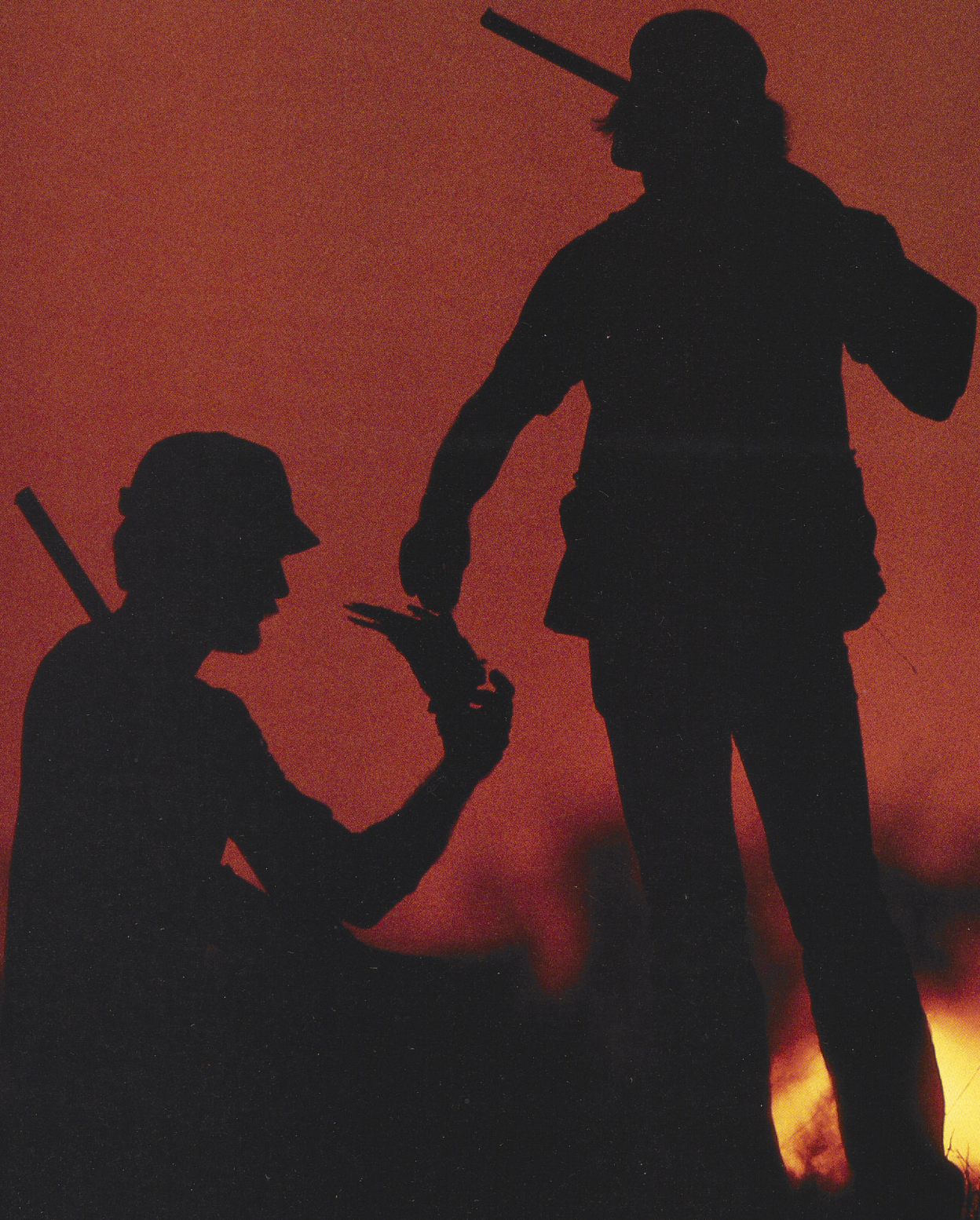


TEXAS

PARKS & WILDLIFE



September 1985



TEXAS PARKS & WILDLIFE

September 1985, Vol. 43, No. 9

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Contents



Page 30

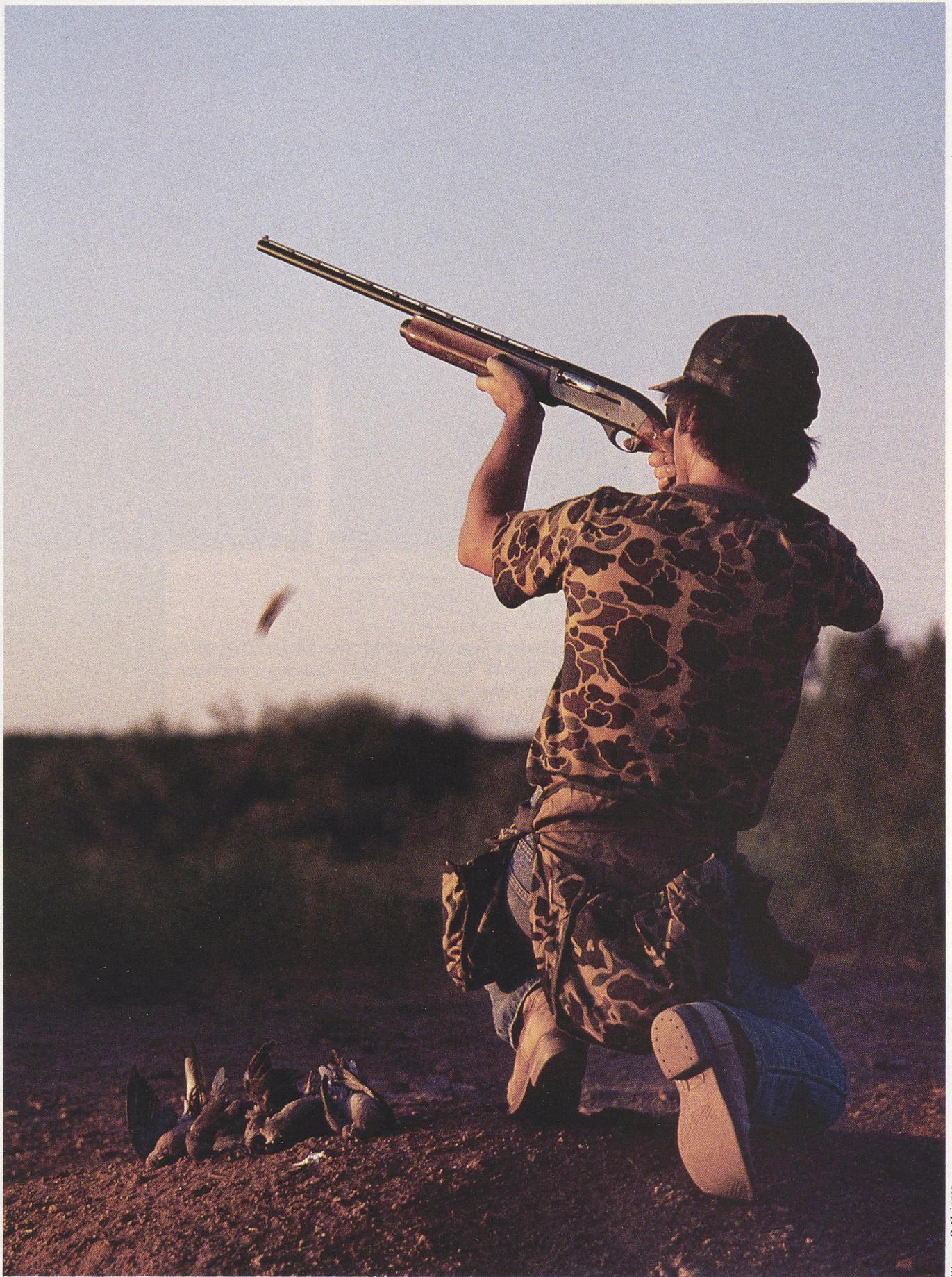


Page 10



Page 18

- Seven Rules for Good Dove Hunting** *by Ray Sasser* **2**
A few tips to make your dove hunting experience more enjoyable and productive this season.
- Mesquite** *by Paul Hope* **10**
It will take research, patience, a sense of humor and a lot of imagination to bring positive economic returns from the mesquite.
- So . . . What's A Nutria, Anyway?** *by Terri Justinger Lobpries* **18**
For better or worse, this semiaquatic rodent, sometimes called the South American beaver, is well established in this country.
- Outdoor Roundup** **20**
News briefs compiled by the department's news service.
- Help Preserve the Best of Texas** *by Mike Herring, Karen Leslie and Bobby Alexander* **21**
You can be a part of the accelerated land acquisition program being pursued by the Parks and Wildlife Department.
- Paisano** *by Mary Love-Bigony* **30**
One of the most recognizable members of the Texas avian community, the roadrunner occupies a distinct ecological niche.
- Staying on Top of Deer** *by David R. Synatzske* **36**
Keeping track of deer involves some varied censusing techniques.
- Letters to the Editor** **48**
- Covers**
Front: There's something jaunty about the roadrunner, but this bird is more than a cartoon character. (See story on page 30.) Photo by Wyman P. Meinzer. **Inside Front:** Successful dove hunters are those who follow a few basic rules. (See story on page 2.) Photo by Wyman P. Meinzer.



Wyman P. Meinzer

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Wyman P. Meinzer

The September sun was mercifully losing a little of its heat, sliding slowly toward the western horizon. Small flocks and pairs of mourning doves were leaving adjacent grainfields, heading for local watering holes before going to roost.

Seven Rules for good dove hunting

.....
by Ray Sasser
.....

It was the opening day of mourning dove season, a time when sportsmen try to shake the cobwebs from the gray matter of their wingshooting computers and get on track for some of the year's trickiest action.

Hurriedly stuffing a couple of boxes of my favorite dove loads into my game vest, I hustled toward the far corner of the field, a proven flight lane for doves during previous hunts in this same area. En route to the hotspot, I passed a young hunter who looked somewhat disgruntled. He was decked out against the heat in a white t-shirt and a red "gimme" cap advertising a brand of chewing tobacco.

"Having any luck?" I asked.

"Naw. I've been here for two hours. There are quite a few doves flying around, but I can't seem to get anything but long shots. That's my dad over there on that fence line. He's getting some close shots, but he's not hitting 'em very well."

The kid was sitting right in the middle of a plowed field and, in his brightly colored clothing, he stuck out like a sore thumb. I glanced toward his father and saw that the elder hunter had selected for himself a much more effective stand.

He was hunkered beside a small bush alongside the fence. The fence line, I knew from experience, was a pretty good flight lane for birds, and the bush offered the hunter concealment from the sharp eyes of incoming doves.

As I watched, a pair of doves flew just inside the fence line. They approached with the deceptive flight style that makes mourning doves appear to be loafing when they're actually moving quite fast. The hunter waited patiently. When the doves were as close as they ever would be, about 25 yards away, he stood and emptied his autoloader in their direction. The barrage didn't seem to faze those two doves, aside from moving them off the fence line and out of range of hunters waiting farther down the fence.

I wished the brightly dressed youngster good luck and hurried on toward the corner. It was there that the fence snaked across a small irrigation ditch for the grain fields. Relative dampness around the ditch had produced a thick stand of small trees on either side of the winding waterway. Birds came over the spot via the fence line or by following the irregular course taken by the ditch.

Doves watered in several spots along the irrigation ditch and they roosted in the small trees. The place was a natural for mourning doves. I set up my lightweight stool in the shade of a tree, took a refreshing swig from a bottle of ice water in the stool's gear pouch and loaded my shotgun.

It wasn't long before doves began trickling past within easy range. Dressed in drab khaki clothing, sitting in the shady spot, I was not visible to the birds until I stood to shoot. I made some tough shots and missed some easy ones, par for dove hunting.

During slack periods, I watched the other hunters in

the field. Birds continued to flare around the brightly dressed youngster sitting in the bald open. His father scratched down a couple of high flyers, but missed numerous shots at doves in easy range. I later discovered he was shooting a full-choke gun.

One of the high flyers he managed to hit fell across the field in thick cover. He immediately went after the bird, but was sidetracked by another dove passing within easy range. He missed that shot, lost his bearing on the downed game and failed to locate the dove that had obviously fallen dead.

All in all, that opening day provided me with a very good hunt and an interesting lesson in what not to do when you hunt one of Texas' most challenging and popular game birds.

In a sense, it's a shame so many hunters across the state begin the hunting season with mourning doves. Doves are abundant, numbering about half a billion nationwide, but because sportsmen regularly see mourning doves in their yards, in parks and within the corporate limits of virtually every town in Texas, they tend to take dove hunting lightly.

There's a certain party atmosphere consistent with hunting doves, an attitude that's essentially lacking in other hunting sports. Large, organized groups of hunters can scatter strategically around a good field and actually help one another by keeping birds moving. This lighthearted approach to dove hunting adds fellowship value to the sport.

Truly successful dove hunters can mix a good time with a good hunt simply by adhering to a few basic rules. It's wise to consider these rules as early in the season as possible, ideally before opening day. What I've discovered is that dove hunters often are ill-prepared for the start of hunting season. They spend the first few hunts of the season, hunts that should be the most productive in terms of game bagged, just relearning the basics.

Rule one: Mourning doves are tricky targets

They're not hard to kill, but they are tough to hit. The average mourning dove weighs about four ounces. Since doves fly erratically at 30 to 40 m.p.h., it's an understatement to say that they are challenging targets. My theory is that ammunition manufacturers and retailers live for dove season. That's when the profits start rolling in. Various estimates indicate that for every dove harvested, the average shooter requires about four to five shots. In Texas, where five to seven million mourning doves are harvested annually, the shotshell tab for dove hunters comes to about \$6 million.

In some cases, hunters can improve their shooting dramatically by using the correct shotgun and shells and by putting in a little prehunt practice. The best spot for a practice session is a skeet field. Shooting at high and low house targets from the various stations will simulate most of the chances you'll get in a dove field.

Some pretty good dove hunters I know shoot skeet while seated on a hunting stool or while kneeling to make their shots seem more like realistic hunting situations. At the very least, it's a good idea to shoot European style,

with the shotgun held at port arms until the clay target appears. This provides good practice for correctly mounting the shotgun, a serious shortcoming with many shooters.

Targets thrown by a hand trap are also good practice for dove season. The objectives of practice sessions are to exercise reflexes that may have gone stale from a long season of disuse and to build a little confidence in the bargain. Confidence is a large part of wingshooting success.

Entering a dove field without a little preseason practice is akin to a major league hitter going to the plate against Nolan Ryan without benefit of spring training. Batting averages in either situation are apt to be low.

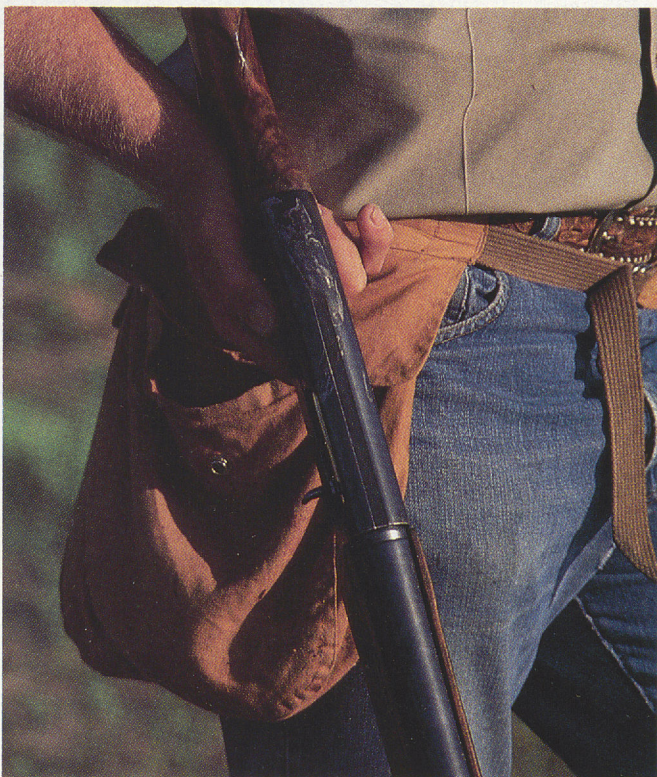
Rule Two: Use the proper gun and shells

Proper gun and shells further enhance your odds for taking doves. Most shots at mourning doves are made at close range, say 30 yards or less. Arm yourself with a shotgun effective at typical dove-shooting ranges. A full-choke gun is out of the question except under atypical circumstances. I believe an improved cylinder is the best all-around choke for dove hunting.

