

TEXAS

PARKS & WILDLIFE

March 1980 • 50¢



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Governor of Texas

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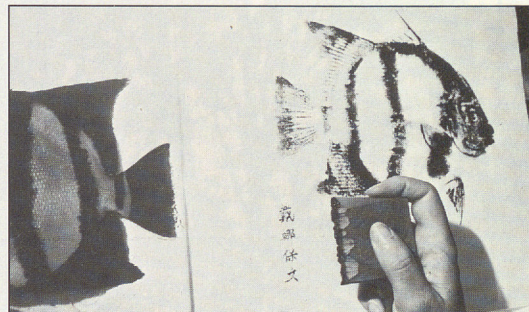
**TEXAS PARKS & WILDLIFE
magazine**
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Dedicated to the conservation and enjoyment of Texas fish, game, parks, waters and all outdoors.

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Front Cover: McKinney Falls State Park is located just outside Austin and provides easily accessible outdoor recreation for residents of that city. There is a state park within a tankful of gas of every major metropolitan area in the state. (See story on page 2.) Photo by Leroy Williamson.

Inside Front: Using its long bill to lash out at food and seize it, the great egret slowly stalks about the marshes of eastern Texas. P&W File Photo.



There and Back On a Tank of Gas

by Mary-Love Bigony



Glen Mills



Vacations and weekend outings are important. They provide respites from the daily routine and an opportunity for families to have fun together. And with the number of state parks distributed across the state, vacation spots can be easy to get to and inexpensive.

There is a state park within 100 miles or so of every major metropolitan area in Texas, so you should be able to get there and back on one tank of gas, usually for a cost of less than \$20.

State parks are economical, too. Entrance fee is \$2 per vehicle and campsites range from \$3 per night with no utilities to \$6.50 for a screened shelter. Campsites with electricity are \$4, or \$5 with sewer hookups.

Six state parks—Lake Brownwood, Bastrop, Caddo Lake, Daingerfield, Garner and Possum Kingdom—have cabins starting at \$12 per night. Rooms at Indian Lodge in Davis Mountains State Park are \$16 for a single, and in Balmorhea State Recreation Area rooms at San Solomon Springs Courts start at \$13 for one person. For all cabins, plus the lodge and courts, there is a \$3 charge for each addi-

tional person over the age of 12 and a \$1 charge for each child between the ages of six and 12.

Many cities have a state park right outside the city limits convenient for weekend camp-outs or picnics. In cases such as this, the \$8 restricted annual park entrance permit, valid at only one park, is a good idea. People who travel in an area where there are a number of parks may prefer the \$15 annual park entrance permit, valid at all state parks where a vehicle entrance fee is charged.

A number of state parks are close enough to each other or to historic sites to be included in one trip for additional recreation and sight-seeing. For example, campers at Eisenhower State Recreation Area should visit the nearby Eisenhower Birthplace Historic Site. Visitors to Tyler State Park can take a 26-mile drive to Quitman and spend the day at Governor Hogg Shrine State Historical Park visiting the three museums and picnicking on the grounds. Two side trips are available for campers at Fairfield Lake State Recreation Area—Fort Parker State Recreation Area 26 miles to the west and Old Fort Parker

Vacation spots abound in Texas, thanks to the number of state parks and their distribution. At Pedernales Falls State Park (left) families can fish, swim, hike and enjoy the outdoors together. Daingerfield State Park (far left) is one of six parks with cabins and Mustang Island State Park (bottom left) has recreational opportunities unique to the coast.

State Historic Site, a replica of the fort where Cynthia Ann Parker was captured by Comanche and Kiowa Indians in 1836.

Campers at Cleburne State Recreation Area might want to visit Dinosaur Valley State Park 18 miles to the west to study the three types of dinosaur tracks preserved there. Sea Rim State Park has camping facilities, and an interesting side trip is Sabine Pass Battleground where a handful of Texans held off the Union Army in 1863. Bastrop and Buescher State Parks are just 13 miles apart, and Palmetto State Park is 25 miles south of Lockhart State Recreation Area. Campers at Inks Lake State Park can drive seven miles and tour Longhorn Cavern. Some parks are close enough together to bicycle from one to the other, which saves gasoline and is good exercise, too.

Other combinations of state parks are possible. Check the route you plan to take for more ideas. And be sure to plan your trip far enough in advance to reserve the type campsite you will need. Contact the park directly by mail or telephone to make reservations. To obtain a list of facilities available at each park, write the department at 4200 Smith School Road, Austin, Texas 78744, or call toll-free 1-800-252-9327.

No one has to deny himself a much-needed vacation when a tankful of gas will get him to a state park and home again. **



State Parks within 100 miles of:

ABILENE

- Abilene State Recreation Area
- *Big Spring State Recreation Area
- Fort Griffin State Historical Park
- Lake Brownwood State Recreation Area
- Lake Colorado City State Recreation Area
- Possum Kingdom State Park

AUSTIN

- Bastrop State Park
- Blanco State Recreation Area
- Buescher State Park
- Enchanted Rock State Natural Area
- Inks Lake State Park
- *Jose Antonio Navarro State Historic Site
- Kerrville State Recreation Area
- Lake Somerville State Recreation Area
- Lockhart State Recreation Area
- *Longhorn Cavern State Park (not operated by P&W)
- *Lyndon B. Johnson State Historical Park
- McKinney Falls State Park
- *Monument Hill State Historic Site
- Palmetto State Park
- Pedernales Falls State Park
- *San Jose Mission State Historic Site
- *Sebastopol House State Historic Structure
- Stephen F. Austin State Historical Park
- *Washington-on-the-Brazos State Historical Park

CORPUS CHRISTI

- *Copano Bay State Fishing Pier (not operated by P&W)
- *Fannin Battleground State Historic Site
- Goliad State Historical Park
- Goose Island State Recreation Area
- Lake Corpus Christi State Recreation Area
- Mustang Island State Park
- *Port Lavaca State Fishing Pier (not operated by P&W)

DALLAS-FORT WORTH

- Bonham State Recreation Area
- Cleburne State Recreation Area
- Dinosaur Valley State Park
- Eisenhower State Recreation Area
- *Eisenhower Birthplace State Historic Site
- Fairfield Lake State Recreation Area
- Fort Parker State Recreation Area
- Fort Richardson State Historical Park
- *Governor Hogg Shrine State Historical Park
- Lake Arrowhead State Recreation Area
- Lake Whitney State Recreation Area
- Meridian State Recreation Area
- Mother Neff State Park
- *Old Fort Parker State Historic Site
- Possum Kingdom State Park
- Tyler State Park

EL PASO

- Hueco Tanks State Historical Park
- Balmorhea State Recreation Area (189 miles)

HOUSTON

- Galveston Island State Park
- Huntsville State Park
- Lake Livingston State Recreation Area
- Lake Somerville State Recreation Area
- Martin Dies, Jr. State Park
- *Monument Hill State Historic Site
- *Sabine Pass Battleground State Historical Park
- *San Jacinto Battleground State Historical Park
- Sea Rim State Park
- Stephen F. Austin State Historical Park
- *Varner-Hogg State Historical Park
- *Washingon-on-the-Brazos State Historical Park

LUBBOCK

- *Big Spring State Recreation Area
- *Caprock Canyons State Park
- (No facilities at present, 100-acre fishing lake)
- Lake Colorado City State Recreation Area
- Palo Duro Canyon State Park

MIDLAND-ODESSA

- Balmorhea State Recreation Area
- *Big Spring State Recreation Area
- *Fort Lancaster State Historic Site
- Lake Colorado City State Recreation Area
- Monahans Sandhills State Park
- Davis Mountains State Park (150 miles)

RIO GRANDE VALLEY

- Bentsen-Rio Grande State Park
- Brazos Island State Recreation Area (No developed facilities)
- Falcon State Recreation Area
- *Port Isabel Lighthouse State Historic Structure
- *Queen Isabella State Fishing Pier (not operated by P&W)

SAN ANGELO

- Abilene State Recreation Area
- *Big Spring State Recreation Area
- *Fort Lancaster State Historic Site
- Lake Brownwood State Recreation Area
- *Fort McKavett State Historic Site
- Lake Colorado City State Recreation Area

SAN ANTONIO

- Bastrop State Park
- Blanco State Recreation Area
- Buescher State Park
- Enchanted Rock State Natural Area
- *Fannin Battleground State Historic Site
- Garner State Park
- Goliad State Historical Park
- Inks Lake State Park
- *Jose Antonio Navarro State Historic Site
- Kerrville State Recreation Area
- Lake Corpus Christi State Recreation Area
- Lockhart State Recreation Area
- *Longhorn Cavern State Park (not operated by P&W)
- Lost Maples State Natural Area
- *Lyndon B. Johnson State Historical Park
- McKinney Falls State Park
- *Monument Hill State Historic Site
- Palmetto State Park
- Pedernales Falls State Park
- *San Jose Mission State Historic Site
- *Sebastopol House State Historic Structure



There is a state park within a 100-mile radius of every major metropolitan area in the state, making it easy to get to one and home again on a single tank of gas. Activities at the parks are as varied as Texas itself, from hiking and primitive camping at Enchanted Rock State Natural Area in the Texas Hill Country (left) to fishing from the jetties at Mustang Island State Park.

TYLER

- Atlanta State Recreation Area
- Bonham State Recreation Area
- Caddo Lake State Park
- Daingerfield State Park
- Fairfield Lake State Recreation Area
- Fort Parker State Recreation Area
- *Governor Hogg Shrine State Historical Park
- *Jim Hogg State Historical Park
- Mission Tejas State Historical Park
- *Old Fort Parker State Historic Site
- *Texas State Railroad State Historical Park
- Tyler State Park

WACO

- Bastrop State Park
- Buescher State Park
- Cleburne State Recreation Area
- Dinosaur Valley State Park
- Fairfield Lake State Recreation Area
- Fort Parker State Recreation Area
- Inks Lake State Park
- Lake Somerville State Recreation Area
- Lake Whitney State Recreation Area
- *Longhorn Cavern State Park (not operated by P&W)
- McKinney Falls State Park
- Meridian State Recreation Area
- Mother Neff State Park
- *Old Fort Parker State Historic Site

WICHITA FALLS

- Copper Breaks State Park
- Fort Griffin State Historical Park
- Fort Richardson State Historical Park
- Lake Arrowhead State Recreation Area

