

# TEXAS

PARKS & WILDLIFE

LIBRARY  
FEB 17 1969  
AMERICAN COLLEGE  
DINBURG, TEXAS

December, 1968

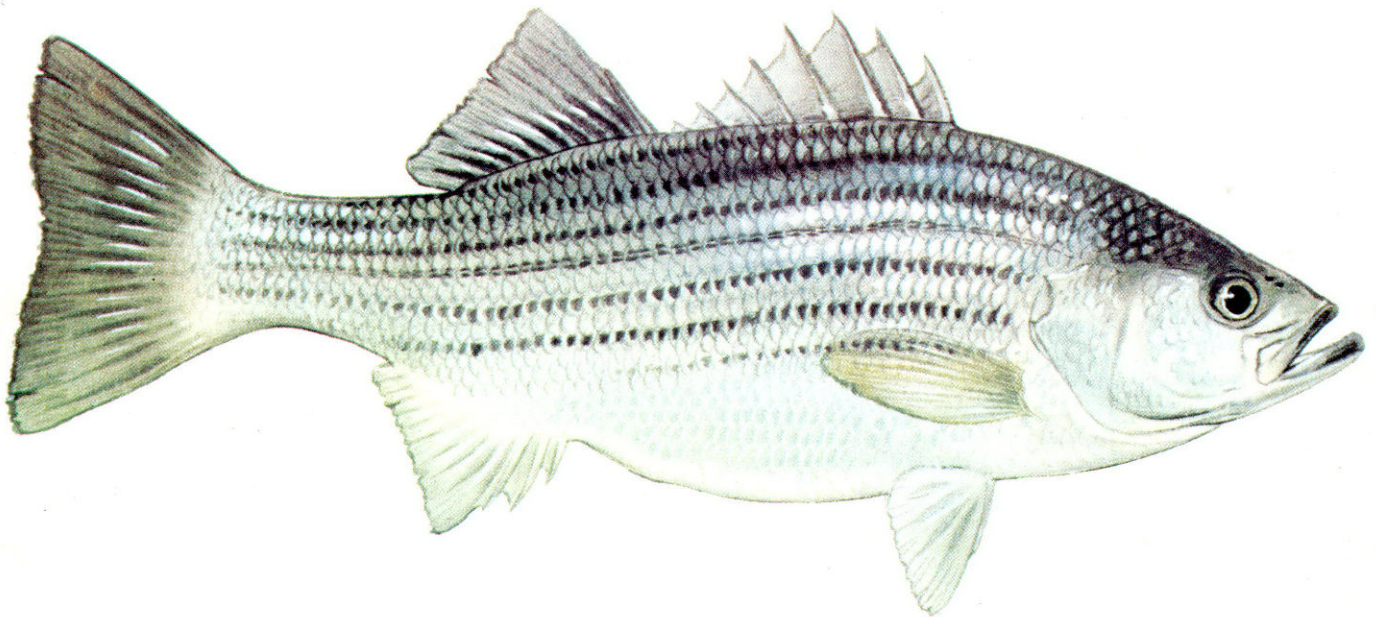
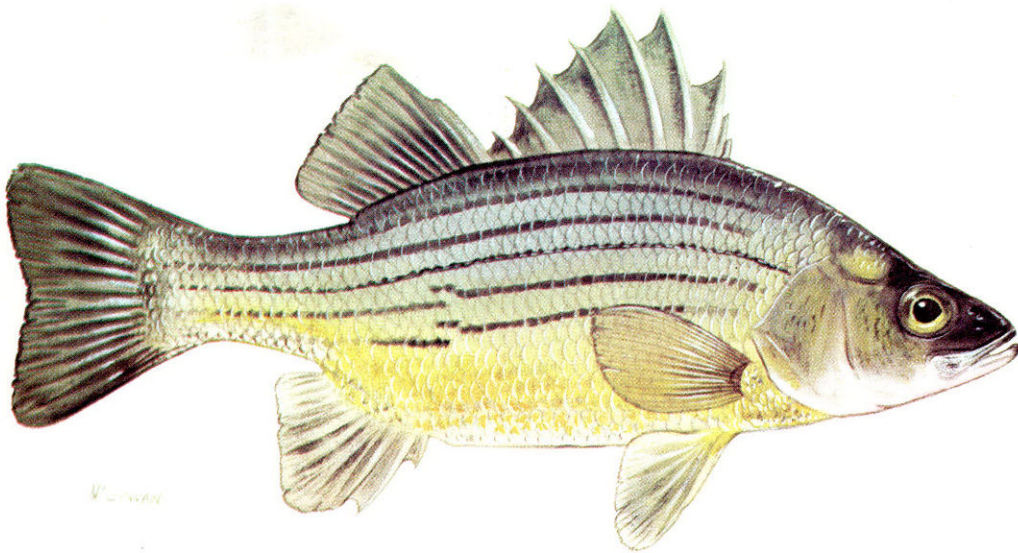
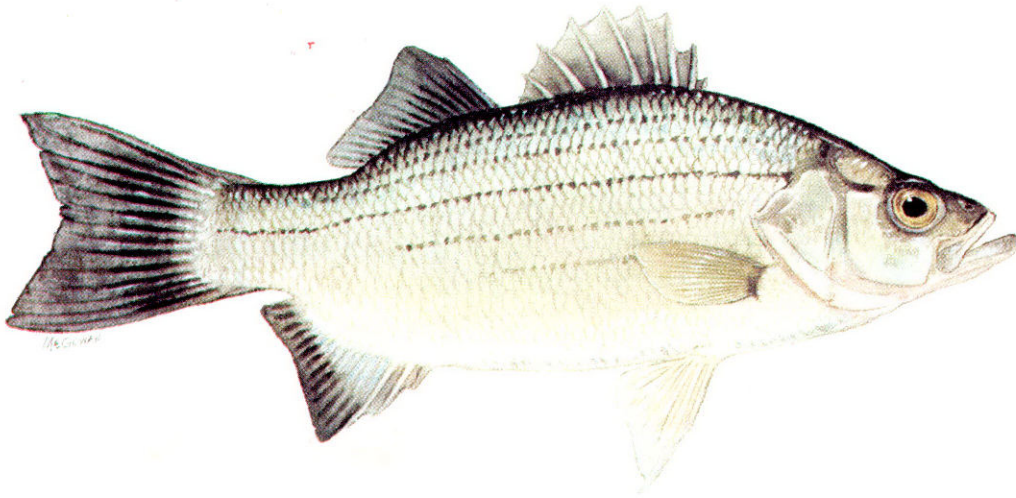
## The Fishes of Texas

Of Texas' three true bass the most common is the white bass (top). Lightly striped with pointed gill covers, it is found statewide and grows to an average weight of about three pounds.

Found in most East Texas waters is the yellow bass (middle), recognized by its two lower broken stripes and pointed gill covers. Not as popular with anglers as the white, it matures to a weight of about two pounds.

Recently introduced into Lake Bardwell, Navarro Mills Reservoir, and Lake Texoma is the striped bass (bottom). Boldly striped with notched gill covers, it is normally the largest of the three, reaching weights up to 20 pounds. See related story on page 16.

—Nancy McGowan



**PARKS AND WILDLIFE  
COMMISSION**

Will Odom, Chairman.....Austin  
James M. Dellinger.....Corpus Christi  
Harry Jersig.....San Antonio

**PARKS AND WILDLIFE  
DEPARTMENT**

J. R. SINGLETON.....Executive Director  
R. G. MAUERMANN.....Deputy Director

**ADMINISTRATIVE SERVICES**

W. J. CUTBIRTH, JR.....Director  
C. L. FRIGU.....Assistant Director

**WILDLIFE SERVICES**

EUGENE A. WALKER.....Director  
A. J. SPRINGS.....Assistant Director

**PARKS SERVICES**

WILLIAM M. GOSDIN.....Director  
PAUL SCHLIMPER.....Assistant Director

**INFORMATION-EDUCATION**

A. L. BOYD.....Director  
T. D. CARROLL.....Coordinator

**REGIONAL OFFICES**

AREA	PARKS SUPERVISOR	WILDLIFE DIRECTOR
San Angelo	R. P. Harris	Henry Burkett
Waco	Billy J. Smith	A. W. Lewis
Tyler	Harold Allums	John M. Carlisle
La Porte	W. B. Hoskins	Ernest Marsh, Jr.
Rockport	Donald Oliver	Tom D. Moore

**Regional Information Officers**

W. R. LONG.....San Angelo  
FRANK ETHEREDGE.....Waco  
ROBERT L. SINCLAIR.....Tyler  
CLARENCE E. BEEZLEY.....LaPorte  
L. D. NUCKLES.....Rockport

**TEXAS PARKS & WILDLIFE  
magazine**

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

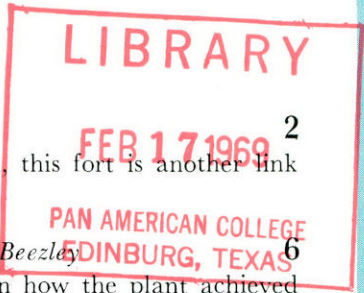
WAYNE K. TILLER.....Editor  
NEAL COOK.....Associate Editor  
SUZANNE WINCKLER.....Assistant Editor  
NANCY MCGOWAN.....Art Editor  
LEROY WILLIAMSON...Photography Editor  
LARRY SMITHERMAN...Production Manager  
ETHEL SPECK.....Advertising-Circulation  
ILO HILLER.....Office Manager

Published monthly by the Texas Parks and Wildlife Department, John H. Reagan Bldg., Austin, Texas 78701. Republication of material is not permitted except by special written permission. The inclusion of advertising is considered a service to subscribers and is not endorsement of products nor concurrence with advertising claims. Rate schedule available upon request. Subscription rates: \$2.08 for one year, \$3.12 for two years, \$5 for five years. Single copies, 21¢.

**Postmaster:** If undeliverable, please send notices by form 3579 to Reagan Building, Austin, Texas 78701. Second class postage paid at Austin, Texas, with additional entry at Houston, Texas.

**Features**

- Fort Lancaster** *by Mabel Lowry* 2  
Standing sentinel over the Pecos Canyon, this fort is another link in Texas' historical fort chain.
- Under the Sparkin' Bush** *by Clarence Beezley* 6  
Mistletoe myths and folklore help explain how the plant achieved its Christmas season fame.
- Bounding Blacktail** *by Tommy L. Hailey* 8  
Leaping over desert browse, mule deer have a distinctive "rubber ball" bounce that may carry them 25 feet in a single leap.
- Matching Wits with Sandies** *by W. R. Long* 12  
Relatively unknown as a game bird, the sandhill crane is a challenge to even the most skilled hunter.
- Texas' True Bass** *by Ed W. Bonn* 16  
Often difficult to tell apart, the three true bass in Texas are the white, yellow, and striped.
- Bobwhite Ups and Downs** *by Clyde E. Holt* 20  
Demanding a certain habitat and having a high natural mortality, quail must maintain a high rate of reproduction to survive.
- Brown Pelican Epitaph** *by Suzanne Winckler* 24  
A symbol of ecological harmony along the coast, this pterodactyl-like bird has suffered a rapid decline in recent years.



**Departments**

- Long Shots, Short Casts.....10    Junior Sportsman .....30  
Outdoor Books .....11    Letters to the Editor.....32



**TEXAS  
PARKS & WILDLIFE**

... first place winner of the 1967 international award for magazine excellence given by the American Association for Conservation Information.

**Cover:** Snow comes to the Texas Hill Country—usually a once-a-year one-day blanket that calmly covers winter dreariness. Photo by Leroy Williamson.

# Outpost on the Pecos



FROM A SKETCH BY A GOVERNMENT DRAFTSMAN IN ABOUT 1860.

## Fort Lancaster

by Mabel Lowry Historian, Parks Services

**LIKE A KING** deposed, Fort Lancaster lies in solitary splendor, waiting to be restored. Its active reign came to an end more than a century ago, and today a lone chimney stands sentinel over what was once a vigorous, brawling camp of infantrymen guarding the Texas frontier. But even though dethroned and abandoned by its subjects, the fort has an imposing dignity which commands respect.

The rugged beauty of Pecos Canyon evokes memories of bygone days when the silent hills echoed back the sound of rifles, bugle calls, and the tumultuous clamor of soldiers preparing to ride into hostile territory in pursuit of Indians. Close by, on an impossibly steep escarpment are ruts carved into the earth by the wheels of stagecoaches and wagons driven toward the protective walls of the fort.