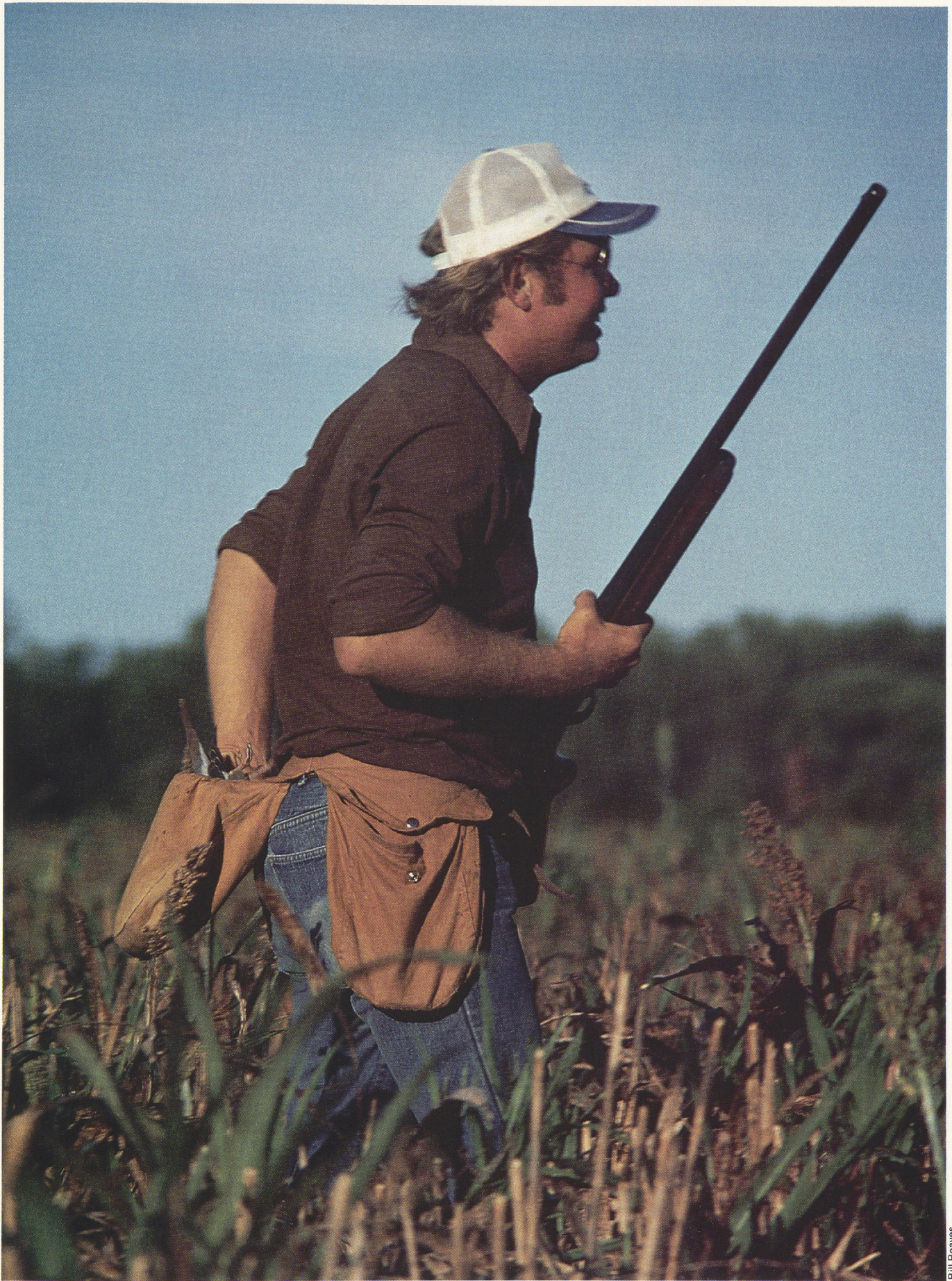
Ballistics charts indicate that, at 20 yards, the pattern from a 12-gauge gun bored improved cylinder is twice the size of the shot spread from a full-choke gun. With an improved cylinder, you could hit a bird at 30 yards that you might miss by a foot with full choke.

The most effective shotgun in terms of game bagged is a 12-gauge, at least for shooters who have no trouble handling a 12's recoil. However, doves are perfect game for smaller bore guns. Lightweight, quick-swinging 20's and sweet 16's are a pleasure to shoot at mourning doves.

The small bore theory washes out when you reach the diminutive .410 shotgun. The .410 is an expert's gun. I



Bill Reeves



Bill Reaves

shudder when I see youngsters stuck with a single shot .410, most of which are bored full choke. The result is that the young hunter cannot hit doves and becomes discouraged and embarrassed by his apparent lack of shooting ability. He may decide he doesn't care for hunting at all.

A couple of years back, I opened dove season in a harvested cornfield that was swarming with birds. It was one of the largest concentrations of doves I've seen this side of Mexico. The birds were so thick and the shots so regular that I killed 10 of my 12-bird limit in about 20 minutes.

Just to make the hunt last longer, I borrowed a .410 pump that one of my partners had brought along, but had quickly abandoned for his usual 12-gauge. After my hot-shot big-bore performance, the .410 was a humbling experience. It took about a dozen seemingly easy shots to finish my limit. I'd recommend that any father considering a .410 as his youngster's first dove gun try his own hand with the little popgun.

A much better bet for a youngster is a 20-gauge, gas-operated autoloader with an improved cylinder bore. This is a highly effective combination for most dove shooting situations, has very light recoil and is a firearm the young hunter will never outgrow.

Shotshell selection also can make you a more effective dove hunter. A friend, an expert shot who's always expounding on the various ballistics advantages of different loads, tells about sharing a dove field with a veteran farmer. The farmer was the first hunter in that field to finish his limit. Later, while picking birds around the vehicles, someone asked the farmer what shells he was using.

"Twelves," he said. "Unless I'm shooting a 20-gauge and then I use 20's."

That's a cavalier attitude that most of us can't afford. It's hard to get a handle on shotshell preferences for dove hunting because dove hunters use their shells on a variety of other small game. The basic rule is to select small shot sizes that produce dense patterns. Remember, doves are easy to kill but hard to hit.

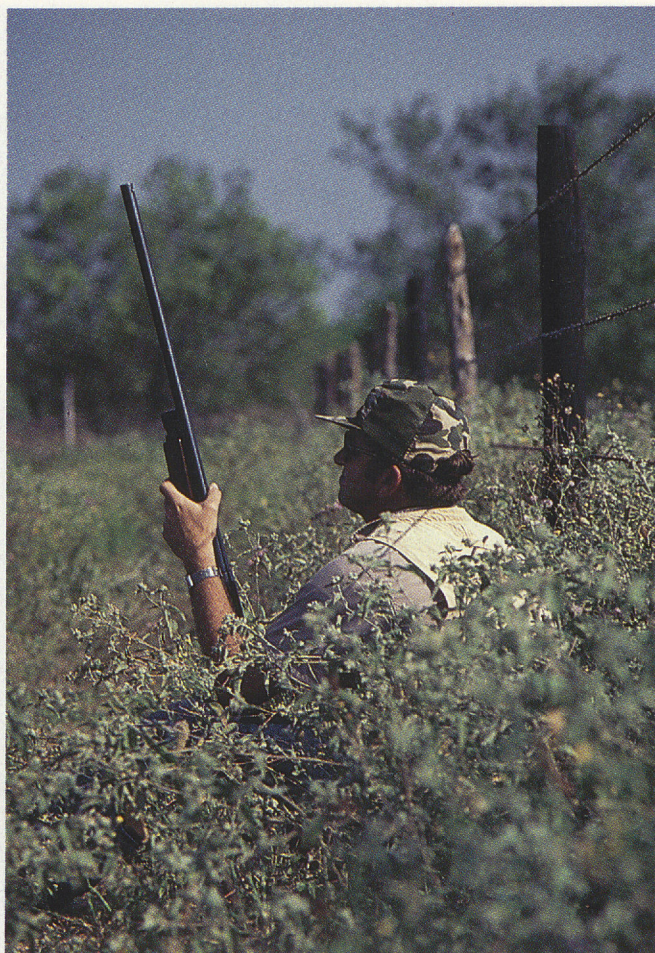
Shells loaded with 7½, eight or nine sized pellets work very well for doves. High-velocity loads are generally not necessary and actually may be a liability unless long shots are commonly taken. In a good dove field, you're liable to be taking quite a few shots. High brass shells recoil more than the so-called "field loads" or "game loads," low brass shells that contain less powder. Hunters sensitive to recoil may develop flinches after several high-velocity rounds.

The only way to know which particular shell fires the best pattern from your shotgun is to shoot them all at a pattern board. For close range work, the inexpensive field loads work fine. For pass shooting, try traploads or pigeon loads in 7½ shot size. The premium shells are made for competition and contain harder pellets that deform less than soft-lead pellets, consequently producing more even patterns.

Rule three: Doves have good eyesight

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Of course the best shotguns and shell combinations won't do much good if you can't get within scattergun range of doves. Like most birds, doves have keen eyesight and are capable of seeing colors. It's amazing to me how many



Bill Reeves

Hunters should conceal themselves from the sharp eyes of incoming doves (above). Decoys (right) sometimes are effective.

hunters insist on wearing brightly colored shirts and/or caps to hunt mourning doves.

You'll be a lot less conspicuous if you dress either in camouflage or in drab clothing that matches the terrain. It helps to take advantage of available cover. Simply sit by a tree, a fencepost or a clump of weeds—anything to break up your outline and make you appear less of a foreign object in the dove field.

Last year I hunted next to a small waterhole in arid country. Doves came to the water late every afternoon. Another hunter in our party had given up on the spot because he was getting very few shots. He had driven a red, three-wheeled all-terrain cycle, to the hunting spot. He parked the three-wheeler in the obvious flight lane and used its comfortable padded seat as a stand. Fortunately for the rest of us, the hunter got bored and left before the real flight began. We stood back in some cover on the pond's low dam and enjoyed a pretty fair shoot on doves coming directly across the narrow waterhole.

Doves not only see colors vividly, they're also perceptive to sudden movements. Hunters caught in the open when doves are approaching sometimes spook birds by ducking quickly to a kneeling position. If you're dressed properly, it's better to stand perfectly still or ease down slowly to present a low profile.



Bill Reaves

Mourning Dove Seasons and Bag Limits

North Zone

September 1-November 9, 1985

Central Zone

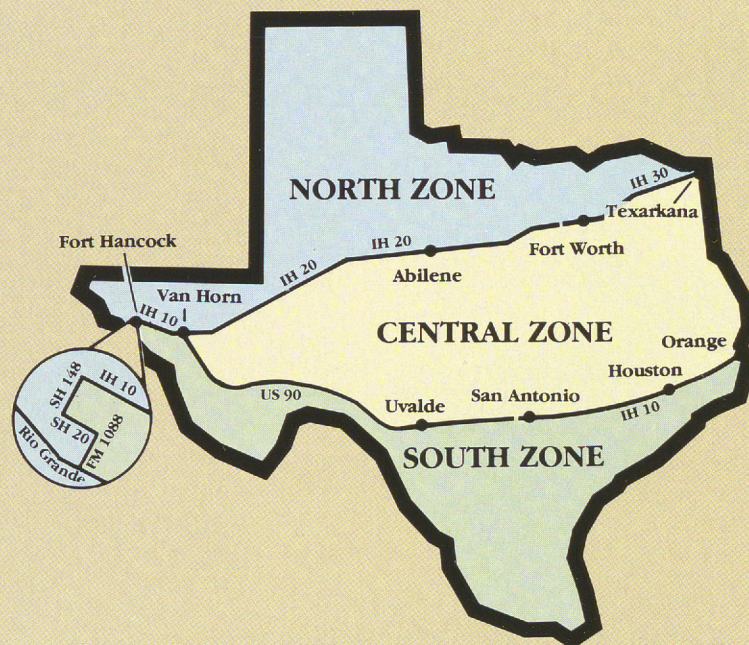
September 1-October 30, 1985;
January 4-13, 1986

South Zone

September 20-November 12, 1985;
January 4-19, 1986

Shooting hours are sunrise to sunset in all zones.

Bag limit is 12 mourning, white-winged and white-tipped doves in the aggregate, including no more than two white-winged and two white-tipped doves; possession limit is twice the daily bag limit.





Wyman P. Meinzer

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Rule Four: Doves are predictable

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Mourning doves are apt to exhibit certain flight tendencies in any particular field. They'll follow leisurely along a fence line or follow a tree line or winding watercourse. Some flight patterns are not so readily recognizable and the birds actually may be zeroing in on a feature beyond the field in question.

The wise hunter watches carefully for signs of developing flight pattern, then positions himself to intercept the doves. Keep in mind that flight patterns in a given field may remain consistent from hunt to hunt and even from year to year. The hotspot I mentioned at the beginning of this story was good for the five years I hunted that field.

On the other hand, a change in crop rotation, a water-hole gone dry or other physical changes can abruptly alter the pattern in which birds fly. Best bet is to let the doves tell you what they want to do, then adapt to the specific situation.

Rule five: Plan how to retrieve downed birds

.....

A major consideration when selecting a stand for doves is the terrain around the stand. A fallen dove can get lost in a hurry in thick cover. Last season I spent 15 minutes locating a mourning dove that fell on virtually bare ground. About the only ground cover was sparse weeds, cactus and an abundance of rocks. The bird so closely resembled a gray rock that I stepped over it at least three times.

The U.S. Fish and Wildlife Service estimates that some 14 million mourning doves are lost each year as cripples. I'm sure that figure includes doves that fall dead and never are located.

To avoid lost game, always try to set up where birds will fall on relatively open ground. Depending on the terrain, such positioning is not always possible. It's been my observation that the most common cause for losing fallen birds is taking your eye off the spot where the bird fell to watch for other doves.

The best technique for finding downed game, if you hunt without a dog, is to walk directly to the spot where the bird fell without ever taking your eye off the exact location. Once you've arrived at where you think the bird fell and you don't immediately see the dove, drop your hat, handkerchief, or lay down your gun as a reference point. Hunt from the reference point in ever-widening circles until the game is located.

If a hunting partner is close by, he also should concentrate on marking your fallen bird and direct you to the spot either vocally or with hand signals. Most wasted game can be avoided if you follow this procedure.

Best insurance against losing fallen birds is a well-trained dog. Some retrievers accustomed to waterfowl and some pointing dogs used on quail or other game birds don't retrieve doves particularly well without some experience. Doves apparently have a very subtle scent. Dry, hot conditions in an early-season field further thwart a dog's efforts in sniffing out birds.