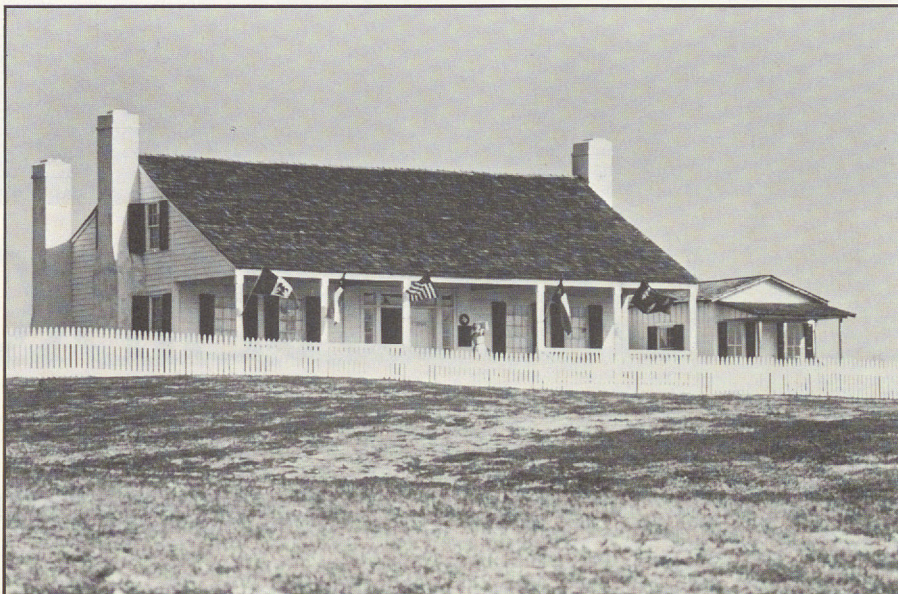
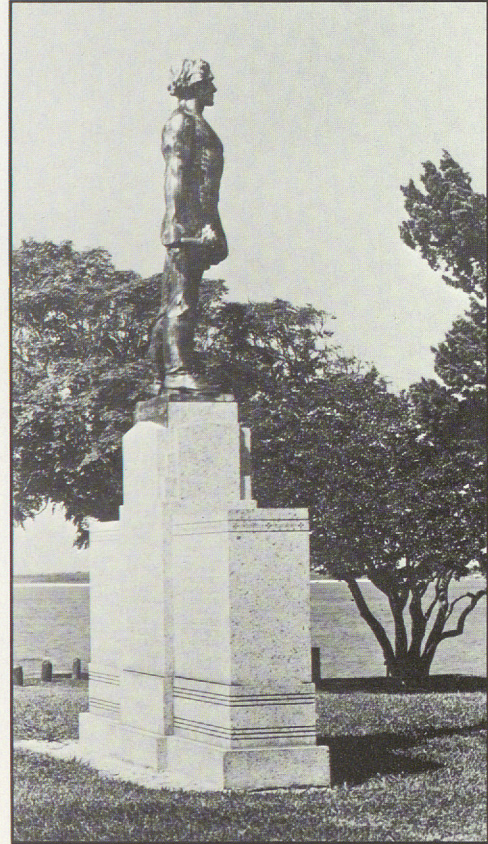
*No camping



Campers at many state parks can take side trips to nearby historic sites and spend the day picnicking and learning about Texas history. There is no entrance fee at many historical parks, although there may be a small charge for guided tours of some of the museums. Campers at Mission Tejas can visit Jim Hogg State Historical Park (above), dedicated to the first native-born governor of Texas. Washington-on-the-Brazos State Historical Park (below right) has many opportunities for historical study, and is close by for campers at Lake Somerville. Sabine Pass Battleground (upper right) is only a few miles from Sea Rim State Park, and offers fishing, picnicking and sightseeing.

- | | |
|--------------|--|
| 915 572-3204 | ABILENE Route 1, Tuscola 79562 |
| 214 796-6476 | ATLANTA Route 1, Box 116, Atlanta 75551 |
| 915 375-2370 | BALMORHEA Box 15, Toyahvale 79786 |
| 512 321-2101 | BASTROP Box 518, Bastrop 78602 |
| 512 585-1107 | BENTSEN-RIO GRANDE VALLEY P.O. Box 988, Mission 78572 |
| 915 263-4931 | BIG SPRING Box 1064, Big Spring 79720 |
| 512 833-4333 | BLANCO Box 493, Blanco 78606 |
| 214 583-5022 | BONHAM Route 1, Box 337, Bonham 75418 |
| 512 237-2241 | BUESCHER P.O. Box 75, Smithville 78957 |
| 214 679-3351 | CADDO LAKE Route 2, Box 15, Karnack 75661 |
| 806 455-1492 | CAPROCK CANYONS P.O. Box 204, Quitaque 79255 |
| 512 237-2241 | CLEBURNE Route 2, Box 90, Cleburne 76031 |
| 512 729-8633 | COPANO BAY Concessioner, P.O. Box 39, Fulton 78358 |
| 817 839-4331 | COPPER BREAKS Route 3, Quanah 79252 |
| 214 645-2921 | DAINGERFIELD P.O. Box B, Daingerfield 75638 |
| 915 426-3337 | DAVIS MOUNTAINS Box 786, Fort Davis 79734 |
| 817 897-4588 | DINOSAUR VALLEY Box 396, Glen Rose 76043 |
| 214 465-1956 | EISENHOWER Route 2, Box 50K, Denison 75020 |
| 214 465-8908 | EISENHOWER BIRTHPLACE 208 East Day, Denison 75020 |
| 915 247-4934 | ENCHANTED ROCK Fredericksburg Route, Box 42, Llano 78643 |
| 214 389-4514 | FAIRFIELD LAKE Route 2, Box P30, Fairfield 75840 |
| 512 848-5327 | FALCON P.O. Box 2, Falcon Heights 78545 |
| 512 645-2020 | FANNIN BATTLEGROUND Fannin 77960 |
| 915 762-3592 | FORT GRIFFIN Route 1, Albany 76430 |
| 915 836-4391 | FORT LANCASTER P.O. Box 306, Sheffield 79781 |
| 915 396-2358 | FORT MCKAVETT P.O. Box 867, Fort McKavett 76841 |
| 817 562-5751 | FORT PARKER Route 1, Box 256, Mexia 76667 |
| 817 567-3506 | FORT RICHARDSON P.O. Box 4, Jacksboro 76056 |
| 713 737-1222 | GALVESTON ISLAND Route 1, Box 156A, Galveston 77550 |
| 512 232-6633 | GARNER Concan 78838 |
| 512 645-3405 | GOLIAD P.O. Box 727, Goliad 77963 |
| 512 729-2858 | GOOSE ISLAND Route 1, Box 105, Rockport 78382 |
| 214 763-2701 | GOVERNOR HOGG SHRINE Route 3, Box 1, Park Road 45, Quitman 75783 |

915 859-4100 HUECO TANKS Box 26502, Ranchland Station, El Paso 79926
 713 295-5644 HUNTSVILLE P.O. Box 508, Huntsville 77340
 915 426-3254 Indian Lodge, Davis Mountains State Park, Box 786, Fort Davis 79734
 512 793-2223 INKS LAKE Box 117, Buchanan Dam 78609
 214 683-4850 JIM HOGG Route 2, Box 29, Rusk 75785
 512 226-4801 JOSE ANTONIO NAVARRO 228 S. Laredo, San Antonio 78207
 512 257-5392 KERRVILLE 2385 Bandera Highway, Kerrville 78028
 817 528-2211 LAKE ARROWHEAD Route 2, Box 260, Wichita Falls 76301
 915 784-5223 LAKE BROWNWOOD Route 5, Box 160, Brownwood 76801
 915 728-3931 LAKE COLORADO CITY Route 2, Box 232, Colorado City 79512
 512 547-2635 LAKE CORPUS CHRISTI Box 1167, Mathis 78368
 713 365-2201 LAKE LIVINGSTON Route 9, Box 1300, Livingston 77351
 713 535-7763 LAKE SOMERVILLE (Birch Creek) Route 1, Box 192A, Somerville 77879
 713 289-2392 LAKE SOMERVILLE (Nails Creek) Route 1, Box 61C, Ledbetter 78946
 817 694-3793 LAKE WHITNEY Box 1175, Whitney 76692
 512 398-3479 LOCKHART Route 1, Box 69, Lockhart 78644
 512 756-4680 LONGHORN CAVERN Concessioner, P.O. Box 98, Burnet 78611
 512 966-3413 LOST MAPLES Station C Route, Vanderpool 78885
 512 644-2252 LYNDON B. JOHNSON Box 201, Stonewall 78671
 713 384-5231 MARTIN DIES, JR. Box 1108, Dogwood Station, Woodville 75979
 512 243-1643 MCKINNEY FALLS Route 2, Box 701B, Austin, 78704
 817 435-2536 MERIDIAN Box 188, Meridian 76665
 713 687-2394 MISSION TEJAS Route 2, Box 108, Grapeland 75844
 915 943-2092 MONAHANS SANDHILLS Box 1738, Monahans 79756
 713 968-5658 MONUMENT HILL P.O. Box C, La Grange 78945
 817 853-2389 MOTHER NEFF Route 1, Box 58, Moody 76557
 512 749-5246 MUSTANG ISLAND P.O. Box 326, Port Aransas 78373
 817 729-5253 OLD FORT PARKER Route 3, Box 220, Groesbeck 76642
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 806 488-2227 PALO DURO CANYON Route 2, Box 285, Canyon 79015
 512 868-7304 PEDERNALES FALLS Route 1, Box 31A, Johnson City 78636
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 817 549-1803 POSSUM KINGDOM Box 36, Caddo 76029
 512 943-9807 QUEEN ISABELLA Concessioner, P.O. Box 69, Port Isabel 78578
 713 479-2431 SAN JACINTO BATTLEGROUND 3523 Highway 134, La Porte 77571
 713 479-2019 SAN JACINTO MONUMENT 3800 Park Road 1836, La Porte 77571
 512 922-2731 SAN JOSE MISSION 6539 San Jose Drive, San Antonio 78214
 713 971-2559 SEA RIM/SABINE PASS BATTLEGROUND P.O. Box 1066, Sabine Pass 77655
 512 379-8202 SEBASTOPOL HOUSE P.O. Box 1077, Seguin 78155
 214 683-2561 STATE RAILROAD P.O. Box 39, Rusk 75785
 713 885-3613 STEPHEN F. AUSTIN P.O. Box 125, San Felipe 77473
 214 597-5338 TYLER Route 9, Tyler 75706
 713 345-4656 VARNER-HOGG Box 696, West Columbia 77486
 713 878-2214 WASHINGTON-ON-THE-BRAZOS Box 305, Washington 77880



P&W File Photo



Located below Lake Diversion on the Big Wichita River, the Dundee Fish Culture Station is the fourth oldest hatchery in the state. After being built in 1928, Dundee was doubled in size in 1933 and completely remodeled in 1957. Recent development increased pond acreage from 32.9 to 77 acres, and when the facility goes into full production it is expected to turn out some two million fish every year.

DOUBLING

to keep pace w



P&W File Photo

Demands for hatchery-reared fish far outstripped the production capabilities of the state hatchery system during the early 1970s, so a 10-year hatchery plan was proposed in 1974 which included the gradual elimination of smaller state hatcheries to coincide with the construction of four large fish culture stations, each with 250 acres of ponds.

It soon became apparent that the funding required for this massive renovation and construction project was well beyond the revenues of the Special Fish and Game Fund Nine. However, the Texas Parks and Wildlife Department was able to secure a legislative appropriation of \$800,000 from the 64th Legislature to purchase additional land and expand the Dundee facility located below Lake Diversion on the Big Wichita River. The Dundee site was chosen because abundant quantities of very fertile water could be gravity fed into the hatchery and because land prices in the area were lower than at other sites.

