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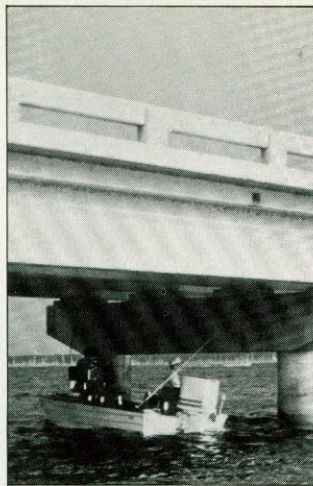
**TEXAS PARKS & WILDLIFE
magazine**

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

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6

March 1974, Vol. XXXII, No. 3

29



TEXAS PARKS & WILDLIFE

Die-off! by C. D. Stutzenbaker 2
When waterfowl become concentrated, they are subject to diseases
such as fowl cholera and botulism.

Find Their Level by Ilo Hiller 6
Crappie fishing can be a year-round sport if the angler knows
where to find them.

South Texas' Wildlife by Charles K. Winkler 12
Efforts by landowners to improve their wildlife habitat would
benefit wildlife and increase the value of the property for hunting
purposes.

Dolphins of Texas by David J. Schmidly and Betty A. Melcher 18
This, the final segment of a three-part series, introduces the dolphin
family.

Try Old Muddy by Tim Leifeste 24
Lake Colorado City State Recreation Park is situated on this
privately owned, but publicly available, lake.

Young Naturalist: Clean-up Campaign by Ilo Hiller 29
Get together and clean up your community's litter problems.

Outdoor Books 11 Long Shots, Short Casts 17
Photo and Art Credits 17 Letters to the Editor 32

Front Cover: Fluffed feathers help keep this male cardinal warm during cold
weather. Photo by Martin T. Fulfer.

Inside Front: What a shame that the next person who visits this picnic site
will have to face the careless littering of someone who wouldn't even use
the trash can provided. See related story on page 29. Photo by Bill Reaves.





DIE-OFF!

Dead and dying birds
resulted in fast action
to avert a possible
major waterfowl disaster.

by C. D. Stutzenbaker, Waterfowl Biologist, Port Arthur

A startling scene confronted a Wharton County rice farmer early last November as he surveyed a partially flooded, harvested rice field. Where only seconds earlier thousands of ducks and geese had taken flight, there remained hundreds of dead and dying birds. He saw sick, flightless birds swim feebly away to hide among the rice stubble while others lay dead on the levees.

After further checks, the farmer called the county game warden who quickly investigated the problem and radioed an urgent report to the Parks and Wildlife Department regional office. Promptly, word of the waterfowl die-off was spread to all key personnel in the Parks and Wildlife Department, the United States Fish and Wildlife Service and waterfowl authorities in Louisiana.

A number of sick birds were picked up and transported to the Veterinary Pathology Laboratory at Texas A&M University where laboratory tests were immediately begun. Tentative field diagnosis pointed to fowl cholera as the most likely cause of the bird loss which included shorebirds and ducks. While lab tests were being conducted, a field crew of local farmers and Parks and Wildlife Department personnel was hastily formed to conduct a thorough search and clean-up operation. The cleanup involved picking up all dead and dying birds and destroying them. Their remains were incinerated since it was apparent that a fatal epidemic was running its course among birds using the rice field.

The landowner was asked to drain the field. This was accomplished by cutting levees and running a tractor and plow through the inundated area to facilitate gravity-flow drainage.

Within a few days, laboratory tests were available which confirmed the tentative diagnosis—deadly fowl cholera. Maximum total waterfowl and shorebird losses were estimated to be approximately 1,000 birds. The majority of the birds lost were green-winged teal, blue-winged teal, shoveler and dowitchers. Despite



A field pathological examination was made on the carcass of a dead bird (left) immediately after the die-off was reported. To avert a major waterfowl disaster, propane gas guns (below) were set up to discourage birds from using the contaminated field. Surveillance teams, with retrievers to locate any incapacitated birds, closely monitored other fields (right) near the die-off site.



C. D. Stutzenbaker

the large number of geese using the field, less than a dozen were found dead.