Originally established on August 20, 1855, the



PHOTOS BY BILL DUNCAN



# Fort Lancaster

fort was first named Camp Lancaster. It was strategically located half a mile from the confluence of Live Oak Creek and the Pecos River on the lower of two military roads from San Antonio to El Paso. The Pecos in those days formed a natural barrier to the far west region of Texas and was fordable at very few places. One of them was an important crossing near Fort Lancaster, called Live Oak Crossing or Indian Ford, and used by the majority of travelers on the Chihuahua Trail.

An early surveyor, Lt. William H. C. Whiting, had suggested that a line of defense was needed "where the Indians live instead of where citizens live." Lancaster was one of four such posts established in West Texas during the fifties. A pioneer freighter, August Santeleben, visited the abandoned fort in 1869 and commented: "A more desirable location for a frontier post could not be found in the western country. It is situated near the base of a high mountain on the east side of Lancaster (Live Oak) Creek, in which flows a constant stream of limpid water, that empties into the Pecos River a mile below."

A fortification which commanded a supply of fresh water—the Pecos was too salty to drink—served a dual purpose: it could sustain itself, and at the same time dispossess the Indians who had used it as a camping ground. The Apaches by no means abandoned the position quietly, and the list of Indian engagements near Lancaster was lengthy, and studded with casualties.

The outpost on the Pecos was garrisoned by Companies H and K of the First Infantry, under alternate command of Captains Stephen D. Carpenter and Robert S. Granger. The mission they undertook was a grave responsibility for so small a band: to control the movements of the Indians of the plains and Trans-Pecos region, and to protect the settlers, gold miners, freighters, and mail wagons which were beginning to move westward in constantly increasing numbers. Scouting parties were sent out at frequent intervals to patrol the area, but their numbers were few, and the distances impossibly great. For this reason, Indian raids along the frontier increased in ferocity during the years immediately preceding the Civil War.

Other difficulties had to be faced. The men were largely new recruits, and there were never enough subalterns to instruct them properly in the arts of drilling and Indian warfare. Uniforms, rifles, and

ammunition were in short supply. Water could easily be hauled from Live Oak Creek, and a temporary store of wood obtained from the live oaks and other trees along its banks, but hardware and finished lumber had to be hauled from San Antonio, and there was never enough to go around. The men were housed in tents, picket houses with canvas roofs, or portable barracks—most of which were eventually replaced by native limestone and adobe structures.

Off-duty soldiers and fatigue parties did the work of foraging and building, and since their military duties were demanding, the work progressed at a slow rate. Considering the circumstances, the fort surprisingly was complete six years after it was first staked out.

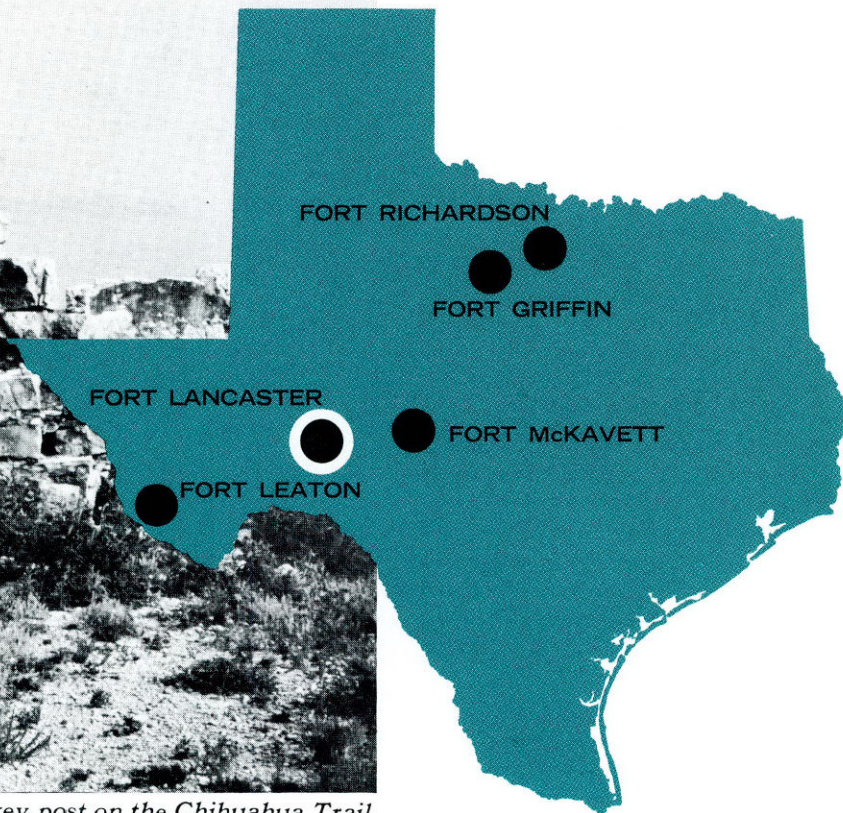
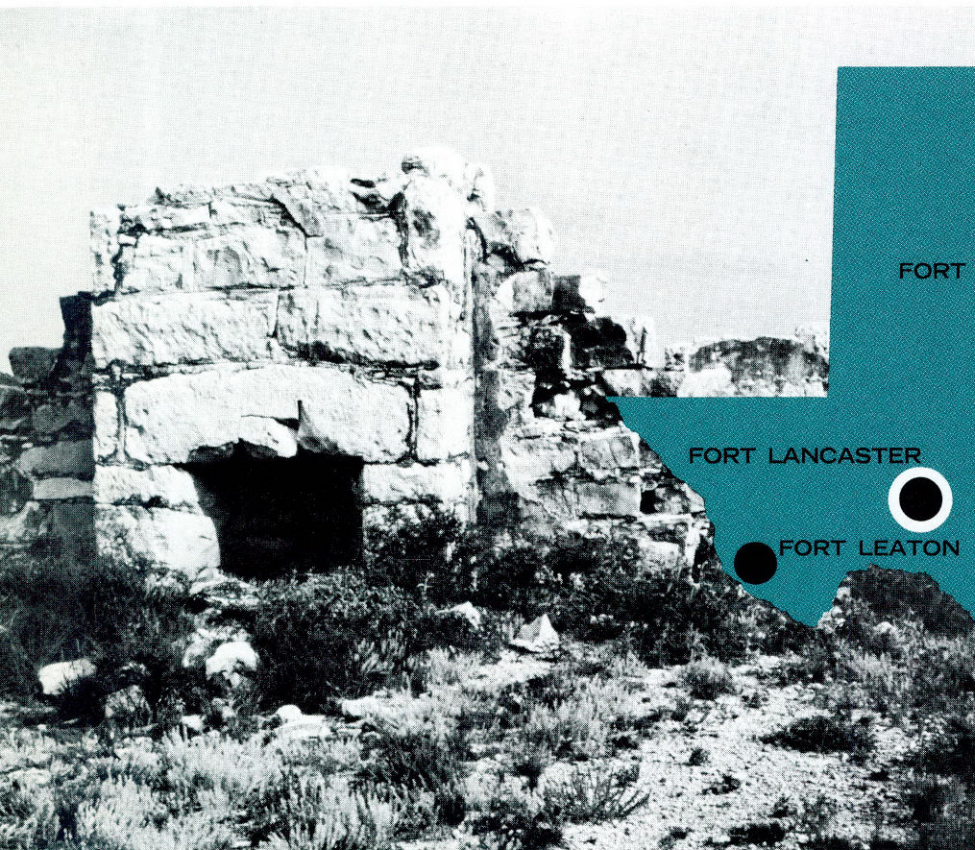
At the height of its development in 1860, the fort consisted of a group of buildings around a central parade ground, with soldiers' barracks on the west and officers' quarters on the east, and a row of outlying structures. Today the ruins of 29 buildings can still be discerned, in addition to the remains of a lime kiln, cemetery, trash dumps, and latrines. Limestone fireplaces, some of which have resisted time and weather, served two adjoining rooms.

The report of Colonel J. K. F. Mansfield, who inspected Fort Lancaster June 9-11, 1856, points up the difficulties and the urgency of their situation: "The Apaches and Mescaleros keep out of sight and commit depredations & murders at times when least expected. They are on the Pecos, in the mountains, on Devils river, &c, always concealed & difficult to find. . . . The number of these Indians cannot be estimated. They do not occupy the ground permanently but come from a distance, and it is quite probable that this and other posts will have to be maintained for a great many years."

No doubt Fort Lancaster would have continued to serve an important role in frontier defense, as the colonel recommended, but the Civil War brought it to a premature end. When Texas joined the Confederacy, General David E. Twiggs, commanding the Department of Texas, ordered the abandonment of all U. S. forts and the surrender of all personnel. The garrisons of the western posts—Forts Lancaster, Clark, and Inge—accordingly abandoned their installations on March 19, 1861, and marched to San Antonio to surrender—a tame ending for a dramatic story.

But Fort Lancaster provided one violent incident during its last day of existence. Captain Robert S. Granger, stationed with the troops for route at Comanche Creek, inscribed the following in the Record of Events in the Final Post Return: "Private Cunningham shot by David Ramsey, an employee of the San Antonio-San Diego Mail Company on the 19th inst., a short time previous to the evacuation of the Post."

The history of Fort Lancaster did not come to an



*Created in 1855, Fort Lancaster was a key post on the Chihuahua Trail.*

end with its official abandonment, however. A transient effort was made by the Secession Government to re-man the deserted posts, and Lancaster was one of a group of forts designated as a second line of defense and garrisoned by detachments from the Second Regiment of Texas Mounted Riflemen. For several months in 1861 and 1862 it was occupied by troops of the W. P. Lane Rangers, but they did not remain long, and soon the fort was left to the ravages of time and weather. It was briefly reoccupied by U. S. troops in the fall of 1867, and for periods during 1868 and 1871, but no subsequent record of military occupancy exists.

One of the Texas Rangers, W. W. Heartsill, noted in his diary on December 3, 1861, that he arrived at Fort Lancaster and found it "a beautiful place." Apparently the diarist looked back with nostalgia on his sojourn there, for when detailed to

Camp Hudson two months later, he wrote: "Early this morning we bid a tender adieu to our adobe house and are soon on the march. Six miles on the way we see a herd of antelope."

The visitor of today will see few traces of military occupancy and may not catch a glimpse of pronghorn antelope, but he will be entranced—as those preceding him were—with the beauty of the landscape, the unlimited vistas, the distant mountains, the clear blue sky, and the air of freedom and release which is uniquely West Texas. He may still wade across the "limpid water" in Live Oak Creek, enjoy the mild semi-arid climate, and then drive 32 miles east to partake of real western hospitality in Ozona. But an even greater attraction will be Fort Lancaster itself, whose rich historical past provides an exciting and significant chapter in the history of our State. \*\*



# Under the Sparkin' Bush

by Clarence Beezley Information Officer, La Porte

**MISTLETOE**—what do you think about when you hear the word? Christmas, kissing, or parasite are common answers to this question, but a student of history or religion might say—murder under oak trees or pagan rites or old myths—mistletoe means all these things, too. Probably no other plant has a past so interwoven with early religions and history.

Mistletoe is a parasite, or at least is semi-parasitic. While it gathers some food through its aerial green leaves, it also draws water and other nourishment from the tree on which it grows. The mistletoe's root system is developed in the bark and wood of its host.

Not having roots in the soil, mistletoe was thought by many ancient people to be a plant from heaven. But it was one unromantic Greek by the name of Theophrastus who, in about 305 B.C., recognized mistletoe as a parasite.

The name mistletoe comes from the Saxon word *mistl-tan* meaning "different twig." The European plant, *Viscum album*, was thought by early settlers as identical to the mistletoe of the new country. But American mistletoe has been placed in a different genus, *Phoradendron*, a Greek name meaning phar—"a thief," and dendron—"a tree." About 10 species of mistletoe occur in Texas, the most common being Christmas American mistletoe, *Phoradendron flavescens*, a yellowish-green, shrubby plant found on oaks and other broad-leaved trees.

Mistletoe has both male and female flowers on separate plants that are pollinated by bees and other insects. These flowers are small and inconspicuous, blooming in October and November. Birds relish the white, sticky berries. Some of the fruit that is not eaten will stick to the bird's legs



or feathers and in this way mistletoe is transplanted from tree to tree.

Qualities which make mistletoe an interesting specimen to botanists made it a thing of worship and magic to early people. They understood the "what" but not the "why."