Heat also can be a problem, especially for waterfowl dogs with thick coats. A few years ago, I took an exuberant

black lab, an excellent young duck dog, into a blistering hot September dove field. It was the dog's first experience with doves and she consistently overran her marks, turning easy retrieves into long hunts. The result was that the black dog suffered heat prostration and I wound up carrying her half a mile back to the truck. Fortunately, I was able to cool the retriever down with cold water, but she watched the rest of the hunt from a portable kennel in the shade.

Rule six: Stay comfortable

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The heat of an early-season dove field likewise can cause problems for humans. That's why it's important to dress as coolly as possible, including a lightweight gamebag or shell belt, and to keep plenty of cold drinks handy, at least in an ice chest in your vehicle. On a hot September day in the field, nothing quenches thirst as well as icy-cold water. A small plastic container filled with water and frozen solid in your home freezer will thaw slowly and remain cold throughout a hot afternoon.

Sunscreen is a handy accessory for early-season dove hunters and the same can be said for an ample supply of insect repellent. I often hunt doves in boggy, coastal ricefields where you either apply insect repellent liberally or prepare to kill more mosquitoes than doves. In other parts of the state, ticks and chiggers usually are active when dove season begins. Pants legs and socks soaked with insect repellent are good insurance against the unwelcome presence of these pesky parasites.

Rule seven: Clean your game quickly

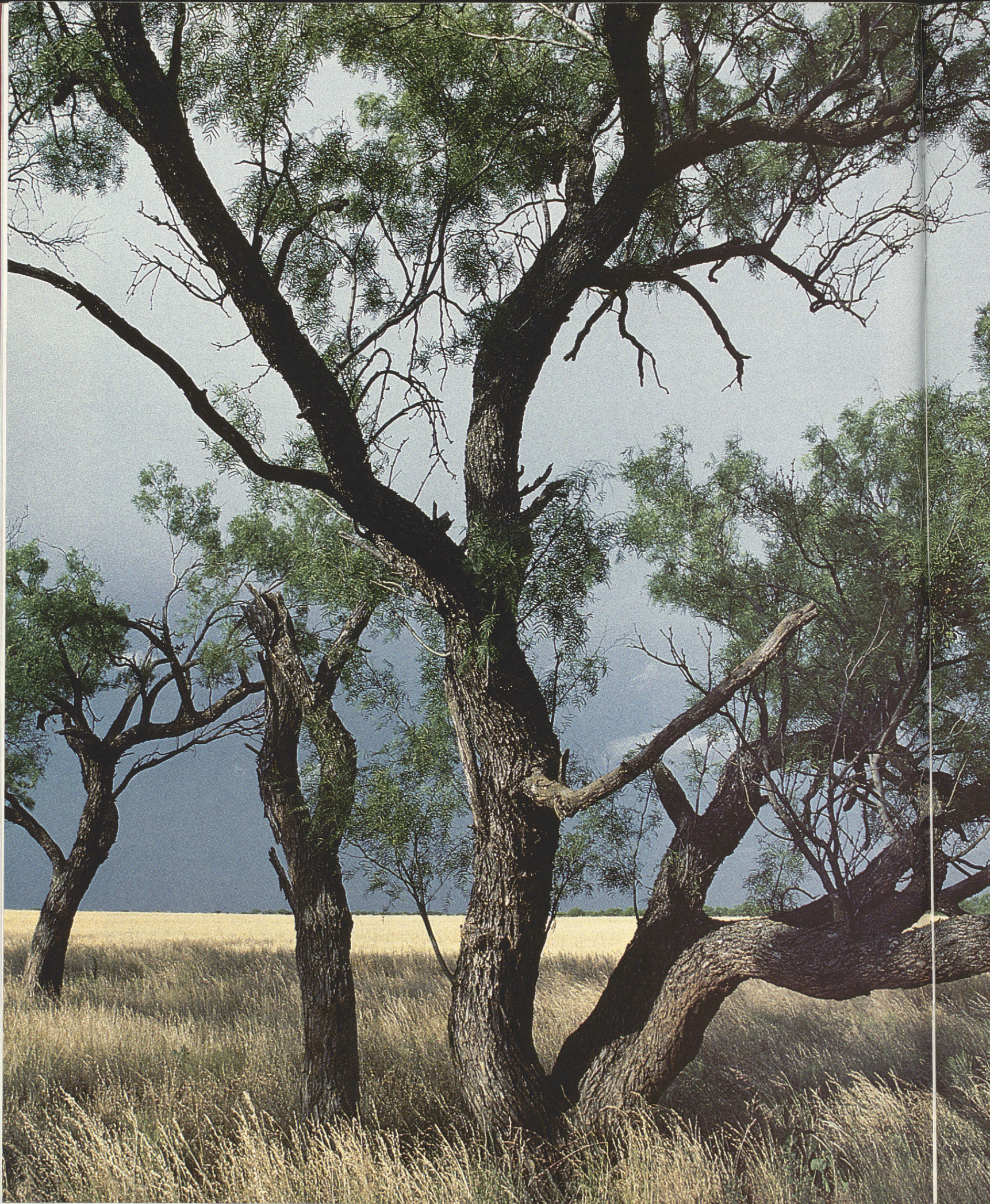
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Blazing heat of an early season field also can affect the table quality of the game you kill. Doves have a lot of body heat to begin with and birds stuffed into a rubberized gamesack for a couple of hours, then transported home in the trunk of a car can't be expected to taste particularly good.

The least you can do is draw the birds as soon as you shoot them. Better yet is to draw and pick the doves as far as the game laws allow. In Texas, one fully-feathered wing must stay on all dressed doves at all times in the South Zone. (See map.) This can be done during lulls in the shooting action. The picked birds should be placed on ice. Some lightweight stools designed for dove hunting have zippered compartments to hold ice and game. Mourning doves treated properly in the field are a culinary treat. This is a reality that escapes a surprising number of dove hunters.

It's just another indication of the tendency hunters have to take doves lightly. Sure, they're small in size but they're mighty big when it comes to sport. People who fail to study history, it is said, are doomed to repeat the same mistakes over and over again. Consider the history of your dove hunting and see just how many successful hunts you've enjoyed.

By employing the basic rules listed above, your odds for taking mourning doves will be greatly enhanced. Because the best hunting often occurs early in the season, it's wise to prepare for opening day with these rules in mind. **





Wyman P. Meinzer

A mesquite tree looks as though it originally were designed to be a Japanese bonsai, but had to be rejected because of overactive growth hormones. Mesquite gets a lot of rejection; it is not one of the most handsome trees on the prairie, and if it ever gets out of the bush stage, it grows into a gnarled, misshapen tree.

But the mesquite tree is distinctly Texan. It has adapted to more than 60 million acres of Texas and the Southwest. It has fought eradication and elimination efforts to a standstill and submitted to control and management only until it could gather enough strength to resurge.

The mesquite is hardy, durable and has a flint-hard will to survive—what could be more Texan?

Other than running counter to man's scheme of things, perhaps the greatest objections to mesquite are its gluttonous appetite for water and its weedlike habit of growing where not wanted. Civilization, overgrazing and general mistreatment of rangeland have caused the spread of mesquite to areas in which its growth would be inhibited under natural, native grassland conditions. Its spread parallels that of juniper or cedar in the Texas Hill Country (see June 1985, *Texas Parks & Wildlife*).

The mesquite's competitive edge over most other rangeland species, some of which are more desirable, concerns those who must make a living from the land. With a tap root as long as 300 feet and a large lateral root

system, the mesquite often finds water and nutrients at the expense of other, more valuable plants.

According to popular folklore, the mesquite tree uses 300 gallons of water a day. But this does not distinguish between the thirst of a year-old seedling and a 50-year-old tree. Biomass studies show that the mesquite of the Southwest requires from 2,500 to 3,000 kilos of water to produce one kilo of mesquite, a high price in a land where water is the most valuable commodity of all. But the mesquite's high water consumption ratio taken out of context is misleading. The same biomass studies point out that other dry-land plants, such as the highly valued grasses, also have high water consumption rates.

Just what happens to water consumed by plants often is ignored by popular folklore. Leaves lose water by a process known as transpiration. Within its complicated system, the mesquite tree has an internal regulator that reduces water transpiration from noon to dark—the period of greatest loss.

No one disputes that mesquite control work is necessary for more economical yields on heavily infested land. But current methods provide only a quick fix. Control efforts open to the range owner are to bulldoze, root plow, chain, rake and burn. These are expensive, with the final price depending on density, location and terrain. One Austin-area rancher who had a pasture root-plowed, raked and burned, leveled and reseeded with

MESQUITE

Fighting eradication efforts to a standstill, mesquite has adapted to more than 60 million acres of the Southwest. It is hardy, durable and has a flint-hard will to survive. What could be more Texan?

BY PAUL HOPE

native grasses, said two such operations would be equal to the cost of buying his land all over again. Chemical controls, ranging from manually applied kerosene and diesel fuel to aerially sprayed herbicides, are less expensive, but not always as desirable because of the ecological consequences.

Primitive man had a fairly tolerant and accepting attitude toward mesquite, because it provided storable food staples. But modern man's relationship with mesquite has mostly been a frontal assault. In the last 40 years, some researchers estimate that 90 percent of all public-funded research on mesquite has been directed toward its eradication and control, efforts which often have not been successful. However, some research has been directed toward finding uses for this plant that cannot be eradicated and can be controlled only with great effort and expense.

FUEL

When the oil embargo of the 1970s caused a scramble for other sources of energy, Peter Felker was an undergraduate at the University of California studying dryland plants. After graduation and research on mesquite trees in the drier parts of California and Arizona, he came to the Caesar Kleberg Wildlife Research Institute at Texas A&I University, Kingsville, armed with a grant from the Department of Energy, to look into the feasibility of powering electrical generators with mesquite should the foreign oil spigots be turned off completely.

With modifications on the boilers,

such a fuel supply will work, but it is not considered economical now because current oil and natural gas prices are acceptable to the consumer. Converting to a biomass generator would be labor-intensive and far removed from the convenience of piped-in fuel.

Some of the cost of using mesquite as a fuel supply could be reduced by planting specifically developed species of trees that could be harvested like corn or small grain, chipped in the field and used like coal at the generating plant. Plantation trees should be fast-growing, straight-trunked, low-water users or even trees so saltwater-tolerant they could grow and thrive in salinities approaching seawater. All these characteristics exist within the 42 species of *Prosopis* genus, which contains the mesquite tree. However, getting all these characteristics into one tree isn't going to be simple since it takes two mesquite trees to produce seed. A single tree cannot pollinate itself, but a single tree can be cloned to replicate the parent tree.

While the biological and genetic cloning work was going on at Texas A&I, Dr. Willie Ulrich, professor of Agriculture Engineering at Texas Tech in Lubbock, was working on a mesquite combine to harvest and chip trees and brush. "Due to its physical growth patterns, mesquite is one of the more difficult plants to harvest," Dr. Ulrich wrote. His combine, which travels one to three miles per hour in light to heavy infestations, harvests mesquites with trunks up to seven inches in diameter and could reduce a

whole tree to chips at a cost of \$7.46 per ton (1982 prices), about half the cost of other methods used.

Dr. Ulrich's paper, which was presented to the Mesquite Utilization Conference in October 1982 in Lubbock states: "As a source of energy, a calorimeter test shows 8504 Btu's per pound of 19 percent moisture mesquite chips or about 40 percent the energy of gasoline on a weight basis. One published chart which considers the energy per unit, current cost per unit and the efficiency of combustion to produce one million Btu's for heating, shows the following comparison: Wood chips \$1.64, coal \$3.56, wood pellets \$4.08, natural gas \$4.38, fuel oil \$8.61 and electricity \$15.42."

Although wood chips are cheaper, researchers feel there is a resistance to change because of the costs of conversion as well as the convenience of using in place systems.

FOOD

To the hunter/gatherer of the early Southwest, the mesquite tree was a source of food that tasted good, provided fairly good nutrition and could be stored. But the gatherer had to get the beans before the wild animals and birds. Even today, wildlife biologists observe that most mesquite beans are gone within 30 days after they mature. Those remaining on the ground probably have been infested by insects.

Al Brothers, wildlife biologist for the Zachery Ranches in South Texas,

Mesquite beans (below), like other legumes, are high in proteins and minerals.



Paul Hope

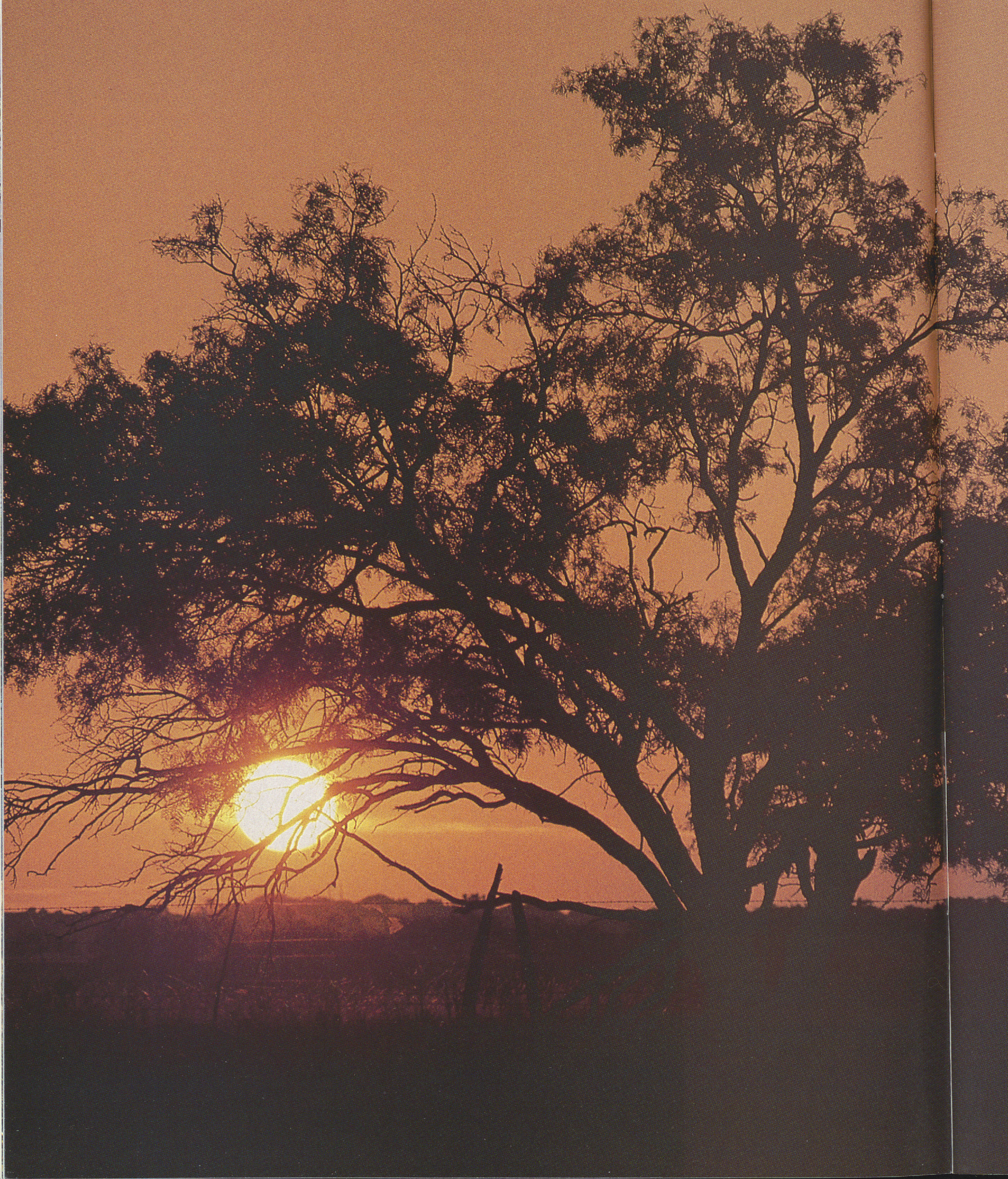


Grady Allen

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Grady Allen





marvels at the fine balance between land, weather, plants and animals. Mesquite beans mature when broadleaf plants are under stress from summer drouth and heat and no longer can provide a fully adequate diet for deer. Mesquite beans tide deer over until fall rains and the next crop of broadleafed plants. Production seems to be heaviest during dry years, with some trees actually producing three crops of beans per year. One of the reasons South Texas produces trophy white-tailed deer is because of mesquite, which serves as protection as well as a food supply.

