

A large flock of birds, likely shorebirds, is captured in flight over a wetland area. The sky is a soft, warm orange and pink, suggesting a sunset or sunrise. The birds are scattered across the sky, with some appearing as dark silhouettes against the bright background. In the foreground, there is a body of water with lily pads and tall, thin reeds or grasses. The water reflects the sky and the birds, creating a shimmering effect. The overall scene is peaceful and natural.

# TEXAS

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December 1980 • 50¢

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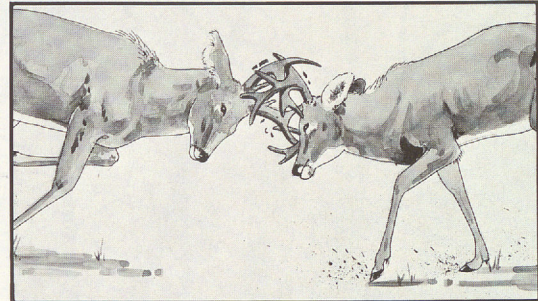
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**Front and Back Covers:** Because of its location near the Gulf of Mexico, the Welder Wildlife Refuge attracts a variety of migratory and resident birds such as these cattle egrets. (See story on page 16.) Photo by Glen Mills.

**Inside Front:** Photo by Wyman P. Meinzer Jr.





## Woodcock

# Thicket-dwelling Game Birds Hard to Hit

Article by Bill Borden, Biologist, Jasper, and Dan Boone, Biologist, Beaumont  
Photos by Glen Mills

**People familiar** with the woodcock know it by a variety of colloquial names, such as timberdoodle, becasse, wood hen, mud snipe, bog-sucker, whistler, big-headed snipe, hill partridge and labrador twister. But many Texas hunters have never seen this member of the sandpiper family, since huntable populations are confined primarily to wooded areas of the eastern United States. For the most part, its Texas range is limited to the East Texas Pineywoods, with only a scattering of birds over the remaining eastern half of the state.

The woodcock's range extends from Nova Scotia and southern Ontario south to the Gulf Coast where the birds winter. The largest winter concentration is believed to be in the heavily wooded Atchafalaya Basin of central Louisiana. Since they are migratory, woodcock are managed by both state and federal agencies, the same as waterfowl.

Woodcocks sport beautiful plumage of light to dark brown, cinnamon, tan, some black and touch of white, allowing them to blend in with the fall forest floors of East Texas. They are about the size of a pigeon or a large quail. The female generally is larger than the male and

has a longer bill. Their eyes are large and set toward the rear of each side of the head, and their ear openings also are large. The distinctive twittering sound of a woodcock in flight is the result of three narrow, stiff feathers on each wing.

In its summer range, the woodcock nests in a slight depression in the ground, lined with dead leaves. These nests usually are located in open fields, meadows and along forest edges. Normally, the hen lays four eggs. The male's courtship activities, known as the "sky dance," are quite spectacular. The woodcock bursts from the ground making spiral flights almost straight up and down while his whistling wings lure the female. During these spiral flights he utters his mating call, a nasal "peent." Biologists in some states survey woodcock populations by making "singing ground" counts where the birds are carrying on their courtship activities.

*Woodcock can offer some exciting and challenging hunting in the East Texas Pineywoods. The birds favor brush and briar thickets, and avid woodcock hunters have learned to wear protective trousers and jackets to prevent shredded clothes and scratched skin. The current woodcock season runs through January 18, 1981.*



Woodcocks normally are found where there are earthworms, since worms constitute their entire diet, with the exception of a few small insects and plant seeds. Low, damp woodlands and moist, brushy areas are their primary haunts. Quality woodcock habitat in East Texas includes forest clear-cut areas where islands of trees have been left standing in damp areas and where the cleared area has grown up into brush and briar thickets. Where the soil is loose and moist, the woodcock probes for earthworms with its long bill. Some observers contend it locates the worms with its sensitive feet before probing the soil. The tip of the upper mandible is hinged so the bird can open its bill and grasp an earthworm while the bill is inserted in the soil.

Woodcock hunting can be an exciting sport, and most bird dogs that point quail will point and hold them easily. Woodcocks are noted for holding tight, but occasionally they will creep if tightly pressed in sparse cover. Quail hunters in East Texas sometimes curse woodcocks because their dogs wander into dense briar thickets and point them. If the dog cannot be called off a rigid point, the hunter has to crawl into or otherwise overcome the thicket to retrieve his dog.

The avid woodcock hunter is familiar with briar thickets, shredded clothes and scratched skin. Protective trousers and a canvas coat are necessities. When your dog comes on point and you ease up for the flush and shot, five things can happen: You can kill the bird, miss the bird, never get a shot (frequent),



hang your gun on a limb or blow the bark off a tree.

Since woodcocks can camouflage themselves so well in East Texas forests, many times dogs will point one on an open forest floor, but the hunter won't see the bird until it flushes, often just two or three feet in front of the dog. When a woodcock flushes, the loud twittering sound created by its unique wing feathers leaves no doubt as to its identity. The quick flush and its rapid flight through the trees and brush will test the ability of any hunter.

Woodcocks are most active at night and during twilight hours, so hunters pursuing them during the day actually are working the birds in their roosting and resting areas. An excel-

lent way for hunters and birders to locate woodcock concentrations is to station themselves near the edge of open meadows or forest clear-cut areas at twilight, and listen for the unmistakable twittering sound of birds flying into these areas to feed.

In Texas, woodcock season begins in mid-November and runs through the end of waterfowl season in late January. Daily bag limit is five, with a possession limit of 10. Shooting hours are one-half hour before sunrise to sunset.

The woodcock is delightful table fare. Its flesh is dark, and when breasted and cooked, it tastes much like dove. East Texas hunters who have taken up the sport of woodcock hunting find it a refreshing change and more than challenging. \*\*

*Most bird dogs that point quail will point and hold woodcock easily. The woodcock's plumage of different shades of brown, some black and a touch of white allows it to camouflage itself well on the fall forest floor, and many times a dog will point a bird but the hunter won't see it until it flushes.*

# Two Nations Honor Texas-born General

by Mary-Love Bigony

**On May 5, 1862**, General Ignacio Zaragoza assembled a ramshackle army in Puebla, Mexico. These troops, many of them local *indios* armed only with machetes, gathered with hopes of deflecting a powerful French army of 6,000 regulars that was en route to Mexico City as part of Napoleon III's plan to conquer Mexico.

The odds were against Zaragoza's humble army. "Your enemies are the first soldiers of the world," Zaragoza told his men, "but you are the first sons of Mexico. They have come to take your country from you."

Remarkably, Zaragoza's army defeated the French forces, which renewed a badly needed sense of confidence in Mexico. Cinco de Mayo, the fifth of May, became as significant to Mexicans as the Alamo is to Texans, and General Zaragoza won national acclaim. Although French forces succeeded in capturing Mexico City the next summer, the year's delay resulting from the battle of Puebla is believed to have shortened the war of French intervention and changed its outcome, as the French had proposed to set up liaison with Confederate forces and supply them with aid through Texas. Above all, it rekindled the fervor of the Mexican people to win and preserve their independence.

Ignacio Zaragoza was born in Goliad, Texas, in 1829, the son of Mexican Army Captain Miguel Zaragoza of Veracruz and Maria de Jesus Seguin of San Antonio. He studied law and religion in Matamoros and Monterrey and at age 24 held the rank of captain in the Mexican Army. Two years later, realizing that his political beliefs were more in line with Mexico's liberal party, Zaragoza enlisted in the Liberation Army. There he achieved recognition as a military hero after serving with distinction in the successful campaign against General Woll which eventually led to the downfall of General Antonio Lopez de Santa Ana.

After being promoted to the rank of colonel, Zaragoza participated in other successful campaigns in the Liberation Army. In 1861, he was named Minister of War for the Republic of Mexico, a post he held until December of the same year, when he resigned to take command of the "Army of the East" in Puebla. After his



Leroy Williamson

*Dignitaries from the United States, Texas and Mexico participated in the dedication of a monument honoring General Ignacio Zaragoza in Goliad State Park. The bronze statue was commissioned by the governor of Puebla, Mexico, where Zaragoza commanded a successful battle against French forces in 1862. Also in the park is a furnished reconstruction of Mission Espiritu Santo (above). Park interpreters provide tours of the church, which contains an exhibit describing the mission's history and its restoration.*





Photo from Album de las Glorias Nacionales



Ignacio Zaragoza (left) was 33 years old when his poorly trained and badly outnumbered army defeated French forces in the battle of Puebla (right). One year later, the French succeeded in capturing Mexico City. Ferdinand Maximilian of Austria (below left) took the throne in 1864 and reigned as Emperor of Mexico until 1867. Maximilian was overthrown and executed by Mexico's liberal forces in order to assert Mexican sovereignty and warn other countries against future interventions.

victory against the French army, Zaragoza was welcomed in Mexico City as a national hero. His brief but illustrious military career ended with his death from typhoid fever, September 8, 1862, when he was 33. The general was buried with military honors in Mexico City.

