

P400.6
P235
58:02

WWW.TPWMAGAZINE.COM • FEBRUARY 2000

TEXAS

PARKS & WILDLIFE

The OUTDOOR MAGAZINE *of* TEXAS

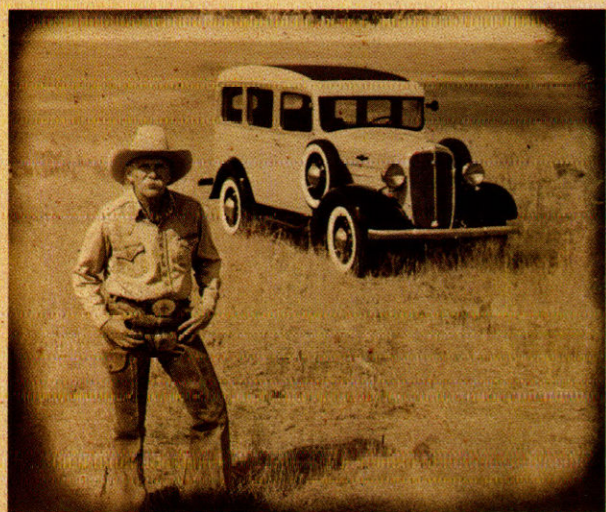
Lessons on Life at LAKE LYDIA

**THE RED
DRUM WARS**
Revival of a
Coastal Fishery

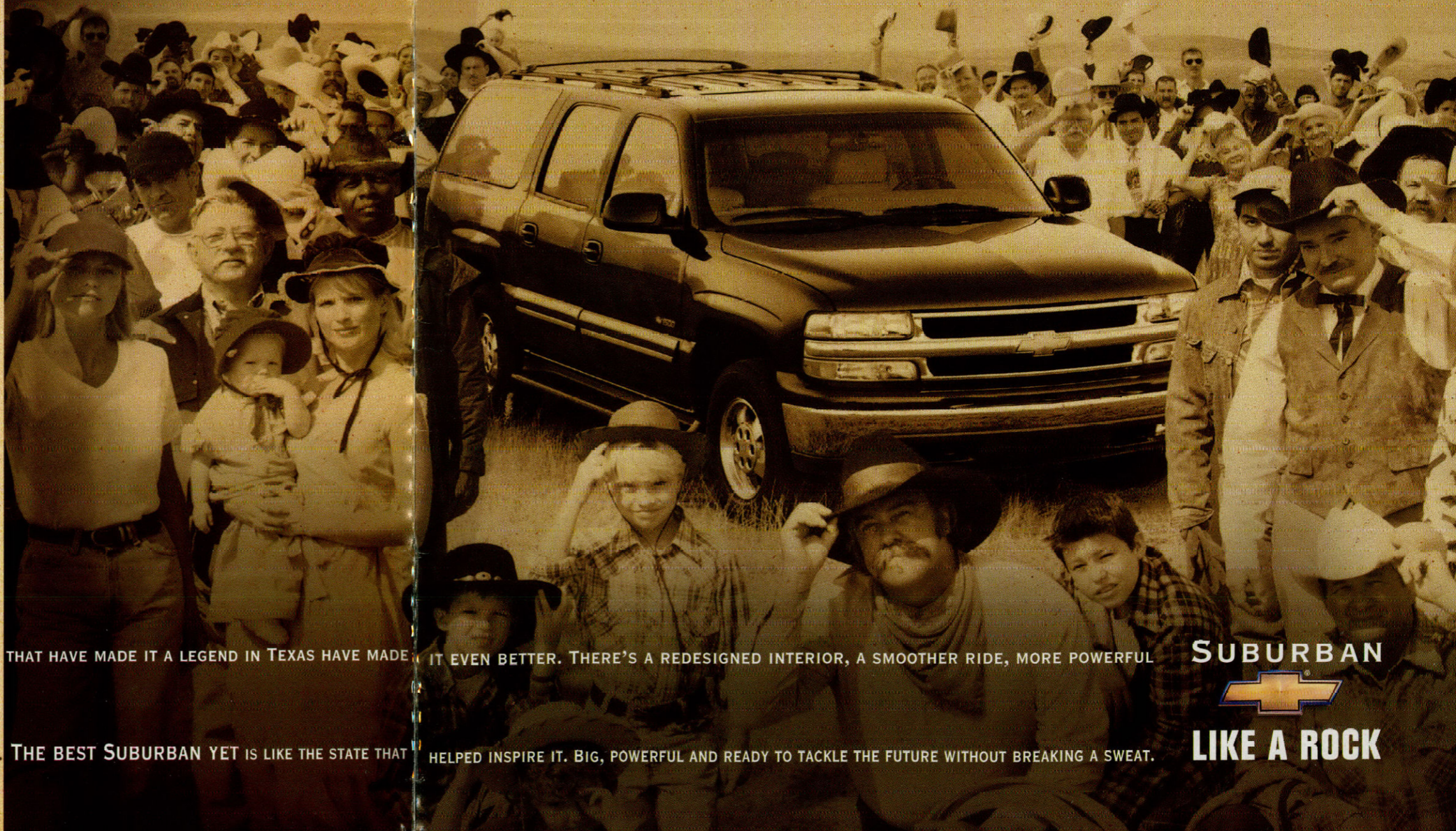
**RICHARD
ZELADE**
Secrets of the
Unknown Country



SINCE 1935,



IT'S CARRIED MORE THAN 10 MILLION GALLONS OF TEXAS TRADITION.



INTRODUCING THE NEW CHEVY™ SUBURBAN.® NOW, THE CAPABILITIES THAT HAVE MADE IT A LEGEND IN TEXAS HAVE MADE IT EVEN BETTER. THERE'S A REDESIGNED INTERIOR, A SMOOTHER RIDE, MORE POWERFUL

SUBURBAN



VORTEC™ ENGINES, AND IMPROVED TOWING AND HAULING CAPABILITIES. THE BEST SUBURBAN YET IS LIKE THE STATE THAT HELPED INSPIRE IT. BIG, POWERFUL AND READY TO TACKLE THE FUTURE WITHOUT BREAKING A SWEAT.

LIKE A ROCK

CONT

FEATURES

18 **The Rio Grande**

The river's flow through the Big Bend has diminished from a roar to a trickle. A new proposal seeks to engineer the Rio Grande back to health.

by Louis Dubose

26 **The Red Drum Wars**

The red drum fishery off the Texas coast suffered a near-collapse in the 1970s. Its revival is a tribute to modern fisheries science.

by Will Woodard

34 **Lessons on Lake Lydia**

A Dallas family learns the value of slowing down and savoring the wonders of nature at their weekend place in the country.

by Mariana Greene

43 **Hunting Texas' Wild Bacon**

Weighing up to 300 pounds and found almost statewide, feral hogs offer a challenging hunt at any time of the year.

by Brandon Ray

48 **The Unknown Country**

Rugged and isolated Black Gap Wildlife Management Area, a research facility in the Chihuahuan Desert, hosts bighorn sheep, peregrine falcons, black bears, dozens of desert plants and the occasional hardy human visitor.

by Richard Zelade

DEPARTMENTS

4 **AT ISSUE**

8 **MAIL CALL**

11 **SCOUT**

54 **LEGEND, LORE & LEGACY**

56 **GETAWAYS**

59 **SIGHTS & SOUNDS**

64 **PARTING SHOT**

COVERS

Front and back: "In the five years that we've owned our modest weekend place in East Texas, it has been more than a getaway or a chance for my husband to fish," writes Marianna Greene of Dallas. "It has taught us lessons about nature and ecology, it has been a source of family-centered recreation, and it has reminded us that living under the same roof does not a family make, when everyone is going in a different direction." Read her story beginning on page 34. Photo by Earl Nottingham.

For the latest and greatest parks and wildlife information, check out our Web site <<http://www.tpwd.state.tx.us>>.

EVENTS

FEBRUARY 2000

Publications
Texas State Documents

APR 13 2000

Department
of Library

AT ISSUE

From the Pen of Andrew Sansom

In this issue, Will Woodard chronicles one of the most successful stories of conservation in American history: the spectacular recovery of red drum in the coastal waters of Texas. If you haven't been, you need to go because the fishing from Beaumont to Brownsville has been better than at any other time in our lives. In fact, the redfish and speckled trout fishery in Texas is today among the strongest sport fisheries in the world.

It did not happen by accident.

As our story indicates, it was essentially a war; a war which pitted the urgency of strict conservation against an ancient way of life; a war which pitted the best conservation law enforcement officers in America against a tough group of commercial fishermen who were determined to keep their nets in the water, legal or not.



One of those unique Texans who is larger than life, Dickie Ingram was absolutely fearless and determined in his advocacy and defense of the conservation efforts which have brought such a remarkable turnaround to the Texas Coast.

The day before Christmas, one of the people most responsible for launching and ultimately winning the red drum wars was killed in an automobile accident returning from his deer lease in South Texas. Dickie Ingram for many years represented, or more accurately, embodied the Coastal Conservation Association before the Texas Legislature. One of those unique Texans who was larger than life, Dickie was absolutely fearless and determined in his advocacy and defense of the difficult, expensive, but enlightened conservation efforts which have brought such a remarkable turnaround to the Texas Coast.

Today, the fishery is the envy of the nation and many of those hardy commercial fishermen are enjoying a new economic harvest as guides for the exploding recreational fishery. The nets are gone and last year Texas Parks and Wildlife stocked thirty-six million red drum fingerlings in the bays and estuaries of Texas.

Thanks, in part, to the efforts of Dickie Ingram.

Now the fight is over fresh water inflows to those bays and estuaries and although Dickie would be the first to say that it will take more than one person to succeed, he would have been right in the middle of it.

And it's going to be much harder to win with him gone.



Andrew Sansom

TEXAS PARKS AND WILDLIFE MISSION STATEMENT:
To manage and conserve the natural and cultural resources of Texas
for the use and enjoyment of present and future generations.

Here Is A Way To Keep Two Of Your New Year's Resolutions

✓ Save Money!

You save money by transferring balances from your higher-APR credit cards to a low 2.9% * annual percentage rate (APR) on the Texas Parks and Wildlife credit card.

✓ Make The World A Better Place

You can at least make Texas a better place when you become a holder of this special credit card. FirstUSA will make a \$25 donation to the Lone Star Legacy campaign for all approved cardholders, at no cost to you. In addition, every time you use your card, FirstUSA will contribute a percentage of your purchase to the Lone Star Legacy campaign.



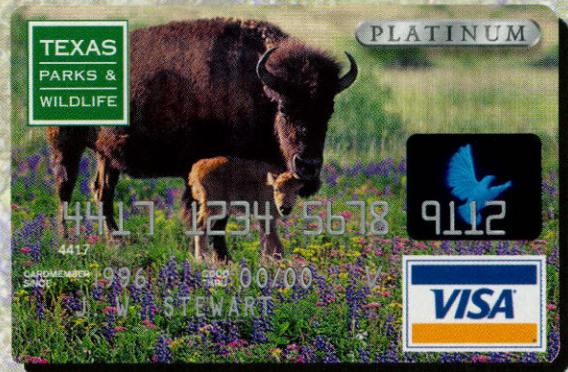
Lone Star Legacy seeks to establish an endowment fund for each and every state park, wildlife management area and fish hatchery in Texas.

Lone Star Legacy

ENDOWMENT FUND

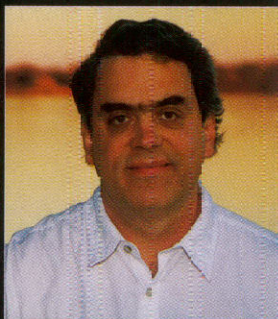
Pick up an application at any state park or Texas Parks and Wildlife site. Or call 1-800-792-1112 and press option 1 to request an application brochure.

Pick your favorite card



* Offer subject to credit approval. If you transfer a balance with your application, the introductory 2.9% fixed APR on purchases and balance transfers is effective for the first six (6) billing cycles following the opening of your account; after that, a 15.40% variable APR on purchases and balance transfers. The APR for cash advances is 19.99% variable. If payment is received late once during the introductory period, the APR will adjust to 15.40% variable on purchases and balance transfers. If we do not receive a balance transfer with your application, the introductory 2.9% fixed APR is not offered and the APR for all purchases and balance transfers will be 15.40%. If payment is received late twice during any six-month period, the APR for all balances on your account goes to 19.99% variable. APRs are current as of 11/22/99 using a prime rate 8.50%. First USA Bank, N.A. will allocate your payment in the manner it deems appropriate including applying your payment to purchase and balance transfer balances before cash advance balances. The annual fee: \$0. A minimum monthly Finance Charge of \$1.00 is payable if any Finance Charge is due. There is a Transaction Fee for all cash advances equal to 2% of the amount of the advance, or use, \$10 minimum fee and no maximum fee. There is a Transaction Fee for purchase of wire transfers, money orders, betting or casino chips or similar items; purchase of foreign currency and travelers checks from other than a bank; and use of convenience checks equal to 2% of the amount of the purchase or check, but not less than \$5. Your account will be issued by First USA Bank, N.A., P.O. Box 8658, Wilmington, DE 19899-8658. You should contact First USA Bank, N.A. to obtain information on any changes after the printing date by calling toll-free 1-800-FIRSTUSA.

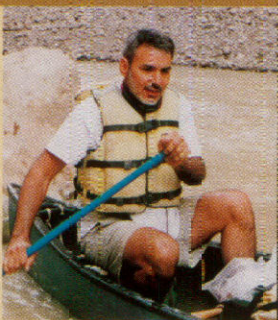
Will Woodard gained his initial love of the outdoors through monthly camping trips as a young member of Dallas Boy Scout Troop 30. That love has since been developed through backpacking and mountain biking excursions throughout the U.S., including such areas as Grand Canyon National Park and the Blue Ridge Mountains of northern Georgia. He is deeply interested in conservation issues and the choices humans make in regards to nature, for good and for ill. His articles and photographs have appeared nationally in such publications as *Walking, Bicycling* and *D* magazine.



Mariana Greene, a Dallas native and fourth-generation Texan, was first charmed by rural East Texas — the snowy white of dogwood in the spring and the blazing red and orange of its autumns — on Sunday drives with cousins in the 1950s.

Now she spends many weekends in Wood County, where the land changes from the flat prairie and hackberry scrub of North Texas to the gentle hills and pine-freshened air of East Texas. She writes in this issue about the impact weekends in the country have had on her urban family. The editor of a home and design magazine, she lives in a Dallas historical district with her writer-husband and 13-year-old son.

In 1987, **Louis Dubose** and his then-10-year-old son Michael took a trip through the Colorado Canyon of the Rio Grande. It was a one-boat outing in an aluminum canoe. The river was roaring full of water. The two of them came to two conclusions. 1) In Austin, they lived one day away from some of the most spectacular canoeing on the continent. 2) Always travel with at least two boats. In several dozen trips on various stretches of the river, the pair and an extended family of river enthusiasts have covered hundreds of miles of the Rio Grande. They will return to the Lower Canyons for an April trip. Dubose has written about the Texas-Mexico border for *Civilization*, *The American Prospect*, *The Toronto Globe & Mail* and the *San Diego Tribune*. For 12 years he has been editor of *The Texas Observer*. He lives in Austin with his wife Jeanne — a reluctant but occasional canoeist.



TEXAS

The OUTDOOR MAGAZINE of TEXAS

JANUARY 2000, VOL. 58, NO. 2

GOVERNOR OF TEXAS

George W. Bush

COMMISSION

- Lee Bass, Chairman Fort Worth
- Carol Dinkins, Vice Chairman Houston
- Ernest Angelo Midland John Avila Fort Worth
- Richard (Dick) Heath Dallas Alvin L. Henry Houston
- Katharine Armstrong Idsal Dallas
- Nolan Ryan Alvin
- Mark E. Watson, Jr. San Antonio
- Perry R. Bass, Chairman Emeritus Fort Worth
- Executive Director Andrew Sansom
- Communications Director Lydia Saldaña

MAGAZINE STAFF:

- Susan L. Ebert Publisher and Editor
- Mary-Love Bigony Managing Editor
- Mark Mahorsky Art Director
- Susanne Harm Circulation Director
- Bill Reaves Photography Editor
- Tami Crawford Office Manager
- Rebecca Behan Editorial Research Assistant
- Billy Kasberg Design Assistant
- MaryKeith Trawick, Scott Godley Interns

EDITORIAL OFFICES:

3000 South IH 35, Suite 120, Austin, Texas 78704
 Phone: 512-912-7000 Fax: 512-707-1913
 E-mail: magazine@tpwd.state.tx.us

ADVERTISING SALES OFFICES:

Advertising Account Management
 & West Coast, Northwest, Midwest & Southwest U.S.:
STONEWALLACE COMMUNICATIONS, INC.: 3000 S. IH 35,
 Suite 120, Austin, Texas 78704
Jim Stone, Senior Account Executive, 512-912-7007;
 fax: 512-707-1913
Jennifer Wallace, Classified Ad Manager, 512-912-7003;
 fax: 512-707-1913

Automotive Category Management:

THE NOYD GROUP:
 2145 Crooks Ave., Suite 200, Troy, Michigan 48084
Ron Noyd, 248-643-7240; fax: 248-637-6452

Northeast & Southeast U.S.:

FIVE MILE RIVER ASSOCIATES:
 RR 1, Box 1400, Stockton Springs, Maine 04981
Bill Warren, 207-469-1981; fax: 207-469-3050

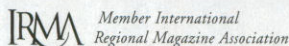
Texas Parks & Wildlife magazine (ISSN 0040-4586) is published monthly by Texas Parks and Wildlife, 4200 Smith School Road, Austin, Texas 78744. The inclusion of advertising is considered a service to subscribers and is not an endorsement of products nor concurrence with advertising claims. Copyright © 2000 by Texas Parks and Wildlife. No part of the contents of this magazine may be reproduced by any means without the permission of *Texas Parks & Wildlife* magazine. The magazine is not responsible for the return of unsolicited materials provided for editorial consideration. SUBSCRIPTION RATE: \$14.95/year; foreign subscription rate: \$22/year.

POSTMASTER: If undeliverable, please send notices by form 3579 to *Texas Parks & Wildlife* magazine, P. O. Box 17668, Austin, Texas 78760. Periodicals Postage Paid at Austin, Texas with additional mailing offices.

Texas Parks & Wildlife magazine is edited to inform readers, and to stimulate their enjoyment of the Texas outdoors. It reflects the many viewpoints of contributing readers, writers, photographers and illustrators. Only articles written by agency employees will always represent policies of Texas Parks and Wildlife.

SUBSCRIBER SERVICES

Subscription inquiries only, please.
PHONE: 800-937-9393
 7 a.m.-11 p.m. Monday-Friday, 8 a.m.-6 p.m. weekends



**Be one of the first
on the road to**

KEEP TEXAS WILD



The Texas Horned Lizard, known affectionately as the "Horny Toad," was once common throughout the state. But nowadays it is a rare sight to behold. In fact, the official reptile of Texas is now a state threatened species. You can help by purchasing a "Keep Texas Wild" license plate. It costs just \$25 in addition to your regular registration fees, and \$20 of your purchase will go directly to fund conservation programs that benefit native wildlife, fish and habitat.

To order call
1-800-792-1112 or visit
www.tpwd.state.tx.us/plate



MAIL CALL

Picks, Pans and Probes from Previous Issues

FOREWORD

LETTERS

I first discovered the joys of road racing in the early '70s, as a college freshman. Horseback riding, my first love for escaping out into the countryside, was simply unaccessible on a student's budget and I also found that that my trusty white Mecció took a good deal less maintenance than would a steed of flesh and bone — I could simply hang my "ride" on a couple pegs on the wall of my college dorm.

Rides around campus soon gave way to "point-to-points," usually to a state park within striking distance, where our group could reconvene and douse ourselves in a river before heading home. Interest in road cycling was burgeoning then, and "century rides" — 100 miles along open roads — were springing up in this state and many others. Usually, our team's training for these events would originate in one state park and end in another — much as the one Sitton described last issue between Davis Mountains and Balmorhea State Parks — with our assorted boyfriends and girlfriends driving a sag wagon a few hours behind us with water, snacks and our bedrolls for the night. (Sitton also penned "The Pulse of the Pines," May 1998, on cycling between Eastrop and Buescher State Parks.)

The helmets of those days were lightly padded leather skullcaps, rather like the old aviators' leather helmets — and I am grateful every time I strap on a helmet today for advances of technology in protective gear. Today's quick-release toeclamps are vast improvements for quick egress over the "rat-traps" that secured our feet tightly to our pedals in years past.

Along with safety improvements in cycling gear, however, has come the increased traffic loads on the scenic country roads loved by recreational motorists and cyclists alike. And let's face it, fellow cyclists: the roads were built for motor vehicles, and the onus is on us to prove that we can share these roadways safely and responsibly.

Today, slow-paced rides on dirt trails have taken the place of adrenaline-pulsed charges of youth. My racing days are soundly in the past; my spidery-white French racing machine replaced by a sturdier Fuji mountain bike, more suited to exploring off-road terrain and the grumblings of pre-arthritis knees. Still, when I see those racers climbing a steep grade as they cling to the right-hand shoulder, flung out on a ribbon of highway like moving jewels, I remember what it felt like and I silently salute them.

After all, this is Texas — the homeland of personal freedoms and mental toughness that nurtured an aspiring young cyclist from Plano. That young man, Lance Armstrong, proved his mettle to the world first by soundly defeating testicular cancer and then, this past year, going on to whup all other competitors in the Tour de France — the most grueling and storied sports event in the world. I like to think it's not just the terrain, but Texans themselves, that together make Texas so unique, and invite you to share the road with — or from! — a bike.



Sharing the Open Road

Your January cover photo and those contained in the article on cycling illustrate a very real and growing danger to cyclists and others on Texas roads.

Many Texas rural and farm to market roads have only two lanes with no shoulder and were not designed for both motor vehicle and bicycle use at the same time. Many motorists are not aware of the right-of-way due cyclists or become impatient when delayed by cycling groups or individuals.

Do you have suggestions or comments on how this problem is being or might be addressed?

⚡ Frank Sprague

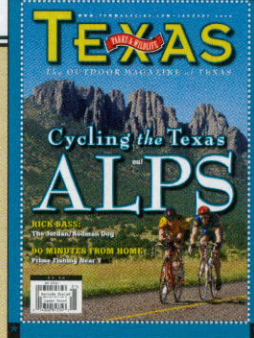
SUSAN L. EBERT

replies: The best source I've found to guide road cyclists is "Rules for the

Road: Eight ways to increase your safety in traffic," by James Hargett from *Bicycling magazine*, reprinted with permission from <bicycling.com>:

"Cyclists should try to make life easier for motorists. After all, it's in our self-interest to make the road a safer, more pleasant place. Here are eight easy ways to minimize the chance of conflict...

1. KEEP RIGHT. This most basic rule of sharing the road with motor vehicles is the one that cyclists are most casual about. If there's a wide, clean shoulder,



"While bicycles are wonderful for recreation, they have no business on the roads and highways. We travel extensively with our travel trailer and I shudder to think of the danger of coming upon a group of cyclists on a narrow country road."

⚡ Michelle Purvis, Round Rock



use it. Barring potholes, storm grates, parked cars, glass and other hazards, it's usually easier (and safer) to ride to the right. If there is no safe shoulder, ride as far to the left of the white line as it takes to prevent drivers from attempting to squeeze past and put you in danger. Just avoid being in the traffic flow for no apparent reason.

2. USE COMMON SENSE ABOUT RIDING ABREAST. It's enjoyable to ride side-by-side with a companion and carry on a conversation. But road and traffic conditions may be such that vehicles back up behind you when they could otherwise get by. It's usually best to restrict side-by-side riding to quiet, secondary roads. Even if you're alone, traffic may back up, especially on narrow, winding roads with limited visibility. Wave vehicles to come around when the path is clear.

3. DON'T FORCE VEHICLES TO REPASS YOU NEEDLESSLY. Let's say you're riding along a narrow, busy road and motorists are having trouble getting by. There are half a dozen waiting at the next red light, all of whom have already patiently overtaken you. Do you maintain your place in line, or do you zip past everyone on the right so you'll get the jump when the light changes? If you do the latter, you might gain 50 feet and save a few seconds, but you'll also probably create six antibicyclists when they get caught behind you again.

Admittedly, the scenario becomes trickier if, by hanging back, you miss the light. There are two tactful ways around this: One is to only move up in line far enough to just make the light. The other is to ride to the light, but move out slowly and slightly to the right when it turns green, letting the cars through the intersection first. One other courtesy at traffic lights: Avoid blocking drivers who want to turn right on red.

4. RIDE PREDICTABLY. This one's easy. Ride in a straight line when you're cruising and use hand signals when turning or changing lanes. If you're riding erratically, it's difficult for drivers to know when to pass. They may let several relatively safe opportunities go by before becoming exasperated and taking a dangerous chance. Hand signals are a courtesy and an important part of safe cycling. Point with your left arm for a left turn, and your right arm for a right turn. Motorists feel more

comfortable dealing with cyclists who communicate their intentions. More important, drivers tend to show them more respect.

