18 inches while allowing for the harvest of small bass and large bass. It was under this slot limit that Fork began to mature and blossom into a big bass factory. In fact, the lake became so well-known for big bass that the daily

bag limit was reduced to three fish and the slot limit was adjusted to protect bass between 14 and 21 inches.

Keith Blair, who owns Lake Fork Marina, once weighed a 10-pound, two-ounce bass that was only 21 1/8 inches long. The 14- to 21-inch slot remains in effect and obviously is doing the job.

According to Phil Durocher, inland fisheries branch chief for TP&W, the slot limit at Lake Fork accelerated the growing interest in catch-and-release bass fishing.

"Because of the slot limit, anglers caught large numbers of Lake Fork bass that they legally could not retain," said Durocher. "They released those fish and they discovered that it didn't hurt to release a bass. They had a great time fishing and they caught a lot of fish. The catch-and-release mentality for bass fishing is growing quickly all over Texas but Lake Fork has been the leader."

According to Lyons's Lake Fork creel data for 1990, fishermen at that lake release 49.6 percent of the legal bass they catch. Most of the fish retained are smaller than 14 inches.

"Very few of my fishermen keep bass they catch from Lake Fork," said veteran fishing guide Bob Uhler, who was guiding at Fork the day it opened and hasn't missed many days since. "If the customer catches a big bass, we measure the fish and release it. If they want a big bass for their wall, they can have a replica made that coincides with the measurements of the fish they caught and released. It's the best of both worlds—the fishermen get a trophy for the wall and the knowledge that their big bass is still out there, waiting for them or another fisherman. That logic is hard to argue with and few fishermen at Fork try to argue."

Marshall furniture dealer Jerry New became the cornerstone of catch-and-release bass fishing in 1990 when he caught a 17.63-pound Lake Fork bass in late August. New turned his big fish, which ranks third in the state, over to the Tyler State Fish Hatchery to make sure it would recover from the stress of being caught. In October, New released the huge and healthy bass back into the lake. It's the biggest bass caught and released in Texas waters.

In July 1991, Scott Abish of Oceanside, New York, caught a 15.02-pound Lake Fork bass that ranks 34th on the Top 50 list. It also ranks third! Abish caught the bass that New had released nearly nine months earlier. The fish is clearly identifiable via an electronic tag implanted by Tyler Hatchery superintendent David Campbell.

Abish also released the fish, which was the biggest bass of his career, a fish that's still out there, waiting for the next lucky angler. Both fishermen, incidentally, have replicas of the big bass made by Emory taxidermist Ron Kelly, who said he hopes that particular bass is caught 10 more times in its life.

"The exciting thing about this fish is that it proves beyond a shadow of a doubt that a big bass can be caught and released and the fish will survive to be caught again," said Campbell of Abish's catch. "The fact that a fisherman from New York would release a trophy Texas bass is an indication of just how far the catch-and-release philosophy has spread

in just a few years."

Dr. Jack McCullough believes that dairy cows also may contribute to the production of hog bass at Fork, and that's no bull. McCullough is a limnologist (a scientist who studies lakes, ponds and streams) with Stephen F. Austin State University. He started a research project at Fork in early 1991 in an attempt to determine just what makes the lake so good.

"We have some very good data," said McCullough. "I think we may find Lake Fork's high fish production capabilities linked to nutrients in the runoff from dairy farms located around the lake and in the lake's drainage. Hopkins and Wood Counties have more dairy farms than any other counties in Texas."

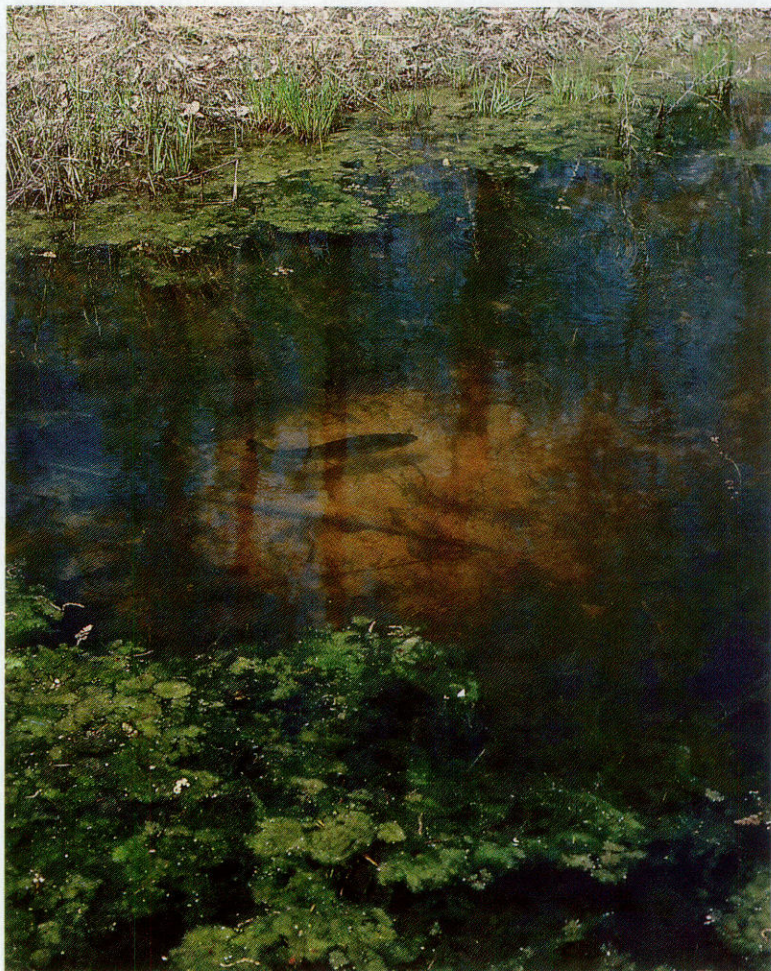
There's more to the nutrient chain than mere bovine manure. McCullough said the bottom contours at Fork are just about perfect for fish production. There's plenty of the shallow water bass need for spawning. There is also hydrilla, the emergent vegetation that tends to

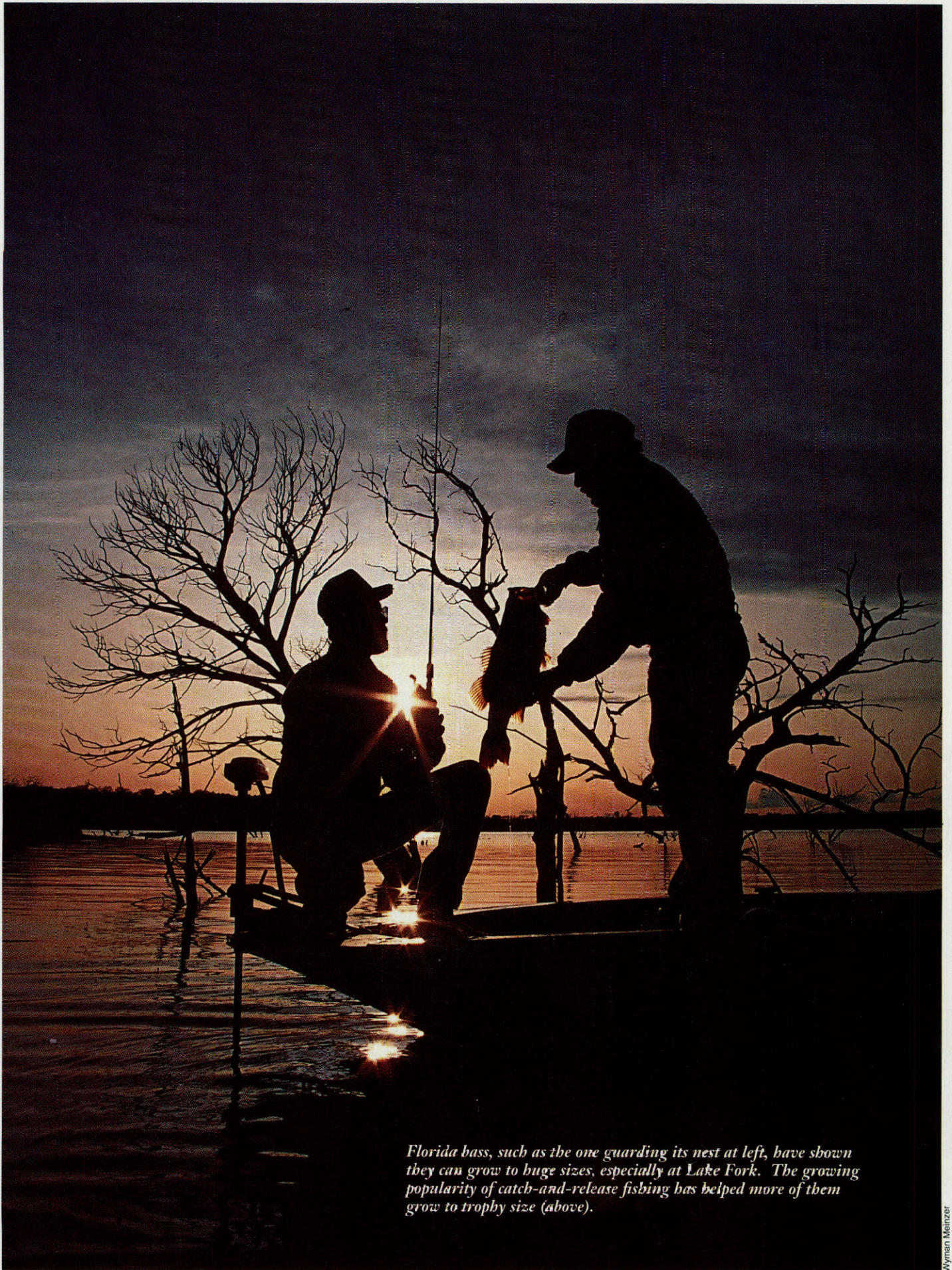
choke shallows and protect the fish from fishermen. McCullough said bottom contours—sharp dropoffs relatively close to shore—keep the hydrilla from taking over the lake and allow the nutrients to get into open water, thereby contributing to the thriving zooplankton, which feeds a variety of forage fish, including threadfin and gizzard shad. Fork also is renowned as a bluegill lake and bluegills are a favorite largemouth food.

Zooplankton is the bottom of the food chain, whereas bass that weigh 17 pounds or more are the top of the food chain, at least as far as fishermen are concerned.

Another unusual aspect about Lake Fork is that it filled in three stages. Each of the successive stages flooded thousands of acres of timber so thick that it was inaccessible by bass boat. Raising the lake level in three stages also made the early fishing less consistent than is

(Continued on page 11)





Florida bass, such as the one guarding its nest at left, have shown they can grow to huge sizes, especially at Lake Fork. The growing popularity of catch-and-release fishing has helped more of them grow to trophy size (above).

Wyman Meinzer

Operation Share A Lone Star Lunker

Bill Rutledge still recalls the first promotional material done in late 1986 to promote a new program called Operation Share A Lone Star Lunker (OLSL). It featured a bass on a wanted poster with the inscription "Wanted, Dead or Alive." The "dead" part was scratched out.

That initial concept, recalls Rutledge, was meant to get mainstream fishermen involved in the Texas Parks and Wildlife Department's fish hatchery system. Rutledge, who is now director of the agency's Conservation Communications Division, was hatchery branch chief in those days.

Successful beyond Rutledge's wildest dreams, OLSL almost immediately took on an aura of its own. The unannounced program was scheduled to begin January 1, 1987, but Lake Fork fishing guide Mark Stevenson jumped the gun when he caught a new state record bass on November 26, 1986. Stevenson defied convention by keeping the 17.66-pounder alive and that huge fish became the cornerstone of OLSL.

"The original idea was that fisher-

men would loan bass weighing 13 pounds or larger to the hatchery system," said Rutledge. "It was common practice for hatchery managers to get rid of brood fish once they reached five or six pounds. It was thought that a fish's brood potential declined after that, plus we knew big fish required more forage.

"Since Florida-strain bass stockings were beginning to create a new awareness of big Texas bass, we decided to try and spawn big fish through OLSL. One goal was to see if the gene for growth could be passed on to successive generations."

Ironically, the genetic potential of Lone Star Lunkers remains a question mark but, in handling 127 bass from 13 pounds to 18.18 pounds (the current Texas record caught by Barry St. Clair from Lake Fork in January 1992), David Campbell has learned a great deal about big fish. Campbell administers OLSL from Tyler State Fish Hatchery, where he is superintendent. One thing Campbell has learned is how to handle a big bass that you intend to keep alive.

"If you catch a Lone Star Lunker, you should put it in a livewell as quickly as possible and immediately transport the fish to the nearest marina," said Campbell. "Everyone wants pictures of the biggest bass they've ever caught. Get everything organized so you don't have to hold the fish out of the water more than 30 seconds at a time."

In terms of oxygen to the animal's brain, holding a fish out of water is similar to holding a person under water. In fact, Campbell recommends that fishermen hold a fish out of water no longer than they—the fishermen—can hold their breath. In the case of a fish, its eyes dry out quickly, particularly on a bright, windy day with low humidity.

Campbell discovered that the standard grip by which anglers hold bass by the lower jaw with their thumb on the inside of the fish's lip can be damaging to heavy bass. The fish's jaw simply cannot support such a great weight. The preferred method of holding a big bass is to hold it horizontally with one

hand on the fish's lip and the other hand under its belly to help support the weight.

"If you're holding a Lone Star Lunker, don't take the fish out of the livewell until you're certain the marina has an aerated minnow tank in which to hold the fish," advised Campbell. "Then make the move as quickly as possible."

OLSL begins in December each year and continues through April. That's when most big Texas bass are caught. In fact, 38 of the program's 127 entries were caught during the month of February and 49 others were caught in March.

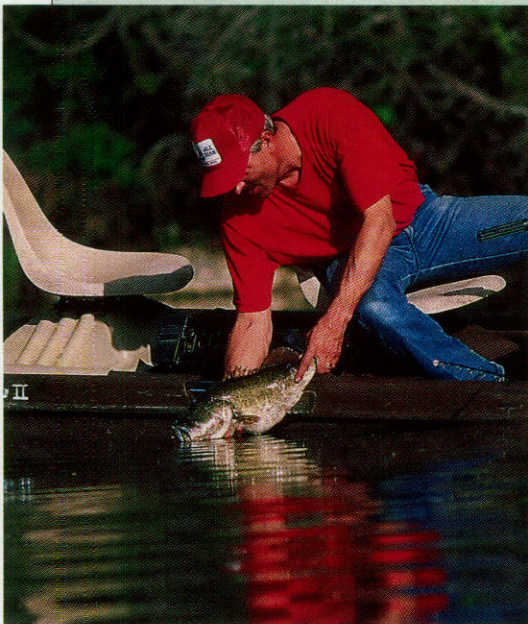
If you catch a bass 13 pounds or larger and wish to participate in the program, call Campbell at 903-592-7570 or 903-597-7919. Big fish also can be reported by calling the Texas Parks and Wildlife Department in Austin toll-free at 1-800-792-1112. Fishermen who participate in the program receive a free fiberglass replica of their catch. They also can have the fish back if they so choose, or have the fish released back into the lake where it was caught.