Zaragoza's Texas birthplace now is part of Goliad State Historical Park, and the most recent tribute to the general came on September 13, 1980, with the dedication of a monument in his honor. The 10-foot, 3,000-pound bronze statue was commissioned by Dr. Alfredo Toxqui Fernandez de Lara, governor of Puebla, as a gift to the people of Goliad and Texas.

Designed and cast by a fifth-generation, father-and-son team of sculptors from Mexico City, the statue stands on a plaza constructed for it by the Texas Parks and Wildlife Department. It is the culmination of years of planning by Texas and Puebla governors, Zaragoza societies and other organizations.

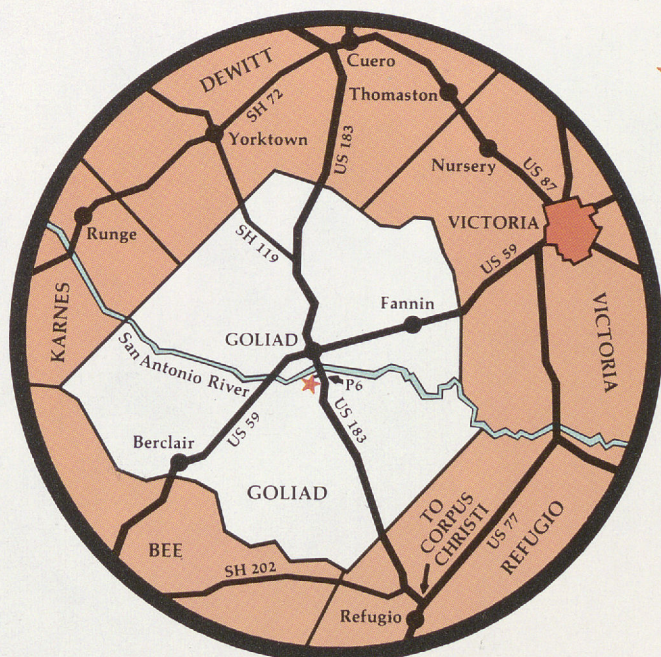
Dedication ceremonies included a field Mass concelebrated by Archbishop Patrick Flores of the San Antonio Catholic Archdiocese and Bishop Thomas J. Drury of the Diocese of Corpus Christi. In addition to Toxqui, governors of several other Mexican states and officials from the United States and Texas attended the ceremonies at the Goliad State Park Zaragoza Plaza Amphitheater. All emphasized the friendship between Texas and Mexico and the cultural, economic and political ties that bind the two countries.

Goliad State Park and the surrounding area are filled with Texas history. In addition to the new statue and Zaragoza's birthplace, there is a furnished reconstruction of the Mission Nuestra Senora del Espiritu Santo de Zuniga, first established in 1722 and resettled at Goliad in 1749. Park interpreters provide tours of the church, and exhibits describe the history of the mission and its restoration. A slide show portrays the life of the Indians before the missionaries came. In the mission workshop is a loom used for weaving demonstrations. The ruins of Mission Nuestra Senora del Rosario, established in 1754, are located four miles upriver from Mission Espiritu Santo de Zuniga and are administered as another unit of Goliad State Park.

The restored Presidio Nuestra Senora de Loreto de la Bahia is located near the park and is open to the public. Also nearby is the Goliad memorial shaft marking the burial site of Colonel James Fannin and other victims of the 1836 Goliad Massacre. \*\*

Photo from Historia de la Guerra de Mexico by Pedro Pruneda





## ★ Goliad State Historical Park

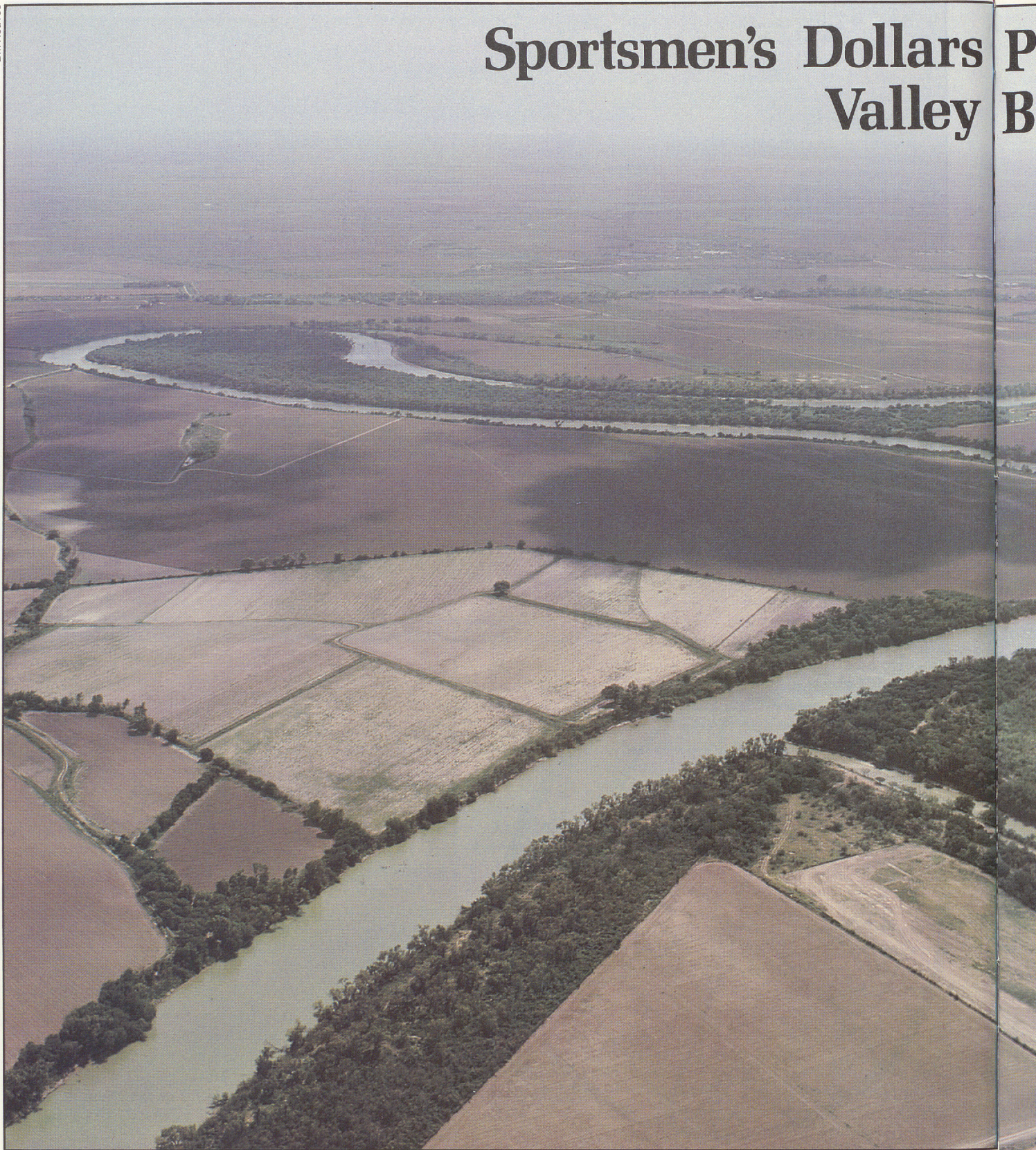
**Location:** Goliad County, one mile south of Goliad on U.S. 183 to Park Road 6 entrance.

**Facilities:** 20 campsites with water, sewer and electricity; five screened shelters; group trailer area with 24 campsites with water, electricity and sewer dump station and a group shelter (capacity approximately 75); 10 primitive campsites (no motorized vehicles—parking provided at trail head); 42 picnic sites; one group picnic area with 13 tables and group barbecue facility; four restrooms (two with showers, two without showers); playground; nature trail; museum; refurbished church; mission workshop; interpretive center; and a swimming pool complex operated by the City of Goliad.

**For reservations or information:** call 512-645-3405 or write Goliad State Historical Park, P. O. Box 727, Goliad 77963.

Bill Reaves

# Sportsmen's Dollars Valley B



# Preserving Brushland



## Revenue from whitewing stamp helps fund habitat acquisition.

by J.H. Dunks, Wildlife Division

In 1846, while attempting to rejoin his regiment, W.A. McClintock rode to a hill overlooking the Rio Grande near Rio Grande City. Later, in a letter to his parents, he reported the "Valleys of the Rio de Grande and San Juan Rivers spread out at my feet, the dense chaparral looking in the distance like a noble forest."

For centuries the unchecked Rio Grande has built and shaped a fertile river delta along the lower stretches of its course in Cameron, Hidalgo and Starr Counties. Prior to the 1900s, a dense thicket of native brush claimed the rich alluvial soil nourished by periodic flooding.