Once the field was drained, the bulk of the birds moved to adjacent flooded fields. Realizing the rainy season along the middle Gulf Coast had begun, authorities decided to pump fresh water through the affected field to flush and dilute the contamination from heavy bird usage and the decomposing carcasses that had been missed in the mud and standing vegetation. Shortly after the flushing action, heavy rains fell to add more fresh water to the die-off area.

The field was kept under surveillance even after the death losses had completely subsided. Waterfowl populations in Wharton County continued to build through the month aided by a steady stream of northern migrants. Waterfowl usage of the middle coastal rice-prairie zone was heavy because nearly all harvested fields held surface water and waste grain was abundant since significant amounts of the 1973 crop were lost during tropical storm "Delia" in September.

In late November, a second die-off was discovered in the same field and to a lesser extent on two ponds in adjacent fields. The same mechanics for coping with the earlier loss were implemented. This time,

however, laboratory tests showed the losses were due to avian botulism. A maximum total of approximately 1,800 ducks, primarily green-winged teal, blue-winged teal, shoveler, pintail, gadwall and baldpate, was estimated to have been lost to the botulism outbreak. Goose mortality was not noted.

Fortunately, the botulism outbreak subsided abruptly with the second drainage. This time it was decided to attempt to completely dry the field. A dry, cold front with low humidity and bright sun aided the drying process. The only water that remained in the field was that which collected in the deep combine tracks resulting from harvesting the field during the wet, early fall period.

To counteract the continued attractiveness of the field to waterfowl, propane gas guns were set up at strategic points. These special, scare-device guns operated on compressed gas and emitted timed explosions sufficiently loud to discourage birds from using the area. In addition to the propane guns, the Parks and Wildlife Department dispatched a crew, working in shifts, to fire rifle and shotgun blasts to keep the birds from returning.

Fortunately, the extended dry weather and disrupt-



tive actions kept the birds away. Periodic checks were made of the field and adjacent waterfowl use areas and no evidence was found of a continuing die-off.

Botulism and fowl cholera are well-known killers of waterfowl, and practically every area of waterfowl concentration in the United States has experienced the effects of these diseases.

Fowl cholera is caused by the bacteria *Pasteurella multocida*. A few birds in all waterfowl populations are carriers... that is, they have survived a prior cholera outbreak and are healthy in appearance but contain the bacteria. It is believed that stress, a condition that may stem from over-crowding on a small acreage, triggers reproduction of the bacteria in the carrier bird, and the disease is then transmitted to other birds through contact with fecal materials and nasal secretions.

Botulism is a bacterial poisoning caused by the bacteria *Clostridium botulinum*. This bacteria forms spores that may remain dormant in the soil for many years. When conditions become favorable, as in the Wharton County rice field, the spores germinate and multiply in tremendous magnitude. There is a possibility the decaying bodies of birds not found and

incinerated during the cholera outbreak provided an organic medium to allow the dormant spores to germinate. The multiplying spores produced a powerful nerve toxin that, when ingested by birds, caused a paralysis of the respiratory system resulting in death.

Avian botulism is impossible for humans to contract. However, fowl cholera is similar to "shipping fever," a health problem frequently experienced by livestock growers. Humans can contract cholera, but the chances of hunters obtaining the infection from handling harvested birds is very remote.

Waterfowl and shorebird losses in Wharton county along the wildlife-rich middle-Texas coastal prairie are examples of the many adversities that face wildlife managers in their quest for game abundance. Swift, decisive action in dispersing the populations and removing infected birds, plus an extended break in the normally wet winter weather, aided wildlife biologists in holding the total losses to well under 3,000 birds and averting what could have been a major waterfowl population disaster. Total avian population in the several counties of the middle coast has been estimated at well over a million ducks, geese and shorebirds. **

To catch crappie:

Find Their Level

Article by Ilo Hiller, photography by Martin T. Fulfer

Whether they are called white perch, speckled perch, calico bass or any one of the other local names, crappie can provide year-round fishing pleasure for the angler who is wise to their ways.

Huge catches are taken during the two- or three-week spawning period from late March to early June in various parts of the South, but the experienced crappie fisherman can also fill a stringer before and after the spawning season by knowing where to look for this wide-ranging fish.

Water temperature controls the fish's spawning activities, but several weeks before the temperature reaches the ideal 68-degree level, crappie leave their deep, winter haunts and begin to gather in large schools along banks and ledges or around submerged rocks and brush piles. As the water temperature continues to rise, the fish move into shallower waters to spawn.