5. AVOID BUSY ROADS. It's surprising how often you see cyclists on a busy highway, ruffling the delicate feathers of already edgy commuters. An alternate route doesn't have to be a residential street with stop signs every other block or a glass-littered, jogger-strewn bike path. Examine a detailed map of your area and you'll probably be surprised at the relatively quiet roads available nearby.

6. MAKE YOURSELF VISIBLE. In conditions where motorists might not readily see you (an overcast day, for example), it's a courtesy and plain good sense to wear brightly colored clothes. Drivers will never blame themselves when they almost pull into your path after a too-casual look. Unfair, yes; but you can greatly enhance your safety by dressing to be seen. At night, it's a different story. Drivers who encounter cyclists riding without lights, reflectors and light-colored clothes are right to consider them menaces.

7. BE CAREFUL ABOUT "PROVOCATIVE" ACTIONS. At a red light, even friendly drivers are likely to be irritated by a cyclist riding in circles in front of them. Similarly, if you lean on a vehicle at a stoplight, be aware that some drivers consider their cars extensions of themselves. You wouldn't want anyone leaning on your bike, would you?

8. RETURN THE FAVOR. Cyclists come to appreciate little unexpected courtesies from motorists. For instance, we all nod a thank you to the driver who has the right-of-way but waves us through anyway. Try returning the favor. You might, for example, motion a driver to make his turn in front of you if you'll be slow getting under way. Who knows? That driver might look a bit more favorably on the next cyclist down the road." ★

A Tree Grows in Dallas

I really enjoyed reading your article about Ned Fritz. I am amazed someone of his vision and sensitivity chooses to live in Dallas, but I am glad he does. Dallas desperately needs more like him.

Since moving to Dallas eighteen years ago, the low regard the City and developers have for nature has both



Discover

Discover a birder's paradise on April 13-16 at **Nature Quest**, the Texas Hill Country's premier nature festival. Enjoy birding tours along our five crystal rivers, densely wooded ranchlands and scenic state parks. Learn from the experts in a variety of nature workshops. Lodge in style at one of our cozy river cabins, bed and breakfasts or guest ranches. Call today for registration materials and a FREE accommodations guide.

Texas Hill Country River Region
A Vacation Reason for Every Season
www.texhillcountryvacation.com
800-210-0380

Discover 400 years of African American History

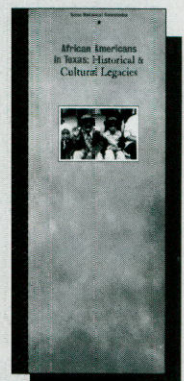
with a free travel guide from the Texas Historical Commission

Whether used as a travel guide or educational resource, you will enjoy this fascinating booklet.

For a free guide, call

512/463-5853

Or email history@thc.state.tx.us



TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

P.O. BOX 12276 • AUSTIN, TX 78711-2276
www.thc.state.tx.us





amazed and disappointed me. All open spaces must be developed, or at least covered in concrete. There is no comprehension of the beauty of natural space, woods, creeks, and wildlife.

My personal crusade to save a local area from illegal dumping was challenging enough. I am in awe at how much Mr. Fritz has accomplished.

Thank you for letting us know that people like Mr. Fritz exist, let alone in Dallas, Texas.

⚡ Renee Solinger

The Kentucky Connection

I was glad to see the letter from Mrs. Scotty Clenney, Board Member of the Kentucky Network of Outdoor Women, printed in the January issue of the magazine. I don't know if you are aware but K.N.O.W. is an offshoot of the Becoming an Outdoors-Woman program in Kentucky and was inspired by the Texas Outdoors Woman Network

(T.O.W.N.) that was started by alumni and staff of the Becoming an Outdoors-Woman program here in Texas.

T.O.W.N. is going strong, with 12 chapters in nine cities with a new chapter ready to get going in San Marcos to start the millennium. It's wonderful to see articles about women participating in outdoor activities, and providing role models for new outdoor enthusiasts. Thanks for including the women's viewpoint.

⚡ Debbie Bunch

*Becoming an Outdoors-Woman Coord.
Texas Parks & Wildlife
1-800-792-1112, push 6 then 4
<debra.bunch@tpwd.state.tx.us>*

Hueco "Thanks"

The article "Rock of Ages" by Elaine Robbins (December issue) was most illuminating and interesting. Few people know the richness of Indian history in rock art that Texas holds. We have the oldest petroglyphs in the U.S. at Fate Bell

MAIL CALL

Shelter near Del Rio. We have the "Sistine Chapel of rock art," Hueco Tanks. These are Texas' natural art treasures that we should protect and preserve. Experts like Dr. Kay Sutherland have been on the scene for years, recording and preserving the pictographs and petroglyphs, and lobbying for protection. Thanks for excellent coverage of an important subject. We'd like to see more. And by the way — boy, is the magazine looking great!

⚡ Lin Hartley
Austin

Some Craters Are Greater

I would like to offer some additional information about the Odessa impact crater described in your November 1999 issue (pp. 52-57).

The Odessa site is the smallest of 3 impact craters in Texas. The Sierra Madera crater is perhaps the most spectacular because it is exposed at the surface of the Earth and has a diameter of 13 kilometers, which is large enough to be seen from space. Its age is uncertain, but is likely to be less than 100 million years old. The Marquez crater is the same size as Sierra Madera, but it was buried by other geologic processes after it was produced about 58 million years ago.

There are likely to be more impact craters found in Texas, so stay tuned for new discoveries.

⚡ David A. Kring, Ph.D.

The Reel Thing S.U.V.

Free! 32-page
Buyer's Guide and
dealers nationwide.
1-888-274-2267 or
www.lancecamper.com



The SUV of RVs!
2000 Lance
America's Favorite Truck Camper

Sound off for "Mail Call!"

Texas Parks & Wildlife magazine welcomes letters from our readers. Please include your name, address and daytime telephone number.

Write to us at

Texas Parks & Wildlife magazine,
3000 South IH 35, Suite 120,
Austin, TX 78704.

Or, fax us at 512-707-1913.

E-mail us at

<magazine@tpwd.state.tx.us>.
Subscribe at <tpwmagazine.com>.

⚡ Letters designated by this symbol were delivered to us via e-mail. We reserve the right to edit letters for length and clarity.



SCOUT

NEWS AND VIEWS IN THE TEXAS OUTDOORS

A NEW BAT IN TEXAS

Texas is home to more species of bats than any other state. This number recently increased by one as students and faculty from Texas Wesleyan University and The University of Texas at Arlington discovered that the western yellow bat (*Lasiurus xanthinus*) has moved into West Texas.



Western yellow bats roost in dead leaves of the Spanish dagger yucca in West Texas.

I have been a part of the team that has been studying the bats of Big Bend National Park for the past four years. We caught a western yellow bat in October 1996 over a spring-fed pool in the park. We thought it was an "accidental," an individual that has wandered out of its normal range, sometimes as a result of a tropical storm. We began to doubt this after catching two more in 1997. Now we have caught a total of seven and other biologists have found them in Black Gap Wildlife Management Area and Davis Mountains State Park.

Yellow bats generally don't roost in caves, buildings or bridges as do many other bats, instead seeking roosts in trees. Not just any tree meets their preference; they seem to prefer palm trees. There are very few palms in the Chihuahuan Desert, so we wondered

where these new inhabitants were living.

To investigate this, we returned to Big Bend with miniature radios. It took two long days to find our bat roosting near the top of Dagger Mountain in the northern end of the national park. In a large Spanish dagger yucca, for which Dagger Mountain is named, we found our bat.

Dead leaves of both yuccas and palms stay attached to the trunk, forming a skirt of dead yellow leaves beneath the living foliage. It is in this skirt that yellow bats are known to roost. The architectural similarity is so striking that it seems surprising to us that more yellow bats aren't found here.

Why have they moved into Texas? Perhaps their numbers have increased so much that they are spreading out and colonizing West Texas. Or perhaps, if conditions are changing in Mexico, the bats could be fleeing and resettling into marginal areas in West Texas. It even has been suggested that global warming will cause an increase in the number of tree-roosting bat species in Texas. No one yet knows why the western yellow bats are here.

— Michael Dixon



FIELD NOTES

Lone Star Legacy will be the beneficiary of an April 20 dinner and reception at Sea Center Texas, and guests can go home with an autograph from 1999 Baseball Hall of Fame inductee Nolan Ryan.

Ryan, a Texas Parks and Wildlife commissioner, will be the guest speaker at the event, which will raise funds for the Sea Center Texas Endowment Fund. Sea Center officials say that attendees will have the opportunity to have one article of their choice autographed by the baseball great.

The Lone Star Legacy Endowment Program was created to provide a secure and self-perpetuating source of operating income for Texas Parks and Wildlife facilities. For ticket information call Sea Center Texas in Lake Jackson at 409-292-0100.

PHOTO © MERLIN TUTTLE, BAT CONSERVATION INTERNATIONAL • SPOT ILLUSTRATIONS BY KYLE DREIER

Concerns Surfacing Over Groundwater Rights

Proposals to export water from the Carrizo-Wilcox aquifer have Bastrop and Lee County residents and politicians concerned about their groundwater, their forests, their wetlands and their wildlife.

A study recently completed by the University of Texas, Bureau of Economic Geology (BEG) shows that while there appears to be sufficient water to meet future water demands, there will be groundwater level declines. According to the study, a recent contract between Alcoa and San Antonio Water System to export 90,000 acre-feet of water per year to Bexar County could potentially cause groundwater levels to decline an additional 50 feet on average, with a maximum decline of 260 feet in the vicinity of the groundwater withdrawal. Alcoa is currently required under the conditions of its mining permit with the Texas Railroad Commission to mitigate impacts to water supply wells.

Mitigation is not required for impacts to surface water resources, however.

"We are concerned about the effect groundwater pumping will have on surface water resources such as springs, creeks and rivers," says TPW Water Resources Team Leader Cindy Loeffler. Although scientists do not fully understand the aquifer's role in shaping local ecosystems, Loeffler explains, "effects could be pronounced, especially if they involve unique or threatened biotic resources." The proposed mine site provides habitat for hundreds of migratory birds and two federally endangered species: Navasota ladies' tresses orchid, and the Houston toad, a species endemic to just three Texas counties.

The Bastrop County Commissioners Court unanimously opposed the mine expansion in an official resolution, stating in part that, "the severe, long-lasting and potentially irreversible adverse

impacts caused by the extraction of lignite coal by strip-mining, on ground and surface water, soils and agriculture, air quality, wildlife, and native vegetation are well documented....

"Bastrop County Commissioners Court strongly and unanimously opposes the planned expansion of strip-mining of lignite and its combustion in a substandard facility, and calls upon elected and appointed officials of San Antonio to withdraw from onerous and ill-considered contracts which support such strip-mining and combustion."

The Texas Railroad Commission, which regulates mining statewide, currently is reviewing the Three Oaks mine proposal. The mine is considered an expansion of Alcoa's existing Sandow mine, therefore circumventing need for a full environmental review by the Corps of Engineers (COE).

— Wendee Holtcamp

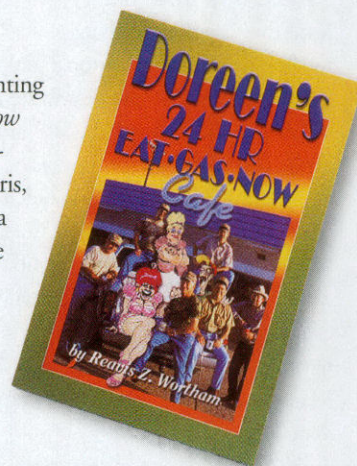
Come In for Some Coffee at Doreen's 24-HR Eat Gas Now Café

If you, or others you know, anticipate going through withdrawal at the close of hunting season, spending some time with the Hunting Club at *Doreen's 24-HR Eat Gas Now Café* by Reavis Z. Wortham provides a simple, hilarious antidote to ease the symptoms. Wortham, who began his writing career as a columnist for *The Paris News*—Paris, Texas, that is—and is currently humor editor at *Texas Fish & Game* magazine, takes a lighthearted look at the "big secret" known by outdoorsmen and the women who love them: a good deal of the outdoors experience is in the shared camaraderie before and after the hunt, usually involving food and good, strong coffee.

"Male or female, old or young, outdoorsmen or what I fondly call Bunnyhuggers, can find truth and humor in these pages," says Wortham. "Sometimes I might touch a personal nerve, but it's all in fun, because I laugh at the guys and myself as much as I laugh at this strange and bizarre world in which we live."

To enjoy a respite with the members of the Hunting Club—including my personal favorite character "Wrong Willie" (*Willie Nelson? No, wrong Willie...*), order an autographed copy from *Texas Fish & Game* magazine. Order by mail at 7600 West Tidwell, Suite 708, Houston, TX 77040; by phone at 800-750-4678 or via the internet at <www.fishgame.com>. Total cost, including shipping, handling and sales tax, is \$18.89.

— Susan L. Ebert





Childress FFA Students “Top Dogs” At Nationals

“It’s important that people start learning to manage prairie dogs instead of eradicating them,” emphasizes Emily Robertson, as she visits with a group of students from Minnesota at the National FFA Convention in Louisville, Kentucky. Emily, a soft-spoken 18-year-old, talks about prairie dogs as easily as most girls her age talk about fashion.

“For centuries prairie dogs have been a keystone species on the plains and their existence provides food and shelter for about 120 other species.” Emily, along with her research partner Jim Self, go over their bound thesis and tri-fold display as their out-of-state peers listen with enthusiasm.

“If something isn’t done about conserving the prairie dog soon, they could be put on the Threatened Species List by the U.S. Fish and Wildlife Service,” Self tells the group. “If that happens I’m afraid that landowners may lose a lot of say about what kinds of activities take place on their land. In Texas, that’s serious.”

Both Robertson and Self were in Kentucky competing in the National Agriscience Fair Competition that is held in conjunction with the National FFA Convention — a gathering of approximately 50,000 students from all across the country. Representing the Childress, Texas, FFA Chapter, they were named national champions in the Environmental Sciences - Team Division with their research project entitled *The Effects of Black-Tailed Prairie Dog on Plant Diversity and Soil Fertility in the Rolling Plains of Texas*.

Their research, which took place just north of Childress High School, focused on how the species affects rangelands as compared to like soil types where the prairie dogs aren’t found.

They discovered that prairie dogs may not harm rangelands, as traditional wisdom dictates. “I was like most people in thinking that prairie dogs were good for nothing,” says Jim Self. “Now, because of the research, I have a whole different outlook on them and how we should manage them.”

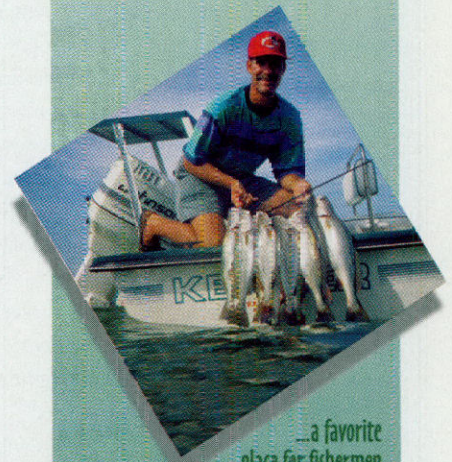
The study indicates that prairie dogs have a neutral effect on soil fertility but a positive effect on plant diversity. During their counts, they discovered that 35 different species of plants lived inside the town, whereas only 20 were catalogued outside the town. These findings are backed up by similar research conducted in the Dakotas in the early part of this decade.

“We think that the prairie dog needs to be looked at as a possible economic commodity just like you would deer or quail,” says Robertson. “By managing the prairie dog and not eradicating them, the species and the landowner will both come out winners.”

— Russell A. Graves



...a favorite place for birders because it's a favorite place for over 250 bird species. Port Arthur has been a bird sanctuary since 1988. Available upon request are Chartered Birding Tours and complimentary Birding Guide Books for some of the world's best birding.



...a favorite place for fishermen because they enjoy a major estuary that fish love year-round. Inshore and Offshore Charter Services available as well as pier and surf saltwater fishing for anglers of all ages. For more information about our fine fishing, a local waterways guide and about other area activities, contact:



CONVENTION AND VISITORS BUREAU

1-800-235-7822

<http://www.portarthurtexas.com>

e-mail: pacvb@portarthurtexas.com





SCOUT

BY GIBBS MILLIKEN

FIELD TEST

HANDS-FREE

LIGHTING

The evolution of portable, hands-free lights started with the needs of miners and hunters to work in darkness with a focused beam and both hands on the job. Improvements over the years include better brightness and color of light, longer-lasting power sources, even illumination, variable focus, waterproof housings, lighter weight, durability, and more power in smaller-size units. Perhaps the most important feature to look for in any light is dependability. No one wants a light source that flickers and goes out at a critical moment.

A good selection of quality lights, with either general or specialized functions, is available today in a wide range of prices. The more expensive units are powered by newer battery designs, high-tech bulbs, and unique features for specific tasks. In some cases, the lights have accessories that give them multi-functions from overhead tent lighting and filters for map reading to emergency signaling modes that can be seen over distances of one or more miles. The models considered most serviceable are headlights equipped with elastic bands or pocket/belt clips for hands-free use when worn on the forehead or hat.

One basic problem still plagues the designer of portable lights: the power source. In most cases, the trade-off is weight vs. power and longevity. Currently available batteries are heavy, limited reservoirs with diminishing power output. They usually are uncomfortable when attached to the

user's head and frustrating when carried at the hip with cords that can hang, tangle and disconnect at crucial moments. If hands-free lighting is to receive a major improvement, the engineers first need to find some new form of power that is lightweight, long-lived and constant to combine with strong, high-efficiency bulbs and reflectors to produce even lighting and variable beam widths ranging from wide general illumination to an extremely narrow focused beam of intense light. So far, it's back to the drawing board for light makers.



Top to bottom: Photon Micro Light II, smallest, lightest and brightest for its size; NiteRider Pro, which is connected to a belt pack; Petzl Saxo Aqua Light, a new waterproof design.

WHAT TO LOOK FOR:

- Waterproof (not water-resistant)
- Light diffuser created by a dimpled reflector surface or front filter.
- Variable power from weak to very strong when needed.
- Optional power sources for the same unit, i.e., belt battery pack, rechargeable cells and head-mounted batteries.
- Focusing beam from flood to spot.
- Adjustable swivel head.
- Optional bulb types, from standard to high intensity.
- Set of filters for various purposes.
- Durable shock-absorbent housings for headlamp and power source.
- Lightest possible weight to power and light duration ratio.
- Reliable switches and electronic connections.
- Comfort when worn on the head.
- Convertible from head-mounted to hand-held when needed.

SAFETY IN NUMBERS

Always carry a second light source when in the field. In one moment, a light failure can become a life-threatening situation in a cave, underwater or when crossing dangerous ground in total darkness. A spare bulb, batteries, waterproof adhesive tape and a multi-tool also should be a part of any lighting kit.

LIGHTS OF THE FUTURE

Current models of lights are sure to be replaced in the next few years by products from research into LED (light-emitting diode) bulb technology. These have the potential to produce longer-lasting, intense light with compact size and minimal weight. Gone will be the cumbersome battery packs and short-lived filament bulbs once engineers figure out how to get the brightness to the same level as today's conventional models. For now, we can only wait and look forward to the technology that gives us better hands-free lighting.

"Say, would you mind holding this light for me while I ...?"

PHOTOS © GIBBS MILLIKEN



THE BEST-SELLING "LEARN ABOUT" SERIES CONTINUES WITH THE ALL-NEW

"LEARN ABOUT... TEXAS INSECTS!"



An exciting new book now joins Texas Parks & Wildlife Press' acclaimed "Learn About..." series — *Learn About Texas Insects!* This educational activity book features the most numerous and easily observed of Texas' animal residents. Children from six to twelve can enjoy the marvelous world of "bugs" — that great host of hopping, crawling, flying, and buzzing creatures more properly called insects.

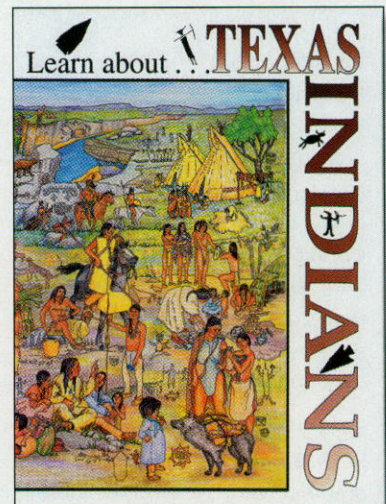
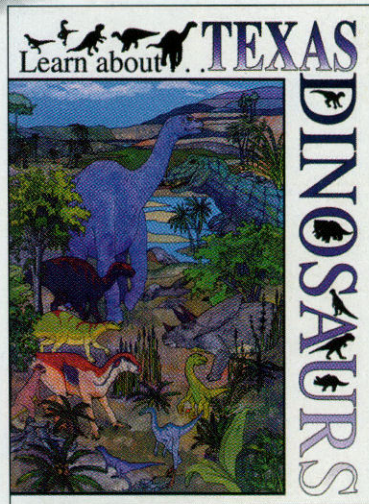
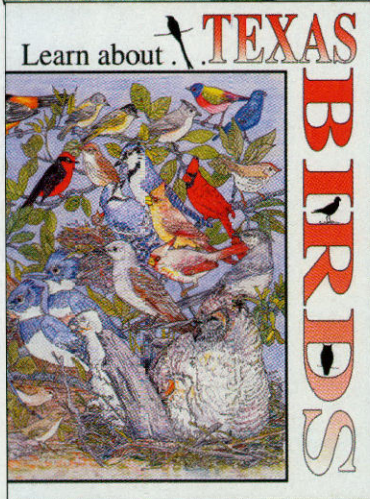
Youngsters can color detailed line drawings of the most common and most unusual Texas insects. The accompanying easy-to-read text gives important facts about insects' roles in nature. Interspersed throughout are instructive games and suggested activities. **BONUS FOLD-OUT! A 17" by 22" coloring poster.**

1999, Texas Parks & Wildlife Press, 8 1/2 x 11 in., 60 pp., b&w illustrations, ISBN 1-885696-27-2, \$7.95, paperback

Also available in this series:

- Learn About... Texas Birds
- Learn About... Texas Dinosaurs
- Learn About... Texas Indians

Order all four books for only \$27.00 and save almost \$5.00!



ORDER FORM

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

DAYTIME PHONE _____

| TITLE OF BOOK | QUANTITY | PRICE | AMOUNT |
|--|----------|----------|--------|
| LEARN ABOUT... TEXAS INSECTS | | \$7.95 | |
| LEARN ABOUT... TEXAS BIRDS | | \$7.95 | |
| LEARN ABOUT... TEXAS DINOSAURS | | \$7.95 | |
| LEARN ABOUT... TEXAS INDIANS | | \$7.95 | |
| | | SUBTOTAL | |
| TEXAS RESIDENTS PLEASE ADD .0825 SALES TAX | | | |
| PLEASE ADD \$2.95 SHIPPING & HANDLING PER BOOK | | | |
| TOTAL AMOUNT ENCLOSED BY CHECK OR MONEY ORDER: | | | |

MAIL TO: TEXAS PARKS & WILDLIFE PRESS, 3000 SOUTH IH-35, SUITE 120, AUSTIN, TX 78704



BY DAN MORRISON • ILLUSTRATIONS BY NARDA LEBO

FIRST AID

ESSENTIALS

Although it may be easier to purchase one at your favorite outdoor retailer, you can put together a basic first aid kit with a quick trip to the grocery store. Here are the essentials.

Adhesive bandages keep small cuts from becoming infected, or going septic. Pack a few large ones for cuts on legs or arms; a few small ones for toes or fingers; and a few spot bandages for little cuts and nicks on other body parts.

For more serious wounds you'll need **gauze bandages**; 2-inch by 2-inch and 4-inch by 4-inch are convenient sizes. Gauze bandages have multiple uses: they can seal off a wound to prevent infection, they can hold dressings in place, and they can immobilize broken bones. Also consider a malleable splint. It's lightweight and folds up small enough to carry easily. Toss a couple of **crepe bandages** (the elastic ones) in the kit as well. A large **triangular bandage**, merely a piece of cloth cut in triangular form, can be used as a sling, worn over your shoulder, in order to immobilize a broken arm. Or it can be used as a large bandage for cuts.

A few **safety pins** are helpful to secure bandages. **Pain medicine**, whether aspirin, acetaminophen, or ibuprofen, also is nice to have.

A good pair of **scissors** may be the most important tool in any first aid kit, for cutting bandages and removing clothing, among other things.