This corridor of thorny brush consisted of woody plants such as Texas ebony, anaqua, huisache, guayacan, colima, brasil, catclaw, granjeno, tepeguaje, mesquite and sugarberry. Many were found only in this part of Texas. This dense corridor also

served as home to peripheral wildlife species such as the white-winged dove, red-billed pigeon, white-fronted dove, chachalaca, groove-billed ani, ocelot, jaguarundi and the extirpated jaguar.

Massive clearing efforts in the early 1900s resulted in rich farmlands, a trend that intensified and peaked in the '40s and '50s. Most of the brush comprising the corridor had been removed by the mid-1950s, and the land converted to farmland.

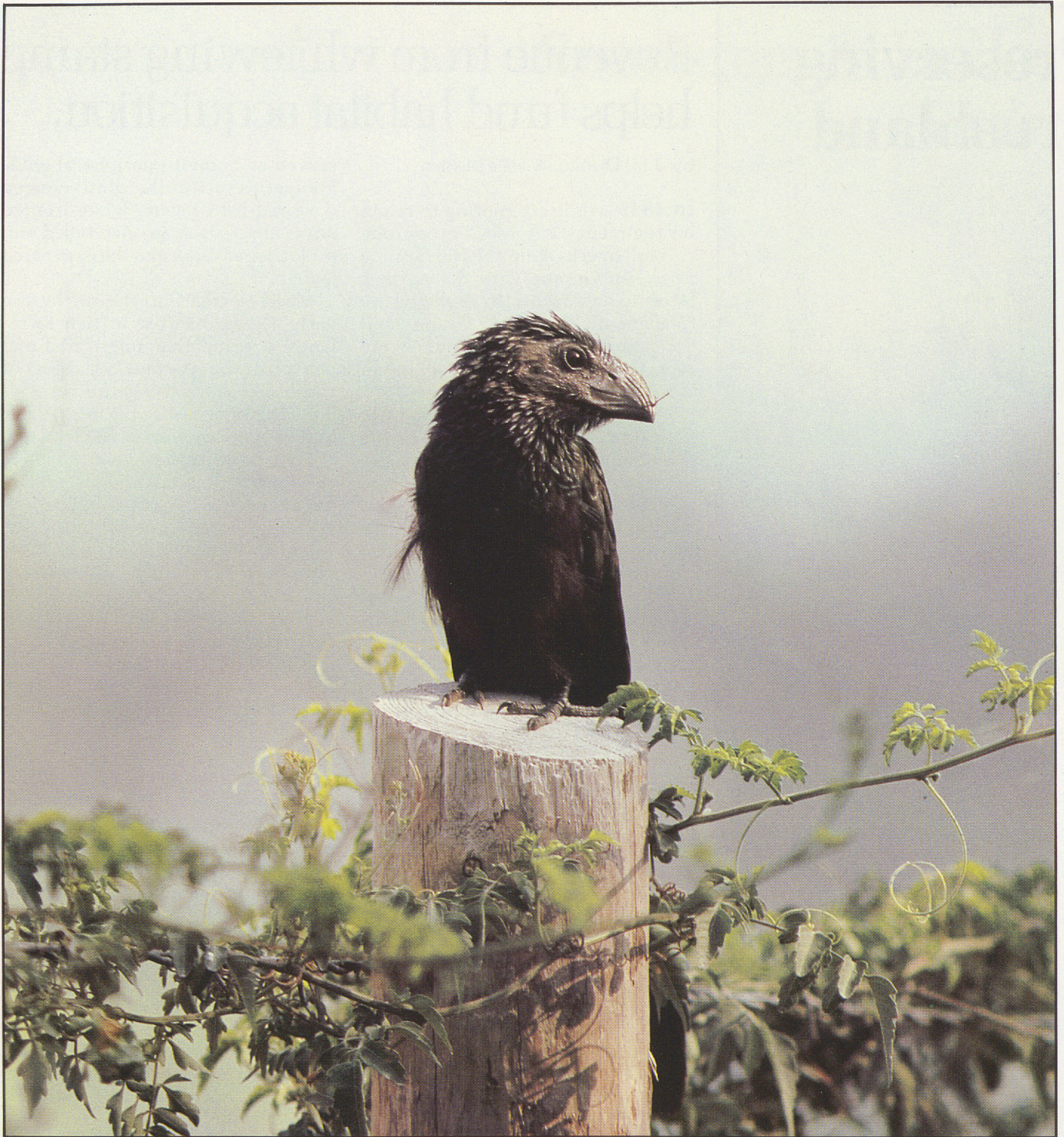
Efforts to preserve some of this subtropical habitat and its wildlife began in the '40s. The U.S. Fish and Wildlife Service acquired some 2,500 acres of brushland along the Rio Grande in 1943 which is now part of the Santa Ana National Wildlife Refuge. In 1944 the State Parks Board (now part of the Texas Parks and Wildlife Department) acquired land and developed the 588-acre Bentsen-Rio Grande Valley State Park.

Private conservation agencies also have been active in the preservation of this unique habitat. The World Wildlife Fund acquired several tracts totaling 1,440 acres from 1964 through 1967. These tracts later were conveyed to the Fish and Wildlife Service and are considered part of the Santa Ana National Wildlife Refuge. The National Audubon Society has purchased a 170-acre tract which contains one of the few remnant stands of native sabal palms, *Sabal texana*, existing in the United States. The Nature Conservancy recently has acquired a 367-acre tract

Bill Reaves



A sharp bend in the Rio Grande, with Mexico on the left and Texas on the right, encompasses a remnant of the thorny brush which once occurred along the river's lower stretches. This brush, under private ownership, is important wildlife habitat. The Texas ebony and white-winged dove (left) typify the areas to be preserved.



*The McManus Brush (opposite page) is a 56-acre island of brush that has survived the intense demand for farmland. This brush was bought recently with funds from the sale of white-winged dove stamps, and will be preserved as part of Las Palomas Wildlife Management Area. Among the Valley's wildlife species are the groove-billed ani (above) and the colorful Altamira oriole (right). The tepeguaje or great lead-tree, in which the oriole is perched, is one of the tallest trees in the area.*

J.H. Dunks



Gary Homerstad



adjacent to the Audubon Sanctuary which soon will be transferred to the U.S. Fish and Wildlife Service.

The Texas Parks and Wildlife Department has acquired several brush tracts in the Rio Grande Valley that serve as parks or wildlife management areas. Both types of facilities help preserve the native environment. State parks include Bentsen-Rio Grande Valley, Resaca de la Palma (1,100 acres) and South Texas Site-Goat Island (475 acres). Development of the parks has been in a manner to ensure the integrity of the natural environment.

Las Palomas Wildlife Manage-

ment Area was designed to preserve white-winged dove nesting habitat, but this habitat protection benefits other wildlife species as well. Las Palomas, Spanish for "the doves," consists of seven separate units ranging from 35 to 200 acres in size. This project was initiated in 1957 and remains active today. It is operated under guidelines of the Federal Aid in Wildlife Restoration Act which reimburses the state 75 percent of all qualifying expenses.

Funding historically has been a problem in preserving lands for wildlife. In 1971, the Texas Legislature made a tremendous step toward gen-

erating funds for preserving white-winged dove habitat by requiring all persons who hunt whitewings to purchase a white-winged dove stamp. Funds generated by the dove stamp are earmarked for acquisition and development of whitewing habitat in the state. Two important brush tracts have been added to Las Palomas Wildlife Management Area as a result of stamp sales, another example of how hunters pay the price to benefit wildlife.

The U.S. Fish and Wildlife Service also is proceeding to acquire more wildlife habitat in the Lower Rio Grande Valley. In the past three years more than 500 acres of native brush have been purchased by the Service with money from the Land and Water Conservation Fund. The fund derives its revenue from outer continental shelf oil leases, tax on motorboat fuels and sale of surplus federal lands. Lands bought with these funds, where compatible with wildlife management objectives, will be available for a variety of public recreation.

Farming, urbanization and flood-control projects have intensified to the point that the remaining brush tracts are in jeopardy. A coordinated effort of land acquisition by the Texas Parks and Wildlife Department and the U.S. Fish and Wildlife Service now has been accelerated in hopes of protecting what is left of this wildlife corridor. \*\*

Bill Reaves



# AROUND the STATE

NEWS OF THE TEXAS OUTDOORS FROM THE PARKS & WILDLIFE DEPARTMENT'S NEWS SERVICE

## BOBCAT PELT TAGGING PROGRAM ENTERS THIRD YEAR

Texas hunters and trappers will be required again this year to have their bobcat pelts tagged prior to sale.

The authorized tagging period is November 15, 1980, through February 15, 1981. Bobcats taken during this period are eligible for tagging and sale. This is the third year of the tagging program and the second year the Parks and Wildlife Commission has authorized permitted dealers to affix tags to pelts.