The number of Lone Star Lunkers released has increased with each successive year of the program. In 1992, a total of 26 of the record 33 Lone Star Lunkers was released. St. Clair's state record fish is on display at the Dallas Aquarium in Fair Park and eventually may be the centerpiece of a new hatchery and Freshwater Fishing Hall of Fame planned for Athens.

For that matter, the original Lone Star Lunker, Stevenson's fish, is a major attraction at a huge Bass Pro Shops aquarium in Springfield, Missouri and another Lone Star Lunker is featured in a Chattanooga, Tennessee aquarium.

The program has attracted national attention. During the peak big bass season, Campbell's phone rings constantly from news media across the nation seeking an OLSL update.

Only 18 of the Lone Star Lunkers actually have spawned, producing about 500,000 fingerlings. Those offspring are being stocked into Texas lakes and also are being incorporated as brood



Ray Sasser

The Lone Star Lunker program has helped educate anglers about how to handle and release big bass.

fish into the hatchery program.

Perhaps the most exciting thing the program has accomplished, according to both Campbell and Rutledge, is to emphasize the success and importance of catch-and-release bass fishing. Campbell implants a magnetic tag in each Lone Star Lunker and routinely scans each new fish coming into the program.

At least two of those lunkers have been caught twice, recycled, as it were, to provide the thrill of catching a trophy-sized bass for more than one angler. The fiberglass likenesses of these fish hang as reminders on more than one wall and the fish themselves are still out there, waiting to thrill the next lucky fisherman.

In the meantime, Campbell is adding valuable data to a computer file that includes such information as the fish's age, length, girth, date and time of day and where it was caught and what lure it struck. An incredible 87 of the 127 Lone Star Lunkers were caught at Lake Fork. OLSL has shone a national spotlight on bass as big as Texas. ★



Barry St. Clair displays his state record bass for a group of photographers at Tyler State Fish Hatchery, home of the Lone Star Lunker program.



Grady Allen

The Lone Star Lunker program has contributed numerous big bass for spawning and research, but officials believe its main value has been in promoting the catch-and-release philosophy among Texas bass anglers.

(Continued from page 8)

the norm for a brand-new lake that is allowed to fill in one fell swoop.

Finally, the lake level at Fork is remarkably constant. It seldom fluctuates more than a foot, a factor that many observers, including Keith Elair, believe is a plus for fish production.

McCullough believes the next major study at Lake Fork should center around economic impact. He said he was amazed, while working at Fork, at how much money is spent on boats and fishing equipment and how many out-of-state boat trailers show up at the lake. "Beyond providing tremendous recreation, a Lake Fork quality fishery has an incredible impact on the economy, and that's an issue that's been overlooked," said McCullough.

According to Lyons's 1990 creel census, Fork sustained about 805 man-hours of fishing per acre from more than 350,000 fishermen that year. Total man-hours of fishing at the lake approached two million.

How big will Lake Fork bass eventually get? As big as bass can get in Texas. Most fishermen, St. Clair included, believe the elusive 20-pound barrier could

be broken by a Lake Fork bass on any given day.

In spring 1990, fishing guide Bryan Duplechain spotted a big, pale object floating on the surface at Fork. Upon investigation, Duplechain plucked a huge dead bass from the lake. It weighed 20.5 pounds but it was deteriorated to the point that it was obvious the fish had been dead for quite a while.

Subsequent experiments by Lyons indicated that dead bass left in the water actually gain weight. The floater Duplechain found probably weighed less than 20 pounds when it was alive. It almost surely weighed more than 18 pounds, however.

Whether Fork ever produces a 20-pounder or not, it already has rewritten the Texas big bass record book and effectively ushered in the era of catch-and-release bass fishing.

"Lake Fork is an unbelievable success story," said Forshage. "It's an example of what can be done with fisheries management, and the lake is a blueprint for future bass management. We need more lakes just like Fork." ★

Ray Sasser is outdoor editor of the Dallas Morning News.

Fort Richardson guarded front lines of North Texas settlement.

Sentinel on the Edge of the West

Article by Betty Starr Kirkpatrick, Photos by Mario Gonzalez

T

he wide expanse of sky seems to encompass the scattered trees and grassland. A lone rider on his favorite cow pony can be seen checking the fence that surrounds an expensive herd of cattle. Oil wells pump with amazing regularity amid the grazing animals. All looks peaceful and serene along U.S. 281 near the county seat of Jack County.



Mounted soldiers gallop past Colonel Mackenzie's quarters during a recent reenactment.



A cavalryman (left) pauses to fill his canteen in Lost Creek. Jacob Howard (below) portraying a private of the 9th Cavalry, appeared in the movie "Glory."



It was more than 100 years ago that Comanche and Kiowa Indian tribes claimed this land around Jacksboro. As early settlers advanced westward, a string of forts was built to protect them and provide a measure of security. Fort Richardson was one of these frontier forts. Today, its entrance stands solitary, unguarded. The Indians are gone and the cavalry has faded from view, but if you are brave enough to drive through the open gate you will find yourself a visitor to "times past" and suddenly the year becomes 1872.

The hollow blast from a volley of guns permeates the crisp morning air. Slapping leather and soldiers marching in cadence to the drums do not silence the nicker and whinny of the horses. Uneasy as the signal for a call-to-arms is given, the horses can be contained only within the confines of the brown, sandstone fence that separates them from the frontier. More than 300 horses, all sizes and colors, stand ready to move out when needed across the mesquite and cactus country from Fort Richardson.

The Salt Creek Massacre is only hours away. The horses can detect the tense strains in the high-pitched voices that echo across Lost Creek toward the rock fence. Breezes stir the brightly colored flags standing high above the fort and from far out on Squaw Mountain comes the wail of coyotes. Or could it be the Comanches?

Time and its counterparts have swept away many facets on this diamond of history, but they can neither erase nor camouflage the spirit of Fort Richardson. It can be seen and felt in the old rock fence that runs intermittently along the western edge of the fort grounds. At several spots it angles across Lost Creek and separates the creek bottom from the higher plateau area. The worn sandstones now symbolize an era, a time when men still could visualize Texas as it was before the Anglos arrived, when law and order was buckled around the hips.

In the evening, when a whippoorwill calls from a live oak tree and a roadrunner scurries along the top of the old fence, it could be 1872 again. But, it isn't. Airplanes fly overhead and on Friday nights in autumn you can hear football fans whooping for the Jacksboro Tigers, sounding like the Kiowas and Comanches did a hundred years ago. Armadillos run through the tall prairie grass and root along the base of the rocks searching for food. Several deer stand quietly and docilely, watching for a sign of trouble. The Indians with their bows and sharp-tipped arrows ride the valleys between the mountains no more.

Prickly pear cacti dot the grasslands throughout the park. Colorful and gaudy in their spring blossoms, they cast their ray of color against a backdrop of mesquite, live oak and prairie grass in newly coated green. They signal the real end

to the cold winter. When the last days of summer fade into early autumn, the prickly pear fruit turns a deep, purplish red to brighten the landscape in a splash of beauty before the north winds flow down from Canada. These same showy prickly pear annoyed the marching soldiers and stabbed the legs of foraging horses. Today, we can enjoy their colors from the trail or on the road.

Fort Richardson State Historical Park has another side to its rare beauty. From up on the bluff a trail leads down into dense vegetation that grows along Lost Creek. On one side of the well-maintained trail is a high rock ledge and on the other side is a spring-fed creek that once watered the horses of the Fourth and Sixth Cavalry units. Here in the dark, tree-shaded depth of the park, the air is cooler and the water usually is clear on its limestone bed. It's a good place for a cavalryman to relax after a

long day in the saddle. Before him, the Indians no doubt enjoyed this cool spring water after their day on the hot, rocky and cactus-covered prairie.

Along the trail in April and May the numerous plum trees are a sweet-smelling and lovely sight. Blooms ranging from white to pink, then to a deeper pink, indicate some that will ripen in early summer and others that are fall plums. The trail winds through huge rock boulders whose age transcends 400 million years and finally enters the campsite area. These camping places under the bluff are almost always shady and cool. Here on the lower area of the campground, the prickly pears do not grow. Both areas, the lower campsites and the ones upon the bluff, are uniquely Texas and uniquely lovely.

It was 1867 when a board of military officers chose Jacksboro as the site for a new U.S. Cavalry Post. A year earlier a post had been abandoned at the Jacksboro location when four companies of soldiers were ordered to Fort Belknap, 40 miles west on the old Butterfield Stage line. Two other companies were sent to Buffalo Springs, 20 miles north of Jacksboro. A scarcity of water at Buffalo Springs changed the *modus operandi*, and Fort Richardson was started within the year. The town of Jacksboro grew as carpenters and other



workers spent their paychecks in saloons, drinking and gambling. It had yet to become the place where settlers and farmers could come for a brief respite from toil.

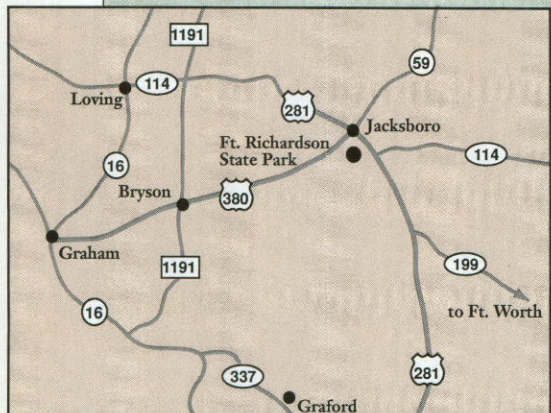
In the years that Fort Richardson served as one of the front lines of defense against the Indians, it contributed in no small way to the establishment of settlers, farmers and ranchers. Communication and transportation that depended primarily upon the horse and rider left many miles of uncovered area where confrontations sometimes occurred between Indians and settlers.

Reenactments, popular at Fort Richardson, include ladies portraying the wives of officers.

Soldiers had to be on constant alert.

It was here at Fort Richardson that Colonel Mackenzie lived up to his reputation as one of the most successful Indian fighters. Seven men on a wagon train traveling from Fort Richardson to Fort Griffin were killed, an event that

Fort Richardson State Historical Park



Map by Debra Morgan

Fort Richardson was established as part of a string of federal posts in Texas to halt widespread Indian attacks on early settlers. Seven of the nine buildings are original structures with the post hospital being the most impressive. An Interpretive Center is located in a reconstructed officers' quarters that overlooks the parade ground. The fort was abandoned in 1878, but today we may enjoy recreational facilities that include campsites with water and electricity, picnic sites, pond and creek fishing, nature hiking trails, restrooms and showers and a primitive camping area.

Location Fort Richardson State Historical Park is at the southwest

edge of Jacksboro, the county seat of Jack County, on Highway 281. It is approximately 60 miles northwest of Fort Worth.

Facilities There are 23 overnight campsites with electricity and water, 40 picnic sites, group picnic area with covered pavilion accommodating up to 80 seated guests, primitive camping area, restrooms and showers, playground and nature trail along Lost Creek and Prickly Pear Trail.

Fees \$3 entrance fee per vehicle; \$9 for campsite with water/electricity; \$17 for covered pavilion for 1-25 persons, \$29 over 25 persons; \$4 per site, primitive area.

became known as the Salt Creek Massacre. Later, the arrests of the three Kiowa chiefs Satanta, Satank and Big Tree as the leaders of the massacre proved to be the beginning of the end for raiding Indians. Few visitors to the area realize the indelible marks left by the Indians in Jack County—not only arrowheads, but tombstones of early settlers that died at their hands. Entire families were wiped out. Bands of Comanches, Cheyennes, Kiowas and Arapahoes were forced or coerced to the reservation at Fort Sill, Oklahoma, and by 1878 Fort Richardson was abandoned.

Inside the park grounds, not visible from U.S. 281, still stand the officers' quarters, hospital and morgue, guard-

house, barracks, magazine, commissary and bakery. You can walk across the parade ground and envision the men who marched here more than 100 years ago. If you camp in one of the many campsites outside the fort area you may hear the yip of a coyote or the hoot of an owl in the night, but you need not fear an approaching Kiowa. You might want to plan a family reunion or a picnic by Lost Creek. A covered pavilion is available if a sudden shower develops. You may see the prickly pears, plum trees, clear spring water and armadillos. You can sit on the old brown rock fence and let your imagination run wild. Late in the shadowy evening you may see a buffalo herd so large that it stretches as

far as the eye can see. Then, as the twilight lingers, a deer bouncing through the tall grass will jolt you back into reality.

Fort Richardson State Historical Park is a trip back into time. The cooler months of spring and early summer or the savory sweetness of fall are excellent times to enjoy its bounty. And one last reminder, do not be surprised that the sounds of the city of Jacksboro can sometimes be heard on a still, moonlight night when the roaring Jacksboro Tigers make a touchdown. ★

A Texas educator for many years and an avid writer, Betty Starr Kirkpatrick resides in Brazoria.



An old water-filled quarry near the entrance is stocked with largemouth bass and sunfish.

Making the Rounds with a Frontier Surgeon

by Arlinda Abbott and Jerry Sullivan

E

arly on Tuesday morning, December 19, 1871, Dr. John Fox Hammond sat in his office in the Fort Richardson hospital. The 51-year-old veteran of the Mexican and Civil Wars hunched over his portable field desk, finishing a letter to the Surgeon General. The plaintive notes of the bugler sounding sick call drifted through the window. He carefully folded the letter and glanced at his pocket watch—9:30. Soon, ailing enlisted men and officers would begin arriving.





Reenactor Jack Thomason portrays Dr. John Fox Hammond at his desk writing to the Surgeon General.

Hammond spent a few minutes inspecting the natural science specimens he had collected during the eight months he had been stationed at the post, reminding himself to send them to the National Museum. He waited, but no soldiers answered sick call, only civilian employees—very unusual for December. Dr. John Gregory and Dr. John Wolf, his contract surgeons, would see to the teamsters and laundresses. He rose and walked into the hall toward the south ward to check on his patients, beginning his daily duties as Fort Richardson's post surgeon.

Established in 1867, during the reorganization of the frontier defense system in Texas, Fort Richardson was the northernmost post of a line of forts stretching from the Rio Grande to the Red River. Working in concert with other Texas posts and Fort Sill, Indian Territory, the fort played an important role in subduing the native Plains peoples and forcing them to stay on the

reservations north of the Red River.