A pack of **antiseptic wipes** and a tube of **antiseptic cream** should be in your kit. Infections set in more

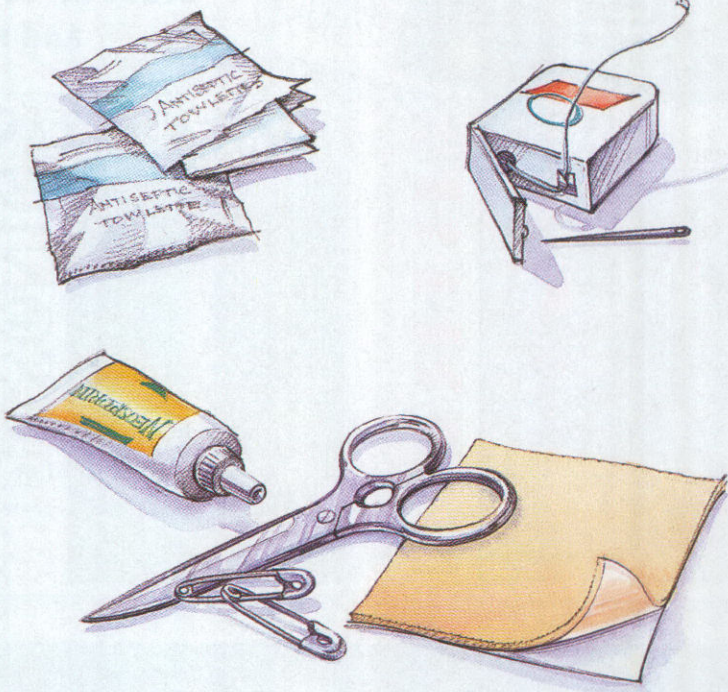
quickly than one might realize, especially in the woods.

Foot felt, sometimes known as "moleskin," is an item sold in foot-care sections of drug stores and groceries. It's a good thing to have for blisters. Not only are blisters painful, they are prone to infection. Blisters

duct tape, dental floss and a large sewing needle.

Duct tape can be used to cover hot spots to prevent full-blown blisters, to immobilize fractures, and to bind up cuts. But a word of caution: duct tape does not breathe, so it should only be used for relatively short durations when applied to flesh.

Likewise, dental floss and a strong sewing needle have myriad uses. Not only can they be used to suture wounds, they also can be used to sew bandages and to repair clothing or gear. Dental floss is sterile, an important consideration in treating wounds. And it is extremely strong.



A basic first aid kit should include antiseptic wipes and cream, scissors, safety pins, dental floss, a large sewing needle and foot felt or moleskin.

start out as hot spots, and most people make the mistake of ignoring a hot spot, waiting until setting up camp to investigate; by then it is too late. As soon as you feel a hot spot, stop immediately and treat it.

Things that you should pack, but won't find in commercial kits, are

Even though a good first aid kit is important, the most important thing you should take on any trip is knowledge. Take a first aid class. Learn the basics of hygiene and wilderness survival. You can't buy basic first aid know-how, but it can make or break a trip.



TEXAS

PARKS & WILDLIFE

DON'T MISS TEXAS' BIGGEST & BEST FLY FISHING SHOW!

Mark your calendars now for the fifth annual TEXAS FLY FISHING SHOW, presented this year by Texas Parks & Wildlife magazine! This year's show will be at Aquarena Springs — offering spectacular surroundings combined with easy access from the I-35 corridor.

This year's show will feature our salute to Texas fly fishing talent across the state, and include a wealth of paddlesports, children's activities as well as fly tying, casting instruction, rod building and more. We look forward to seeing you there!



For Further Information and Class Schedules:

Visit www.pico-outdoor.com/TFFshow/menu.htm or call:

For Exhibit Space and Class Registration:

Contact Bob Miller: phone (830) 895-4348, fax (830) 895-4344; e-mail pico@kctc.com.

For Event Sponsorships and Advertising:

Contact Susan Ebert: phone (512) 942-7001, fax (512) 707-1913; e-mail: susan.ebert@tpwd.state.tx.us or Jim Stone: phone (512) 512-7007, fax (512) 707-1913; e-mail: jim.stone@tpwd.state.tx.us

For San Marcos Accommodations:

Contact Rebecca Ybarra, San Marcos Convention & Visitors Bureau at (888) 200-5620



THE RIO

**Canoeists in the Trans-Pecos region see signs
that the Rio Grande is slowly going dry,
but there's a move afoot to restore its flow.**

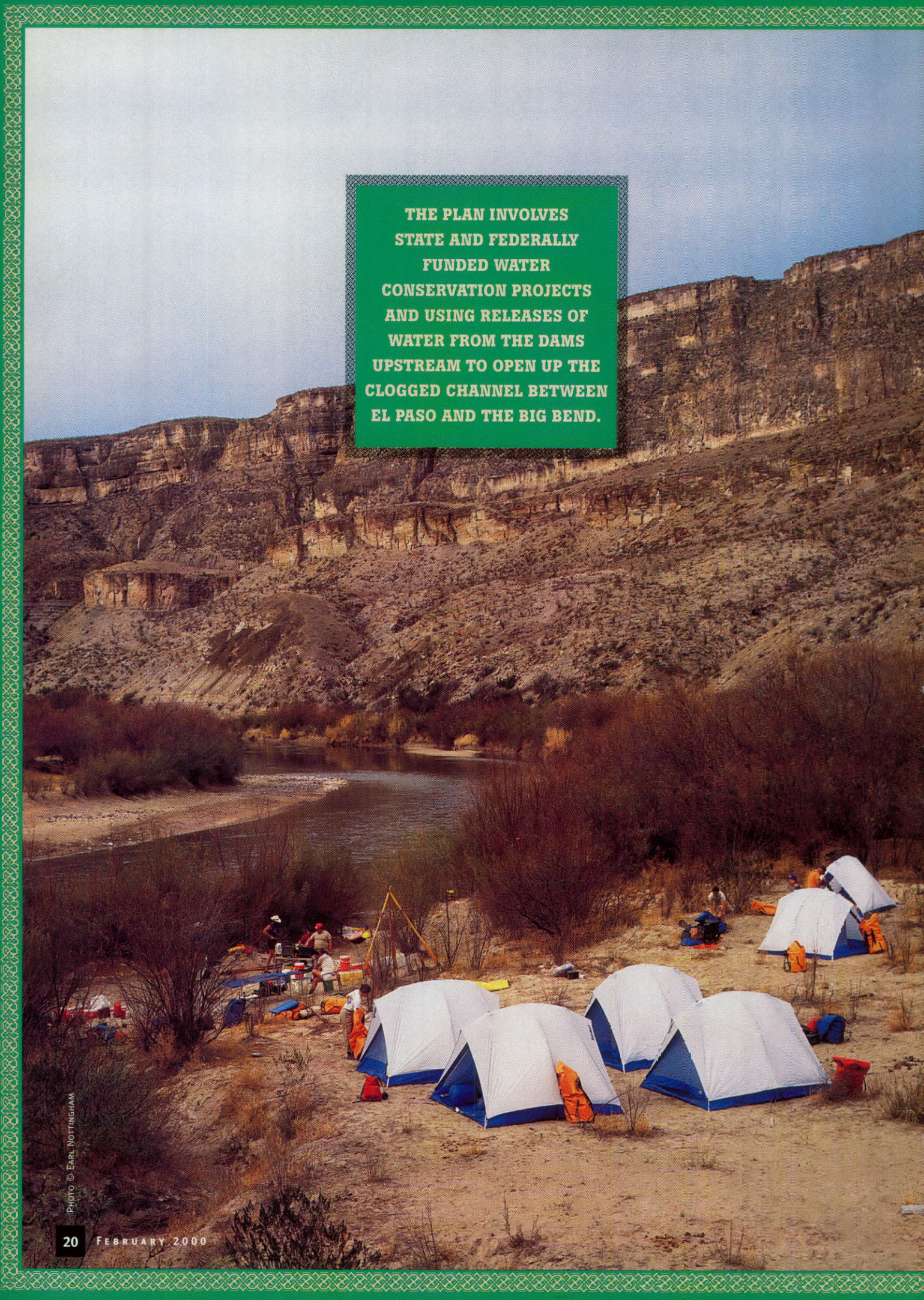
By Louis Dubose

“SINCE SPRING OF '92, the river hasn't been like it used to be due to lack of rain and increased irrigation upstream,” Pierre DeKoninck says. “But it's still a beautiful place to be. It's more of a scenic float versus whitewater rafting.”

Pierre, who is from Quebec, runs Big Bend Shuttle Service with his wife, Lovika, who is from Tahiti. The river he was describing is the Rio Grande, in particular the stretch that flows through the state and national parks in the Big Bend. In early March of 1999, the river was “gone” — or almost gone. Seven years of drought, expanded agricultural development, increased consumption in the thirsty desert cities of El Paso and Juárez all have slowed the river's flow. The Rio Grande, known as the Rio Bravo in Mexico, is neither “grande” nor “bravo.”



GRANDE



**THE PLAN INVOLVES
STATE AND FEDERALLY
FUNDED WATER
CONSERVATION PROJECTS
AND USING RELEASES OF
WATER FROM THE DAMS
UPSTREAM TO OPEN UP THE
CLOGGED CHANNEL BETWEEN
EL PASO AND THE BIG BEND.**

SINCE THE MID-1980s I have canoed and rafted the Colorado and Santa Elena Canyons in good and bad weather. But I have never had a bad trip, even when there was little water. With proper equipment, enough food and, most important, plenty of extra drinking water, it has been almost impossible not to enjoy this place. And for those who would avoid the work or who lack river experience, there are outfitters in Terlingua who will row, set up camp and cook.

But since the big rains of 1991 and a relatively wet year in 1992, the whole region has been suffering a seven-year drought. Year by year, the water gradually has disappeared. For agriculture, the drought has been devastating. For the guides and outfitters, there has been real economic hardship. "So many people invested so much money and energy because they thought they were going to have a river," Pierre says. But there is enough for canoes, which are easier to drag across shallow sandbars than rafts. At today's water levels, we will have to work a lot more for our recreation.

I paddled the river in March with four friends from Austin. With a gentle breeze blowing at our backs, we eased three rented canoes out into the muddy river. The wooden gauge at Lajitas showed less than three feet of water, but at least there was some current. Lajitas was still in sight when we all got out and dragged our canoes across the first gravel bar — which with just another foot of water would have been a bouncing riffle.

We paddled for 11 miles, sometimes in open desert, sometimes along canyon walls. For an hour we paddled along a tall cliff most notable for the deep brown igneous sill that forced its way into the limestone 500 feet above on the Texas side.

Not even a sandstorm could have spoiled a day like this, when the breeze seemed to stay at our back even as the river changed direction. It hardly seemed to matter that Matadero Rapids no longer is a rapid, and the dozens of "wall shots" provided little challenge for even the least experi-

enced in our three-boat party. By late afternoon, we were paddling a stretch that guides call "the Doldrums," where the river spreads out, current slows down and the hissing of the wind in the rushes that lie between us and Texas can lull you to sleep.

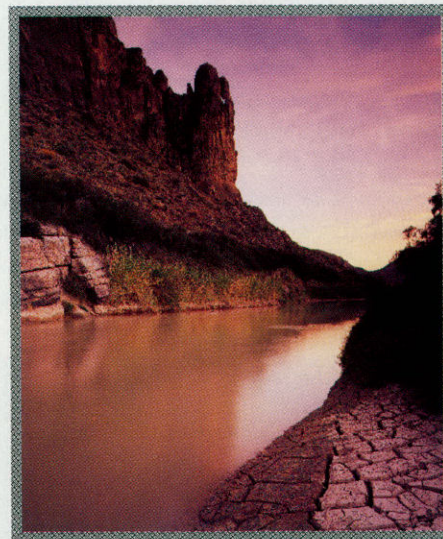
The shallows along the banks of the Doldrums tell more of the story of drought. If one steps out of a boat into the shallow water there's a good chance of sinking to your knees — and in some places your legs will entirely disappear in silty sediment. Even during periods of drought, there are rainstorms. Their runoff transports the fine alkaline desert soil into the river. For 40 years, dams upstream and downstream have prevented spring floods that would have carried this material downstream to the alluvial plain at the mouth of the river. But there has been enough flow to move much of the silt downstream. With currents such as we experienced, mudflats grow and the channel shrinks.

We continued through the Doldrums, past a formation called the Sentinel — a butte on the Mexican

side of the river, a sign that we were approaching the entrance to Santa Elena Canyon. Within an hour, the river turned left for a long, bouncing ride through a series of five or six drops, then 90 degrees to the right and past the mouth of San Carlos Creek, and 90 degrees to the left to the bank where most boaters pull out to camp on the Texas side.

If there is a more beautiful campsite in Texas, I have yet to find it. Pitch your tent or lie on the ground and point your feet toward the river and you are looking up a vertical limestone canyon wall that has a slight reddish hue. There is the murmur of water running across rocks and if there's not too much moon, there are so many

Despite decreasing water levels, the Rio Grande still offers a pleasant river experience. For those who want to enjoy the trip without doing all the work, there are outfitters who will row, set up camp and cook all the meals, left.



TOP PHOTO © LAURENCE PARENT; BOTTOM PHOTO BY EARL NOTTINGHAM

stars that you almost regret that you hadn't camped on the wide-open desert floor.

In the morning, we awoke to the song of a canyon wren. Five years ago, in this same spot on Easter Sunday morning, Austin singer-songwriter Tish Hinojosa pointed out to me that the canyon wren "sings down a scale" in a series of about 10 to 15 lilting notes. On this morning in early March it was cold — in the 40s — until the sun appeared over the canyon wall. I took the gear boat and we paddled the three canoes straight ahead toward a canyon wall, scuttling across rocks and finally getting out to push across a gravel bank that in years past had been a fast-running chute leading unsuspecting paddlers into the canyon wall on the Texas bank. Then the river turned hard to the right, the channel narrowed, and suddenly we found ourselves in a limestone canyon so beautiful that it was best to stop paddling, and absorb as much of the moment as possible.

Ahead lay eight miles of the most scenic paddling on the continent — a stretch easily covered in half a day,

although we spent another night in the canyon. We got out on the Mexican side, well above the rapids, to scout the open channels of the Rockslide, a Class IV rapid that isn't really a rapid but a labyrinth of narrow channels and dead ends, by dozens of huge rocks that have fallen into a narrow gorge. At high water in the late 1980s, I scouted and mapped for an hour, only to shoot through the channels in less than two minutes. Today the Rockslide requires a fast run down the Texas side of the river, a 90-degree turn right and an immediate 90-degree turn left into the main channel, which then turns hard left. There are no alternatives, no "Mexican run." The channel on the Mexican side of the river is too shallow to navigate. More challenging than the Rockslide is a series of elaborate maneuvers that offer the only possibility to get more water into the river.

A half-dozen figures and agencies are making efforts to save the river's attractions in the Big Bend region. Ty Fain is the director of the Consortium of the Rio Grande, a coordinating agency established in 1998 when

President Clinton designated the Rio Grande one of 14 American Heritage Rivers. Fain describes a plan promoted by Steve Harris, a long-time river guide and co-owner of Terlingua's Far Flung Adventures. The plan involves using releases from the dams upstream to open up the clogged channel between El Paso and the Big Bend. It is advanced by the Forgotten River Group. The point man for the group is Harris, but the plan won't succeed, Fain says, without the support of John Bernal, the U.S. commissioner on the International Boundary and Water Commission, or IBWC.

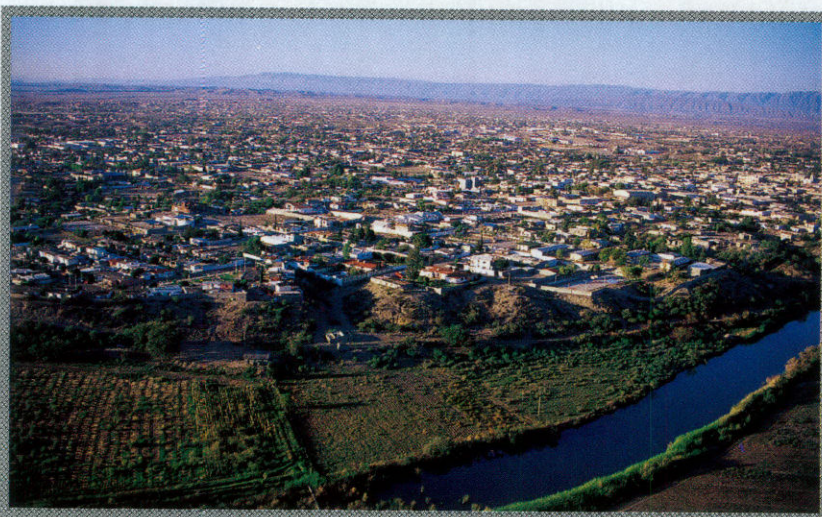
In years past, Fain says, no one would associate the IBWC with conservation or environmental projects. Before Bernal, the commission was widely considered a stodgy bureaucracy, invisible even along the border, except perhaps to Mexican farmers who wanted to be sure that the water guaranteed to them by a 1906 treaty would be there when they needed it. Or to American farmers in the Upper Basin of New Mexico, who own many of the water rights. Or the "Water Buffaloes" on the boards and commissions that supply water for El Paso, which, along with Ciudad Juárez on the Mexican side of the river, is rapidly exhausting its underground water supply and taking more water from the river.

Bernal is modest about his agency's role in any project that would solve the problem or "save" the river. "We can manage the river better, so that more water gets to El Paso," Bernal says. But he warns that the Big Bend parks are problematic because so little water gets past El Paso. "We have looked for ways to get more water from the upper portion of the basin down to that middle basin. But there is no adequate channel down there and little supply. Much of the water in the parks historically came from a major Mexican tributary, the Rio Conchos. But demands are increasing in Mexico," Bernal says. "And we're in a dry condition in the Mexican tributaries." As the drought has dried the Conchos, the Rio Grande, as it flows through the Big Bend, has diminished from a roar to a trickle.

According to Ken Rakestraw, chief of

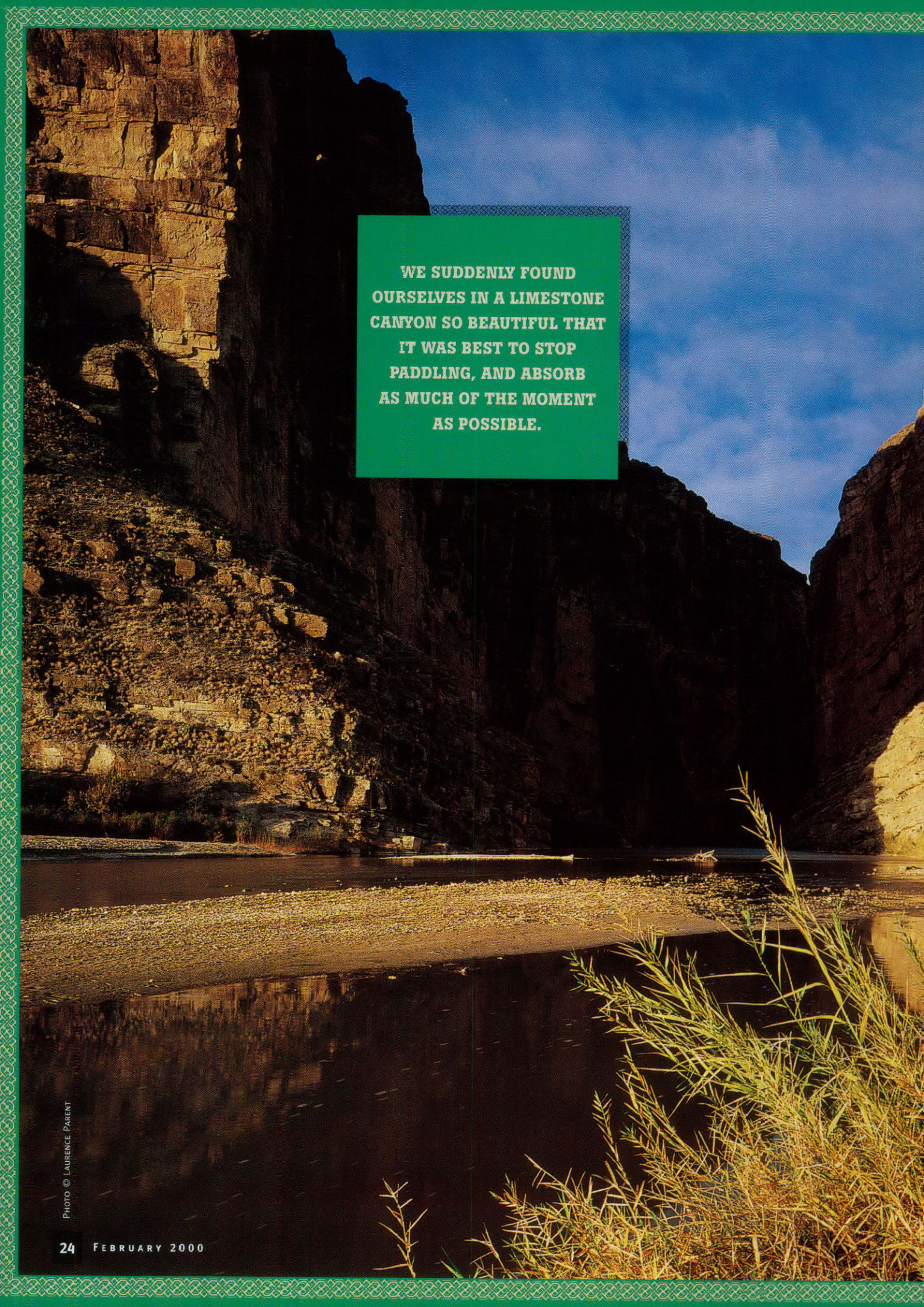


Most of the river that flows through Big Bend comes from the Rio Conchos in Mexico. The above right photo shows the confluence of the Rio Grande and the Rio Conchos. Below is the Mexican town of Ojinaga.





**SEVEN YEARS OF DROUGHT,
EXPANDED AGRICULTURAL
DEVELOPMENT, INCREASED
CONSUMPTION IN THE
THIRSTY DESERT CITIES
OF EL PASO AND JUÁREZ,
ALL HAVE SLOWED THE
RIVER'S FLOW.**



**WE SUDDENLY FOUND
OURSELVES IN A LIMESTONE
CANYON SO BEAUTIFUL THAT
IT WAS BEST TO STOP
PADDLING, AND ABSORB
AS MUCH OF THE MOMENT
AS POSSIBLE.**

water accounting at the IBWC, there is little that can be done about the Conchos. "The amount of water is guaranteed by treaty, except in an extraordinary drought, and is a five-year average amount," Rakestraw says. "In the past five years it has fallen short because of the drought." Short is an understatement. The average flow on the Conchos is more than a million acre-feet per year. By 1994, after two

years of drought, flow was down to 350,000 acre-feet — one third of what the Conchos provided in the past.

"Water development is threatening to deplete the Rio Conchos, the same way the Rio Grande has been depleted," Harris says. And because it is a Mexican river, there is only so much that American interests can do about it. "All the water in the Rio Grande is allocated," Fain says. "Every drop belongs to somebody. Between the agricultural interests and the cities, there is no water left for the river." That, according to Harris, creates a circular problem. There is no channel because there is no water. And with no water, the channel continues to become aggraded.

Fifty-five percent of the water the U.S. owns goes to the Elephant Butte Irrigation District in New Mexico, and 45 percent goes to the Texas interests, which include El Paso. And 60,000 acre-feet go to Mexico. After the river flows past the concrete channel that moves it between El Paso and Juárez, then waters the fields between El Paso and Fort Quitman, there's not much river left.

The water that gets past El Paso is known as the "system leakage," Harris explains — water that flows back from irrigated fields, or that is not captured by agricultural interests. The Rio Grande, in other words, as it flows past tiny Texas towns such as Fort Hancock, Sierra Blanca, Fort Quitman and Candelaria, is the meager flow that has escaped the agricultural projects and municipal water systems upstream.

"We get about 5 to 6 percent," Harris says. Because of the slow flow



and shallow channel near Fort Quitman, half of that 5 to 6 percent is evaporated or sucked up by salt cedar, the thirsty African import that has displaced native plants. The plan Harris pitches to anyone who will listen — including the big family and corporate farmers around Las Cruces, New Mexico — will increase that amount by 5 to 6 percent and open the channel above the park so that less water is lost to evaporation and salt cedar.

Harris is a practical environmentalist. He knows that 89 percent of the Rio Grande's water is dedicated to agriculture, yet when he talks about inefficient agricultural practices, such as flood-irrigation of fields, he acknowledges that there are high-value crops such as pecans and pistachios that justify that sort of water use. The Rio Grande also supports "low-value" crops such as hay and alfalfa, which Harris calculates consume as much as 80 percent of the water that is dedicated to agriculture. The plan that the Forgotten River Group is advancing includes state and federal support of water conservation projects, such as drip irrigation, to return to the river some of the water consumed by old, inefficient agricultural practices.