Dealers must obtain a free bobcat pelt tagging permit from any department law enforcement field office prior to purchasing any bobcat pelt. Permits also are available at the department's Austin headquarters. Addresses of the offices are listed on the back of the 1980-81 Texas Hunting and Sport Fishing Regulations booklet, available where hunting and fishing licenses are sold.



A trapper license is not required of persons taking only bobcats in Texas. Dealers must report in person to be registered. The dealer permit may

be obtained along with the tags.

For further information on tagging procedures, call department law enforcement offices across the state, contact John

T. Roberson, Wildlife Division, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744, or call (512) 475-4871.

## OYSTERING SEASON PROSPECTS IMPROVED

Oystermen in Galveston Bay may be heading for the best oyster harvest in three years with the November 1, 1980, through April 30, 1981 season.

Shellfish Program Director C.E. Bryan said a good spat set (attachment of tiny oysters to objects on the bay floor) in 1978 produced a large quantity of oysters which are now marketable size.

Additionally, barring unusually bad weather conditions,

Bryan said prospects also are good for the 1981 season. "The department distributed 52,000 cubic yards of clean shell in the bay this summer, and fortunately there was a good reproductive effort by the oysters which allowed an unusually large number of spat to set on the new shell." The shell was made available through a federal grant.

He said sampled areas revealed that the new shell in-

creased the current spat set by about 1.5 million per acre.

The improved oyster outlook this year is in stark contrast to 1978, when the quantity of marketable-sized oysters sank to an all-time low in Galveston Bay, Bryan said. The scarcity was caused by low reproduction, caused in turn by weather-related environmental factors. The Parks and Wildlife Commission responded to the situation in 1978 by closing the oys-

ter season early, and continued by delaying the 1979 season opening until December 15, 1979.

Oyster Program Leader Bob Hofstetter said this year's excellent spat set may have been assisted by high tides brought on by Hurricane Allen.

The Galveston Bay system is important to the multimillion dollar Texas oyster industry, annually producing 80 to 90 percent of the state's harvest.

## LAKE POISONING COSTLY FOR NORTH TEXAS PAIR

Two Wichita Falls area men had to pay \$400 in fines and \$2,800 damages to a local rancher after they used a chemical to kill about 1,800 catfish in the rancher's lake.

The pair was apprehended after a two-week investigation by Texas Parks and Wildlife Department Game Warden Wayne Chappel of Mineral Wells.

## DEER GROW ACCUSTOMED TO OIL FIELD RACKET

White-tailed deer are known as skittish creatures which bolt and run from any unusual sight or sound.

But Texas Parks and Wildlife Department biologist Robert

West of San Angelo believes constant noises don't necessarily spook the cautious animals. He recently observed a group of deer at night basking in the light of a roaring oil well flare. Another group of deer in the same oil field was feeding a few feet away from the steady din of a large one-cylinder pump.



## BOATERS ACCOUNT FOR FATALITY RATE RISE

Boating-related fatalities accounted for the largest increase in water-related deaths recorded in 1979 by the Texas Parks and Wildlife Department.

As in past years, the largest number of drownings resulted from swimming incidents, but boaters suffered the largest increase in fatalities over the previous year.

Boating-related deaths rose 38 percent, climbing from 96 deaths in 1978 to 132 in 1979, indicating that many Texas boaters are not observing boating safety laws and procedures.

The largest number of drownings traditionally occurs in large reservoirs near metropolitan areas. In 1979, Lake Ray Hubbard near Dallas led in fatalities with 10, followed by lakes Canyon and Lake O' the Pines, eight; Cedar Creek, seven; and Corpus Christi, Lavon,

Lewisville, Livingston, Possum Kingdom, Toledo Bend and Travis with five each.

By county, Galveston recorded the most fatalities, with 55, followed by Harris, 54; Tarrant, 26; Nueces, 23; Dallas, 22; Cameron, 20; El Paso, 17; and Comal and Val Verde, 14 each.

Alcohol or drugs were reported to be associated with about 10 percent of water-related deaths, but experts believe they are a factor in the chain of circumstances leading to death in 50 to 60 percent of all water fatalities.

Swimming accounted for the most victims, with 207, or 33 percent of all water-related fatalities.

Drowning statistics are compiled from reports filed by Parks and Wildlife Department game wardens across the state and from press reports.



## ENDANGERED PELICANS MAKING PROGRESS

Some 40 to 50 pairs of endangered brown pelicans nested along the Texas coast this year, producing 76 young birds.

David Blankinship of the National Audubon Society at Rockport said the adult birds nested at three coastal sites this summer, including one which had not been used since the 1950s.

"We found 22 nesting pairs at Robert Porter Allen Memorial Sanctuary in San Antonio Bay," said Blankinship, "and another 25 to 30 pairs nested on Pelican Island in Corpus Christi Bay.

"A single pair of adult pelicans nested within the San Bernard Refuge on the upper Texas coast—a site not frequented by nesting brown pelicans for the past 30 years—and produced two young."

The 76 young pelicans hatched this year compares to 47 in 1979 and 37 in 1978.

"Before Hurricane Allen hit

during the summer," said Blankinship, "there were approximately 400 brown pelicans on the Texas coast. We lost some birds in the hurricane but it won't be until next year after we count breeding adults that we can determine the losses."

Brown pelicans have been on the Federal Endangered Species List since 1971. Populations collapsed in the 1950s after persistent hydrocarbons such as DDT in the environment caused the birds' eggshells to become thin and reduced the number of successful nestings.

Louisiana's population of brown pelicans became extinct in 1963; the birds have since been reintroduced to that state from Florida's stock of pelicans.

Blankinship said the brown pelicans have been increasing in Texas since the early 1970s with a steady improvement in eggshell thickness.



## SEMINOLE CANYON STATE PARK DEDICATED

Dedication ceremonies were held October 19 for the new Seminole Canyon State Park in Val Verde County, acclaimed as one of the most archaeologically significant park sites in the nation.

Representatives of state government, private organizations and the press were on hand for the ceremonies hosted jointly by the Texas Parks and Wildlife Department and the Whitehead Memorial Museum of Del Rio.

The park, which opened to the public last spring, features extensive and dramatic interpretations of the various prehistoric archaeological sites dating as far back as 10,000 to 12,000 B.C. The interpretive exhibits are 80 percent complete, with only the sections dealing with modern-day land use yet to be installed.

Exhibits include two large murals, two dioramas, a full-sized cave replica, Indian artifacts and artwork and various photographic reproductions. Tours to the famous Fate Bell Rock Shelter also are being conducted.

The park is approximately 40 miles west of Del Rio on U.S. Highway 90W. Overnight campsites are available, with water and restrooms only provided.

## HUNTING, FISHING LICENSES SET RECORD FOR YEAR

Texas outdoorsmen bought hunting and fishing licenses at a record clip during the 1979-80 fiscal year.

The Texas Parks and Wildlife Department reported license revenue of \$14,832,329 for the year ending August 31, 1980, which exceeded the previous year's income by almost \$1 million. However, officials pointed out that the overall six percent increase in revenue was well below the rate of inflation during the fiscal year.

One of the largest increases was in resident combination hunting and fishing licenses, with 50,762 more sold in 1979-80 than in the previous year, bringing in an additional \$431,852 revenue.

Resident hunting and fishing licenses also gained, contributing almost \$100,000 over the previous year's total.

Nonresident fishing license revenue declined, a phenomenon explained by establishment of the new Lake Texoma fishing license last year. The \$5 Lake Texoma license enables its holder to fish all the waters of the border reservoir, where in the past an Oklahoma resident had to purchase a Texas nonresident license to fish on the Texas side of the lake, and vice versa.

Most hunting and trapping licenses showed gains. The resident trappers license showed an increase of 7,433 licenses sold, and the department sold 3,636 more archery stamps than in the previous year.

One decrease was in sales of white-winged dove stamps, which probably resulted from bad weather conditions during the four-day whitening season in South Texas in 1979.

# Welder Refuge Haven for Wildlife, Laboratory for Students

by David Baxter

It's possible to see more wildlife species in a two-hour tour of the Welder Wildlife Foundation than can be seen during a week in most other parts of Texas. Perhaps that's why Rob Welder thought so much of this portion of the family ranch and established a foundation to preserve the land and its wildlife resources after his death.

The 7,800-acre Rob and Bessie Welder Wildlife Foundation lies in the Coastal Bend, north of Sinton, some 35 miles from Corpus Christi. What is now the Welder refuge was a small part of a very large ranch granted by Spain and held by the Welder family since the mid-19th century. It has been in the hands of heirs of the original owners since that grant was made.

Rob Welder was born to wealth; wealth which he increased during his life by astute dealings in cattle and oil. Living and working throughout his life on South Texas ranches instilled an awareness of the outdoors in Welder. By all accounts, he became concerned about the fate of the state's wildlife and laid the groundwork for a foundation which would strive to further the knowledge of wildlife management and conservation.