The post hospital, completed in 1870, was among the earliest of the few permanent buildings constructed at Fort Richardson. With two large wards and a two-story administration block including a dining room and kitchen, it followed closely the military design for such facilities. At that time, the imposing sandstone hospital was the most modern building between Fort Worth and El Paso.

The health of troops and civilian employees and the general sanitation of a fort was the charge of the post surgeon. Usually a regular army doctor with the rank of major or captain, the post surgeon was assisted by one or more civilian contract surgeons, men who often were poorly trained. However, the responsibility of keeping the hospital running smoothly fell to the hospital steward. A noncommissioned officer with the rank of ordnance sergeant, the steward served as record

keeper, dietician, dentist, surgical assistant and pharmacist. He also commanded two civilian laundresses, or matrons, normally the relatives of soldiers, as well as several male nurses, attendants and a cook, all enlisted men assigned to extra duty in the hospital.

So much is written about the glory of the "winning of the West," that one would think that the staff's primary task was patching up wounded soldiers. Not so. Highest on the list of complaints requiring medical skills were illnesses caused by bad water and spoiled food, followed closely by alcoholism and social diseases spawned by visits to nearby dens of iniquity.

Since the post surgeon inspected all post buildings for proper sanitary conditions, most people would expect the hospital to have been immaculate. Again, not so. Patients often slept on worn, filthy, bed bug-infested mattresses inside rooms with leaky roofs and sooty walls with falling plaster. Such was the

Fort Richardson's hospital building (left) was a modern facility for its time, but medical practice on the Texas frontier was difficult for both doctors and their patients.

scene Dr. Hammond encountered when he entered the south ward that December morning in 1871.

Pausing at the door, the doctor contemplated the room's many shortcomings. The heating system did not meet standards. A long section of stove pipe stretched across the room to the dispensary fireplace flue, soiling the beds beneath with soot. The new iron bedsteads were dirty: the pegholes in the slats were filled with bed bugs, the mattresses were stained and blankets moth-eaten. The three-year-old bedside tables were weak and rickety. Each table served two beds; more were needed. Linen coverlets, Civil War surplus, covered the windows because the medical shopkeeper in New Orleans could not pro-

Private William Modinger (Robert Rowley), sitting beside the wood stove, and Private Henry Shields (Tom Sessions) reenact a scene in the restored hospital, below.

vide regulation window shades.

Men of science, Dr. Hammond among them, were just beginning to make the connection between good sanitation and ventilation and good health. Hammond again would appeal for the needed improvements. But now, he must attend to his charges.

Eight of the 10 patients were dressed and standing beside their beds; one other, Private William Modinger, suffering from rheumatism, sat shivering by the stove. The tenth, Private Henry Shields, lay bedridden, wasting away with acute diarrhea. All the men but one were cavalymen with General Ranald Mackenzie's 4th Regiment. The other, Shields, served with the 11th Infantry.

Dr. Hammond returned Private Barnard Walters to duty, his contusion having healed sufficiently, and told Private Frank Fitzgerald, who had spent his first night beneath the stove pipe, to move his gear to Walters's already stripped bed. Fitzgerald's malady was another case of scorbutus, or scurvy, which seemed to be increasing to epidemic proportions—an indication of



Mario Gonzalez



poor diet. Hammond prescribed citric acid five times a day and pickles with meals. The surgeon then checked the "cerate" dressing on Private Hiram Wood's severe burn, ordered continuation of the treatment, then moved on to privates William Bierbower and Patrick Whelan. Both men suffered from gonorrhea after a trip to the nearby settlement of camp followers across Lost Creek. Hammond called for continua-



Mario Gonzalez

tion of a dose of a prescriptive “gonor-rheal mixture” every three hours and deleted coffee and tea from their diets.

Continuing his rounds, Hammond prescribed quinine tablets—as a bitter placebo—for Private Richard Williams. Hammond questioned the legitimacy of Williams’s chronic medical complaints. He seemed to be a “beat,” or “malingerer,” feigning illness to avoid duty. Shaking his head, Hammond

moved on to examine the gunshot wound in the lower left leg of Private George Keeley. Blood had seeped from the wound during the night, staining the sheets. Unwrapping the bandages, Hammond feared gangrene and certain amputation, but found no indication of decay. He ordered recressing the wound with “cerate resinae,” and admonished Keeley for the drunken behavior that had landed him in the hospital.

The photo above shows how members of General Ranald Mackenzie’s 4th Regiment might have appeared while awaiting treatment at Fort Richardson Hospital in 1871.

Hammond moved on to Private Michael Manion. Although not serious, the deep cut in Manion's left arm had been slow to heal. Continuing the treatment begun five days ago, Hammond specified dressing with simple cerate every 12 hours. Hammond took a blanket from Manion's bed to wrap around the shoulders of Private Modinger, still shivering near the stove. Modinger was too debilitated from rheumatism to leave the ward room, so Hammond ordered a restricted diet of soup served to him at his bedside. In order to stimulate Modinger's circulation and combat his chronic chills, Hammond called for a

wine "cough mixture" in addition to a glass of port wine after breakfast and dinner.

Finally, Hammond approached the bedside of Henry Shields. The long-suffering, 27-year-old private had been hospitalized since October 31, his fourth confinement since July. Acute diarrhea, a painful, protracted and usually fatal disease, had left Shields emaciated, with congested lungs and a high pulse rate. Hammond knew there was little he could do; the disease was in its final stage. As a last resort, in addition to cod liver oil, Hammond prescribed an ancient medical practice—the application of "heated

cups" to the course of the colon, hoping to divert the diseased blood from the intestinal area. As he left the room, Hammond glanced sadly at Shields's uniform hanging on a nearby peg rack, knowing the young soldier would not wear it again.

It was 11:30 by the time Hammond had examined the other patients in the north ward. He went directly to the dispensary to review his prescriptions and dietary orders with the steward, Austin Waterman, who was filling out medical requisitions, and to instruct him to "cup" Shields later in the day. As Hammond left the room to inspect the

Historical furnishings in the hospital, including the kitchen (right), are based on military documents in the National Archives.



remainder of the hospital, Waterman turned to the shelves and drawers of drugs and supplies needed to prepare the prescribed remedies. The 42-year-old steward was highly qualified for his post, having served in that capacity during the Civil War. Since coming to the post six months earlier, he had earned the respect of the hospital staff through his “intelligent, faithful, and efficient” discharge of duties.

Walking through the south ward, Hammond stopped to



Mario Gonzalez

Steward Austin Waterman (Bob Williams), above, served as record keeper, dietician, surgical assistant and pharmacist at Fort Richardson. Beef and bread, below, were mainstays on the menu at frontier forts.

remind Mrs. Walsh, the matron, to remove the soiled linens discarded by Private Walters, and prepare the bed for Private Fitzgerald. Hammond entered the wash room at the end of the ward and found the basins unemptied, fresh water buckets empty, dirty towels and water spills everywhere. Private Michael Crean, the attendant assigned



Mario Gonzalez



Mario Gonzalez

the duty, once again had neglected cleaning the room after its use by the convalescents. Hammond decided to ask General Mackenzie for a replacement. Most enlisted men disliked hospital duty and were inclined to avoid it, with few serving more than 15 days before being relieved of duty.

The small room across the hall, containing the earth closet, or commode, had been neglected as well, and was beginning to smell. The detail of prisoners from the guardhouse assigned to empty the trays was overdue. Hammond

had been pleased with the results of the experimental system introduced here last year by his predecessor. The double-seated closet, an alternative to an outdoor sink, was built by convalescents. Designed by a sanitation engineer, the basic principle of the device was based on absorption of moisture and elimination of odors by a diatomaceous earth and charcoal mixture thrown on the wastes. Hammond wanted a closet for the north ward as soon as the lumber could be obtained.

Hammond had finished his inspec-

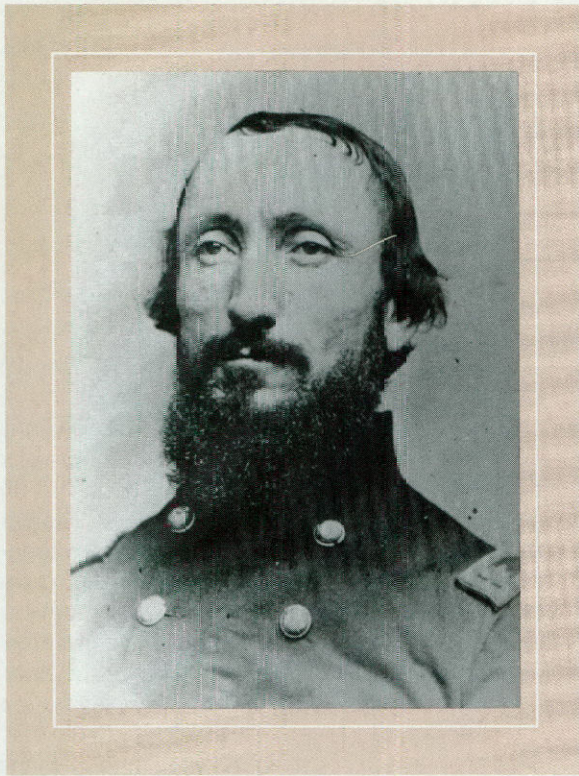
tion of the building when he heard the post bugler sound dinner call at 12:15. He proceeded to the dining room where 13 of his patients were crowded on benches around two makeshift tables of rough boards, the only furnishings in the hall. The meal was typical army fare: bean soup, baked beans, beef cut from the soup bone, coffee and coarse bread supplied from the post bakery. Pickles were provided for the victims of scurvy.

Nurses Harry Thompson and Dennis Sullivan passed, carrying vessels of



Rodney Florence

This authentic-looking meal replicated from modern resins and polymers.



OTIS Historical Archives, National Museum of Health & Medicine

Today at Fort Richardson State Historical Park, the desk, books and instruments in Dr. Hammond's office, the tiers of medicines and potions lining the dispensary cabinet, the stove and utensils in the kitchen, the beds, tables and blankets accurately recreate that December day, 121 years ago.

The meticulous recreation required thorough research of the medical and post records of Fort Richardson and the histories of medicine and medical technology. Procurement or reproduction of all the furnishings and accessories followed. A visit to this hospital will make you appreciate modern medicine, as you are transported to another era, to experience the sights, if not the smells and sounds, of the medical profession on the Texas frontier. ★

Arlinda Abbott is a furnishings planner and Jerry Sullivan is an interpretive planner for the Public Lands Division of the Texas Parks and Wildlife Department.

food to the ward rooms for the bedridden patients. Hammond reminded them not to forget the glass of port wine for Private Modinger's rheumatism. In the kitchen, Hammond found Calvin Smith, the cook, studying the diet table for the next day's meals, given to him by Waterman. Smith informed Hammond that the post police had not emptied the full slop barrels, requiring him to throw garbage on the ground outside the kitchen door. He reminded the doctor of the need for shelving to hold cooking pots and utensils, which were stored in disarray about the kitchen, and for another table and a sink. He was tired of washing the dishes in tin basins in the dining room after meals. Smith was not the best of cooks, but he worked hard. Hammond told him he would submit requests again, knowing the Medical Department would ignore them, just as they always had.

Hammond returned to his office, closed the door and sat silently for several minutes, staring out the window and watching a mounted company in close order drill. His thoughts drifted briefly to Private Shields—he had done all he could do for the young man. Taking a deep breath, he picked up his unsigned letter to the Surgeon General and unfolded it.

Dr. John Fox Hammond, shown in a Civil War portrait (above), served at Fort Richardson in 1871-72. Below is a replica of an "earth closet."



Mario Gonzalez

Infrequent Flyer

by Mark Lockwood

In the area known as far West Texas resides a small bobwhite-like quail that lives in the tall grasses, scattered oaks and pines of the desert mountains. These handsome quail are docile and approachable, waiting until the last minute to burst into flight and possibly scaring the intruder as much as themselves. After the short burst of flight they land in the tall grass and scurry off, calling back and forth to one another. This is how many people have been introduced to the Montezuma quail, a curious little bird with an interesting history and an ongoing struggle for survival.

A small, intricately marked quail of the southwestern United States and Mexico, the Montezuma quail is found in the United States from southern Arizona through southern New Mexico to southwestern Texas. They are most

common in Arizona. Montezuma quail also are common in upland areas of northern Mexico with a range extending as far south as Oaxaca. Uncommon to rare in Texas, they are restricted to five mountain ranges in the Trans-Pecos with the Davis Mountains currently the stronghold of the species in this area. Additionally, there is a stable population in Edwards, Real and Val Verde Counties on the southwest corner of the Edwards Plateau.

Montezumas are one of four species of quail that occur in Texas, all of which are found within the range of the Montezuma in the Trans-Pecos. The most common and widespread species in Texas is the northern bobwhite, which occurs throughout Texas to near Pecos and Balmorhea in the west, overlapping with the Montezuma quail in the northern Davis Mountains. Bobwhites, how-

ever, are uncommon in the Davis Mountains and seldom are seen. The scaled quail is a western species found in the Trans-Pecos, Rio Grande Plains and the Panhandle. These birds are found throughout the range of the Montezuma, but the actual ranges of these two species do not overlap because scaled quail are found at lower elevations and in open grasslands.

The Gambel's quail reaches the easternmost part of its range in the western Trans-Pecos and is common only along the Rio Grande between the small, isolated village of Ruidoso in southern Presidio County and El Paso. The ranges of the Gambel's and Montezuma quail overlap only in the spectacular Chinati Mountains where neither is common. The Gambel's quail is a desert bird and rarely, if ever, wanders into habitats preferred by the Montezuma.

Of these quail, only the bobwhite could be mistaken for the Montezuma. While the males of these species are distinctly different in overall color and pattern, the females of each species can be difficult to distinguish. The female bobwhite is more elaborately marked than the female Montezuma and, of course, lacks the crest.

Of the six species of native quail in the United States, the Montezuma has the most restricted range. It also is more closely tied to its habitat than any of the other quail species because of its extremely narrow ecological requirements. Montezuma



Rob Curtis

At first glance, the female Montezuma quail in the photo at left could be confused for a bobwhite, but there's no mistaking the garish plumage of the male Montezuma, right.

Ground-hugging Montezuma quail fly as a last resort.



quail inhabit pinyon-oak woodlands almost exclusively. They occasionally are found in other habitats, but these observations are made most often in areas close to more preferable habitat. These habitat requirements do not appear to be tied to either the oaks or pines but rather the understory species that are associated with these trees, particularly the tall grasses.