Amidst brush and weeds in water as shallow as one foot or as deep as 10 to 20 feet, the male crappie fans out a nest for the female's eggs. As the eggs are released, their adhesive surfaces cause them to stick to the weeds and brush in the nest where the male fertilizes them. He then stands guard to protect them from predators until they hatch.

It is during this time that anglers are able to entice the male into striking both artificial and live bait. Trembling bushes and brush along shallow shorelines will locate the fish, and the fisherman will have luck with tiny, 1/32-ounce jigs or any type of small fishlike lure, as well as live minnows.

The worst way to use the artificial bait is to cast it out and steadily reel it in. Instead, reel a bit, stop and then twitch the rod tip to cause the jig or lure to bounce and gyrate in front of the fish. No male crappie will be able to resist it long. The same is true with live bait. An occasional rod twitch will make it more attractive and keep the minnow active.

Anglers who concentrate only on the nest-guarding males during the spawning season and fish only along the shoreline are missing out on the action to be provided by immature males and females waiting to spawn. These fish can be found anywhere from 20 to 100 feet from shore at a depth about the same as the nests. The fortunate fisherman who locates this school will quickly catch enough for a nice fish fry.

Seven or eight days are required for the 5,000 to 20,000 eggs laid by one female to hatch, but less than one percent of the hatched fry will reach adulthood.

In fact, their own guarding father may be the first predator to make a meal of them.

If they survive, the crappie mature at two years and reach their full growth in four years. Perhaps it ought to be mentioned at this point that there are actually two species of crappie—white and black. However, since the male white crappie at spawning time may be darker than the true black crappie, color is not a reliable identification method. The easiest way to tell them apart is to count the spines in the dorsal fin. There are five or six in the white and seven or more in the black.

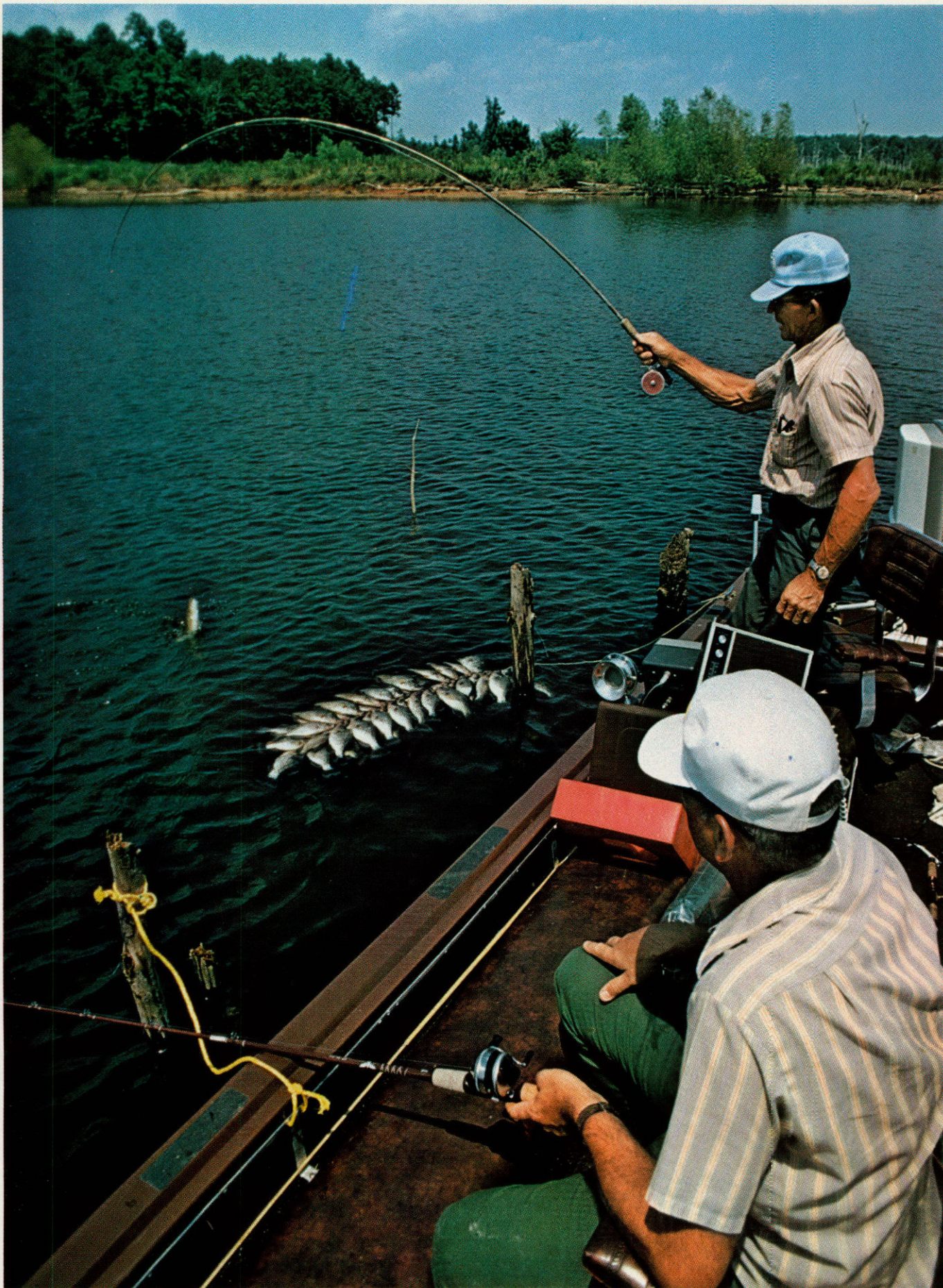
When fully grown, crappie can reach a weight of five pounds or more, but most fishermen land those weighing two pounds or less. The state record for the white crappie is four pounds, nine ounces and was caught in Navarro Mills Lake in February 1968. The record for the black crappie is still open with a minimum of four pounds required to qualify. Get out your fishing gear and maybe this year one of you will be able to land a record-size black.