"The Golden Bough" of the sacred oak which the "King of the Wood" defended in early Italy is thought to have been mistletoe. In that society, a pretender could become king only by murdering the uneasy wearer of the crown. A runaway slave, if he were able to break off one of the magic branches, could challenge the king to combat. If he killed the king, he then became "King of the Wood." Later, he would be removed from office in the same manner.

In Norse mythology, mistletoe was the weapon used to slay Balder, the son of Freya, Norse goddess of love. Freya made him invulnerable to every living thing except one plant, mistletoe, which she overlooked. The evil god, Loke, saw to it that a dart made of mistletoe was thrown at Balder. Balder was killed. But Hela, the goddess who took care of the dead, returned him to life saying that mistletoe would never harm him again if it were kept from touching the ground. The mistletoe was placed in the custody of Freya, and since she was the goddess of love, mistletoe is associated with kissing. Bless those early Scandinavians.

In an old Christian myth, mistletoe was said to have been once a normal forest tree, but its wood was used to make Christ's cross. Being shamed, it became a parasite and now lives on other trees. It is sometimes referred to as "Holy Cross Wood" and in parts of Europe is often placed on church alters. However, in this country it is the one evergreen never used in church decorations.

This is thought to be because it was used in the rites of pagan Druids who lived in Gaul and Britain.

Holy things, of course, repel witches. Thus, mistletoe and figurines made of mistletoe can still be found hanging over doors to counteract the powers of conjurers. It was hung in barns in Europe to make cattle fertile and to keep trolls and witches from souring the milk.

As a cure-all, mistletoe has many alleged uses. When mistletoe is cut under the sign of Sagittarius, November 23 through December 21, it is good for all children's diseases. It has been given to man, woman, and beast to make them fruitful, and until late in the 19th century, was prescribed for curing old-age ills.

Birdlime—a compound made from mistletoe berries—was smeared on twigs to capture small birds that stuck to the sticky substance. Birdlime is said also to mollify hard knots and tumors. If dried, it is a cure for palsy and epilepsy. And, the cure will work even better, it is said, if a small sprig of mistletoe is worn about the neck. Ulcers will heal if mistletoe leaf is chewed.

Most of the healing qualities of mistletoe are now repudiated by cynical modern doctors. If however, a person would like to try some of the old fashioned cures, a note of caution is in order. The berries of at least one species of American mistletoe are toxic.

The Druids, when making mistletoe moonshine, gathered the plant on the sixth night of the new moon. They cut the plant with a golden sickle, caught it in a white cloth, and sacrificed two white bulls at the time of harvest, after which they produced some very strong mistletoe brew. But it has been found that all this ceremony is unnecessary. The Greeks collected their mistletoe during

both solstices, at midsummer and Christmas, and theirs too is said to have had excellent qualities.

While superstitious customs are scoffed at today, one mistletoe tradition should not be laughed at, and in fact should be heartily promoted. It is the custom of kissing under the mistletoe. Whether it came from the legend of Balder, or from primitive marriage rites, or from the license of the Greek Saturnalia—kissing is fun.

Kissing a girl under mistletoe insures good fortune, for both participants. A girl standing under mistletoe is inviting a man to kiss her and to refuse is bad luck.

Young ladies wishing to remain single should be careful about one thing. A girl kissed seven times in one day will marry. But this spell can be broken. By burning the mistletoe after Christmas, the people who kissed under it will be saved from marrying.

One English custom, which wastes a lot of mistletoe, states that after each kiss one of the berries should be removed. When the berries are gone—no more kissing.

A few simple rules should be followed if you wish to obtain some mistletoe of high potency for this Christmas. First select oak mistletoe—this is considered the most sacred kind. While it is unnecessary to cut it with a golden sickle, it should never be touched by iron or steel. The proper procedure is to knock or shoot it out of the tree and catch it. Mistletoe should never be permitted to touch the ground. Any time during the first six days after the last new moon before Christmas is a good time to harvest it.

Now, all you have to do is hang the mistletoe and wait. Have a kissing Christmas, but watch it—you are playing with black magic. \*\*

# Bounding BLACKTAIL

by Tommy L. Hailey Wildlife Biologist

**POWERFUL YET GRACEFUL**, the big-eared mule deer stands out as one of the most prized game animals of the West. Of an estimated population of two million mule deer in western North America, the annual hunter harvest takes about 10 percent. In Texas, hunters took 9,900 during the 1967 season.

The range of mule deer, *Odocoileus hemionus*, extends from the western portions of Mexico northward into western United States and Canada. Trans-Pecos and parts of the High Plains in Texas have a relatively large population with individuals attaining a weight of 130 to 250 pounds. "Mulies" of Colorado, Wyoming, and other western mountain states are a different subspecies and grow much larger, sometimes reaching a live weight of 475 pounds.

Hunters, more accustomed to stalking the wily white-tailed deer, are constantly amazed at the marked difference in habits of the two animals. The mulie is more sociable than the whitetail and when one is spotted, others are likely to be nearby. Typically less cautious, the mule will often stand unprotected on open prairies or bed down on bare outcroppings of rock along a canyon rim. When alarmed it bounds off for a short distance, then pauses to see what startled it—an avid curiosity that often costs the animal its life. The whitetail, by comparison, is off-and-gone at the first signs of danger.

Antlers of mule deer, much

prized by the trophy hunter, are high-branched and project up-and-forward from the top of the head, with the main beam dividing evenly at the first fork. Each tine is again equally subdivided into two smaller tines. Antlers are shed after the breeding season from January to about April, with bucks in good condition usually shedding by the first part of March. New antlers grow rapidly and are fully developed in about five months.

Young bucks produce their first antlers when they are about one year old, and a full rack will be developed by the third year. As with all deer, the number of points on a rack is no indication of age and a three-year-old buck can have as many points as an older one. A span of two feet is fairly common among the young adults.

The Texas or desert mule deer, compared to the subspecies found in more mountainous regions, are generally more pale in color, and have a comparatively smaller white rump patch. The short, black-tipped tail, when swished back and forth across the rump patch, serves as a highly efficient alarm device that can be seen by other deer from long distances. In winter, the deer's reddish summer pelage turns a slate gray.

Before rut, adult bucks travel in "bachelor bands," then break up to gather harems of from 5 to 10 does. The larger trophy bucks are usually loners during the time when others are gathering in bands. The rut generally begins

in November or December and can last until the end of January. During this time, a distinct swelling appears in the buck's neck.

With a December to January rut and a gestation period of approximately 210 days, the fawns are born in July and August. The female has a tendency to isolate herself, dropping her fawns in a protected area. After the doe cleans the newborn, she usually hides it. If she has twins, each will be hidden separately in sheltered places as much as 100 feet apart. Generally, the newborn remain hidden for a week to 10 days. Able to stand and nurse shortly after birth, the tiny fawn weighs five to six pounds and is heavily spotted.

In two to four weeks, the fawn is strong enough to follow the mother and soon begins to eat some solid food. After about 75 days, it is almost weaned and at this time the spots begin to disappear.

Doe fawns are sexually mature at about 18 months of age; however, in the Trans-Pecos region does have been known to breed when only six months of age. Most bucks do not take an active part in the rut until they are three to four years old.

Usually the mulie is a silent deer, but during the rut the buck may emit a low-pitched, guttural bleat, especially when fighting another buck. When alarmed they make a shrill whistling snort characteristic of white-tailed deer.

Rocky, barren, semi-desert



## Bounding **BLACKTAIL**

habitat seems to be no deterrent to speed or escape. The mule deer are often called "jumping deer" because of their bounding gait as they rubber-ball their way among spiny desert plants. Adults have been clocked at speeds well above 30 miles per hour, and they are capable of jumping 25 feet or more in a single leap. For the most part, mule deer country is a land of spines, thorns, and sharp-pointed leaves. The animals are quite adept and efficient at nosing aside the thorns to get to the tender green growth of their preferred foods.

Browse, forbs, and grass species make up the bulk of the diet. They are especially fond of sotol, prickly pear, lechuguilla, juniper, acacia, ceniza, and many other browse species found in Texas' semi-arid terrain. Feeding is generally at night with bright moonlight nights favored, but in winter when food is scarce, it isn't unusual for them to feed both day and night. During the rut or hunting season, feeding is sometimes erratic.

Mule deer have a few enemies in addition to man. Cougar, bear, bobcats, and coyotes are always on the lookout for deer and both adults and fawns will fall prey to these predators. However, the doe is a good mother, and her sharp, slashing hooves are formidable weapons against many would be killers.

The average life span of the mule deer is 8 to 10 years, but cases are on record of some living 23 years.

The mule deer is a hardy animal and his population numbers prove his ability to survive and prosper in the rough western terrain. Because of the animal's keen senses and the rugged terrain in which it is found, the thrill of matching wits with a cunning mule buck is indeed a memorable occasion. \* \*

# Long Shots, Short Casts

*compiled by Neal Cook*

**Make Haste Slowly:** The National Parks Service has announced that "National Parks are for leisurely travel only." A commission studying road construction in National parks decided that new methods must be found to end the pressure of too many automobiles in the parks. They decided that "new roads should be considered a last resort in seeking solutions to park access."

**Tackle Buster:** A report from Arizona tells of the 10-pound largemouth bass that was caught last spring with a plastic worm, an artificial fly and lure, treble hook, and four other assorted hooks either in or on its body. The 21-inch long fish had a girth of 22 inches.

**State Park Hunting:** The New Mexico Department of Game and Fish and the State Park and Recreation Department have reached an agreement on allowing hunting in 10 state parks. Hunters will be allowed to take waterfowl, dove, quail, and big game from these areas.

**Smoggy Pines:** No cure is in sight for the thousands of ponderosa pines now being affected by smog disease in Southern California. About 25,000 acres of trees are being killed or injured by the smog blowing in from the Los Angeles area. So far there is no cure for the disease and only prevention of the cause will stop it.

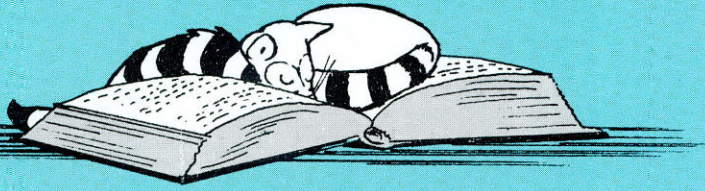
**Locking Grip:** A bird's feet are made so that the foot is forcibly closed when the leg is bent. This enables the bird to maintain a steady grip on limbs while it sleeps.

**Pollution Lover:** A report from Oklahoma tells of the man overheard in a cafe who said, "Man, am I going to be glad to get back to Los Angeles. This vacation has been terrifying—for seven days I've been breathing air I couldn't even see."

**Crime Note:** State and Federal officials have smashed a ring headquartered in Maryland that was illegally shooting songbirds and game birds and then selling the mounted specimens. Many "nature loving" people were using these for decorations.

**Swim Or Sink:** A University of Wisconsin professor has found that tuna must swim or sink. Because they are heavier than salt water, tuna must continually swim. If they stop swimming their negatively buoyant bodies sink in a tail-first dive.

# Outdoor Books



**HUNDRED ACRE WELCOME**, by Ronald Rood, Stephen Greene Press, Brattleboro, Vermont, 1967, 132 pages, \$4.95.

The story of a nature-loving family who purchases a famed Chincoteague pony and take it to live on their Vermont hundred acres is the central theme of this book.

The Chincoteague are small, ancient horses who were once marooned on the island of Chincoteague, Virginia. Against his better judgment, and with the urging of his young son, author Rood buys a pony at a Virginia auction and transports him back to Vermont via the family Volkswagen bus. The children's excitement and the astonishment of neighbors, friends, and on-lookers is retold with relish. Although many of the family's experiences are interesting, they are not out of the ordinary.

This book could easily be classified as "light reading" and would probably be enjoyed by younger readers. It is a charming storybook with little actual wildlife information, but it does have value in repeating the message of conservation and promoting human compassion for wild creatures.

—Jeanette Hunt

**WHEN BIRDS MIGRATE**, by Nina Shackelford, illustrated by Elizabeth Rice, Steck-Vaughn Co., Austin, Texas, 1967, 40 pages, \$3.25.

The best time to learn about wildlife and learn to love nature is when we are children. One good way is through books. In *When Birds Migrate*, Nina Shackelford explains the basic principles of migration in such a way even a child could easily understand.

Although bird experts disagree on many aspects of migration, the author gives a few simple explanations about what bird migration is, and how far, how fast, and how high birds fly when migrating.