With the appropriated money the department purchased 45 acres of land, constructed 46 new ponds, built a new maintenance and holding house complex and provided a domestic water supply for hatchery residences. Previously, drinking water had to be hauled in or collected in cisterns.

The Dundee facility, built in 1928 at an original cost of \$23,000, is the fourth oldest hatchery in the state. It was doubled in size in 1933 through efforts of the Wichita Falls Chamber of Commerce and relief labor, received minor modification in 1946 and was completely remodeled in 1957. However, the recent development, which increased pond acreage from 32.9 to 77 acres, marks the only new hatchery expansion since the Sheldon hatchery was constructed in 1956.

During its early history, operating on a yearly budget of about \$4,200, the Dundee hatchery produced bass, catfish, sunfish and crappie. In more recent years, the facility has concentrated on production of striped bass and their hybrids because its fertile water is well suited for the culture of these species.

Dundee has played an important role in the development of new culture techniques throughout the years. In 1934 the hatchery briefly worked with smallmouth bass, but no production records are available. Dundee personnel also were responsible for originating the procedure using rearing ponds for the culture of black crappie, a breakthrough that nearly doubled crappie production in the early 1940s. Experiments in flathead catfish culturing were conducted at the hatchery in 1960.

From its first crop of 8,300 bass, this hatchery's fish production increased to 700,000 fish of various species in 1978. When the expanded facility goes into full production, it is expected to turn out about two million fish annually. For the next several years efforts will concentrate on striped bass and hybrid stripers, but perhaps someday in the future Dundee once again will culture smallmouth bass.

The Dundee Fish Culture Station should be in full production in 1980, and Texas anglers will reap the rewards of their investment when they fill stringers with hatchery-produced stripers and hybrids. **

G DUNDEE

Hatchery expanded with demand for fish.

by William P. Rutledge, Hatchery Coordinator

Skimming Over the Marsh

Airboat Tours Open Wetlands to Sea Rim Visitors.

by Mary-Love Bigony

Marshland waters provide a haven for a variety of wild creatures, and the marshes at Sea Rim State Park are no exception. Most of the more than 15,000 acres that comprise the park are a brackish water inland marsh, an area relatively inaccessible to many visitors.

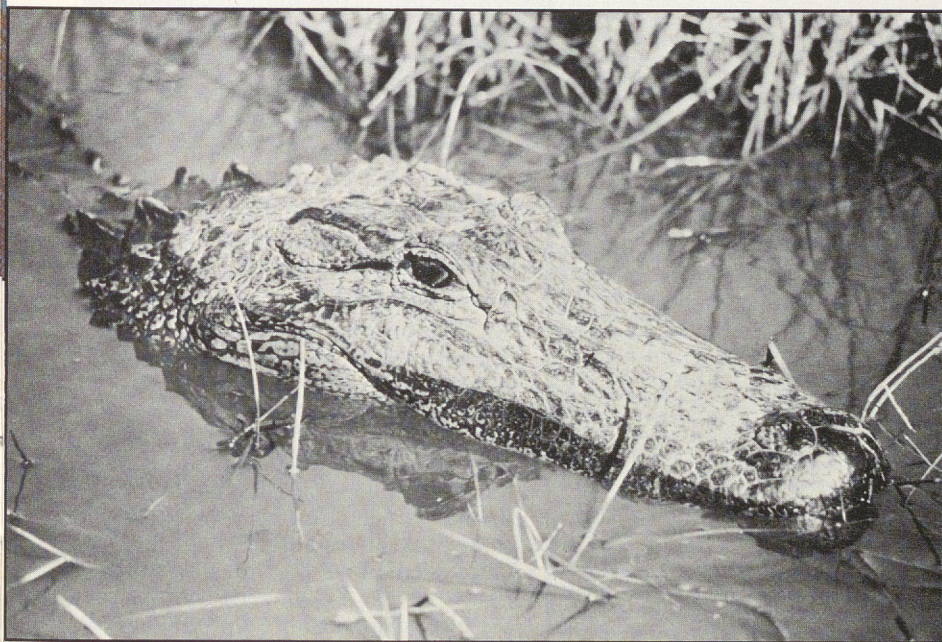
A new dimension of outdoor recreation at Sea Rim now makes it possible for more people to see the marshes which make this park unique. Airboats, which have no trouble navigating the shallow water, take visitors on tours of areas many never knew existed.

Biologists and game wardens use airboats to skim easily over extremely shallow water, and some sportsmen use them for hunting and trapping in marshes. But for most people, an airboat ride is an exhilarating new experience and the wetlands and its wildlife are interesting and sometimes awesome.

Unlike in a zoo, it is impossible to know what wild animals the visitor will see, and no two rides are the same. Herons, bitterns, gallinules and rails are among the birds that nest in the park, and during the spring, adult birds and their fledglings often are seen. Spring also

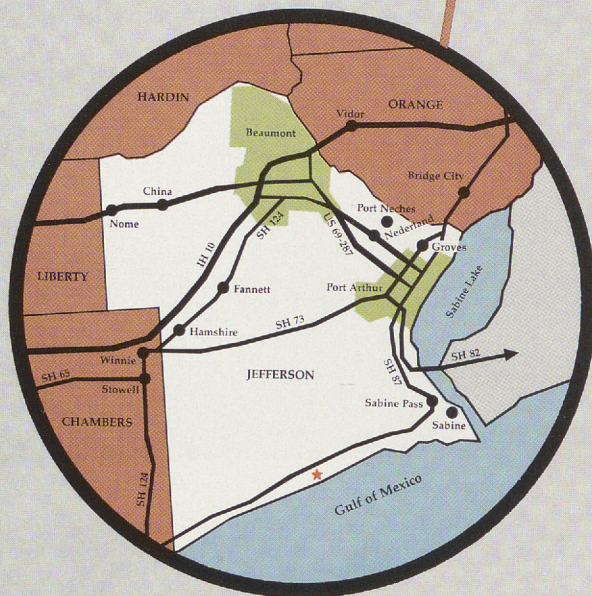
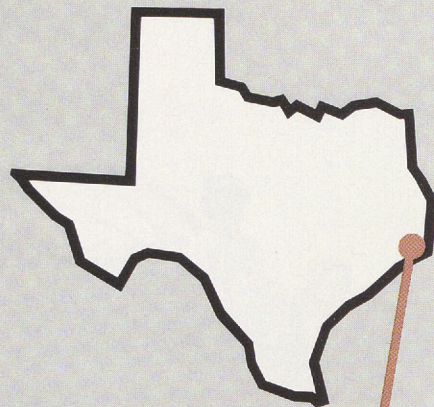


P&W File Photo



An airboat tour at Sea Rim State Park is much more than just an exciting ride. The park's thousands of acres of marshlands are home to many wildlife species, and airboat tours give visitors a close-up view of these animals and life in the wetlands. A number of birds spend the winter in Sea Rim's marshes, but the common egret (left) is a year-round resident. Springtime visitors probably will see alligators emerging from semihibernation to sun themselves, and sightings of alligators increase during the warm summer months.

Glen Mills



★ Sea Rim State Park

Location: Jefferson County, 10 miles west of Sabine Pass on Texas 87.

Facilities: 20 campsites with water and electricity, 60 picnic tables, concession building, interpretive center, boardwalk for nature study, six camping platforms and four observation blinds in Marshlands Unit.

For reservations or information: call 713-971-2559 or write Sea Rim State Park, P.O. Box 1066, Sabine Pass, Texas 77655.

brings wild flowers, and alligators emerge from semihibernation to sun themselves. Sightings of birds and alligators continue into the summer and occasionally other resident species appear. Nutria, mink, raccoons, rabbits, muskrats and the rare river otter live in the park area, and although it seldom is seen, the endangered red wolf is said to find sanctuary at Sea Rim.

In the fall, Sea Rim's marshlands attract thousands of ducks and geese, and from the vantage point of the airboat, visitors can watch great numbers of these birds.

During the eight-mile airboat tour, which lasts approximately 30 minutes, a guide explains the many aspects of the vast wetlands, points out things of interest and answers questions. People who take the tour simply for the thrill of an airboat ride usually gain a better understanding of intricate marsh ecology, and the serious student or birder has the opportunity to get a close look at the wetlands and the creatures living there.

Airboats used for the Sea Rim tours are equipped with automobile engines rather than airplane engines, providing better fuel economy. While the boats are capable of exceeding 60 miles per hour, this speed is not required on the tour for an exhilarating ride.

Sea Rim Airboat Service also rents canoes for those who wish to travel into the marsh alone. Six camping platforms in the park's Marshlands Unit are available for fishing and camping and four observation blinds can be used for observing or photographing wildlife.

From March through October, airboat tours give Sea Rim visitors an opportunity to see marsh life in one of the state's most ecologically important parks. **

Sea Rim Airboat Service

Hours: 9 a.m. to 7 p.m. daily, March through October; sunrise and sunset tours arranged by appointment.

Rates: \$6 per adult, \$4 per child, no charge for children under five.

Canoe rental: \$2 per hour or \$10 per day.

For information: call 713-971-2963

Prairie Chicken Airlift

Developer pays for relocation of endangered birds.

by Buddy Gough, Information Officer, La Porte



Leroy Williamson

"The white man made us many promises, and never kept but one. He promised to take our land . . . and he took it."

Those words are attributed to an Oglala Sioux Indian chief, lamenting the loss of his tribal land. But, if an Attwater's prairie chicken could speak it might express a similar sentiment regarding its fate at the hands of the people who have civilized this country.

At a time when several species of wildlife in the state have achieved some accommodation to the en-

croachments of progress on their habitat, the Attwater's prairie chicken stands as an example of unyielding determination to hold its own. Inhabiting a narrow band of prairie along the upper Texas coast, the prairie chicken has had the misfortune of occupying choice real estate for industrial and urban development.

Rather than retreat before the onslaught of condominiums and concrete, the pugnacious chickens often physically challenged the invasion. For example, when their an-

Some of the Attwater's prairie chickens which were moved from the Houston area to a ranch near Victoria were equipped with small solar-powered transmitters. These transmitters will allow Texas A&M University researchers to monitor the birds' movement and reproduction during the next two years to determine if this experimental transplant is successful.

cestral booming grounds were paved for airports, they continued to strut on the runways. The outcome of this admirable but futile conflict was predictable—the Attwater's prairie chicken population

dwindled to 1,600 birds in Texas by the time the species was declared endangered in 1967.

In the Houston area, where the pheasant-sized birds were once well established, they have been reduced to three embattled colonies being slowly squeezed by development. One band of chickens, living on a 370-acre tract of undeveloped land near the Gulf Airport southeast of Houston, recently seemed doomed to join their dispossessed ancestors.

General Homes, Inc., planned to develop the site and build 1,400 homes on the prairie chicken's booming grounds. In a campaign similar to the historical expedient of "round them up and send them to the reservation," General Homes pledged \$15,000 to trap the endangered prairie chickens and release them on the 6,000-acre Gonzalez Estate Ranch near Victoria where, hopefully, they would reestablish themselves.