Crappie are a short-lived fish with a maximum life span of four to six years, and their population runs in cycles. There may be large numbers available for two or three years and then the fish seem to disappear for an equal period. This up-and-down fluctuation is caused by the fish themselves. As the population grows, the mortality of the young also increases because the adults devour their own spawn and young. This annual eradication continues until the original brood has decreased to the point that it cannot completely destroy the yearly spawn. Once this point is reached, the population begins to increase until the adults can again devour almost all their young.

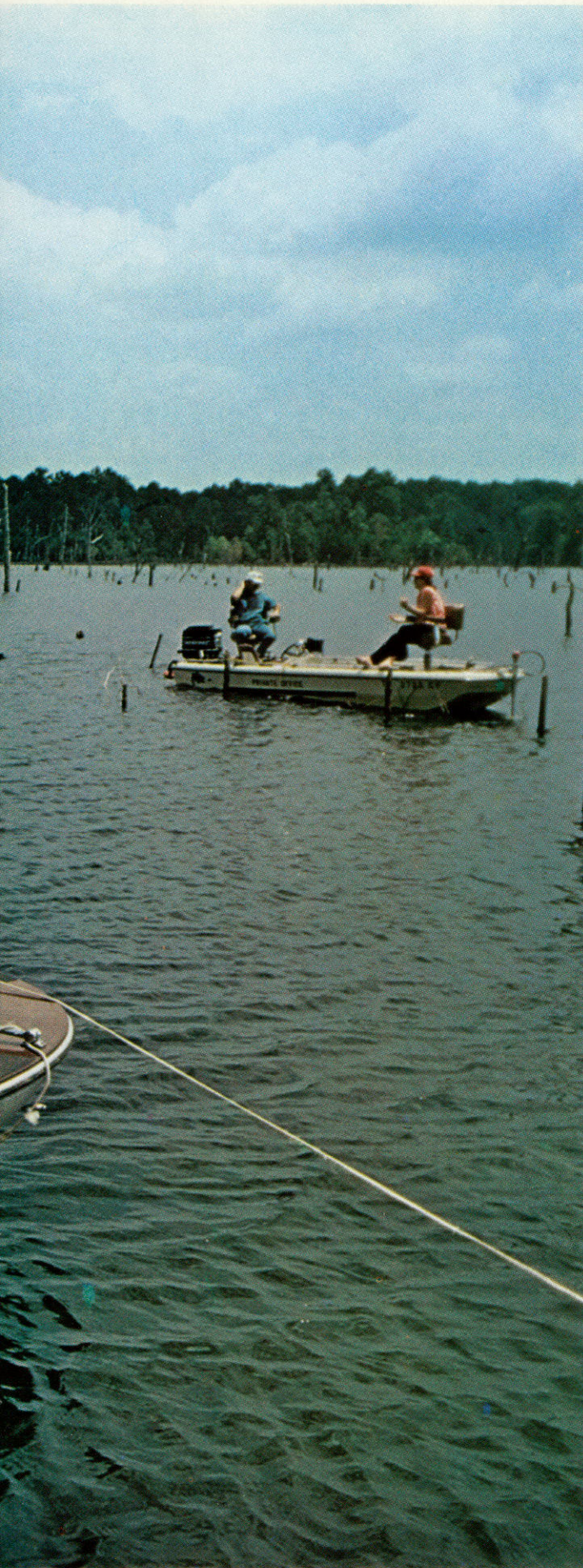
After the spring spawn is completed, the adults school again and start their wanderings in search of food. The wise angler will know it is time to leave the shallows and start fishing the ledges, drop-offs, channels, submerged obstructions, bridge pilings and brushy cover once more.