Special mention is given to the vanishing whooping crane. With colorful

illustrations by Elizabeth Rice, brief notes on this rare bird are presented for the young reader.

Without a simple understanding of a bird's construction, it is difficult to comprehend how they can migrate or even how they can fly. The author also includes a brief explanation of bird physiology.

The author has kept the entire book extremely brief, yet interesting. The simple style and bird illustrations make this slim volume a welcome addition to any child's library. —Jeanette Hunt

**SURE-HIT SHOTGUN WAYS**, by Francis E. Sell, Stackpole Books, Harrisburg, Pa., 1967, 160 pages, \$5.95.

For the novice shotgunner, Francis E. Sell has compiled a complete shotgun handbook that includes everything from choosing a gun to basics of firing and stance.

This is a "no nonsense," "down to brass tacks" kind of book that will never be found on a best seller list. But, for the beginning hunter who wants serious instruction in the fine art of guns or the hunter with a special problem, it is ideal. The lack of photographs and illustrations makes the book appear "gray" to the casual observer, but upon a closer look, the reader will discover an in-depth study of gun handling.

The author gives tips on selecting a gun, correct gauge, and stock; how to care for your shotgun; and how to buy good used guns. He also includes techniques of footwork, clay bird shooting, and estimating shotgun ranges. Although one cannot become an expert shot by reading a book, advice from someone who knows guns can certainly help.

A plea for safe hunting practices is included in the author's chapter on "A Beginning Gunner's Obligations." He reviews basics of safe gun handling and the best ways to approach and deal with landowners on whose land you want to hunt.

This volume deals with all the basic

aspects of gunning. The author seems to know his subject well and realizes the most important aspects to be emphasized in such a book. Although the experienced gunner would probably find helpful hints, this volume is primarily a good text for the beginner.

—Jeanette Hunt

**A PICTURE GALLERY**, written and illustrated by Tom Lea, Little Brown and Company, Boston, 1968, 2 volumes, \$50.00.

A book as rare and striking as its author, *A Picture Gallery* stands as a monument to one of Texas' greatest artists and to his state.

Tom Lea begins by telling the reader he has not written an autobiography and has no desire to, but by telling about his work and many of the exciting experiences of his life, he sketches an unforgettable self-portrait. Volume I is an illustrated text of his life and experiences. Volume II contains a book-portfolio of 36 suitable for framing reproductions of his work, 12 of which are in color.

Born in El Paso, Lea has an excellent understanding of both Mexico and Texas. He has illustrated books for J. Frank Dobie, painted murals for civic buildings all over the State and Nation, and was an outstanding artist correspondent for *Life* magazine during World War II.

He relates many of his experiences during the war and his somewhat unusual interview with Generalissimo and Madame Chiang Kaishek. Lea was aboard the Battleship *Hornet* before its destruction and made many lasting friends and memories during his years in the Pacific.

His father was once mayor of El Paso, and the author remembers another, somewhat smaller war—the revolution in Mexico. He recalls the cannonades and rifle fire from across the Rio Grande in Juarez when he was a boy.

His talents unlimited, Tom Lea is also an excellent writer. Among his other books are: *The Brave Bulls*, *The Wonderful Country*, and *The King Ranch*.

In *A Picture Gallery*, Lea relates with relish the wonderful times he has had with his art, and the many rich experiences with the unusual people he has known.

The illustrations in both volumes can speak for themselves. They are a poignant image of life in the Southwest and Mexico.

*A Picture Gallery* is a warm, personal book that reveals a man whose soul lies in his work. Coupled with the portfolio of some of Lea's best works, these two volumes are almost priceless.

—Jeanette Hunt



# MATCHING WITS WITH SANDIES

by W. R. Long Information Officer, San Angelo

**THE FIRST** sandhill crane hunting season in Texas was in 1961. That year the long-necked, wary bird, also known as little brown cranes, taught 2,100 hunters that they were more than a match for the hunter's shotgun, and only 1,900 cranes ended up in the bag.

In 1934, the National Geographic Society reported: "We are now faced with the near-extinction of the sandhill crane which has become a pitiful remnant of its former population." Today, large migratory flights of these birds are evidence of a sensational comeback within the last 30 years.

Based on the pre-season count in 1960 there were 134,673 wintering birds in Texas and New Mexico. By 1961, the crane population had jumped to 165,840. A year later there was another increase, to an estimated 184,901; then 1963 revealed a startling 250,000 birds feeding on the prairies near

large shallow lakes west of Lubbock and Big Spring.

The crane population in Texas has seemingly levelled to a great extent consistent with hunter harvest, and the 1967 survey places the population at a figure approaching 163,500. Wildlife workers report that hunter harvest is not touching the breeding population in any seriously detrimental manner.

There has been an open season each year since 1961 and the hunter harvest, despite an increasing population of birds, has ranged from 890 to 2,000 birds per year.

But what can a hunter do with a bird that has a built-in tendency for survival? It tends to avoid fence rows and areas of dense growth. It has the ability to drop straight down into a field or lake, well beyond the range of the shotgun. It seems to defy the rudiments of flight when it is alarmed and

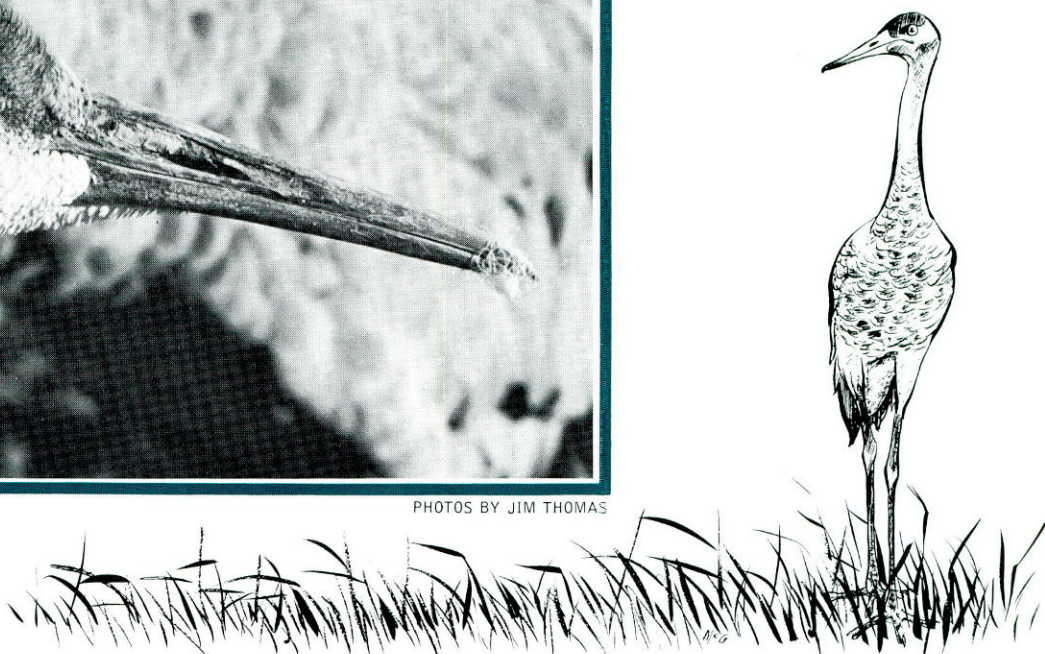


*Once faced with extinction, sandhill cranes have rebounded, now approaching 163,500 in Texas.*

*Keen-eyed sandies are deceptive targets—fast on the wing, wary of densely grown areas, and larger in size than they first appear to be.*



PHOTOS BY JIM THOMAS



may make an almost perpendicular takeoff.

These adaptations add to the already confusing problem of the size of the bird. It is much larger than it appears to be, causing hunters to misjudge distance and begin firing long before the bird is actually in range. Many cranes survive this way.

Flying with necks stretched out and weighing an average of seven pounds, the birds seem to be easy targets for waiting hunters. But some shotgunners, ordinarily proficient shots, fail to take into consideration the speed of the sandhill, or little brown crane. These hunters slash the air far behind the deceptively fast, 60-mile per hour Christmas dinners.

Each species of wildlife in Texas seems to have its own peculiar ways and means of being hunted, and quite often a little know-how spells the difference in success and failure. Sandhill cranes may require a little effort, but no more than geese and turkey, and are well worth the effort.

Silhouette decoys made from heavy cardboard and painted a dull gray may be an asset to the hunter. These should be placed near flyways, and well within shotgun range of the hunter's place of concealment. Once shot over, decoys are virtually worthless in the area from then on. After each hunt the sportsman should move his "set" of silhouettes to a new location.

Cranes seem to prefer flying close to the ground

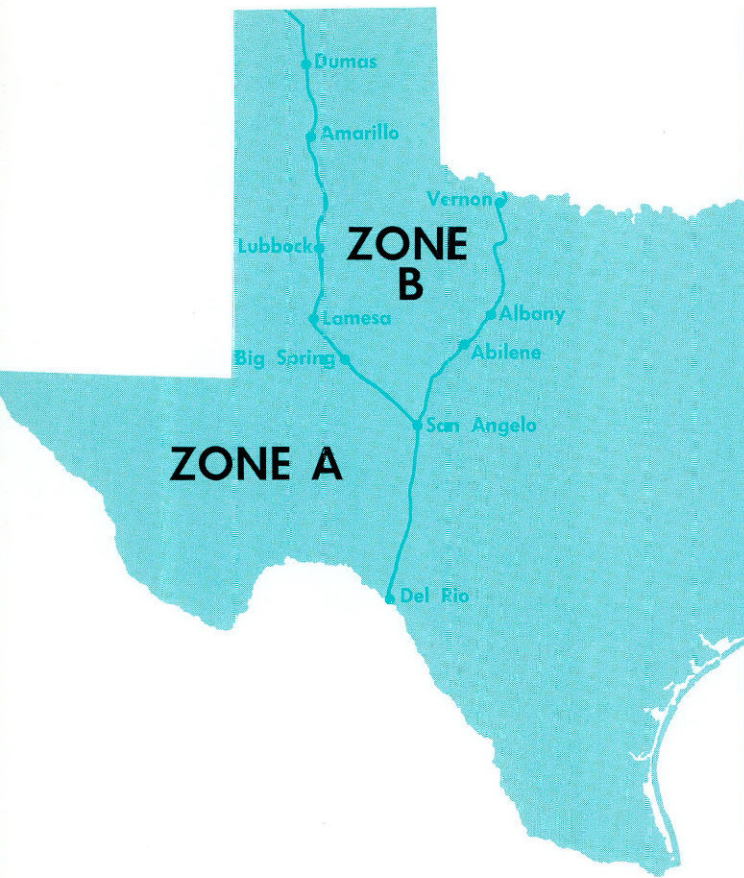
in windy weather, and at such times pass-shooting may be successful. On still days the hunter should forget the pass-shooting and use his decoys. The best place for a pass-shooting blind is between a feeding area and a known roosting site. Here is where a little advance research may pay off. Most of the successful shooting seems to occur in early morning or late afternoon.

Gauges of shotguns are optional with users, as are proper loads. There are still many hunters who believe that anything less than a full-choked 10 or 12-gauge magnum is necessary medicine for geese, but others haven't heard this rumor and go right ahead and get their limits with hi-velocity 20-gauge shotguns. The same may be true of cranes, but usually, anything you might use on ducks is good crane dosage. The birds have a fragile body construction that makes any decent hit a fatal one.

It's well to remember that catching a wounded crane may be equal to being caged with an angry bobcat. The long, rapier-like bill can be a dangerous weapon in eluding a would-be captor, and the hunter with only two eyes may have none to spare.

Rising from a feeding site, sandhills sometimes form a hodgepodge of erratic flight, but like geese, they often fly in straggly V-formations. The voice is loud and coarse; the loud chatter of the largest honker would be drowned out by the repetitious cry of the crane flocks.





### ZONE A

**Boundaries:** On the west by the State border and on the east by U.S. Highway 287 from the Oklahoma border to Lamesa, U.S. 87 from Lamesa to San Angelo, and U.S. 277 from San Angelo to Del Rio

**Seasons:** November 2 through December 28

### ZONE B

**Boundaries:** On the west by the eastern border of Zone A to San Angelo and on the west by U.S. 283 from the State border north of Vernon to Albany, Texas 351 from Albany to Abilene, and U.S. 277 from Abilene to San Angelo

**Seasons:** December 14 through January 12

### LIMITS AND SHOOTING HOURS (both zones)

**Daily Bag Limit:** 2

**Possession Limit:** 4

**Hours:** One-half hour before sunrise to sunset

This year, in an effort to increase sandhill crane hunting in Texas and help decrease crop depredation, the Texas Parks and Wildlife Department has opened another huge segment of the State to hunting sandhills.

