



**TEXAS**  
PARKS & WILDLIFE

April 1988



# TEXAS PARKS & WILDLIFE

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**Front:** Despite the harsh environment in which they live, Texas cacti reveal their ability to reproduce by the appearance of flowers and fruit that are both conspicuous and beautiful, like those of this red-goblet cactus. (See story on the rest of the Texas cacti on page 24.) Photo by Jim Cammack. **Inside Front:** A wild grape leaf covered with dew is one of the more attractive sights in the East Texas Pineywoods on an April morning. Photo by Jim Cammack.



by Myra Hargrave McIlvain



Grady Allen

# ISLAND AVIARIES

Tours offer close-up glimpses of nesting shorebirds.

During April, May and June, at the height of the mating season for birds in the Coastal Bend, small charter boats skim through shallow water next to rookery islands and offer birders, photographers and curious nature lovers close-up views of birds strutting in full mating plumage. A glimpse of baby birds tucked in nests among the shell, sticks and shrubs is a rare treat on some of the trips.

Captain Ted Appell, who worked with Captain “Brownie” Brown on the well-known *Whooping Crane* near Rockport from 1973 until Brownie’s death in 1984, began his own birding tours in November 1985. After the whooping cranes depart for Canada in the spring, Appell and Captain Charley Hale take small groups in twin 30-foot cruisers on a four-hour, 50-mile round trip through the rookery islands off Aransas National Wildlife Refuge.

The trip begins at Sandollar Pavilion on Fulton Beach Road in Fulton. As the boat slices across four breezy miles of Aransas Bay toward the Intra-



Vernon Eugene Grove Jr.



Grady Allen

coastal Waterway, you'll see shrimp boats working the shallow bay, porpoises diving and cavorting and sailboats cutting through the waves. You'll pass Coast Guard marker 13 and see in the cross beams a great blue heron nest filled with long-necked babies.

Rookery islands in this area are tiny natural shell reefs protruding less than two feet above the water. Over time, grasses and low mesquite and various bushes have covered part of each island and offer nesting places for thousands of birds.

"These islands are far enough off shore that they're safe from coons and foxes," Appell says as he beaches the boat, *Shearwater*, on the first rookery. "Keep your movements slow and fluid," he warns. "Birds don't mind us looking as long as we don't move too quickly." His voice fades out as a chorus of thousands all begin singing their own tunes.

The island is alive with activity. Appell estimates there are between 2,000 and 3,000 birds on this tiny island. Immediately, you see the lipstick-red bills of black skimmers clustered in colonies on the shell beach. A baby black skimmer chases its mama. Appell then points to a juvenile that's almost feathered out. In another week it will be as big as its mother.

A caspian tern with a baby fish in her reddish-orange bill sails into a colony of caspian, sandwich and royal terns, and the birds form a circular pattern on the end of the beach. Movement is constant as they soar from the island to alight briefly on the water, all the while joining the clatter with their constant raucous call. Baby terns are the color of sand, and Appell says



Glen Mills

*Young egrets (far right) and a newly hatched heron (above) are among the most rewarding sights for passengers on the rookery island tour. One of the most conspicuous birds is the great blue heron (right). At four feet tall, this is the largest heron on the Texas coast.*





# ROOKERY ISLAND TOURS

Captain Ted Appell's Whooping Crane Tours offer guided birding and fishing trips from Sandollar Marina, three miles north of Rockport on Fulton Beach Road. Up to six passengers are booked on each boat. However, only four photographers are permitted per trip and photographers are asked to make up their own group. Both of the twin 30-foot cruisers are equipped with restrooms.

Rookery Island tours are offered April through June, and Whooping Crane tours are scheduled from November 1 through March. Bay and Gulf fishing also is available year around in good weather.

Fees for four-hour birding trips on the *M.V. Skimmer* are \$20 per person while fees on the four-hour birding trips aboard the twin 30-foot cruisers are \$30 per person. Costs for bay and Gulf fishing trips vary with the number of passengers and the length of the trip. Lodging facilities are available at Fulton and Rockport.

For reservations and more information, write Capt. Ted Appell, Star Route 1, Box 225J, Rockport, Texas 78382. Or call 512-729-9589.



Grady Allen

Grady Allen







Vernon Eugene Grove Jr.

that when they reach a certain size, they move to the end of the island. This allows other birds to nest toward the middle of the island. As a consequence, colonies appear to be lined up for choir practice.

On each rookery island, a riot of solos is conducted at full pitch. Toward the center of the island, among piles of sticks, is a nest of baby great blue herons. The shaggy feathers on their long slender necks closely resemble their stick nest. Appell draws your attention to the mother sitting very still with her neck hunched down on her blue-gray shoulders.

As the boat moves toward the lower end of the island, you'll pass egrets—common, snowy and reddish—nesting in a patch of sunflowers. The reddish egret is the shaggiest bird when he is displaying; the rust-colored feathers on his crown and down his breast look like wild whiskers. Appell says the reddish egret is a threatened species and is found in larger concentration on these rookery islands than anywhere else on the Texas coast.

Bulbous bills seem to dwarf the bodies of baby brown pelicans, not more than a week old. Appell estimates that 60 to 65 pelicans are clustered here, and many more are out feeding.

The route along the Intracoastal Waterway skirts the outer edge of Aransas National Wildlife Refuge. The rookery islands are not part of the refuge, but are protected by the National Audubon Society through a lease arrangement with the Texas General Land Office.

Protection is necessary for the islands because human visitors often are not aware of how destructive their presence can be to nesting birds. Emilie Payne, a warden for the Audubon Society, said intrusion of humans or playful dogs causes panic among birds.

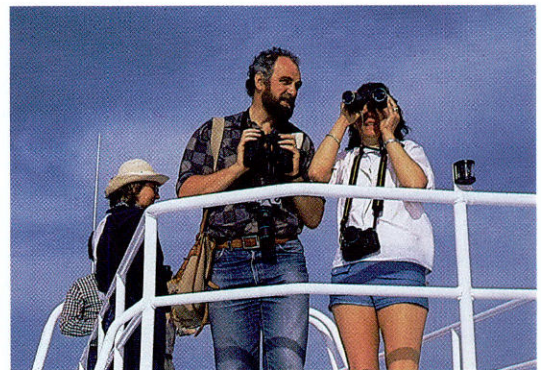
"It isn't unusual for birds to be flushed four or five times in one morning," said Payne.

When birds are frightened away from their nests, eggs are left exposed to the sun, and the young are left unprotected. Islands are the birds' only nesting ground and each year more islands are destroyed. Continued flushing from humans will permanently frighten birds away from the few islands that remain. According to Payne, "If you get near enough to an island to make birds fly, you are too close."

At San Antonio Bay, the route turns back through shallow water paralleling St. Joseph and Matagorda Islands. Crab pots bob in the bay, and in all directions the horizon is marked by low green coastal islands. The water is a few inches deep and only experienced captains venture through here. Carol Island is the first stop. It boasts a concrete marker noting it as an Audubon bird sanctuary.

Birders are delighted to see a sooty tern walk pigeon-toed across the

*Masses of royal terns and sandwich terns congregate on the rookery islands. The royal terns' bills are orange or yellowish-orange, while the sandwich terns (foreground) have black bills with yellow tips. Both species have bushy crests on the backs of their heads.*



Glen Mills



Tom J. Ulrich

shell on little short feet. “They’re not common,” Appell explains, “but, now they’re being sighted on the Texas and Louisiana coasts.”

In the center of the island, roseate spoonbills resemble pink ornaments in mounds of green coastal Bermuda grass. They rise out of the grass majestically before gracefully floating back to the center of the island.

Eight rookery islands stretch in a row. On each island, cattle egrets, common year around, are decked out in mating plumage—orange bill, crest, breast and shoulders. Snowy egrets, too, take on a different look during mating season. The usually smooth, pure-white plumage bristles like lacy fern during display. Appell calls them “ladies of lace” and says that snowy egrets almost were destroyed in the 19th century because their plumage made such grand decoration for ladies’ hats.

Suddenly, two reddish egrets fly sideways in a courtship display, their plumage puffed up like rusty-colored fluff. “He’s very curious,” Appell says, “You almost can walk up and shake hands with him, and he’ll put on quite a display.”

As you head back toward port, Appell points out the white water bubbling over a nearby reef—almost protruding out of the bay. He guides your attention to black-crowned night herons, white ibis flying across the flats, and mottled ducks on a nearby bank.

Although Captain Ted Appell doesn’t claim to be an expert, he remains a good resource to all but the most knowledgeable birders. No matter the season, he is at home with the birds. \* \*



Glen Mills

*The threatened reddish egret (right) and colorful roseate spoonbills (above) share the islands with thousands of birds in the spring. From April to June the tours give birders, photographers and nature lovers close-up views of birds in mating plumage.*

Vernon Eugene Grove Jr.





# LAKE WHITNEY

## A Fine Kettle of Fish



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Article by Jim Cox  
Photos by Leroy Williamson

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A decade ago, the late Bob Kemp predicted that smallmouth bass eventually would be the most significant of all nonnative game fish introduced into Texas waters.

This bold prediction by the Texas Parks and Wildlife Department's fisheries director probably was received with skepticism in some circles. After all, by 1978 when Kemp made the prediction, striped bass, walleye and Florida-strain largemouths already had measurable impacts on freshwater fishing in Texas.

Skeptics also found it difficult to believe that smallmouths and striped bass could coexist with largemouth bass and other native species in the same impoundment. And besides, since we already had largemouths, why bring in another bass?