Crappie range at different depths seeking favorable water temperatures and may be found in water as shallow as eight feet or deeper than 25 feet at various times of the year other than spawning time. To be successful, the fisherman must locate the fish's chosen level because crappie will not rise more than a foot or so to take bait and will not dive for it at all.

Once a likely looking spot is found, the best way to find out how deep the fish are feeding is to lower







a small, lively minnow (hooked through the lips, back, tail or eye sockets) to the bottom and allow it to work for a few minutes. If no crappie bites, raise the bait two or three feet and again allow the minnow to work, occasionally giving the rod tip a twitch. Continue this action until the bait reaches the surface. If after three or four tries no crappie has struck the bait, move to another promising spot and try again until the fish are located.

Crappie are very sensitive to disturbances, so don't roar up to your fishing spot or there won't be one left within 100 yards of the boat. Kill the motor and drift into the fishing area or use a trolling motor to maneuver into position. Whenever possible, tie to a stump or snag to avoid having to drop anchor.

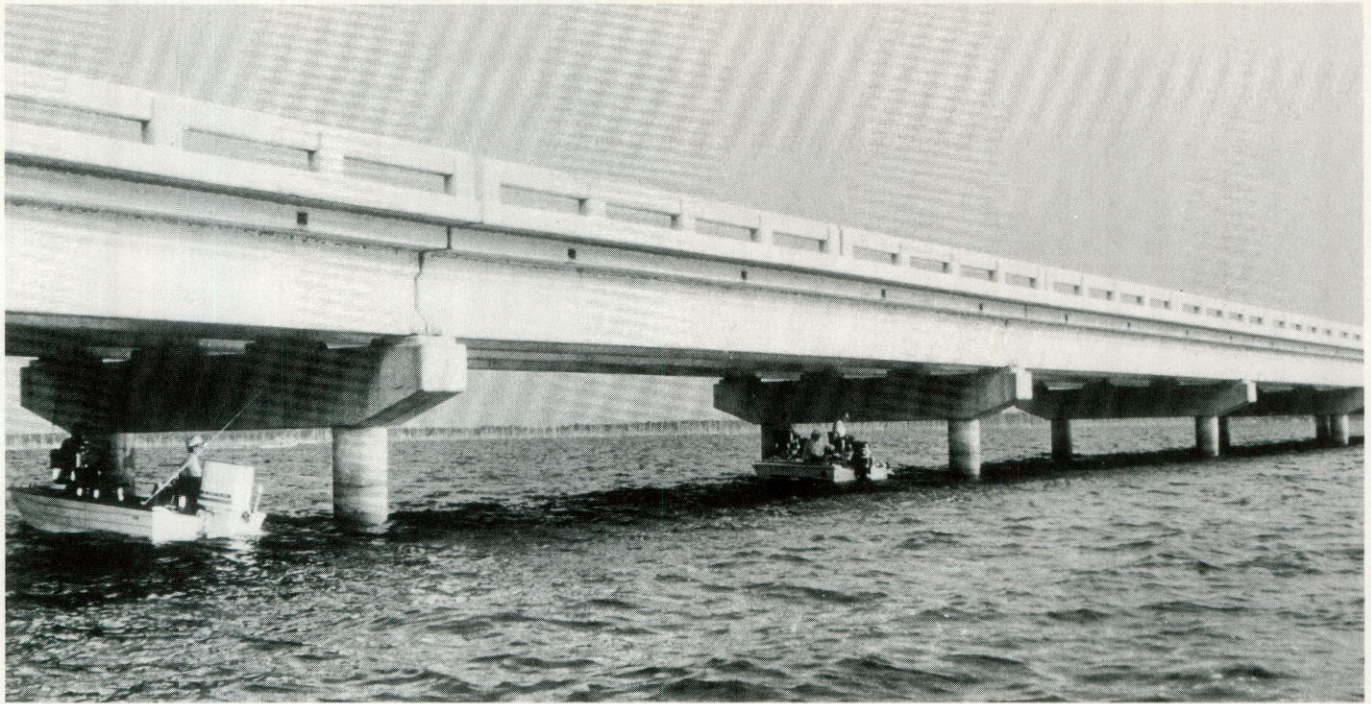
Elaborate tackle is not required, which may explain some of the fish's popularity. A cane pole is adequate when fishing the shallows, but a reel of some type is needed when the fish are in deeper waters. Spinning and spin-cast gear are probably the most popular because they allow the fisherman to quickly lower the bait to the desired depth. Light tackle also makes for more action when the fish is hooked. The crappie is not a spectacular fighter, but it does fight in tight circles and uses its flat body to add resistance as it is reeled to the surface. Don't try to horse the fish in or the hook may be torn loose. Crappie are known for their tender mouth and one of their common names is papermouth.