The Montezuma quail has been known by a number of common names. It was first described to science in 1830 from specimens taken in Mexico, as the Messina partridge. When originally described from the United States, it was called the Mearns' quail after Dr. Edgar A. Mearns. The subspecies of Montezuma quail that occurs in the United States still bears his name, *Cyrtonyx montezumae mearnsi*. Later the common name was changed to harlequin quail, referring to the clown-like markings on the male's face. Other local names like crazy quail, squat quail and fool's quail come from the bird's habit of freezing when approached. The current common name as designated by the American Ornithological Union is Montezuma quail, after the Aztec ruler at the time of the Spanish conquest. Montezuma is a Nahuatl word meaning "angry chief," but the common name of the quail may have been chosen to reflect the similarities between the elaborate dress of Montezuma and the distinctive plumage of the quail, certainly not the temperament of the quail.

The Montezuma quail's plumage is striking. On first inspection the bold pattern of the male might not look like good camouflage, but the white spotting on the black breast and sides and the black striping on the otherwise white face blend in well with the shadows of the oak-juniper woodland. The mottled brown back makes the bird difficult to see in dry grass when it sits perfectly still. Immature males lack the bold facial pattern of the adult males but otherwise are identical.

The female is much duller in appearance and is brown overall. All but the youngest birds have a small, rounded crest on the back of the head. This

coloration pattern allows the bird to remain perfectly still rather than running or flying when intruders approach. If the quail are startled they behave as any other species of quail by abruptly flying for a short distance and then running.

Prominent features of the Montezuma quail are its large, powerful feet and claws. The genus name when translated from Greek to English describes this trait. *Cyrtonyx* has two base words, *kyrtos* meaning curves, and *onyx* meaning claw. This feature gives a hint as to the feeding behavior and food requirements of this quail. Feeding studies of Montezuma quail in Arizona, Mexico, and recently in Texas suggest

that bulbs and tubers, particularly of *Oxalis* or wood sorrel, are the major components of their diet. Additionally, acorns and various kinds of seeds are important food items in the spring and fall, while the birds eat large quantities of insects during the summer months. Their habit of foraging on bulbs and tubers is unique among American birds.

The nesting time of Montezuma quail is closely tied to rainfall. As a result, they typically nest in the late summer and early fall when rainfall is greatest. It is not uncommon to see hatchlings in August and early September. The nest usually is made of tall grasses woven into a chamber with a well-hidden entrance. The chamber is lined with grass





Glen Mills

Montezuma quail have the most restricted range of the six quail species found in the United States. In Texas they live only in the hilly grasslands of the Trans-Pecos and southwestern Edwards Plateau.

population numbers appeared to be significantly lower in 1990. The effects of the heavy rains of the late summer and fall of 1990 cannot yet be determined.

Attempts to reintroduce Montezuma quail into Big Bend National Park have failed so far, but an attempt to reintroduce them into Guadalupe Mountains National Park in the Dog Canyon area has had some success. The long-term success of this program, however, still is in question. Similar reductions in populations have been noted from Arizona and New Mexico, but not to the extent that has occurred in Texas.

The Montezuma quail is both a favorite and a nemesis of birders. People visit the Trans-Pecos time after time looking for this elusive quail, more often than not unsuccessfully, but when the moment of discovery does come it is all the sweeter. This bird, and a few others, make a trip or two to the Davis Mountains a must for anyone trying to build a good state bird list.

Areas where these birds can be observed in Texas are few. Davis Mountains State Park consistently has been a good place to find them. Look for them in the mornings in grassy areas of the park, but even there they can be difficult to find. One way of locating a covey is to listen for their calls. These calls are not particularly varied, but they are constant and rather loud, probably allowing a covey to remain in contact while moving through dense cover. By driving the highways near Fort Davis, particularly State Highway 118 south toward Alpine or north toward Kent, there is a good chance of seeing these birds along the roadside. Traveling in the early mornings or evenings increases the chance of seeing them. ★

Mark Lockwood is a seasonal worker at Kickapoo Cavern State Natural Area.



Robb Curtis

and leaves and occasionally with some down. Six to 14 white eggs are laid in the cavity and are incubated for about 25 days. The young leave the nest soon after hatching and are cared for by both parents.

Historically, this quail ranged over the western half of the Edwards Plateau south to Maverick County, near Eagle Pass, and in every county of the Trans-Pecos. The rapid decline in numbers of the species first was noted in the early 1930s. By the early 1950s, there were no Montezuma quail in the new Big Bend National Park. Some accounts during this time speculated that the species had been extirpated from Texas and possibly Arizona. Overgrazing by cattle and sheep is thought to be the major factor that led to this reduction in range. A recent study has further suggested that the quail leave an area when tall grasses are reduced 40 to 50 percent by grazing.

This reduction in population numbers continued into the early 1980s, but since about 1983 the species seems to have increased significantly in both range and numbers. The reasons for this recent turnaround are unclear. Several years of above-normal rainfall have been recorded during this period, and rainfall has a dramatic effect on the reproductive success of this species, as with other species of quail. Evidence to support this hypothesis can be found following the drought year of 1989 when

Nature's Winter

Not all bluster and freeze, the harshest season has its special brand of splendor.

A winter moon hangs over the caprock country of West Texas.



Wyman Meinzer

A cottontail rabbit (above) and a coyote (below) are well-adapted to survive when blue northers chill their West Texas environs.

A thin coating of ice blankets a cypress-lined slough at Caddo Lake in East Texas (right).



Leroy Williamson



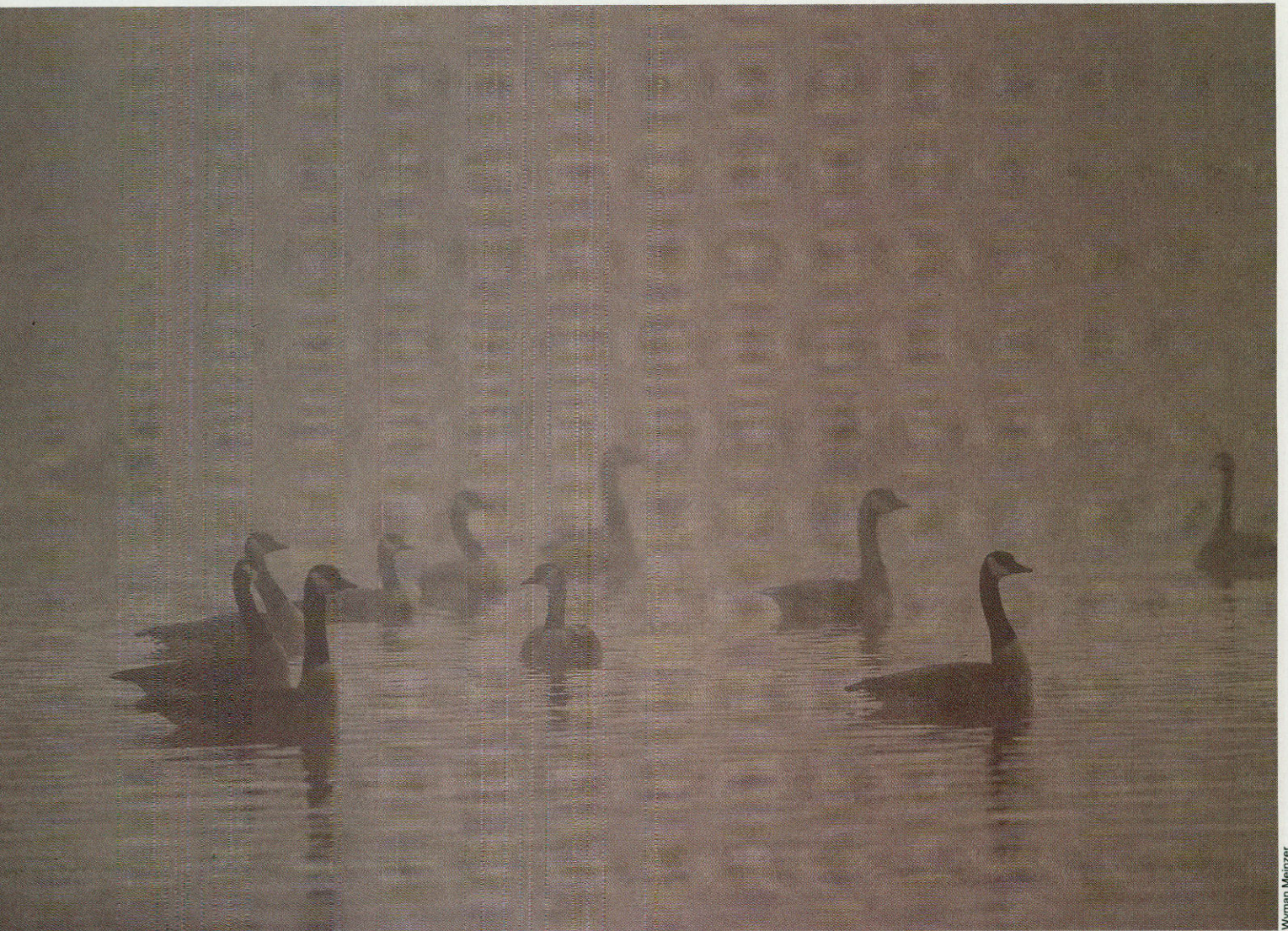
Wyman Meinzer



Stephan Myers

Leaves of clover acquire a mantle of ice crystals after an overnight freeze in Houston (left).

Canada geese appear unconcerned at the chill and fog on a North Texas pond (below).



Wyman Meinzer

A lone pintail drake shows off his winter plumage (right).

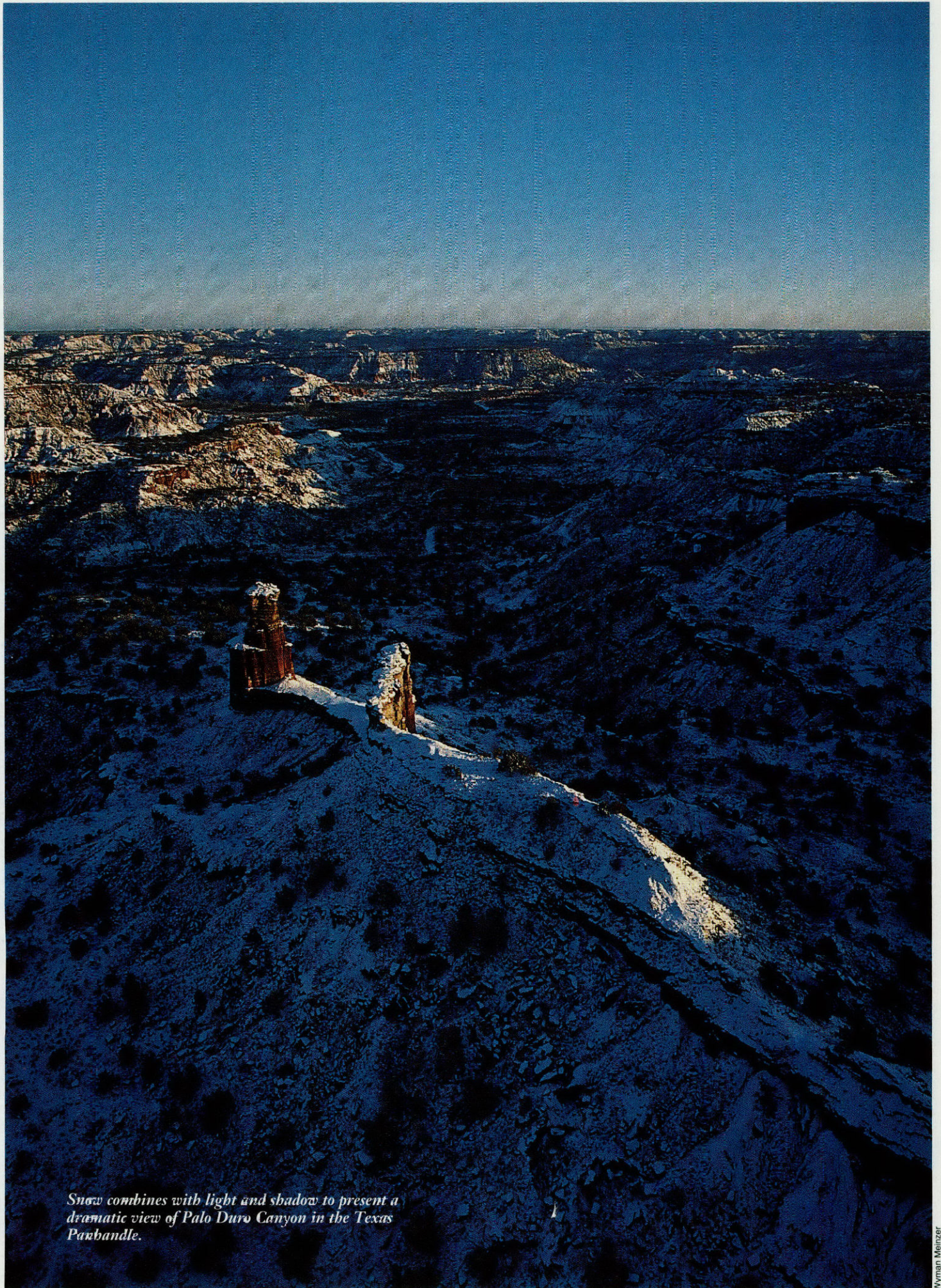
The Guadalupe Mountains wear a crown of snow (below).



David Vinyard



Robert Bunch



Snow combines with light and shadow to present a dramatic view of Palo Duro Canyon in the Texas Panhandle.



Winter

Shell

Game

Dedicated shellers have the beach to themselves in January

Remember how the expectation of finding a colorful egg at Easter had you keyed-up to the bursting point? This is the feeling a sheller has. The chance of finding that special shell is what keeps you trudging with your laden bucket when you can barely put one foot in front of the other.

Texas has 423 miles of inland waterway running along its coast and passing through lagoons and bays between its barrier islands and the mainland. If you stretched all these outer beach, bay and lagoon shores following that waterway out in a line, there would be hundreds of miles of shoreline to explore.

Last winter, which is my favorite time on a Texas beach, I took a few days and retraced my old shelling trails from Galveston to Port Aransas. My suspicion that coastal development had changed access to many of my early haunts was affirmed. But not to worry; you still can get to enough good shelling places to make shell collecting in Texas a worthwhile pastime if you know when and where to go.

A friend from Corpus Christi who has spent much time over the past 12 years beachcombing about eight miles below Port Aransas asked me, "What's happened to all the shells that used to wash in? We just don't find them anymore." There are several reasons, including the big freeze of January 1962, which lasted more than five days, and

the floods that accompanied Hurricane Beulah in 1967. These floods caused the inland rivers and creeks to empty their overflow of fresh water into the enclosed coastal bays, turning the bays into freshwater lakes for 18 months. This same period saw population growth, as well as development of homes, agriculture, industry and tourism spread over the vast length of coast. Together, these elements placed such stress on the habitats of the mollusk that, in some cases, they have not been able to reestablish.