Research with mesquite beans confirms their similarities to other legumes. The dark brown, hard-cased mesquite seed contains 13 percent fat and up to 60 percent protein, although short in the sulphur-bound necessary amino acids. The hull contains up to 40 percent sugar (mostly sucrose) and eight percent protein, which is high in lysine, a necessary amino acid. The hull contains no starch, which is necessary to make bread rise. Mesquite beans, like other legumes, are a good source of minerals for humans, especially calcium, magnesium, potassium, zinc and iron.

A good number of companies in the Southwest produce chips and chunks for the barbecue industry—an industry that accounts for \$2 billion annually. Ray Williams and his Cattleman's Barbecue Chip Company, Arlington, was

Sawmills' cost of handling mesquite can make it more expensive than prime walnut.

struggling until an article on mesquite cookery mentioning Williams' company appeared in the food section of the New York Times. The article was written by Courtenay Beinhorn, a displaced San Antonian now living in New York. Almost immediately, Williams' sales jumped \$17,000 per week and haven't slowed since. His markets include the Mideast, Europe, Japan and the United States.

Liquid mesquite smoke, made by Red Arrow Company in Minnesota, has been tested by the Meat Sciences Department at Texas A&M and found acceptable for both color and taste in processing hotdogs. In addition, Red Arrow produces about a half-dozen mesquite-flavored food items for the wholesale market, ranging from mesquite-flavored salt to mesquite-flavored maize, which is sprinkled on salad for additional flavor.

WOOD

The physical characteristics of mesquite trees defy efforts to make the tree an economic asset, which would change the way landowners view the tree. Generally, it grows slowly and if damaged when young, whether by grazing goats, a root plow or herbicide, it becomes a multistemmed shrub, which is even more difficult to deal with.

If it is not disturbed and a single trunk develops, seldom will the resulting tree be capable of producing even a 1x8-inch piece of lumber, eight feet long. Straight logs up to four feet long and 12 inches in diameter may be obtained, but such sizes are more time-

Grady Allen



Peter Felker

consuming and expensive for the regular hardwood sawmill to handle. Custom sawyers with lower output increase the cost of mesquite lumber, making it more expensive than prime walnut. One hardwood dealer was selling random-width walnut for \$3 to \$3.25 per board foot while selling kiln-dried mesquite for \$6.95.

Pieces of mesquite lumber large enough for tables and chests would be hard to obtain from the trees growing in Texas. Such pieces can be found—but not commonly—in Arizona and San Luis Potosi, Mexico. Making large items from mesquite, such as furniture, requires sorting through great amounts of mesquite lumber or skillful joinery—both of which are expensive.

Mesquite's orneryness prevented development of grading standards comparable to those of other hardwoods. Physically, mesquite wood has some of the desirable properties of hardwood lumber. The wood is hard, strong, and dense, and it works, sands and finishes well. During the harvesting stages it is stable and shrinks little when drying. The finished color is rich reddish-brown and the grain patterns are striking—rough, unpredictable and uneven.

Mesquite sawyers constantly look for straight-grained pieces suitable for making gunstocks. Such a prized piece of lumber will cost about \$300. Some of the most insidious defects in mesquite lumber are the pinto bean-sized

and larger voids that contain flinty, brownish-black chemical deposits. These often are discovered only after hours of rough-shaping the \$300 blank into something that looks near the size and shape of a rifle stock. As is usually the case, these irregularly shaped voids will be found along the forestock or the cheekplate, rendering useless a \$300 piece of wood and hours of work. At this point, mesquite imperfections become an emotional issue as well as an economic one.

Despite the wood's perversity, well-crafted items made of mesquite reward the craftsman with a higher sales price. Items made from mesquite sell better than similar items made from other hardwoods. Jim Lee, a mesquite craftsman from near Uvalde, discussed wholesaling his craft items, notably wood turnings, with a Pennsylvania company. The buyer reminded him that at least two out of three people in the Northeast hardwood country fancied themselves as qualified and capable wood lathe operators. "But my turnings are out of mesquite," Lee answered. His items from Uvalde, Texas, now are available to the world through a Paxton, Pennsylvania, company. But are they selling? "I'm paying the rent, buying equipment, feeding the family and can't keep up with the demand," Lee said.

The owner of land bearing unwanted mesquite is faced with the choice of controlling it or cutting and handling the tree to turn it into a commercial product, both of which are expensive.

Mesquite is an economically impor-

tant plant in the negative sense, and it will take research, patience, a sense of humor and a lot of imagination to turn this plant into something that will make a profit. Since complete eradication is impossible, the only solution to the mesquite problem would be to find uses with positive economic returns. Of the untold millions of tons of mesquite grown in Texas each year, only a small percentage will be used for commercial gains.

Any plant with such an ability to survive deserves a better fate than bulldozing and burning, neither of which are economically or environmentally sound. Of all the adjectives used on mesquite, it is doubtful that it will ever be called a wimp. * *

Los Amigos del Mesquite

Following the mesquite symposium at Texas A&I in June 1982, those attending voted to organize as Los Amigos del Mesquite, which later was chartered as a nonprofit educational organization by the Texas Secretary of State. Membership is international and includes barbecue chippers and chunkers, craftsmen, researchers, botanical gardens, science and financial organizations, universities as well as landscape architects. An informational brochure is available from Los Amigos del Mesquite, Northeast Station, P.O. Box 15551, Austin, Texas 78761.

Mesquite yields everything from carvings (below) to barbeque chips (below right).



Paul Hope



Wyman P. Meinzer



So... what's a nutria, anyway?

by Terri Justinger Lobpries

A South American native, the nutria or coypu, was introduced into the United States in 1899 to control aquatic weeds. Although the weed-control programs were unsuccessful, the nutria remained, quickly multiplied and, by the 1930s, had become established in this country. They now are found in 40 of the 50 states and at least three Canadian provinces.

The existing Gulf Coast population dates back to 1937 when E.A. McIlhenny of Avery Island, Louisiana, released 13 Argentine fur-farm nutria into an enclosed area. Reproduction was extremely successful and in 1939, 12 of them escaped into the Louisiana marshes by burrowing under the enclosure. An additional 150 escaped during a 1941 hurricane.

Nutria, also known as the South American beaver, are stocky, semiaquatic rodents resembling large rats or beavers. However, unlike the beaver, they have long, round tails and webs between the inner four toes of their hind feet, but not the fifth outer toe. Their ears are small and round with small hair-tufts inside. Their ear valves close under water and they have excellent hearing. Large hind feet provide motor power in water or on land, while their small forepaws, with four fingers and a retractable thumb, give them a humpbacked walk on land. The long, round tail, which tapers toward



Gracy Allen



John Tveten

Weighing as much as 18 pounds, nutria resemble large rats or beavers. These stocky rodents can float with little or no body motion and can hide themselves in sparse vegetation. Large hind feet and small forepaws give the nutria a humpbacked appearance on land.

the tip, is scaly and has long hairs at the base and bristle hairs over the rest. The tail has little use as a rudder or motor. The average nutria is approximately 24 inches in length with a tail about 16 inches long. The average weight is 10 pounds; however, a large male can weigh 18 pounds and a pregnant female can weigh 17½ pounds.

Nutria are abundant in the Texas coastal marshes and swamps because they are adapted to a semiaquatic environment. They also have been introduced or spread naturally into areas where lakes, rivers, streams or backwaters are found. A nutria hiding in the water will keep only its eyes and nose or the upper part of its head above water. They are able to float with little or no body motion and can stay hidden under sparse vegetation.

On land, the nutria seems slow and clumsy with legs just barely long enough to keep its large body off the ground. However, when frightened it can and will move quickly. Nutria also are able to climb high steep banks, gently sloping trees and wire fences.

Nutria usually build platforms of vegetation for resting, feeding, nesting or hiding from danger in marsh habitat. Most of these platforms are piles of uneaten plant material at a favorite feeding site.

During the warm months they may make their home on the ground in dense vegetation, but during the rest of the year they use burrows abandoned by muskrats, armadillos and other nutria. On streams, canals and lakes, especially inland where little marsh exists, nutria commonly live in



John Tvelen

dens they dig or find. Each pair makes its own burrow by working well above the water level where levees or stream banks are present. These burrows vary from simple, one-entrance affairs with short tunnels to complex units with several multilevel entrances, tunnels and living compartments. Normally tunnels extend from four to six feet into the bank, but they have been found as long as 150 feet. As the family grows the burrow is enlarged and, if the site is not disturbed, in time it may become the home of a large colony. As long as food and water are plentiful the colony will remain in the same locality.

Nutria are prolific and breed throughout the year. Like most rodents, they do not mate for life. Nutria are able to breed both on land and in the water.

The age of sexual maturity differs between males and females and for both sexes between winter and summer, but they usually reach sexual maturity at four to five months. Under good conditions, nutria have a high reproductive rate. The female is capable of producing two litters a year and may have five litters in two years. After a gestation period of about 130 days, an average of four to five young are born. The young are born fully furred, with their eyes open, and they are ready to swim shortly after birth. The females can nurse their young while swimming because the mammary glands are located along the sides of the back.

Nutria are fairly docile; they are neither wary nor aggressive. When disturbed they usually try to escape rather than fight. However, if they are handled

or intimidated they will bite and can cause serious injury. Many curious dogs have learned that lesson the hard way.

Nutria groom and scratch themselves constantly. Their forepaws are used for this purpose while the free outer toes are used for cleaning their ears and combing the fur.

Nutria feed and are most active at night, but they also feed during the daylight hours when hungry. Nutria are commonly believed to be crepuscular, that is, active primarily at twilight, but they may be encountered at almost any hour.

Nutria originally were introduced into this country to control aquatic weeds. The effort was unsuccessful, but the nutria thrived.

Strictly herbivorous, the nutria feeds on a wide variety of succulent green plants, seeds, rushes, aquatic plant roots and sour grasses. Even in waters well stocked with fish, the nutria has never been observed eating them, nor have they shown a tendency to molest or eat eggs of birds nesting in the same area.

Adult nutria usually eat about 2½ to 3½ pounds of food per day, consumed in numerous feedings rather than at one time. Normally they feed by holding food items in their forepaws, either leaning forward while resting on their elbows or sitting in an upright, kangaroo-like position. Because they are buoyant they are able to free-float for long periods, shoving floating plants into their mouths.

In 1981 the nutria was classified as a fur-bearing animal under Texas law. It currently can be hunted year around and there is no limit to the number harvested. However, most trappers and hunters prefer to harvest nutria from November through February. During this time the nutria has a thick winter coat with long guard hairs and dense underfur. Fur buyers claim that the belly fur is the most important portion of the nutria when purchasing pelts. The 1983-84 nutria harvest is estimated at 21,180 pelts with a projected value of \$26,475. * *

Outdoor Roundup



Parks & Wildlife Dept. Wins National Awards

Texas Parks and Wildlife Magazine has won first-place honors in competition with 30 other states' conservation agency publications.

The competition, held each year by the Association for Conservation Information, recognizes excellence in more than a dozen categories. Professionals from the private sector judge the entries submitted by information-education branches.

In addition to the magazine's being selected as the most outstanding magazine in this competition, three other entries also won first-place awards. An audio-visual presentation entitled "Texas Nongame" was selected as best slide show in the Izaak

Walton League's Fred Bear competition. The nongame slide program was produced to promote sales of the first Nongame Print, Stamp and Decal, which will produce revenue for supporting the department's nongame wildlife programs. A painting of whooping cranes adorns the inaugural edition of the stamp, print and decal program.

A promotional graphic for the P&W Magazine entitled "What Do I Know" was judged the best graphic in the Fred Bear competition.

Finally, "Intranews," the department's employee newsletter, won first place in the internal communications category.

Public Archery Hunt For Hogs Announced

Texas Parks and Wildlife Department officials have announced that public archery hunting for feral hogs will be allowed during two weekends in September at the James Daughtrey Wildlife Management Area in Live Oak and McMullen Counties.

Herb Kothmann, public hunt program leader, said the hunts will be on a first-come, first-served basis, with no limit to the number of hunters. Hunt dates are September 21-22 and 28-29.

"Unlike some of our other hunts, these will start at 6 a.m. on Saturday morning and continue until dark on Sunday," Kothmann said. "Hunters can check in and hunt anytime dur-

ing the weekend, but they will be required to pay a \$10 fee whenever they start."

The archers will be able to hunt as much as 25,000 acres of rolling, wooded habitat along the Frio River, with the exact acreage depending upon the level of Choke Canyon Reservoir at the time of the hunts.

Hunters will be required to report to the area check station before hunting. The check station can be found by going three miles north from Tilden on State Highway 16, then turning right (east) on FM 3445 for 5.5 miles to the entrance leading to the check station.

Feral hogs are free-ranging hogs of the domestic variety, and should not be confused with javelinas which also are found on the Daughtrey area, Kothmann pointed out. "Hunters should familiarize themselves with the two animals to avoid an illegal kill," he said.

There will be no bag limit on feral hogs. Overnight camping will be allowed at a designated campsite near the check station.

Creel Survey Shows Improved Catches Coastwide

Fisherman interviews conducted by the Texas Parks and Wildlife Department during the past three months indicate fishing in Texas' coastal bays has improved over the same period in 1984.

Biologist Hal Osburn said private boat fishermen interviewed retained 9,891 fish, which represents an 83 percent increase over the 1984 total. "The spotted seatrout catch showed a significant 235 percent increase, from 951 in 1984 to 3,188 this year," said Osburn, "and red drum catches were up 125 percent during the same period."

Bay fishing guide boats also had better success during the April 1-June 30 period, reporting a 60 percent increase in catches while expending about the same number of man-hours on the water. Of the 1,634 fish they retained, 56 percent were sand seatrout.

Osburn said every bay system except Galveston showed increases in manhours spent by anglers during the creel period. This increase was in excess of 200 percent in the Upper Laguna Madre, he said.

Department Testifies On Trinity Fish Kills

An official of the Texas Parks and Wildlife Department said July 23 that the Trinity River below the Dallas-Fort Worth Metroplex is in a "biologically critical state," and that more fish kills can be expected unless more stringent waste discharge limits are applied.

Dennis Palafox, pollution surveillance program leader, said in a statement presented before a public hearing of the Texas Department of Water Resources that five major fish kills in the river since 1971 were caused by low dissolved oxygen which resulted from deposits of oxygen-demanding sediments. "We suspect that the source of these sediments is wastewater treatment plants in the Metroplex," Palafox said.

He explained that these bottom sediments are re-suspended in the water when rainfall causes a rise. This was the case in early July when an estimated 184,000 fish were killed, valued at more than \$297,000.

Palafox said there are many who perceive the Trinity as a "dead river" because of poor water quality and associated fish kills. "While the Trinity has been severely degraded by wastewater discharges in its upper reaches, it does support a viable fishery in a segment roughly from State Highway 31 near Athens to State Highway 21 near Crockett," Palafox stated. That section of the river supports a wide variety of fish, including game fish species, and he added that in the July fish kill, 55 percent of the dead fish were channel catfish, flathead catfish and white bass.