The operation was carried out in early October 1979 by members of the U.S. Fish and Wildlife Service, Texas A&M University and the Texas Parks and Wildlife Department. Employing a helicopter equipped with a trap net, the wildlife officials worked during the cool, early morning hours to flush and trap 34 of the estimated 40 to 60 birds living on the housing site. The team returned in early December to trap and transplant five more birds.

Wayne Shifflett, manager of the U.S. Fish and Wildlife Service's Attwater Prairie Chicken National Refuge, said the trapping and transplanting operation was an experiment to see if birds trapped in the fall could be reestablished in other suitable, protected areas, such as the Gonzalez Estate Ranch. To determine if the move was a success, 25 of the 39 birds were equipped with solar-powered transmitters so their movements could be tracked and their reaction to the new environment checked.

The two-ounce transmitters—technology for which was developed by the National Aeronautics and Space Administration—will remain with the birds for their lifetime. Monitoring of the birds via

transmitter is being done by Texas A&M University under the direction of project coordinator Dr. Nova Silvy.

According to Silvy, the birds moved a great deal after release—five to seven miles from the release point—as if they were looking for a place to settle or attempting to return to their native grounds. A recording which simulates the

chickens' booming or mating call is played early each morning and late in the afternoon in an attempt to hold the birds in the release area.

At present, the birds' activities are being checked once a week by a Texas A&M University graduate student. Movement and reproduction of the prairie chickens will be monitored during the next two years. **



Photos by Buddy Gough



Using a helicopter equipped with a trap net, employees of the U.S. Fish and Wildlife Service, Texas A&M University and the Texas Parks and Wildlife Department flushed and trapped 34 prairie chickens, then released them on the 6,000-acre Gonzalez Estate Ranch. General Homes, Inc. plans to develop the area from which the birds were moved, and pledged \$15,000 to move the endangered prairie chickens to a protected area.



Bird Dog Training Firmness Tempered With Patience

Article by Darrell Holt Photos by Glen Mills

Training a bird dog can be an exciting and gratifying experience for those who use the proper techniques.

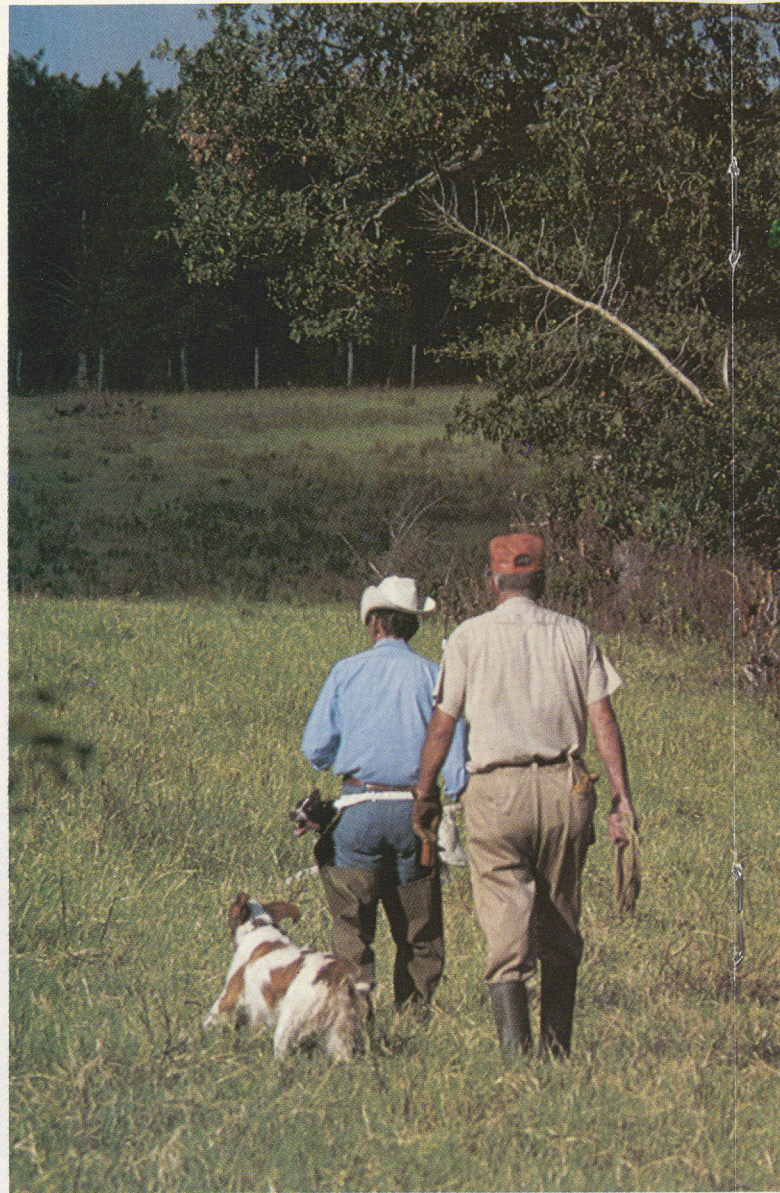
The first step is to evaluate yourself as a dog trainer. You need patience, an even temperament and perseverance to mold that puppy into a bird-finding machine.

If you lack the necessary qualifications, let a professional train your puppy or buy an already trained dog. However, if you do possess training qualities, start thinking about puppy selection.

Gordon Hazelwood Jr., field trial professional from Tomball, considers selecting the right puppy the most important part of dog training. "For an amateur, a good puppy will make training easier," he said. "Some dogs simply have more natural ability than others."

Examine the puppy's pedigree. If it boasts a long line of good hunting stock, your chances of having a fine hunting dog are better. If you have had no experience or have trouble making a selection, ask a professional to help. Hazelwood suggests taking the litter of puppies from their kennel or run and placing them in unfamiliar surroundings. Observe them interacting with each other in this strange area. Clap your hands, make loud noises or hold the puppies off the ground to watch their reactions. Some people even use a quail wing to study the dog's curiosity.

Isolate each puppy and run it through the same battery of tests. See if it will come to you, and don't pick



the puppy if it won't. A good hunting dog must be human oriented; avoid a shy dog and choose instead the bold or aggressive one.

Pick a healthy one says Bill Tarrant in the book *Best Way to Train Your Gun Dog*. The author and his collaborator, professional trainer Delmar Smith of Oklahoma, devote an entire chapter to puppy selection and conformation. They recommend selecting a puppy with sound legs and feet, a deep heart girth, straight and even teeth, pink gums and a clean shiny coat. Avoid the pup with the runny nose and eyes unless the condition has been diagnosed safe by a veterinarian.

Dr. J. Paul Scott, director of the Animal Behavior Laboratory of the Roscoe B. Jackson Memorial Laboratory in Maine, has done research on seeing eye dogs and recommends taking the puppy home at the exact age of 49 days. At this age the puppy is physically immature, but its brain has attained full adult form. This is the time



to establish dog-human relationships. These attachments will affect its attitude toward accepting direction and education.

Once you have made your selection, never doubt that you picked the best puppy in the litter because doubts could be reflected in your training.

Training is a combination of association and repetition. Teach the dog to do the same thing repeatedly and insert the proper command at the right time until it causes an automatic response. Association is when the dog learns that by responding in one way in a given situation it gets a pat on the head, but gets a reprimand or no reward if it responds in a different way in the same situation. Jerome B. Robinson, *Sports Afield* magazine's dog editor, puts it another way. "Training is a matter of correcting mistakes and showing the dog how you want it to react in various situations."

Basically, a dog's training period can be divided into four stages: 49 days to three months, kindergarten; three months to one year, school; one year to two years, finishing school; and above two years, graduation.

During kindergarten, your main objective is to introduce the animal to as many associations as possible. The most important one is yourself. Establishing rapport with the dog at this time lays the foundation for its further training.

Charles Stuart, professional field trial dog trainer from Von Ormy, feels the most important aspect of training is working with the dog while it is young. When the dog is about 10 inches tall, take it to a variety of environments. Let it explore every blade of grass, spooky shadow, log or hole in the ground. Take joy in watching the pup chase grasshoppers and butterflies and kick up its heels. Exposing it to children and other noisy situations such as trains, freeway traffic, air hammers, track meets and shopping malls will teach the dog not to panic in bird-training situations.

Some trainers hang noise-making devices from the kennel's fence so the dog will get used to noise. At feeding time, bang the feeding dish against objects, clap your hands and generally make a ruckus. During



If a well-trained bird dog is your goal, be prepared to spend many hours in the field working with the dog. As the training progresses, the dogs are allowed to work without a trailing check cord (above left). When a dog being led on a check cord smells the planted birds and comes to a point (left), drop the check cord, firm up the dog's stance and then release the birds. The white cord in the foreground is the release for the bird holding device.

this time, while the pup is enthralled with eating, shoot a toy cap pistol a distance from the pen, gradually working closer as conditioning progresses.

When the animal is about six months old, introduce the rudimentary commands of yard work—sit, come, stay, heel, fetch and whoa. Marvin Beherns, Georgetown's walking dog trainer, says, "The most important command in bird dog training is 'whoa.' If you can stop a dog, you can control him, and this is absolutely necessary. Developing this command makes it easy to teach backing, working close and staunchness later on."

There are several techniques used in teaching whoa, but the fastest is the whoa post from which you work



your dog. A whoa post is a metal rod driven into the ground. A 30-foot piece of three-eighths inch nylon rope is attached to the post with a slip knot and to the dog's collar. A second length of rope also is attached to the dog's collar to serve as a long-distance hot line for communication. Later it will become your check cord.

As you give the command come, pull the pup to you with the second rope. The whoa post rope will slip until it reaches a predetermined knot or the end of the rope. When the dog reaches the knot or comes to the end of the rope, give the command whoa. Do not allow the dog to move after giving the command. If it

does, pick it up and place it back at the spot where the command was given. After two weeks of this training for 10 minutes a day, you'll have a dog that knows the meaning of whoa.

As the dog makes progress, evaluate yourself. Are you keeping the commands simple, your tone of voice emotionless, your movements slow and your stance nonaggressive? To gain the dog's respect, use firmness tempered with patience. Don't hold grudges because a dog forgets quickly. Keep the training consistent and free of distractions. Also, keep your training sessions brief. Holding short, frequent ones is much more effective than long sessions on an irregular schedule. Five or 10 minutes a day is all that is needed. Never train the dog after it has eaten.

Become adept at understanding your dog and calculating how much force is required. Watch and read the dog's demeanor, tail, head and ears. If it drops the tail or stops wagging it enthusiastically, it is losing interest and training should stop until the next day.

Fear is a poor motivator for dog or man. A pat or soothing praise is more effective than punishment. The dog will disobey at times, but punishment should be administered without anger. A short piece of rope or your cap will serve to discipline it.

When the dog reaches a year old, it is time to start its serious schooling. Take it off the whoa post and substitute a check cord. Using this cord, you can give the command whoa, and with a flip of your wrist, pop the dog lightly under the chin or across the rump for a reminder. This is very important when introducing the dog to birds.