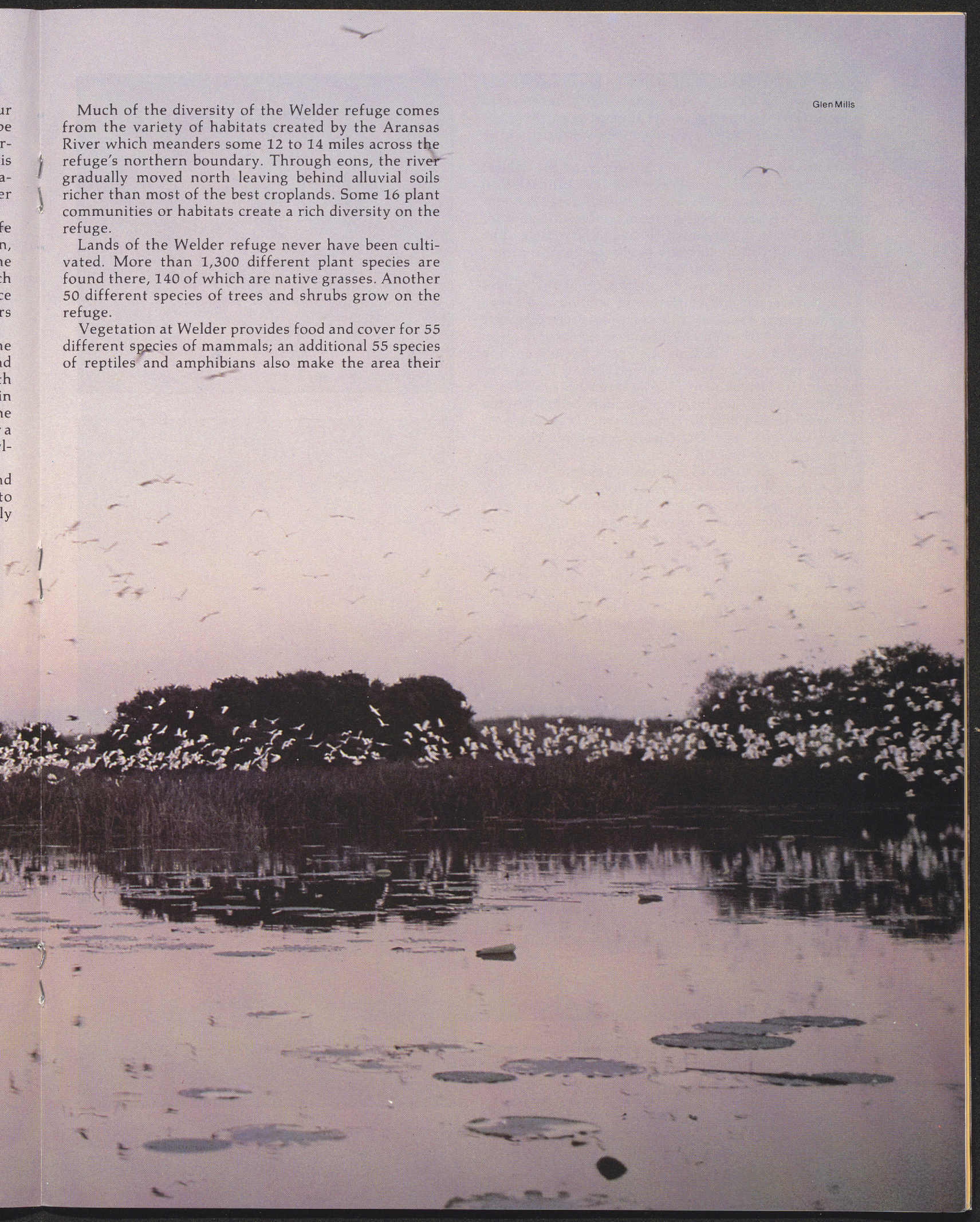
Welder died in December 1953. In 1955 the Rob and Bessie Welder Wildlife Foundation opened its gates to the public. Welder's wife Bessie still lives in the family home in Sinton.



Much of the diversity of the Welder refuge comes from the variety of habitats created by the Aransas River which meanders some 12 to 14 miles across the refuge's northern boundary. Through eons, the river gradually moved north leaving behind alluvial soils richer than most of the best croplands. Some 16 plant communities or habitats create a rich diversity on the refuge.

Lands of the Welder refuge never have been cultivated. More than 1,300 different plant species are found there, 140 of which are native grasses. Another 50 different species of trees and shrubs grow on the refuge.

Vegetation at Welder provides food and cover for 55 different species of mammals; an additional 55 species of reptiles and amphibians also make the area their



home. A trained birder in a day's visit between October and May can identify more than 100 different bird species. But depending on the time of year, there are more than 400 species of birds on the refuge or in the immediate vicinity.

Its location near the Gulf of Mexico and the habitat variety seem to make the Welder refuge a funnel which draws birds through the area. So in addition to resident species, birds which migrate from one coast to another and from the Arctic move through the refuge. The number and variety of birds swells during the winter and long periods of migration.

Four general programs are conducted at the Welder refuge: research and education in wildlife and range management, demonstration of proper management techniques, staff research and conservation work on an independent level. Dr. James G. Teer is the current and third director of the Welder refuge. Teer is the former head of the Department of Wildlife Sciences at Texas A&M University and formerly a wildlife biologist at the Texas Parks and Wildlife Department. He succeeds W. Caleb Glazener and Dr. Clarence Cottam, the first director at Welder.

"Much of the Welder Foundation's success and reputation to date is due to the work done by Cottam and Glazener," said Teer. "Cottam, an internationally known conservationist, was involved in creation of the Padre Island National Seashore and the fight to regulate and restrict use of chlorinated hydrocarbons such as DDT."

Dr. Teer sits on boards of directors and acts in other advisory capacities. In these roles, he exercises his influence as an independent voice on ecological issues and problems in wildlife management.

The Welder refuge is not exactly top-heavy with staff; serving with Teer are assistant director Dr. Lynn Drawe, education coordinator Gene Blacklock and a small maintenance staff.

Twenty-two students received Welder fellowships in 1980 with their educational and research activities funded by the foundation. They are chosen on the basis of their academic records as undergraduates or graduate students; all must be enrolled at a university or college in the United States for Master of Science or Doctor of Philosophy degrees. Students presently in the Welder program are enrolled at the Universities of Minnesota, Oklahoma State, Texas A&I, Texas Tech, Texas A&M, Colorado State, Oregon State, California at Berkeley, Montana and others. All receive a stipend for their living expenses and funds for their research to satisfy thesis and dissertation requirements.

About 80 percent of the students work on the Welder Foundation refuge or in nearby areas of the Coastal

Glen Mills



Glen Mills



*An impressive number of wildlife species on the Welder Refuge and the diversity of the area's plant life make it a natural setting for research and education programs. Fields of study include mortality of white-tailed deer and work on birds of prey, such as the broad-winged hawk (above).*



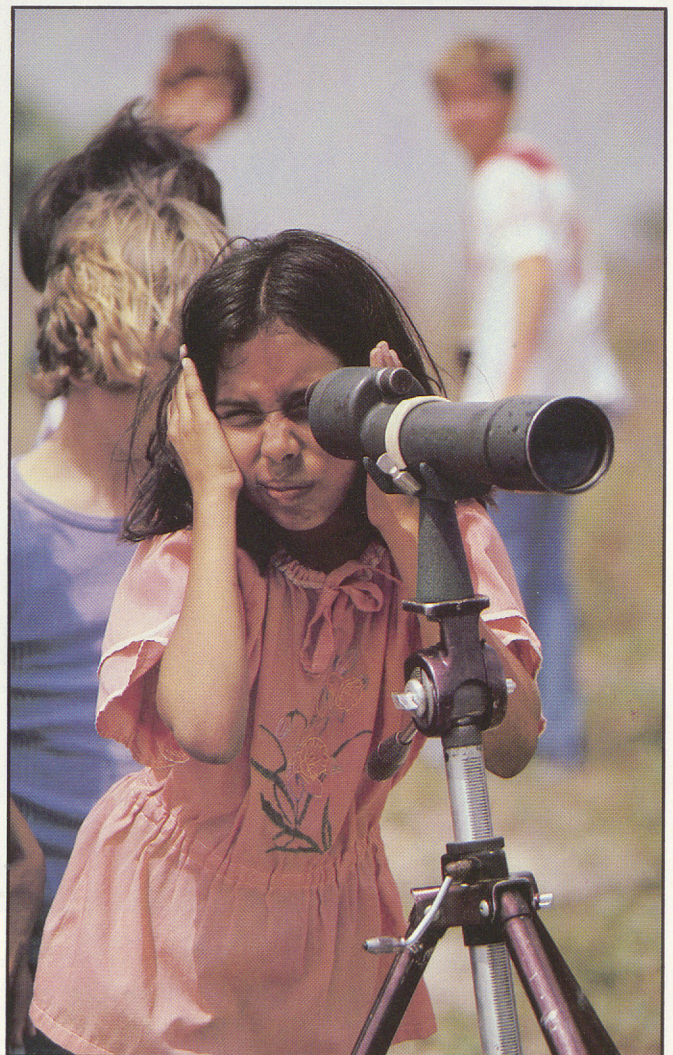
Bend. Fields of study include work on the coyote, black-bellied whistling duck, birds of prey, javelinas, three species of doves in South Texas, mortality of white-tailed deer and the Coastal Prairie's native grasses. The students are housed on the refuge either in efficiency apartments for married students or in bachelor rooms in the dormitory.