Kemp died in December 1986. He was only 60, but he lived long enough to see many of his favorite projects and

predictions come to fruition. Both striped bass and Florida largemouths have been unqualified successes, expanding anglers' horizons and giving a welcome boost to tackle and other fishing-related businesses and industries. Now it appears that smallmouth bass may be living up to Kemp's high expectations, especially in the clear, rocky lakes of the state's western two-thirds.

Of all the lakes that have undergone a fishing renaissance as a result of Kemp's innovative programs, Lake Whitney may provide the finest example. Once considered to be on the decline, the 37-year-old lake has claimed a position as one of the top-notch fishing spots in the state. The winding Brazos River impoundment is living evidence that native and nonnative fishes can thrive in neighboring habitats without suffering from direct competition.

Native largemouth bass and introduced Florida-strain bass, spotted bass, crappie and catfish are abundant. White bass, which actually are not native to







most Texas waters but considered as such by most anglers, also are numerous. Add to this the newer fisheries for introduced striped bass and smallmouth bass and you have an angling combo unsurpassed by any other lake in Texas.

Until fall 1987, smallmouths were largely unknown outside the local area. That started changing last September when the lake record was set by two anglers who caught identical smallmouths weighing five pounds, four ounces each. By the end of November, anglers had broken the unofficial lake record three more times. One of those fish, weighing exactly 6½ pounds, is now the state record.

Floyd Teat of Waco caught the big fish on November 21, using a crawfish-colored crankbait. Teat, who coincidentally is a fishery technician with the Parks and Wildlife Department's Waco office, has followed the progress of smallmouth bass at Whitney since the first stockings in 1983. "I think Whitney's smallmouth bass fishery has developed into the best in Texas," said

Teat, who has fished extensively for them at Lakes Belton and Stillhouse Hollow near Belton. "I'm sure there's no other lake that turns out quality-sized smallmouths in the numbers we see here."

Teat said fall 1987 saw an unbelievable number of smallmouths in the two- to four-pound class caught at Whitney, enough to cause him concern about too many fish being retained. "Smallmouth bass may be more vulnerable to fishing pressure than largemouths because their preferred habitat is easy to identify, and they seem to move less than largemouths."

Teat kept his state record fish alive and donated it to the department's traveling aquarium display. The fish will, however, be returned to Whitney for release this year.

It's easy to spot smallmouth country at Whitney according to Teat, who recommends heading for the rockiest areas available. "Smallmouths almost always are caught on rocky shorelines, especially where ledges create a stairstep effect," said Teat, who caught his state

record fish on such a rocky dropoff in about seven feet of water. Smallmouths are found in most areas of the lake, but Teat prefers fishing in the narrow upper end, where the Brazos River channel swings near the shorelines.

Like largemouths, smallmouth bass can be caught all year and on a variety of lures. However, the best season apparently is autumn when the fish move up on rocky banks and main-lake points. "When the water temperature drops into the 60s, the smallmouths really seem to come alive," said Teat. Crankbaits were the hot lure in fall 1987, although jig-and-pork combos also produced. As winter moves in, smallmouths are caught slightly deeper, and Teat often throws a plastic shad imitation on a ¼-ounce jig head, hopping the lure along the bottom.

Spring sees a movement of the fish toward the backs of coves, where they seek small-sized rock rubble on which to spawn. They strike several styles of crankbaits during this period, including the long-bodied type. The plastic shad jig also is good in springtime, he

*Lake Whitney's limestone cliffs form an impressive backdrop for anglers sampling the big Central Texas reservoir's varied fishing offerings (left). Mixed catches of largemouth and smallmouth bass (right) are part of the fishery that also includes spotted bass, striped bass, crappie and catfish.*



said. Summer may be the least productive time to fish for smallmouths, as they tend to suspend away from their usual rocky haunts. They sometimes will hit a topwater lure, however.

If smallmouth bass have posted gains at Whitney, they have not done so at the expense of the ever-popular largemouth. "Largemouth bass fishing during 1987 was the best in the past five or six years," said Teat. "The number of quality-sized fish has been really impressive." As in other lakes with a mixture of smallmouths and largemouths, the latter gravitate to habitat where inundated brush is found in combination with aquatic vegetation. "I can take you to one area and predict that you will catch largemouths, or to another that will produce only smallmouths," said Teat. "That's how different their habitat preferences are."

Fishing guide Don Wooten, who has fished Whitney most of his life and as a guide for 15 years, admits he is amazed at the smallmouth boom. "I'm surprised at the number of people that are smallmouth bass enthusiasts, and at how

many people are coming here from other states strictly to fish for smallmouths," said Wooten. "Just about all of them tell me that we Texans don't realize how good we have it, because they have to fish longer and harder to catch smallmouths in their home states."

"There's no question that stocking striped bass, smallmouths and Florida bass brought this lake back from almost nothing," Wooten said. "I'm really excited about it, because 1987 was the best fishing year overall I've seen on this lake since 1976."

For the record, Wooten's best smallmouth weighed six pounds, five ounces. He and his clients release most of the smallmouths they catch, and his parties have caught 45 weighing over four pounds each between October 1987 and January 1988. He retained five fish for a stringer wall mount, and the five weighed 27 pounds, seven ounces. Wooten and a client caught back-to-back lake record smallmouth bass within a few minutes of each other on November 5. The client's fish

weighed 5-10 and Wooten's was a 6-5.

Largemouth bass also have been re-surgent on Lake Whitney. Biologist Ken Sellers of Waco said September cove rotenone surveys conducted in 1984, 1986 and 1987 reflected dramatic increases in the standing crop of bass. Three coves sampled produced nine pounds of largemouth bass per acre in 1984, 11 pounds per acre in 1986 and a surprising 36 pounds in 1987.

Sellers attributed the increased poundage of bass to higher lake levels and resulting successful spawns, and the release of undersized largemouth bass by anglers since the 14-inch minimum length limit went into effect September 1, 1986. The daily bag limit for bass is five largemouth, smallmouth and spotted bass in the aggregate. Smallmouth and spotted bass 10 inches or longer may be retained. However, biologists have recommended to the Parks and Wildlife Commission that the 14-inch minimum include those two species. If adopted, the new minimum length limit for smallmouth and spotted bass would go into effect September 1, 1988.

If smallmouth bass have created a boomlet on Whitney in the past year or so, striped bass have been a bread-and-butter fishery for well over a decade. And the best may be yet to come, according to Roger McCabe of Waco, striped bass program leader. "There were more 20-pound-plus stripers caught during 1987 than any year on record," said McCabe. "Fishing could get even better because of a change in our stocking regime." McCabe said the department started stocking stripers at Whitney in 1973, at a rate of 10 fingerlings per acre. The fish did well, and during the mid-1970s it was discovered that they were spawning in the reservoir.

Because of this natural reproduction, stocking was discontinued from 1976 to 1984. "We were hoping that the fishery would be self-sustaining, but subsequent surveys indicated it was not," McCabe said. "So during 1984 we started annual stockings at Whitney and increased the stocking rate to 15 per acre."

Biologist Ken Sellers said gill net surveys conducted each January reflect improvements brought about by the increased stocking rate. "The number of stripers collected per net essentially

*(Continued on page 16)*

# Lakeside Park

Lake Whitney State Recreation Area offers an excellent base of operations for enjoying Lake Whitney's excellent fishing, boating and other recreational opportunities. Located just north of the dam on the lake's north shoreline, it can be reached by traveling south from the city of Whitney on FM 1244.

The topography of the area is flat to gently rolling open space interspersed with stands of oak trees. The area is especially known for its beautiful stands of bluebonnets, Indian paintbrushes and other wildflowers during the spring.

One of the 955-acre park's most unusual features is an airstrip used by considerable numbers of small aircraft. The park is located near the ruins of Towash, an early Texas settlement that was inundated by the lake. Towash Village was named after a chief of the Hainai Indian tribe that moved into the area in 1835.



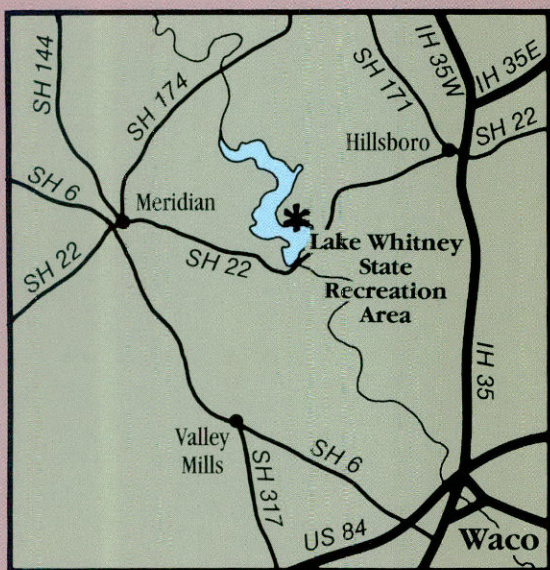




Glen Mills



Glen Mills



## Lake Whitney State Recreation Area

**Location:** Hill County, 35 miles northwest of Waco and 15 miles west of Hillsboro on FM 1244, which connects with State Highway 22 in Whitney.

**Facilities:** 187 campsites, including 95 tent sites with picnic table/grill, 35 trailer/camper sites with complete sewage hookups, seven camper sites with water/electricity, 48 screened shelters and two group camping areas. Fishermen will find an excellent boat ramp and fish-cleaning facilities.