Select a spot for bird training where you do not intend to hunt so that if the dog has an unpleasant experience there, it will not associate the place with hunting.

In field training, everything is artificial. You simulate hunting conditions, but the dog must have the opportunity to use its own natural instinct, initiative and ability. In this training, you are developing these attributes and controlling them so the dog obeys your wishes and is happy working for you.

Ideally, yard training should be done in May and June when wild birds are in broods and will not be disturbed. Field work on wild birds should be held in August and September. Work the dog early in the morning during the summer to avoid the heat.

Year-round training requires substitute birds, but amateur trainers may not be able to afford pen-raised



quail all the time. Pigeons are a good substitute because they are inexpensive and easy to keep. Professionals can plant pigeons without a holding device and they will not move, but you probably should make or buy a holding device which will spring open when you pull a release string. You can find them in any dog catalog.

Put the pigeon in the holding device and plant it in the medium-high grass. Work the dog into the wind while holding the check cord. When it smells the bird, stop the dog and hold it steady. Then release the bird, making sure the dog doesn't get hit when the device is sprung.

Once the dog points to the bird, do not let it move. If it does, pick the dog up and move it back to where it originally smelled the bird and you told it to whoa. It may have a tendency to bump birds later on if you let it creep forward. Praise the dog enthusiastically if it does everything required.

If the dog is young or if you need to build a little enthusiasm into it, let it chase the bird. When the bird flushes, pop a blank starter pistol or small gauge shotgun so the dog will associate the noise with good times. As it progresses and the rope is needed less and less, you may shoot a bird over the dog.

Pen-raised quail (extreme left) or less expensive pigeons are placed in a holding device and used to train bird dogs to point. The dog on the check cord (above) is being taught to stop and hold steady when it smells the set birds. If the dog moves after it points the birds, it must be picked up and moved back to the spot where it originally smelled the bird and was told to whoa. Praise the dog enthusiastically when it does things right.

The dog's next training is finishing school or hunting. Generally, all the yard and field work should be accomplished within three to six months, depending on the dog. When you feel the dog is ready, work with it another month.

During hunting season let it run, but with a trailing check cord. The cord should be made fairly stiff by soaking it in water, and there should be no knots to catch on any obstruction.

When the dog points to a wild covey, pick up the check cord, steady it, and move in a wide circle to flush the birds. Then the fun begins—working the single.

As Jerome B. Robinson aptly put it, "The easy handling bird dog is a gem, a treasure, a delight to take afield. With it, gunning becomes a quiet, enjoyable pursuit, instead of a rodeo."^{**}

AROUND the STATE

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

STATE LARGEMOUTH BASS RECORD SHATTERED

For Jim Kimbell of Pittsburg, it was a good thing the crappie weren't biting.

When the crappie failed to respond to his minnow offerings on Lake Monticello February 2, Kimbell tied on a crankbait and broke the 37-year-old largemouth bass state record with a 14-pound, 1½-ounce whopper.

The fish apparently will displace a record 13-pound, eight-ounce bass caught by H. R. Magee of Kingsland at Medina Lake near San Antonio in 1943.

Kimbell, who is service manager for a Pittsburg car dealership, said he had little luck on crappie near the FM 127 bridge so he tried a timbered area farther down the lake.

"I thought it might be a lake record when I caught it, but it never entered my mind that it could be a state record," Kimbell said. "But later, another fisherman came by and when he saw it, he told me he held the current lake record of over 12 pounds

and he swore my fish was bigger than that."

The fish hit the crawfish-colored crankbait in about 10 feet of water and stayed deep, Kimbell said. "It never jumped, but there

for a while it was wedged against a tree or something and I was lucky to get it freed again."

Kimbell's 17-pound-test line held, and the fish apparently will be the new kingpin in the state

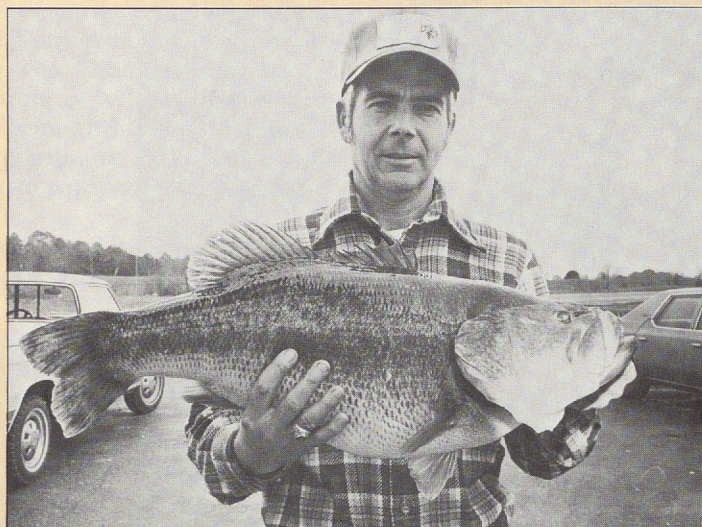
record book as soon as final approval is granted by the State Fish Records Committee of the Texas Parks and Wildlife Department.

Alan Forshage, regional fisheries director from Tyler, examined the fish and confirmed it as one of the fast-growing Florida strain of largemouth bass stocked at Monticello and other Texas lakes by the department.

Biologists had been predicting the new state record largemouth would be caught sometime this spring, and Monticello was expected to be the place.

The publicity shifted to Lake Calaveras near San Antonio on January 16 when John Godfrey of Austin caught a 13-pound Florida largemouth.

"I doubt if my state record will last too long," Kimbell said, "but if someone doesn't beat it this spring it may last until next spring, since most of the big bass are caught around February and March."



1979 OUTSTANDING YEAR FOR REDFISH STOCKING

Coastal fisheries biologists of the Texas Parks and Wildlife Department could well consider 1979 the year of the redbfish.

Propagation of red drum (redfish) in captive conditions was little more than a pipe dream as recently as two years ago, but during 1979 biologists found the right combination of light and temperature which triggered a bountiful harvest of young reds for restocking Texas bays.

In fact, the rearing ponds at the department's research facility at Palacios were twice filled to capacity, and 16.8 million excess fry had to be stocked immediately after hatching.

Brood redbfish in large indoor tanks are tricked into spawning by manipulating light and water temperature conditions to simu-

late the fish's spawning season. After the eggs are released and fertilized, biologists collect them in jars before releasing them in the ponds or bays.

In all, 1.4 million redbfish were reared to fingerling size and released into selected coastal bays in 1979. "We are optimistic about these stockings because survival apparently is quite high for redbfish which are reared to the three- to five-inch fingerling size before stocking," said biologist Larry McEachron of Rockport.

McEachron said the department's 1979 redbfish program hit a peak during the fall, with two females producing eight million eggs, of which 360,000 were reared in ponds to fingerling size and stocked in Matagorda Bay. About 30,000 of the fingerlings were tagged with magnetic nose tags in order to evaluate the stocking program. The bay also received 1.5 million fry.

The year's total of 1.4 million fingerlings was distributed to Matagorda Bay, St. Charles Bay and the Upper Laguna Madre.

BIG FISH AWARD PROGRAM EXPANDED

Texas fishermen who would appreciate receiving a "Certificate of Fishing Merit" from the Texas Parks and Wildlife Department for catching a big fish may have a better chance of achieving that goal this year.

Fisheries biologists encourage anglers to seek these awards since the number of large fish caught is a good indicator of the condition of the fishery.

The award program has been expanded to include spotted bass, smallmouth bass and sunfish.

However, the department's Fisheries Division raised the minimum weights required to receive a certificate for two species—hybrid striped bass and largemouth bass. The minimum weight for hybrid stripers was raised from six to eight pounds, and the largemouth minimum now is eight pounds instead of seven.

Anglers catching a qualifying fish on hook and line in Texas waters should measure the fish's total length and have it weighed on an inspected scale certified for trade by the Texas Department of Agriculture. A statement of weight must be signed by a witness.

Then the angler should obtain an application form from a local marina, tackle shop or by writing the Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744, or calling toll-free 1-800-252-9327.

SPORTSMAN, BIOLOGIST HONORED BY T.O.W.A

The Texas Outdoor Writers Association's annual "Conservationist of the Year" awards have been bestowed on a Plainview sportsman and a Texas Parks and Wildlife Department employee.

Joe Don Scott of Plainview was cited for his role in formation of Pheasants Unlimited, Inc. in the Texas Panhandle area.

The organization has encouraged the establishment of better pheasant habitat by raising money used to pay landowners for maintaining portions of their

land in food and cover plants for pheasants.

The organization is similar in structure to Ducks Unlimited, Inc., which raises money to enhance duck habitat in Canada and Mexico.

Horace Gore received the other Conservationist of the Year award for his years of work in upland game programs.

T.O.W.A. officials said Gore, who now heads the department's white-tailed deer program, has made significant contributions, particularly in the restoration of the eastern wild turkey to East Texas and management of the Rio Grande turkey resource in the western half of the state.

TEXAS FIRST IN DEER BUT WHAT STATE'S NEXT?

Texas has more deer—totaling about 3.1 million—than any state. But what state comes in second?

Surprisingly, Oregon is second in deer numbers with 1.5 million. However, most of Oregon's deer are mule or black-tailed, while Texas' herd is predominantly white-tailed deer, according to the Texas Parks and Wildlife Department.

The runner-up state to Texas in white-tailed deer production actually is a toss-up between Michigan and Alabama, at approximately a million white-tailed deer each.

Wisconsin and Pennsylvania are at the next plateau, both with about 700,000 whitetails within their borders.

FISHING LICENSE SALES SHOW BIG INCREASE

Revenue from licenses sold by the Texas Parks and Wildlife Department hit an all-time high during the 1978-79 fiscal year, at \$13,898,057.

Substantial increases in sales of resident and nonresident fishing licenses, resident combination hunting/fishing licenses and resident trapping licenses were largely responsible for the increased revenue in the fiscal year which ended August 31, 1979.

Some of the gains were offset by a decline in both resident and general nonresident hunting licenses, the department said.

Resident fishing license sales jumped from 912,576 licenses which brought \$3,654,465 in 1977-78, to 1,011,530 licenses and \$4,049,389 revenue in 1978-79. Nonresident fishing license sales increased from 29,302 worth \$293,480 in 1977-78, to 36,319 licenses valued at \$363,809 during the past fiscal year.

Resident combination hunting/fishing licenses gained from 447,567 bringing in \$3,806,657 during 1977-78, to 518,403 sold in 1978-79, worth \$4,408,969.

COMMERCIAL REDFISH QUOTAS NOT ATTAINED BY FISHERMEN

Commercial fishermen on the Texas Gulf Coast landed only 55 percent of their quota of red drum (redfish) assigned under provisions of the Red Drum Act during the year which ended August 31, 1979.

The Red Drum Act, passed by the Texas Legislature in 1976, assigned maximum redfish commercial harvest quotas for each bay and the Gulf of Mexico. When 90 percent of the quota is reached in a particular bay, the act directs the Parks and Wildlife Department to ban the sale of redfish from that bay until the end of the quota period.