Palafox said the TP&WD agrees with a recent waste load evaluation done by the TDWR, which stated that the Trinity River is unable to assimilate the waste it presently receives without developing dissolved oxygen problems. "Dissolved oxygen problems will continue as long as current treatment levels are maintained by the major dischargers," Palafox said.

Palafox urged that the TDWR's waste load evaluation be used as a basis for improved water quality criteria for the river. "All discharges to the Trinity River should be evaluated and permit limitations tightened as necessary to achieve improved water quality," he said.

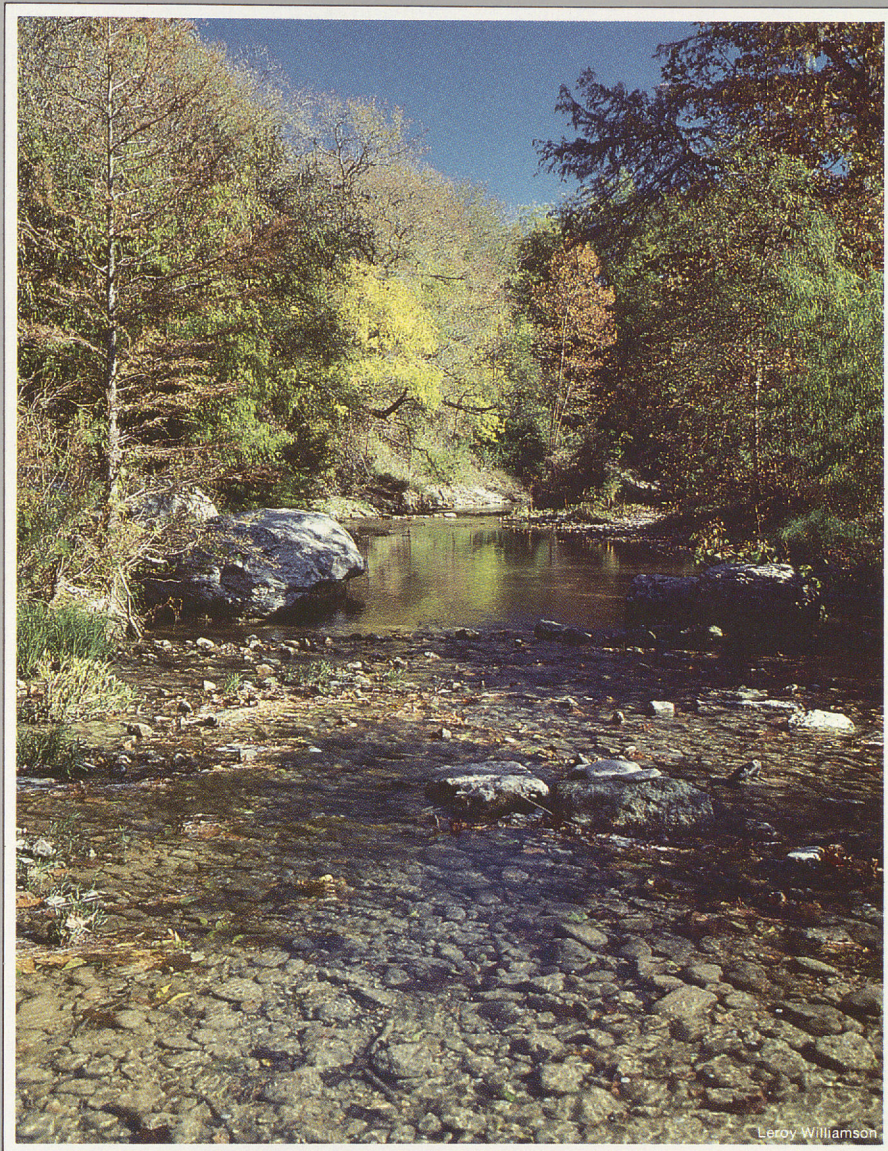
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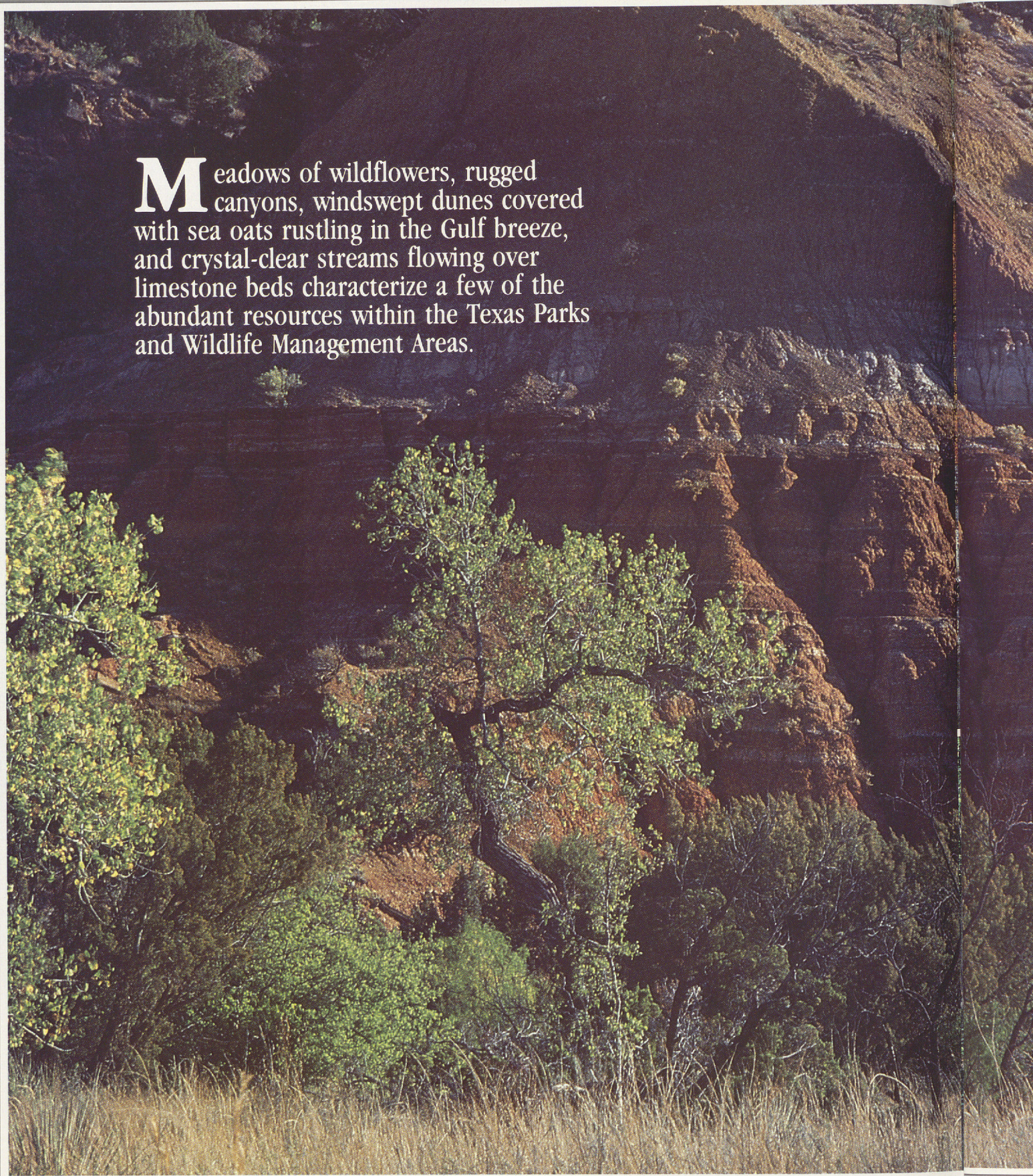
HELP PRESERVE

THE BEST OF

TEXAS

by Mike Herring, Karen Leslie
and Bobby Alexander

Meadows of wildflowers, rugged canyons, windswept dunes covered with sea oats rustling in the Gulf breeze, and crystal-clear streams flowing over limestone beds characterize a few of the abundant resources within the Texas Parks and Wildlife Management Areas.



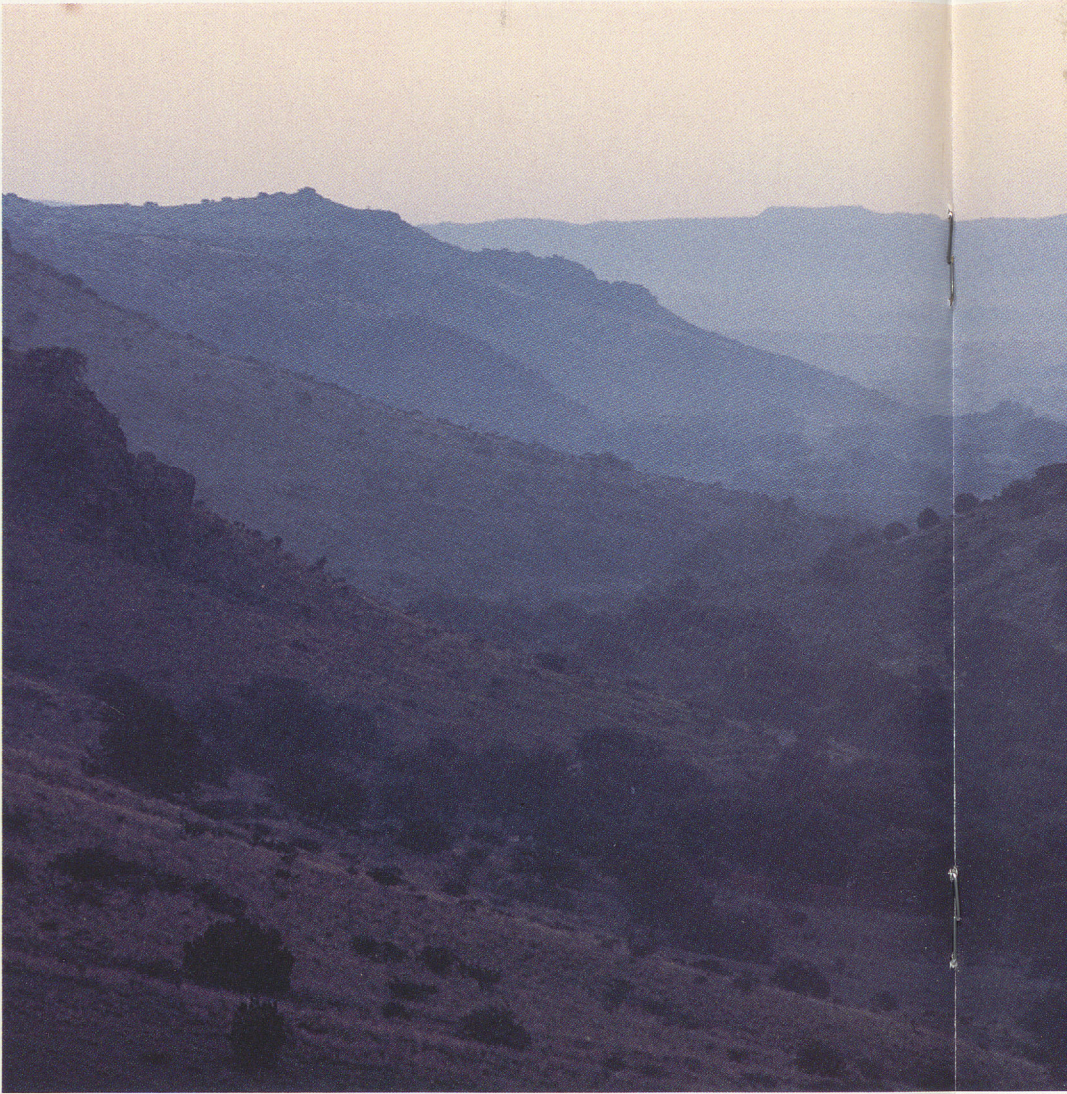




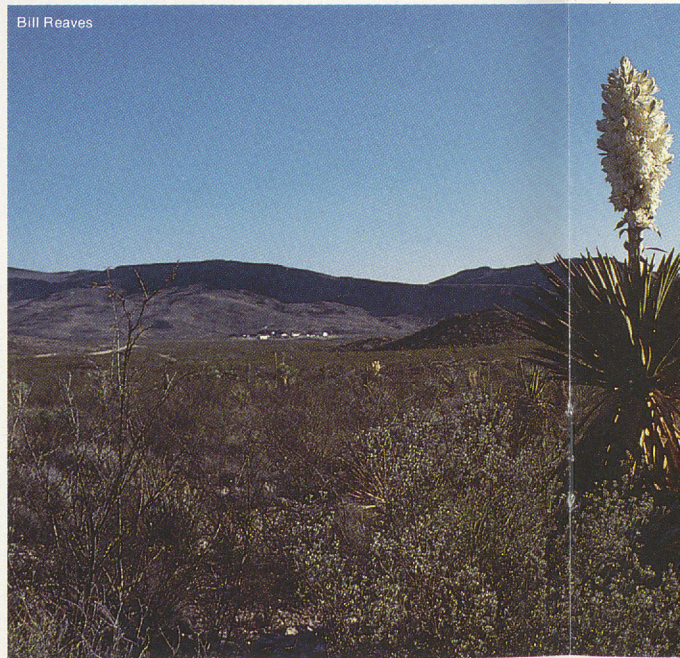
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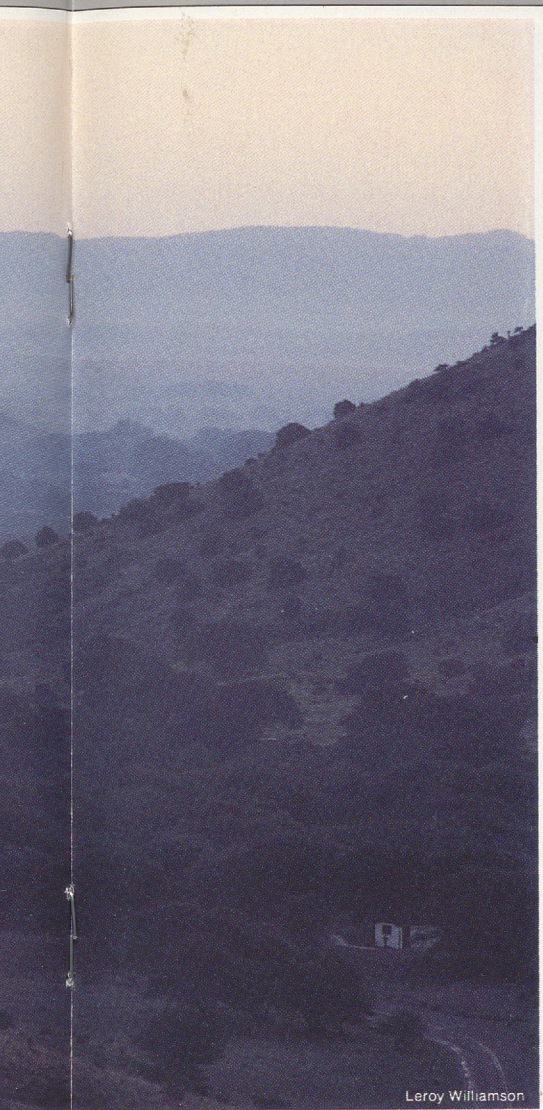
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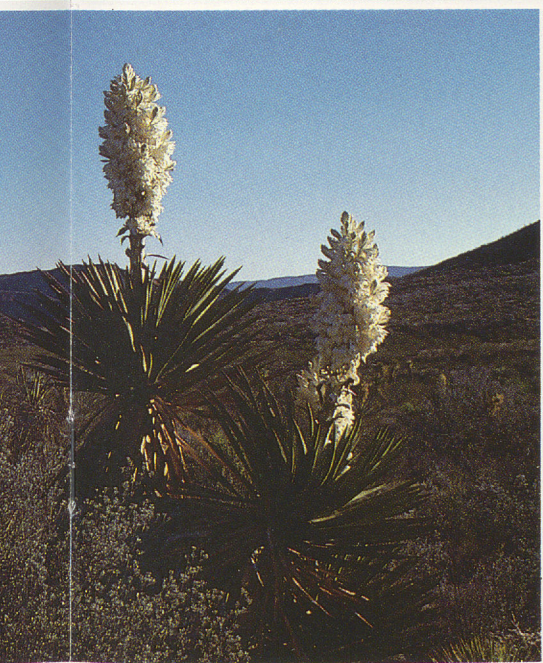
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Bill Reaves



Leroy Williamson



At the present time there are more than 120 parks and 22 wildlife management areas ranging in size from .006 to 100,878 acres. The purpose of state parks and wildlife management areas is varied; from providing resource-oriented outdoor recreational opportunities, to protecting and conserving the natural and cultural features of the state, to wildlife research and management programs. The resources of each one are as varied as the acreage and include caves; marshes; deserts; woodlands; natural springs; an isolated barrier island, Matagorda Island, that can be reached only by water; missions; the site of the signing of the Texas Declaration of Independence; an 1896 steam engine passenger train that puffs along the tracks between Palestine and Rusk in the East Texas Pineywoods; and Fort McKavett, a military installation that has been restored and interpreted to tell the story of the western frontier and Indian resistance to white settlement. Since forts played a major role in settling the Texas frontier, six have been preserved—two private posts and four military ones.