**Fees:** \$2 entrance fee; \$6 for tent site with picnic table/grill; \$9 for campsite with water/electricity; \$10 for camper sites with complete sewage hookups and \$12 for screened shelters.

**For information and reservations:** Call 817-694-3793 or write Park Superintendent, Lake Whitney State Recreation Area, Box 1175, Whitney, Texas 76692.



*Floyd Teat hoists a fat largemouth bass from a brushpile in one of Lake Whitney's coves (left). Unlike smallmouth bass, which prefer the lake's rock rubble and dropoffs, largemouths tend to stay close to brush and aquatic vegetation. Anglers at right greet the new day near the FM 1713 bridge.*



*(Continued from page 13)*

doubled each year from 1985 through 1987, and survival of fish stocked in 1986 and 1987 has been very good," he said.

Sellers said striped bass collected during January 1988 ranged in size from nine to 34 inches, with most in the 15- to 28-inch range. "This indicates that there are plenty of five- to eight-pound stripers in the lake," said Sellers. He said Whitney stripers have an average growth rate, and they are in excellent condition. "It's a good sign also that as many as seven to eight year-classes are represented in our collections, so there will be continuous production of quality-sized fish in the coming years."

Veteran Whitney fishing guide Jim Snodgrass agrees with Sellers' observations about stripers. "We're catching lots of smaller fish in addition to the big ones," he said. "That wasn't the case a couple of years ago." Snodgrass said striper fishing during 1987 was very good, and he feels the large number of smaller fish is an indicator that

fishing could improve.

Snodgrass, who has caught two 25-pound stripers at Whitney, uses a variety of fishing methods, dictated by the season and weather patterns. "I prefer to catch them by casting jigs whenever I can, but we also use top-water lures, downriggers and even live bait at times," he said.

Although there is some movement of stripers up the Brazos River in the spring, Snodgrass confines his fishing to the lake's lower one-third all year. Early April is the time of year when topwater lures often score big on Whitney stripers. Snodgrass said this is because the fish herd schools of large gizzard shad into shallow areas such as the points and the backs of large coves. He casts long-bodied floating crankbaits, and reels them in slowly to trick the feeding stripers.

As summer approaches, the fish tend to cluster around the edges of submerged creeks and the river channel in 20 to 35 feet of water; Snodgrass trolls with downriggers or uses live bait. Fall often brings another flurry of topwater

activity as the fish move back toward coves and flooded creeks. The fish stay in the vicinity of the mouths of these creeks through the midwinter period, he said. His favorite year-round lure for stripers is a green or green and white combination bucktail jig with plastic trailer.

Although Snodgrass is normally rigged for stripers, he said Lake Whitney's white bass fishing also was excellent during 1987. "It was no trick to catch 150 per boat at times when the fish were schooling near the surface," said Snodgrass, adding that the average size was good and two-pounders were not uncommon.

Lake Whitney was constructed and is operated by the U.S. Army Corps of Engineers. There are several shoreline park areas on the lake, most of which have boat launching facilities. There also are marinas where gasoline and other supplies can be purchased. Lake Whitney State Recreation Area, located on the north shoreline near the dam, offers overnight camping and other facilities. \*\*

# Outdoor Roundup

by Jim Cox



Glen Mills

## TPWD Stocks Elk At Two West Texas Sites

Texas Parks and Wildlife Department officials have sent 300 Rio grande turkeys to Oregon in exchange for 99 elk stocked at two sites in the Trans-Pecos region of West Texas.

Charles Winkler, big game program director, said 48 elk will be stocked in the Davis Mountains in Jeff Davis County, and 51 in the Wylie Mountains near Van Horn in Culberson County.

The animals are being released with the goal of establishing new herds and, eventually, to create additional public hunting opportunity, Winkler said.

Elk of the Merriam's subspecies once ranged across much of the Trans-Pecos, but the animals became extinct in their entire range by the late 1800s. The elk being imported are the larger Rocky Mountain subspecies which already has demonstrated its ability to survive in Texas.

Winkler noted that there currently are three herds of elk in the Trans-Pecos, numbering about 250 animals. They were released by private ranchers and landowners in the Guadalupe, Glass and Eagle Mountains. "There also is a small herd of elk in the Panhandle, plus some 2,000 on private ranches in other parts of the state," Winkler said.

Winkler said a student at Sul Ross State University at Alpine will

monitor movements of the Jeff Davis County herd with telemetry equipment.

The animals will be trapped by the Oregon Department of Fish and Wildlife in areas where they are causing damage to hayfields. They will be hauled in commercial cattle trucks to the Texas release sites, Winkler said.

## TPWD Having Best Turkey Stocking Season

Agreements with other states and support from private organizations have helped the Texas Parks and Wildlife Department's eastern turkey restoration program have its best season ever.

Don Wilson, upland game program leader, said 396 birds have been liberated at restoration areas in 13 East Texas counties since October. He added that 25 of the birds were trapped from established populations in Texas, with the remainder coming from Florida, Iowa and South Carolina.

Eastern turkeys were largely eliminated from their East Texas habitat by the turn of the century. Restoration efforts in recent years have been limited by the difficulty in obtaining birds for restocking. Wilson noted that Texas is the nation's foremost producer of Rio Grande strain turkeys, but most of the habitat in the eastern half of the state is unsuitable for Rio Grande birds.

Charles Allen, director of the

Wildlife Division, said outstanding support has been received from Temple Eastex Inc., Champion International Corp. and Kirby Forest Products, a wholly-owned subsidiary of Louisiana-Pacific. They were instrumental in the department's obtaining the large number of eastern turkeys from other states this year. The three companies have returned all or portions of the revenue they received from the Type II Public Hunting Program to the department's eastern turkey restoration program. He added that with the continued support of the forest products companies, the Texas Wild Turkey Federation, the National Wild Turkey Federation, private landowners and sportsmen, a goal of 300 to 400 birds imported each year may be real-

ized during the next five years.

Counties that have received birds since October are Bowie, Houston, Nacogdoches, Red River, Rusk, Sabine, San Augustine, Cherokee, Angelina, Anderson, Hopkins, Cass and Freestone.

The restoration program has established huntable numbers of eastern turkeys in portions of Newton, Jasper, Tyler, Polk and Trinity Counties, where a gobblers-only season is set for April 2-17. In the western half of the state where Rio Grande turkeys range, the spring season is April 2-24.

Prospective eastern turkey hunters should consult the department's 1987-88 Hunting Regulations Guide to determine boundaries where hunting is allowed in those five counties.

## 'Lunker' Committee Changes Bass Release Rule

Officials of the "Operation Share A Lone Star Lunker" committee have decided to rescind the requirement for returning bass alive to their lakes of origin after completion of hatchery work.

Bill Rutledge, hatchery chief for the Texas Parks and Wildlife Department, said the decision was made because several anglers who were otherwise willing to loan their 13-pound-plus bass to the department did not do so because they wanted to retain final ownership of the fish.



Leroy Williamson

## COMPILED BY THE PARKS AND WILDLIFE DEPARTMENT'S NEWS SERVICE

"One of the objectives of the lunker program is to promote catch-and-release fishing," said Rutledge. "It will continue as an objective, but the release requirement was causing us to lose fish that could have helped us in our bass genetics program."

Any angler lending a fish to the lunker program will receive a fiberglass replica of the fish. If the fish dies in the hatchery, it will be given back to the angler. Likewise, if the fish lives it will be returned to the angler to release or to use in any manner he or she chooses.

Fishermen with bass that might qualify for the program should call toll-free 1-800-792-1112, or the Tyler Fish Hatchery, 214-592-7570.

### Chlordane Contamination Found In Trinity Fish

Three fish collected by the Texas Parks and Wildlife Department (TPWD) from the Trinity River in Dallas contained chlordane concentrations that exceeded federal action (warning) levels.

The fish, analyzed by the Texas Department of Health (TDH), contained levels above those set by the U.S. Food and Drug Administration, TPWD officials said.

However, 12 fish collected from other upstream and downstream sites had levels of chlordane below the FDA action level. Tissues from all fish collected had concentrations within acceptable levels for the other pesticides and heavy metals analyzed, according to Dave Sager, chief of the TPWD's Environmental Contaminants Branch.

Chlordane is a persistent pesticide commonly used to control termites. It is considered by the U.S. Environmental Protection Agency as a probable cancer-causing chemical, and the Texas Department of Agriculture has banned over-the-counter sales of the compound.

The action levels established by the FDA represent the contaminant concentrations at which food products may present health risks and can be seized. The TDH is the Texas agency responsible for issuing health advisories regarding fish and shellfish. At this time, the

TDH is not issuing any advisory, pending the completion of additional samples. The TDH can be contacted at 512-458-7510.

Fish having chlordane levels exceeding the FDA action level of 300 parts per billion (ppb) included a smallmouth buffalo collected near South Loop 12 with 500 ppb, a longear sunfish from the East Fork near Malloy Bridge Road with 430 ppb, and another smallmouth buffalo collected near Belt Line Road in Grand Prairie with 340 ppb. However, another smallmouth buffalo from the same site near Belt Line Road only had 32 ppb chlordane, well below the action level.

Fish from several other sites were not found to contain any contaminants in concentrations above the FDA action levels. These sampling sites were the Elm Fork of the Trinity River near Sandy Lake Road and the mainstem Trinity River at Highways 85, 287, 79, 7 and 21. Fish species analyzed included smallmouth buffalo, longear sunfish, river carpsucker, white crappie, channel catfish, blue catfish, flathead catfish and freshwater drum.