Although fishermen who swear by artificial lures will argue that using a tiny jig is the only way to fish for crappie, live minnows still are considered to be the most effective year-round bait. Beginning crappie fishermen will be wise to have a good supply of them because a crappie can skillfully strip a minnow from the hook without the angler's knowledge if the angler is not alert to the soft bite of this fish. Some fishermen improve their luck by holding the line between their thumb and index finger. This enables them to feel the slightest tap and they can quickly set the hook.

Speaking of hooks, a gold, 2/0, thin-wire one that will straighten out if it becomes caught in a submerged limb is the crappie fisherman's choice. This hook, tied on line of 25-pound test or less with a medium, tied to large split shot situated six to eight inches above the hook, makes up the crappie rig.

Since the crappie is a schooling fish, when one is caught it's a good idea to mark the line so the bait can be put back down at the same level. This will enable you to catch additional fish out of the school before it moves or is spooked away. A skilled fisherman can locate a crappie school and continuously take fish from it for three or more hours without disturbing the school. When a good productive crappie hole is found, the fisherman can also return to it again and again on successive fishing trips.

If you happen to be fishing a lake which is unfamiliar to you, either get a good map of the lake showing the channels and water depths; use a depth finder to locate the channels, ledges or submerged obstruc-



Fishing around the supports of the Highway 21 bridge over Toledo Bend Reservoir can prove productive.

tions; go with someone familiar with the lake; do all three; or do as we did at Toledo Bend and use the services of a good guide.

We visited Toledo Bend during August especially to fish for crappie. Knowing the fish can be found around stumps and submerged trees, we were overwhelmed when we saw the lake for the first time. In every direction we looked from the Pendleton Harbor Marina, all we could see were stumps, tree snags and skeletonlike trees. Surely crappie couldn't be located around every one.

Our fishing companions had fished the lake extensively for bass and knew where the good bass spots were located, but they had never fished for crappie and could be of no help to us. We finally decided that a guide was the answer to our dilemma since our time was limited. Ira Weatherly, who makes his home on the Louisiana side of the lake but works out of Pendleton Harbor on the Texas side, was recommended to us as both an experienced crappie fisherman and a productive guide, so we asked for his help.

Since it was already late afternoon, he suggested we go out that evening, tie up to one of the supports on the Highway 21 bridge which connects Texas and Louisiana and try our luck at night fishing. This is another popular way to catch crappie and Toledo Bend sometimes looks like a small city with all the lighted boats dotting its surface after dark.

Lanterns are used to attract insects which fall into the water and attract small bait fish. These, in turn, attract the larger predator fish which include crappie.

Luck was not to be with us that evening. We had only been under the bridge for a few minutes when bad weather moved in and it began to sprinkle. Pro-

tected by the bridge, we decided to go ahead and fish a while longer, but when the wind started blowing and the lightning began flashing, we decided the last place we needed to be was out on the lake. After a fast, wet boat ride back to the marina, we gave up the effort for the night.