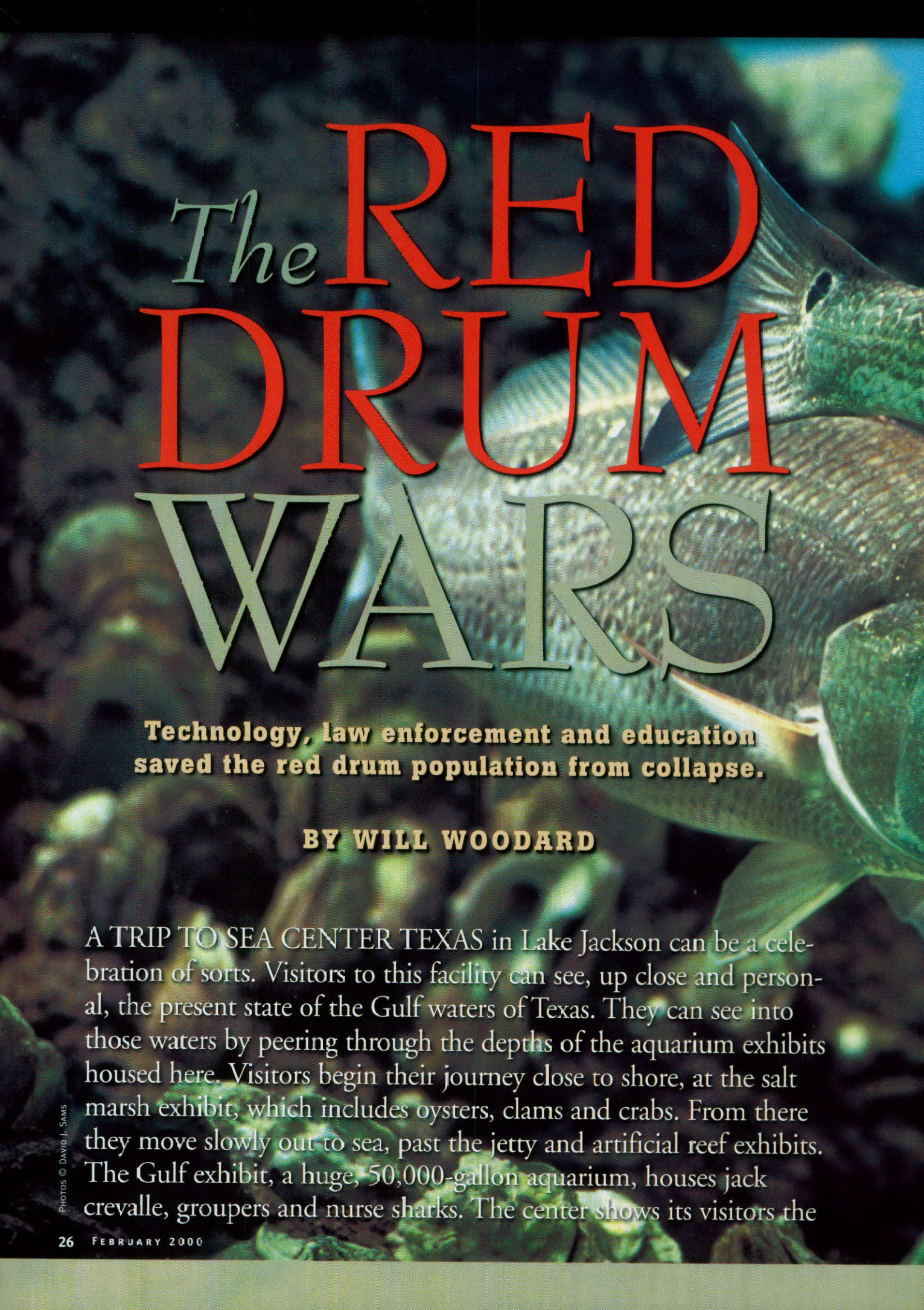
The Forgotten River Group, which includes representatives of the IBWC, interested state agencies and a half-dozen environmental and recreational organizations, proposes to reclaim enough water to allow for substantial releases that would open the channel at Fort Quitman enough to "engineer the river" back to health, anyway.

We spent our second night on the

The Forgotten River Group, which is made up of representatives of governmental agencies as well as environmental and recreational organizations, proposes to reclaim enough water to engineer the Rio Grande back to health.

river at Fern Canyon, a beautiful limestone canyon that wends its way from the riverbank into Mexico. In the morning, we began the final three miles of our trip. Again there was a gentle breeze at our backs and a slow current, but with more than half a day to complete the last leg of the trip we quit paddling and floated out the morning in a reverential silence. Then, just as abruptly as it had begun on the previous morning, Santa Elena Canyon ended, and we were paddling toward the dry mouth of Terlingua Creek and into the open desert.

Even as we concluded our trip, there were the visions of a dying river that haunt Steve Harris. Immediately upstream from Terlingua Creek, the mudflats we had slogged through seem to have extended even farther into the river. The current was slow, and the rocks ahead suggested that we were going to be dragging the boats for a stretch before we got to the take-out point. The water seemed warm for March, although it was not near the life-choking 90 degrees that arrived with the low flows and high temperatures of summer. Without some plan that restores the flow of water and life to this river, trips like this one will be no more. ★



The RED DRUM WARS

Technology, law enforcement and education saved the red drum population from collapse.

BY WILL WOODARD

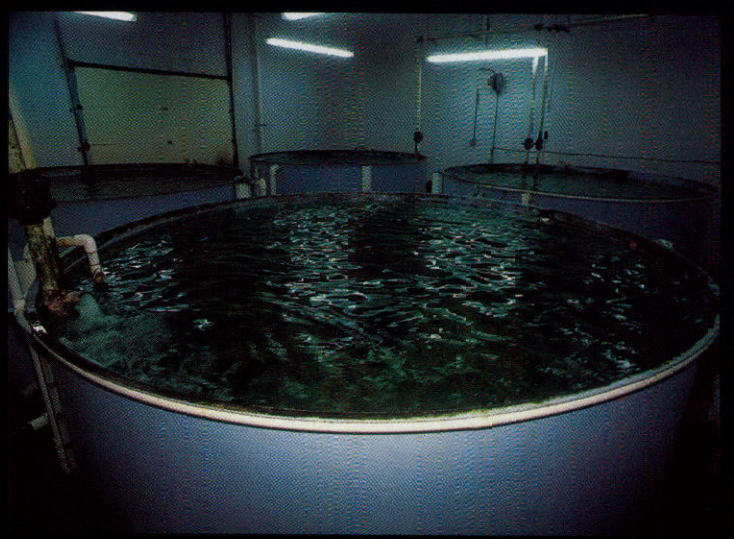
A TRIP TO SEA CENTER TEXAS in Lake Jackson can be a celebration of sorts. Visitors to this facility can see, up close and personal, the present state of the Gulf waters of Texas. They can see into those waters by peering through the depths of the aquarium exhibits housed here. Visitors begin their journey close to shore, at the salt marsh exhibit, which includes oysters, clams and crabs. From there they move slowly out to sea, past the jetty and artificial reef exhibits. The Gulf exhibit, a huge, 50,000-gallon aquarium, houses jack crevalle, groupers and nurse sharks. The center shows its visitors the



vibrancy of the coastal waters, a state that Robert Vega, enhancement director for the Coastal Fisheries Division of Texas Parks and Wildlife, describes as “very dynamic and, at this particular time, in very good health.”

It wasn't always so.





“In the 1970s there was a dramatic decline in numbers of red drum, due to over-fishing and habitat destruction,” Vega says. “Something had to be done. If that trend had continued, the fishery would have collapsed, much like what has happened with the famous Maine cod fishery. Commercial and recreational fishermen on the East Coast are no longer able to catch cod in anywhere near the numbers they once did. We were frightened that the same thing would happen here.”



It didn't. And the story of that near-collapse and successful revival winds down a rather circuitous path, a path that passes through the ecological problems caused by building development, commercial fishermen who were asked to give up their livelihood and the law enforcement officers who enforced that loss, the astonishingly prolific reproductive ability of the red drum and how humans can manipulate that reproduction and, finally, scientific theories hardening into practices that the entire world now turns to as an example of success.

The Crisis

The red drum crisis began years ago, ever before there was a perceptible decline in their numbers. Larry McEachron, science director for the Coastal Fisheries Division of TPW, explains: “Red drum are very long-lived. They can stick around up to 40 years.

Some of the fish you saw in the Gulf in the '70s actually were spawned in the '30s.” So the problem had been growing for quite some time before it began to be noticed in the '70s.

And who did this noticing, serving as a warning beacon for the dangerous shrinking of the fish population?

The anglers of Texas. You and me. “Outdoor writers and anglers had started seeing that their catches of red drum were not as good as they were in the '50s and '60s,” says McEachron. These warning signs from the general populace began to gather steam until 1975, when TPW decided it needed to act. “A decision was made in 1975 to begin a monitoring program. We felt it was time to gather quantifiable data and determine what the status of the red drum actually was,” he says.

“By 1980, we had determined that the red drum population was clearly in trou-

ble,” says Vega. He believes that if the trend were left unchecked there would have been a danger of the Texas Gulf waters ending up in a situation similar to the crisis off the coast of Maine. This is a fish population collapse so pervasive that it led Massachusetts Governor William Weld in 1995 to ask President Clinton to declare the New England coastal fishing territories a natural disaster area. The two culprits there, as in Texas, seemed to be habitat destruction and over-fishing.

Vega describes the first culprit: “As building development occurs, we lose sections of the nursery grounds used by our coastal fish — mainly wetlands and sea grasses. Also, as more and more dams are constructed upriver we are losing the necessary flow of fresh water into our bay systems.”

But, as McEachron (who at that time was the leader of the Harvest Program, a group that interviewed fishermen and



passed its findings on to legislators) explains, there was an even bigger problem: “The information we gathered from 1975 to 1980 indicated that the major source of the decline was due to the commercial fishery. And based on that information, along with the scientific data other groups had gathered, the Texas Legislature banned the sale of spotted sea trout and red drum in 1981.”

The coastal fisheries of Texas were on their way to being saved. But there was a certain subset of the fishing population that didn't exactly see this ban, or earlier ones restricting net fishing, as good news.

The Red Drum Wars

Imagine for a moment that it's 1978. You're a young game warden field officer in Corpus Christi, and you have been charged with enforcing the state's fishing laws. It's 3 a.m. and you're where you always are this time of morning: floating near a gas well located between Padre Island and the mainland, lights off and silent, somehow at the same time both anxious and bored. You wait — and listen.

“I heard the sound of a boat running nearby,” says Jim Robertson. “At this time of morning, what typically would happen is that the illegal fishermen would come out, try to collect their nets and get back in before daylight. I picked up my binoculars and looked to the north and realized it wasn't one boat, but three boats coming at me! I jumped the first one, and we had a boat race of

about a mile and a half before I got him shut down. The other two got away. But here we are, sitting in the mist and fog at 3 o'clock in the morning, and I find myself in a 50-mile-per-hour boat race, lights off and in total darkness. I'm telling you, it'll put your heart right in your throat!”

Just another day at the office for Robertson who today is director of TPW's Law Enforcement Division. Many other Texas game wardens experienced similar events at many times during the '60s, '70s and '80s, when game wardens were seizing more than 580,000 feet of illegal nets per year. Vega says those times often are referred to as the “Red Drum Wars.” Robertson adds that those days were known as the “Net Wars” by his division.

This was the kind of enforcement effort that was needed even after House Bill 1000 banned the sale of red drum in Texas. “From 1981 to 1984 there was a tremendous amount of illegal fishing going on,” says McEachron. “This was encouraged by the fact that a lot of the seafood markets and restaurants were actually buying this fish, no questions asked. Around 1983, there was a big push by the CCA [Coastal Conservation Association of Texas, a group dedicated to the conservation of the marine resources of the Texas Gulf Coast] to get the message out about the magnitude of damage this was having on red drum. Restaurants and seafood dealers realized they were helping to encourage their demise, and they decided they would not buy illegal fish.” The blend of law

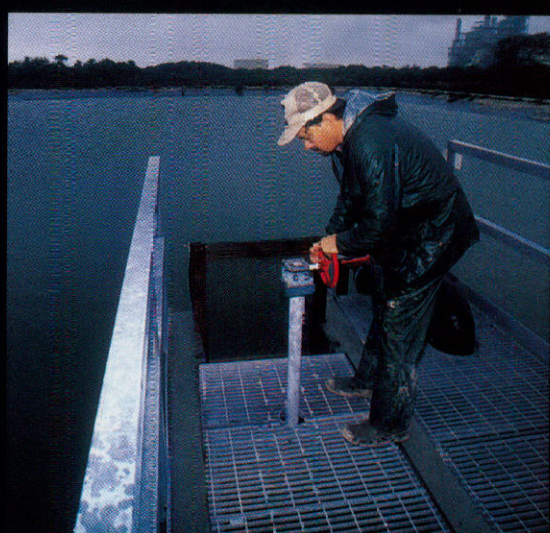
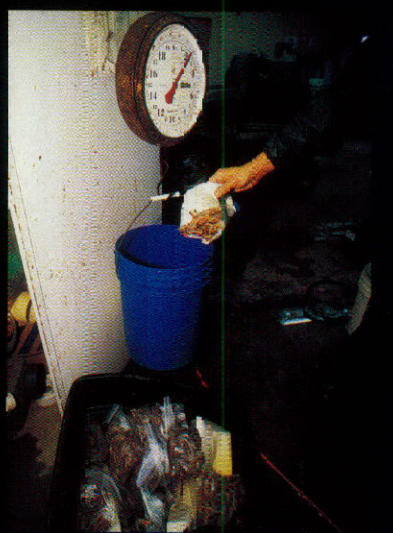
enforcement and education finally did the trick. “That combination really dried up most of the black market.”

Failures of the Past

But as varied as the efforts of law enforcement were, sale and catch restrictions alone would not do the job. The damage already had been done: the red drum numbers had gone into dramatic decline. It was now the scientists' turn at bat, and the difficult question that faced them was how to bring the red drum and other coastal fish back from the brink of destruction.

History was not much help. Our great-grandparents actually could have witnessed the earliest attempts at fish farming in North America: a trout hatchery built in Mumfords, New York, in 1864 was the first of its kind. And the folks of the time had great hopes for their hatcheries. Local fish stocks all around the country were being depleted and the artificial propagation of fish was becoming popular.

But in spite of the efforts made to keep the nation's bays fully stocked, the numbers continued to decline. Finally, during the 1940s, interest in farming as a solution to the nation's fisheries woes began to wane. The fishing managers were left with a huge question: why did the stocking of large numbers of fry (the larval stage of fish) in our nation's coastal waters lead to no increase in the population? The answer came when researchers began to study not how fish live, but how they die.



SEA CENTER TEXAS

Sea Center Texas is a \$13 million facility that opened in spring 1996. It is the result of a unique partnership between Dow Chemical, the Coastal Conservation Association, the U.S. Fish and Wildlife Service, the City of Lake Jackson and Texas Parks and Wildlife. This award-winning facility is located in Lake Jackson and is open to the public free of charge Tuesday through Friday from 9 a.m. to 4 p.m., Saturday 10 a.m. to 5 p.m. and Sunday 1 p.m. to 4 p.m.

Five large aquaria at the visitor center, including a 50,000-gallon Gulf tank containing a variety of large marine fish, depict important marine habitats. The touch tank, where close encounters with marine crustaceans are encouraged, is a big hit with kids and adults alike.

The 20,000-square-foot hatchery building, the largest and finest marine production facility in the world, is home to scores of red drum and spotted seatrout spawners that produce the offspring used for stocking estuaries along the Texas coast.

Some of the fish used in the hatchery and on display in the visitor center were donated to the facility by recreational anglers who participate in the Texas Gulf Coast Roundup. Roundup events are conducted each year in Port Arthur, Texas City, Corpus Christi and South Padre Island.

For more information about Sea Center Texas and the Texas Gulf Coast Roundup, call 409-292-0300 or check the Texas Parks and Wildlife Web site, www.tpwd.state.tx.us.

Mike Ray
Coastal Fisheries Division

A Good Day to Die

The phrase "It's a good day to die" would be a perfect motto for the red drum. As Vega explains, the mortality rate of that fish turns out to be astonishingly high. "More than 99 percent of the eggs that are spawned in the wild do not survive. And that's common for most marine organisms."

For a spawned egg to survive along the Texas Gulf Coast, nature must be very accommodating. And it usually isn't. "Red drum will typically spawn near the passes," McEachron says. (Passes are the openings between islands that connect the Gulf to the bay.) "The females will release their eggs and the males will release their milt and the eggs will become fertilized. The hope then is that the current will draw the growing larvae through the passes into the bay systems themselves. But if you don't have the right environmental conditions they may not get pulled far enough in, or a strong reverse tide may pull them back out. Texas just doesn't have wide expansive passes. They're very narrow, unlike some of the other areas along the Gulf Coast."

So then, the burning question is this: How do we keep these deaths from happening? How can we help every deserving fish to make it from egg into adulthood? The solution, as it turns out, is very simple — and very difficult.

The simple part? Avoid the problem altogether. "What we do is circumvent that 99 percent mortality rate by giving the red drum population a head start. We capture and breed the fish until they are large enough and strong enough to

place back directly into the bays," Vega says.

The difficult part? The specific, intricate steps you must go through to make that happen.

Four Steps to Better Fishing

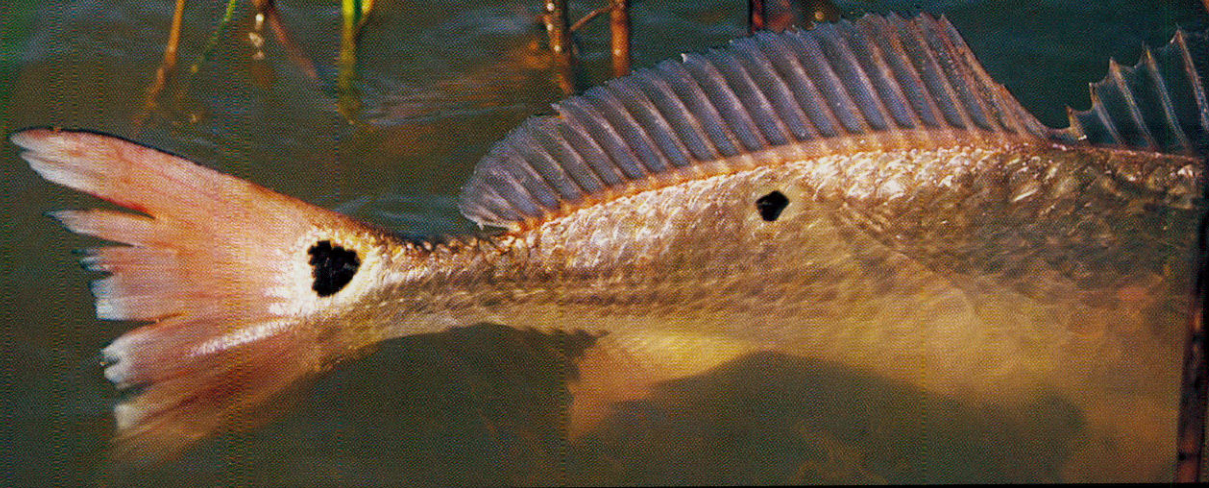
There are four steps Texas fishery managers must go through to assure healthy levels of fish along the Gulf Coast.

Step 1: Catch Fish

The brood fish, or the full-grown, sexually mature red drum, are captured in a variety of ways. But the preferred method, because it causes the least stress for the fish, is just the way you and I would do it — with hook and line. Once enough are gathered, they are shipped back to the various facilities along the coast where they actually breed and grow the fish. Along with the aquariums discussed earlier, Sea Center Texas has the largest red drum hatchery in the world. "The fish are placed into brood tanks," Vega says. "These are 2,500-gallon tanks about 12 feet in diameter and 5 feet high." Only five fish are needed for each tank, usually two males and three females — and a facility like Sea Center has around 40 tanks.

Step 2: Fool Fish

Vega continues: "For red drum, spawning normally occurs in the fall when you have 11 hours of light and the temperature is about 25 degrees centigrade. We condense a regular year into 150 days and then we fool the fish into thinking it's fall by adjusting the lighting and water temperature of their tanks."



This simple-sounding process is actually the culmination of a lot of research. Dr. Connie Arnold of the University of Texas Marine Science Institute was the first person to spawn red drum using light and temperature variations. His process was refined by Florida scientists and then further refined back in Texas into the process used today. This has become the preferred method of spawning, because it can be repeated with the same fish many times a year. Also, unlike other methods such as "stripping," where eggs and sperm are forced out of the fish by external pressure on their bodies, the fish continue to live afterwards to spawn another day, always a plus for the fish.

This procedure is incredibly prolific. As Vega says, "Each female spawns around 5-7 million eggs apiece over a production year."

Step 3: Grow Fish

At this point the young fish change homes more times than an army brat — they will have no less than three residences before they finally are released back into the bays.

They stay at home with their mothers and fathers only briefly. Once the eggs are produced and fertilized, they are skimmed out of their parents' tank. They are then placed into slightly smaller incubator tanks until they hatch and develop physically to the point where they can eat on their own (the larval stage), a process that will take no more than two and a half days. Finally they will be placed into one of Sea Center's 36 large outdoor "grow out" ponds inside of which a brew of tasty rotifers is prepared

for their arrival. Depending on the growing size of the fish, they are continually fed a variety of items until they reach a length of about an inch and a half — the fingerling stage.

Step 4: Release Fish

When the fish reach that size it's time to harvest. The pond is gradually drained over a period of days. Since the pond has the shape of an inverted cone, as more and more water leaves, the fish are herded into a smaller and smaller area. Finally, at the bottom of each pond, they find themselves in a U-shaped canal, just exactly the width of a skim net. Then, early one morning, they are skimmed out of the canal, loaded into tanks, and transported to one of the many bay areas Sea Center services.

This procedure is repeated again and again until the Gulf stocking goals are reached. Last year a new record was set in this area — some 36 million red drum fingerlings were stocked into the coastal waters.

Success

So how successful are these programs? Does all this money and effort really translate into healthier, sustainable ecosystems for the fish in our coastal bays? As Vega relates, determining this is not an easy thing to do. "The main problem is that when you release fish into a bay system they become very hard to track. We're talking about trying to find a fish that is an inch and half long in a bay system that can be 10 miles in diameter."

At the moment there is no one perfect

method for tracking the stocked fish. So many different methods are used — some high-tech, some low-tech — to give a good estimate as to how many fish are surviving and making it into adulthood. One of the simpler methods involves just going back out to the bay and recapturing the fish at specific intervals to monitor their growth.

Other, more high-tech methods involve recognizing stocked fish by detecting specific genes through DNA testing, or marking the stocked fish with a substance that will glow under a UV lamp. "By next March," says Vega, "we hope to be releasing small numbers of radio-tagged fish."

And the numbers gathered by these methods have shown that hatchery fish survive in Texas bays. Some 20 percent to 30 percent of the red drum caught in Coastal Fisheries sampling research can be attributed directly to stocking. This is a number that all of the managers consider a huge success.

And apparently the world thinks so, also. When asked if the Texas restocking effort is one of the best in the nation, Vega responds firmly. "It's actually one of the most successful in the whole world. We are highly regarded around the world for our stock enhancement work. We have a lot of reasons for this, but it all comes down to the support of our supervisors, our volunteers and our sponsors. We have been able to develop a trust with the people of Texas. All that together is why we've been so successful." ★

We can help you reach the promised land.

JUST SOME OF THE HUNDREDS OF BOATS AVAILABLE

**Travis Edition
Cobra 201 S**

\$26,995

Complete with Mercury 200 EFI outboard and custom tandem axle trailer with brakes. Length: 20'1" • Beam: 93" • Fuel: 44 Gallons • In-dash flasher with temp gauge • Lowrance X48 • MAX65 trolling motor • Dual lighted tournament livewells with timers • Hydraulic tilt steering • Battery charger • Stainless steel prop • Large, locking lighted storage compartments • Limited lifetime hull and transom warranty



**New for 2000
Travis Edition
Sprint 270**

\$10,995

Complete with Mercury 75 HP outboard and custom single axle trailer. Length: 16'3" • Beam: 82" • Fuel: 18 Gallons • Lowrance X48 depth finder • 12-volt trolling motor • Aerated livewell • Locking rod and storage boxes with aluminum lids • AME resin • Limited lifetime transom warranty



**Travis Edition
SeaArk ZX170**

\$10,695

Complete with Johnson 60 HP outboard and custom single axle trailer. Length: 17'2" • Beam: 79" • Fuel: 27 Gallons • 100-gauge, all-welded • Aluminum floor and deck • Two large aerated livewells • Lowrance LCG depth finder • 12-volt trolling motor • Locking rod box • Removable ice chest



**Travis Edition
SeaArk 1652 P**

\$6,595

Complete with Mercury 40 HP outboard and custom single axle trailer. Length: 16' • Beam: 72" • 100-gauge, all-welded • Side console with aerated livewell • 12-volt trolling motor • Large, raised front fishing platform • Two fold-down fishing seats



**Travis Edition
Fishmaster 2150 V-Hull**

\$19,995

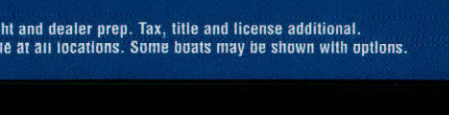
Complete with Johnson 150 HP outboard and custom tandem axle trailer. Length: 21' • Beam: 102" • Fuel: 72 Gallons • Full composite construction • Self-bailing cockpit • 32-gallon insulated fish box with overboard drain • Lockable floor storage • 14-gallon livewell • Removable 90-quart cooler • 10 rod holders • Att 14-gallon livewell • Raw water washdown • Dual-cable steering



**Travis Edition
Promaster 185 Pocket Tunnel**

\$12,995

Complete with Johnson 115 HP outboard and custom single axle trailer. Length: 18'5" • Beam: 94" • Fuel: 40 Gallons • Aerated baitwell • 96-quart removable ice chest with cushion • Non-feedback tilt steering • AME resin • Limited lifetime transom warranty

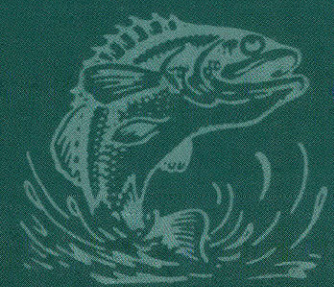


All prices include freight and dealer prep. Tax, title and license additional. All models not available at all locations. Some boats may be shown with options.