Sager said because of the small number of fish analyzed and variable results among fish taken from the same sites, additional fish have been collected by the TPWD for analysis by the TDH. More information will be available when these analyses are completed.

### Record Deer, Turkey Harvest Confirmed By TPWD

Final survey results show the 1987-88 hunting seasons set a plethora of records, including an all-time high harvest of white-tailed deer and turkey.

Glenn Boydston, coordinator of technical programs for the Texas Parks and Wildlife Department, said the estimated deer harvest of more than 504,900 was the fourth consecutive record harvest for the species and 13 percent higher than the 1986-87 season.

Most of the dramatic increase resulted from a rise in antlerless deer harvest. The 210,800 harvested represented a 28 percent



Bill Reaves

increase over the previous season.

"The antlerless harvest was 46,000 animals higher than ever recorded before," said Boydston, "and more than three times higher than it was 10 years ago."

The department's big game harvest survey also showed a record number of deer hunters, 567,300, had the highest-ever success rate of 61.2 percent, and highest-ever average kill per hunter, at 0.966.

Of five major ecological areas sampled, only the Post Oak Savannah showed a decrease in total deer harvest. The antlerless harvest there increased by nine percent, but the buck harvest fell by five percent, accounting for a one percent overall decrease.

The following are other ecological areas, the harvest and percent increase: Pineywoods, 41,600 bucks (1%), 20,200 antlerless (10%), 61,800 total (3%); Cross Timbers and Prairies, 25,700 bucks (10%), 16,300 antlerless (47%), 42,000 total (22%); South Texas Plains, 55,600 bucks (3%), 42,900 antlerless (43%), 98,500 total (18%); and Edwards Plateau, 121,600 bucks (11%), 107,500 antlerless (26%) and 229,100 total (18%).

Horace Gore, white-tailed deer program leader, said several natural factors could have contrib-

uted to the record deer harvest, including high deer populations. However, hunting regulation changes also may have also played a part in the remarkable increases in antlerless harvest. "Expansion of the either-sex bag limit (where no landowner-issued permits are required) appears to have contributed to the 26 percent increase in the Edwards Plateau, and especially in the 47 percent gain in antlerless harvest in the Cross Timbers and Prairies of West Texas," said Gore. He added that the special late antlerless season in nine South Texas counties may have contributed to the whopping 43 percent increase in the doe harvest in the South Texas Plains.

The harvest of mule deer in West Texas and the Panhandle also reflected an increase; the 6,700 animals taken represented a 28 percent increase over the previous season.

The javelina harvest remained stable at an estimated 20,900 animals.

The record 63,500 turkeys harvested during 1987-88 probably resulted from the large number of hunters in the field and continuing high turkey populations. The total harvest was 31 percent above the harvest of 48,500 the year before.

# Outdoor Roundup



Bill Reaves

## New Hiking Trail Opened At Buescher State Park

A new trail built by volunteers at Buescher State Park near Smithville was officially dedicated on February 27.

A dedication ceremony was held for the trail which opens up previously inaccessible portions of the park. Hikers on the 7.8-mile trail can enjoy a portion of the famous "Lost Pines" of Bastrop County and other natural features of the rugged, hilly terrain.

The new trail complements the natural beauty of the park, officials said, and it was built with drainage and erosion control features to ensure preservation of the park resources.

Almost 900 hours of volunteer labor went into construction of the trail during the past two years. Officials estimate the value of the total project was approximately \$88,000. Volunteers from the Texas Trails Association and the Sierra Club were coordinated by Dr. Keith McCree of College Station.

The Lost Pine Forest, part of which is found in both Buescher and nearby Bastrop State Parks, is an isolated pine/oak forest separated from the main body of East Texas Pineywoods by several hundred miles.

Buescher State Park is located two miles north of Smithville off State Highway 71, then one-half

mile north on Farm Road 153 and on Park Road 1. Campsites and screened shelters are available, and a 25-acre lake offers fishing for stocked rainbow trout as well as native game fish species. A 14-mile scenic drive on Park Road 1-C to Bastrop State Park will provide additional hiking and camping opportunities.

## Fishing Program To Continue At Black Gap

Texas Parks and Wildlife Department officials said fishing is now being permitted on the Rio Grande in the Black Gap Wildlife Management Area in Brewster County.

Fishermen are required to register at the area headquarters before fishing. No fee is charged.

Black Gap is one of the department's Type II wildlife management areas, and a \$35 Type II permit is required for entry. However, due to conflict between Type I and Type II regulations, the department will continue to allow fishermen to enter without any requirements other than registration at the entrance.

The area can be reached by taking U.S. Highway 90 to Marathon, turning south on U.S. 385 then left on FM 2627. The road to the fishing area is rough, and four-wheel-drive vehicles are highly recommended.

## Public Quail Hunts Set Records At Chaparral

All-time records were set during public hunts for quail at the Texas Parks and Wildlife Department's Chaparral Wildlife Management Area, TPWD officials said.

Hunters bagged 12,607 quail on the 15,200-acre area in Dimmit and LaSalle Counties in South Texas—the highest harvest since the department acquired the tract in 1969.

Herb Kothmann, public hunt coordinator, said the phenomenal hunting is reflected in the results of the first four weekend hunts. "A total of 2,155 hunters bagged 8,654 quail during those four weekends, which is unprecedented," Kothmann said.

For the entire 34-day hunt period, hunters bagged 0.83 quail per acre. When the estimated number of unretrievable birds is added, total harvest amounted to a remarkable one quail per acre.

Kothmann said the Chaparral hunts were typical of quail hunting in South Texas in 1987-88.

## Week-long Hunt Fails In Quest For Bighorn Ram

Eight days of hunting in the rugged Van Horn Mountains of West Texas failed to get Johnny McKenzie a desert bighorn ram in the state's first public bighorn hunt.

McKenzie, a Mesquite resident, won the right to hunt a surplus ram by having his name drawn by Gov. Bill Clements in a special ceremony at the State Capitol January 21. A total of 1,046 purchasers of Texas Parks and Wildlife Department's Type II wildlife management area (WMA) hunting permits applied for the sheep hunt.

McKenzie's permit allowed eight days of hunting, and by the last day, February 22, a mature ram had not been located. The hunting party led by TPWD biologist Jack Kilpatric of Alpine used mules to traverse the rough backcountry of the Sierra Diablo WMA and a neighboring ranch in Culberson County.

Kilpatric said they saw 31 sheep during the hunt, including 14 young rams and four lambs. He added that older rams are known to travel in bachelor groups, and the hunters never were able to locate them. Continual high winds, snow and occasional fog also hampered hunting conditions, Kilpatric said.

The department is attempting to reestablish desert bighorns, the least numerous of North American bighorn subspecies, in the Trans-Pecos region. Kilpatric said he was encouraged by the large number of sightings in the Sierra Diablo region, as it indicates good survival and reproduction.

## Second-Largest Largemouth Bass Caught At Fork

Larry Barnes of DeSoto narrowly missed setting a new state record for largemouth bass when he caught a 17-pound, 4¼-ounce fish on February 14 at Lake Fork.

Barnes' catch was the second-largest bass ever taken in Texas, after the 17-pound, 10.72-ounce fish caught from the same lake by Mark Stevenson of Plano in November 1986.

The latest catch gives Lake Fork a remarkable four of the top six largest bass taken in Texas, according to biologist Barry Lyons of Tyler.

Barnes hooked the big fish on a black jig and pork trailer while fishing in submerged brush at about 15 feet.

Lyons said another bass, weighing approximately 17 pounds, nine ounces, washed up at the North Fork Marina boat ramp. "There's no way of knowing exactly when the fish died, so we don't know how much it weighed when it was alive," said Lyons. "It might have been a new state record."

To add to the remarkable weekend, James Cook of Grand Prairie caught a 13-pound bass at Fork, also using a jig and pig.

Lyons said Barnes' fish will remain on display in a tank at Lake Fork Marina for a few weeks. The marina is located on the west side of the lake on State Highway 17 near Alba.

## Commission Approves Mandatory Hunter Education

The Texas Parks and Wildlife Commission has adopted a mandatory hunter education program for persons born on or after September 2, 1971.

Meeting in Austin recently, the commission approved the plan which will go into effect when an adequate number of instructors have been recruited and trained, supplies and materials secured, and the public is notified of program requirements. Officials estimate this will be within 90 to 120 days. Effective September 1, 1989, the regulation will be enforced and hunters whose date of birth is during the period September 2, 1971 through August 31, 1973 must have passed a 10-hour minimum hunter education course and receive a certificate of completion.

Effective September 1, 1990, hunter education will be required of hunters born during the period September 2, 1971 through August 31, 1974. By September 1, 1993, hunter education will be required of every hunter born on or after September 2, 1971. A \$5 fee will be charged for the course.

Hunters under 17 years of age accompanied by a licensed hunter 17 or older are exempt from the certification requirement. Hunters under 12 will not be eligible for certification, but they may take the course. All hunters are strongly encouraged to take the course regardless of age.

The department already offers

the course on a voluntary basis, taught by volunteer instructors. The Texas course is recognized by all states requiring a hunter education course. Persons who have been certified under the voluntary program are also certified under the mandatory program.

Steve Hall, hunter education coordinator, said the voluntary program currently has 1,230 instructors, but about 2,000 will be needed to handle the influx of students brought in by mandatory hunter education legislation. "Those who wish to become instructors must first pass the basic student course and then pass an instructor's course," Hall said. Prospective instructors are encouraged to call Hall at 512-389-4999.