Two zones have been created, with one opening later in the year because in years past a whooping crane was spotted with a flock of sandhills in one part of that area.

Hunting in the western zone, traditionally the old zone, will be from one-half hour before sunrise until sunset from November 2 through December 28. This zone lies west of a specified line from Del Rio to San Angelo to Dumas (see map and regulations). From here the line heads northwesterly.

The new zone will be open for hunting beginning at sunrise December 14 through sunset January 12, 1969. This is that portion of Texas lying west of a line from San Angelo to Abilene to Albany and to Vernon (see map and regulations). The western boundary of the new zone is the eastern boundary of the old zone.

Bag limit in both zones is two, with a possession limit of four.

The Texas Parks and Wildlife Department has published a map for the hunter's benefit. It is available without charge and outlines all pertinent information on sandhill hunting for the season.

Sandhill cranes bluish-gray and smaller than the

white whooping cranes. The meat goes beyond the ordinary definition of palatable and compares favorably with goose or wild turkey. It is usually cooked in the same manner of either of these two popular game birds.

Unlike geese, the meat of the sandhill never tastes strong or "fishy." The birds habitually adhere to their preferred diet of corn, grain crops, and grass roots, and only seldom eat such things as fish, crayfish, or mollusks.

Calling the sandhill crane migratory is an understatement. One banded in New Mexico in January 1960, was found in May 1961, in Magodan, Russia. On the map, a straight line from this point in Russia to the banding site measures about 7,000 miles, but since the bird almost certainly flew by way of Alaska, a conservative estimate of its flight would be about 8,000 miles.

As a game bird in Texas, the crane has attained only mild popularity simply because many hunters aren't aware of their existence in such huntable numbers. Flocks, big ones, are found now in many areas of West Texas, and once a shotgunner is bitten by the bug, the challenge usually makes him an avid crane hunter from then on.

With their hunting range extended, with the present good population, and with the disappearance of hunter apathy, the 1968 season should be one to remember. \*\*

# TEXAS' TRUE

**AN ARGUMENT CAN START** very easily when you tell a bass fisherman that the five-pound largemouth he has just caught is a pretty good sunfish. However, most of the bass-named fish, including the largemouth, smallmouth, spotted, and rock bass, are really members of the sunfish family.

The yellow and white bass are the only true bass in Texas, belonging to the family Serranidae, although the recently introduced striped bass also belongs to this group.

All true bass have a silvery white color overlaid with distinct, black longitudinal lines. However, the chief characteristic that separates this group from other freshwater species is that true bass have a small, gill-like structure on the inner surface of the gill cover. This is called a pseudobranchium, or false gill.

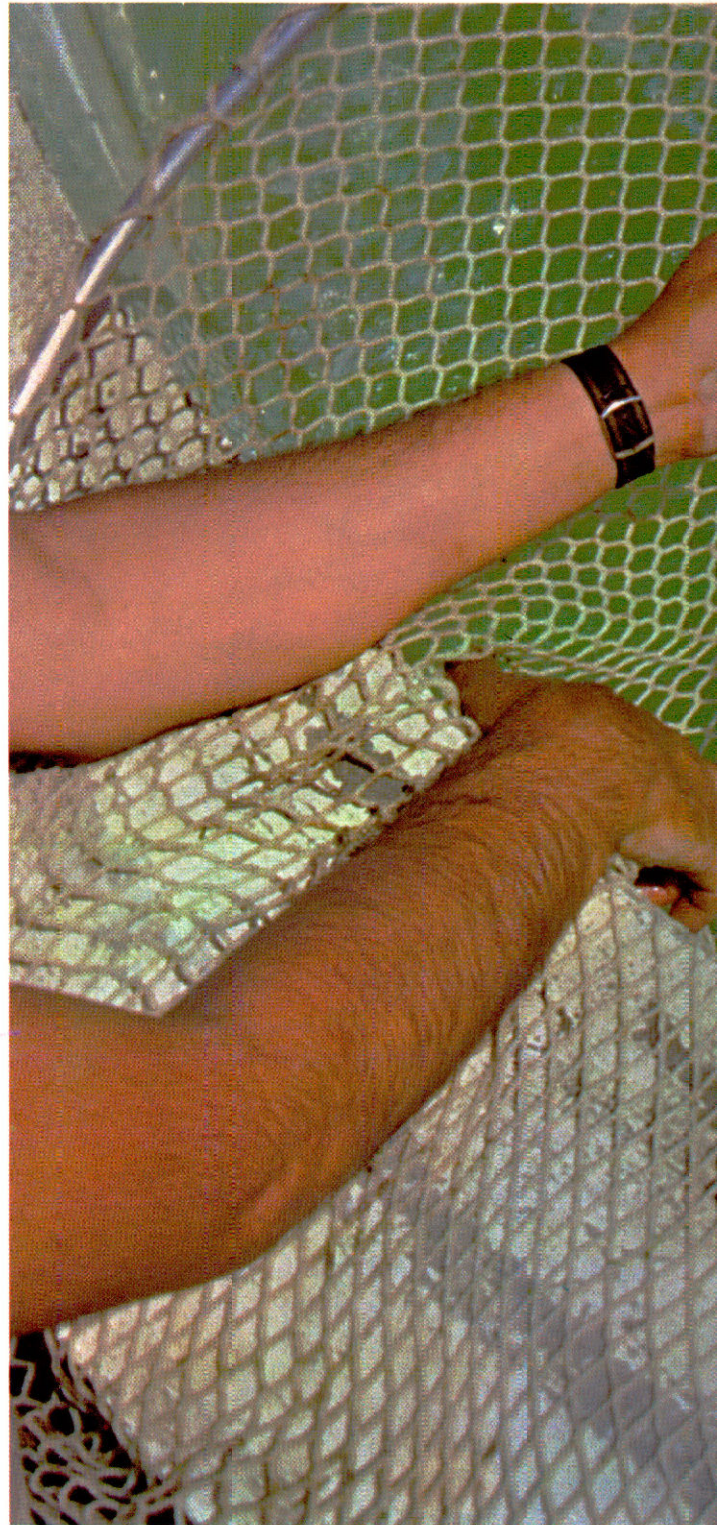
The three types of true bass are somewhat harder to tell apart. The yellow bass has a golden overtone, but is best distinguished from its two Texas cousins by having no space between the base of the dorsal fins and by having jaws of equal length. Its second and third anal spines are both long and nearly equal, while the spines of the white and striper are of graduated lengths. The first is short, the second intermediate, and the third long. Longitudinal stripes on both the yellow and the striper are wider and more distinct than those on the white. On the yellow bass these stripes are broken and offset just above the anal fin.

It is often hard to distinguish a young striper from an adult white bass. The best method is to measure the length of the second anal spine. In adult white bass this measurement is about one-third the length of the head, while it is only one-fifth the head length of a striper. A quick check shows white bass to have one patch of teeth on their tongue and a single point on the edge of the gill cover. Striped bass have two patches of teeth and usually have a notched, or double pointed cover.

When comparing grown fish there is no problem. Striped bass grow to 20 or more pounds and the world's rod and reel record is a whopping 73 pounds.

Yellow bass rarely weigh over two pounds while white bass seldom weigh much more than three pounds. The current record rod catch for white bass is a 5-pound, 4½ ounce fish caught this spring in the Colorado River below Town Lake, Austin.

Originally the white and yellow bass were natives of the Mississippi Drainage from the Great Lakes



# E BASS

by Ed W. Bonn Aquatic Biologist



PHOTO BY ED BONN



to the Gulf of Mexico. In Texas this included only the Red, Sulphur, and Cypress river watersheds in the northeast part of the State.

Until 1932, the only white bass known in Texas were in Caddo Lake, a natural impoundment on the Texas-Louisiana state line. That year the Game, Fish and Oyster Commission transplanted 13 brood bass to old Lake Dallas. A year later a few were taken by anglers, but by 1935 they were caught by the thousands. Commercial fishermen easily netted 400 pounds a day. This prompted the Texas Legislature to adopt the same regulations for this species as applied to other bass. The white bass then became a game fish and cannot be netted or sold in Texas.

In 1938, following the successful Dallas planting, white bass were moved to Eagle Mountain, Buchanan, Medina, Waco, Kemp, and Wichita lakes. By this action the Trinity, Colorado, Guadalupe, Brazos, and upper Red River watersheds were stocked with this now popular game fish. Releases continued until at present almost all of the freshwater streams and major reservoirs of the State contain good numbers of white bass.

Because of their smaller size, the yellow bass has never been as popular with Texas anglers as the white bass. As a result, no official introductions have been made in Texas streams or lakes and they are generally restricted to northeast Texas.

Some transplants of yellow bass into private and club lakes have been attempted by individuals. Overflow from Greenville Club Lake in Hunt County where such an introduction was made is responsible for the large population of yellow bass in Lake Tawakoni, a popular reservoir on the Sabine River. White Rock Lake in Dallas also supports numerous yellow bass. In both of these lakes, yellow bass do not grow very big and most anglers mistake them for small white bass.

The history of the striped bass is quite different. The striper was thought to have been only a salt-water fish that entered freshwater streams to spawn until a South Carolina biologist discovered that fish trapped in the Santee-Cooper Reservoir were completing their life cycle without returning to salt water. Stripers have long been a popular game fish on the Atlantic Coast and as early as 1879 this species was transplanted to the Pacific Coast. The South Carolina discovery spread the demand for these fish to freshwater reservoirs in most southern states.

Since striped bass were already popular with anglers, fisheries workers began to take a deeper look into the value of this fish. It was found that the stripers fed heavily on the gizzard shad, a forage fish that easily becomes overabundant and troublesome in many southern reservoirs. Striped bass could possibly become a natural control for these rough fish.

Texas, like most neighboring states, considered

*Striper (opposite page on left) has slimmer body than white bass with fewer but more distinctive stripes. Stripers have proven to be efficient producers under hatchery conditions, especially when hormones are used to induce spawning.*

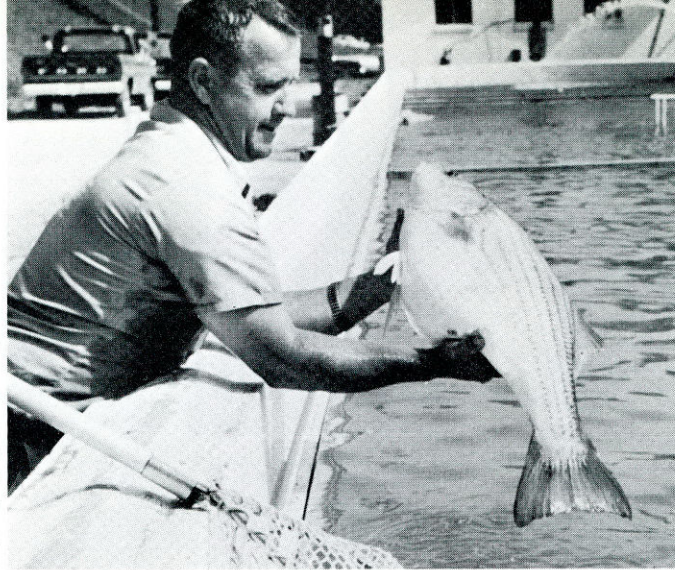


PHOTO BY ED BONN

the striper to be a good fish to introduce and made arrangements to secure some striped bass from California. Many of the fish died in transit from the West Coast, but in December 1960 about 800 fingerlings were released in Lake Diversion near Wichita Falls.

Lake Texoma, a border reservoir on the Red River between Texas and Oklahoma, was also the site of several experimental introductions. During a period of several years, the Oklahoma Department of Wildlife Conservation released mature fish ready to spawn, very small fry, and even six to eight-inch fingerlings.

Texoma has long had a reputation as an excellent white bass lake, thus some stripers could have been taken but not distinguished from the native whites. Eight striped bass catches have been verified ranging in weight from three-fourths to two pounds. Although these were about the same size as the white bass they had been catching, the anglers first thought they had hooked a larger fish because the stripers fought so hard.

Interest in the striped bass continued but the major problem was getting fish for stocking. Again South Carolina fisheries workers made a breakthrough: hormones were used to induce adult fish to spawn. A striped bass hatchery was built near Moncks Corner, South Carolina, and in 1966 over 55 million eggs were hatched by the new method.