No matter where the fish are, Travis Boating Center can get you to them. As one of the world's largest retail boating chains, you'll find an unequalled selection. With our volume buying, you'll also find great prices and financing on boats with our exclusive Travis Edition packages, complete with the motor and accessories you want. From state-of-the-art bass boats to bay boats to aluminum fishing boats, the promised land is closer than you think. To get a closer look, see your nearest Travis Boating Center or visit us online at www.travisboatingcenter.com.

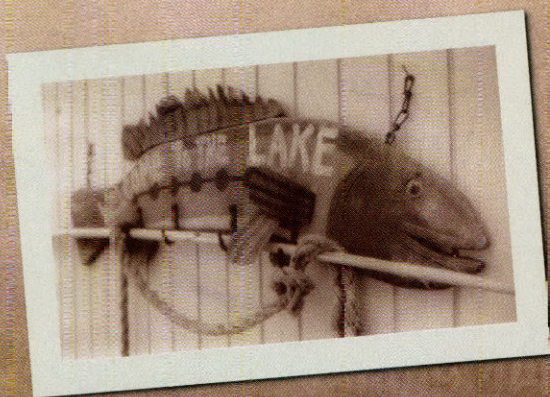
Abilene 915-672-2171
Arlington 817-265-3232
Austin 512-250-9000
Beaumont 409-860-9444

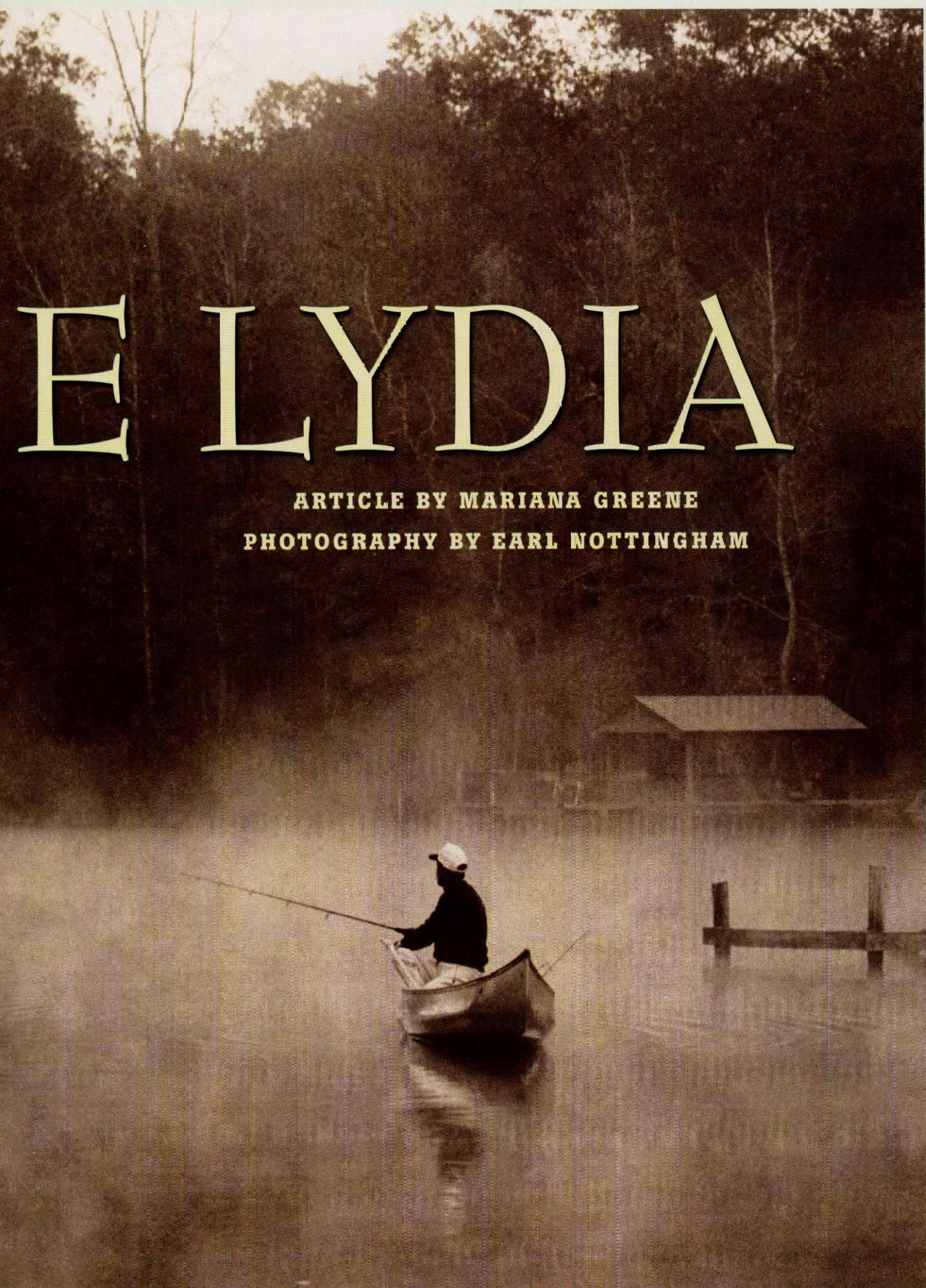
Dallas (Lewisville) 972-436-2628
Houston 281-591-2028
Midland 915-697-3261
San Antonio 210-690-6270



Lessons on LAK

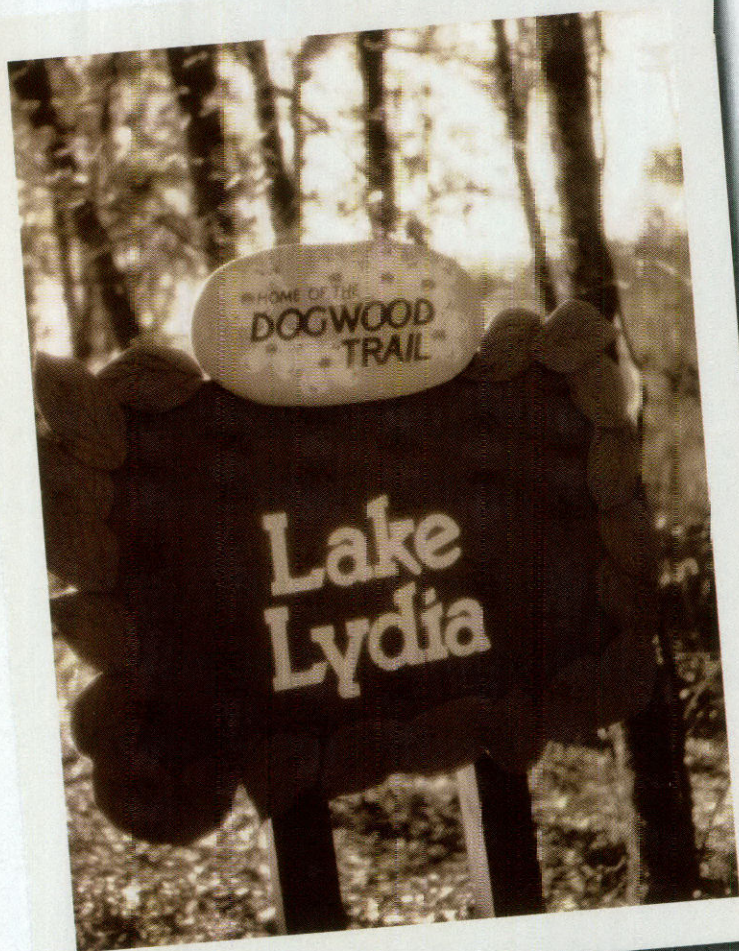
**Our teenage son
anticipates weekends
with no television,
no skate parks, no
video games and no
ready-made gangs of
neighborhood boys.**





ELYDIA

ARTICLE BY MARIANA GREENE
PHOTOGRAPHY BY EARL NOTTINGHAM



Almost anyone would have been frightened if a 25-foot-long, black-and-yellow snake, napping on a tree limb, had suddenly swung its wrist-thick, sinuous body in front of one's face.

I was.

THE SNAKE was, in reality, only some six feet long. And I was a good 20 yards from its grasp, the safety of a sturdy fishing cottage within leap behind me. Furthermore, the only snakes of that size, and that coloration, in that part of Wood County are the nonvenomous Texas rat snake, *Elaphe obsoleta lindheimeri*, and the rare Louisiana pine snake, *Pituophis*

from one crepe myrtle to another. I expected my son, then eight, to be similarly afflicted by the sighting of the black-and-yellow reptile, swaying menacingly as it rearranged its fearsome length on a branch near the water's edge.

He wasn't.

Instead, he was excited about seeing the creature in its native habitat, rather than at the zoo through a panel of

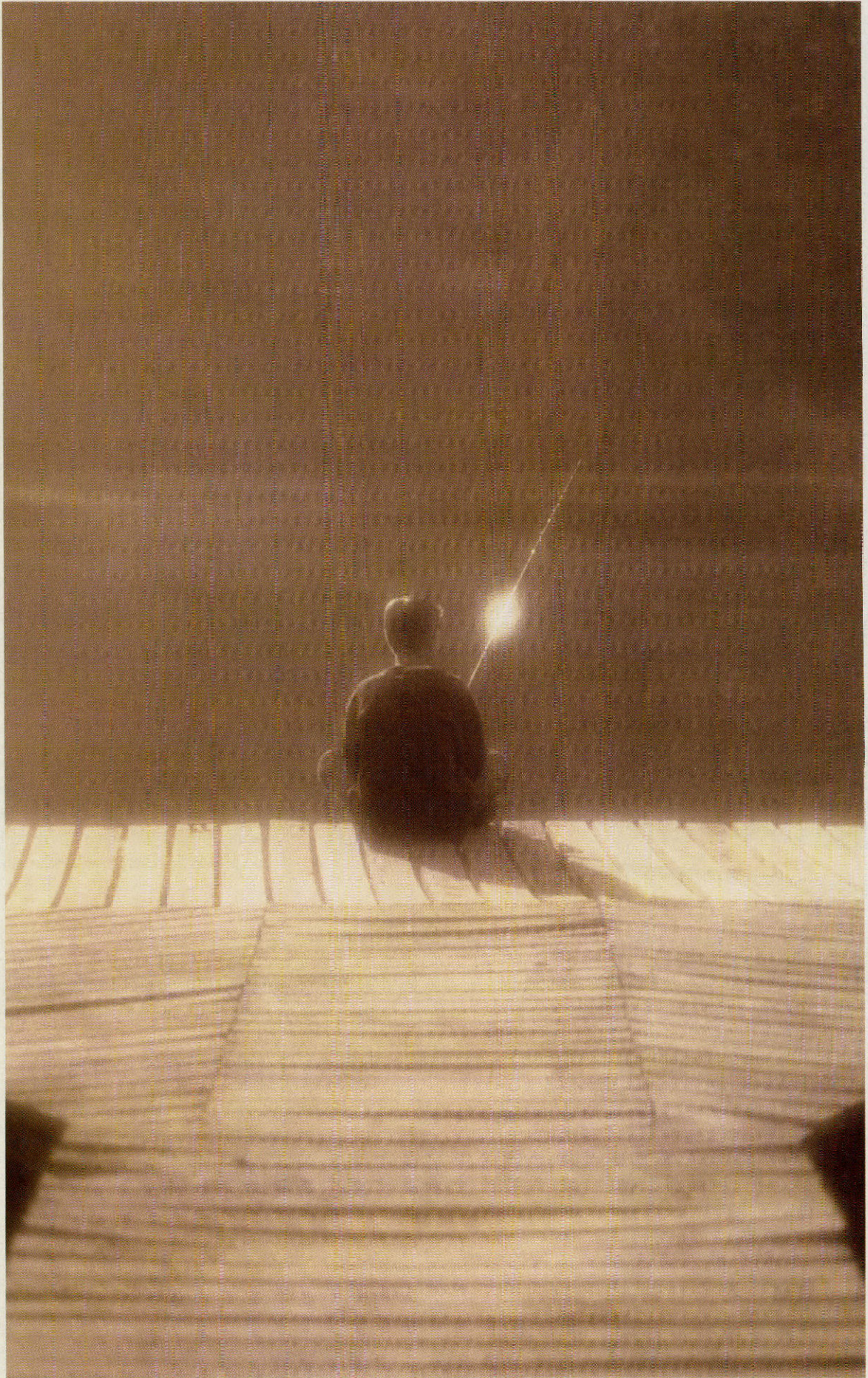
Our modest weekend place in East Texas has been more than a getaway. It has taught us lessons about nature, and it has reminded us that living under the same roof does not a family make, when everyone is going in a different direction.

rubiveni. Don't believe everything that you've read, I said to myself — not even the herpetological identification guide that a friend provided as a housewarming present when my family bought our weekend cottage in East Texas.

I'm a city girl, born and reared, and I've been opposed to snakes since a little, green number fleetingly wrapped itself around my 10-year-old neck decades ago, on its way

glass. Seeing it in the woods also gave him bragging rights over his guest, likewise a city boy.

That was my first of many lessons about the country. You never know when one of those moments will drop into your lap. In the five years that we've owned our modest weekend place in East Texas, it has been more than a getaway or a chance for my husband to fish. It has taught us lessons about nature and ecology, it has been a





not only the youngest, but all three generations of my family. My 90-year-old mother would be indignant if she and her canine companion were not part of the Ma and Pa Kettle diorama that is our Chevy Blazer: three dogs, various boys, three adults, assorted BMX bikes, fishing gear and an ice chest with groceries. We stash a permanent supply of clothing, first aid — for my husband's ill-conceived mountain-man exploits — and poison ivy, chigger, mosquito and tick deterrents in the cottage.

I always marvel at how quickly the week's stress and tension dissolve once the car is unloaded and we begin our rounds. My husband heads off to the boathouse to wrestle with his nemesis, a rebuilt boat motor, while I refill birdfeeders and check for signs of habitation at the bluebird and wood duck boxes and martin apartment house. My mother picks her way slowly, arthritically, over the property, gathering kindling for the woodstove, whether it is June or January. With a slam of the door, my son is off on some adolescent pursuit that invariably involves a dust bath in red dirt or wrapping himself in skeins of poison ivy roots. He won't return until dark.

The country does a number on him, too. Just two hours earlier he might have been whining about how there would be nothing to do.

It's amazing how many diversions the countryside offers. These getaway weekends hone my resourcefulness in ways that never present themselves in the city. It reminds me of my childhood, when I pretended to be a pioneer woman providing the basic

Weekends in the country have made our family slow down and savor the small things, a gift that has benefited not only the youngest, but all three generations of my family.

source of family-centered recreation, and it has reminded us that living under the same roof does not a family make, when everyone is going in a different direction.

Our cottage is near Quitman ("birthplace of Sissy Spacek," its welcoming billboard proclaims) on Lake Lydia, a 100-acre private lake in Wood County. When we bought it, my husband and I promised each other that we would drive out from Dallas every other weekend, without fail, to justify taking on a second mortgage. Sometimes we got a late start, waiting until after Saturday morning soccer games to make the 100-mile drive, but we've adhered to the rule pretty well.

Weekends in the country have made our family slow down and savor the small things, a gift that has benefited

necessities for my family of dolls.

Instead of attending to basic physical needs, however, I've a harder job: enticing my adolescent son to spend time with us. Going to the zoo or a museum no longer holds much cachet, but the strange, foreign realm of the country can sometimes stop him in his tracks.

His grandmother taught him to tie a tidbit of bacon fat to a string for luring a huge crawdad out of its mud chimney. We experimented with natural materials to dye Easter eggs, including onion skins, berries, lichens, aquatic plants and bark. He helped in our project to reintroduce wood ducks to the lake by painting a nesting box with stains that he concocted from earthen pigments, a process borrowed from Native Americans. His boyish



sweetness still sometimes breaks through when he brings home a silky egret feather or a turtle shell for his mother's natural history collections.

At the country house, there is no television, no video games, no skateparks, no movie theaters, no shopping malls, no ready-made gang of neighborhood boys. Most of Lake Lydia's fulltime residents — about half the 50-year-old community's population — are retirees. There is one boy roughly my son's age who lives year-round at the lake. Luckily, they like each other.

But it's easy to import a boy or two for the weekend. And where



Where my son tends to take the pleasures of the country for granted, his guests, impressed by the hawks nesting on the property, coyotes yipping at night and a dark sky full of stars, make him appreciate the rural setting anew



my son tends to take the pleasures of the country for granted, his guests, impressed by the hawks nesting on the property, coyotes yipping at night and a dark sky full of stars, make him appreciate the rural setting anew.

We've seen meteor showers, moon eclipses and a great-horned owl, which glided soundlessly from tree to tree, leaving awestruck humans in its wake. We've watched a wintering osprey dive, and we've been scared out of our wits by a beaver, unseen in the deepening dusk, that thwacked its tail on the water at the intrusion of our kayak. We've encountered copperheads and water moccasins several times, but have called the sheriff only once to look for children who lost their way in the darkening woods. (The kids eventually found their way home, but by then the sheriff was needed to extricate an urban dad who'd gone in after them.)

We chose Wood County because that's where the Blackland Prairie begins to gently roll. It is graced with tall pines that sigh in the wind and hardwoods that autumn sets ablaze. Furthermore, East Texas has a peculiar real-estate arrangement whereby some lakes are developed and owned by corporations. Consumers may buy the improvements and shares in the owning corporation, but do not own the land on which their houses sit.

Without land factored into the pricing, a 50-year-old, one-bedroom fishing cottage with window air conditioning units and a woodstove costs much less than a top-of-the-line





bass boat. Surprisingly, the lack of amenities doesn't hamper our enjoyment of the place. In a way, it's liberating.

Forced hours in the country have brought us closer together as a family. Any pop psychology paperback on understanding teens will tell you that as a child approaches adolescence, he begins to pull away from his parents. It's a normal transition on the way to independence, a healthy step a parent should want her offspring to experience. Their days absorb activities like a sponge and, before you know it, their brains become accustomed to the assault. They are revved up and in need of constant

fetches it back a second time, it's almost warm enough for humans. By May, the boys are racing from dock to dock, getting in shape for their swim team.

June brings afternoons in the hammock; July, the homespun flotilla of crepe-papered boats, a community potluck supper and legal fireworks. With fall, the sweet smell of woodsmoke curls again from our chimney. And while I find the "dead of winter" entirely appropriate language for Dallas, at Lake Lydia the landscape is bright with cardinals, goldfinches, chickadees, titmice and woodpeckers.

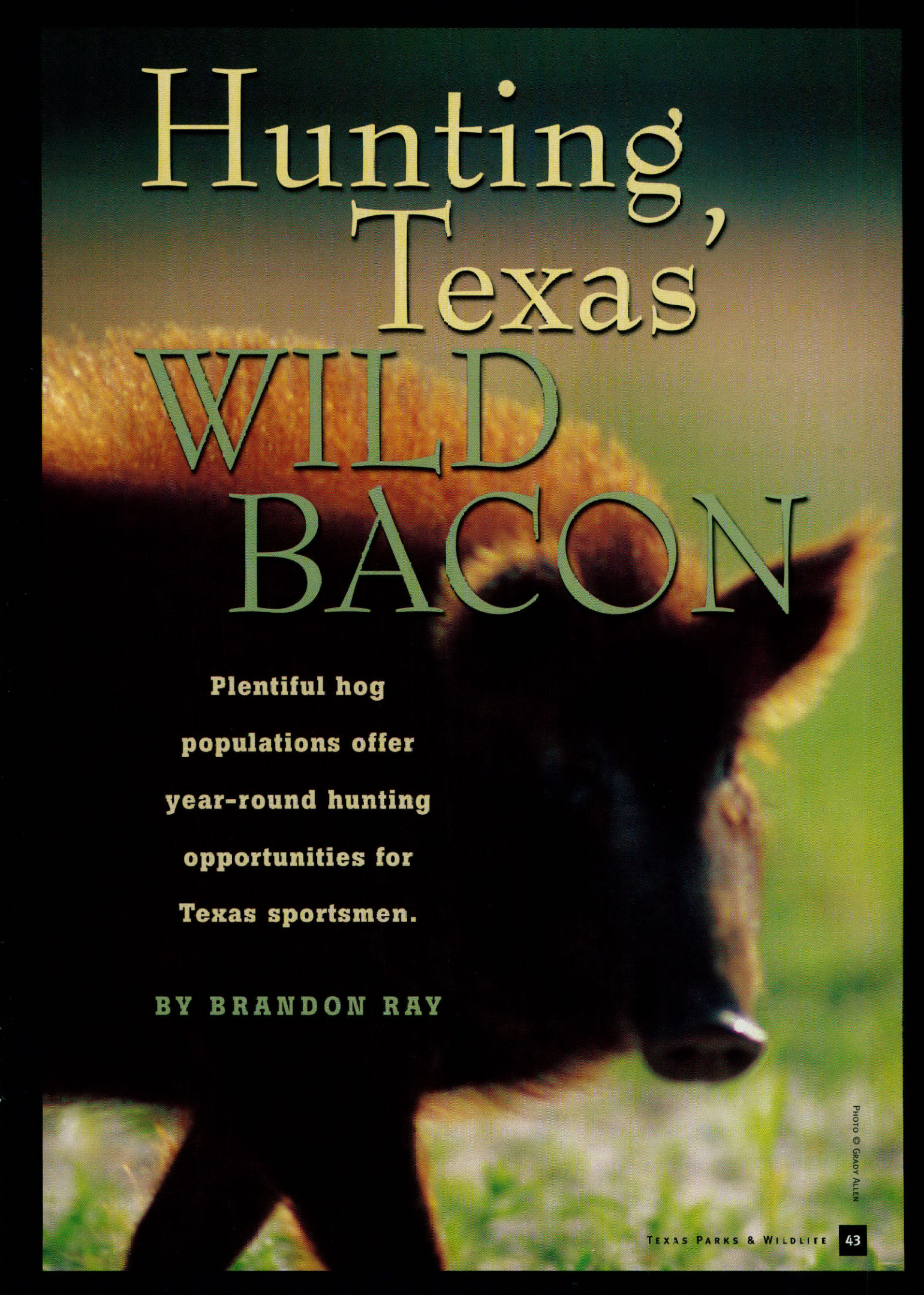
We've seen meteor showers, moon eclipses and a great-horned owl, which glided soundlessly from tree to tree, leaving awestruck humans in its wake. We've watched a wintering osprey dive, and we've been scared out of our wits by a beaver, unseen in the deepening dusk.

stimulation until they drop into bed from exhaustion. They have too many demands upon their time — and they like life that way.

In East Texas, we mark the passage of seasons as much by taking cues from nature as from a calendar. We clean out the purple martins' apartment by Valentine's Day, in hopes that a scout will take a shine to our address. In March, the dogwood trees envelop the community in a cloud of white sprigged with lilac redbud blooms. We test the temperature of the lake water in April by heaving a sick out to the middle of our inlet. If the Weimaraner

Spending time in the country has been an unexpected gift to my family. We thought when we bought the Lake Lydia property that we were investing in an entertainment venue. Little did I imagine that the country would provide me with mechanisms for keeping the lines of communication open with my son, one of the most difficult challenges of parenthood.

More than the lessons in ecology, tolerance, natural history and self-reliance, Lake Lydia has given us a place to be a family, fostering a closeness that time and distance will not dilute. ★



Hunting, Texas' WILD BACON

**Plentiful hog
populations offer
year-round hunting
opportunities for
Texas sportsmen.**

BY BRANDON RAY

WILD SWINE POPULATIONS are booming in Texas. Experts estimate that one million feral hogs roam Texas today, enough to make them the second most plentiful big game animals, after deer. From the thick cactus and mesquites of South Texas to the pines of East Texas, the river bottoms and rolling terrain of North Texas and the Panhandle, and even into parts of the desert mountains of the Trans-Pecos, wild hogs are to be found in every part of Texas.

Reproductive ability is one reason for their rapidly expanding range. According to Texas Parks and Wildlife biologist Calvin Richardson of Midland, feral hog sows have as many as two litters per year, with four to 10 piglets born in each litter. Habits such as rooting up crops, eating expensive winter cattle feed and even occasionally killing newborn fawns, young lambs and kid goats make them unpopular among farmers and ranchers.



Feral hogs are prolific, with sows producing up to two litters a year with as many as 10 young in each litter. Boars have continuously growing tusks that can be sharp. Hunting feral hogs with dogs can be exciting but risky, if the dog tangles with an angry boar.



WILD OR FERAL HOGS are not native to Texas.

Early Spanish explorers probably were the first to introduce hogs here, about 300 years ago. As colonists became more numerous, hog numbers increased. They provided meat and lard. During the fight for Texas independence, as people fled for safety into the United States and Mexico, many hogs escaped or were released.

In the 1930s, European wild hogs, or "Russian boars," were introduced into Texas by ranchers and sportsmen. Many escaped and began free-ranging and breeding with feral hogs. Today's Texas hogs, members of the family Suidae, include the European wild hog, feral hogs and European-feral cross-breeds. After generations in the brush, these hogs take on the behavior of wild hogs.