Ira was disappointed we were unable to catch even one crappie before the storm drove us off. He claimed he had his reputation to protect and asked us to give him another chance the next day to show us how to fill a stringer.

True to his word, he left a message at the marina for us to meet him in a certain cove around noon because he had a crappie hole all staked out for us. Sure enough, when we pulled into the designated cove, there sat his boat tied to a snag. As quietly as possible we joined him and he showed us a stringer with perhaps 12 crappie already on it. The fish were located between 12 and 15 feet deep and were not hesitating to take the lively, small minnows he provided for our use. Although some of us caught more tree branches than crappie, within three hours we had 96, nice-sized crappie on the stringer and were ready to call it a day.

Dreading cleaning all those fish, we headed back to the marina where Ira had another surprise for us. He showed us how to fillet the fish with an electric carving knife, making quick work of the stringer of fish. Before we knew it, we had five plastic bags filled with fillets just waiting for the cornmeal and hot grease or the freezer.

A fish fry, of course, was in order for the evening and we all appreciated first hand just how good fresh-caught crappie taste. All agreed they were well worth searching for. **

OUTDOOR BOOKS

FRESHWATER FISHING IN TEXAS by Russell Tinsley; Cordovan Corporation, 5314 Bingle, Houston, Tex. 77018, 1973; 162 pages, \$4.75.

FISHING HOLES OF TEXAS by L. A. Wilke; Cordovan Corporation, 5314 Bingle, Houston, Tex. 77018, 1973; 139 pages, \$4.25.

Catching fish is said to be a matter of being in the right place at the right time and two Texans have written two books to help Texas freshwater fishermen do just that, catch fish.

Aimed primarily at the beginner, Russell Tinsley's new book, his sixth, gets down to the hook, line and sinker basics of catching everything from the tiny bream to the next-to-impossible paddlefish.

He includes chapters on bass, wall-eye, carp, gar, catfish (by line and pole or trotlining) and the "strange ones"—bowfin, Guadalupe bass and gaspergou.

For getting back to basics, Tinsley's book hits the mark but still contains lots of information for the seasoned pro.

While Tinsley tells you how to fish, L. A. Wilke, one of the most prolific of outdoor writers, has put together a guide on where to go in Texas to catch those fish.

Wilke details, with personal observations, of course, more than 200 lakes in 14 major watersheds, many of which he has fished himself, to make the book one of the best tackle-box references around.—Tim Leifeste

THE GULF OF MEXICO by Bern Keating with photographs by Dan Gura-vish; The Viking Press, 625 Madison Ave., New York, N.Y. 10022, 1972; 125 pages, \$14.95.

The dullness of the book's title spills over into the text and would literally lull an environmentalist to sleep with its passive, half-eyed requests for an end to pollution on the Gulf of Mexico.

Although the topic of discussion is relevant to 20th century environmental problems, the author lacks the impact required for modern-day muckrakers. In fact, the book reads like a diary at times.

The Gulf of Mexico, a 600,000-square-mile surface and the fifth largest sea in the world, borders Texas, Louisiana, Mississippi, Alabama, Florida and Mexico. The author discusses the plague of man and progress vs. man and ecology, noting the varied conditions at present.

The book is attractive with many full-page color illustrations. No doubt, the author and photographer traveled extensively for these photos and information, but both seem too idealistic in their presentation. A scenic shot of a beautiful sunset or a fisherman in a cove laden with Spanish moss doesn't arouse a sense of pollution in the true sense of the word. The reader finds himself asking "Where's all this pollution?" while the author and photographer are content to skirt the issue, preferring the less offensive approach with their thesis, "Is there enough natural beauty left . . . to make it worth fighting to save?"

I agree with the author's conclusion that the Gulf needs to be saved, but he offers no suggestions as to what can be done. The reader doesn't care what Panfilo de Narvaez did in 1528, but he is interested in a newly discovered bacteria that eats oil and converts oil slicks into protein.

The book is divided into four chapters covering Florida, the Bayou Country and Texas, and is published in association with the Exxon Corporation.