In addition to the graduate student program, the refuge is open for public school tours on Thursdays. Workshops are held on the Welder for teachers in primary and secondary education. They are one-week classes in natural history, conservation and wildlife management for teachers not professionally involved in the outdoors.

There seems to be a demand among local residents for tours at times other than the regularly scheduled Thursday tours. Groups may call the refuge for an appointment.

Despite its academic trappings, the Welder refuge remains a working ranch and the ranching operations have shown that it's possible to raise and market fat cattle fed solely on native range grasses. There are no improved pastures on the refuge, pastures which often are devoid of wildlife.

Range vegetation has been greatly improved for livestock production since the refuge was established. With conservation stocking of livestock and proper use through deferring pastures in a series of short-term grazing regimes, the range is now judged by experts to



Bill Reaves

be in good condition. The average range in the Coastal Bend is in fair condition. Supplemental feeding is done on the Welder refuge only during December through February or early March. During these months, range vegetation has lost much of its protein and energy content through leaching and decaying, and most ranches must feed at this time of the year despite the condition of their ranges. Nonetheless, through management of rangeland resources and the cattle herds, the goal of complete dependence on native vegetation is attainable.

The Welder refuge is stocked moderately at about one adult cow per 15 acres. Presently 500 head of crossbred cattle are used in the grazing programs, and management efforts are made to keep first-generation hybrids with Brahman bloodlines in the base herd. Every animal is used in the experimental grazing programs which are designed to determine the best set of conditions needed to integrate livestock and wildlife production on the same ranges.

Rob Welder left a rich land to the foundation and made provision for that land's riches to sustain the organization. Revenue from oil, cattle and other investments contribute to the operation of the foundation.

The Welder refuge is no cloister for students and the wildlife they study. Rob Welder seems to have mixed his philanthropy with a businessman's practicality and spelled it out in his will: "In designating as a refuge the lands devised to my Trustees it is not my direction that my Trustees keep such land solely for a wildlife sanctuary. I contemplate that my Trustees shall, as they see fit, use all or any part of these lands for grazing and raising cattle and other livestock and for agricultural purposes . . . and that wildlife may be given sanctuary or may be taken from the refuge by trapping, hunting or other means all as my Trustees shall see fit in their discretion for the furtherance of the purposes of the trust."

Dr. Teer and his staff are working to carry out that trust. \*\*

Glen Mills



*In addition to the graduate students in the Welder program, tours of the refuge are conducted for public school students on Thursdays. The administration building (upper left) is one of five permanent buildings on the refuge and contains a museum, lecture hall, laboratories, library, darkroom and offices.*

# The Well-dressed Duck Hunter

by Jeffee Palmer

**When** the temperature starts dropping, some 100,000 Texans know it's time to get out their duck hunting gear.

Duck hunters are a dedicated group, willing to endure considerable discomfort to get their birds. They hunt around ponds, marshes, lakes, rivers and back bays and estuaries—anywhere ducks land to feed. This, plus the cold weather, makes water safety knowledge and hypothermia precautions imperative.

Duck hunters should use as much care in selecting clothing as they do in choosing guns, calls and decoys. Wool garments are best because they help retain body heat. A personal flotation device is important too, since even the most careful hunter can fall into the water from a boat, from the bank or while wading. PFDs designed as flotation coats or buoyancy jackets are available for \$50 to \$75. These Coast Guard approved coats are warm, waterproof and windproof, and they are comfortable to wear anytime it is cold, whether around water or not.

Waders are needed to set out and retrieve decoys or if the hunter does not have a dog and must go into the water to pick up his ducks. In the interior of the state most hunters wear hip waders, but along the coast, chest waders are needed. For a long time, hunters believed that if they fell in the water wearing waders, they should get out of them as soon as possible to prevent the waders from filling with water and pulling

them under. Actually, air trapped in the waders provides extra buoyancy. Keep your toes out of the water and the waders will float at the knees. Similarly, air trapped in clothing will bring the hunter to the surface if he relaxes.

To get into shallow water with vegetation that ducks prefer, most hunters use flat-bottomed boats. A spotlight on the boat helps locate the blind or a particular spot in the dark or fog. Several flashlights should be readily accessible since it is easy to drop or lose one in the dark while stumbling around in the marsh. Some hunters push their boats back in the reeds, cover them with camouflage cloth and shoot from the boat. Hunting from a boat is legal as long as the boat is moored, anchored or grounded. But never shoot while standing because this increases the chances of capsizing the boat.

Too often, hunters load gear into the boat as if they were loading a pickup. When people and dogs get in, the overloaded boat has only a few inches of freeboard. A large wave, movement in the boat or a collision with an underwater hazard can capsize such a craft. If this happens, stay with the boat unless it is in danger. Sometimes it is possible to climb onto the bottom of the capsized boat and get out of the water. If thrown from the boat, conserve energy and body heat by moving as little as possible.

If there is gear floating in the water, gather it up and use it for

*Although this hunter probably is comfortable enough in an ordinary jacket, a better choice would have been a personal flotation device designed as a flotation coat or buoyancy jacket. These warm, waterproof, windproof jackets are Coast Guard approved, and are especially good for duck hunters. Even the most careful person can fall into the water, and in duck hunting weather hypothermia is more life threatening than drowning.*







P&W File Photo

buoyancy or to help keep warm, even if you also are wearing a PFD. But don't risk your life for a gun—let it go. People have drowned trying to hang on to a new or favorite gun; one such victim was found still clutching his gun.

When rescuing a person who is soaking wet and cold, hypothermia treatment should be started immediately. Move the victim to shelter and warmth, gently remove all wet clothing and raise the body's central core temperature by applying heat to the head, neck, sides and groin with warm, moist towels, a heated blanket or a tub of water 105 to 115 degrees. The worst and most dan-

gerous treatment for cold is drinking alcohol. It gives a momentary feeling of warmth which quickly is followed by a reduction in body core temperature. For more information about hypothermia, call the Texas Parks and Wildlife Department's toll-free number, 1-800-252-9327, and request the brochure "Freezing to Death."

Weather not only affects the hunter's comfort, it contributes to duck hunting hazards. Keep a close check on the weather since a norther can blow in suddenly and even a breeze can cause whitecaps on the water and strand hunters. If possible, walk out through the marsh when this

happens and return to get the boat and gear when the wind dies down.

It has been said that a person is crazy to be a duck hunter. But duck hunters are very enthusiastic about their sport and consider the hardships part of it. In fact, they seem to be proud of the problems they have encountered and enjoy exchanging stories about who has had the most harrowing experience and lived to tell about it. Follow these few safety tips and you'll live to tell about this season and enjoy the next one. Their importance cannot be overemphasized, as it can be a matter of life or death.

\*\*

Perry Shankle Jr.





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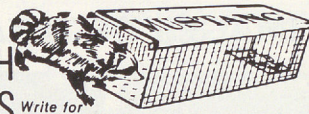
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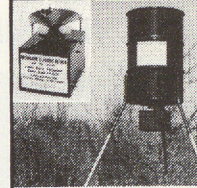


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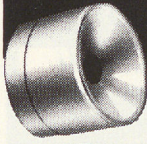
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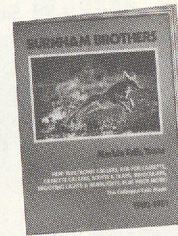
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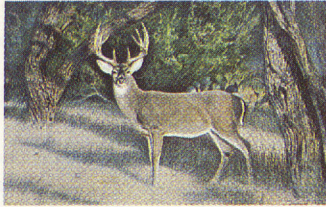
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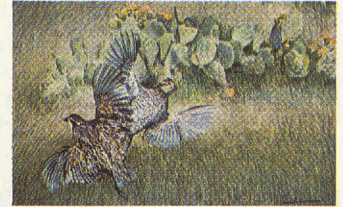
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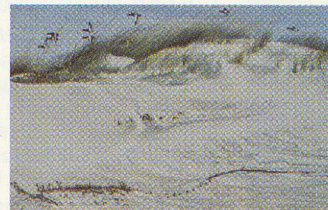
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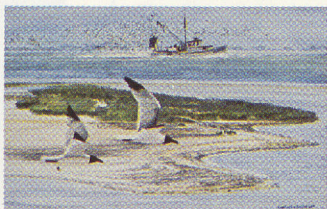
I-31 Sand Dunes—South Padre



I-32 Sunrise—Padre Island



I-33 Boat—Great Blue Heron



I-34 Sea Gulls—Shrimp Boat



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I-37 Mallard Hen and Ducklings