Hogs of the Russian strain have long snouts and large heads that taper to narrow back ends. Other varieties have floppy ears and markings that appear like those of



domestic pigs. Combinations of these characteristics are also common. Coat coloration can be black, brown, gray, red, white, spotted and combinations of these. Most literature on feral hogs lists their size at maturity as about three feet high, with a weight of about 300 pounds, but I've witnessed the weighing of one old, gray boar that bottomed-out a scale's 350-pound maximum.

Most hog hunters consider old boars to be the true trophies. Boars are usually loners, traveling alone except for when they find a sow in heat. Their solitary nature makes hunting them a challenge.

A boar has four continually growing tusks that can be extremely sharp and may reach five inches before they are broken or worn from use. Old boars also develop a thick layer of cartilage and scar tissue on their front shoulders and neck from continual fighting with other hogs. This feature, more pronounced on old boars, is usually referred to as their "shield." For clean kills, broadside and quartering shots behind the thick shoulder are best.

HUNTING STRATEGIES FOR WILD HOGS

There are many different ways to go about bagging wild pork. Begin by



scouting for signs in likely areas, such as thick vegetation near creeks or rivers. Signs include wallowing, rooting, rubs, crossings, trails and droppings. Wallows are found in muddy areas and are made where hogs root and roll in the mud. Rubs are made when hogs scratch or rub themselves on tree trunks, telephone poles and fence posts, leaving mud and hair clinging. The height of a rub often indicates the size of a hog. Rooting is

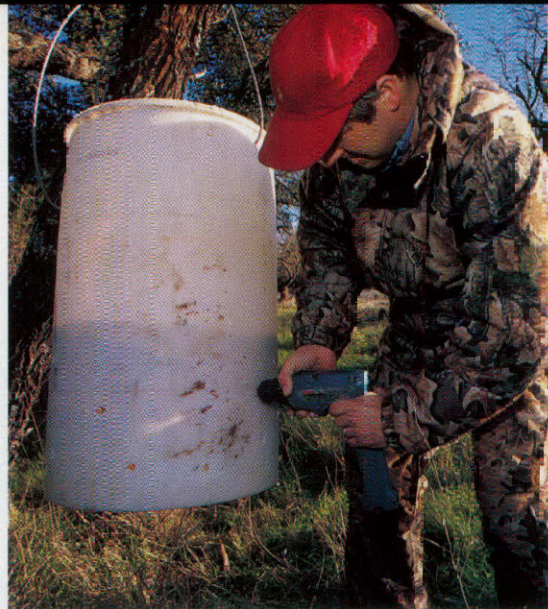


Fighting between boars is common, and older animals often have a thick layer of scar tissue on the shoulders and neck. To find a place to hunt, look for hog wallows such as the one at left.

easily recognizable because it looks as if the soil has been plowed. Most often, rooting takes place over a large area, and some rooting holes can be as much as three feet deep. A hog track is similar to a deer track, except the toes are more rounded and wider in comparison to length. Droppings appear very much like that of a small calf, being dropped in several small piles. Hogs are most active after dark, but also will feed during the early morning and late afternoon hours.

Once you've determined where hogs are spending their time, decide on an effective hunting technique. Pursuing

TOP PHOTO © RUSSELL A. GRAVES; BOTTOM PHOTOS © GRADY ALLEN



Another way hunters can find hogs is to look for areas where they have rooted, above. Hogs can be found around deer feeders, and some people build hog feeders to attract the animals.

HOG HUNTING REGULATIONS

Feral hogs may be hunted by any means or methods at any time of year. There are no seasons or bag limits, but a hunting license and landowner permission are required to hunt them. Hunting feral hogs at night in Texas is legal, but in areas where deer also are found, game wardens ask that you notify them before you start your hunt.

hogs with well-trained hounds is one exciting and adventurous method, but not for every hunter. The basic idea is to take the dogs to a known hog "hangout" and cut a fresh track on a hog and then turn the dogs loose. In a perfect scenario the hog is pursued until it is "bayed" and stops running. At this point the hunter can close in and take his shot.

However, an old boar with a nasty temper would rather fight than run. It is not uncommon for the dogs to get cut by a hog's tusks and even be killed in a run-in with an irate boar.

Spot-and-stalk hunting near river bottoms and agricultural areas is another effective way to bag a picker. Strong 10-power binoculars, a variable-powered spotting scope and a small tripod go with me on all my hog hunts.



Hogs seldom are far from the thick vegetation near a muddy creek or river bottom. When you find a thickly wooded creek or river bottom near fields of winter wheat or peanuts, you have found a possible hotspot. When stalking into a group of hogs in this type of situation, pay close attention to the wind. While a hog's eyesight is relatively poor, their sense of smell is excellent.

Another technique for pursuing Texas hogs is by hunting over bait. Feral hogs are omnivorous. Their preferred fare includes grasses, forbs, roots, acorns, insects, snails, eggs, live mammals and birds, as well as carrion. Wild hogs also are fond of crops like corn, milo, rice, soybeans, potatoes, watermelons and cantaloupes. Corn feeders and even table scraps are very productive for attracting hungry hogs.



Corn or milo, soured in water and then buried underground, also is a good bait.

THE HUNT

I recently made an exciting hunt for wild pork in the middle of March. One of my hunting partners called to report that he had seen several big hogs while scouting a North Texas ranch for turkey season. Several days

later I was on my way to one of my best hog hunting days ever.

The morning hunt started out cool with a brisk north wind. I was perched in a 10-foot-tall tripod stand to give me a commanding view of the surrounding mesquites and a nearby wheat field. The plan was to scan the landscape at first light with strong binoculars and, if I located a suitable target, to climb down and execute a stalk into the wind.

A big "calico"-colored boar had been spotted in this area the previous evening. About 30 minutes after the sun came up and warmed my shivering body I saw him, slowly moving through the mesquites en route to a corn feeder located about a half mile from the wheat field. I started the stalk. The 20-mile-per-hour north wind teared my eyes and made my teeth chatter as I crawled into the wind toward the feeding hog. Whenever the boar turned his body to feed I would scurry forward a few more steps. Finally, I was crouched behind a short mesquite tree with nothing but 25 yards of ankle-high brown grass separating me from my target.

Several times the fat hog lifted his head and stared in my direction, but with the cold wind blowing into my face he never picked me out. I eased my 60-pound bow to full draw and waited for the brown blob to turn broadside. When he did, I released the arrow, sending a two-bladed broadhead

through his heart. The arrow had hit lower and farther forward than I had wanted it to, but the results were deadly. He ran only 75 yards before he tumbled over. The big boar tipped the scales at 300 pounds before field dressing.

Later that same morning we moved to an area that my buddy wanted to scout for turkeys. The area consisted of a long, narrow creek with muddy banks, a few open mesquite trees and an occasional towering oak. Earlier in the year quail hunters had complained of seeing lots of wild hogs in the area. It sounded great to me! The terrain was ideal habitat for both hogs and Rio Grande gobblers. After driving up to the edge of a small pond to investigate for turkey tracks we spotted a black hog on the opposite side of the pond.

I grabbed my quiver and bow and raced through the brush to intercept the lone boar. After I closed the distance to 50 yards the hog walked up a rocky bluff near the edge of the pond. He walked parallel to me and about 10 feet higher than me on the rocky ledge.

I noticed a small opening in the thorn bushes ahead of him, in the direction that he was walking. I tiptoed to the spot and waited. Less than a minute later he walked into the small opening and stopped to scratch an itch. It was all the invitation I needed to drop the string. The arrow penetrated to the bright fletching and the hog turned to face the direction that the arrow had come from. For a moment the hog stared at me from less than 20 yards. Just when I thought he was going to come down the ledge towards me he turned away and charged through the thick thorn bushes. Two hundred yards down the trail I found the black boar, slightly smaller than the first. I had cleanly taken two boars with archery gear and it wasn't even lunch time yet. It was quite a morning. ★

BRANDON RAY is a freelance writer, photographer, and artist who lives in the Panhandle.

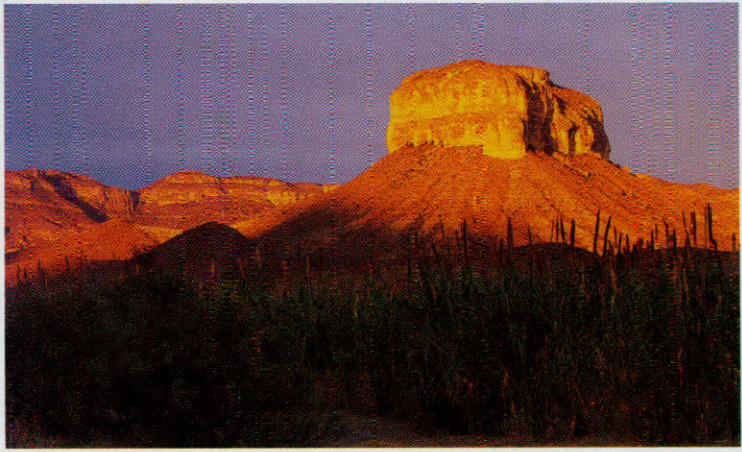
TOP PHOTO © BRANDON RAY

**Concessions to human comfort take a backseat
to the needs of plants and animals at the rugged and
remote Black Gap Wildlife Management Area.**

BY RICHARD ZELADE

The unknown





A VISIT TO BLACK GAP WILDLIFE MANAGEMENT AREA in southern Brewster County is not for the faint of heart. In some years, several hundred people will journey into this rocky corner of what the Spaniards called *la tierra desconocida*, the unknown country.

The name, Black Gap, refers to a natural cleft in a long, high, dark-colored basalt ridge created 50 million years ago when huge amounts of lava blasted to the surface along fractures in a volcanic zone that stretched from the Big Bend of the Rio Grande to New Mexico. Black Gap offers no running water (other than 25 miles of the Rio Grande) or sanitary facilities, and the unpaved roads are, as the old saying goes, more hole-y than righteous. Cell phones are worthless there; closest coverage begins about 40 miles north of area headquarters, near Marathon.

COUNTRY

The reward, for the few who come, is a Wild West experience unsurpassed in Texas, with cathedral-like mountains, sheer cliffs, rare plants and animals, and lots of solitude. It's possible to travel Black Gap all day without encountering another soul. Concessions to human comfort take a back seat to the needs of the plants and animals that live here, consistent with the mission of TPW's wildlife management areas. Desert bighorn sheep, desert mule deer, peregrine falcons and black bears are Black Gap's highest-profile inhabitants.

Established in 1945, the "Gap" hosts research and developmental



work dedicated to the conservation and restoration of all the region's indigenous wildlife species. It has established populations of javelina, mourning dove, scaled quail and fascinating plants like the candelilla, guayule and resurrection plant.

Most days, the human population of this sprawling, roughly 106,000-acre WMA just east of Big Bend National Park consists of eight or 10 hardy souls who come to hunt (in season), fish or float the Rio Grande, watch birds or other wildlife, ride horses, mountain bike, explore, or just drink in the dramatic, desolate Chihuahuan Desert scenery. Three TPW employees live on site, but are seldom found in its office; visitors normally check in and out on the honor system.

Maravillas Canyon Trail, the most popular and human-friendly trail in Black Gap, runs 18 miles from the WMA's headquarters down to the Rio Grande. It is fairly smooth and well-graded, with short, graceful, mostly rubble-free dips and ascents, allowing drivers and cyclists to enjoy

the views instead of eagle-eyeing the trail ahead. The vistas really unfold about five miles from headquarters, when the trail makes a hard right to follow Maravillas Canyon down to the river. Maravillas is Spanish for "marvels."

The area's first Anglo ranchers found several waterholes along the canyon. These watering spots soon dried up as thirsty herds of domestic cattle drank all they could. So the ranchers drilled wells and put up the windmills still standing along the Maravillas Canyon Trail. Despite the cessation of ranching, Maravillas Canyon's waterholes have never returned. To compensate, over the years TPW staff has implemented a variety of low-cost, low-maintenance water collection methods to ensure permanent sources of water for wildlife: carving out earth tanks, placing header dams across ravines and building guzzlers to catch what they can of the region's scant eight-to-10-inch annual rainfall. Much of this rain comes on a couple of late-spring afternoons in short, explosive

deluges, at rates of two inches an hour or more, sometimes accompanied by golf ball-size hail. The runoff from these storms soon covers thousands of acres of the desert floor, like a shallow sea rushing toward the Rio Grande. As the clouds clear, rainbows arch across the sky and the air fills with the antiseptic perfume of the ubiquitous creosote bush, whose leaves are still used in Mexico to cleanse wounds, cure stomach aches and kill germs.

The Maravillas Canyon Trail ends at thick stands of tall cane and the Rio Grande. Canyons rise and fall along the Big Bend of the Rio Grande, and by Maravillas Canyon the river is easily wadeable. On the Texas side, a narrow trail turns north from the mouth of Maravillas Canyon, providing access to a string of 23 fish camps (consisting of a roofed shelter and a fire ring) that dot the Rio Grande's narrow, sandy beaches for the next 20 miles.

The beach sands in this lowlands area, known as Las Vegas de los Ladrones, or Outlaw Flats, are frequ-

led with colorful, river-polished pebbles and rocks: cinnabar red and pink, copper brown, obsidian black, milky quartz, malachite green, lava gray, fool's gold, and most shades in between, reflecting the geologic diversity of the lands draining into the Rio Grande. Perhaps there's a flake or two of gold as well, for this is the land of the fabled gold mine described by J. Frank Dobie in *Coronado's Children*. Catfish and carp are the fisher's fare.

The best times for most types of nature watching are during the early morning and twilight hours, either at the river or near one of the area's tanks or guzzlers. (A guzzler is a cistern adaptation in which a rainwater catchment apron, made of large sheets of galvanized metal resting on low posts driven into the ground, feeds rainwater to a storage tank, which dispenses water to a float-operated drinking trough.) One of the easiest

tanks to access is Dell Tank, located right next to the Maravillas Canyon Trail about four miles from headquarters, and accessible all year. Other good ones are Bee Cave Tank and Guzzler (a little over a mile northwest of headquarters, near campsite 4), Lavern Tank (in the west part of Black Gap, near campsite 29), and several unnamed water tanks along the boundary with Big Bend National Park, above campsite 28.

One of the Southwest's most magnificent big game animals, the elusive desert bighorn sheep, *Ovis canadensis*, inhabits rough, rocky, mountainous terrain. As little as 100 years ago, they roamed throughout the mountains of the Trans-Pecos, but the encroachment of ranchers and their domestic sheep led to extirpation of the native bighorn population by the 1950s. Efforts to reintroduce bighorns in Texas began in 1957.

Bighorn sheep prefer bluffs and steep slopes with sparse vegetation and an unobstructed view. They spend hot days in the shade of cliffs and trees, descend at twilight, and browse through the night into early morning. Trans-Pecos menu staples include sotol, ocotillo, mountain mahogany, Mexican tea, trumpet flower, mock orange, wild onions and penstemon. The sheep especially prize the juicy fruits of yucca, prickly pear and pitaya cactus. Billy Pat McKinney, a wildlife technician who lives on site and works with the sheep restoration program, notes that the sheep use their hoofs and horns to dig up and knock the spines off the prickly pear and barrel cactus fruits and flesh.

Bighorns need relatively little water for survival, satisfying much of their needs from the green and succulent vegetation on which they feed. During the hottest months of summer, ewes and lambs generally come to water sources daily. But the rams sometimes do not come to water for several days at a time. They may stray 20 miles away from a water hole before doubling back for another drink. But when rams drink, they fill up, guzzling up to four gallons of water at each visit, while a ewe drinks approximately one gallon.

The chances of seeing some of the sheep that inhabit Black Gap are best (though slim) near the Maravillas Guzzler or Walker Mill, from a concealed downwind position. With their acute eyesight, the cautious bighorns can detect humans from long distances and will quickly move to safety.

The "Birds of Black Gap" checklist includes more than 250 species, but the highest profile bird is the peregrine falcon, *Falco peregrinus*. One of the fastest of all birds, with a dive speed clocked at 209 miles per hour, peregrines also can fly long distances, at a steady 60 miles per hour in level flight. Populations of the endangered peregrine falcon are increasing in some other states, notes Bonnie McKinney, endangered resource spe-



Visitors to Black Gap WMA enjoy classic Chihuahuan Desert scenery. Peregrine falcons and desert bighorn sheep are present but can be hard to spot, unlike the ubiquitous roadrunner. On the previous page is a view from Black Gap looking across the Rio Grande to the Mexican town of La Linda.



cialist for the Trans-Pecos, but the falcons' success in the Trans-Pecos has not been stunning. No one knows why. The Big Bend region along the Rio Grande seems to be ideal habitat, with water and ample food. Peregrine falcons hunt other birds, including blackbirds, jays, swifts, doves, shorebirds and songbirds. And there are miles of high, sheer cliffs that the falcons prefer for nesting, rising like the walls of medieval castles.

The best way to see the falcons in action is to drift down the river in a small boat. Visitors may put in at

Guzzlers, below, catch rainfall and are good spots to watch for wildlife in the early morning and twilight hours. Visitors may launch boats at the fish camps along the Rio Grande. Drifting down the river in a small boat is a good way to look for peregrines. Among the interesting desert plants at the WMA are candelilla, yucca and cenizo.

almost any of the fish camps, or at the privately owned Heath Canyon property at the end of RM 2627, just before the La Linda international bridge.

The waxy candelilla, *Euphorbia antisiphilitica*, and the rubbery guayule, *Parthenium argentatum*, are two of Black Gap's most interesting native plants. Once very common, both were harvested to near extinction here and elsewhere in the Big Bend during the first half of this century, to make chewing gum, shoe polish, lip balm, electrical insulation and phonograph records. Growing in

clumps, like long, gray/green pencils, candelilla is well-adapted to this very marginal environment. Its reed-like stems are coated with a wax that minimizes evaporation of the plant's internal moisture. After rendering, the refined wax is water-resistant and at once very hard and malleable. Native people made candles with the wax and used candelilla solutions to treat venereal diseases.

Guayule, or the Mexican rubber plant, is a knee-high shrub whose bark is a source of rubber and latex. Guayule rubber has been used since the 1900s to make tires and other



GETTING THERE

Black Gap Wildlife Management Area is located in Brewster County, along the Rio Grande. It is just east of Big Bend National Park and approximately 55 miles south of Marathon. Take U.S. Highway 385 south from Marathon, then veer left on RM 2627 and follow the signs.

For information call 915-376-2216.

rubber products, while the latex has been used to make gloves, condoms, surgical balloons, catheters, and tubing. Guayule latex is valuable because people with allergies to traditional



latex items (made with latex from the Brazilian rubber tree) are not allergic to guayule latex.

From March 1 through August 31, visitors are restricted to the 20-mile Maravillas Canyon Trail. Rugged, scenic Horse Canyon Trail (which also leads to the Rio Grande) is also normally open all year, but can be closed for such things as nesting peregrine falcons or washouts. The entire WMA is closed November 28-December 14, December 26-29, and January 22-25, except to hunters with a special permit.

Desert bighorn sheep restoration projects have indefinitely closed the territory north of Maravillas Canyon,

as well as Frog Canyon, on the area's southern edge. A black bear study has closed the Rainbow Tank area to the west.

Visitors to Black Gap should come adequately prepared with food reserves, first-aid kits, and plenty of water. Entry is limited to licensed hunters, fishers and holders of limited permits and Silver or Gold Conservation Passports. These permits must be purchased ahead of time. Horses run free throughout the area, but equestrians are limited to an approximately 12-mile stretch of the Maravillas Canyon Trail. Bicyclists may ride all official trails that are not closed to the public.

While the Maravillas Canyon Trail that leads down to the Rio Grande is easily driven by pickups and cars with adequate clearance, the Horse Canyon Trail down to the river requires four-wheel drive, high-clearance vehicles. The wildest trail of all links the Maravillas Canyon and Horse Canyon trails, surmounting a high ridge along the way. The expansive view from the ridge top is just reward for the treacherously rumbled trip up and down it, a loose-rock challenge for hikers, mountain bikers, or four-wheelers. Only the experienced should play here. ★



Texas' Wild TURKEYS

BY SUZANNE WINCKLER



A nine-year-old of my acquaintance tells me that her mother, in the early morning haste to get afield, has been known to stalk the family's Thanksgiving wild turkey in her bedroom slippers. A wildlife artist remembers in minute detail her first wild turkey nest, a crocheted mat of grasses in the thorny embrace of a prickly pear in which 10 eggs lay snug on a bed of soft brown feathers. A Texas Parks and Wildlife biologist confides that springtime turkey hunting, which involves a

and nattering in what can only be described as a mournful way, presumably for the pile of feathers beneath them that was a former and recently dispatched comrade.

Something else is dreamlike about turkeys. As with many reveries assessed upon wakening, turkeys are ridiculously implausible. Nonetheless, the sum of their mismatched parts adds up somehow to beauty. Both sexes, gobbler and hen, have naked, wrinkled, warty heads, spindly necks attached to portly bodies, and scaly, gangly legs. But they comport themselves, to borrow a line from the

yet fly with stealth and grace.

As is typical of most male birds, the tom or gobbler is the more brilliant of the genders. The etched feathers of his plumage glisten topaz, emerald, garnet, turquoise. When courting females, he struts, puffs out his feathers, fans his tail, and makes a ruckus of vocalizations for which the term "gobbling" is a faint description. By contrast, the subtle, discerning, quietly clucking hen is a study in browns, raiment designed to blend with her shadowy palace haunts.

Whether glimpsed by accident, or seen well and often, wild turkeys tend

They are regal. They walk in the woods with the rhythmic lurch of royalty bearing heavy robes.

lot of rambling over hill and dale, serves as his annual weight-loss program. A statistician and birder maintains that no turkey watching in Texas is complete without an evening spent on the Canadian River, where at last light hundreds of wild turkeys stream in to roost in the streamside cottonwoods.

My own turkey-watching memories are akin to dreams. From a blur of 30-year-old memories, I can still see a gobbler gliding silently across a cedar brake in the Hill Country. Nor am I likely to forget a treetop chorus of hens, mewing

poet E. A. Robinson, "as one by kings accredited."

They are regal. They walk in the woods with the rhythmic lurch of royalty bearing heavy robes. The statistician-birder cited above recalls a single tom on the Kenedy Ranch in South Texas "slowly loping across the dunes bordering the Gulf of Mexico," and he adds, "The sight of a turkey attempting, quite successfully, to cross the shifting sands is a vision I will never forget." And then there is the puzzlement of aerodynamics. Turkeys look positively earthbound,

to make lasting impressions and, in Texas, perhaps the most propitious state in the nation for turkey watching, people seem to especially cherish the visions and memories they hold of these lovely, quirky birds.

Texas has the largest wild turkey population in the world. Three circumstances account for this good fortune. The breadth of Texas provides an array of habitats — from the pine-oak forests of the Big Thicket to the semiarid mountains of the Trans-Pecos — capable of supporting three of the five sub-



species of *Meleagris gallopavo* in North America. One of these subspecies, the Rio Grande wild turkey, *M. g. intermedia*, never suffered the drastic declines, caused by loss of habitat and overhunting, that its closest kin experienced. And, lastly, Texas has a long tradition of taking care of its turkeys.

The eastern wild turkey, *M. g. silvestris*, is a bird of the forest. The turkey of our pilgrim lore, it extends from the Atlantic coast to the middle of the continent, where the forests play out. By the early 20th century, the eastern wild turkey was on the brink of extinction because of the felling of forests, unregulated hunting and the burgeoning of feral hogs, which compete with turkeys for acorns, beechnuts and other forest food. In the pine-oak woodlands of East Texas, on the western edge of its range, *silvestris* had slipped to fewer than 100 individuals by the 1940s. After World War I, state agencies began reintroduction programs, which have brought the eastern wild turkey back to sustainable populations numbering roughly 3 million birds. In East Texas, the greatest numbers are found in the Sabine and Angelina National Forests.

Merriam's wild turkey, *M. g. merriami*, is a bird of western mountains. In Texas it was apparently native only in the Guadalupe Mountains,

where it was hunted out by the turn of the century.

In the big middle of Texas, between the mountain islands of *merriami* and the dark forests of *silvestris*, lies the stronghold of the Rio Grande turkey, the subspecies that puts Texas on the *Meleagris* map. From the High Plains of the Panhandle, across the Edwards Plateau, down through the sprawling South Texas Brush Country, the Rio Grande turkey reigns supreme. When bird watchers and hunters tell turkey stories, they are most likely discussing encounters with *intermedia*.

As the world's best refuge for Rio Grande turkeys, Texas is, not surprisingly, a sanctuary for *intermedia* watchers, hunters, and photographers (often one in the same person), and springtime is when they can match wits with these wild, four-foot-tall, 20-pound birds.

While turkey hunting is a rite of autumn, especially for those who wish to eat a wild *Meleagris* for Thanksgiving, it does not require the same degree of skill and patience that the springtime pursuit of turkeys requires. This is a simple matter of biology. In the fall, with the rigors and responsibilities of courtship and rearing of young behind them, toms and hens are less wary. Fall hunters often take wild turkeys with rifles incidentally to hunting deer.