## Big Striped Bass Caught Below Canyon Dam

The phrase "big fish in a small pond" could be applied to Todd Fulcher's catch on the Guadalupe River February 2.

Fulcher landed what is likely the second-largest striped bass ever caught in Texas about a mile below Canyon Reservoir Dam.

He caught the 39-pound, 14-ounce fish in the river which was little more than a creek because of reduced water releases from the dam. Fulcher said he used a live bluegill for bait, and landed the striper with 12-pound-test line.

The fish was 45 inches long, which is actually two inches longer than the current state record fish caught below the Mansfield (Lake

Travis) dam in April 1986. The record striper weighed 43 pounds, eight ounces.

Biologist David Terre of San Marcos said Fulcher's fish was weighed on certified scales at a marina at Canyon Lake. "The department has not stocked stripers in the river, but quite a few have obviously come through the dam," said Terre, adding that no striped bass have been stocked at Canyon Reservoir since 1983.

## Bass Size Limit Boosting Fishing At Two Lakes

Extensive electrofishing surveys by Texas Parks and Wildlife Department crews indicate the 14-inch minimum length limit on largemouth bass has improved bass populations on two Central Texas lakes.

Biologist David Terre of San Marcos said the catch rates and average size of bass both showed dramatic improvement over similar surveys in 1985 and 1986 at Lake Buchanan northwest of Austin and Canyon Reservoir north of San Antonio.

Electroshocking surveys involve probing specified areas of a lake with electrodes that temporarily stun fish so they can be examined and then released. The same areas are sampled for the same time periods each year in order to reflect accurate trends, Terre said.

The Parks and Wildlife Commission authorized the 14-inch minimum length limit for largemouths, along with a five bass per day bag limit, effective on most Texas reservoirs effective September 1, 1985.

"Our collections on the two lakes show that largemouth bass over 12 inches long comprise a greater proportion of the populations than in previous years," Terre said.

Terre explained that the survey is based on the numbers and size of collected bass that are over eight inches long. These are referred to as "stock size" bass for statistical purposes.

Terre said the 1986 survey at Canyon showed that 12 percent of the stock size bass were 12 inches

long or longer. "By comparison, 44 percent of the stock size bass exceeded 12 inches in the fall 1987 survey," Terre said.

The percentage of Canyon Reservoir bass over the 14-inch size for legal retention also increased significantly, Terre said, from one percent in 1986 to 16 percent in 1987. The catch rate per hour of electrofishing rose from 2.5 per hour in 1986 to 15.3 per hour in 1987. The per-hour catch of 14-inch-plus bass jumped from 0.5 bass in 1986 to six bass in 1987.

The data from Lake Buchanan are remarkably similar, reflecting a dramatic upward trend in both numbers and average size of largemouth bass, Terre noted.

The percentage of stock size bass 12 inches and longer jumped from six percent to 42 percent; the 14-inch-plus group rose from 1 percent to 16 percent, and the catch per hour increased from four bass per hour in 1986 to 12.5 in 1987. The per-hour catch of 14-inch-plus bass grew from 2.7 to 5.1.

Terre said the 14-inch limit has another benefit aside from protecting the under-14 fish from overharvest. "Largemouths reach adult size (about 12 inches) after two growing seasons," said Terre. "By protecting the under-14 fish, you are increasing the number of mature, reproducing fish in the population."

## May In . . .

# TEXAS PARKS & WILDLIFE

In the May issue we'll visit Enchanted Rock State Natural Area, the largest granite dome in Texas and a national natural landmark. Another story will focus on the National Park Service's National Natural Landmark Program, which includes 18 Texas sites in addition to Enchanted Rock. Also next month are articles on the coati, the painted bunting, the madrone tree the Parks and Wildlife Department's nongame wildlife program and a photo story on textures in nature.



Leroy Williamson



# Jakes, Hens

Article by Don Wilson and Photos by Wyman Meinzer

Spring turkey season is April 2 through 24 in many Texas counties, with a bag limit of two gobblers. It's important during the spring season for sportsmen to be able to distinguish between legal birds—gobblers—and those which may not be taken—hens and bearded hens—or those which may be less desirable than mature gobblers—jakes.

Color is crucial to identification. An adult male turkey is a dark bodied bird with black-tipped breast and back feathers. The back and breast feathers of hens are buff or white colored, giving the female birds a gray appearance.

Jakes or immature gobblers are legal birds and also can be readily distinguished from hens by the same dark color as their mature brothers. A jake's beard may not be as clearly visible as a mature gobbler. For that matter, some 15 to 20 percent of hens also have beards. It might be easier to see a hen's beard than that of a jake.

Size also is an undependable means of telling hens from gobblers. A lone bird with a beard out in the middle of a field might seem large, and therefore a gobbler, but without a comparison to other birds it's hard to tell.

If you are not close enough to the birds to distinguish color you could make a mistake. Hunters who use camouflage and a call to bring gobblers within shotgun range will have no problem telling the difference between hens and mature gobblers. The folks who get in trouble are those who drive about the pastures taking shots at turkeys with rifles. The birds might be in range, but instead of a big gobbler you might wind up with a hen or a bearded lady. \*\*





# and Bearded Ladies



*Color is the key to telling a hen from a gobbler. An adult gobbler (near left) is a dark-bodied bird with black feathers and a prominent beard. Hens (bottom far left) have a more gray appearance from their white or buff-tipped feathers. A beard is an unreliable distinction between male and female birds. The hen in the top right photo has a beard much longer than the stubby beard of the jake in the top left photo. However, the jake has the same dark color of a mature gobbler. A word of advice to spring turkey hunters: get the birds in close so you can distinguish color.*

# TOUGH BLOOM

by Paul Montgomery

Just as bluebonnets, cowboys, armadillos and long-necks conjure up popular images of Texas, the cactus is a plant that perhaps best embodies the Texas mystique. Characterized by great varieties of texture and form, this unusual plant group is represented by more than 2,000 species worldwide and of these, approximately 100 species grow in Texas. The greatest numbers are found in the western, southern and central portions of our state.

While cacti evolved originally in the western hemisphere, no one seems to know much about their beginnings. Unlike more an-

cient plants such as the ferns, whose long evolutionary history can be documented by fossil evidence, no fossils of cacti have ever been found. Because of this lack of fossil evidence, it is difficult to create an "evolutionary tree" that would show their development over time. Most authorities assume, however, that cacti are a relatively recently evolved group of plants.

It is fascinating to think that such a plant group could adapt to extreme and varied habitats within such a short time span. Cacti may be found in deep forests growing with orchids and mushrooms, on tree trunks, along salty seashores, and even on

barren, snowy mountain slopes worldwide. They thrive best, however, in the arid terrain of the southwestern United States, Mexico and in arid portions of South America.

Structurally there are no other plants on earth quite like cacti, even though many desert species resemble them. Their stems are thick and succulent and usually have no leaves. By cutting through the stem one may observe a wet, spongy interior much like that of a watermelon. This interior acts as a reservoir for holding food materials and water and makes the cactus one of the most delicate of all plants. When ranchers find the



**Vibrant blooms in shades of yellow, gold, orange and red decorate the barrel cactus (right), now rare in Texas.**



**The cat-claw cactus (right) has maroon or garnet-colored flowers. Certain common names such as cat-claw, hedgehog, strawberry and turk's head can apply to a broad range of cacti.**



R. Michael Charaske



R. Michael Charaske



George O. Miller



Lacy spines and striking flowers make the lace cactus (left) one of the most beautiful cacti. The treelike cholla (above) produces purple or rose-pink

flowers. The pencil cactus (right) got its name from its long, slender stems. This cactus has pink flowers in the spring, but it is inconspicuous at other times.

common prickly pear on their land, they often use it as nutritious forage for their livestock.

Externally, cacti are anything but edible and must be regarded as among the most formidable of desert plants. Most species in Texas are covered with sharp spines that protect the water supply within the stem from thirsty wildlife and also shade the stem from intense desert sunlight. Unless the spines are broken off or poorly formed, few animals will attempt to eat a cactus or even approach it for fear of injury.

Despite the harsh environment in which they live, our Texas cacti reveal their ability to reproduce by the appearance of flowers and fruit that are both conspicuous and beautiful. Usually protruding from the top of stems but at times along their sides, the flowers reveal exquisite shades of red, orange, pink, yellow and white. They are perfect flowers and yet are variable in



John Peslak

Paul M. Montgomery

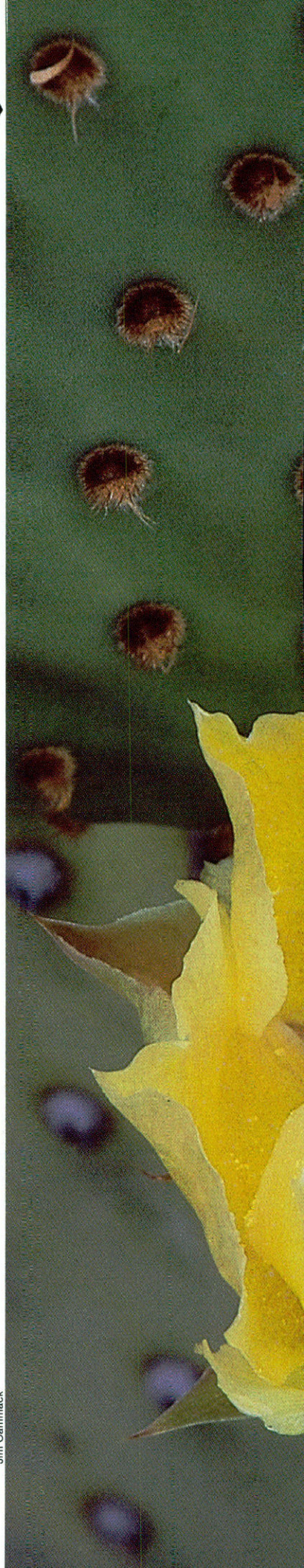


Jim Cammack



Four species of the abundant and widespread *Opuntia*, or prickly pear: purple (above), blind (right), Texas (far right, top) and smooth (far right, bottom).