I-38 Greenwing Teal



I-39 Snow Geese—Rice Field



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I-41 Old House—Bob White



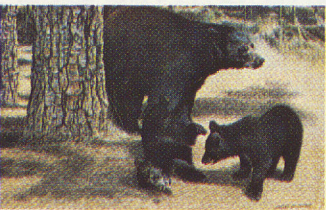
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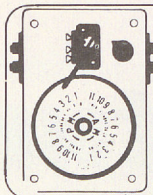
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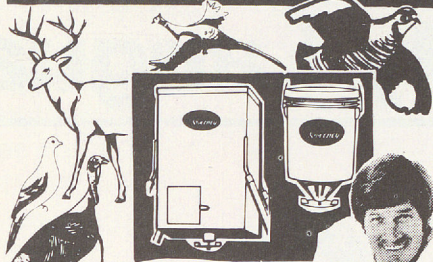


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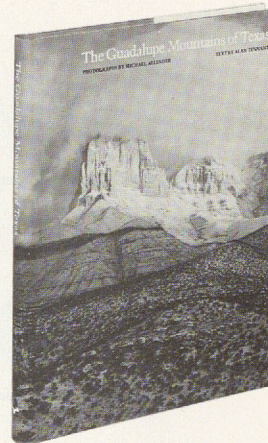
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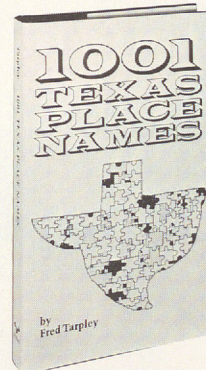
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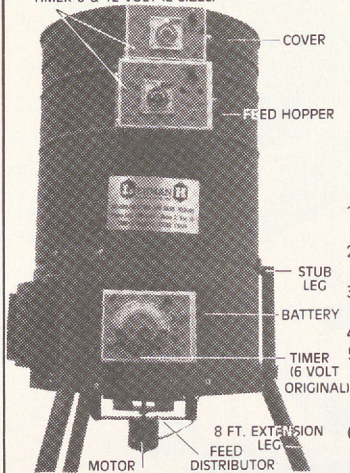
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# Young Naturalist

## Whitetail Body Language



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Article by Ilo Hiller Artwork by Andrew Saldaña

**Words** may be considered our primary method of communication, but our body language is just as informative. Facial expressions convey messages without speech. Each of us can translate the meaning of a frown, smile, raised eyebrow, wink or curled lip. Gestures also serve as substitutes for

words. A shrug, nod, wave, beckoning motion or various other hand signals transmit understandable messages. These are but a few examples of the many ways we speak to each other with our bodies.

Body language also plays an important role in the communication system of the animal kingdom. This nonverbal language may serve as a warning, an indication of

submissiveness or a way to attract the opposite sex.

Bristling hair, bared teeth and laid-back ears are clear messages of warning whether they are displayed by a coyote, javelina, porcupine, deer, dog, cat or horse. An animal groveling on the ground, with its vulnerable belly or throat exposed, signals submissiveness, as does the canine slinking off with its tail tucked between its hind legs. Colorful feathered displays and body movements of some birds serve to attract mates and play an important role in their courtship rituals. These are some of the different ways animals speak to each other with their bodies.

Social relationships within a group of animals are well defined, and body language often is used to establish the hierarchy or peck order. Within a deer herd, for example, the most aggressive males dominate. Less dominant or inferior bucks usually give way without the necessity of physical conflict. At the beginning of the breeding season the males become more aggressive and conflicts are more frequent.

Biologists studying the aggressive behavior of deer have found that males display five intimidation postures—each more aggressive toward the adversary. The mildest display is called the *ear drop*. When the dominant buck drops its ears along its neck, the message may be sufficient to send the other deer on its way. If not, the dominant buck then displays a *hard look*. The head and neck are extended and the ears are flattened

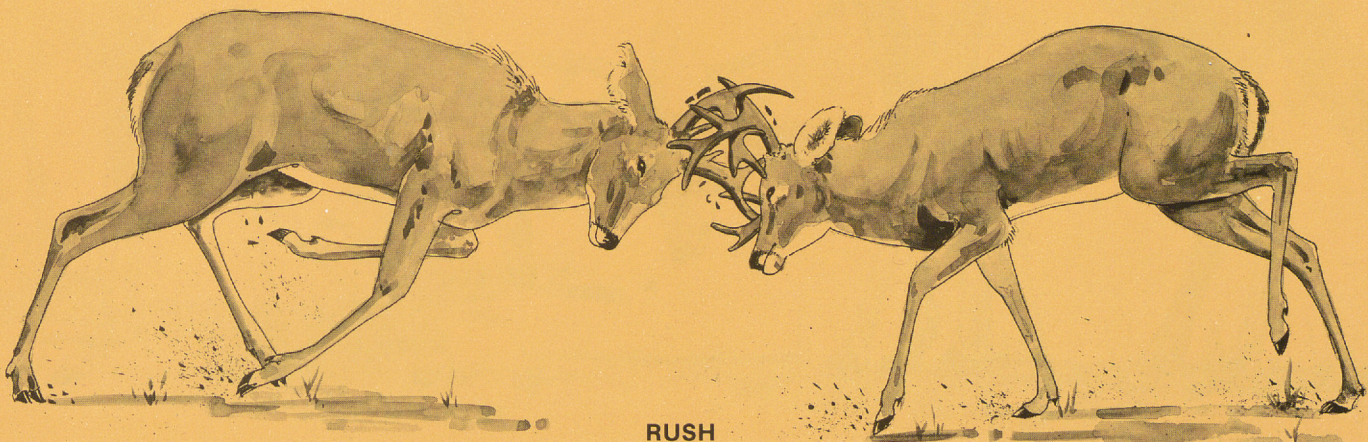
along the neck as the buck glares at his adversary.

If the adversary responds with a hard look of his own, the dominant buck progresses to the *sidle*. With his head and body turned about 30 degrees from the adversary, the buck advances with several sidling steps. His head is held erect, his chin is tucked in and the hair along his neck and hips is raised to show anger.

Failure to yield to this display brings on the *antler threat*. The dominant buck drops his head and presents his spiky, polished antler points. If the adversary stands his ground and responds with his own antler threat, the *rush* follows. Both bucks rush together, making violent contact with their antlers, shoving, twisting and testing each other's strength. The battle may end after a single rush or continue for 15 or 20 minutes. Few things will distract the battling bucks once they are engaged in combat. The battle ends when one or the other has had enough and gives way to the victor.

Occasionally the antlers of battling bucks become wedged together during combat. When this happens, both become losers since they cannot survive in this condition. Now and then a hunter will discover their carcasses with antlers still tightly wedged together.

Female deer also establish a peck order and display aggressive behavior. Does, like bucks, use the ear drop, hard look and sidle body language. However, since they don't