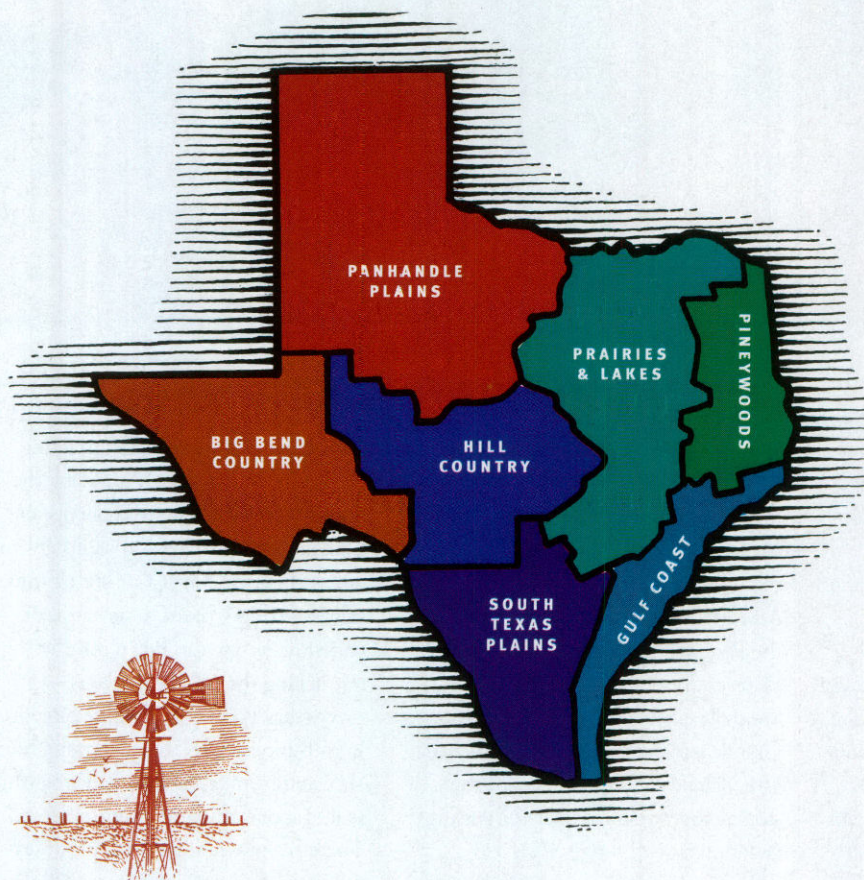
In spring, the wild turkey imperative is to mate and produce offspring. The toms are preoccupied with attracting hens. The hens are cyclically assessing the toms. At this season, the challenge of the hunter or watcher is to skillfully and discreetly insert himself or herself into this courtship tableau. One can wait patiently, or one can lure a tom by mimicking the calls of the hens.

As Texas Parks and Wildlife biologist John Burk explains the springtime hunt, "It is not so much about marksmanship as it is about calling the tom in close." There is a growing industry of turkey-call manufacturers and tutors to teach people how to make the requisite her sounds, which include an array of *chucks*, *kee-kees*, *putts*, *yelps* and *purrs*. The calling apparatus — diaphragm calls, wind calls, slate or wooden strikers, box calls — are the equivalent of a trout fisherman's hand-tied lures.

A tom that thinks he is courting a hen is a sight to behold. He is an explosion of energy, a soloquy of gobbling, a fandango of feathers. Bob Warren, secretary of the Alamo Chapter of the Texas Wild Turkey Federation and avid proponent of spring turkey hunting, describes the experience of calling in a tom in this way: "It has all the thrills of elk hunting without the mountain climbing and heavy lifting." ★

GETAWAYS

From Big Bend to the Big Thicket and the Red to the Rio Grande



PANHANDLE-PLAINS

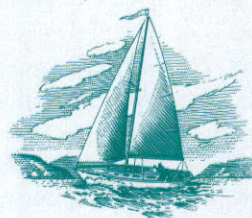
FEBRUARY EVENTS

- Feb. 5:** Wildlife Call Demonstration, San Angelo SP, San Angelo, 915-949-4757.
- Feb. 12:** Dino Walk, San Angelo SP, San Angelo, 915-949-4757.
- Feb. 19:** Petroglyph Tour, San Angelo SP, 915-949-4757.
- Feb. 26:** Stargazing Party, San Angelo SP, San Angelo, 915-949-4757.
- Feb. 26:** Longhorn and Buffalo Seminar, San Angelo SP, San Angelo, 915-949-4757.
- Feb. 26:** Nature Hike, Palo Duro Canyon SP, Canyon, 806-488-2227.

MARCH EVENTS

- March:** Stargazing, call for dates and times, Palo Duro Canyon SP Canyon, 806-488-2227.
- March:** Storytelling, call for dates and times, Palo Duro Canyon SP Canyon, 806-488-2227.
- March 4:** Dino Walk, San Angelo SP, San Angelo, 915-949-4757.
- March 11:** Macey's Ridge Hike, San Angelo SP, San Angelo, 915-949-4757.
- March 18:** Longhorn and Buffalo Seminar, San Angelo SP, San Angelo, 915-949-4757.
- March 25:** Nature Hike, Palo Duro Canyon SP, Canyon, 806-488-2227.

March 25: Petroglyph Tour, San Angelo SP, San Angelo, 915-949-4757.



PRAIRIES AND LAKES

FEBRUARY EVENTS

- Feb.:** Kreische Brewery Weekend Tour, every weekend, Monument Hill/Kreische Brewery SHP, La Grange, 409-968-5658.

Feb.: Historical Tour, every Saturday and Sunday, Stephen F. Austin SHP, San Felipe, 409-885-3613.

Feb. 4, 11, 18, 25: February Film Fest, Texas Freshwater Fisheries Center, Athens, 903-676-BASS.

Feb. 5, 12, 19, 26: Fairfield Lake Bald Eagle Tour, Fairfield Lake SP, Fairfield, 903-389-4514.

Feb. 5: Kids' Trout Fishing Day, Rusk/Palestine SP, Rusk, 903-683-5126.

Feb. 6, 13: Kreische House Tour, Monument Hill/Kreische Brewery SHP, La Grange. 409-968-5658.

Feb. 12: Stagecoach Rides, Fanthorp Inn SHP, Anderson, 409-873-2633.

Feb. 26: Fly Fishing Fest, Texas Freshwater Fisheries Center, Athens, 903-676-BASS.

MARCH EVENTS

March: Kreische Brewery Weekend Tour, every weekend, Monument Hill/Kreische Brewery SHP, La Grange, 409-968-5658.

March: Historical Tour, every Saturday and Sunday, Stephen F. Austin SHP, San Felipe, 409-885-3613.

March 4, 5: Texas Independence Day Celebration, Washington-on-the-Brazos SHP, Washington, 409-878-2214.

March 4: Western Days Barbecue Cook-off, Fort Parker SP, Mexia, 254-562-5751.

March 5, 12: Kreische House Tour, Monument Hill/Kreische Brewery SHP, La Grange, 409-968-5658.

March 11: Stagecoach



Rides, Fanthorp Inn SHP, Anderson, 409-873-2633.

March 11: Build a Birdhouse, Cooper Lake SP/Doctors Creek Unit, Cooper, 903-395-3100.

March 18: Build a Birdhouse, Cooper Lake SP/South Sulphur Unit, Sulphur Springs, 903-945-5256.

March 25: Spring Swap Meet, Texas Freshwater Fisheries Center, Athens, 903-676-BASS.

March 25: 2nd Annual Colonial Texas Heritage Festival, Stephen F. Austin SHP, San Felipe, 409-885-3613.



PINEYWOODS

FEBRUARY EVENTS

Feb.: Bald Eagle Tour, call for dates and times, Martin Creek Lake SP, Tatum, 903-836-4336.

Feb. 5: Birdhouse Day, Martin Dies, Jr. SP, Jasper, 409-384-5231.

Feb. 13, 27: Walk on the Wild Side, Martin Dies, Jr. SP, Jasper, 409-384-5231.

Feb. 19: Guided Nature Trail Hike, Village Creek SP, Lumberton, 409-755-7322.

Feb. 19: Floating the Forks, Martin Dies, Jr. SP, Jasper, 409-384-5231.

MARCH EVENTS

March 5, 12, 26: Walk on the Wild Side Martin Dies, Jr. SP, Jasper, 409-384-5231.

March 11, 25: Guided Nature Trail Hike, Village Creek SP, Lumberton, 409-755-7322.

March 11: Cowboy Campfire Stories, Poetry and Songs, Martin Dies, Jr. SP, Jasper, 409-384-5231.

March 12: Project WILD Activities, Martin Dies, Jr. SP, Jasper, 409-384-5231.

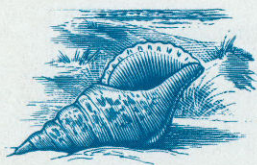
March 18: Alligator Etiquette, Martin Dies, Jr. SP, Jasper, 409-384-5231.

March 18: Floating the Forks, Martin Dies, Jr. SP, Jasper, 409-384-5231.

March 17, 24, 31: Dogwood Railroad Excursions, Texas State Railroad SHP, Rusk, 1-800-442-8951.

March 25: Big Thicket Tales, Unsolved Mysteries and Ghost Stories, Martin Dies, Jr. Jasper, SP, 409-384-5231.

March 25-26: Spring Flower Show, Palestine Council of Garden Clubs, Palestine, 903-723-8876.



GULF COAST

FEBRUARY EVENTS

Feb.: Nature Programs, every Saturday and Sunday, Brazos Bend SP, Richmond, 409-553-5101.

Feb.: Plantation house, barn and grounds tours, Varner-Hogg Plantation SHP, West Columbia, 409-345-4656.

Feb. 5, 19: Whooping Crane and Wildlife Bus Tour, Matagorda Island SP, Port O'Connor, 361-983-2215.

Feb. 9, 21: Intracoastal Whooping Crane Tour, Matagorda Island SP, Port O'Connor, 361-983-2215.

Feb. 19: Wild Boar Safari, Fennessey Ranch, Refugio, 361-529-6600.

Feb. 20: Beachcombing, Matagorda Island SP, Port O'Connor, 361-983-2215.

MARCH EVENTS

March: Nature Programs, every Saturday and Sunday, Brazos Bend SP, Richmond, 409-553-5101.

March: Plantation house, barn and grounds tours, Varner-Hogg Plantation SHP, West Columbia, 409-345-4656.

March 3: Intracoastal Whooping Crane Tour, Matagorda Island SP, Port O'Connor, 361-983-2215.

March 4: Whooping Crane and Wildlife Bus Tour, Matagorda Island SP, Port O'Connor, 361-983-2215.

March 4: Wild Boar Safari, Fennessey Ranch, Refugio, 361-529-6600.

March 5, 19, 23: Beachcombing, Matagorda Island SP, Port O'Connor, 361-983-2215.

March 11: Spring Nature Tour, Fennessey Ranch, Refugio, 361-529-6600.

March 12: Houston Area Fords of the 50s Club 17th Annual Old Car Picnic, San Jacinto Battleground SHP, La Porte, 281-479-2431.

March 18, 25: Spring Migration Birding Count, Fennessey Ranch, Refugio, 361-529-6600.

March 18: History of Matagorda Island, Matagorda Island SP, Port O'Connor, 361-983-2215.

March 25: 7th Annual Rivers, Lakes, Bays 'n' Bayous Trash Bash, San Jacinto Battleground SHP, LaPorte, 281-479-2431.



HILL COUNTRY

FEBRUARY EVENTS

Feb.: Birding Tours, call for dates and times, X Bar Ranch, off IH-10 near Sonora, 888-853-2688.

Feb.: Gorman Falls Hike, every Saturday and Sunday, Colorado Bend SP, Bend, 915-628-3240.

Feb.: Wild Cave Tours, every Saturday and Sunday, Colorado Bend SP, Bend, 915-628-3240.

Feb. 4-5: Sam Bass Treasure Hunt, Longhorn Cavern State Park, Burnet, 512-756-4680.

Feb. 5: Birdhouse Day, Lyndon B. Johnson SHP, Stonewall, 830-644-2252.

Feb. 21: Austin Fly Fishers meeting, 512-918-1832.

Feb. 26: Bird Banding seminar, Kerrville-Schreiner State

Park, Kerrville, 830-257-5392.

MARCH EVENTS

March: Wild Cave Tours, every Saturday and Sunday, Colorado Bend SP, Bend, 915-628-3240.

March: Gorman Falls Hike, every Saturday and Sunday, Colorado Bend SP, Bend, 915-628-3240.

March: Birding Tours, call for dates and times, X Bar Ranch, off IH-10 near Sonora, 888-853-2688.

March: Spring Break at X Bar Ranch, off IH-10 near Sonora, call for dates and times, 888-853-2688.

March 4, 5: Quilt Show, Lyndon B. Johnson SHP, Stonewall, 830-644-2252.

March 11-12: Artisans Festival, Lady Bird Johnson Wildflower Center, Austin, 512-292-4200.

March 14: Stargazing, Kerrville-Schreiner SP, Kerrville, 830-257-5392.

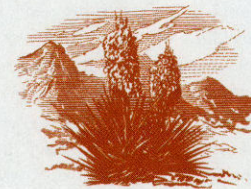
March 18: Annual Living History Day, Fort McKavett SHP, Fort McKavett, 915-396-2358.

March 18: Music by the River, Kerrville-Schreiner SP, Kerrville, 830-257-5392.

March 18: Cycles in Nature, Kerrville-Schreiner SP, Kerrville, 830-257-5392.

March 18-19, 25-26: Introduction to Birdwatching, Pedernales Falls SP, Johnson City, 830-868-7304.

March 21: Austin Fly Fishers meeting, 512-918-1832.



BIG BEND COUNTRY

FEBRUARY EVENTS

Feb.: Fate Bell Cave Dwelling Tour, every Wednesday through Sunday, Seminole Canyon SHP, Comstock, 915-292-4464.





Feb.: Rock Art Tour, every weekend, Hueco Tanks SHP, El Paso, 915-857-1135.

Feb. 4-6: Private Guide Training, Barton Warnock Environmental Education Center, Lajitas, 915-424-3327.

Feb. 5, 12, 19, 26: White Shaman Tour, Seminole Canyon SHP, Comstock, 915-292-4464.

Feb. 5, 26: Presa Canyon Tour, Seminole Canyon SHP, Comstock, 915-292-4464.

Feb. 5, 6, 19, 20: Guided Weekend Hikes, Franklin Mountains SP, El Paso, 915-566-6441.

Feb. 5: Bat Houses and Bird Houses, Fort Leaton SHP, Presidio, 915-229-3613.

Feb. 12: Upper Canyon Tour, Seminole Canyon SHP, Comstock, 915-292-4464.

Feb. 18: A Stop Along the Chihuahu Trail, Fort Leaton SHP, Presidio, 915-229-3613.

Feb. 19: Panther Cave Boat Tour: Seminole Canyon SHP, Comstock, 915-292-4464.

MARCH EVENTS

March: Bird Banding, call for dates and times, Davis Mountains SP, Fort Davis, 915-426-3337.

March: Fate Bell Cave Dwelling Tour, every Wednesday through Sunday, Seminole Canyon SHP, Langtry, 915-292-4464.

March: Rock Art Tour, every weekend, Hueco Tanks SHP, El Paso, 915-857-1135.

March 4, 11, 18, 25: White Shaman Tour, Seminole Canyon SHP, Langtry, 915-292-4464.

March 4, 5, 18, 19: Guided Weekend Hikes, Franklin Mountains SP, El Paso, 915-566-6441.

March 11: Upper Canyon Tour, Seminole Canyon SHP, Langtry, 915-292-4464.

March 18, 19: The Nitty-Gritty of Adobe, Fort Leaton SHP, Presidio, 915-229-3613.

March 18: Panther Cave Boat Tour, Seminole Canyon SHP, Langtry, 915-292-4464.

March 18: Living History Day, Fort McKavett SHP, Fort McKavett, 915-396-2358.

March 25: Presa Canyon Tour, Seminole Canyon SHP, Langtry, 915-292-4464.



SOUTH TEXAS PLAINS

FEBRUARY EVENTS

Feb.: El Canelo Ranch Bus Tour, every other Wednesday, Bentsen-Rio Grande Valley SP, Mission, 956-585-1107.

Feb.: Kiskadee Bus Tour, every Tuesday and Friday, Bentsen-Rio Grande Valley SP, Mission, 956-585-1107.

Feb. 5: 1880s Wild West Extravaganza, Presidio La Bahía, Goliad, 361-645-3752.

MARCH EVENTS

March: El Canelo Ranch Bus Tour, every other Wednesday, Bentsen-Rio Grande Valley SP, Mission, 956-585-1107.

March: Kiskadee Bus Tour, every Tuesday and Friday, Bentsen-Rio Grande Valley SP, Mission, 956-585-1107.

March 18: Battle of Coletto Creek Reenactment, Fannin Battleground SHP, Goliad, 361-645-2020.

March 21, 22, 23: Youth Shooting Sports Event, Chaparral WMA, Artesia Wells, 830-676-3413.

March 25-26: Goliad Massacre Reenactment, Presidio La Bahía, Goliad, 362-645-3752.

March 25: Spring turkey season opens, 512-389-4505.

SP STATE PARK

SHP STATE HISTORICAL PARK

SNA STATE NATURAL AREA

WMA WILDLIFE MANAGEMENT AREA

TECHNOLOGY UPDATE

Bring a drained battery back to life without opening your hood

The remarkable Auto Starter® eliminates the need for dangerous jumper cables and can provide independent power for a variety of uses.

Imagine this...after a long flight home, you arrive at the airport parking lot, get in your car and turn the key and nothing happens. Guess what? Your car battery's drained. It's cold, dark and you're alone. Do you flag down a stranger and hope he has jumper cables? Do you walk back to the airport, phone a tow truck and wait? No...you simply reach into your glove box and take out your Auto Starter®. You plug it into your car's cigarette lighter and, in a matter of minutes, you're on your way.

A good start. Before Auto Starter, you either had to call a tow truck or try to get a jump from another vehicle. Tow trucks are slow to arrive and very expensive. Jumper cables, even heavy-duty ones, are dangerous and involve getting under the hood. Plus, there has to be another car around to provide the jump. Battery acid can burn your skin and ruin your clothes. If the cables are not connected correctly they can damage your car's expensive electrical system or, even worse, cause an explosion. With Auto Starter, you don't need a jump—you don't even have to open the hood. You simply plug the unit

into the cigarette lighter, wait a few minutes and you're on your way. Leave the unit plugged in for 30-120 minutes while driving and it recharges automatically.

Portable power. Auto Starter has many other uses. It's an independent 12V DC power supply that can operate TVs, radios, cellular phones and laptops. Almost any appliance that runs off of an adapter can operate independently with Auto Starter.

Auto Starter also makes it easier to work on your car. Plug it in before you change the car battery, and you won't have to reprogram your car's clock, radio or alarm system. You wouldn't think of driving around without a spare tire—why not have a spare battery that fits right in your glove box?

Try it risk-free. Considering the cost of a tow, Auto Starter will pay for itself the first time you have a problem. It is backed by a one-year manufacturer's limited warranty and Comtrad's exclusive risk-free home trial. If you are not fully satisfied for any reason, return it within 30 days for a full refund, "No Questions Asked."

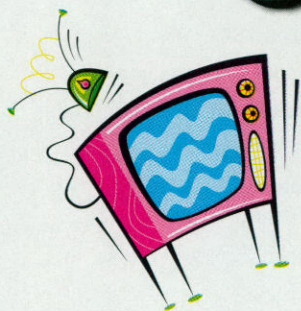


Auto Starter® \$49.95 \$6 S&H
Buy two or more. \$39.95 each
Please mention promotional code 5804-17573.

For fastest service, call toll-free 24 hours a day
800-992-2966

comtradindustries
 2820 Waterford Lake Drive, Suite 102 Midlothian, VA 23112

SIGHTS AND SOUNDS



The Front Line of News and Views

TELEVISION

Look for These Stories in the Coming Weeks:

Jan. 30 – Feb. 6:

Star gazing in the West Texas desert; birding along the Great Texas Coastal Birding Trail; how Houston's Clear Creek is fast becoming one of the last of the bayous.

Feb. 6 – 13:

Wildlife photography secrets from Wyman Meinzer; why birdwatchers love the hummingbird; hanging out on cliffs.

Feb. 13 – 20:

A rainbow of Texas wildflowers; an ancient ceremony in a slightly newer setting; the critically endangered Attwater's prairie chicken, found only in Texas.

Feb. 20 – 27:

Volunteers who make a difference; the finer points of stone-skipping; transforming a playful puppy into a champion hunting dog.

"TEXAS PARKS & WILDLIFE"

Watch our Emmy Award-winning companion television series on your local PBS affiliate. All times p.m. unless otherwise noted. In stereo where available.



See the fascinating hummingbirds of Texas the week of February 6 - 13.

Amarillo: KACV, Ch. 2 / Sun. 4:00

Austin: KLRU, Ch. 18 / Mon. 12:00 / Sat. 8:00

College Station: KAMU, Ch. 15 / Thurs. 7:00

Corpus Christi: KEDT, Ch. 16 / Thurs. 7:30 / Fri. 11:30

Dallas/Fort Worth: KERA, Ch. 13 / Fri. 11:00
Also serving Abilene, Denton, Longview, Marshall, San Angelo, Texarkana, Tyler, Wichita Falls, Sherman

El Paso: KCOS, Ch. 13 / Sun. 6:00

Harlingen: KMBH, Ch. 60 / Sun. 12:30
Also serving McAllen, Mission

Houston: KUHT, Ch. 8 / Sun. 5:00
Also serving Beaumont/Port Arthur, Galveston, Texas City, Victoria

Killeen: KNCT, Ch. 46 / Sun. 4:00
Also serving Temple

Lubbock: KTXT, Ch. 5 / Sat. 6:30

Odessa: KOCV, Ch. 36 / Fri. 1:30 / Sat. 5:00
Also serving Midland

San Antonio: KLRN, Ch. 9 / Thur. 12:00
Also serving Laredo

Waco: KCTF, Ch. 34 / Sat. 3:00

Schedules are subject to change, so check local listings.

RADIO

"PASSPORT TO TEXAS"

Your Radio Guide to the Great Texas Outdoors

Join Joel Block weekdays for a 90-second Journey into the Texas Outdoors. Producer Kathleen Jenkins. Check this listing for a station near you or tune in on our Web site: www.passporttotexas.com

Abilene: KACU-FM 89.7 / 7:06 a.m. & 1:44, 6:01 p.m.

Amarillo: KACV-FM 89.9 / 9:20 a.m.

Austin: KUT-FM 90.5 / 1:58 p.m., (12:58 p.m. Fr.), KVET-AM 1300 / 6:00 a.m. • *Austin American-Statesman's* Inside Line 512-416-5700 category 6287 (NATR)

Beaumont: KLVI-AM 560 / 5:40 a.m.

Brady: KNEL-AM 1490 / 7:20 a.m. & 8:50 p.m., KNEL-FM 95.3 / 7:20 a.m. & 8:50 p.m.

Brenham: KWHI-AM 1280 / 6:50 a.m.

Bryan: WTAW-AM 1150 / 5:45 p.m.

Canton: KVCI-AM 1510 / 6:40 a.m.

Canyon: KWTS-FM 91.1 / 7:10 a.m.

Carthage: KGAS-AM 1590 / 6:46 a.m., KGAS-FM 104.3 / 6:46 a.m.

Center: KDET-AM 930 / 5:15 p.m.

Coleman: KSTA-AM 1000 / 7:45 a.m. & 5:15 p.m.

Columbus: KULM-FM 98.3 / 7:20 a.m.

Comanche: KCOM-AM 1550 / 6:30 a.m.

ABOUT YOUR SUBSCRIPTION

TEXAS

Get the most out of your subscription with this handy guide to *Texas Parks & Wildlife* magazine's customer services.

CONTACTING THE EDITORS

We welcome your questions and comments about articles or editorials within our publication. Address letters to:

EDITOR
Texas Parks & Wildlife magazine
3000 S. IH 35, Ste. # 120
Austin, TX 78704

We can also be reached via E-mail at <maga-zine@tpwd.state.tx.us> or via our web site at <tpwmagazine.com>

ORDERING BACK ISSUES

Back issues of *Texas Parks & Wildlife* magazine may be purchased for \$5 each (shipping & handling included). Prepayment by check or money order is required; please allow 3 weeks for processing. You can browse past articles and photos at our Web site at: <<http://tpwmagazine.com>> by clicking 'Past Issues.' To order, please send your request and payment to:

Texas Parks & Wildlife magazine
Back Issues Department
3000 S. IH 35, Ste. 120
Austin, TX 78704

USING YOUR MAILING LABEL

Your magazine label is a valuable source of information for you and for us. The second line of the address label indicates your account number, followed by the month and year of your subscription's expiration date.

CHANGING YOUR ADDRESS

All address changes, title changes, etc. may be called in to our toll-free customer service center at 800-937-9393. Or, submit changes to us online at <tpwmagazine.com>.

RECEIVING A LOST ISSUE

You should receive your copy of *Texas Parks & Wildlife* by the last week of the month prior to the cover date. We are always happy to replace lost issues if notified within 60 days of issue date.