The mollusk is an invertebrate animal whose ancestors date from the Cambrian period 600 million years ago. The lovely, calcareous shells that we seek are made by these mollusks, and the fossil remains of those shells are important to the study of the earth's geologic past. Mollusks may be found not only in the sea but also, to a lesser degree, on land and in fresh water. Gastropods, bivalves, scaphopods, cephalopods and polyplacophoras make up five of the seven classes of these soft-bodied animals (mollusca means soft-bodied) that are found in the shallow coastal waters of Texas. Only the first two of these five are likely to be found by the casual collector, although roughly 400 different species of these five groups may be collected on the Texas coast.

Gastropods include the snails, which have adapted for life in both marine and

by Jean Andrews

With hundreds of miles of coastal shoreline, Texas offers shell collectors ample opportunity to find attractive shells like the ones at left.



Lone Star Photographics

fresh water as well as on land. The spirally coiled snail shells actually are supporting skeletons worn on the outside of the soft, slippery animal, as are the shells of each group. Whelks, moonshells, conches and wentletraps are some examples of snails.

Bivalves, as the name implies, have two valves or halves as seen in clams, oysters, cockles and scallops. They live only in water, either marine or fresh.

The scaphopods are long, tapering, tusk-like tubes that burrow into the sand in marine water. Three or four small examples of these "tooth" shells

can be found on the Texas coast.

The chitons (polyplacophora) have eight plates or segments that allow them to roll up like the garden pill bug and the armadillo. The two species living in Texas salt water are found on hard surfaces such as rocks and old shells.

If you move fast you might catch one of the fifth group as it swims past—cephalopods (octopus and squid). Cephalopods living in Texas marine waters don't have a calcareous exterior skeleton for us to find. However, one of them, *Spirula spirula*, has a little interior shell coiled like a ram's horn that fre-

quently washes in.

Marine (salt water) mollusks are either sessile (attached) or very slow-moving animals that are extremely sensitive to changes in temperature and salinity of the water they occupy. Their shell is their primary protection. By closing the valves or pulling into the shell they can hold off against the cold or fresh water for several days, but not for extended periods. Even in freezes of short duration the cold stuns them to the extent they lose their hold in the sand or rocks and are washed up on shore to die. But in 1962 the long, hard freeze killed everything that could not swim to deep water. Our shores were blanketed with frozen, dead marine life of every description.

Five years later, the mollusks were beginning to make a comeback when rains accompanying Hurricane Beulah caused massive flooding of the rivers that empty into the enclosed Texas bays and lagoons. The flooding changed the normally saline waters into freshwater lakes, a condition that persisted for 18 months. Withdrawal into the shell or a burrow can protect the animal for a brief period, but the membranes of the vulnerable creatures could not withstand the changes in osmotic pressure caused by the difference in salinity for a week or two, much less a year and a half. They and their progeny perished. Many have not become reestablished. Myriads of tiny, chalky snail shells, unlike any that have been found alive during the memory of living persons, are found along the Aransas ship channel and nearby bays attesting to a similar natural disaster that wiped them out long ago.

Shell collecting is rewarding in direct proportion to the regularity and persistence of the search. That happy coincidence of time and tide that brings a rare treasure is unpredictable. Being on the beach regularly is hard enough for those who live nearby, but what about collectors who live hundreds of miles from

the nearest beach? Unless we just want a long drive followed by a nice outing in surf and sun, we must plan. There are four components to a successful collecting trip: 1) A knowledge of the habits of mollusks. 2) An acquaintance with the physical conditions of the ocean and seashore. 3) A sensible choice of collecting equipment. 4) Perseverance.

The common shells are easy to come by for any beachcomber, but the real collector seeks the living shell in its natural habitat, being careful not to overcollect. Start with what you find on the beach in order to acquire a representation of as many species as possible, then continue upgrading your collection as you find better specimens. In "Gift from the Sea," Anne Morrow Lindbergh tells us, "One cannot collect all the beautiful shells on the beach . . . gradually one discards and keeps just the perfect specimen; not necessarily a rare shell, but a perfect one of its kind."

Texas does not have extreme tides, but our high tides are high enough to keep you from being able to collect in

the bays where many of our shells are found. There is no use trying to collect in the bays except at low tides, which expose the mud or sand flats. The lowest tides usually occur in the winter and in August. If you can get the combination of a minus tide and a hard freeze, you can expect good shelling. The Coast and Geodetic Survey publishes an annual tide table that may be purchased from the United States Department of Commerce or from a marine supply company. Local newspapers along the coast also publish daily tide times and moon phases. Shell clubs keep their members updated on low tides and many of them will share that information with an inlander. The windy days of March and April drive the pelagic (floating) forms, such as the purple sea snail, to shore. Hurricanes in August and early fall can provide a windfall.

Although there are a few spoil islands that can be reached only in a boat, most places can be reached in a passenger car,

and no special permits or complex equipment are needed for collecting in Texas. The veteran collector generally has some favorite essentials, but the beginner will find the following to be handy:

- Appropriate clothing according to the season, but always use protection against the sun such as sunglasses, long sleeves, a hat and sunscreen.

- Old canvas shoes: glass, broken shells and old cans buried in the sand can be a menace to the feet, and the hidden balls of tar ruin footwear.

- Pockets, built-in or apron-style.

- Lightweight plastic bucket.

- Plastic bags for collecting drift or carrying messy material.

Where to Find Shells

Finding good shells is a matter of being in the right place at the right time. In addition to the spots mentioned in the article, here are some other places to go:

1. The south jetty at Port Aransas can be reached by staying on Cotter Street when you come off the ferry and continuing on Tarrant to the Port Aransas Park. Examine the rocks.

2. The outer beaches on Mustang can be reached by continuing on the beach from the jetty or returning to Cotter Street, then turn right at the stoplight on McAllister and proceed to the stoplight at Avenue G. At that point McAllister becomes Texas 361 (formerly P53) which has access roads to the beach. The first is 1A at 1.8 miles from the light, on down the island approximately every two miles. A \$5 parking permit, purchased at any convenience store, is required for the area between Access 1A and the jetty.

3. The outer beaches of Padre Is-

land can be reached by following Hwy. 361 (formerly P53) to turn to the Padre Island National Seashore. Use any of the plainly marked access roads to reach the beach, but be very certain that the beach sand is firmly packed so you won't get stuck. On these long stretches two people can "jump" the beach by letting one out while the second drives about a quarter mile farther then parks the car, gets out and walks. When the first "jumper" reaches the car, he drives it a quarter mile past the second then gets out and walks, and so on. It would be safer to have two sets of keys.

4. The Aransas Pass channel that follows the causeway/Hwy. 361 offers some pretty good picking at low tide.

5. Several tidal flats can be visited: At Aransas Pass continue on Hwy. 361 south from downtown to Beasley Street. Turn toward the bay.

From 361 take 2725 toward Ingleside and a little cove just to the



Glen Mills

Some of the most beautiful shells can be found on cold, dreary days in January when few people venture onto the beaches.

west of the site of the new Home Port off FM 1069 at Channel View Marina.

In Portland, follow Chiltipin Street to the Bay Shore Park, below which are the flats known as Portland Reef.

Indian Point can be reached from Portland by going toward Corpus Christi on 35/181. It is on the bay side before reaching the causeway.

- Pill bottles for small or very special specimens.
- Small strainer or dip net for collecting in grass flats, etc.
- Trowel or some other digging tool.
- Tweezers or toothpicks (wet the end) to pick up tiny shells.
- Waders, rubber boots and thermal underwear. Since winter is the best time to collect, this clothing will make the cold water and our blue northerners more bearable.
- Note pad and waterproof pen for keeping location data.
- A friend; unfortunately, it is not prudent to go to isolated bays and beaches alone.

Wide, uninhabited beaches may appear unproductive to the novice beachcomber. A knowledgeable collector, however, will not pass up a waterlogged piece of wood, for here dwell many boring or clinging shells. From a tangle of red and yellow whip coral, polished yellow and red *Simnialena marferulus* and other tiny goodies might reward the person who gives it a good, hard shake. Tropical coconuts, bamboo roots or knots of rope may have some rare offshore specimen attached.

At low tide, bays and back waters generally provide the best collecting at any time of year. On these sand and mud flats you can follow the trail of a gliding snail or find the siphon hole of a buried clam or a delicate angel wing. Lifting and examining submerged rocks, bottles, broken shell and old shoes as you wade in the quiet waters along the edges often produce fascinating results such as minute snails, clinging chitons, frightened crabs or feathery algae. Always return the rock or shell to its former position in order not to disturb the ecology of the area.

Minuscule shells make up more than half the species found in Texas. In fact, you may get home with a whole collection of them in the sand in your tennis shoes. Look for the tiny shells in the line of drift, that unpretentious-looking debris or trash deposited by the waves along the high-water line. Ordinarily, the last high-water line will hold the richest assortment. Scrape the drift up with your hand or a trowel and put it in plastic bags. When you return home wash it with fresh water to remove all traces of salt (salt deteriorates the shells) and allow it to dry on a cloth (paper comes to pieces). Screen it through



Glen Mills

strainers or a colander. Use a magnifying glass or a dissecting microscope to sort your material.

One cold, foggy morning last January, a friend picked me up in Houston at 5 a.m. so that we could be at San Luis Pass to meet a -0.9-foot tide (of the 26 days of minus tide in January, the lowest was -1.0). As we emerged from the tunnel of fog to pull off the road and grope our way under the bridge at the pass, we barely could see the waiting van that held our equally sleepy friend.

Bundled like Eskimos while tripping over our waders, we made our way expectantly to the beach. There it was! A line of drift that you see only at such a low tide following a heavy freeze. Masses of shell-encrusted worm tubes entwined thousands of freshly dead juvenile moonshells and arks, along with 10 other species of mollusk, heart urchins and anemones. We waded out onto the flats along the pass, but didn't find as much as we had hoped for. Upon returning to the beach an hour later, our productive drift mass was being carried back out to sea, and at the horizon the sky and water were melded into indistinguishable silver by the early morning light.

We returned to the cars and drove west on Brazoria County Road 257 following the badly eroding waterfront to Surfside, a settlement of several hun-

dred wooden beach houses that appear to be toppling on the sand atop their tall piling legs. At Surfside the sea had delivered the same shells we had seen at the pass plus eight additional beach-worn species. Half-frozen fishermen were arriving and unloading their gear for a day of quiet surf fishing. The entire beach from San Luis Pass to Surfside had been covered with the worm tube goop, but when we made our way to the Quintana side of the jettied channel there was nothing.

Our next stop was down the road along State Highway 36 to 521, then State 66 to Matagorda where the Colorado River empties into the Gulf of Mexico. Since my last visit some years before, a colony of raised beach houses had been built near an immense fishing pier, and a new Matagorda County Jetty Park complete with covered picnic tables was being completed. There were lots of cars and people out there. Some fishermen inquired about our luck fishing. When we replied that we were shelling they snorted disdainfully and waded on.

Although we added eight new species to our collection, we moved on quickly because the day was passing rapidly and we wanted to be in Port O'Connor before dark. Our long drive was broken by sightings of a meadow filled with

The distinctly colored center of the shark's eye (left) makes this shell of the Texas Gulf Coast easy to identify.

white snow geese, hawks waiting patiently atop bare branched trees, more than 200 stately sandhill cranes grazing in a fallow field and seemingly endless clouds of blackbirds heading to roosts.

So tired and hungry were we after checking into a motel, that we promptly went in search of dinner without pausing to unload or unlayer. Over dinner we rehashed our day. When you realize that each shell in our buckets represented bending over to pick it up, coupled with a lot of walking in the sand, you can see why we were so pooped-out. Exercise tapes don't provide soft sea breezes, the smell of salt, or gulls mewing overhead.

At Port O'Connor, the jetty area and the exposed tidal flats at the opposite end of Washington Boulevard produced 35 species during the two hours we prowled there before rejoining Highway 35 for the drive south to Aransas Pass. Located across the ship channel from Port Aransas is the most productive shelling locale on the Texas coast, St. Joseph Island, where the prospect of finding the sought-after Mitchell's wentletrap keeps the die-hard sheller coming back despite the difficulty of getting there. The first jetty boat leaves from Woody's Boat Basin at 6:30 a.m. and they run every hour until 6 p.m. If you are going to find any of the select shells, you've got to beat the other enthusiasts, which means taking the boat just before first light. Even though there may be quantities of paired disk shells, pen shells and big Atlantic cockles, it's a real heartbreaker when the seasoned collector spots a telling set of footprints accompanied by a little cart trail following the driftline. He knows another experienced sheller has gotten there before him and picked out the "jewels."

Except for the part nearest the jetty, Saint Joe is a privately owned island, and the owners prefer that you stay south of the first fence you come to as you walk north from the ship channel. On this stretch of beach you are strictly

on your own; there are no drinking water or facilities of any kind.

If you think dreams of sugarplums cause your head to dance, try the jingle of cockle shells for a sleep chaser. After a night of shell fantasies, you can imagine the disappointment when a report of foul weather canceled our early morning boat trip to Pelican Island in Redfish Bay. Instead, we pulled on our shorts and tennis shoes to wade out to the flats of Portland Reef. Although the sky was overcast, it was a balmy 73 degrees. Lost in our private thoughts, we each followed the winding trails of foraging snails, or poked around the siphon holes of buried, filtering bivalves. Several hours passed in what seemed to be only minutes. Interrupting our preoccupation with the rippled sand of the bay bottom, a wall of dark, smoky-blue clouds raced toward us across the silver sky. Like a herd of deer when a coyote is spotted, we turned tail and headed toward the shelter of our car, which was 30 minutes away through knee-deep water.

Halfway there the predicted cold front caught us. Our sides toward the malevolent cloud-wall were instantly frigid, while the opposite parts were still 73 degrees—but not for long. This was a fabled Texas blue norther. Within 40 minutes the temperature dropped 30 degrees. Although shivering in our wet clothing, we were thankful for the prudent decision to wade and not boat. Most Texas shores are quite isolated. Never try to outguess the weatherman. No shell is worth the risk.

Texas may not have shelling meccas like Florida's Sanibel Island, Australia's Great Barrier Reef, or Subic Bay in the Philippines with their wondrous mollusks, but I wouldn't trade the moonshell found during a peaceful winter's day, while poking along a line of drift on a Texas beach accompanied by a symphony of the waves, for all the cowries in China—well, maybe a golden cowrie or two. ★

A fifth generation Texan, Jean Andrews, Ph.D. is an artist, writer and naturalist. She has written three books about Texas shells, Sea Shells of the Texas Coast and Shells and Shores of Texas, both of which are out of print. A revised edition of A Field Guide to Shells of the Texas Coast is available in bookstores or from Gulf Publishing Co., Houston, 713-520-4444.