Unique areas and significant natural habitats are preserved through the acquisition of such areas as Lost Maples and Enchanted Rock State Natural Areas, and Black Gap Wildlife Management Area.

As the population of Texas grows, the current shortage of public recreational lands will increase. Also accompanying this population growth is a loss of critical wildlife habitat and a reduction in public hunting lands. Since these programs can only

become more critical in the future, action must be taken now to assure that the citizens of the state, both present and future, have an opportunity to enjoy outdoor recreational pursuits. In order to help meet these needs, an accelerated land acquisition program has been approved by the Texas Parks and Wildlife Commission. The department will be actively seeking areas to purchase for future sites, but no-cost acquisitions such as donations and leases are vital elements to meeting the needs of Texas.

Texas landowners are known for their deep appreciation and love for their land and its perpetual preservation. The Texas Parks and Wildlife Department shares this feeling and has worked with many landowners the past few years to preserve farmsteads or ranches during these times of high taxes and escalating operating expenses. Landowners faced with finding alternatives to selling portions of their land and watching its beauty destroyed have found it desirable to donate or sell to non-profit organizations or governmental agencies, such as the Texas Parks and Wildlife Department.

General objectives of the department's programs include protecting the natural and cultural heritage of the state, conserving and managing its resources, providing a wide spectrum of opportunities for outdoor recreation and providing outdoor laboratories for wildlife research and demonstration. Landowners who have donated or sold their property to the department know their property will be preserved for present and future generations.

Varying degrees of development and public use are allowed on different areas; however, protection of the natural resources while promoting public use is a major goal.

Today it is easier than ever for a landowner to give land or a partial interest in it. Federal laws encourage gifts of real property by providing substantial income tax advantages, capital gains savings and estate tax benefits for donors.

Gifts or donations of land can take many forms. The simplest and most desirable is an outright gift of land or a fee simple donation. Such gifts can be made at any time during an individual's life or can be part of a will in the form of a bequest.

Some individuals may wish to donate a tract of land, yet retain some use of the property. Such an arrangement can be made and is referred to as a reserved life estate. Under this method the landowner insures preservation of the property while living and using the land or a portion of it until death. A similar arrangement is an undivided interest involving the donation of an interest in the land and not any specific portion. As such, the land may have several owners but still be retained as a whole. Subsequent gifts of the remaining interest may follow. Both a reserved life estate and an undivided interest often preclude use of the property by the public for an undetermined period.

Anyone seriously considering a significant gift of land should consult an attorney. The tax laws are complicated and subject to change.

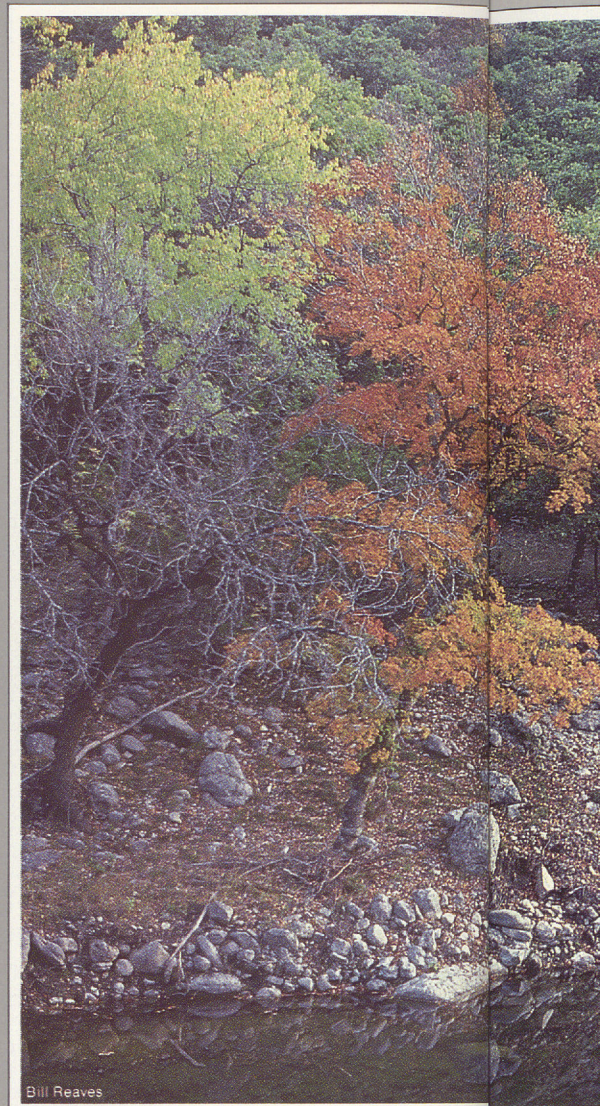
Unfortunately, the department cannot accept all land offered to it. The high costs of development, operations and maintenance make it financially infeasible to accept property that does not meet department standards. The suitability and quality of the resource, its size, its location in relation to need and other such factors are considered before land is accepted.

If you are considering a gift, donation, or even sale of property to the Texas Parks and Wildlife Department, please contact the Executive Director in Austin:

Executive Director
Texas Parks and Wildlife
Department
4200 Smith School Road
Austin, Texas 78744
Telephone 512/479-4802

Several steps are involved in the donation or sale of property to the department. After a landowner makes the initial contact with the department, an on-site inspection of the property is made. The nine-member Parks and Wildlife Commission, appointed by the governor, reviews the proposal and either approves or declines the acquisition based on the inspection report. If approved by the commission, a survey, appraisal and title opinion also may be obtained.

Continued growth of the state Parks and Wildlife management program depends on the generosity and sensitivity of today's Texas landowners. Please help preserve the best of Texas' natural and historic resources so future generations of Texans can continue to enjoy the diversity that is Texas. **



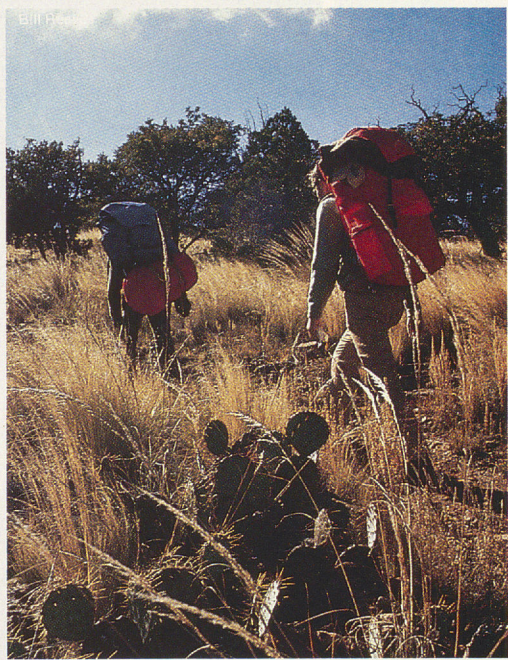
Bill Reaves



Glen Mills



Leroy Williamson



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Texas Parks & Wildlife Department
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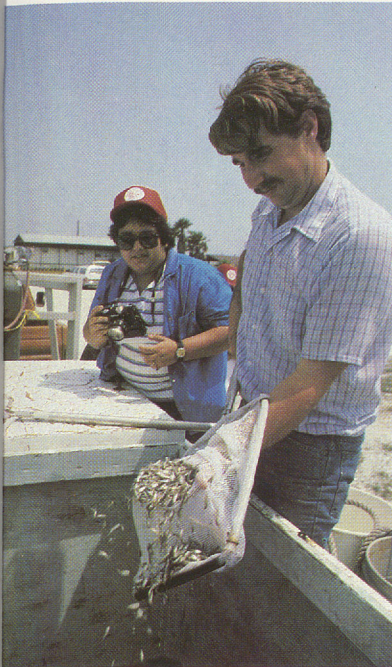
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COMPILED BY THE PARKS AND WILDLIFE DEPARTMENT'S NEWS SERVICE



Spotted Seatrout Stocked at Matagorda Bay

Biologists of the Texas Parks and Wildlife Department have completed the first significant stocking of spotted seatrout in a Texas bay since the winter fish kill of 1983.

Dr. Tony Maciorowski, director of the Perry R. Bass Marine Fisheries Research Station in Palacios, said crews stocked more than 664,000 fry and 250,000 fingerlings in Matagorda Bay during June.

The released fish were the result of spawning and culture experiments designed to provide large-scale hatchery production techniques for spotted seatrout by 1990.

Maciorowski said experiments with the trout at the hatchery date back to 1974. However, until 1983, fingerling production attempts were largely unsuccessful, he said.

Bob Colura, project leader for the spotted seatrout culture program, said he is optimistic about the program's future. "This year's June production period yielded a quarter of a million fingerlings, where a similar level of effort two years ago provided only 50,000 fish," Colura said. He added that the improved yields are due to several refinements, including techniques for brood fish

capture, handling, spawning and pond management.

Colura stressed that the culture program is experimental. "Nevertheless, this is the first year we are attempting to produce two crops of spotted seatrout. If our July and August experiments are as successful as those in May and June, we will have come a long way in demonstrating the feasibility of rearing and stocking spotted seatrout into Texas bays," he said.

Free Booklets Can Assist Fundraising Efforts

Outdoor recreation-oriented organizations and local government officials can learn how to raise money for local parks and other recreation facilities by reading three free publications being distributed by the Texas Parks and Wildlife Department.

The illustrated booklets are based on data originally compiled by the U.S. Department of the Interior, but edited to emphasize conditions in Texas.

The booklets are "Fundraising for Parks, Recreation and Cultural Resources," "Scrounging," and "Foundations . . . A Handbook."

To obtain the materials, write John Emerson, Comprehensive Planning Branch, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744, (512) 479-4899.

October in . . .

TEXAS PARKS & WILDLIFE

Autumn foliage presents a spectacle of colors, and we'll showcase them for you in the October issue with a 14-page photo story. In other stories, we'll go along on a youngster's first squirrel hunt, visit Lake Brownwood State Recreation Area in the heart of Texas, watch some young coyotes in action and examine the state's trespass laws. The Young Naturalist will describe the mysterious migration of the monarch butterfly.

Kids Raise Money For Battleship Repair

A third-grade class at Hollibrook Elementary School in Houston has collected \$54.36 and sent it to the "Save the Battleship" fund for restoration of the Battleship "Texas."

Sandra Mayo's reading class raised the money after seeing pictures of the retired warship moored adjacent to San Jacinto Battleground State Historic Site.

Young Angela Thomas, who had visited the battleship, wrote, "I like everything on it. It is really neat." Another third-grader, who had not, said, "I would like to visit it someday."

The campaign to save the battleship is being coordinated by the Battleship Texas Advisory Board. Donations should be sent to "Save the Battleship," P.O. Box 1986, Belaire, Texas 77401.

Department Exhibit Schedule

In observance of National Hunting and Fishing Day, the El Paso Coalition of Sportsmen will sponsor a day of activities at the Fort Bliss Rod and Gun Club on September 29. A firearms safety exhibit, sponsored by the Texas Parks and Wildlife Department, will be on display, and a representative of the department will be on hand to answer questions. Many of the activities will be youth-oriented, and the public is invited to attend.

The Central Texas Wild Turkey Federation will sponsor a Sportsmen's Day Show at Killeen Mall on September 28. The Parks and Wildlife Department's exhibit at that event will emphasize hunter safety and water safety.

Other events scheduled during September include:

September 19-22: Houston Camper and Recreational Vehicle Show, Houston Astrohall Complex.

September 20-22: San Antonio Fall Hunting and Product Show, sponsored by the Texas Trophy Hunters Association, Joe Freeman Colliseum.

The Parks and Wildlife Department's exhibit at both these functions will include color photographs and supplies of informational pieces such as hunting and fishing regula-

tions and state park guides. A department representative will be on hand to answer questions.

Coming up October 3-20, the department will have an audio-visual presentation along with the stationary exhibit at the State Fair of Texas. The department's exhibit will be in the Tower Building, and the state fair will have a sesquicentennial theme.

Elephant Mountain Ranch Donated To TP&WD

The Texas Parks and Wildlife Department has received donation of the Elephant Mountain Ranch, a 23,000-acre ranch some 20 miles south of Alpine on State Highway 118 in Brewster County.

C.G. Johnson of Houston donated the land to the TP&WD to be managed as a wildlife management area for the conservation and development of bighorn sheep and large game animals and compatible recreational uses. The donation was made possible by Jerry Henderson, principal in Henderson Properties, and was accomplished in Dallas on July 10, 1985, through the offices of the Plano Title Co. It represents the single largest donation to the department.

Department officials said the ranch is home to mule deer, pronghorn antelope, javelina and scaled quail. The area also is suitable bighorn sheep habitat and will aid the department's desert bighorn sheep restoration efforts. The ranch's most notable feature is its namesake, 6,200-foot Elephant Mountain.

Elephant Mountain Ranch will remain closed to the public pending development of a management plan for its use.

Correction

A \$5 freshwater trout stamp and \$5 saltwater fishing stamp will be required effective January 1, 1986, not September 1, 1986, as reported the August "Outdoor Roundup."

The two stamps were authorized by the Texas Legislature this year. Anglers should be aware of the new requirement and purchase the appropriate stamps before the January 1 effective date.

Paisano— Southwestern bird of legend and folklore

by Mary-Love Bigony

It's hard to see a roadrunner scooting across a desert flat without expecting to hear "beep beep" and see Wile E. Coyote in hot pursuit.

Several generations of American children have grown up watching the antics of these animated characters, and while many cartoons have done a disservice to wildlife (most notably in the case of Bambi), it's easy to see why Warner Brothers made this outlandish-looking bird a Saturday morning star. The roadrunner's plumage, iridescent when seen at close range, is heavily streaked, coarse and harsh, and looks as though it could have been rented at a costume shop. The long, shaggy crest atop its head, often blue or purple, enhances the comical appearance. Its eyes seem to glow, giving the roadrunner a perennially startled look, and bare patches of blue and orange skin behind the eyes could have been put there with an artist's paintbrush. There's something jaunty about the roadrunner in the way it walks and the way it looks.