The only bay systems which approached the 90 percent maximum were Sabine Lake, with 85 percent, and the Lower Laguna Madre, at 78 percent.

ROCK ART PRESERVATION STUDY APPROVED FOR SEMINOLE CANYON

A program attempting to preserve valuable prehistoric wall paintings at Seminole Canyon State Historic Park in Val Verde County has been authorized by the Texas Parks and Wildlife Commission.

The commission, meeting in Austin January 24, approved expenditure of \$58,000 in an effort to learn how to halt deterioration of the rock art which apparently is being eroded by moisture.

The program will include extensive studies of methods for preservation of the rock art and also for stereo photography to ensure accurate records of the art in the event the deterioration cannot be halted.

A University of Texas research team will inventory the archaeology of the entire area and perform the stereophotogrammetry (stereo photography) portion of the project. This phase is to cost \$53,740.

Funding also was approved for purchase of a hydro thermometer, an instrument which will record temperatures and relative humidity at the rock shelter.

Parks Division Director Paul Schlimper told the commission he also anticipates obtaining the services of an art conservationist consultant who has had experience in preserving historic structures in Rome and Venice.

The park is located just a few miles north of Amistad Reservoir, and Schlimper said there has been some speculation that increased humidity created by the lake has accelerated the deterioration, but this has not been proven.

TEXAS STATE RAILROAD ROUTE MODIFIED

The Texas State Railroad will not operate on a round-trip basis between Rusk and Palestine for the 1980 season scheduled to begin March 15.

Instead, the scenic railroad operated by the Texas Parks and Wildlife Department will operate two separate trains—one departing from the Rusk park depot and the other from the Palestine depot. The trains will turn around before reaching the mid-point between the two cities.

During last season trains made round trips between the two cities as well as some shorter runs to the halfway point and back.

The change was authorized by the Texas Parks and Wildlife Commission in order to avoid a major bridge which a recent engineering study showed will require replacement or major repair in the near future.

The commission authorized funding for maintenance facilities at Palestine, an additional locomotive, a turntable near Maydelle on the Rusk end of the route and a wye turnaround track about seven miles east of the Palestine station.

Parks Division Director Paul Schlimper told the commission the main problem involves deterioration in the 1,075-foot-long bridge spanning the Neches River approximately halfway between Rusk and Palestine. The commission deferred action on bridge replacement or repairs pending further study.

Schlimper said he anticipates the two turnaround projects will be completed in time for the season opening March 15, which coincides with traditional Dogwood Festival activities centered around Palestine.

The railroad's spring schedule will be March 15 through May 18, on Saturdays and Sundays only. Trains will depart the Rusk depot at 11 a.m. and return at 12:30 p.m. The Palestine train will depart at 2 p.m. and return at 3:30 p.m. Fares for all runs will be \$4 for adults and \$2.50 for children ages three through 12.

An expanded summer schedule will be May 24 through September 1, with runs departing at 11 a.m. from Rusk depot and 2 p.m. from the Palestine depot on Thursday through Monday each week. The line will be closed Tuesdays and Wednesdays during the summer schedule.

For reservations or other information write Texas State Railroad, P.O. Box 39, Rusk, Texas 75785, or call 214-683-2561.



Fast-water Bass

by Jim Cox



Texas has no native trout, but it has spotted bass which are just as good.

That statement is enough to elicit derisive groans or gales of laughter from those who have experienced the joys of angling in a bona fide trout stream.

But wait. Texas is blessed with the native spotted bass which seems to act like a trout, think like a trout and lives in troutlike river habitat. And it is infinitely more accessible than those wary residents of distant mountain streams.

To be sure, catching a spotted bass in a Texas river would never match the sophistication of expertly dropping a No. 13 midge over a Beaverkill brown trout during a hatch. But even some dyed-in-the-waders trout fishermen are beginning to realize the joys of light-tackle fishing for spotted bass.

First, it should be understood that the Kentucky spotted bass, and its close relative the Guadalupe spotted bass, are entirely different from the largemouth bass. Their main differences in appearance are a slightly smaller mouth and a faint row of lines below the lateral line on spotted bass. The spotted bass also has a well-defined tooth patch on its tongue. A third method of distinguishing spotted bass is a close examination of the dorsal (top) fin. The membrane that lies between the end of the dorsal spines and the beginning of the dorsal soft rays is not as deeply notched on this species as it is on the largemouth bass.

But the real difference in largemouth and spotted bass lies in habitat preference. Both species evolved as stream fish. But spotted bass are found in the swiftest water, while largemouths prefer backwaters and sloughs. Even when found in lakes, spotted bass cling to the riverine areas where there are steep banks and points with rock and gravel sides and bottoms.

Spotted bass are native Texans, and they thrive in most of the state's major river systems. In fact, spotted bass are found in some stretches of shallow, turbid rivers where the casual observer would hardly suspect the presence of any kind of game fish.

It would be difficult, if not impos-

Drifting down a Texas river is a pleasant enough activity in itself, but when combined with light-tackle angling for spotted bass it can become a day to remember. These fishermen are finding spotted bass action on a stretch of the Colorado River near Bastrop. Anglers who take the time to learn about Texas rivers can enjoy the fruits of what department officials consider an underutilized resource.

sible, to pinpoint the state's best spotted bass fishing lakes and streams. There are several reasons for this. One is the fact that spotted bass often are mistakenly identified as largemouths. Another is that angler effort on Texas rivers is sporadic because of difficult access and a lack of boat-launching facilities in some areas, periodic high water flows and the necessity of a boat or canoe to pursue effectively the river bass. Also, river fishing in Texas traditionally is associated with trotlining for catfish.

However, fine spotted bass fishing is a certainty in sections of the Cypress, Sabine, Neches, Upper Brazos, Colorado and Guadalupe River systems and in Lakes Travis, Caddo, Texoma, Whitney, Stillhouse Hollow and Lake O' the Pines.

Department fisheries biologists believe there are perhaps hundreds of miles of excellent spotted bass river habitat where the fish have hardly had the opportunity to glimpse an artificial lure of any kind. In fact, this is one of the prime attractions to those who have discovered river spotted bass fishing. These fish are more easily enticed into striking than the lure-smart largemouths in heavily fished reservoirs. Add to that the eye-pleasing scenery along Texas rivers and you have a combination to make even the most rabid trout angler at least temporarily forget about those rifles in Rocky Mountain streams.

The sporting qualities of spotted bass may be questioned by anglers who point out, correctly, that spotted bass don't grow as large as largemouths. However, spotted bass in the two-pound class are not uncommon, and tricking a three-pound-plus specimen is not at all beyond

the realm of possibility for the skilled river fisherman. And on light tackle a two-pound spotted bass fights like a barracuda. The flyrod angler who blithely tosses a popping bug beneath an overhanging willow branch in a spotted bass neighborhood should be prepared to see an almost frightening bend in his favorite trout wand.

The prospective spotted bass fisherman might be surprised upon learning that hot fishing action is nearby. A good starting point for

cornering some river bass is to pick out a section of river and ask local fishermen or a department biologist if it is known to contain bass. If the answer is yes, chances are the fish are spotted, even though some fairly knowledgeable anglers may figure them to be largemouths.

Next, determine the water flow and be aware of any hazards such as falls or stretches of shallow riffles where a boat might run aground. Some rivers offer areas where wade fishing is productive, especially

during low water-flow periods.

A flat-bottom aluminum boat usually is the best craft for spotted bass fishing, but a canoe might be best in swifter areas such as the upper Guadalupe River. A trolling motor also is valuable although not essential, and an outboard motor can be used in most major rivers if the operator is vigilant in the presence of stumps, rocks and other obstacles. There are boat ramps at points along most Texas rivers, but finding them can be difficult with-

The spotted bass on the right exhibits the characteristic leopard spotting pattern for which the fish is named. However, the line of tiny spots seen below the lateral line on the larger fish is a more reliable indicator of spotted bass. Largemouth bass do not have spots below the lateral line.



Glen Mills

out detailed county maps or information from local fishermen. A shuttle system between ramps is the best arrangement for an uninterrupted day of fishing. River fishing parties should be sure of the distance to be floated before starting out, and they also should keep in mind that nearly all the riverbank areas encountered will be on private property and subject to trespass laws.

Once the equipment and location are set, the angler very likely has accomplished the most onerous task. Catching spotted bass usually is not difficult, and even inexperienced anglers can learn to locate the best habitat after fishing a few hundred yards of shoreline.

On sunny days in particular, look for spotted bass in shady areas, and be sure to cast around and under brush or tree limbs hanging from the bank. Overhanging cutbanks are natural hiding places for spotted bass, and the closer a lure can be cast to the bank the better. The fish seem to hug the shoreline watching for insects, frogs or terrestrial creatures to make a fatal wrong turn. They often stay in the deeper holes where the water swirls, creating an eddy, but oddly they also congregate along the outer curve of a bend, where the current is likely to sweep food items their way. Any large objects in the water such as fallen trees, piles of driftwood or large boulders can be potential spotted bass hideaways.

Spotted bass can be caught on a wide variety of baits, live and artificial. Small hairpin-type spinners are excellent because the fish readily hit them and they have the additional advantage of being fairly snag-proof—a real plus when fishing from a drifting boat in tricky river currents. Another lure which is tailor-made for fishing moving water is a standard small lead jig head with a two-inch section of a red, brown or purple plastic worm threaded thereon. This lure drops into the deep holes quickly, and when retrieved in rapid jerks seems to duplicate the motion of a crawfish heading for cover.

But the best and most exciting way to trick the "green trout" of

Texas is to use a topwater lure. Small poppers or torpedo-shaped lures with propellers fore and aft can entice a vicious strike if cast near choice habitat. Flyrod enthusiasts can have a field day with small popping bass bugs, and long casts generally are not necessary from a properly positioned boat.

As with largemouths, spotted bass prize crawfish as food, and anyone with sufficient patience and know-how to fish them properly can expect to be rewarded.

Crawfish can be fished using a slip sinker for weight, and they can be cast into one spot or slowly retrieved like a plastic worm. Or, they can be free-fished where the water is shallow and the current is not swift.

To bait the hook, begin at the tail of the crawfish and run the point through the abdomen until it enters—but does not break—the thorax or middle section. This rig keeps the bait relatively weedless. Crawfish sometimes can be obtained at bait shops, and they are easily captured by seining small creeks or bar ditches after a rain. They can be kept for several days in an ice chest with about an inch of water and some weeds or leaves for cover. The lid should be left off or ajar to allow air circulation.

Minnnows, hellgrammites, grasshoppers and perhaps a number of other natural baits catch spotted bass if presented in the right habitat. However, when the water is clear it may be necessary to cast into likely spots rather than moving into the area and fishing straight down, tight-line-style, with a rod or pole. Spotted bass, like the other members of the Micropterus family, are sight feeders and are easily spooked by fishermen or boats approaching too close.

For the record, spotted, largemouth and smallmouth bass all are members of the sunfish family. True bass include the striped bass and white (sand) bass, both of which are found in many Texas lakes and rivers. As stated earlier, spotted bass are rather easily distinguished from largemouths. They also are easily distinguished from the smallmouths which have been introduced in Texas by the department.