Learn About Shells

You can learn the habits of the mollusks from books or from being a member of a shell club such as:

Coastal Bend Shell Club

c/o Corpus Christi Museum,
1901 N. Water St.
Corpus Christi, Texas 78401
Meeting: 4th Tuesday
Publication: The Mitchell

Sea Shell Searchers of Brazoria County

c/o Brazosport Museum
P. O. Box 355
Lake Jackson, Texas 77566
Meeting: 1st Tuesday
Publication: The Searcher

North Texas Conchological Society

c/o Pat Lockhart
804 Westbrook Dr.
Plano, Texas 75075
Meeting: 3rd Sunday
Publication: Conch Courier

San Antonio Shell Club

9402 Nona Kay Dr.
San Antonio, Texas 78217
Meeting: 3rd Tuesday

Austin Shell Club

c/o Hollis O'Neill
16420 Edgemere
Pflugerville, Texas 78660
Meeting: 2nd Tuesday
Publication: The Auger

South Padre Island Shell Club

P. O. Box 944
Port Isabel, Texas 78578



The lightning whelk has distinctive spokelike markings.

Stephan Myers

BIRDHOUSE DAY

Helping the birds that help us

Article by Jim Cox, Photos by Leroy Williamson

Anyone interested in making a tangible contribution to bird life in Texas has the opportunity to do so during Birdhouse Day activities at Fairfield Lake State Park on February 6.

Park Superintendent Dennis Walsh promoted the first Birdhouse Day at Fairfield in 1992, and he hopes the interest it generated will inspire similar events across the state in the future.

"I felt that designating one day of the year as a special time to learn how to build and set up birdhouses, and to clean out and repair old houses, might develop into a tradition like Arbor Day is for trees," said Walsh. "It's an excellent way to improve the habitat of various species of birds that enrich our lives."

Walsh points out that cavity-nesting birds such as bluebirds and purple martins may have difficulty locating favorable nesting sites, since many natural sites have been lost through development and other land-use practices, as well as from competition from introduced bird species.

Visitors can learn how to construct houses with a variety of materials, including cedar, redwood, treated pine, plywood and even PVC pipe, plant pots or plastic milk jugs.

During the 1992 celebration, visitors walked a park trail designed especially for birdwatching. Much of the trail development work was done by Eagle Scouts, Walsh said. The trail has been used for interpretive

walks conducted by park staff and as part of an off-campus study by students at Stephen F. Austin State University in Nacogdoches.

"In addition to the propagation of your favorite bird species, building birdhouses can be of benefit for insect control," Walsh said. "Purple martins are legendary for their consumption of flying insects, and bluebirds and most other cavity nesters feed almost exclusively on arthropods during the nesting season."

Walsh said the first Saturday of each February was selected to ensure that nest boxes will be in place and ready for the earliest-arriving species that nest in Texas.

"Plan to set aside a small amount of your time to make this day a tradition that year after year will continue to affirm our link with the world of nature," Walsh said. ☆





Baby bluebirds (left) need the protection of a cavity, natural or manmade, to survive.

Bluebird houses can be fashioned from a variety of materials, even gourds (above).

An easily built bluebird house (right) benefits the birds, and also helps control insects.



PICTURE THIS

Photo Contest Winners

We recently asked our readers to submit their favorite wildlife shots for a photo contest. The response confirmed what we had suspected; there is no shortage of excellent amateur wildlife photographers in Texas. Unfortunately, some excellent pictures had to be left out, but here are a half-dozen of the best, including the grand prize winner below.



Grand Prize winner: A pair of great egrets photographed by George Hosek of Houston earned him first place and a new Pentax camera.

George Hosek



Scuba diver Mark Mayfield of San Antonio photographed this blenny at the Flower Garden Reef off the Texas Gulf Coast.

Mark Mayfield

Erhin Shannon of Round Rock took advantage of shadows and backlighting in the mountain lion photo below.

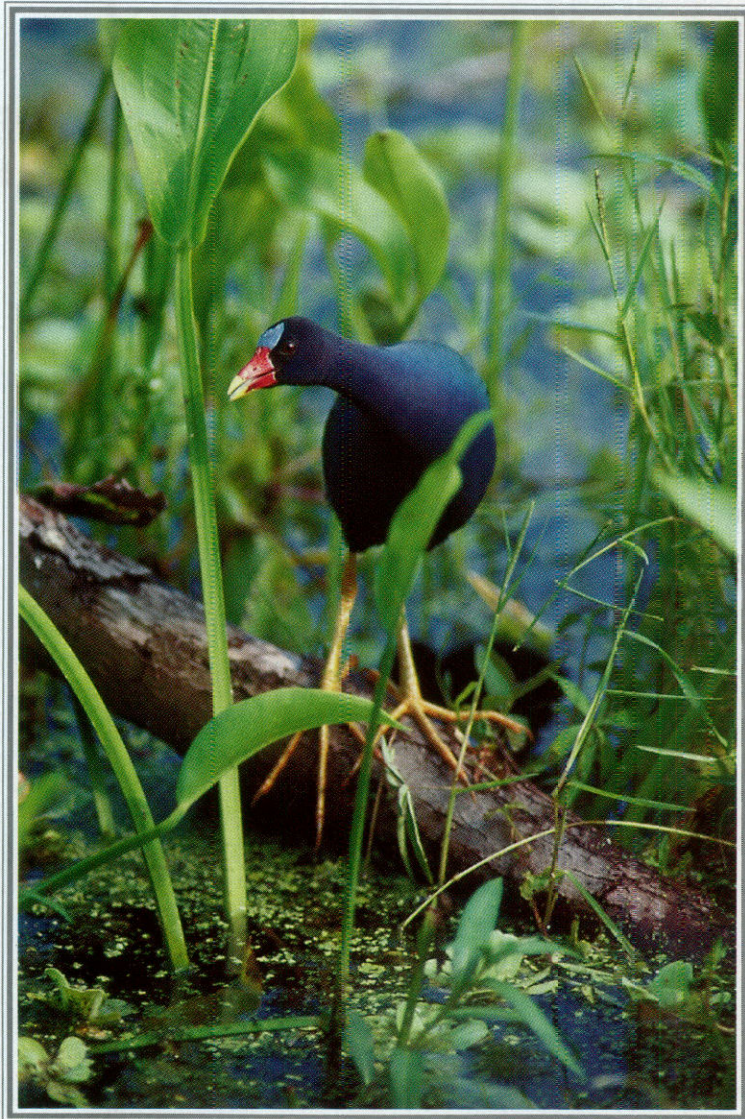
Erhin Shannon





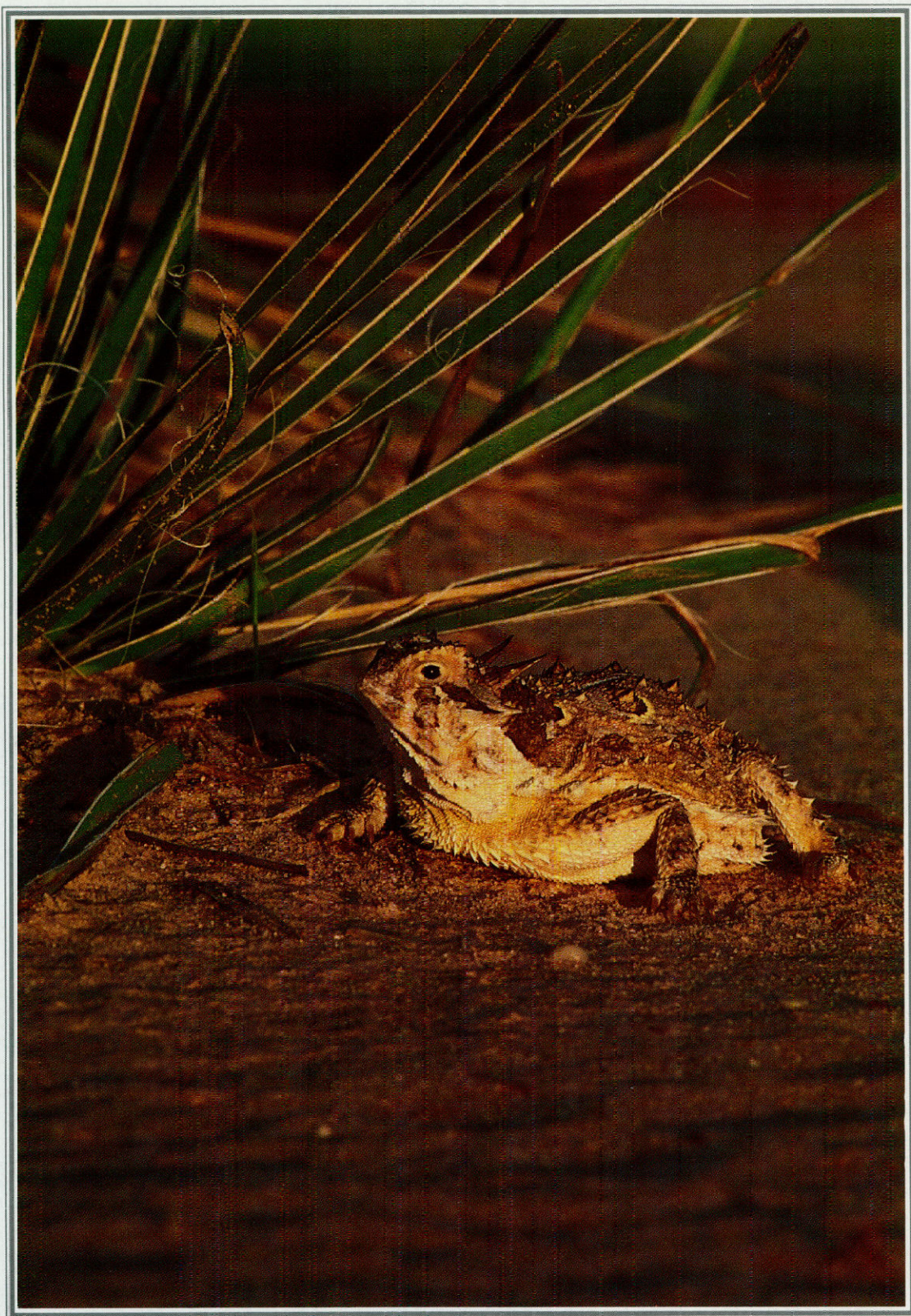
Indianans Al & Una Gates photographed this butterfly during a visit to South Texas.

Al & Una Gates



A purple gallinule (left) photographed by Robert Hinkson of Houston.

Robert E. Hinkson

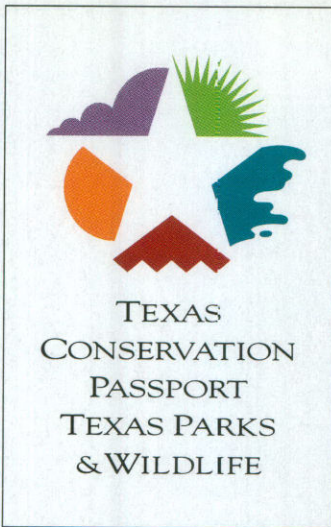


Bill Mueller of Post took this picture of a Texas horned lizard enjoying the late afternoon sun.

Bill Mueller

OUTDOOR DATEBOOK

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



JANUARY

Jan.: * Annual bald eagle count, Eisenhower State Park at Lake Texoma, call for date and time, 903-465-1956

Jan. 2: * Bus tour with chuck wagon lunch, Big Bend Ranch State Natural Area, 915-229-3613

Jan. 2: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Jan. 2: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Jan. 2-10: Mourning dove winter hunting season, Central and South Zones

Jan. 2, 9, 16, 23, 30: * Bald eagle tour, Fairfield Lake State Park, 903-389-4514

Jan. 3: White-tailed deer and turkey hunting season closes in most of state

Jan. 6: * Wildlife corridor slide show and tour, Las Palomas WMA and Lower Rio Grande NWR, 210-383-8982

Jan. 9: * Rainbow trout extravaganza: fish for trout, have fish cleaned and attend a trout seminar, Blanco State Park at Blanco, 210-353-0072

Jan. 9: * Slide show and hatchery tour, GCCA-CPL Marine Development Center at Corpus Christi, 512-939-8745

Jan. 9: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Jan. 9: * Cavern tour, Kickapoo Cavern State Natural Area near Uvalde, 210-563-2342

Jan. 9: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Jan. 10: High Plains duck hunting season closes; South Texas white-tailed deer and turkey season closes

Jan. 12: * Wildlife calling and viewing session, Lake Colorado City State Park in Mitchell County, 915-728-3931

Jan. 13: * Birdwatching and nature study tour, Bentsen-Rio Grande Valley State Park, 210-585-1107

Jan. 13: * Birdwatching for bald eagles, Lake Livingston State Park, 409-365-2201

Jan. 16: * Bus tour with chuck wagon lunch, Big Bend Ranch State Natural Area, 915-424-3327

Jan. 16: * Penn Farm walking tour, Cedar Hill State Park at Joe Pool Lake, 214-291-3900

Bald eagle watching outings are planned for Conservation Passport tours at three state parks this winter.