But the roadrunner isn't a cartoon character. It is one of the most recognizable members of Texas' avian community and occupant of a distinct ecological niche. Its habits are noteworthy even without embellishment by a cartoonist's pen. Roadrunners have become a symbol of arid southwestern deserts, even though they are equally at home among the tall pines or swamplands of East Texas. "This big cuckoo inhabits bare ground with more or less scattered trees and bushes where



Bill Reaves

it can walk about freely," wrote ornithologist Harry C. Oberholser. "It is not much interested in botany." Their large range, which includes all of Texas, extends from central California to central Mexico and east into Arkansas and Louisiana.

Man's long fascination with this native bird is reflected in the volumes of legends associated with it. The late J. Frank Dobie, noted folklorist, was perhaps the roadrunner's biggest fan. He always called it by its Mexican name, paisano, meaning "fellow countryman." Dobie's stationery bore a likeness of a paisano, and in the 1930s the Texas Folklore Society adopted the bird as its emblem.

In a 1939 essay, Dobie related a

number of tales and superstitions inspired by this member of the cuckoo family. The Pueblo Indians of New Mexico attached solemn significance to the bird's tracks, which show two toes pointing forward and two pointing backward. The Indians carefully duplicated the track on the ground near the tent of their dead to mislead evil spirits seeking the course taken by the departed soul. Plains Indians often hung the whole skin of a roadrunner over their lodge door to ward off the henchmen of the Bad God. Guides in the mountains of Mexico believed that if a lost man found and followed a roadrunner, it would lead him safely to a trail. This legend has some logic to it, since the roadrunner got its name from



Wyman P. Meinzer

Someone once said the roadrunner looks like a discarded doodling of a chicken designer. Heavily streaked with white and buff, its plumage has iridescent undertones.

running not only along roads, but also along deer trails and other animal pathways that provide an edge of vegetation and insects that live on animal wastes.

Indians in Mexico's Sierra Madre believed that a paisano crossing the road from left to right was an omen of good luck, while one crossing in the opposite direction would bring luck of the opposite kind. A roadrunner living near a home was supposed to bring the residents good fortune, and in many stories it took the place of the stork in bringing babies into the world. Some Mexicans believed the paisano, their fellow countryman, stopped at noon to pray no matter where he was and left the sign of the cross with every



Wyman P. Meinzer

Parent roadrunners
take turns hunting
food for the nestlings.

As one adult bird
approaches with a
horned lizard for the
hungry chicks, the
other parent takes off
in search of
additional treats.



Wyman P. Meinzer



Leroy Williamson

step. The Tarahumare Indians of the Sierra Madre attributed their running skill to meals consisting of roadrunner meat, and a curandera (Mexican folk healer) interviewed by *National Geographic* in 1982 said a specially concocted roadrunner stew could cure tuberculosis, backaches, itches, boils, lung problems and leprosy.

Even people who attach no special significance to the roadrunner or its activities find the curious bird appealing. It's something of a tourist attraction to people visiting from outside its range, but even those to whom the roadrunner is a familiar sight enjoy watching it dart down a trail, throw on the brakes by hoisting its tail, and stand for a minute cocking its head before dashing off again. Finding itself face to face with a human, the curious

It was the first time I
had ever seen a
roadrunner in the wild.
I was in the desert
and I had heard that
roadrunners were
common there.
I was in the desert
and I had heard that
roadrunners were
common there.



Wyman P. Meinzer

roadrunner might hop atop a rock, lift its shaggy crest, and swish its long tail erratically. A roadrunner seeing its reflection in the hubcap of a parked car often stops, peers curiously for a moment and aggressively attacks its own image.

The associate editor of *Texas Parks & Wildlife* magazine, camping at an RV park near Canyon Lake last spring, was entertained throughout the weekend by a pair of roadrunners making frequent forays to feed their young. On each trip the parent birds gained access to the tree where the nest was located by hopping atop an RV parked nearby. On Sunday afternoon, the owner of the RV pulled out, leaving the space vacant. Soon after that, here came the parent roadrunner with a lizard for the kids. Dashing toward the

spot where the RV had been, the bird suddenly threw on its brakes, threw up its tail and cocked its head as if to say, "What the devil happened here?" It didn't take long for the resourceful bird to find another route up to the nest, but before long another RV claimed the parking space next to the tree. The next time the roadrunner appeared, it once again stopped to check out the situation before nonchalantly using the new vehicle as an access route to the tree.

Running is the roadrunner's strong suit. It flattens its feathers, extends its neck and tail parallel to the ground and moves its long legs with surprising speed. Old-timers used to say a roadrunner could outrun a stage coach and no doubt it could, having since been clocked at up to 15 miles per hour

and even faster on a downhill slope with a favorable wind. But whereas it excels at running, its flying ability hardly earns it the right to be called a bird. Its wings are short and rounded, and flying for the roadrunner is a short, spasmodic episode. But the bird's limited flying ability serves it well. It can glide to the ground from a perch or, if threatened, burst into the air in mid-stride and dive into cover. This combination of speed and limited bursts into the air work well for the bird. As Wile E. Coyote should have learned by now, the roadrunner is not an easy mark. It can escape most predators with a combination of speed and maneuverability, or by hiding in thick vegetation.

Over the years and throughout history, the roadrunner has acquired a

A roadrunner can kill a small rattlesnake with its beak by circling the reptile and stabbing the head repeatedly. The bird avoids the snake's counterstrikes by making brief but effective leaps into the air.



Wyman P. Meinzer



Leroy Williamson

number of colloquial names: chaparral cock, ground cuckoo, lizard bird, corre camino, cock of the desert, churca or snake killer. This last appellation was inspired by fantastic tales of roadrunners constructing a corral of cactus joints around a rattlesnake, then killing the reptile or forcing it to kill itself. Like many legends, this one has some basis in fact. Even though roadrunners don't build corrals around the poisonous reptiles, they do indeed kill and eat small rattlesnakes. Circling around and stabbing the snake's head repeatedly with its long pointed bill, the bird avoids any counterstrikes by making brief but effective leaps into the air and running in a confusing, zigzag pattern. If the bird is the victor,



Wyman P. Meinzer

it swallows the snake head first, and the reptile's tail and rattles dangle from the roadrunner's bill as it digests the serpent.

However, snakes are only occasional prey for roadrunners. More frequently they satisfy their huge appetites with snails, mice, crickets, centipedes, scorpions, tarantulas, black widow spiders and some plants. The bird is especially adept at catching grasshoppers, stirring them into flight with its long bill then leaping to catch them in mid-air. Roadrunners occasionally eat birds and their eggs, and can capture something as large as a mockingbird, although predation of quail and quail eggs is said to be exaggerated. Roadrunners feed their young a diet made up almost

entirely of reptiles. Dashing after a hapless lizard, the bird uses its long tail as a rudder and for balance during sharp turns. After immobilizing the reptile with a whack on the head, the bird picks up the prey with its bill and beats it on the ground or against a rock.

Texas roadrunners breed from early March to late October, and like other aspects of their natural history, their nesting habits are unusual. The nest is a loose conglomeration of sticks, perched three to 15 feet above the ground in a tree or bush. The female lays three to five white eggs, often at intervals of several days. She begins incubating the first one as soon as it is laid, and consequently the birds can

hatch over such a long period of time the first fledgling sometimes is ready to leave the nest before the last chick even breaks through the egg. Newly hatched roadrunners have been described as "featherless, greasy, black creatures with a reptilian appearance." While the parent birds are off on feeding forays, the chicks turn to passive solar energy to keep warm, soaking up the sun's rays on their dark backs.

The cartoon roadrunner's sardonic "beep beep" is nowhere to be found

Man's long fascination with the roadrunner is reflected in the many legends associated with this native bird.

in the real roadrunner's repertoire of calls. One researcher identified 16 different sounds made by the birds, including a series of coos starting at a high pitch and descending to a low, mellow note. During springtime courtship, the male stands in a dead tree or tall cactus at sunrise and makes throaty, cooing sounds. The female makes a whining noise while building the nest. Startled roadrunners make a clacking sound by rubbing the upper and lower parts of their bill together and nestlings buzz when begging for food.

To say the roadrunner is a well-known bird is an understatement. Its likeness has appeared on jewelry, cuff links, tie clasps, dishes, clothes, pictures and, of course, Saturday morning cartoons. But the only way to appreciate this bird fully is to watch it in its native habitat, darting about, catching lizards and snakes and looking at the world with wide-eyed cunning. **



Staying on top of deer

by David R. Synatzske,
Wildlife Biologist, Chaparral
Wildlife Management Area



Have you ever wondered how game biologists determine how many deer are in an area? Or why the place you hunt in Llano County gets "more than enough" doe permits, while that little place you hunt in East Texas doesn't get any? Perhaps the following will offer some insights.

How Texas Parks and Wildlife Department biologists determine the number of deer in an area is a process involving many months afield annually, especially in the late summer and fall of the year. It has evolved from years of research and even more years of application.

In terms of deer habitat, Texas is as diverse as any state in the nation. Many people know we have approximately four million deer, and some can even tell you where most of those deer are located, but not many people actually know how deer are counted.

The white-tailed deer census in Texas is an effort to determine annual population levels, distribution and herd composition so deer harvest and management recommendations can be made. Deer census data are compiled by county and then applied to management units. For hunters and landowners, the most apparent results of a deer census are harvest regulations and antlerless deer permit issuance rates. Put another way, the census determines whether someone does or doesn't get a doe permit.

But how biologists arrive at these antlerless deer permit issuance rates goes back at one point or another to deer census results. There are several different classes of techniques used—complete inventory, inventory by sampling and density indicators.

Complete Inventory

A complete inventory could be compared to the U.S. Census Bureau's efforts to determine the number and distribution of people in the United States. It is an attempt to count each and every deer. This type of census is most commonly used by private biologists or landowners dealing with a confined deer herd, such as a ranch enclosed by a deer-proof fence. Intense management of the deer herd is usually the goal in such efforts, and this census technique is used extensively in areas



Eg Dutch



In terms of deer habitat, Texas is as diverse as any state in the nation. Many people know we have approximately four million deer, and some can even tell you where most of those deer are located, but not many people know how deer are counted.



of South Texas where trophy deer management is practiced. The complete inventory of a ranch is done most efficiently with a helicopter. Efforts are made to count each deer, identify its sex and other characteristics and note population densities.

Inventory by Sampling

Conducting transects through different types of habitat in the deer range is a technique used to census large acreages. Examples of this type of censusing include the Hahn walking transects, evening roadside deer counts, spotlight survey lines and aerial surveys flown in transects.

Hahn Walking Transects—Most widely used in the central one-third of the state, which includes the Edwards Plateau, Hahn cruise line walking transects are two miles long and lie cross country from west to east through typical deer habitat. An observer walks each line, which is permanently marked with paint, during the last hours of daylight. All deer observed are recorded by sex and age class (fawn or adult). Deer density estimates are obtained by dividing the number of visible acres along the survey route by the number of deer observed. Hahn transects are surveyed from mid-August through mid-October.

ber annually.

Evening Roadside Deer Counts—Although widely used in the central one-third of the state, roadside counts are not efficient in some portions of the state. Normally these transects are seven miles long and are established along ranch roads and other infrequently traveled roads. A single observer conducts the counts from a pickup during the last hour of daylight. The number of deer observed are recorded by sex and age class (fawn or adult) and densities are determined by applying the number of deer observed to the visible acreage. Counts are conducted from mid-August through mid-October.

Spotlight Survey Lines—Most widely used technique throughout the state, the spotlight census is an efficient means of censusing deer in many portions of the state's deer range. The principal advantages of this technique are that it covers a wide diversity of deer habitats and obtains a larger sample. These lines, however, are limited to available roads—ideally isolated ranch roads or roads infrequently traveled.

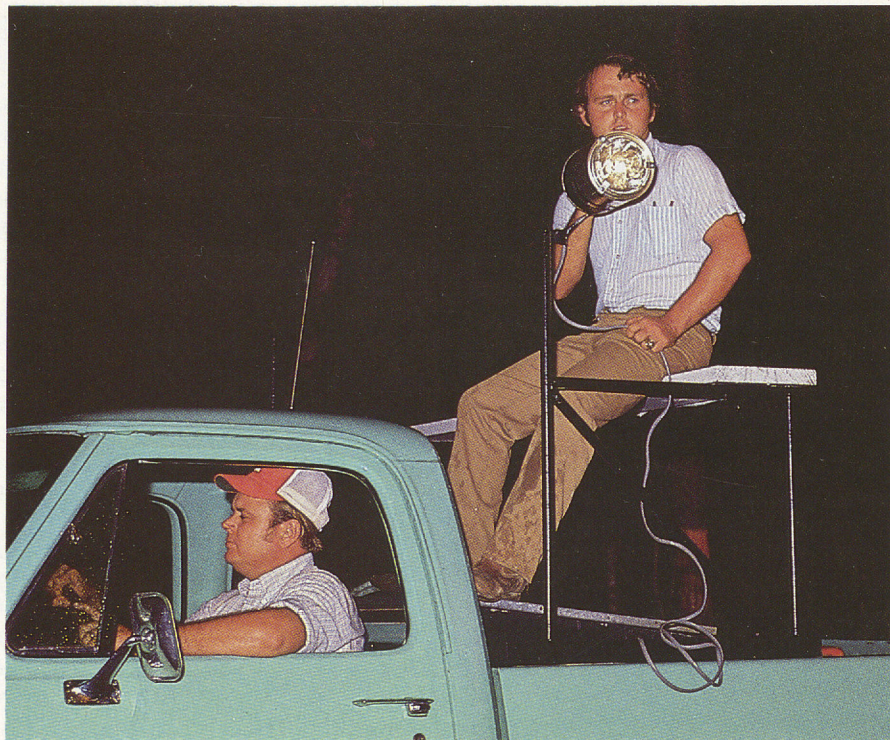
The spotlight route is 15 miles long and is counted during the four-hour period beginning one hour after sunset. A driver and two observers, each equipped with a sealed beam spotlight, conduct the survey from the back of a

pickup truck. The deer observed are recorded by sex and age class (fawn or adult) and applied to the visible acreage to arrive at an estimate of deer density.

Spotlight surveys are conducted from mid-July through mid-October. Prior to each survey, game wardens and persons living along the route are notified. Any spotlighting activity always should be reported to the local game warden, as the activity observed may be illegal.

Aerial Deer Surveys—Used in South Texas, the Rolling Plains, Trans-Pecos and the western portion of the Edwards Plateau, these counts are most efficient where visibility is not hindered by a canopy of trees. The most cost-effective in terms of acreage sampled, this technique offers the ability to sample, by transect, varying types of habitat effectively.

Aerial deer surveys are conducted from a fixed-wing aircraft at an altitude of 150 feet traveling approximately 65 miles per hour. Two observers accompany the pilot and count deer within 100-yard strips on each side of the flight line. Each mile of flight transect samples 73 acres of deer range. Transects are generally flown the first and last 1½ hours of daylight. Approximately 195 miles, or 14,000 acres of transects can be flown daily. Aerial surveys are conducted from mid-



While efforts are made on spotlight, Hahn, mobile and aerial surveys to record deer by sex and age class, incidental sightings often offer a large sample of deer, thus offering more precise estimates of buck/doe ratios and fawn production.



August through October annually.

To supplement data on deer densities and density trends throughout the state, incidental sighting records of does, fawns and bucks are kept in all areas of the state during August, September and October each year. Observations are recorded by management compartment within each county where possible.