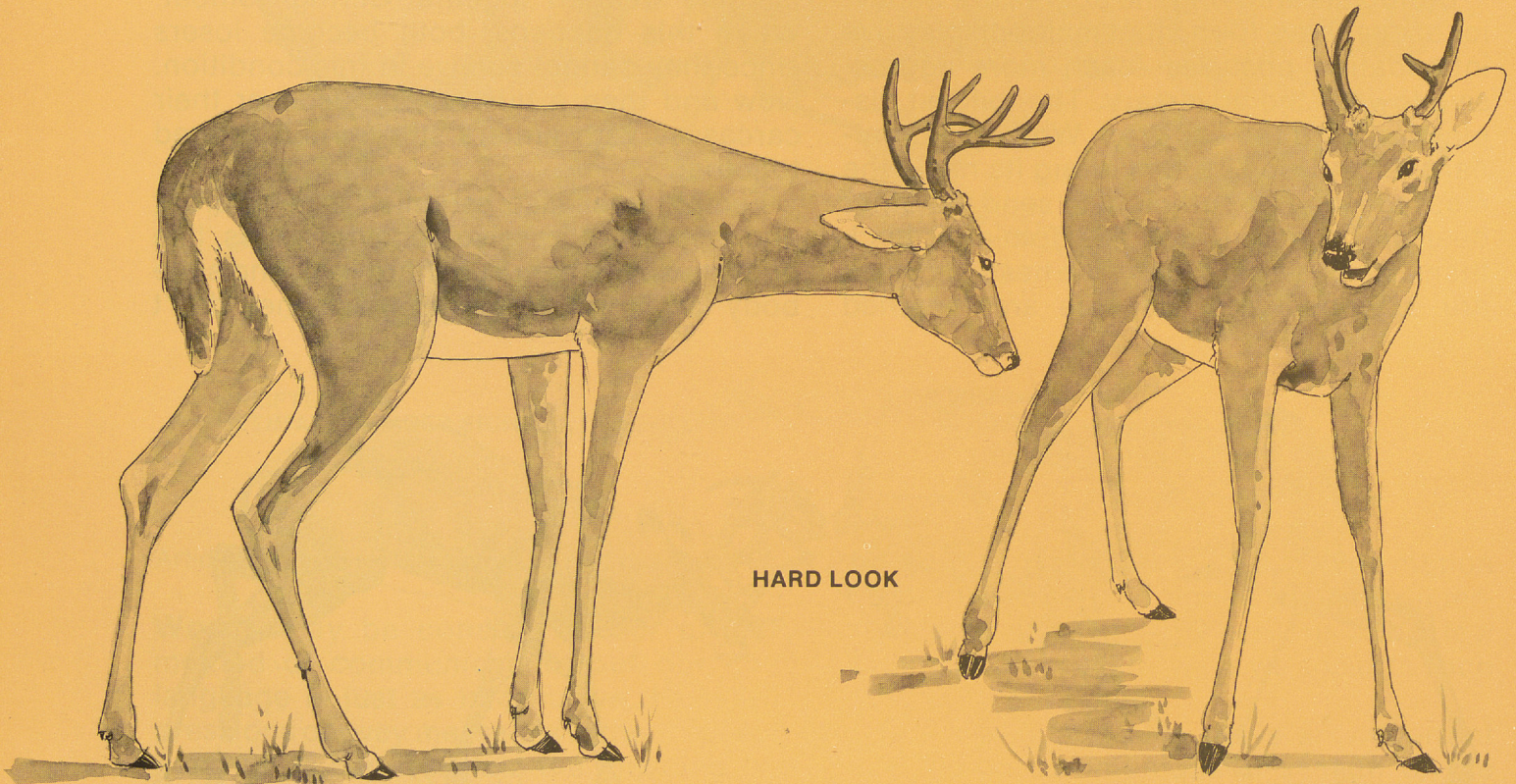
have antlers, they use their front feet to determine their dominance. If the preliminary body language threats are not effective, the dominant doe lunges at her adversary and then strikes out with one or both front feet. As a last resort the fighting does stand up on their hind legs and slash out at each other with both front feet. Their sharp hooves are wicked weapons and the does do not bluff or fight mock battles. Injuries do occur. When one or the other has had enough and is willing to give ground to the victor, the fight ends.

Fawns duplicate the aggressive behavior of does, and bucks that have shed their antlers have been observed fighting with their forefeet.

A combination of body language and sound come into play when danger threatens. If a deer is mildly disturbed and the danger has not been identified, the animal stamps its front feet. It may use only one forefoot or



SIDLE



HARD LOOK



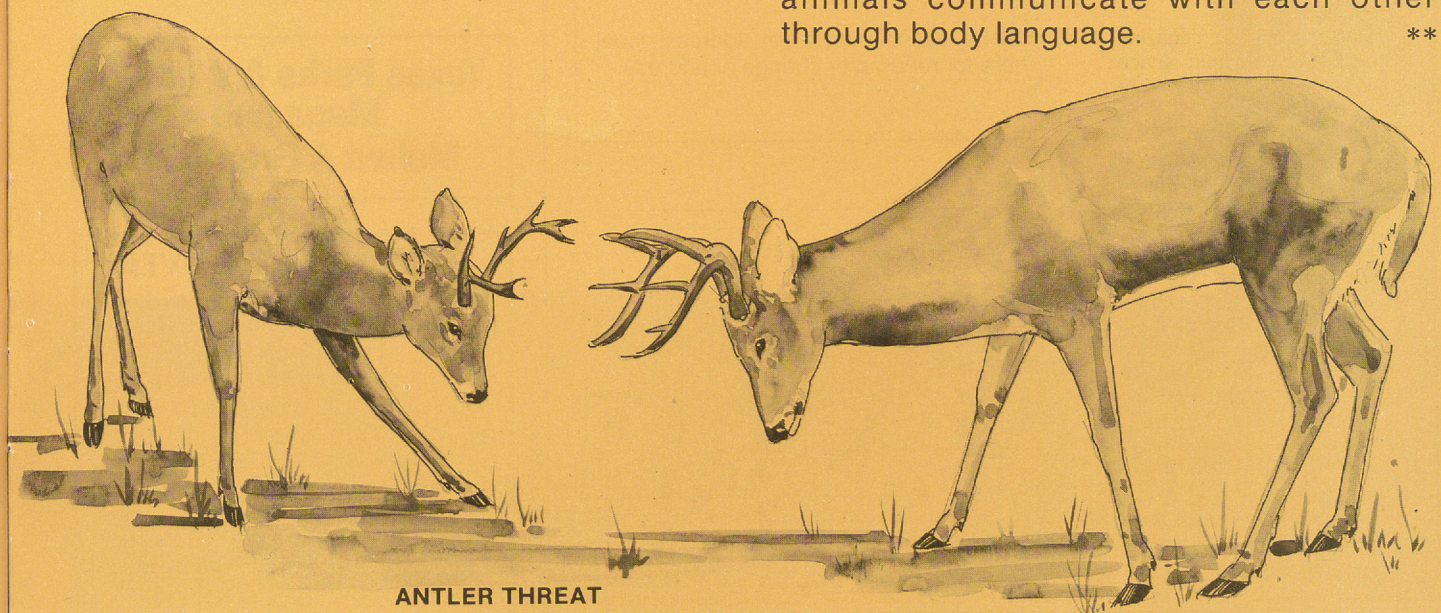


**DOE'S  
FIGHTING STANCE**

may alternate between the two. As suspicion increases, the deer may snort along with the stamping action. Further threat may cause the snorting to become an explosive whistle just before the animal turns to flee. The ultimate warning is the uplifted tail as the deer bounds to safety. When the tail is raised, its

highly visible white underside is exposed. A startled deer may skip any or all of the preliminary signals, but it almost always displays the flaglike tail as it runs away.

Whenever you have the opportunity to observe wildlife, whether in the outdoors or a zoo, watch closely and you will see the animals communicate with each other through body language. \*\*



**ANTLER THREAT**

# LETTERS TO THE EDITOR

## Credit to Ed Dutch

We failed to give Ed Dutch credit for his outside back cover in the November issue. Ed, who is pictured in the antler rattling photo on the inside back cover, has contributed many excellent photos of South Texas wildlife for publication in the magazine. We apologize for the error.

## Realistic Photography

Here is a use for your magazine you may not have thought about. Recently, a male golden-fronted woodpecker was attacking his reflection in the skylight windows of my house. Solutions such as chicken wire barriers and covering the glass with cardboard didn't sound appealing, so I got all my back issues of *Texas Parks & Wildlife* magazine, found pictures of birds of prey and predatory animals and lined them up on the windows. Visitors questioned this strange

array, but no one could argue with the results. No more thump-rat-a-tat-tat at 7:30 every morning. I do believe your magazine is more appreciated by humans, but you never know. Maybe the bird just gave up the attack because it got tired of reading the small print through the window and got its own subscription.

A.E. Bardin  
San Antonio

## Evacuees Grateful

We were among the many Hurricane Allen evacuees who took advantage of state park facilities during that emergency. We stopped at Goliad State Park and Palmetto State Park to check on facilities, but were advised to go farther inland to avoid flooding. We stayed at McKinney Falls State Park August 8 through 11. At every park, we received considerate attention and helpful advice, and we want to commend these em-

ployees. Since there was a "no charge" policy for evacuees, we have made a contribution to the Baptist disaster relief commission and dedicated it to the Parks and Wildlife Department.

Mr. and Mrs. R.W. Blair  
Rockport

## Pollen Irritates Dogs

Congratulations on the excellent pollen photographs in your August issue. You might be interested to know that the same pollens which produce respiratory symptoms (hay fever) in man often cause severe itching (atopic dermatitis) in dogs. Since avoidance is almost impossible, identification of the exact cause by skin testing followed by hyposensitization is the best treatment.

By the way, histamine is not released by the breakdown of pollen by antibodies, but from the breakdown (degranulation) of tissue mast cells or basophils which have both antibody (IgE) and pollen attached to their surface.

Lloyd M. Reedy, D.V.M.  
Dallas

## Armadillo Teeth

A part of the caption that went along with the picture of a nine-banded armadillo in your July issue states, "Armadillos are toothless. . ." Armadillos are not toothless, they have between 28 and 32 degenerate peg teeth which lack enamel and are considered to be premolars and molars. The teeth frequently are partially lost with advancing age, so don't be alarmed if you find an armadillo with fewer than 28 to 32 teeth.

Raymond L. Urubek  
Houston

■ We apologize for the error, and appreciate your clarification.

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**Texas Parks & Wildlife Magazine Makes A Great Gift.**

### INSIDE BACK COVER

Mule deer season in the Trans-Pecos runs through December 7. Readily distinguished by large, mulelike ears, desert mule deer prefer the open, arid range of West Texas and the Panhandle. If startled this buck will run off with a peculiar, high-bouncing gait. They depend on acute senses of sight and smell to detect any danger and a moving object will attract their immediate attention. Photo by Barry Smith.