Jim Cammack





Paul M. Montgomery



Paul M. Montgomery







shape and size. Generally they remain open only during the hottest part of the day when they are pollinated by insects. The fruit that is formed after the flower falls away is usually fleshy or dry and filled with seeds. Since many desert animals eat the fruits, seeds are scattered widely and young cacti may appear far from their original surroundings.

While all desert plants must struggle to absorb and retain moisture in a habitat where little is available, the cactus also survives admirably under these harsh conditions. When it does rain, often in spring or late summer, these plants demonstrate a remarkable ability to absorb great amounts of water through their roots and store it in their stems. This happens quickly and the stems may appear bloated or enlarged at this time. Protected by their thick, compact stems and numerous spines, cacti conserve this stored mois-

ture by reducing transpiration in the dry desert air. These adaptations allow cacti to survive prolonged periods of drought and many species can exist for a year or more on water from one heavy thunderstorm.

There is no doubt that cacti are among the most popular succulent plants in cultivation today. Many nurseries now grow cacti from seed and offer us many beautiful varieties from which to choose. Unfortunately, however, there are still individuals who continue to dig up cacti for resale and personal gain. By removing them from their native habitat in this way, they deprive our species of the exacting requirements under which they survive and threaten the existence of all remaining populations. Collecting seeds rather than removing cacti from the environment is a sound conservation practice and ensures the continued survival



George C. Miller



**The nipple cactus (above) has flowers in a circle around the center of the plant. The distinctive Potts mammillaria (below) grows in the mountains of Big Bend and in Mexico.**



**The small spiny star cactus (left) is found in North and West Texas and throughout the western United States into Canada. It is a large and varied species, one of the most common little cacti. Its purple flowers are unusually bright.**



Paul M. Montgomery



Paul M. Montgomery



Paul M. Montgomery



Paul M. Montgomery



Paul M. Montgomery



Clockwise from top left: horse crippler, sea-urchin cactus, peyote, Boke's button cactus. The waxy, scarlet blooms of the claret-cup cactus (right) are

firm and long lasting, often staying open for several days and nights. The claret-cup is found in the Hill Country, west through Big Bend.



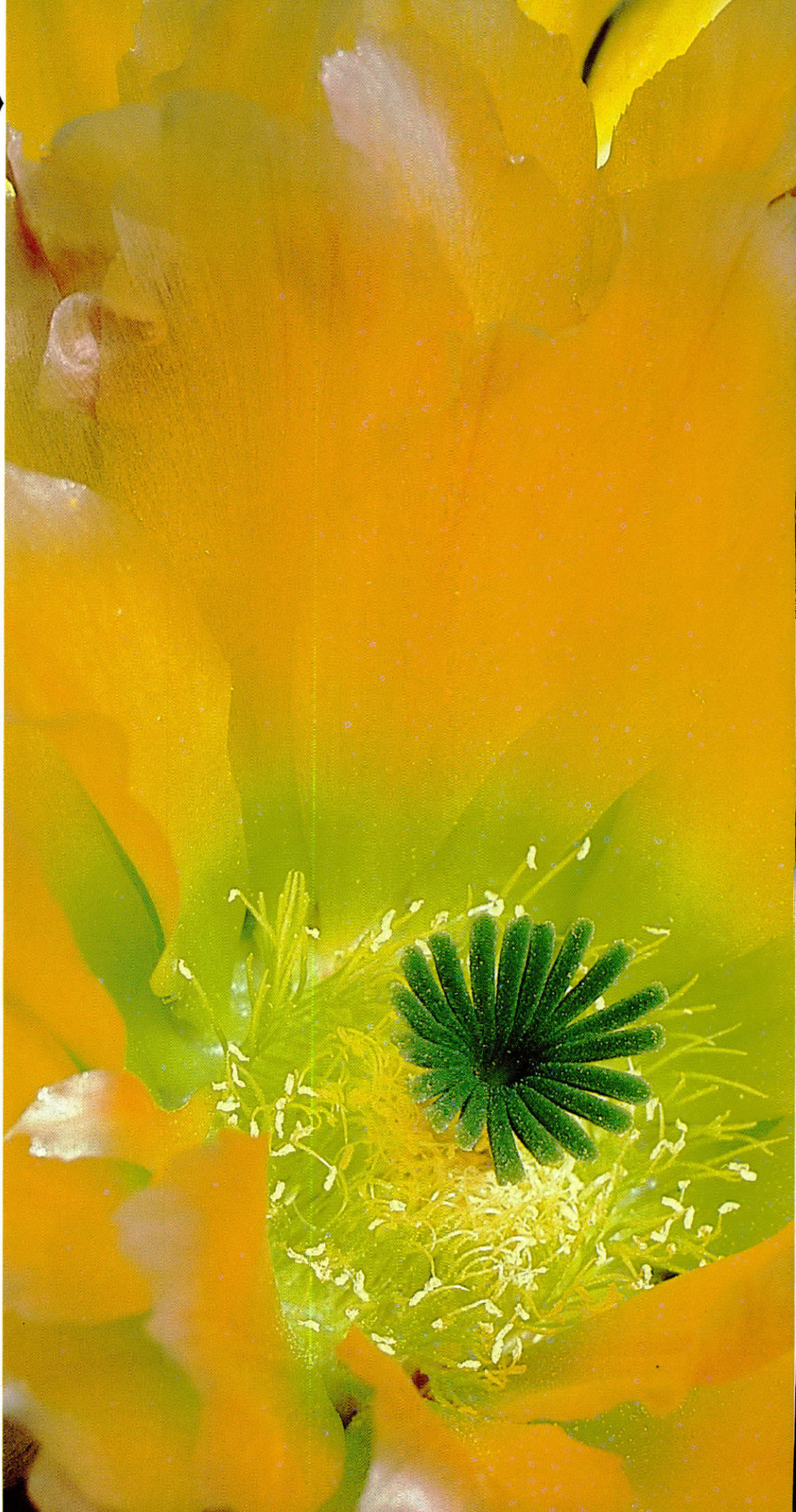
R. Michael Charstke



Hiram L. Parent



Paul M. Montgomery





Gilbert Palmer

of these unique life forms.

There are many cacti in Texas that attract us, not only because of their spectacular blooms but also because of the great structural variety they display. The Texas prickly pear, *Opuntia lindbeimeri*, is the most widespread and familiar species. Thanks to its beautiful blooms, the prickly pear can quickly populate severely grazed rangeland with plants that reach heights of 10 feet or more. In contrast, we have one of the smallest species in the world: the Davis green pitaya, *Echinocereus viridiflorus* var. *davisii*, of West Texas. Less than one inch tall, this species is near extinction and is protected by federal and state law.

Other species include the low prickly pear, *Opuntia compressa*, a shade-tolerant variety found in East Texas; the pencil cactus, *Wilcoxia*

*posegeri*, with stems one inch wide and four feet tall, and the sea urchin cactus, *Echinocactus asterias*, a species with no spines. Existing in very small, scattered populations, this species is rarely seen blooming in its native habitat.

Cacti have occupied only a fraction of time in evolutionary history, but that period has been a spectacular and successful one. Many cactus species are abundant today; others may become extinct in our lifetimes, victims of habitat loss, pollution and indiscriminate collecting. We have forced them and all other life forms on earth into an uncertain future because of our unwillingness to appreciate them for what they are. They have a right to be here and through conservation we can ensure that they will be here for those who follow us. \* \*



**Large, showy blooms distinguish the golden rainbow hedgehog (left). The pitaya (above), barrel cactus (opposite, top) and Glory of Texas (opposite, bottom) illustrate the colors that can be found on Texas cactus flowers.**

Laurence Parent

# Young Naturalist

by Ilo Hiller



Bill Reeves

As wildlife watchers, we often are disappointed when we are outdoors looking for animals and we can't find them. Sometimes we miss seeing them because we make too much noise and they hide when warned of our presence. However, many times we fail to see wildlife because the animals are nocturnal. This means they are night creatures that sleep and rest during the day and begin to prowl in search of food and water only when night falls and we are back home.

One way to "observe" wild animals that you do not get a chance to see is to read the record they leave behind—their tracks. Knowing what kinds of animals live in a particular area will help identify the tracks that are found. Learning something about a specific animal's habits will indicate where and when to look for signs of its presence.

Since many animals wait until dark to travel and eat, probably the best time to look for clear tracks is early in the morning while the prints are still relatively fresh. Muddy areas around water should have a good selection of tracks because many animals gather there to drink. Predators also visit such areas because the water makes them good hunting sites.

Sandy shorelines usually display a variety of tracks. Bird tracks may be prominent in the wet sand at the shore, and bands of dots across the loose sand indicate a sand crab's sideways passage. Occasionally the curved path of a crawling snake or the trail of a darting lizard is visible. Keep in mind that sand tracks must be observed shortly after they are made and before wind and wave action erase them.