Smallmouths lack the distinct black lateral line seen on spotted bass and largemouths. Smallmouths also have rich bronze coloration on their sides and have bright red eyes.

The most difficult identification problem is between the Kentucky spotted bass and its close relative the Guadalupe spotted bass. As far as fishermen are concerned, the main, practical difference is that the Kentucky variety tends to grow to a larger average size than the Guadalupe. Guadalupe spotted bass are found only in the Colorado, San Antonio and Guadalupe River systems. These rivers also contain populations of Kentucky spotted bass, but the two species always remain distinct and apparently do not hybridize.

Spotted bass spawn when the spring water temperature reaches 60 or 70 degrees Fahrenheit in either streams or reservoirs. They are a bit more selective than largemouths in their spawning requirements.

Male spotted bass, like other members of the sunfish family, prepare nests on rock and gravel bottoms in two- to 12-foot-deep water. After the spawn, the male fans the eggs to keep them free of debris and constantly provided with oxygen. Hatching time varies, depending on water temperature, but it usually is within two to four days. Upon hatching, the fry remain in a school and are guarded by the male for as long as a month. They reach sexual maturity as early as one year, but some may not mature until their third or fourth year.

Spotted bass grow at a generally slower rate than largemouths, and spotted bass in rivers usually have a somewhat slower growth rate than those in reservoirs. The current state record spotted bass, caught from Lake O' the Pines in 1966, weighed five pounds, nine ounces.

But as any sportfisherman knows, the size of the fish is relative only when considered with its sporting qualities, type of tackle used and the general pleasantness of the angling experience. And that's why a stringer full of fry-sized spotted bass from a Texas river truly symbolizes high-grade fishing pleasure. **

LONG SHOTS SHORT CASTS

compiled by David Baxter

Higher Priced Cans—

Reynolds Aluminum has increased the bounty paid on aluminum cans from 17 cents a pound to 23 cents a pound. Recycling aluminum saves about 95 percent of the energy required to make the metal from bauxite ore. During the company's 11 years of recycling, 14 billion cans have been collected and \$100 million paid.

Grand Slam Hunter Loses License—

In an attempt to complete a "grand slam" for North American sheep, a California hunter has been fined \$10,000, required to report to a probation officer for two years and has lost all his hunting and fishing privileges throughout the country for two years. The Californian, Krosrow Sanjabi, persuaded 22 friends and relatives to submit applications for one of the 80 tags Nevada issued in a 1977 drawing to hunt the desert bighorn sheep. The desert bighorn is one of four sheep in the so-called grand slam; the others include the dall, the stone and the Rocky Mountain sheep. Sanjabi had taken a bighorn in 1971 and was ineligible under Nevada law to apply for another tag for 10 years. The ruse paid off when one of the 22 applications was drawn. Sanjabi bagged a sheep, and took it to California, which is a violation of the federal Lacey Act that prohibits transportation of illegally taken wildlife across state lines. His downfall came when he accompanied the legal tagholder to the Nevada Department of Wildlife where hunters are required to fill out report forms on their hunt. There he was recognized by Nevada wildlife officers who initiated an investigation with the U.S. Fish and Wildlife Service.

Tax Break Offered for Wildlife Land Sales—Legislation has been introduced into the U.S. House of Representatives that would give wildlife agencies a more competitive position to bid on important wildlife habitat. The bill would exempt a seller from federal capital gains taxes on receipts from lands sold or exchanged in fee simple or easement for use in fish and wildlife conservation or for the preservation of natural areas.

Missouri Fines Go to County Schools—Those in Missouri who broke wildlife laws and got caught contributed \$224,690 to the state's public education last year. Fines from game violations in Missouri are funneled to the county school system. Conservation agents made 7,619 arrests with 7,397 convictions.

Reward is Twice the Fine—The North Carolina Chapter of the National Wild Turkey Federation has paid a \$100 reward for information that led to the arrest and conviction of a hunter who killed a wild turkey illegally. But the violator paid only \$52 in fines; maximum fines for the offense in North Carolina is reported to be \$200. According to a report, the offender commented to the North Carolina agents that he would pay another \$52 if they would let him keep the turkey.

New Program for Penn. Wildlife—The Pennsylvania Game Commission has started a program to raise funds and broaden and expand the agency's wildlife management activities. Called Working Together for Wildlife, thrust of the program will be the enhancement of conditions for the many species of wildlife not hunted in the state. As is the case in many other states, Pennsylvania's hunters have objected to use of hunting license revenue for management of species other than game animals. And some nonhunters, who have been reluctant to buy licenses, have not had a readily available means through which they can contribute to wildlife management. No details on the program yet, but the game commission is accepting contributions.

The Toe Knows—Your big toe can tell you which sleeping bag to buy, according to researchers at the University of Wisconsin, Green Bay. Since the big toe is the furthest body extremity, it acts as a

thermostat, triggering a reduction in blood circulation when the temperature drops below 64 degrees to conserve heat for vital organs. This brings on shivering and enough discomfort to keep campers awake.

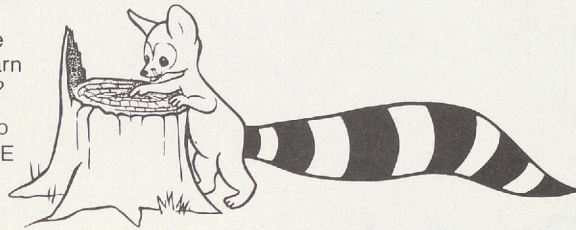
New Federal Policy on Predator Control—Secretary of the Interior Cecil Andrus has revised the federal policy on predator control, particularly as it affects coyotes in the western United States. The new policy emphasizes increased research into nonlethal control methods. Andrus is quoted as saying: "Predators play an essential role in the natural environment. But to some western livestock raisers the problem can be a source of major economic hardship." Some of the major points of the policy include continued use of aerial gunning, M-44s and trapping. The practice of denning, killing coyote pups in the den, has been discontinued. There will be no further research or development of potential uses of Compound 1080.

Aerial Application of Mirex Proposed—The U.S. House Agriculture Committee has reported a bill which would allow the chemical mirex to be sprayed from airplanes across large areas of the South to control fire ants. Mirex is a persistent pesticide that is effective in controlling fire ants. Its use has been banned by the Environmental Protection Agency because of some evidence that the chemical causes cancer. It also has been proven to be lethal to shrimp and other aquatic life. Argument is more over the aerial application of mirex than over the chemical itself.

Agencies Strive to Save California Condor—An agreement between five federal, state and private organizations is being touted as unprecedented and one of the most extensive cooperative efforts ever made to save an endangered species—the California condor. There are estimated to be only 25 to 30 of the huge birds which have nine-foot wingspans and weigh some 20 pounds. In a steady decline for the past several years, there has been so little reproduction that birds are dying faster than they are being replaced. Work with the birds will range from field studies and tagging some birds to a possible program of forming a captive breeding flock.

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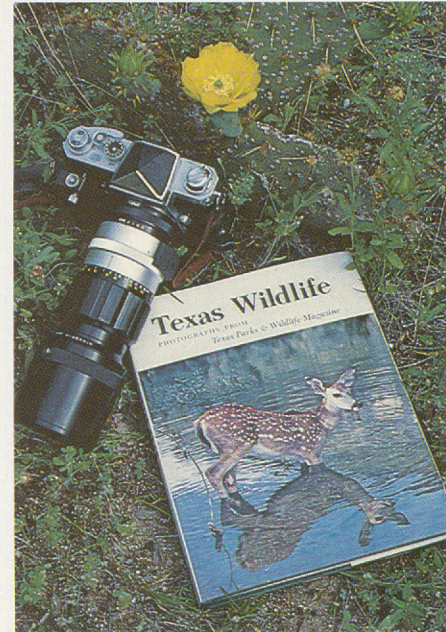


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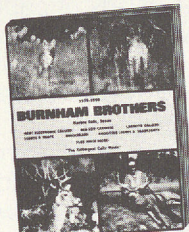
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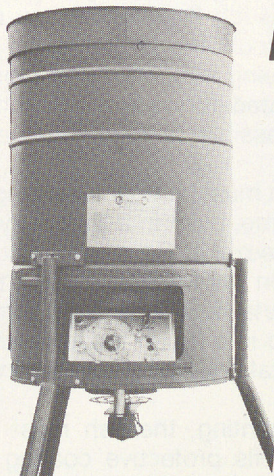
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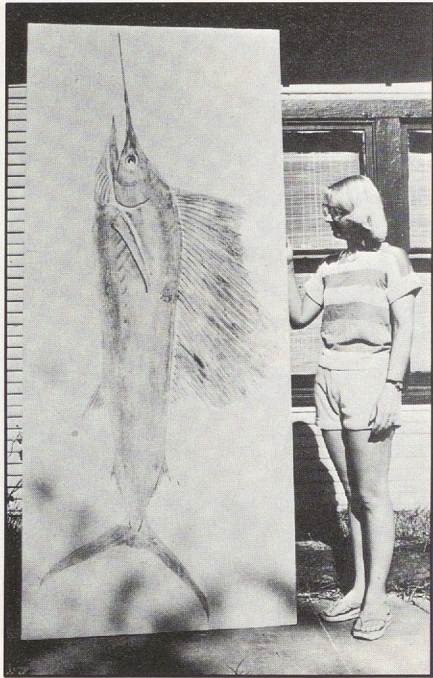
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Keeping a photographic record of your trophy fish is one way to prove your angling skill to those who might doubt your ability, but a photograph may not do your catch justice. If the photo contains nothing to give size reference to the fish, your 18-inch bass may look no bigger than the 15-inch one your father caught last year.

One way to have a true record of your catch without photographs or the expense of a mounted trophy is to borrow a technique called *gyotaku* from the Japanese. In a loose translation, *gyo* means fish and *taku* means to print by hand or to make a rubbing.

Japanese fishermen have been using this method to make prints of their fish for more than 300 years. Their amateurish efforts were not meant to be artistic. *Gyotaku* was merely their way of recording the size and type of fish they caught, but it now is being recognized by many as a true art form.

The skill and individuality of each artist has a definite effect on the appearance of the finished print. By experimenting with different types of ink, paper, cloth and painting techniques, varied results can be obtained from one fish.

Here is a list of the basic supplies you will need to make a *gyotaku* print.

1. **Ink**—Traditionalists use Japanese "sumi" ink for *gyotaku* because it is quick drying and does not show

Young Naturalist

Gyotaku

Article by Ilo Hiller

Photos by Leroy Williamson

brush marks. It also is water soluble and can be washed off the fish after the printing is done. However, any good water-base block printing ink will produce a good image. Acrylic paints also have been used, and some artists are experimenting with oil paints.

2. **Paper**—Rice papers, although a little expensive for the beginner, are considered traditional, but they are not required. There are several different types and each produces a different effect. *Sekisu*, a white, felt-like absorbent rice paper creates a soft, slightly blurred image. *Chiri*, a tan paper with brown flecks, has a harder surface and produces a crisper print; however, the ink does not show through this paper and the artist must work "blind" when making the rubbing. *Unryu*, a rice paper with threads, creates still another type of image.