Jan. 16: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Jan. 16: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Jan. 17: Duck hunting season closes statewide

Jan. 23: * Putting the ducks to bed, Gus Engeling WMA in Anderson County, 903-928-2251

Jan. 23: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Jan. 23: * Bird-banding observation and birding tour, Kickapoo Cavern State Natural Area near Uvalde, 210-563-2342

Jan. 23: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Jan. 27: * Birdwatching for bald eagles, Lake Livingston State Park, 409-365-2201

Jan. 30: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Jan. 30: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County,

210-868-7304

Jan. 31: Goose hunting season closes west of U.S. Highway 81

FEBRUARY

Feb.: * Mountain bike workshop and race, Eisenhower State Park at Lake Texoma, call for date and starting time 903-465-1956

Feb. 3: * Wildlife corridor tour and slide show, Las Palomas WMA & Lower Rio Grande NWR, 210-383-8982

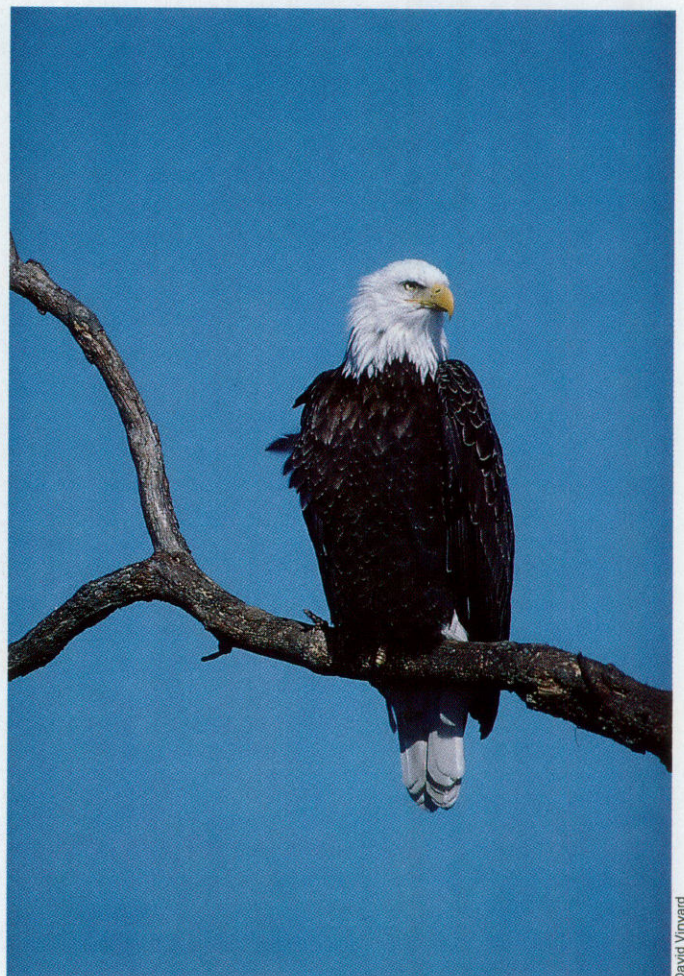
Feb. 6: * Bus tour with chuck wagon lunch, Big Bend Ranch State Natural Area, 915-229-3613

Feb. 6: * Fisheries research station tour, Heart O' the Hills Research Station near Ingram, 210-866-3356

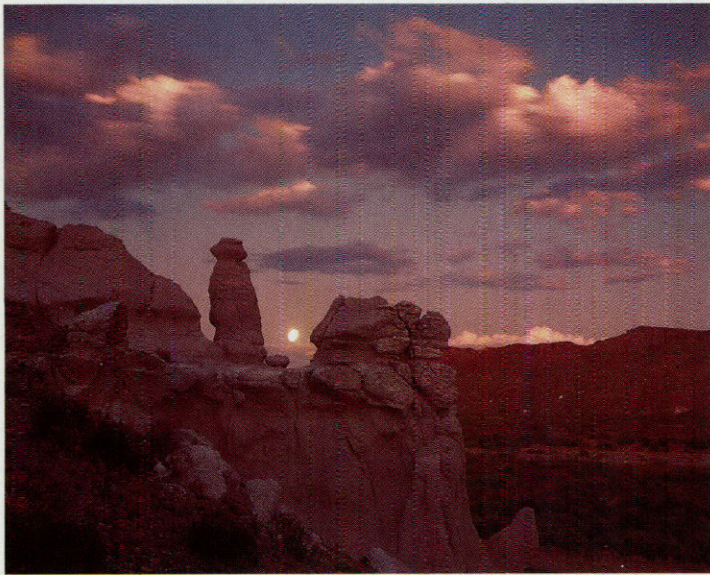
Feb. 6: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Feb. 6: * Cavern tour, Kickapoo Cavern State Natural Area near Uvalde, 210-563-2342

Feb. 6: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304



David Vinyard



Laurence Parent

Feb. 6, 13, 20, 27: * Bald eagle tour, Fairfield Lake State Park, 903-389-4514

Feb. 7: Sandhill crane hunting season closes in Zone C

Feb. 10: * Birdwatching and nature study tour, Bentsen-Rio Grande Valley State Park, 210-585-1107

Feb. 13: * Slide show and hatchery tour, GCCA-CPL Marine Development Center at Corpus Christi, 512-939-8745

Feb. 13: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Feb. 13: * Night wildlife viewing, Lake Colorado City State Park at Colorado City, 915-728-3931

Feb. 13: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-368-7304

Feb. 14: * Interpretive horseback riding tour with mounted lunch provided, Hill Country State Natural Area and Running R Ranch in Bandera County, 210-796-4413

Feb. 14: Goose season closes east of U.S. Highway 31; sandhill crane season closes in Zones A and B

Feb. 20: * Bus tour with chuck wagon lunch, Big Bend Ranch State Natural Area, 915-424-3327

Feb. 20: * Penn Farm walking tour, Cedar Hill State Park at Joe Pool Lake, 214-291-3900

Feb. 20: * Lower Edwards Plateau ecosystem

More Texans are discovering the wonders of Big Bend Ranch through Conservation Passport tours.

tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Feb. 20: * Bird-banding observation and birding tour, Kickapoo Cavern State Natural Area near Uvalde, 210-563-2342

Feb. 20: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Feb. 27: * Lower Edwards Plateau ecosystem tour, Honey Creek State Natural Area in Comal County, 210-438-2656

Feb. 27: * Twin Falls nature trail walk, Pedernales Falls State Park in Blanco County, 210-868-7304

Feb. 28: Quail hunting season closes statewide

TEXAS PARKS & WILDLIFE



TELEVISION SCHEDULE

Watch for our companion television series, "Texas Parks & Wildlife," on your local PBS affiliate. The following is a partial listing for January. All times p.m. unless otherwise noted.

CITY/STATION	DAY	TIME
Austin KLRU, Ch. 18	Saturday	8:30
College Station KAMU, Ch. 15	Tuesday	7:00
Corpus Christi KEDT, Ch. 16	Friday Saturday	10:30 7:30
Harlingen KMBH, Ch. 60	Saturday	6:30
Killeen KNCT, Ch. 46	Thursday	1:00
Lubbock KTXT, Ch. 5	Thursday	1:00
Odessa KOCV, Ch. 36	Saturday	7:30
San Antonio KLRN, Ch. 9	Check Local Listings	
Waco KCTF, Ch. 34	Thursday	11:30

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

In stereo where available



Gary Kramer

Hunters are enjoying an excellent snow goose season, thanks to unusually high goose populations.



AUTOMATIC FEEDERS FOR WILD GAME

- SPIN OR DROP UNITS
- CLOCK TIMED
- AFFORDABLE

SPORTSMANS FEEDER CO.

1001 Minda, #62
Austin, TX 78758
512-837-1505

MUSTANG Live-Catch Traps, Inc.



MS-4
Deluxe Trap
11" W x 13" H x 36" L

Write or call for a free catalogue of Mustang's full line of bird, fish and mammal traps, and receive a complimentary Skinning, Tanning and Tracking Guide.

- Enjoy Trapping as a Business or Hobby
- Remove Nuisance Pests Humanely
- Kids Learn about Nature First Hand

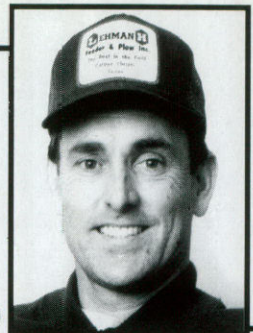
MUSTANG Live-Catch Traps, Inc.

P. O. Box 890627 Dept. TD-100
Houston, Texas 77289-0627
(713) 682-0811

The Best In The Field . . .

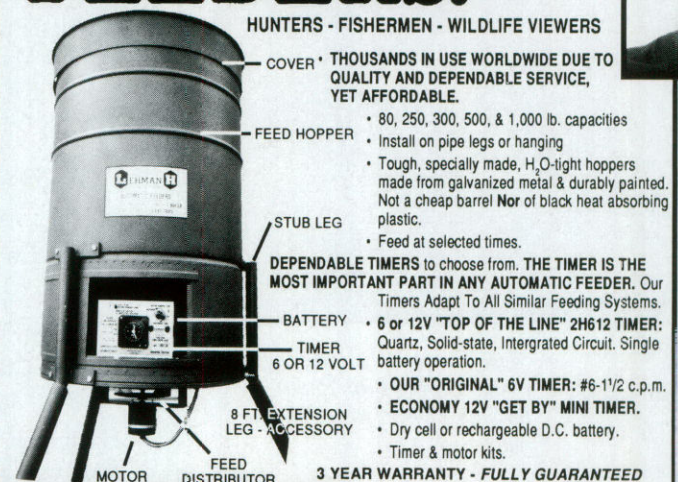
AUTOMATIC FEEDERS.

SOLAR PANELS available



I'm a rancher and Beefmaster breeder. My family and I have always enjoyed wildlife. Through an automatic feeding program, we have improved the quality of our wildlife and our ranches. We've been using Lehman-H Automatic Feeders for years and are well satisfied with their durability and low maintenance.

Nolan Ryan
NOLAN RYAN
Pitcher Texas Rangers



Write or call for FREE BROCHURE
ROUTE 3 - BOX 53, Dept. TPW
CORPUS CHRISTI, TEXAS 78415
(512) 855-0049
Visa • MasterCard • American Express

PLUS NON-MECHANICAL QUAIL FEEDERS

IT'S A TRAGEDY BEYOND DESCRIPTION.



96,000 acres of irreplaceable rain forest are being burned every day. Join The National Arbor Day Foundation and support Rain Forest Rescue to help stop the destruction. Call now.

Call Rain Forest Rescue.
1-800-255-5500

The National Arbor Day Foundation

Duck Stamp Prints

Texas Duck Stamp Prints,
Texas Saltwater, Texas Quail,
Texas Wild Turkey,
GCCA, Federal
John Cowan Prints
All Years



FREE CATALOG

Charlie's Gallery

P.O. BOX 11056 • SPRING, TEXAS 77391-1056
(713) 370-6945 Serving Texas Collectors Since 1980

ATTRACT WILDLIFE



Automatic Wildlife Feeders

Timer-Controls-Battery-Motor
FULLY ENCLOSED!



Used and endorsed by

Bob Lilly



Former Dallas Cowboy, All Pro Tackle,
Pro Football Hall of Fame, Sportsman,
Photographer

FREE

Color Catalog



The "Square One"...

Proven quality...Thousands in use.
Dependable. Sealed rechargeable battery.
Quartz 24-hour timer. Capacity 30 to 750 lbs.
Solid state circuitry. Optional solar charger.
Optional digital timer.

AUTOMATIC --Feeds up to 48 time in 24 hours.

Call (512) 537-4631 FAX (512) 537-5017
Sweeney Enterprises, Inc. Dept TP
HCR 7 Box 2452 - Boerne, TX 78006

DEALER INQUIRIES INVITED

COMFORT & Walls®

You just can't beat our water-repellent Bushwacker Insulated Overalls and Outdoors Jacket for outstanding comfort, concealment and all-weather protection.

Walls hunting clothes deliver years of rugged dependability and complete satisfaction. Maybe that's why serious sportsmen have been selecting us for about 50 hunting seasons.

Walls®

For the store near you
1-800-447-WEAR



BILL JORDAN'S
REALTREE®
America's Most Versatile Camo Pattern™

LEADING THE WAY OUTDOORS™

TEXAS HILL COUNTRY - BURNET
NORTH MORGAN CREEK RANCHES, INC.
TOO MANY HOGS - NEED HUNTERS

RUSSIAN  FERAL

1.15/# - \$50./DAY MIN.
SOME TROPHIES

OTHER GAME AVAILABLE, REASONABLE
BLACKBUCK, Aoudad, MOUFLON-CORSICAN
RUSSIAN PIGLETS - PEN RAISED FOR STOCKING \$40.

R.F. KRUEGER
(713) 442-2537
P.O. BOX 11308
HOUSTON, TX. 77293

BILL CARPENTER
(512) 756-2482
RANCH MGR.



**OPERATION
GAME THIEF**
1-(800) 792-GAME

\$ **99** 95



Spin-Cast Wildlife Feeders

5674 Randolph Blvd.
San Antonio, TX 78233
Phone: 512-653-7514 {Info}
1-800-950-8087 {Orders Only}
512-653-3641 {FAX Only}

The Mark 2 SpinCaster (above) will feed up to 6 times every 24 hours and is shipped with a fresh alkaline battery installed. Other power options available. Call for details. One year limited warranty. Free catalog on request

©1991 Spin-Cast, Inc.

La★Marque
T E X A S

For Visitors
For Families
For Winter Texans
For Fun!

HOUSTON • LA MARQUE • GALVESTON

Only minutes to beautiful beaches, great fishing, the Historic Strand District, Johnson Spacecraft Center, major sporting events, and so much more!

STAY, SHOP AND ENJOY!

Stay at the Holiday Inn, Pelican Inn, or the Little Thicket Travel park, while you shop at the incredible One Star Factory Outlet Stores. Soon you can enjoy the excitement of racing at Gulf Greyhound Partners, Ltd. Greyhound Park.

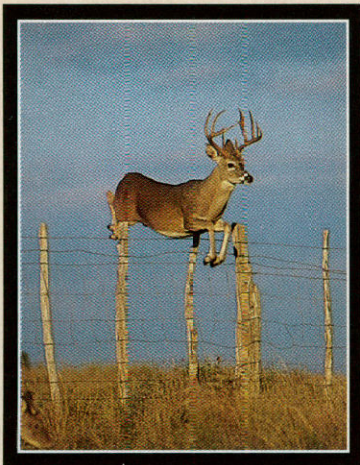
SPECIAL EVENTS

Fun and frolicking at the annual Fair On The Square, tantalize your tastebuds with award-winning seafood at the Great Gulf Coast Grill-Off. Enjoy the excitement of the Christmas Parade of Lights.



**La Marque
CHAMBER
OF COMMERCE**

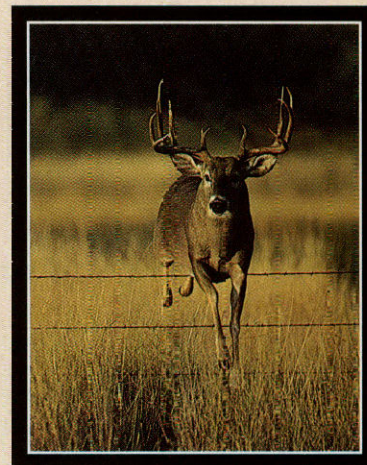
2222 Cedar • La Marque, TX 77568 • (409) 938-0527



"Sky Jumper"



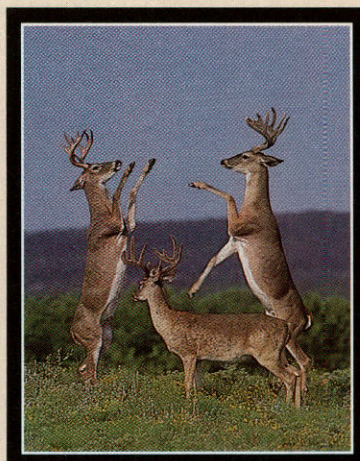
"Ol' Wide-Rack" (over 30")



"Airplane"



"Sunrise Showdown"



"Three's a Crowd"



"Monstrosity"



"Dominitor"

FREE OFFERS

A GREAT DEAL
Order any THREE prints now, at only \$19.95, and receive an incredible 8x10 whitetail print which shows you how to really fool a giant twelve-pointer.