## MAKING TRACKS



Glen Mills

Indians, who were recognized for their ability to read animal signs, could look at a track, identify the animal and tell when the track was made. Since each animal leaves its own peculiar imprint, the naturalist who develops tracking skills should be able to recognize not only the species, but occasionally an individual animal.

As you learn to identify different tracks and take the time to study them, they can tell you a story. You may be able to see where an animal stopped to nibble at some food. Or you may see where a predator picked up the animal's trail and carefully stalked it. The drama of the chase also may be written on the ground, along with the escape or catch. A naturalist who sees the footprints of a scurrying mouse abruptly end may look closely and also see the mark of an owl's talons or the brush of its wings on the ground as it swooped down and caught the rodent.

*It is easy to identify the sand trail of the ghost crab's eight legs and the split hoof and dewclaw track of the deer (opposite page); however, the tracks of a raccoon, cougar, turkey or killdeer may not be as recognizable.*



Wyman P. Meirzer



Paul M. Montgomery



Paul M. Montgomery



Paul M. Montgomery

# Young Naturalist

*Muddy areas are good places to look for tracks. Our photographer recorded those of a river otter, green heron and the alligator with its distinctive dragging tail imprint.*



Paul M. Montgomery



Paul M. Montgomery



Paul M. Montgomery

Some people enjoy collecting tracks. One way is to use a camera, as we have done. To obtain a good photograph, find a sharp, clean track in the open sunlight. Midmorning or midafternoon are the best times to take your pictures because the sun is bright enough to give you a good exposure and low enough to cast a faint shadow in the print. The picture you take will preserve the image and record the area surrounding the track.

Another way to collect a track is to make a plaster cast of it. The cast will be an accurate record of the length, width and depth of the imprint.

Making a cast is easy. All it takes is water, dry plaster of Paris, something to stir the mixture in and something with which to surround the track being cast. This surrounding frame can be a can with the top and bottom removed, a square section cut from a milk carton or a two-inch strip of

poster board stapled or clipped to form a circle.

Once you have found a good track, remove any loose particles of dirt, twigs, leaves or other litter. Place the frame around the track and press it firmly into the ground for support or surround the outside edge with soft dirt to keep the plaster mixture from running out. Allow at least one inch of the frame to extend above the track.

Stir the plaster and water together, adding the water slowly until the mixture is about as thick as heavy cream or pancake batter. Pour it slowly into the mold until the plaster is about an inch deep. Allow the plaster to harden for 15 or 20 minutes. If the ground is damp, the hardening process may take a little longer.

When the plaster is hard, lift the cast off the track and remove the frame. Allow the cast to finish hardening overnight and then clean it with water and a toothbrush. A knife





*Pour the plaster of Paris mixture into the form that has been placed around the track. Remove the cast when it has hardened, but allow it to dry overnight before scrubbing off the dirt.*



can be used to smooth any rough edges.

The cast you have made is just the reverse of the track imprint. Now if you want to make a casting of the track as it appeared in the ground, apply a thin coating of petroleum jelly to the plaster track and the surrounding surface. Place it on a flat surface and surround it again with a frame. Stir up another batch of plaster and pour it into the frame. If you want to use the finished cast as a wall plaque, place a loop of wire in the exposed surface while the plaster is still soft. Allow two hours for the plaster to harden.

When the casting is dry, remove it from the frame and separate the two layers. The petroleum jelly should keep them from sticking together. Wipe the track clean and wash it in running water. Smooth any rough places with a knife blade or use fine sandpaper.

To make the track stand out more clearly from the surrounding plaster, paint it with india ink or black poster paint when the casting is completely dry. A coating of clear shellac or clear plastic spray may be applied to protect and preserve the casting.

Collecting and identifying tracks can be an interesting hobby, and some books that will help you are: "A Field Guide to Animal Tracks" by Olaus J. Murie, The Riverside Press; "Animal Tracks and Hunter Signs" by E.T. Seton, Doubleday & Company, Inc.; "Animal Tracks" by George F. Mason, William Morrow & Company; "Animal Tracks—The Standard Guide for Identification and Characteristics" by H. Marlin Perkins, The Stackpole Company. \* \*



*The Mearns' quail, also known as the Montezuma, Harlequin, clown-faced and fool's quail, is unusual in appearance and behavior.*

# Clown-faced Quail

Article by Sylvestre H. Sorola  
Photos by Glen Mills

"In 1916 or 1917, when I was seven years old and livestock could still wander over some open range, my father and I were on horseback going from Loma Alta towards Carta Valley to round up some stock that had gone astray." The elderly rancher related this story as if it happened yesterday.

"As we were traveling a trail, we caught the motion of some quail crossing the path," he continued. "My father signaled for me to stop, whispering that he would demonstrate how the Indians would kill the 'crazy' quail. He slid off his horse and cut a finger-thick cedar branch about three feet long. He sneaked up to the grassy area where we last saw the birds, and all of a sudden he beat the grass—the feathers drifting in the wind meant that the method really worked. We then put two quail in the saddlebags for supper."

Mearns' quail were common throughout the Edwards Plateau and the Trans-Pecos regions during the late 1800s, but their current status is poorly understood. Mearns' quail can be seen on occasion in the Davis Mountains around Ft. Davis, but their occurrence in the Edwards Plateau is questionable.

One thing for sure, this quail has many names which are descriptive of its appearance as well as its behavior, such as fool's, Montezuma, clown-faced and Harlequin quail.

If you are lucky enough to see a male before it sees you, you'll be surprised that such a boldly patterned bird can hide so well, with its black and white face, spotted sides, brick red breast and black belly. Rather than flush like a bobwhite or run like a scaled quail, this bird has a strong in-



stinct to crouch in cover, making it nearly impossible to find. So highly developed is this defensive behavior that these birds have been seen crouching in the middle of a paved road, believing that they are hidden from danger. Therein lies their downfall.

Several ranchers recently interviewed during a study to determine the status of the Mearns' quail in Texas, said that they had noticed the Mearns' disappearance during the droughts of the 1930s and 1950s. Very little rain, which is necessary for the production of cover, and removal of existing ground cover by domestic livestock, probably made the Mearns' quail vulnerable to predators from the air as well as the ground.

Livestock grazing and droughts probably contributed to a decline in wood sorrel, a plant that is a mainstay of the Mearns' quail's diet. The bulb of this plant remains dormant underground until late-summer rains bring forth leaves—leaves that are appetizing to hungry sheep and deer. The decline of this staple food supply undoubtedly

contributed to a corresponding decline in quail populations.

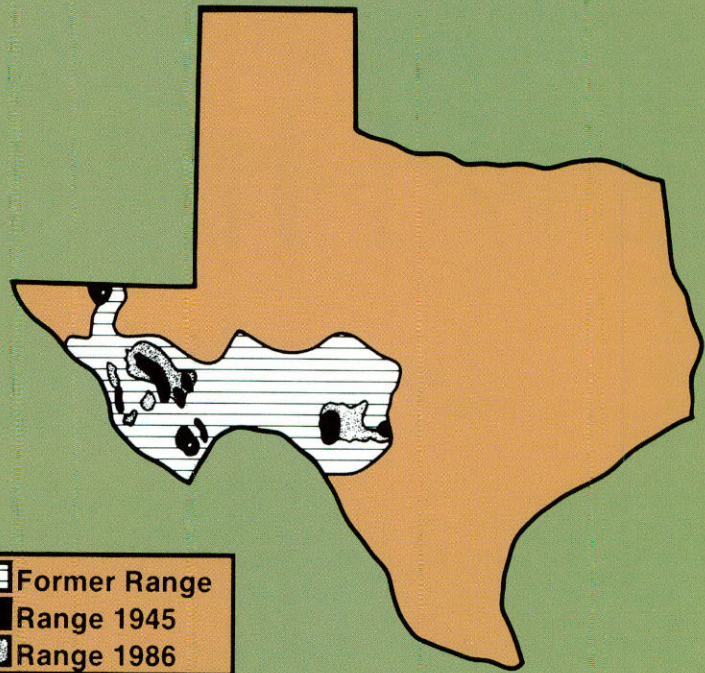
Telltale signs of the quail's presence in a pasture are the characteristic digging marks it leaves while searching for food. This sign turned out to be the most reliable method for determining quail distribution during the course of the study.

Individual quail leave spotty diggings which are one to two inches deep and look like inverted cones with dirt thrown out of one side of the hole in a fan shape. Birds in a covey, feeding close together, can tear up the ground in an area about four to five square feet in size. The confirming evidence left by Mearns' quail are the empty husks of the sorrel bulbs which the quail eat. Skunks and armadillos digging for insects leave the bulbs, which are dug up, intact.

Without adequate grassy cover, all ground-nesting birds have difficulty raising their young. So it is with the Mearns' quail.

Nesting usually takes place during late summer, around July or August.

## Mearns' Quail Range



Eight to 14 creamy white eggs are laid in a nest which is roofed over the top. The male is believed to share the responsibilities of incubation and brooding. Young birds, just days old, have been observed in September in Edwards County. This is a time when there is a resurgence of vegetation and insect populations in response to late-summer thunderstorms.

Mearns' quail do very little calling in comparison to other quail. The male's call is an insectlike trill which descends the musical scale. The female calls with a series of seven to nine high-pitched, descending notes with half-second breaks. Both quail calls have a ventriloquial quality which makes it difficult to determine the location of a calling bird.