IMPORTANT NUMBERS

CUSTOMER SERVICE DEPARTMENT
800-937-9393
7 a.m. - 11 p.m. Mon./Fri.,
8 a.m. - 6 p.m. weekends

We value your business! If for any reason you do not get satisfaction from your call, please contact our Circulation Director, Susanne Harm at 512-912-7006 or via e-mail at susanne.harm@tpwd.state.tx.us

SIGHTS & SOUNDS

Commerce: KETR-FM 88.9 / 10:15 a.m.

Corpus Christi: KEDT-FM 90.3 / 5:34 p.m., KFTX-FM 97.5 / 5:35 a.m.

Crockett: KIVY-AM 1290 / 8:15 a.m., KIVY-FM 92.7 / 8:15 a.m.

Dimmitt: KDHN-AM 1470 / 12:31 p.m.

Dumas: KMRE-FM 95.3 / 10:30 a.m., KDDD-AM 800 / 10:30 a.m.

Eagle Pass: KINL-FM 92.7 / 7:15 a.m.

Eastland: KEAS-AM 1590 / 8:30 a.m., KEAS-FM 97.7 / 8:30 a.m.

Edna: KGUL-FM 96.1 / 8:15 a.m.

El Campo: KULP-AM 1390 / 2:00 p.m.

Fairfield: KNES-FM 99.1 / 6:49 a.m.

Floresville: KWCB-FM 89.7 / 1:30 p.m.

Floydada: KFLP-AM 900 / 10:15 a.m. & 4:15 p.m.

Ft. Stockton: KFST-AM 860 / 12:50 p.m., KFTS-FM 94.3 / 12:50 p.m.

Freeport: KBRZ-AM 1460 / 10:15 a.m. & 7:45 p.m.

Gainesville: KGAF-AM 1580 / 7:00 a.m.

Galveston: KGBC-AM 1540 / 1:45 p.m.

Gatesville: KRYL-FM 98.3 / 7:09 a.m.

Graham: KSWA-AM 1330 / 8:40 a.m., 5:20 p.m.

Hallettsville: KHLT-AM 1520 / 8:15 a.m., KTXM-FM 99.9 / 8:15 a.m.

Harlingen: KMBH-FM 88.9 / 4:58 p.m.

Hereford: KPAN-AM 860 / 2:50 p.m., KPAN-FM 106.3 / 2:50 p.m.

Hillsboro: KHBR-AM 1560 / 9:30 a.m.

Houston: KTRH-AM 740 / 11:40 a.m.

Huntsville: KSHU-FM 90.5 / 11:55 a.m. & 5:55 p.m.

Jacksonville: KEBE-AM 1400 / 7:25 a.m.

Junction: KMBL-AM 1450 / 6:46 a.m. & 3:46 p.m., KOOK-FM 93.5 / 6:46 a.m. & 3:46 p.m.

Kerrville: KRNH-FM 95.1 / 5:31 a.m. & 12:57, 9:57 p.m.

Lampasas: KCYL-AM 1450 / 7:10 a.m., KACQ-FM 101.9 / 7:10 a.m.

Malakoff: KLVQ-AM 1410 / 7:20 a.m.

Marshall: KCUL-AM 1410 / 7:15 a.m., KCUL-FM 92.3 / 7:15 a.m.

McAllen: KHID-FM 88.1 / 4:58 p.m.

Mesquite: KEOM-FM 88.5 / 5:30 a.m., 2:30, 8:30 p.m. M-Th, (5:30 a.m. & 4:45 p.m. Fr.)

Midland: KCRS-AM 550 / 6:43 a.m. & 1:43, 6:43 p.m.

Mineola: KMOO-FM 99.9 / 5:10 p.m.

Nacogdoches: KSAU-FM 90.1 / 3:00 p.m.

Ozona: KYXX-FM 94.3 / 12:09 p.m.

Palestine: KLIS-FM 96.7 / 6:20 a.m.

Pecos: KIUN-AM 1400 / 10:30 a.m.

Pleasanton: KBUC-FM 103.7, KBUC-FM 98.3 / variable

Rockdale: KRXT-FM 98.5 / 5:04, 6:50 a.m.

San Angelo: KUTX-FM 90.1 / 1:58 (12:58 p.m. Fr.)

San Antonio: KSTX-FM 89.1 / 9:04 p.m. Th.

Seguin: KWED-AM 1580 / 7:55 a.m.

Sonora: KHOS-FM 92.1 / 12:09 p.m.

Sulphur Springs: KSST-AM 1230 / 4:45 p.m.

Texarkana: KCMC-AM 740 / 8:30 a.m. or 12:15 p.m.

Uvalde: KVOU-AM 1400 / 5:33, 8:30 a.m. KVOU-FM 105 / 5:33, 8:30 a.m.

Victoria: KVRT-FM 90.7 / 5:34 p.m., KTXN-FM 98.7 / TBA

Waco: KBCT-FM 94.5 / 6:10 a.m.

Wichita Falls: KWFS-AM 1290 / 6:15, 7:45 a.m.

Yoakum: KYKM-FM 92.5 / 8:15 a.m.

"Passport to Texas" is available at no cost to stations across the state. For information contact Donna Endres at 512-454-1922, fax 512-454-2552, or write to P.O. Box 5966, Austin, Texas 78763, e-mail <passport@io.com>

THIS SERIES IS MADE POSSIBLE
IN PART BY GRANTS FROM



THE DOW CHEMICAL COMPANY

OUTDOOR MARKETPLACE

Goods and Services for the Outdoor Enthusiast

CALL FOR MORE INFORMATION & MECHANICAL SPECIFICATIONS: 512-912-7003

ACCOMMODATIONS



240 W. Main,
Fredericksburg,
Texas 78624
www.bandbfbg.com
e-mail:bandbfbg@kctc.com
(830) 997-4712

"Come as a Guest...
Leave as a Friend!"

Fredericksburg—Alte Welt Gasthof (Old World Inn).
Luxurious suites, Main Street. Romantic European
Antique Decor-Vintage Fabrics, Hot Tub.
www.fbg.net/altewelt **888-991-6749**

San Antonio—Adams House. King William
Historic District, Riverwalk, trolley, antiques,
full breakfast.
www.san-antonio-texas.com **800-666-4810**

KNOLLE FARM AND RANCH Bed, Barn, and Breakfast

Upscale inn on historic ranch near **Corpus Christi**.
Superb birdwatching, horseback riding, canoeing,
fishing, gourmet meals and picnics.

(512) 547-2546 • www.knolle.com

ON THE WEB

Strictly Texas
www.strictlytexas.com

BUILDING



HERITAGE BUILDING SYSTEMS

Established 1979

800-643-5555

BUILD IT YOURSELF AND SAVE

| | |
|----------------------|----------|
| 24 x 36 x 10 | \$3863 |
| 39 x 60 x 12 | \$7332 |
| 51 x 90 x 14 | \$12,688 |
| 60 x 72 x 12 | \$11,562 |
| 90 x 150 x 16 | \$31,481 |
| 160 x 200 x 16 | \$65,985 |

Commercial all steel buildings and component parts
from America's largest distributor since 1979. Any
size is available featuring easy bolt up rigid frame
design for industry, office, mini-storage, shop, farm
and all steel homes. Call us today for a free informa-
tion package and quote on the best buildings made.

Mini Warehouse Sale
Any Shape Any Size
www.metalbldg.com

PRODUCTS & SERVICES

7.00%

**BANK C.D.'s FDIC INSURED
TOLL FREE
1-(877)-FDIC-CDS**

(334-2237)

MATTSON FINANCIAL SVS. L.L.P.

5400 Bosque, Waco, TX 76710

"Serving Thousands all over Texas"

All C.D.'s are insured to \$100,000.00 per depositor per institution
by the F.D.I.C. All C.D.'s are subject to availability. The above rate
expressed in apy for 15 years. Callable after 1 year.
\$10,000.00 minimum. Call for the latest updated rates.

Securities through Woodlands • Securities Corp., • Member NASD/SIPC
5400 Bosque Blvd., 4th Floor • Waco, TX, 76710 • (254) 772-6383

LAND AND WILDLIFE MANAGEMENT SERVICES

Practical, effective, and sustainable solutions
for your land management needs.

- Habitat evaluation and management
- Wildlife counts, censuses & surveys
- Prescribed fire plans
- Pond design & construction management
- Native & exotic vegetation management
- Sedimentation and erosion control
- GIS and GPS services
- Wildlife management use property tax assistance

1-512-327-1180

LOOMIS-AUSTIN, INC.

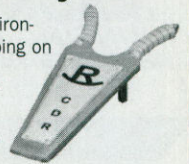
www.loomisAustin.com



Personalized Bootjack

Bronze, aluminum, or cast-iron-
metal base. Leather strapping on
yoke. Leather footplate
with brand, logo, initials or
name burned into leather.

Crawford & Company



Box 126, Uvalde, TX 78802, 888.301.1967



Flat Buster

- ✓ Tire Sealant
- ✓ Prevents Most Hazardous Flats
- ✓ Nails - Thorns - Cactus
- ✓ Easy to Install
- ✓ Quickly Repairs Slow Leaks
- ✓ Non-Hazardous
- ✓ Trucks - Atvs - Cars - Trailers -
Golf Carts - Sports Utility -
Bicycles - Wheel Barrow -
Motorcycle
- ✓ Any Tire with Air
- ✓ Advertised on Hunting and
Fishing Texas by Bob Lilly

For more information call:

1-888-463-ROCK

Sugarland, Texas (7625)

BIRDING

Hummer House. Largest hummingbird
feeding/nesting site. Observation room viewing
birds, deer, turkey. Dan Brown, Box 555, Christoval,
TX 76935. For information, please call:
toll free: (877) 255-2254.

SEED

Native Wildlife Blends

Special Blends for your area with
over 50 varieties of Native Grass
Seed, Legumes, and Forbs.
Straight from our farm to you.

1-800-262-9892

BAMERT SEED COMPANY

Muleshoe, Texas
email: natives@bamertseed.com
web: www.bamertseed.com



**TEXAS
MINT
2000**



Texas Millennium Dollar

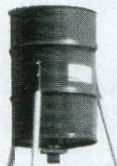
| | |
|--|----------|
| 1 oz .999 Silver Proof-like Coin | \$22.95 |
| 1 oz .999 Gold Numbered Limited Edition Coin | \$395.00 |
| Silver Bezel | \$17.50 |
| Silver 18" Diamond Cut Necklace | \$24.50 |
| Texas Residents 8.25% Tax Shipping & Handling | \$2.95 |

Texas Mint 2000 P.O. Box 1371 Whitney, TX 76692
Toll Free: 1-877-839-6468 www.TexasMint2000.com



HUNTING

AUTOMATIC GAME FEEDERS



- 24-Hr. Quartz Timers
- Digital Timers
- Photocell Timers
- Batteries
- Solar Chargers
- Many Accessories
- Repairs (All Brands)
- Dealer Inquiries Invited

MAGNUM
HUNTING PRODUCTS
... MORE FOR YOUR BUCK

219 Brand Lake, Stafford, TX 77477
(281) 261-0803

FREE BROCHURE

3-YEAR WARRANTY



AUTOMATIC - Game & Fish
80, 100, 250, 300, 350, 500
& 1,000 lb. Capacities

PROTEIN - Free
Choice & Automatic
1,000 & 300 lb.

FEED WHILE DRIVING
Receiver Hitch or
Tailgate

We've been using
Lehman-H Auto-
matic Feeders for
years and are well
satisfied with their
durability and low
maintenance.

Nolan Ryan
NOLAN RYAN

RT 3 BOX 53 - CORPUS CHRISTI, TX 78415
361-855-0049 FAX 361-855-0185
WWW.Z-SCAPES.COM/LEHMAN

The FIRST In The Field...

SINCE THE EARLY 1960's

Patent Appl 7-11-63
Issued 7-20-65



..OUR 35+ YEAR
SPECIALTY
FEEDERS
PROVEN TO LAST

TIMERS - Simple, Durable & Dependable
- Quartz Solid State
- Digital
- Timer-Motor KITS
- Accessories, include winch tripod,
Batteries ... Solar

QUAIL & TURKEY - Non-Mechanical

AUGER LOADERS
- Utility Receiver Hitch Model
- Hydraulic Honda Engine Driven

VISA - M/C 3 YEAR WARRANTY QUALITY/SERVICE

The very latest poop on Spin-Cast Feeders...



\$119.95

MK-6 model (shown)

\$159.95

Mk-6Solar model (not shown)

6V/12V Remote
Control



\$129.95

Spin-Cast
Wildlife Feeders

5680 Randolph Blvd
San Antonio TX 78233

Phone: 210-653-7514 {Info}

210-653-3641 {Fax}

1-800-950-7087 or 8087

{Toll free for orders}

www.spincafeeders.com

email: spincafeeders@spincafeeders.com

Free Catalog Available

© Spin-Cast Inc 1999



\$129.95

MK-2 model (shown)

\$169.95

MK-1 model (not shown)



SUPER STAND™
Guaranteed Five Years!

SINCE
1983

HEIGHTS
10, 12, 13,
15, 17 & 20 Ft.
Eye Level

Camo Covers
& Roof
Available

Adjustable
Top Rail



AVAILABLE:
4x4 and 4x6 models
6 ft. thru 20 ft. heights
Ground Stands
Builders Kits

Patented
Top Closes Down!

"BOSS" Tripod

Exclusive Split Beam Leg
Design Creates the Strongest
Most Rigid Tripod Stand on
the Market

BIG-MAC Feeders



55 Gal.
14 ft. Tripod
Winch Feeder
Shown

Also Available:
50 lb. thru 750 lb. Capacities
Ladder Feeders • Tailgate Feeders
Protein Feeders

Parts
Remotes
Batteries
Solar Panels
Repairs

Chas-Mac, Inc. 2124 Marnel • Houston, TX 77055 • 713-461-9163 • Fax (713) 461-5229

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
(281) 370-6945 • Serving Texas Collectors Since 1980
www.charliesgallery.com

South Texas Ranch

200 acres- low fenced, Deer, Quail,
Wild Hog, and Javelina, 2 hog Traps,
4 trailers, Sleeps 12, 285 ft. well, Windmill,
Potable water, 2 ponds, Tropical fish, Frogs
\$152,000, Owner Financing
12 miles south of San Diego, TX.

Vance Wilson, Broker
956-542-7161 • 956-542-2993
Fax 956-542-5029

FISHING

Bill Carey's

**STRIPER
EXPRESS**

Guide Service

LAKE TEXOMA 903-786-4477
www.striperexpress.com

- 5-Boat Fleet
- 5 Tons Caught Yearly
- 34 Ft. Boat for Groups
- Gift Certificates

BUCK'S South Texas Guide Service
Trout • Redfish • Flounder • Black Drum



Baffin Bay

FREE LODGING
AVAILABLE UPON
REQUEST

Rt 3 Box 475 Alice, TX 78332
www.fishing-baffinbay.com

(361) 668-6161 • (361) 664-8544 Home • (361) 730-7817 Mobile



HISTORIC & HOSPITALITY ACCOMMODATIONS OF TEXAS



★ **Historic** and ☆ **Hospitality Accommodations** of Texas (HAT) includes the state's finest historic bed & breakfasts, country inns, guesthouses and distinctive hotels. The HAT seal of approval means that the property is not only beautiful but unique, sparkling clean, and full of Texas charm. For a full listing of HAT accommodations, visit us at www.hat.org or call 1-800-HAT-0368.



★ **Schildknecht-Weidenfeller House** 1870's German limestone house in Historic District. Private. Accommodates one-ten in one party. Antiques, handmade quilts. Fireplace, cellar, porch. www.schildknecht.com **830-997-5612**

★ **Das Garten Haus** Traditional B&B with exceptional breakfasts, helpful hosts, private suites. New Orleans style courtyard and gardens. www.dasgartenhaus.com **800-416-4287**

★ **Hoffman Haus** Fredericksburg's most beautiful guest house™. Privacy and luxury. Eleven antique-filled cottages. Great Hall accommodates 50-75, weddings, receptions, corporate retreats. 15% discount Monday-Thursday. Breakfast to your door. www.hoffmanhaus.com **800-899-1672**

★ **Settler's Crossing** Fredericksburg's finest! Historic plantation home and seven private guest houses. 35 acres. Fireplaces, antiques, jacuzzis. One of America's great country inns. Featured in Country Home, Country Living. Color brochure. Children welcome. www.settlerscrossing.com **800-874-1020**

☆ **Castle Avalon** Romantic bed and breakfast and fine dining restaurant surrounded by 160 acres of Texas Hill Country. www.castleavalon.com **877-885-4780**

★ **Historic Kuebler-Waldrup Haus** Relax! 43-acre paradise near rivers, Greune, San Antonio, Wildlife, gorgeous views! Complimentary refreshments, candlelight breakfast. Luxuriously restored limestone home, private baths, whirlpools, TVs, videos. www.cruising-america.com/kuebler-waldrup **800-299-8372**

AUSTIN

★ **Woodburn House B&B** Recommended by Sandra Soale for "10 Great Places to Sit on the Porch" article, *USA Today*, June 11, 1999. www.woodburnhouse.com **888-690-9763**

★ ☆ **Carrington's Bluff & Governors' Inn** 1377 Country house or 1897 Victorian near state capitol and UT. Private baths, cable TV, delicious breakfasts. Featured on Romantic Inns of America. 1998 "Best B&B in Austin" award. Rates \$59-\$119. governorsinnaustin.com **800-871-8908**

BOERNE

★ **Ye Kendall Inn** 1859 National Landmark. 15 unique shops in a restored village. 13 rooms & suites. **800-364-2138**

BRENHAM

★ **Ant Street Inn** Tour Antique Rose Emporium, Blue Bell, Bush Library, Old Washington. www.antstreetinn.com **800-329-4943**

★ **Mariposa Ranch** Log cabin, cottages, suites, fireplaces, jacuzzi, "ENCHANTED EVENING" packages - *Southern Living* www.mariposaranch.com **877-647-4774**

COMFORT

★ **Meyer B&B** On Cypress Creek, Hill Country, Mid 1800's Stage Stop, Texas Landmark. **800-364-2138**

DEL RIO

★ **Villa Del Rio** Historic Mexico border villa, lush acreage, by Texas' oldest winery. www.villadelrio.com **800-995-1887**

FORT WORTH

★ **Texas White House.** Elegant landmark home. **800-279-6494**

Miss Molly's Hotel. Authentic stockyards boardinghouse. **800-99-MOLLY**

FREDERICKSBURG

★ **The Luckenbach Inn Bed & Breakfast** "Go Back Well-Fed & Rested." 12 acres, fireplaces, whirlpool tubs, wine cellar, a full country breakfast served daily... and of course... Rooter "I'll never be bacon..." pot-bellied pig. www.luckenbachtx.com **800-997-1124**

★ **Das College Haus** Beautifully appointed with antiques and original art. Near downtown. Delicious home cooked breakfast. www.dascollegehaus.com **800-654-2802**

FREDERICKSBURG TRADITIONAL
BED & BREAKFASTS
Hill Country Hospitality and Style

1-800-494-HOST

www.fredericksburgtrad.com

GRUENE

★ **The Lamb's Rest Inn** On the Guadalupe river near historic Gruene. Peaceful and romantic. Delightful breakfast. **888-609-3933**

KERVILLE

☆ **River Run B&B** Downtown, next to Nature Center. Whirlpool tubs, full breakfast. **800-460-7170**

LOST MAPLES

★ **Texas Stagecoach Inn** Miles from nowhere, in the middle of the surrounding country... www.bbhost.com/txstagecoachinn **888-965-6272**

MARATHON

★ **The Gage Hotel** A historical treasure in a legendary setting. 37 traditionally decorated rooms, landscaped courtyards, year-round swimming and in-room fireplaces. **800-884-GAGE**

NEW BRAUNFELS

★ **Hunter Road Stagecoach Stop** Enjoy Texas hospitality and history at an 1850's Pioneer Homestead nestled amidst antique roses and herbs. For reservations **800-201-2912**

ROCKPORT

HOOPES' HOUSE

ROCKPORT, TEXAS
800-924-1008
www.hoopeshouse.com



NATIONALLY HISTORIC VICTORIAN HOME. EIGHT ROOMS EACH WITH PRIVATE BATH. FULL BREAKFAST INCLUDED. CALL FOR BROCHURE.

SPECIAL EDITIONS FOR 2000

April 2000:
GREAT TEXAS BIRDING CLASSIC EDITION
Space Closing: Feb. 21, 2000

June 2000:
TEXAS FLY FISHING EDITION
Space Closing: April 20, 2000

August 2000:
ANNUAL HUNTING OUTLOOK EDITION
Space Closing: June 21, 2000

September 2000:
TEXAS WATERFOWL HUNTER EDITION
Space Closing: July 20, 2000

October 2000:
WILDLIFE EXPO EDITION
Space Closing: August 21, 2000

Call Jim Stone at 512-912-7007 today for further information.

TOURISM

www.visitbigbend.com
1-877-BIG BEND
The complete information resource for the Big Bend area

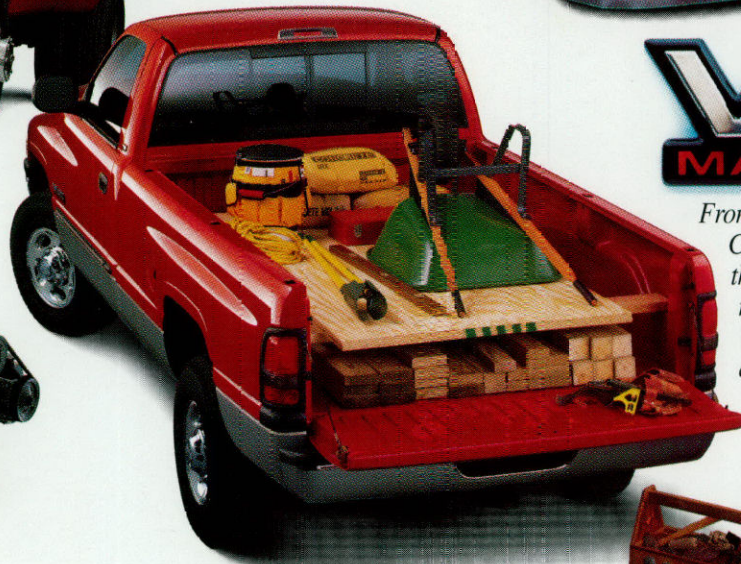
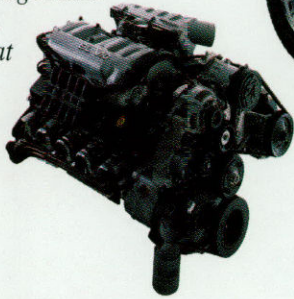
PARTING SHOT

Amid the bighorn sheep and black bears at Black Gap Wildlife Management Area (page 48) is a smaller but no less interesting creature, the horse lubber grasshopper. Measuring $1\frac{1}{2}$ to $2\frac{1}{2}$ inches, the horse lubber grasshopper is shiny black above and beneath and conspicuously marked with yellow and orange. Found from Arizona through West Texas, Mexico, Honduras and Costa Rica, these grasshoppers feed on mesquite and various desert shrubs. When disturbed they hiss and display their wings in a threatening manner.





It's only logical: People who are crazy about power are crazy about the Magnum®-powered Dodge Ram. It was Ram, after all, that redefined what a full-size pickup should be.



**V8
MAGNUM**

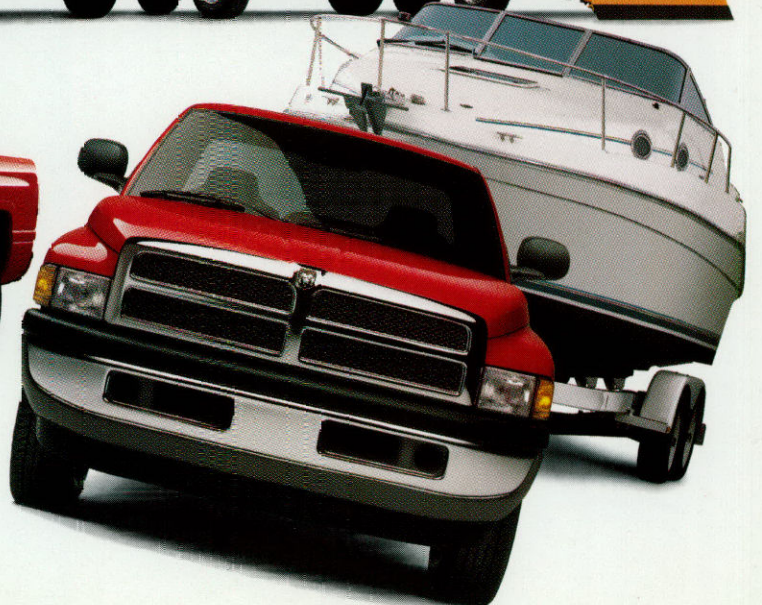
From the powerful Cummins diesel to the first, and still the most powerful, V-10 in the full-size pickup arena, Dodge Magnum power shook the very foundations of conventional thinking. And took things in a whole new direction.



Magnumania.

Dodge Ram  Different.

800-4-A-DODGE or www.4adodge.com



Where can you tap into the source of all this power? At your friendly Dodge dealer: The treatment center for a nation of confirmed Magnumatics.