Last year the striped bass introduction was renewed in Texas when a million four-day-old fish were flown from South Carolina to Corsicana. These small fish were held in tempering boxes until they began feeding and in mid-April, 1967, 300,000 active fry were released in Lake Bardwell and 400,000 were stocked in Navarro Mills Reservoir.

These two lakes were selected as the sites for this experimental introduction for three reasons. No other true bass are known to be present in these Trinity drainage reservoirs and there will be less chance of misidentification. Both lakes have a high population of forage fish, including gizzard shad.

In addition, the fishing regulations are set by the Texas Parks and Wildlife Commission and can be adjusted to protect the introduced fish.

Several attempts were made to check on the survival and growth of the transplanted fish, but seining, trawling, and netting failed to return any striped bass. However, several reliable catches and observations have been made by local fishermen at both lakes.

Anglers who were lucky enough to catch one of these stripers reported the fish were very sporty fighters. One taken from Bardwell in October weighed about three-fourths of a pound. This is very good growth for a species introduced into a lake with an established fish population.

Since neither Lake Bardwell nor Navarro Mills Reservoir has the physical requirements that will permit these fish to reproduce, experimental releases are planned for a total of five more years.

The 1968 program of releasing striped bass began in April when the Department received a half million one to three-day-old fry from South Carolina. These were again divided between Lake Bardwell and Navarro Mills Reservoir. Severe spring thunderstorms killed all the fry in Bardwell and about 85 percent of those in Navarro Mills.

In May another 451,000 fish were received from the Virginia Commission of Game and Inland Fisheries. None of these fry were released in Bardwell then, but 131,000 were stocked in Navarro Mills. The remaining fish were placed in ponds at the Tyler and Lewisville State Fish Hatcheries to be reared to fingerling size. These larger, two to six-inch fish were released in the last part of this summer in Lake Bardwell.

This program is still in the experimental stage and no striped bass are available for release into private waters. This project is another attempt to provide more fishing and outdoor recreation for the anglers of Texas. And who knows? Texas might even end up with a new sportfishing record for striped bass.

\*\*



# BOBWHITE

## ups and downs

by Clyde E. Holt Wildlife Biologist

**TODAY IN TEXAS**, bobwhite quail may be found from the tip of the Panhandle to the mouth of the Rio Grande, but their principal range is generally considered to be east of a line from near Pampa and south through San Angelo to Del Rio. The presence and abundance of bobwhite quail in this vast area is dependent on the quality and amount of quail habitat available.

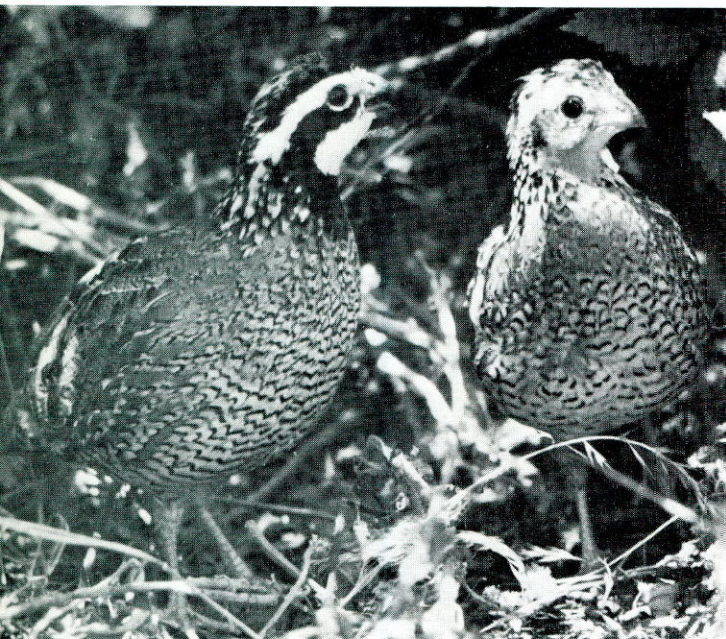
Throughout the State's early history, production of bobwhite quail was both incidental and accidental with very little actual quail management being attempted. As early settlers spread over the State, they created millions of acres of excellent quail habitat where relatively little had existed.

Early agricultural practices resulted in small fields covered with moderate to heavy stands of weeds mixed with domestic crops, and miles of weedy field borders and overgrown woody fence rows. At about the same time, constant grazing of vast open grassland areas resulted in weed successions and the invasion of scattered low-growing woody plants. All of this served to spread bobwhite quail populations in great abundance throughout their present range.

From the completion of the early settlement of Texas until the late thirties, these vast areas of usable quail habitat remained relatively unchanged as did the overall bobwhite quail populations. But



Quail reproduction depends on amount of rain, pattern in which it falls, and quality of habitat.



## BOBWHITE

### ups and downs

from the late thirties to the present day, continued changes in land use have progressively reduced the amount of usable bobwhite habitat and have greatly reduced the total population.

Yearly fluctuations in the number of quail living on a particular area are as normal as wide fluctuations in weather conditions. Two primary factors are involved in governing these yearly fluctuations. First, the number of quail surviving the winter and available as brood stock; and second, the rate of reproduction.

Contrary to popular belief, high populations of bobwhite quail at the end of the hunting season do not insure that high populations will be present as brood stock during nest season or that high populations will occur the following fall. The reason for this is that natural mortality causes an annual population turnover of approximately 80 percent,

regardless of whether hunting occurs or not.

With such a high rate of population turnover, bobwhites must maintain a high reproduction rate to survive. Quail reproduction is governed by the amount of rainfall and the pattern in which the rain falls during the breeding season and by habitat quality.

Since the rainfall cannot be controlled and the quality of the habitat governs to a great extent both carry-over of broodstock and reproduction, we, as landowners, game management people, and sportsmen must develop and maintain habitat in excellent condition to reduce population fluctuations.

Throughout the vastness of the bobwhite quail range in Texas, good quail habitat varies in character with the differences in vegetation, soils, and climate, but the basic qualities are much the same. These include an adequate year-round supply of food and adequate protection from enemies while the birds are feeding, loafing, roosting, traveling, or nesting.

Although the fruits of trees, shrubs, and vines, the seeds of grasses, and domestic grains are sometimes eaten, the seeds of weeds are the foods most often eaten by quail.

Creating and maintaining a year-round food supply for quail may be as simple as managing a weed patch. Many weeds are used as food, but the staple diet throughout the State generally includes some of the following: doveweed (*Croton*), ragweed (*Ambrosia*), broomweed (*Gutierrezia*), sunflower (*Helianthus*), deervetch (*Lotus*), partridge pea (*Cassia*), wild bean (*Strophostyles*), tick trefoil (*Desmodium*), and lespedeza (*Lespedeza*).

Even if an area has an abundant supply of food, another requirement is just as important and necessary—protective cover.

Necessary cover of two types is needed; woody plants that are thick above and open below, and grassy plants which are thick and protective.

The woody cover with open ground is important because it gives the birds protection while they loaf and dust and move freely around. A fence row covered with rattan or grape vines is a good example of this type of cover.

Thick, grassy cover is the other type of cover needed by quail, primarily for roosting and nesting. This thick grass must also contain some tall, old grass for nest sites and building material.

Once woody cover is destroyed, the reestablishment is a long, time consuming, and often expensive operation. For this reason efforts should be concentrated on preserving adequate woody cover. An abundant food supply, along with grassy and weedy cover is of little value in the management of bobwhite quail without woody cover.

The future of the bobwhite quail in Texas depends on whether or not suitable habitat is preserved. It is as simple as that. \*\*





*In addition to hunter harvest, annual natural mortality takes 80 percent of the quail yearly.*



*Quality quail habitat consists of both weed and domestic crops. Also, adequate cover is necessary where birds may loaf, feed, and dust without fear of exposure to predators.*





# Brown Pelican Epitaph

by Suzanne Winckler

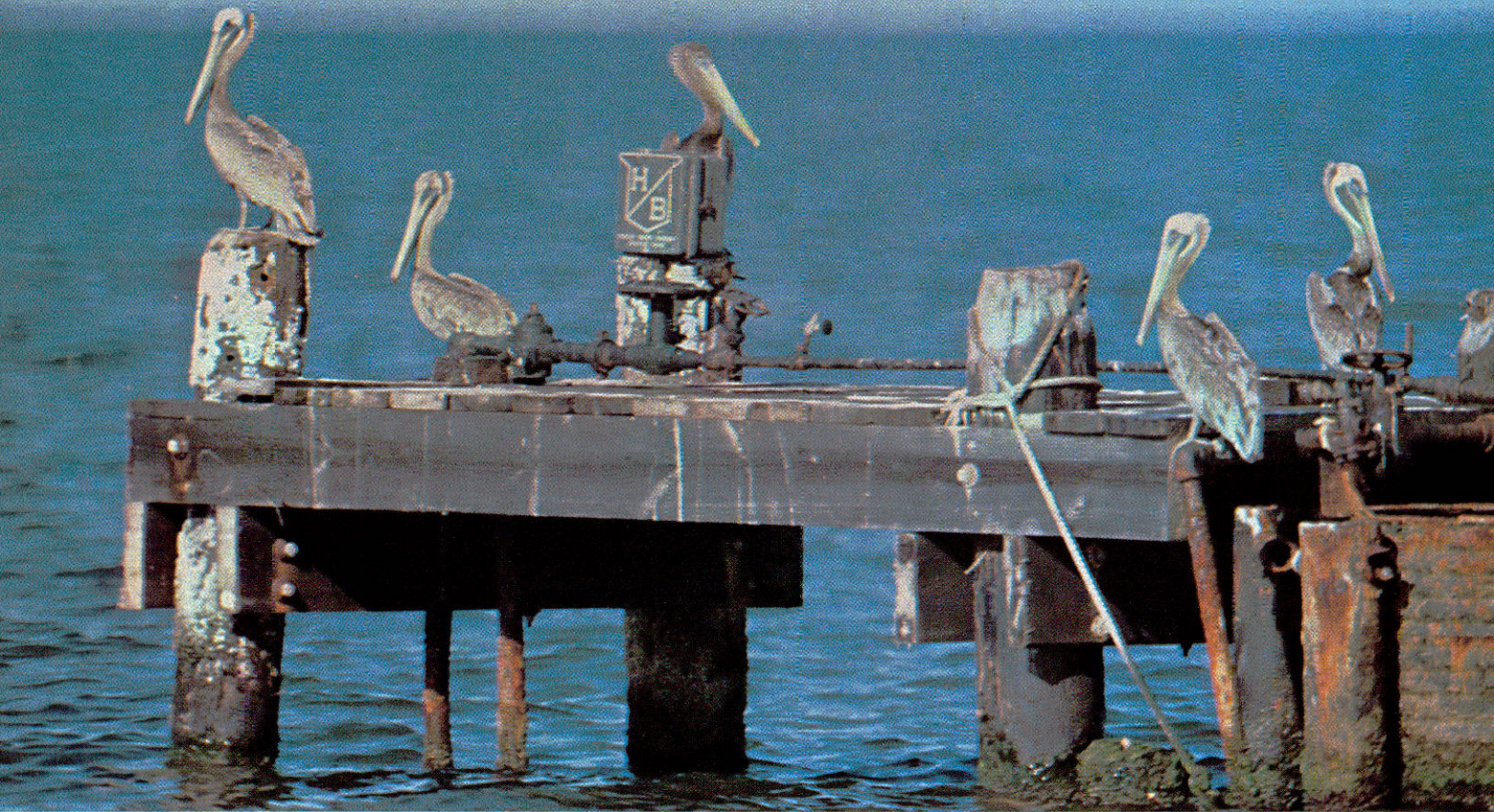
A **POPULAR TOURIST** attraction in Texas, the brown pelican is the good humor bird with the gawky body whose soaring and diving antics have brought smiles to both children and adults. But this "clown of the seacoast" is vanishing from Texas bays and beaches. Wildlife specialists consider the bird's departure as yet another signal of the changing natural environment of the Texas coast with the development of communities and industry.

This unexplainable demise has caught the attention of conservationists in the Gulf Coast states and has provoked much debate about the future of the brown pelican. But since the decline was gradual, it went virtually unnoticed, leaving biologists with little data. Thus, much of their experimental conclusions remain speculative.

Until recently there had been no official counts of the bird in Texas. It is only known that it used to be "quite abundant." By 1965, the official count on the Texas coast was 110 brown pelicans; today it is approximately 22.