The Mearns' quail has a much wider distribution in Texas than previously thought. In the Edwards Plateau, Mearns' quail were found in Edwards, Val Verde, Kinney, Uvalde and Real counties. They were found from 1,500 to 2,400 feet elevation in a liveoak-juniper-pinyon pine grassland savannah with an average rainfall of 24 inches. Mearns' seem to prefer hillsides and hilltops, possibly because these areas normally receive less grazing pressure than lower, more accessible areas.

Birds were generally found on ranches with moderate to light livestock grazing pressure. Even though a ranch may have been grazed heavily, birds could still be found in pastures that were not grazed or that were used occasionally to hold livestock during roundups.

In southeastern Edwards County the birds could be found on the tops of hills that had been cleared of thick cedar. Even though surrounded by solid cedar brakes, these areas contain grass cover as well as mountain laurel, with its basal stem growth which provides good protection from predators. Due to the birds' secretive nature, some landowners did not even know they had Mearns' quail until they were discovered by researchers.

In the Trans-Pecos, quail were found in Jeff Davis, Brewster, Presidio, Reeves and Culberson counties, usually above 5,000 feet.

Typical Mearns' quail habitat was a gray oak-juniper-pinyon pine grassland savannah with an average annual rainfall of 18 inches. On a ranch in Presidio County near the base of Chinati Peak, Mearns' quail were found in the foothills, rolling grassland habitat without an overstory of shrubs or trees. This seems to point out the need for cover to hide in, not necessarily including

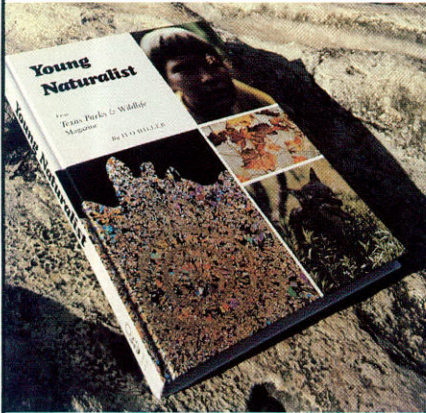
shrubs or trees as was found in other locations.

Translocation of Arizona wild-trapped Mearns' quail has been attempted by the National Park Service in Big Bend and Guadalupe Mountains National Parks in recent years. The success of these releases is unknown. Observers have been unable to find many birds, but we hope this will prove to be another example of their secretive nature.

Davis Mountains State Park is still a likely place to see these rare birds. The Davis Mountains loop road has been a good place to catch a glimpse of a Mearns' quail. The best time of year probably is late summer or early fall, in late afternoon, when young of the year are in coveys with their parents, feeding along the edges of the road. If you don't see them, you might hear them calling from the sides of hills in early morning or late afternoon hours.

Despite this bird's specialized behavior and food habits, its future looks good. Even though the quail cannot change its behavior, man can alter his. Current economic factors are directing land managers to practice sound livestock grazing methods, such as the use of moderate stocking rates and the rotation of livestock, which benefits Mearns' quail and all wildlife. \*\*

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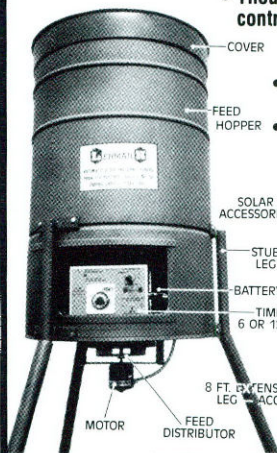
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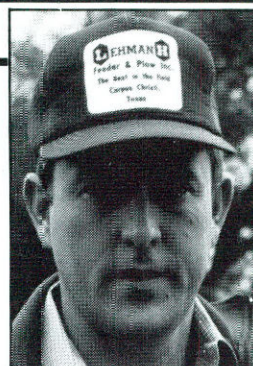
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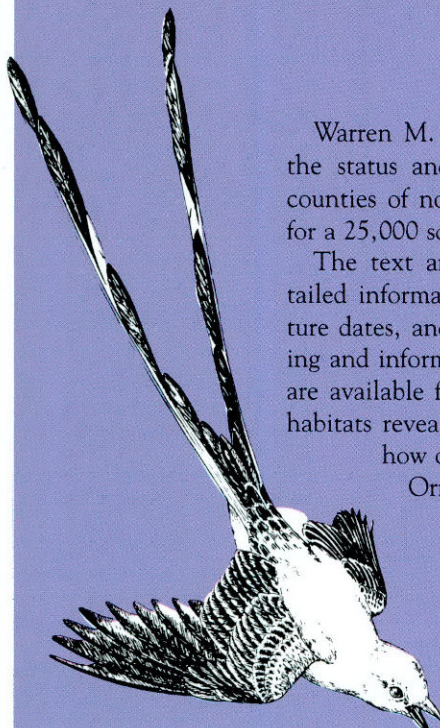
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Foreword by Keith Arnold

Illustrations by Ann Marie Pulich



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# Letters

## Texan in the Philippines

After receiving our second gift subscription to *Texas Parks & Wildlife*, we felt a word of thanks was in order.

I have been stationed overseas for a number of years and my wife and seven children have not had the opportunity to visit Texas. Yet, your magazine has shown them more than I could ever hope to tell them about our great state.

Many thanks for your informative articles and superb photographs.

Steve and Evelyn Casley  
Philippines

## Goofed on Gulls

Oops! Swap those photos around on page 20 of your February 1988 issue. I know my friend, photographer John Tveten, did not make that mistake.

Also, anyone interested in learning more about Texas' birds should join the Texas Ornithological Society. For more information, write to: David T. Dauphin, 7315 Cottonwood Drive, Baytown, Texas, 77521.

David T. Dauphin  
Baytown

## 82 Years Young

You are probably too young to know what the early *Texas Parks & Wildlife* magazine looked like. No matter, you are now publishing a beautiful magazine!

I enjoy your outstanding photos even though I may not feel like reading the articles. At 82 years of age, and never a hunter or fisherman, I hope to be able to enjoy a few more issues.

You'd better hurry, though!

Alice H. Thomas  
Arlington

## Owl Pellets

Thank you for your Young Naturalist article, "Owl Pellets," by Ilo Hiller in the October 1987 issue. It was perfect timing because my ninth grade biology classes were about to dissect owl pellets in a Project WILD activity.

We were studying the skeletal system, so I had the students dissect the owl pellets to construct a rat skeleton. The article served as a guideline because it had an outlay of a completed rat skeleton. Once the students arranged the bones, they were able to label them.

The students really enjoyed this activity even though they were afraid to touch the pellets at first. I want to thank you for your help in making my classes successful.

Sherie Gee  
San Antonio

## Demise of the Herds

I enjoyed your article on the demise of the buffalo, "Slaughter of the Ancients," in the February 1988 issue.

It was sad to read of the senseless killing of these wonderful animals that are so much a part of our heritage. It would have been interesting to read of any existing herds and how they are being protected for future generations to enjoy.

Overall, I thought your February issue was one of the best.

Tommie Bergoon  
Midland

## Know Your Palms

"Disappearing Wild Lands of the Rio Grande Valley" in the January 1988 issue correctly documents the habitat destruction that has occurred along our state's southern border.

However, none of the palm trees shown in the larger photograph on page 7 is a Texas sabal palm. The tall, slender palms are Washingtonias from California, while the short, pinnate-leaved palm is a member of the genus *Phoenix* (date palms), which are native to the Old World.

David E. Lemke, Assistant Professor  
Southwest Texas State University  
San Marcos

## Rio Grande Valley Memories

I want to congratulate you on the revealing article, "The Disappearing Wild Lands of the Rio Grande Valley," in the January 1988 issue. I hope articles such as this will help increase public awareness of the problems and, more important, aid in encouraging continued efforts to find permanent solutions.

I have many fond memories of my childhood in San Benito (Lower Valley) during the 1950s. Unfortunately, among my more vivid memories are: (1) the sight and smell of hundreds and hundreds of acres of native brush being rooted out and burned to make room for more cotton and vegetable fields and citrus groves; and (2) waking up in the mornings to the smell of DDT being

sprayed on cotton fields.

What a pity that more concern wasn't felt when land was relatively cheap, native habitat was plentiful and destruction wasn't approaching the "point of no return."

John DePue  
Joliet, Illinois

## Choke Canyon Bonanza

The new Calliham Unit of Choke Canyon State Park is a real bonanza for nature lovers.

I have seen many deer, wild turkeys, bobwhite and scaled quail, javelinas, coyotes and foxes, besides all of the native trees and plants.

I also spotted two peafowl hens that had joined a flock of turkey hens. What is the story on the peafowl?

What a place to take children for nature study!

W.H. Franke  
San Antonio

■ The park superintendent at the Calliham Unit said that the peafowl arrived at Choke Canyon when the reservoir was being formed in the summer of 1984. They are now permanent residents.

## BACK COVERS

**Inside:** Since they are not adept at digging burrows for themselves, opossums make use of those excavated by others. Hollow trees and logs are preferred sites of residence, but opossums will den in woodpiles, rock piles, crevices in cliffs, under buildings, in attics and in underground burrows. So, needless to say, opossums are frequent dwellers in suburban areas. These small (about the size of a terrier dog), nocturnal mammals have a wide menu which includes rats, mice, young rabbits, birds, insects, crustaceans, frogs, fruits and vegetables. Photo by Tom J. Ulrich.

**Outside:** This young caspian tern is but one of the Texas shorebirds that birders, photographers and curious nature lovers can see on Captain Ted Appell's bird tours at the Sandollar Marina near Rockport. These tours take you to eight rookery islands, which are tiny natural shell reefs protruding less than two feet above the water. (See story on page 2.) Photo by Grady Allen.