While efforts are made on spotlight, Hahn, mobile and aerial surveys to record deer by sex and age class (fawn or adult), incidental sightings often of-

fer a large sample of deer, thus offering more precise estimates of buck/doe ratios and fawn production. In addition, information can be compartmentalized to show population trends in particular areas. This aids biologists and technicians in dealing with problem areas and helps in dealing with landowners concerned about management of deer resources on their land.

One technique that is used more and more each year by private biologists and ranchers is the aerial census by helicopter. It is most widely used on large South Texas ranches and other portions of the state where canopy cover permits. The helicopter has become a valuable management tool on ranches, in areas where dense brush prevents accurate census of deer from the ground and in areas where managers wish to observe as many individual animals as possible. It can be used to census all or part of a ranch.

Helicopter surveys on private ranches are funded and conducted by the ranchers and usually take place in September, October and November and in the post-hunting season months of January and February. The helicopter is flown at 30 to 40 miles per hour at an altitude of 30 to 50 feet. All deer observed are recorded by sex and age class and in trophy management bucks are further classified as to their antler characteristics. In addition to data on

deer, the helicopter flight time also is used to record conditions of habitat and developments on the ranch.

Accuracy of helicopter surveys depends upon the experience of the pilot and observers, canopy cover and weather at the time of the flight. Recent research indicates that helicopter accuracy may vary with ranges between 30 and 60 percent not uncommon. The cost of helicopter surveys ranges from \$200 to \$250 per flight hour, or about 10 to 12 cents per acre. This technique currently is used by the Parks and Wildlife Department on some of its wildlife management areas.

September "Made in Texas" TV Program Concentrates on Deer

The Parks and Wildlife Department's new television program "Made in Texas," will devote the its September program to deer management in white-tailed deer census work.

The program features an interview with department big-game program director Charles Winkler and goes along on an aerial, spotlight and transect surveys. Trapping of whitetails for radio telemetry work and transplanting to other parts of Texas also is featured.

Check your local PBS listings for air times in September.

Density Indicators

While the term census generally denotes some type of count or sample of individuals, often deer density trends can best be monitored without actually counting the animals. One such example is the use of browse inventories. The effect of deer on browse plants is measured, thus linking the deer more directly with their habitat.

While deer techniques are aimed primarily at gathering data relevant to deer population densities and trends, sex ratios and fawn production, other information is readily available during these surveys. Data on furbearer population trends and an overall view of



Ed Dutch

habitat conditions are recorded. Also of importance to biologists is the condition of animals observed, and which habitat types are being most utilized by deer.

Currently, 1,100 transects are being monitored across the state, totaling an estimated 14,500 miles, in an effort to provide as much insight as possible into the conditions and trends of white-tailed deer in the state.

The techniques used today are considered to be the most efficient in terms of cost, manpower and accuracy that can be utilized in the state's diverse white-tailed deer habitats. These techniques are part of the foundation on which hunting regulations, antlerless deer permit issuance rates, deer harvest and management recommendations are based. However, they are not the entire basis for management recommendations.

Deer census techniques yield data on deer population trends and estimates of deer density, but nevertheless, these figures are just estimates. Deer are unlike cattle, which in some instances can be counted by simply honking a horn at feed sites. Also, individual animals are not as easily recognized as are some domestic livestock. It would be impossible to count every deer in the state or even on a given ranch. These techniques, developed and tested through research and application, are the most efficient means of monitoring the white-tailed deer herd in Texas. While they provide only estimates, they are the best means available.

We've mentioned how deer are censused and some of the things biologists look for. All of this information is used to formulate harvest regulations and management recommendations. But it's up to the individual landowner and hunter to implement these recommendations; to realize that in many areas deer are overpopulated, that habitat is deteriorating and that the overall quality and, in some instances, quantity are diminishing.

What ultimately becomes of the deer resource in Texas depends largely upon the sportsman and landowner. * *

Editor's Note: A handy publication entitled "Deer Census Techniques" by Milo Shult and Bill Armstrong is available from the Texas Parks and Wildlife Department as PWD Booklet 7000-83.

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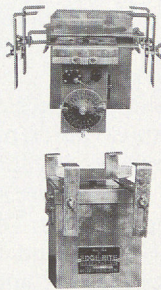
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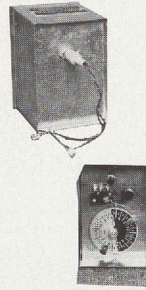
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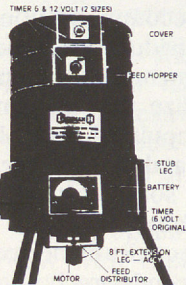
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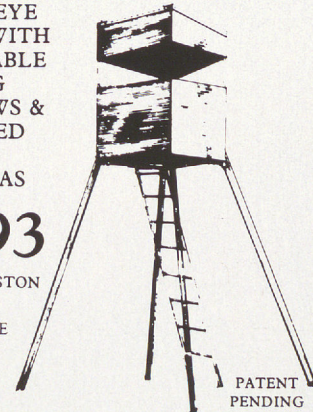
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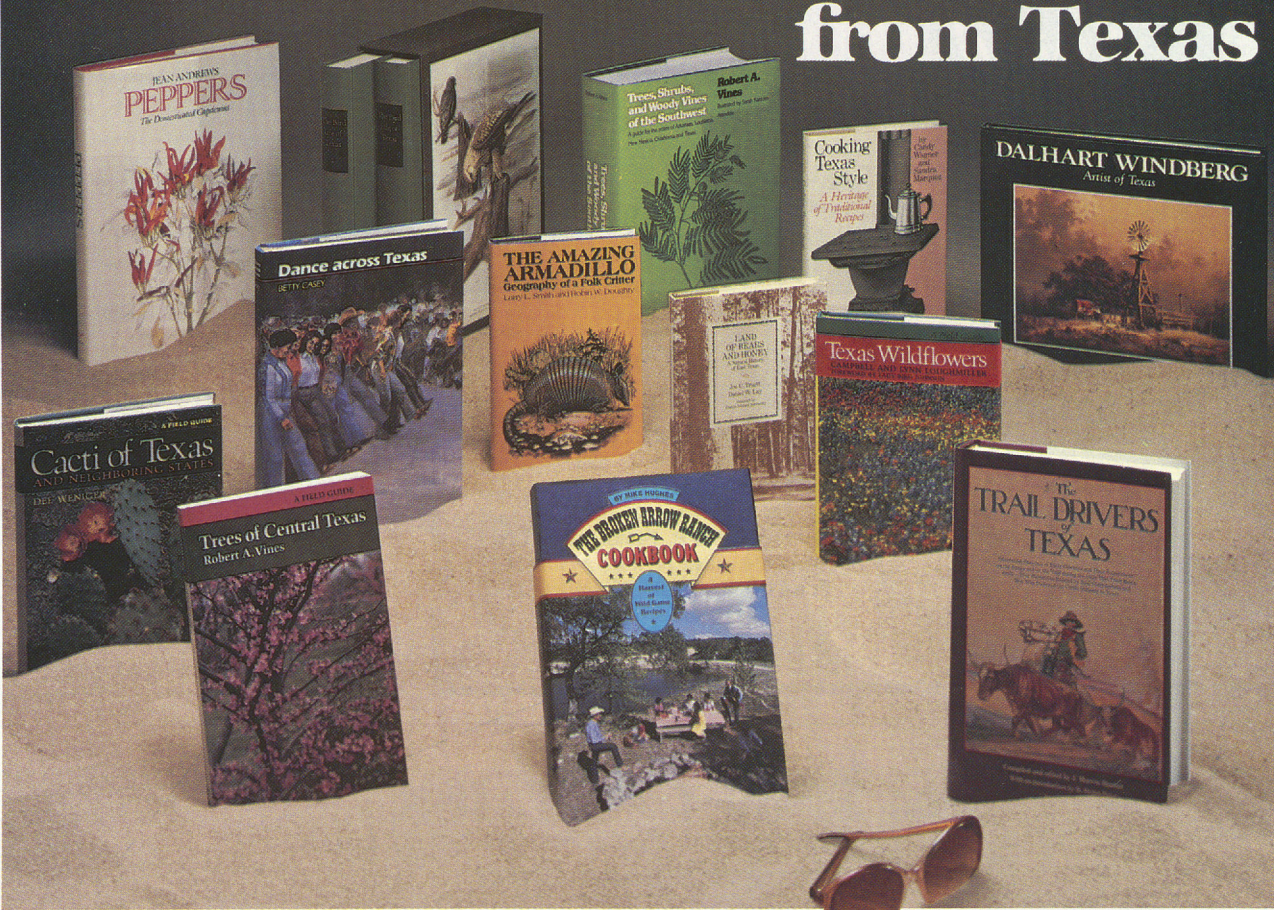
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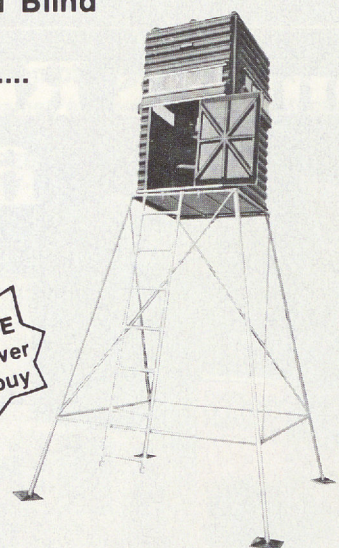
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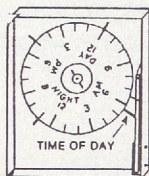
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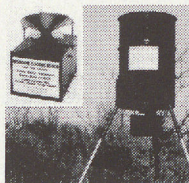
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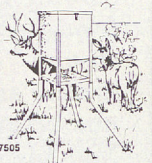
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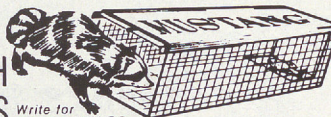
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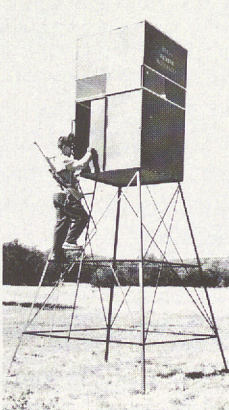


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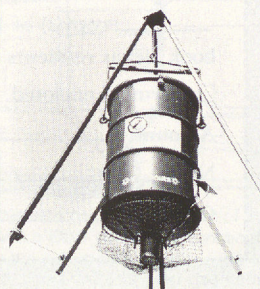


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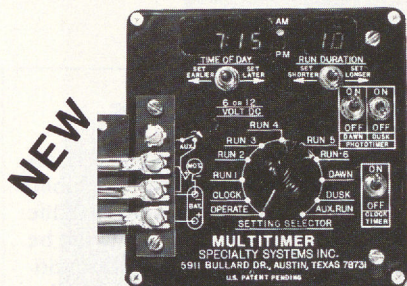


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Letters

Gar Fishing

Do you know of a good method for catching freshwater gar? I already know a variety of saltwater methods, but they don't work in the bayou since there is so much trash.

I've recently acquired three acres on Pine Island Bayou in Lumberton. I love to eat gar and there are some big ones here. I see them swirling every now and then and I even caught one—no, it caught itself on one of my limb lines. It was only 28 inches long, but sure was good eating.

Gary Broussard
Lumberton

■ Gar are difficult to hook with standard fishing tackle because of their hard snouts and sharp teeth. However, one method of catching gar is easy, effective and sporty. Obtain a medium-sized "safety pin" style spinnerbait and remove the hook and plastic skirt opposite the spinner blade. Next, find a piece of white nylon rope of approximately 3/8-inch diameter and cut a piece about three inches long. Use an ice pick or other pointed tool to shred one end of the rope, then attach it to the lure with the shredded end to the rear. When a gar strikes the lure, its teeth become entangled in the nylon. Use caution, however, in extracting the lure from the fish's mouth to avoid being bitten.

Better and Better

I just want to say that the *Texas Parks & Wildlife* magazine has really come a long way. It just gets better and better every month. We have been readers for 25 or 30 years. My husband passed away 18 years ago, but I still take the magazine and it makes the rounds in our family. We all enjoy it very much. I know that it will keep improving and I wish the magazine a lot of continued success.

Mrs. L.S. Utz
San Antonio

Herpetological Society

We enjoyed the articles on snakes in the May and June issues. We found them educational and informative and would like to see more articles of this nature on other types of reptiles and amphibians.

However, we would like to correct the name of our organization as it was published in the list of herpetological societies in the June issue. We are the South Texas

Amphibian and Reptile Society, S.T.A.R.S. We meet the last Sunday of each month at 3 p.m. in the Brazosport Museum of Natural Science, 400 College Drive, Lake Jackson. Our mailing address is P.O. Box 233, Angleton 77515. Our meetings are free and open to the public and we invite all interested people to attend.

Greg Luther
S.T.A.R.S. President

To Borrow a Phrase . . .

Thank you for a very good magazine. I enjoy reading every word of it, every month. I am sure it is difficult to catch every error in spelling, grammar, word meaning and composition.

The only thing I have in common with columnist James Kilpatrick is my love of the English language and my desire to protect it from corruption. I do not know why I singled out the word used to describe the ditches in Paul Montgomery's "Piney Woods Wildflowers" in the June issue. He used the word "bar" ditches. The correct term is "borrow." All one has to do to understand why "bar" is not correct is to give a little thought to why these ditches are there.

V. Foster
Abilene

■ Right. Webster's Third New International Unabridged Dictionary defines borrow ditch as "a ditch dug along a roadway to furnish fill and provide drainage." But it's easy to see why Texas accents and imprecise speech led to the commonly misused "bar ditch." Thanks for pointing this out. You've educated quite a few people, including a couple of *Texas Parks & Wildlife* magazine staff members.

Flathead Fins

I enjoyed reading "Catfish Ugly" by Russell Tinsley in the July issue, and thought it was thorough and informative. However, I disagree on one point. Mr. Tinsley leads one to believe that all catfishes are able to "fin" a person. But all the fins on a flathead are soft and the barb part does not seem to develop so they are unable to "fin."

My thanks for a good magazine and to Mr. Tinsley for a well-written article. I would enjoy reading more catfish articles once in a while.

Stanley E. Saathoff
Sierra Blanco

Park Maps

Contrary to the statement in the article about maps in the July issue that "The Texas Parks and Wildlife Department does not publish or distribute maps," the Parks Division has some kind of map for almost every state park. Granted, the quality is not in the same league as those discussed in the article. There are, however, a number of hiking trail maps that are relatively accurate and show topographic lines. We also publish and distribute a set of bicycle route maps. Our second printing of the maps is due in September. An in-house "Trail Task Force" has recently begun to address the problem of poor quality trail maps, and plans to upgrade those maps.

Kathryn Nichols
Parks Division

Scuba Sports

My wife and I enjoy your magazine. The reading material and photos are very enjoyable. We are avid scuba divers in rivers, lakes and the Gulf. Maybe you can put together an article on Texas scuba sports.

David and DeAnn Clark
Houston

BACK COVERS

Inside: As the population of Texas grows, the current shortage of public recreational lands and critical wildlife habitat will increase. Action must be taken now to insure that future citizens will have an opportunity to enjoy the many beautiful regions of the state, such as this area along the San Marcos River. The Texas Parks and Wildlife Commission has approved an accelerated land acquisition program to meet these needs. Details begin on page 21. Photo by Leroy Williamson.

Outside: Seldom found far from brushy cover, cottontails venture out at twilight to forage. Breeding season appears to be almost year around for cottontails in many parts of the state and because of harsh conditions and numerous predators, mortality rate of the young can be as high as 85 percent. But this is offset by the rabbits' reproduction potential. Cottontails may have four to five litters each year with as many as eight young per litter. Photo by Richard Haverlah.