Wishing to determine why the brown pelicans are waning and, also wanting to protect the present numbers, the Texas Parks and Wildlife Department with several private and governmental





*Only 20 brown pelicans were sighted in the 1967 Cooperative Census of fish-eating birds on Texas' coast.*

organizations, is investigating the brown pelican situation along the Texas coast.

On May 25 and 26, 1967, the Department participated in the first in a series of annual cooperative censuses with private organizations to investigate the status of large, fish-eating birds in Texas. When considering the available miles of Texas coastline, the number of shore birds counted was meagre—10,922. Excluding the cattle egret, an insect-eating bird, the average was about 13 fish-eating birds per mile of shoreline; or one bird per 50 acres of open water.

Twenty brown pelicans were sighted in this census. These birds were found almost exclusively in the Corpus Christi Bay area.

In the second survey on May 24, 1968 only 13 brown pelicans were counted. These were nesting on Carroll Island in Second Chain between Copano and San Antonio Bays, rather than in the vicinity of Corpus Christi Bay.

However, 22 adult birds were seen by Department personnel a month later after Hurricane Candy in the Corpus Christi Bay area. Apparently, this increase was related to movement of a few birds from Mexico.

In addition to the census program, the Parks and Wildlife Department has joined the newly formed "Pelican Committee" composed of state game agencies, the United States Fish and Wildlife Service, the Audubon Society, and other con-

cerned private organizations. Their chief purpose is to study widespread disappearance of the brown pelican colonies.

The work and recommendations of these two programs—the Texas cooperative census and the Pelican Committee—are best understood after looking at the history and habits of the brown pelican along the Gulf Coast.

The brown pelican, state bird of Louisiana, was quite abundant there at the turn of the century. Even in the 1930's, the population was estimated to be between 75,000 and 85,000. But the birds diminished steadily until the last nesting colony in Louisiana disappeared after 1961.

Concern for the preservation of both brown and white pelicans prompted formation of the United State's first federal wildlife refuge in 1903 by order of Theodore Roosevelt. It is located at Pelican Island on the Indian River in Florida.

However, the bird fell from popularity during World War I when hysterical claims were made that the brown pelican ate fish needed for human consumption. Four hundred brown pelicans were clubbed to death on Pelican Island one night in 1918 while the refuge warden slept. Investigations of this event led to discovery that the bird rarely eats fish edible by man.

A well-adapted flying fisherman, the brown pelican soars at variable distances above water, usually 30 to 60 feet, depending on the depth of the fish



*Adapted for fishing from the air, brown pelicans are awkward on their feet but quite graceful when soaring on surprisingly large wings.*



PHOTOS BY REAGAN BRADSHAW

it has spied below. When fish are seen, the bird wheels downwind in a half roll, then with amazing force plunges bill-first into the water. Pneumatic air sacs beneath the skin cushion the bird when it hits and also aid in a rapid ascent.

Underwater, the pelican scoops prey into the pouch under its bill which often holds up to 3½ gallons of water. This pouch is not a storehouse for fish, as many people think, but simply a fishing scoop. As the bird leaves the water flying into the wind, it throws back its head, drains water from its bill, and swallows its catch.

The brown pelican, using its long bill and pouch as the family dinner bowl, feeds its offspring regurgitated, semi-digested fish. As the fledglings grow larger, they reach farther into the bill and even down the parent's throat for food. Both parents take part in the feeding process.

This feeding act explains the brown pelican's historic and religious significance. It was an ancient belief that during the feeding process, the pelican was giving the young its own blood. Many legends sprang from this theme—one being that the bird restored its dead young with its blood, in a sense paralleling the symbol of Christian sacrifice. The feeding act is referred to as the "pelican in her piety." Today, as a result of these legends, the brown pelican represents civic responsibility, filial devotion, and charity.

Reminiscent of the prehistoric pterodaetyl, the



*At one time pelicans were common along the coast.*

brown pelican waddles awkwardly on ground but carries itself gracefully on wings that can reach a span of 6½ feet. In flight, its powerful wingbeat is one of the slowest among birds.

The brown pelican is peculiarly handsome. It is covered with brownish, glossy plumage streaked with silvery gray and black, and marked with a hood of white feathers on the head and neck. The huge, grayish bill varies in length from 9 to 13 inches. The bird has oar-like feet, with webbing that stretches to all four toes. The inner edge of the third toe has tiny teeth similar to a comb and is the birds's special lice-scratching device.

It is thought that the brown pelican breeding schedules vary from colony to colony. On Pelican Island Refuge in Florida, and in other habitat where conditions are conducive, they often will breed year-round. Their nesting places, which vary greatly in size and structure, are found in bushes, low trees, or on the ground.

At present, the species ranges from along the south Atlantic and Gulf coasts as far south as Brazil. They have not invaded the Amazon River area because its waters are too muddy and the bird can't see to dive for fish.

Use of pesticides is generally considered by authorities to be the highly suspect reason for the brown pelican's disappearance from its usual habitat. Besides diving for live fish, the bird will eat dead or dying trash fish that it finds. For this reason, it is prone to pick up fish saturated with pesticides accumulated in waters containing drainage from agricultural areas. Students of the problem have speculated that the pesticides may not kill the bird outright, but may in some way inhibit reproduction.

Hurricanes also have been considered by some as

a possible contributing factor although it is certainly not the only reason. The birds have withstood hurricanes long before confronting the problems that civilization has brought.

In this study—or in any analysis of the problem—it seems necessary to place the blame on a combination of factors, rather than on a single one. Apparently, several forces have worked collectively in reducing the brown pelican population.

The Pelican Committee meeting in Louisiana went further with the problem by specifying objectives and assigning members to various phases of a seven-part program of research and redevelopment. Emphasis was placed on researching the history of the bird's colonies, determining factors causing their evacuation, and establishment of captive colonies for experiment and restocking.

Members at the meeting seemed especially anxious to initiate restocking programs. Fifty nestlings are now being raised in a captive colony at the Rockefeller Refuge, Grand Chenier, Louisiana. The birds were obtained from Florida, which has a relatively healthy brown pelican population of over 10,000.

Louisiana has obtained helpful information from the Houston Zoo which houses three adult brown pelicans in its tropical bird gardens. The Houston Zoo has been quite successful in raising the bird in captivity and hopes to obtain additional pairs to raise offspring for release along the Texas coast. In the past, the zoo has raised several varieties of shorebirds and made them available to federal and state game departments for restocking. For this reason, zoo officials feel confident they will have equally good results in rearing brown pelicans. These studies in captivity are rare opportunities for zoological parks to assist in preservation of endangered species such as the brown pelican.

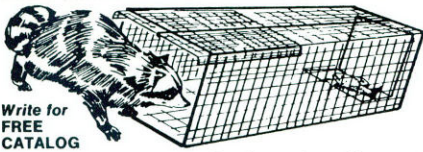
The National Audubon Society, a working member of the Pelican Committee, has recommended census and population assessment along with steps for investigating possible environmental pollution. The Society suggests checks be made on the presence of chlorinated hydrocarbon insecticides around the bird's habitat plus analysis of menhaden and mullet, mainstays of the brown pelican's diet.

By joining the Pelican Committee, the Texas Parks and Wildlife Department has been able to cooperate with other member states and also obtain helpful recommendations from both federal and private organizations. By this joint effort, Texas can confront a problem it shares with the entire Gulf Coast area.

These census, research, and restocking endeavors hopefully will curtail the brown pelican's disappearance. His zestful presence is one worth preserving—not simply because he adds much enjoyment to a coastal visit but because increasing his numbers would signify harmony among inhabitants along the Gulf Coast.

\* \*

## LIVE-CATCH ALL-PURPOSE TRAPS



Write for  
FREE  
CATALOG

Trap without injury squirrels, chipmunks, rabbits, mink, fox, stray animals, pests, etc. Sizes for every need. Also traps for fish, sparrows, pigeons, crabs, turtles, quail, etc. Save 40% on low factory prices. Free catalog and trapping secrets.

SENSITRONIX, Dept. M-37, 2225 Lou Ellen, Houston, Texas 77018

## CALL QUAIL

for the best shooting you ever had



**MONEY-BACK GUARANTEE**

Exciting way to bag Bob White Quail. Call and locate coveys and singles with this easy-to-use call. Guaranteed to work in any part of the country or your money back. Free instructions and catalog included. SEND NOW.

**SPECIAL OFFER FOX CALL KIT:** Long and close range call, instruction record (78 or 45 rpm). A \$7 value, ONLY \$5.

**NEW BOOKLET "Thrills of Game Calling":** Rare and exciting photos. Send 35c.

Q-5 ONLY  
\$1.50  
PPD.

ORDER TODAY

**BURNHAM BROTHERS**

P.O. Box C-15 E-128-Q Marble Falls, Texas

For the man who has everything . . . .

# JEEPS

(Give one to yourself)

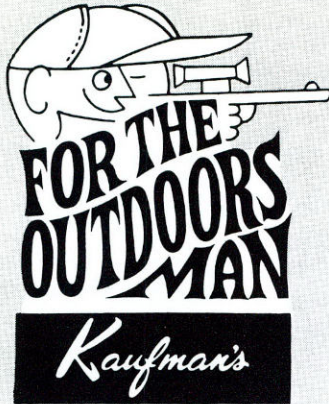
Latest govt. surplus

Rebuilt } \$1245.00  
Guaranteed }

Other Jeeps \$1095.00  
Carrivals & Pickups  
Jeep Parts & Accessories  
Other Surplus Equipment

**BRAUBACH EQUIPMENT CO.**

P. O. Box 7390  
San Antonio, Texas  
Phone 512 PE 6-1659

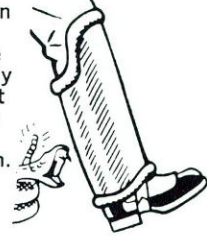


### 1 PROTECT FROM SNAKE BITE

Light weight, adjustable, aluminum or green plastic leggings.

**\$17.95**  
PAIR

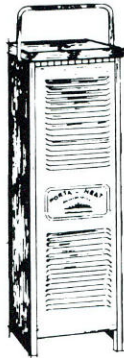
Positive protection for work or recreation in the woods. Slips easily on or off. So light and comfortable you hardly know you have them on.



ONE SIZE  
FITS ALL

Youth sizes, special order.

### 2 PORTA-HEAT for camping comfort



Actual height Only 15". Tends to circulate air almost instantly. Windproof, smokeless, odorless and non-toxic. HUNTING AND FISHING TENTS OR CABINS, COOKING AND WORKING. Uses Inexpensive STERNO Canned Fuel. 7 oz. size 39¢ (lasts 1 1/2 hours)

**\$5.00** Each

### 3 AIM TRUE WITH TRUAIM

For the Rifle and Pistol Shooter

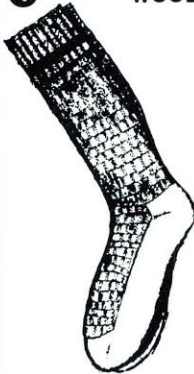
- Use it in the field
- Use it on a bench
- Use it with a rifle
- Use it with a pistol



Your Satisfaction is Guaranteed by the Manufacturer

**\$7.95**  
each

### 4 WOOL THERMO SOX



100% Worsted light medium weight thermal socks — 12" high in an exclusive 3 dimensional pattern for maximum warmth. Grey with red top and tipped heel and toe.

Sizes 9 thru 13

**\$2.25**  
Pair

### 5 THERMAL UNDERWEAR

Original genuine thermal knits developed by the U. S. Navy for the maximum warmth in coldest winter. Wear less this winter and actually keep warmer. Thousands of tiny air pockets knitted into the fabric trap warm air close to the body. Seal heat in, lock cold out.



Non-irritating combed cotton shirts or drawers.

S, M, L, XL

**\$2.79** each  
garment

CLIP AND MAIL THIS COUPON

### WRITE FOR FREE HUNTERS CATALOG

- 1 Please send me \_\_\_\_\_ pairs of (aluminum) (plastic) leggings at \$17.95 a pair.
- 2 Please send me \_\_\_\_\_ PORTA HEAT(s) at \$5.00 each
- 3 Please send me \_\_\_\_\_ TRUAIMS at \$7.95 each.
- 4 Please send me \_\_\_\_\_ pairs of WOOL THERMO SOX Size \_\_\_\_\_ at \$2.25 a pair.
- 5 Please send me \_\_\_\_\_ shirts, size \_\_\_\_\_, and \_\_\_\_\_ drawers, size \_\_\_\_\_, at \$2.79 each garment.