A BETTER DEAL
Order any FIVE prints now, at only \$29.95, and receive an unbelievable 8x10 color print of a 10-point buck flipping over in a dramatic mid-air somersault. Story included.

THE BEST DEAL
Order all EIGHT prints now, at only \$39.95, and receive BOTH of these great 8x10 whitetail prints at no additional charge.



"Fog Fight"

Mike Biggs, the nation's premier whitetail photographer, offers eight of the most spectacular color prints ever taken of whitetail deer.

- Elegant enough for the finest homes and offices.
- Inexpensive enough for every cabin or playroom.
- Large 15" x 20" image on high-quality stock, frame not included.
- Plus a free bonus – included with each print is a copy of the story behind the picture, and how it came to be.
- A great gift idea. As always, your satisfaction is guaranteed.

7⁹⁵ EACH	ANY THREE 19⁹⁵	ANY FIVE 29⁹⁵	ALL EIGHT 39⁹⁵
-------------------------------	----------------------------------	---------------------------------	----------------------------------

Add \$3.00 Postage & Handling per set. In Texas, add 7 3/4% Sales Tax.

SEND ORDER TO: MIKE BIGGS PHOTOGRAPHY
P.O. BOX 330787, FORT WORTH, TEXAS 76163

Name _____

Address _____

City/State _____ Zip _____

Send me: "Sky Jumper" "Ol' Wide-Rack"


"Airplane" "Sunrise Showdown" "Monstrosity"

"Three's a Crowd" "Dominitor" "Fog Fight"

All Eight + Extras Check or Money Order Enclosed

Visa Mastercard # _____

Signature _____ Exp. Date _____

 **OR CALL TOLL-FREE 1-800-433-2102** 



OUTDOOR ROUNDUP

Expo '92 Salutes Hunters and Conservationists

There was a future Hall of Fame pitcher, a rock music star and all manner of experts in the field of hunting and outdoor sports at Texas Wildlife Expo '92 in Austin, but the real winners may have been the hundreds of youngsters who got a taste of Texas's hunting and conservation tradition.

The Wildlife Expo, held October 2-3 on the grounds of the Texas Parks and Wildlife Department's headquarters in southeast Austin, was more than just a hunting show, as many of the demonstrations, seminars and exhibits spotlighted the importance of conservation and the role hunters and fishermen play in protecting and enhancing all wildlife and their habitats.

"One of the major goals of the Parks and Wildlife Department is to promote outdoor recreation to the next generation of Texans," said TPWD Executive Director Andy Sansom. "I think the Wildlife Expo was a most important step in that direction, and I'm confident that Wildlife Expo '93 will be even bigger and better."

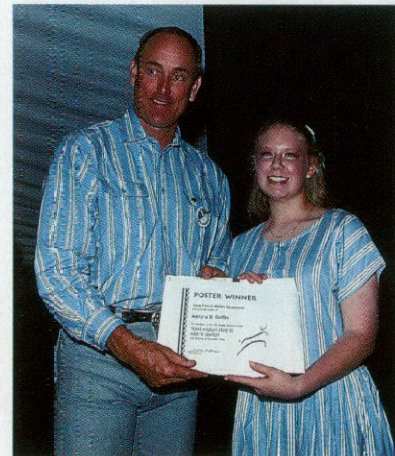
Sansom noted that the Expo was not just a TPWD event, but involved the efforts of a coalition of sportsmen's organizations, businesses, other governmental agencies and individuals who volunteered their time and expertise to make it a success.

Many of the 7,000 visitors to the Expo were youngsters who got hands-on experience, many for the first time, at sporting clays shooting, archery, muzzleloader and airgun target shooting. They also witnessed birds of prey in flight under the guidance of falconer John Karger, saw champion shotgunner John Satterwhite break seven hand-thrown clay targets in the air and learned how bird dogs are trained.

Other fascinating wildlife specialties during the all-day event included calling techniques for turkeys, predators and waterfowl demonstrated by nationally known experts, as well as demonstrations of "rattling" techniques for calling buck deer. A poisonous snake-handling exhibit drew large crowds, and

a popular "who dunnit" demonstration with game wardens posing as game law violators showed visitors the challenges faced by the officers who enforce game laws. Seminars conducted by experts in their respective fields gave tips on hunting in other states, outdoor photography and even wild game cooking.

Wildlife Expo '92 attracted a number of celebrities to its October 2 banquet, including Governor Ann Richards, Texas Rangers pitcher Nolan Ryan, rock singer and avid bowhunter Ted Nugent, former Detroit Lions defensive lineman Doug English, professional golfer Bill Rogers and George W. Bush, son of President Bush and owner of the Texas Rangers baseball team. Ryan, known for throwing no-hitters in the majors, showed a flair for hitting clay targets on the sporting clays range on Saturday, along with Nugent and Rogers. Nugent, whose hard-driving rock music style is a stark contrast to a quiet



Melissa Griffin, winner of the Wildlife Expo poster contest, poses with pitching legend Nolan Ryan.

morning in the woods, told his audience at his Saturday afternoon concert that donning camouflage and going bowhunting is his first love.

The turkey-calling competition was dominated by a pair of Missourians.



Master falconer John Karger, who also is a licensed bird rehabilitator, shows a Wildlife Expo '92 crowd an Andean condor. He also flew several species of raptors during the Expo.



Bill Reaves

Youngsters lined up to fire black powder guns at targets.

Mark Drury of Columbia, currently the world champion, won the open division, while Steve Stoltz of Fulton, who has won or placed in more than 125 calling contests across the nation, took first place in the friction caller division.

Another interesting calling event was the First Annual World Deer Calling Contest, won by Tommy Fought of Brownwood. Ryan Dodds of West Columbia won the youth division. A number of youthful winners in the poster and essay contests were presented lifetime hunting and fishing licenses by Nolan Ryan during ceremonies at the Friday night banquet.



Glen Mills

One of the judges of the turkey-calling competition offered some insights as to the overall goals of the Wildlife Expo. "The key to our future in Texas is getting diverse groups together to help wildlife," said Jim Dickson, a research biologist with the Texas Forest Service and three-time Texas state turkey-calling champion. "Those of us who are interested in hunting and conservation have to convince those who don't hunt that we (hunters) are interested in black-capped vireos as well as getting eastern turkeys reestablished in Texas."



Bill Reaves

Archery instruction was another popular youth activity at the Wildlife Expo.

Dickson lauded several organizations that he believes help to bring the message of hunting and conservation to all Texans. "Outfits like the Wildlife Management Institute, Sportsman Conservationists of Texas and the National Wildlife Federation all are contributing to the conservation message," he said. Dickson added that an example of bringing a diversity of interests together can be seen in the pages of *Texas Parks & Wildlife* magazine. "The magazine serves hunters and fishermen while giving equal attention to so-called non-consumptive activities such as birding, camping and enjoyment of all wildlife," he said. "That's the kind of balance we should strive for in Texas."

An auction held at the banquet raised more than \$17,000 for the Parks and Wildlife Foundation's scholarship fund. Items auctioned included a wide variety of hunting and outdoor equipment, hunts and Nolan Ryan memorabilia.

The prizes included:

- A three-day spring turkey hunt on La Fonda Ranch sold for \$5,000. La Fonda is where the governor bagged her first turkey last spring.
- A Big Bend raft trip on the Rio Grande with Sansom and former Land Commissioner Bob Armstrong brought a \$4,000 bid.
- A safari for two on the Rocking R Ranch sponsored by the Texas Wildlife Association sold for \$2,400.
- A hunt with Nolan Ryan sold for \$2,400.



Glen Mills

Rock star and bowhunter Ted Nugent (left) entertained at the Expo, and visitors also visited the many booths and exhibits (above) on the grounds of the Texas Parks and Wildlife Department headquarters in Austin.

OUTDOOR ROUNDUP

Continued

- A 12-gauge Beretta shotgun brought \$1,100.
- A two-day spring turkey hunt with champion turkey caller Cecil Carder received a bid of \$950.
- A baseball autographed by Ryan and a Bushlan camouflage jacket sold for \$850.

Texas Wildlife Expo '93 is set for October 1-3, with events and activities expanded to include the entire first weekend in October.

Athens Is High Bidder For Freshwater Fisheries Center

The city of Athens has been chosen by the Parks and Wildlife Foundation of Texas Inc. as the site of the multi-million dollar Texas Freshwater Fisheries Center. Athens's winning bid was valued at \$4.063 million by the accounting firm KPMG Peat Marwick.

Athens bested nine other bids, including finalists Corsicana and Longview. Groundbreaking is expected in late 1993, and the facility should become operational by mid-1995.

"We want to emphasize strongly that the entire region, including the other top contenders, will benefit from this project, which will cost in excess of \$12 million," said Ed Cox Jr., chairman of the nonprofit foundation established to provide private sector support for the Texas Parks and Wildlife Department. "Likewise, the entire state economy will benefit, as will anglers from across the state and nation. This truly is a historic achievement."

The Athens proposal is the largest private contribution ever made to a fisheries project in Texas and, with a value of more than \$4 million, it is one of the largest gifts ever made for conservation in Texas. It also represents the first time that a department fisheries facility has been located through a bidding process with various communities competing to offer incentive packages.

Cash value and in-kind contributions were important, officials said, and technical analysis of site proposals and water and environmental considerations also played significant roles in the selection process.

The project will be funded through a combination of support from the city of Athens, funds raised by two conserva-

tion organizations and federal matching funds. The project is a partnership between the Parks and Wildlife Foundation of Texas Inc., Operation Share A Lone Star Lunker Inc. and TPWD.

The foundation supervised the bidding and selection of the site. TPWD staff provided technical assistance during selection and will oversee construction. The department will operate the facility once it is completed.

The facility will feature an educational center, which will include an aquaria, a Fishing Hall of Fame and a historical museum. The center is expected to attract up to 100,000 visitors each year, which could result in direct spending of up to \$7.5 million per year. The total economic impact of hatchery operations and employment is estimated at \$2.4 million yearly. The center will employ 15 to 20 people with an annual operating budget of \$750,000, including salaries.

The hatchery will increase Florida largemouth bass production for stocking in public waters from the current 7 million fingerlings per year to 11 million fingerlings per year.

"This project will result in the location of a world-class facility in a region of Texas where freshwater fishing already is the finest in North America," said Andrew Sansom, TPWD executive director. "Just as important, it gets the new foundation off to an incredible start, and it demonstrates the great promise of private sector support for conservation in Texas."

The other bids were submitted by Corsicana, Longview, Beaumont, Hardin County, Livingston, Quitman/Wood County, Paris, Mount Pleasant and Tyler.

Texas Adventures Team Finds Archeological Site

Two Texas men taking part in the Texas Parks and Wildlife Department's first Texas Adventures climbed a butte during October and discovered a significant new archeological site at Big Bend Ranch State Natural Area.

It was the first afternoon of their adventure and Mark Cook of Weatherford, a geologist, and Murray McCarley of Belton, a U.S. Army Corps of Engineers park ranger, were anxious to ex-

plore. Before the adventures team had even pitched camp, the two men climbed a nearby butte and, alert for archeological signs from the orientation their team had just been given, they began noticing rocks arranged in regular formation, arrowheads, artifacts and other signs of early human habitation.

"This was a very energetic group," said David Ing, a Texas Parks and Wildlife Department archeologist and team co-leader. "They were eager to explore, to learn more and do more. All in all, it was an incredible first adventure, proof that this is a great concept for conservation education and public involvement."

Mad Dog Butte is now the site's official archeological name, after McCarley's nickname Mad Dog. Texas State Archaeologist Bob Mallouf was on hand to record the name and direct technical recording of the find.

Mallouf had the adventures team members record every nook and cranny in a one-acre area surrounding the Cielo Complex site. They took photographs, made drawings, took measurements and charted the exact location of the site, which will be kept secret until archeological work there is complete.

Adventures Team I members had signed on to explore the Cienega Mountains for signs of the prehistoric Cielo people. In all, the team discovered 66 new archeological sites in a 10-mile radius, including two major sites, one of them the Cielo site described above and another which featured native American rock art.

Texas Adventures is a program of the newly formed Parks and Wildlife Foundation of Texas Inc., in association with TPWD. It allows participants to pay to take part in work/study adventures at natural and historical sites such as Big Bend. The program represents a creative way to educate the public and at the same time generate new revenue for Texas conservation projects.

The costs for last fall's pilot program ranged from \$675 per person for seven-day adventure excursions up to \$855 for 10- and 12-day adventures. Holders of the Texas Conservation Passport got a \$75 to \$95 discount on the adventures.

Anyone interested in the program should look for notices in *Texas Parks & Wildlife* magazine and in the quarterly *Passport* newsletter regarding future adventures for 1993, or they may write Texas Adventures, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744.

“Out-powers Ford and Chevy hands down.”

—Certified by SCORE International, January 1992

Comparing this Dodge Dakota V-8 to other pickups is easy. There's simply no comparison. Compacts like Ranger and S-10 just can't measure up.



Dodge Dakota 4x2 Club Cab out-paces full-size regular cab pickups 0-60, with 1,150 lbs payload and with 6,040 lbs combined payload and trailer weight.¹

They don't have this Dakota's available payload. Its power. Certainly not the quickness off the line. And we can prove it.

In a whole series of SCORE certified tests, a mid-size Dakota, equipped with a 5.2L Magnum V-8, out-ran the most powerful compacts Ford or Chevy have to offer. Out-accelerating them with loads and without. Even when loaded up with a trailer, too.¹

With that 230 hp power plant pulling for it, Dakota overpowers *full-size* Ford and Chevy half-tons, as well. Out-running them, empty and loaded. And delivering more horsepower and more available towing than a standard F150 or C1500 pickup.

All in all, it's one very powerful story. Just one more example of how our Magnum engines make Dodge the most powerful line of trucks anywhere.²



Call 1-800-4-A-DODGE for a free product brochure.



Dodge Dakota LE Club Cab
5.2L Magnum V-8

7/70
POWERTRAIN OR
336
RATED BY SCORE

BUY OR LEASE AT YOUR DODGE DEALER. Buckle up for safety. See limited warranties at dealer, exclusions & restrictions apply.

¹Dakota 4x2 Club Cab out-ran Ford & Chevy compact extended cabs 0-60, empty, w/960 lbs payload & w/5,850 lbs combined payload & trailer weight. All trucks equipped with auto. trans. & max. avail. axle ratios. Graph not proportional to test data. ²Overall total combined model scores. All claims & comparisons based on '92 models/data.