Working with rice papers takes a bit of care since the paper gets soft, tears easily and, occasionally, fish spines punch through it and ruin the print. For these reasons, and until you learn the *gyotaku* technique, you may find it cheaper to use the smooth, inexpensive, brown paper towels sold for use in public restrooms. Paper towels with a textured surface do not produce as clear an image as smooth ones.

3. **Cloth**—Some beginners prefer to use cloth because it is easier to work with than paper. Any material with a fine, smooth weave will produce a clear print. Thin cotton and unbleached muslin are recommended. Raw silk produces a nubby, dotted effect. Experiment with any solid-colored material you may have to determine what results you like best. Burlap and other loose-weave materials do not produce good prints.

4. **Brushes**—A medium-soft, flat-bristled brush is best for applying the

ink. The width of the brush should vary according to the size of the fish—narrow for small fish, wider for larger ones. Final touch-up work requires a regular art brush.

5. **Pins**—Long-shafted straight pins are used to hold the fins in an extended position. Pins used for mounting insects in a scientific collection are good for this use.

6. **Modeling clay**—Wads of modeling clay sometimes are needed to hold a rounder fish in position and pins can be stuck into the clay to hold the fins in place.

7. **Paper towels**—Absorbent towels are needed to clean the fish and wipe up any messes. Wads of paper toweling also can be used to support the fins, and as mentioned in the discussion of paper, some paper towels can be used for printing.

8. **Work area**—A piece of styrofoam, cardboard, cork or balsa wood makes a nice work surface and will be soft enough to stick the pins into.

Once you have gathered together the supplies you need for *gyotaku*, all you need is a fish. To produce a good image, the fish must be handled carefully from the time it is hooked until it is printed. Missing scales, gaff marks and other such flaws will show up. The fish should be printed within 24 hours of being caught and it should be refrigerated during as much of this time as possible to keep the flesh firm.

If the fish must be kept for a longer period of time, put it in a ziplock-type bag and freeze it. Be careful not to damage it in the freezer. Placing the fish on a metal rack or allowing something to jab into it can leave permanent indentations in the skin and ruin the print.

Before printing, the fish must be cleaned of its protective coating of slime. If you do not intend to eat the fish later, alcohol or a mild detergent





How the ink is applied to the fish is up to the individual artist. A body outline with highlighted head, fins and stripes was chosen for this spadefish. After the ink is transferred to the paper by gentle rubbing, peel the print from the fish, starting from the head to lessen the chances of tearing the paper with the scales or fin spines. Add the finishing artistic touches with a small brush, but keep them to a minimum to retain the gyotaku effect. Sign the print with a name chop and allow the print to dry for a few hours before handling or framing it.

in water can be used. Otherwise, use water-moistened paper towels and gently wipe the surface from head to tail, being careful not to remove any scales. Some people sprinkle salt on the fish to make cleaning easier, but if the surface is rubbed too hard with salt, it can be damaged. Rinse the fish well and use paper towels to dry it. It is not necessary for a frozen fish to be completely thawed before printing, but it must be thawed enough to allow you to position the fins.

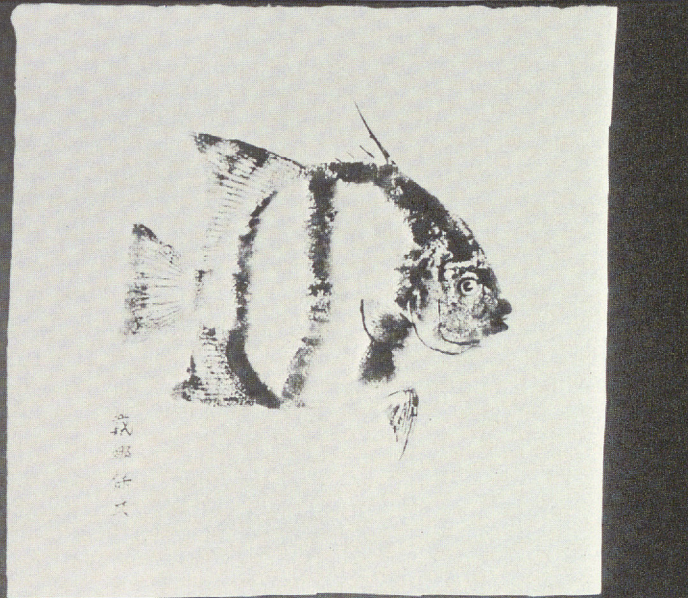
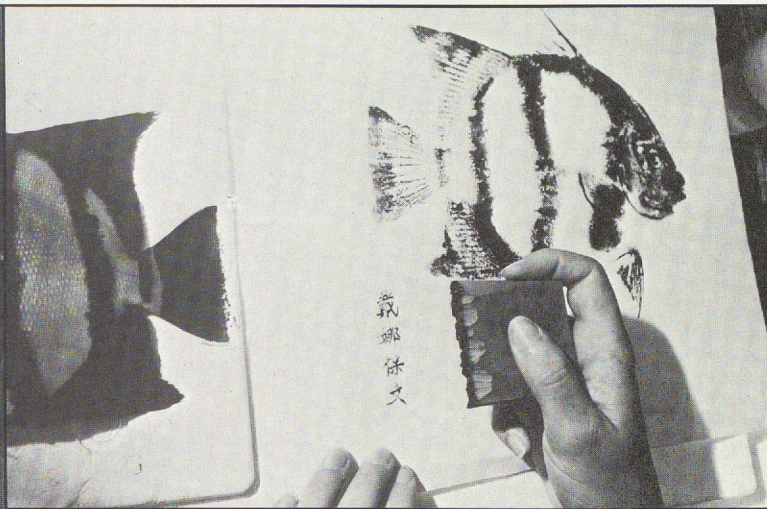
Once the fish is clean, extend the fins and pin them in place. Be sure the pin heads are level with the surface so they do not prevent the paper or cloth from touching the fin. Use as few pins as possible because they will show up in the print.

Now you are ready to apply the ink directly to the fish, but before you be-

gin, decide whether you are going to brush the ink toward the head or tail. Follow the same direction on the whole fish or the ink may not look even on the finished print. Apply a thin coating of ink to avoid ink blots.

How you paint your fish is a matter of preference. You can paint the whole surface, except the eye, and rely on the scale pattern for your image, or you can apply ink to the edges of the fish to give a body outline and highlight the stripes or other color patterns along with the fins. If you get some ink in the wrong place, gently remove it with a damp paper towel. This painting process should be done quickly so the ink will not dry before you are ready to make your print.

Wash your hands when you are through painting to prevent unsightly smudges and fingerprints from being



transferred to the paper or cloth when you handle it. Lower the paper or cloth, which should already be cut to the proper size, onto the fish. Gently rub the fish to transfer the ink, but do not let the fingers linger on any one spot too long or they will cause smudges. As the ink transfers to the paper or cloth it bleeds through slightly so you will be able to tell when you have covered all painted areas.

Slowly peel the print from the fish starting from the head. If you start at the tail, the scales or fin spines are more likely to tear the paper or snag the cloth.

Now you are ready to add the finishing artistic touches. Traditionalists do not add any hand painting except for the eye, but many artists think the final print is improved by emphasizing the edge of a fin or the gill area

with a bit of shading. Be sure to keep any retouching or hand painting to a minimum to retain the effect of the gyotaku technique.

The final step before framing your print is adding your signature. The Japanese use a carved wooden stamp known as a name chop. Since the stamp is an ink transfer process, the signature blends with the print. You can carve a name chop from wood or an eraser. If carving is not one of your talents, any commercial rubber stamp manufacturer can make a signature stamp for you.

Allow the print to dry for a couple of hours before handling it. If the paper or cloth gets wrinkled before the print is framed, smooth it with an iron. Be sure to use an ironing cloth between the iron and the back of the print to protect your piece of art. **

Editor's Note: *Gyotaku is one of the art forms being recognized and preserved by the Nature Printing Society. Through the Santa Barbara Museum of Natural History, this society is establishing a library of nature printing literature, maintaining a permanent repository of nature prints using different techniques and subjects and organizing a traveling exhibit to promote nature printing as a legitimate art form. Those interested in learning more about the Nature Printing Society may contact Dinah Bowman through her art studio and gallery at 312 Fifth Avenue, Portland, Texas 78374. Dinah is the only Texas member of the society and the only artist on the Gulf Coast who prints large fish.*

LETTERS TO THE EDITOR

Bobcat Ear Spots

Your article on bobcats in the July 1979 issue was very interesting and informative, but I have never learned what the light spots behind each ear are for, if anything.

Jim South
Hewitt

■As far as our department biologists have been able to determine, the light spots behind each ear represent nothing more than a color pattern.

Wormy Bass

For years I have caught, cleaned and eaten black bass from tanks or ponds. I had heard they were wormy, but had never paid any attention to it. Since I retired last year, I have had more time to fish and to check the bass closely when cleaning them. I found many of them had small white worms down the back around the fins. Are these fine game

fish all right to eat when you find them in this condition? How do the worms get into the bass?

Bill Odom
Whitesboro

■Don't worry about the small worms you found in the fish you caught; these wormlike parasites are common in fresh water throughout the state, although they are more common in ponds than in larger streams or reservoirs. They may appear on the fish's scales or under the skin, but in any case they are harmless to humans. Pare off the affected area and cook the fish in the normal manner. Only part of the grub's life cycle is spent in fish. The remainder is spent in snails and blue herons.

Senior Citizen Fishing License

Do you have any information as to the senior citizen's status in regard to the

new fishing license laws on Lake Texoma? At present a senior citizen must have a license to fish on the Oklahoma side, but is exempt on the Texas side.

Vernon P. Lewis
Irving

■Texas residents over 65 are required to have either the new Lake Texoma license or a nonresident Oklahoma fishing license if they plan to fish on the Oklahoma side of the lake. Of course, if fishing is confined to Texas waters on the lake, senior citizens need no license.



Scrapes and Rubs

Which of the two sexes of deer makes the scrape on the ground during the rutting season? I've heard conflicting stories about it, and I'm confused.

J. L. Carwile
Hughes Springs

■The buck deer makes the ground scrapes during rutting or breeding season. These scrapes, which seem to advertise a buck's presence in the area, are roughly circular patches of earth torn up by bucks pawing with their front feet. Do not confuse the scrape with a rub. Rubs are made on saplings or bushes in early fall by bucks trying to remove velvet from their antlers. During the rut, most bucks also spar or fight with small trees and bushes, making additional rubs.

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BACK COVERS

Inside: Found along roadsides, thickets and at the edge of woods, the spiderwort can be identified by its three roundish, symmetrical petals accented by golden stamens. Photo by Leroy Williamson.

Outside: Raccoons are excellent climbers. They can run skillfully along the tops of branches and sometimes sunbathe in the crotch of a tree. However, they usually spend the daylight hours sleeping in a hollow log or tree which forms their den. Raccoons almost always live near water, where they forage for food, making trails to the water's edge. Photo by Leroy Williamson.