SEND CHECK OR MONEY ORDER ONLY. SORRY, NO. C.O.D. ADD 4% SALES TAX TO THE TOTAL ORDER, IN TEXAS. ADD 50¢ HANDLING

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

**Kaufman's**  
100 So. Flores San Antonio, Texas 78204

# Junior Sportsmen

by L. D. Nuckles  
Information Officer, Rockport



Texas is big and proud of it. We have the longest highways, the most deer, the most oil, the biggest mohair crop—and even one of the largest birds in the world is part Texan. The whooping cranes, with their six foot height and seven to eight foot wingspread, spend the whole winter on the Texas coast.

Although the whooper is *one* of the world's largest birds, he is

certainly not *the* largest. This distinction belongs to the African ostrich. He is known to stand over eight feet high, and a large male will weigh 300 pounds or more.

Wingspread is another matter entirely. Some much smaller birds have tremendous wings. The wandering albatross wingspan is known to reach 11 feet, 4 inches, and may exceed this. A recently

measured condor weighed only 28½ pounds, yet had a wingspread of over 10 feet. One trumpeter swan with a wingspread of 10 feet, 2 inches has been measured.

All of these birds are alive on earth today, although some are quite rare. At least two groups of extinct birds were considerably larger than the ostrich. These were the moas of New Zealand and the elephant birds of Madagascar. Almost complete skeletons of the moas have been found that show the birds were 9 to 10 feet in height, but many biologists believe that some of the larger species may have reached the incredible height of 18 feet.

The elephant birds were not so tall but they were more massively built. Based upon parts of their skeletons that have been found, a biologist computed their weight at almost 1,000 pounds.

It is interesting to note that these huge birds were flightless, as is the ostrich. Their way of life was such that they did not need to fly so, over a period of thousands of years, they lost the ability to soar through the air. They developed instead powerful legs to run and fight with.

No—Texas is not the home of the world's largest bird, but we do have, during the winter months, one of the world's rarest. Two nations, Canada and the United States, have cooperated to save the magnificent whooping cranes from going the way of the moa and the elephant bird. \*\*

## HUNTERFLAGE



**YOUR PRESENCE FADES.....**

when you use a few drops of **HUNTER-FLAGE**. All human odor **DISAPPEARS**, allowing you to stand within a few yards of deer and other game. An absolute **MUST** for **ARCHERS** and rifle **DEER HUNTERS**, naturalists, photographers, predator callers. Economical, long-lasting, easy-use.

for more information write:

**\$2<sup>00</sup>**

Texas residents  
add 4% sales tax

**Sportaids INC.**

P. O. BOX 16117 SAN ANTONIO, TEXAS 78216

### REAL HUNTING

HUNTERS GET OUT IN THE  
MOUNTAINS AND HUNT WILD  
AFRICAN MOUFLON RAMS.

\$125.00 per ram includes facilities  
No Kill—No Pay

C. T. Moore Ranch, Box 536, Marfa, Texas 79843

### VARMINT CALLING TAPES



**NOW!**  
ORDER  
TODAY  
Post  
paid

Exciting Action! 23 different authentic game calling tapes for portable recorders. **Results Guaranteed.** Young rabbit 3" reel \$2.95—5" \$3.95. Auxiliary speakers avail. Write for **FREE CATALOG.**

All electronic callers available  
BURNHAM BROTHERS, 1511 S. R. Marble Falls, Texas 78654



**NEW!**  
**BURNHAM**  
**Cartridge Tape**  
**CALLER**  
 lures wild predators  
**UP CLOSE!**

Model  
 T-1

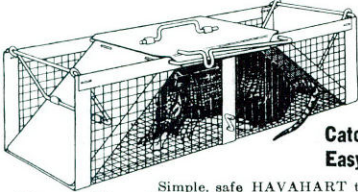


You'll go for this! Easy to use. Just "plug in" tape cartridge—watch varmints come! Predators to crows. Each cartridge has 2 calls. Self-contained. Plays hours on 12 ordinary flashlight batteries (included). Special "Crittter" Speaker, Cord, one Cartridge Tape. Superb value, ppd. only \$119.95.

**MONEY-BACK GUARANTEE. Send for FREE CATALOG!**

**BURNHAM BROTHERS**  
 P.O. Box E-128-C Marble Falls, Texas 78654

**CATCH ANIMAL RAIDERS!**



**Catch more!**  
**Easy to use!**

Simple, safe HAVAHAART traps catch raiding armadillos, rabbits, coons, squirrels, pigeons, sparrows, etc., without injury. Straying pets, poultry released unharmed. No jaws or springs to break. Galvanized; many in use 20 years. Open ends give animal confidence. Sizes for all needs. Write for valuable illustrated guide and price list.


**HAVAHAART, 149 Water St., Ossining, N. Y. 10562**

Please send me FREE new 48-page guide and price list.

Name \_\_\_\_\_  
 Address \_\_\_\_\_ Zip \_\_\_\_\_

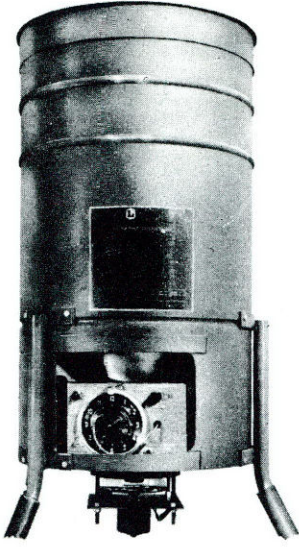
**BIRD DOGS**  
 Chandler Kennels, one of the largest in the business offers to you for your selection over 100 top trained POINTERS, SETTERS & BRITTANIES. These dogs are all registered out of top blood lines. We guarantee all our dogs as advertised to suit you, the Hunter. Also puppies & started dogs.  
 Call, write, or come by:  
**CHANDLER KENNELS**  
 P. O. Box 1011, La Porte, Tex.  
 Call: Area Code 713-GR 1-4023  
 Hollen Chandler - Owner

**NOW Set or Take up Trotline in 5 Minutes!**  
**BOOKLET ON HOW TO 20 PAGES**  
**Catch 'em!**



**"TROTLINE FISHING SECRETS"**... written by experts. How, when, where to set trotline, illustrated. Bait laws, tackle. Send 25¢ for mailing cost.  
 LAWRENZ MFG. CO., DEPT. T, P.O. BOX 3837, DALLAS, TEX. 75208

**TIMELY FEEDER**  
**LEHMAN AUTOMATIC GAME FEEDER**



1. Feed 6 oxen or more at any selected time—regularly & unattended—saves cost of feed & labor.
2. Distributes feed 50 to 100 ft.—depending on installation height. Install suspended—or on pipe legs.
3. Operates on 6 volt dry cell—2 to 6 mos.
4. Capacity 250 & 900 lb. sizes.

WRITE FOR FREE BROCHURE  
**LEHMAN EQUIPMENT CO.**  
 Rt. 3, Box 53 — Corpus Christi, Texas

**SANTA CLAUS** says,  
 for **CHRISTMAS**, give a  
**MINNOW SAVER**  
 Every Fisherman Needs One



Keep minnows & shrimp alive in buckets. Not a gimmick, not a toy—but an attractive, efficient, cordless agitator. Restores oxygen to the water.

Prices:  
 One for \$3.95  
 Two for \$7.00  
 Three for \$10.00  
 (Add 4% Tax in Texas)  
**IMMEDIATE SHIPMENT**

- New Type 1200 RPM Motor
- Operates Up to 6 Hours on One Standard C Flashlight Battery
- No Wires—Can Use Any Bucket
- Only 7½ Inches Long
- Fully Plated to Prevent Rust

Mail Check or Money Order with Name, Address & Zip Code. Sorry—No C.O.D.

**M & S SALES COMPANY**  
 P. O. Box 7313-X Waco, Texas 76710

**MAKE RESERVATIONS NOW!**



**TROPHY BUCKS**  
 White Tail Deer • 8 points or better  
**GUARANTEED!**

**FAMOUS "NO DEER-NO PAY" POLICY**  
 Guides, Transportation Furnished! Meals, Accommodations Available!  
 Write, Call Now! Deer, Turkey Season Ends Jan. 1, 1969

**HUNT EVERY DAY OF THE YEAR**  
 AFRICAN AOUAD SHEEP • WILD CORSICAN RAMS • INDIAN AXIS DEER • JAPANESE SIKA DEER • INDIAN BLACKBUCK ANTELOPE • ENGLISH FALLOW DEER

**Y.O. RANCH**  
 Mountain Home, Texas 78058 - Box 220 — (512) OL 4-2076—OL 4-2071—OL 4-2073

# Letters to the Editor

## Still Stand Hunting

I would like to comment on Mr. Pate's letter to the editor in the October 1968 issue concerning "still hunting" and "stand hunting." Perhaps it is because of the difference in Mr. Pate's habitat and here in the Hill Country deer hunting region, but the majority of hunters here find very little variation between "still" and "stand" hunting. "Still hunting" is just what the name implies—being still, without sound, quite motionless. "Still hunting" can be done from a very elaborate complex with gas heaters, electricity, and television, to just sitting up against a tree trunk—as long as you are still and allow the game to come to you. Without getting technical, "stand hunting" is the same thing. But definitely, in this area, when a hunter speaks of "still hunting," he does not mean stalking deer.

Elmer L. Lange  
Harper

## Stocking Walleye

In looking through the December 1967 issue of TEXAS PARKS & WILDLIFE magazine I noticed on the inside

front cover that northern pike and walleye have been stocked in Caddo Lake. I have lived in Karnak all my life but had not heard of this before. Can you tell me when they were stocked and if they have survived?

T/Sgt. Billy Moore  
Vietnam

Northern pike and walleye have not been stocked in Caddo Lake. Walleye have been stocked in Lake Meredith near Amarillo in the Panhandle of Texas and in Buffalo Lake near Canyon, Texas. Northern pike have been stocked in the new Greenbelt Reservoir near Clarendon and also in Buffalo Lake. The only members of the pike family that are still living in Caddo Lake are the chain pickerel and the grass pike.—Marion Toole Inland Fisheries Coordinator.

## Bobwhite Ups & Downs

Most people I have talked with in the Panhandle appreciate the fine job of game management the Texas Parks and Wildlife Department is doing throughout the State. The public hunts (see "An Invitation to Hunt," October 1968) are a testimonial to this good management. However, there is some



concern over the early opening and long quail season in this area. Could we have an article on this subject in a future issue of *Texas Parks & Wildlife*?

Tom W. Price  
Pampa

See "Bobwhite Ups and Downs," page 20 of this issue.—Editor.

## Copano Causeway

When will work on the 6,000-foot north end of Copano Bay Causeway State Recreation Park be completed? Will it be equipped with 1,000-watt bulbs, and if so, how many? Will it also have a concession stand? What kind of catch can a fisherman expect off the bridge? How many visitors have used the south end so far and how many will use the two piers in the future?

Freddie Steve Harris  
Houston

It is estimated the north end will be completed near the end of 1968. Lighting will be similar to that on the south end, however, will probably not extend to the end. How many bulbs used will depend on the money available. There will be a concession stand. So far fishermen have caught good strings of speckled trout (spotted weakfish), black drum, redfish, and gafftopsail catfish. Of course, the predominant fish has been the speckled trout. By checking daily averages, in 3½ months there have been 9,800 fishermen who have used the pier. Until both piers have been in operation for a year or two, there is no way to estimate how many people will fish there.—L. D. Nuckles, I&E Officer, Rockport.

# TEXAS PARKS & WILDLIFE

Send check or money order to:

TEXAS PARKS & WILDLIFE DEPT.  
John H. Reagan Bldg., Austin, Texas 78701

### Check one

RENEWAL

Paste your last magazine address label into space indicated and mail with payment.

CHANGE OF ADDRESS

Paste recent magazine label into space indicated, show change on form and mail.

NEW SUBSCRIPTION

Fill out form at right and mail with payment.

GIFT SUBSCRIPTION

Show recipient's name and address in form, indicate gift signature and mail with payment.

Attach recent magazine address label here for renewal or change of address.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Sign Gift Card \_\_\_\_\_

CHECK ONE  1 yr. \$2.08  2 yrs. \$3.12  5 yrs. \$5

## INSIDE BACK COVER

With his first shot, hunter downs his first mulie. Taken in Brewster County—Texas' mule deer country—the ten-pointer was field dressed at an estimated 175 pounds. Photo by John Masters.