For a book with excellent photographs of the coast, it is unsurpassed. But for a book calling for an end to pollution, it remains passive.—Terrie Whitehead

THE COYOTE AND THE WHIRLWIND by John B. Holdsworth; The Naylor Company, P.O. Box 1838, San Antonio, Tex. 78296, 1973; 205 pages, \$6.95.

The title of the book is figurative, merely connoting time and the advent of man in South Texas with his effect on nature. The coyote represents natural life forms while the whirlwind symbolizes man, his technology and

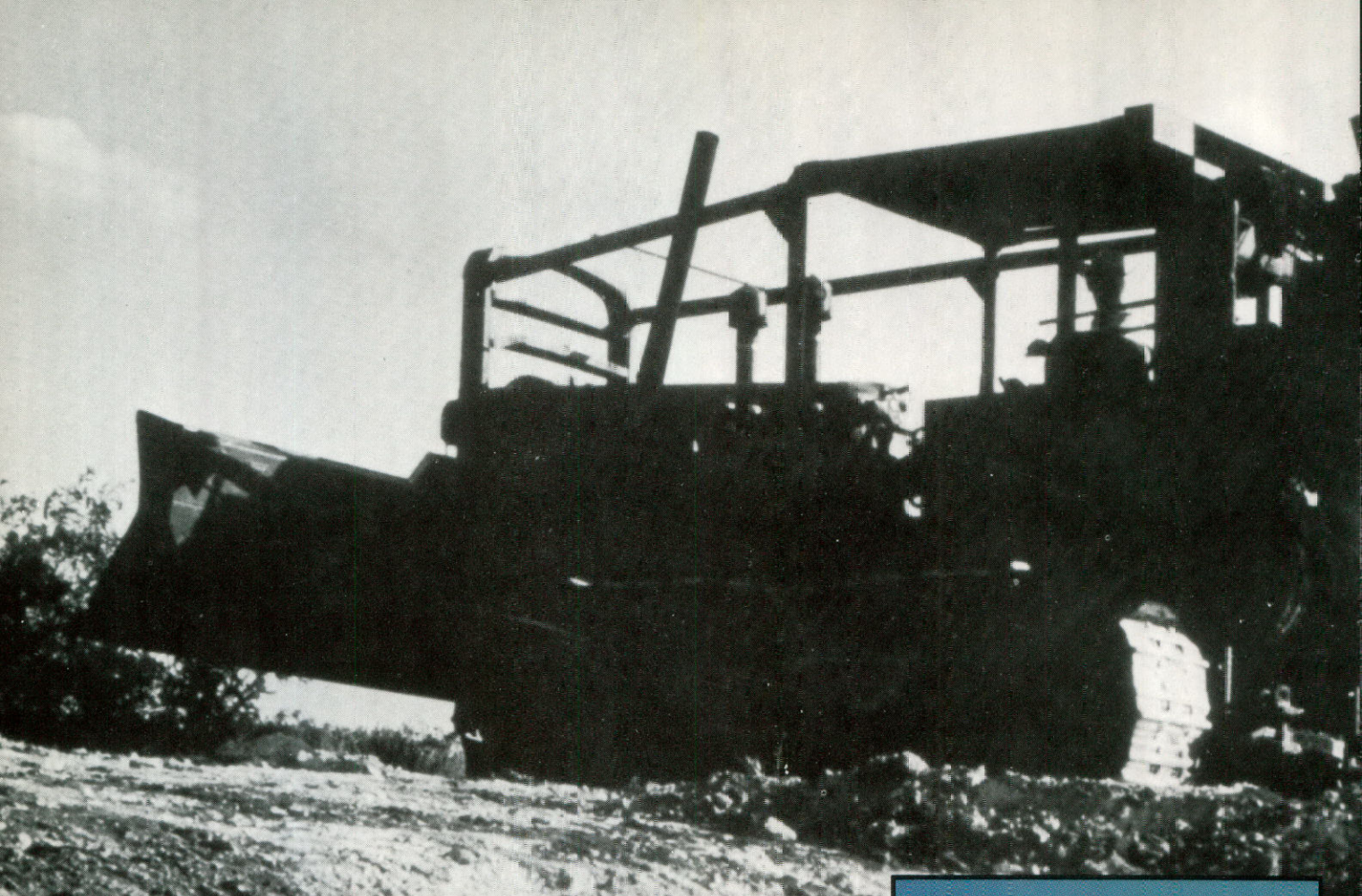
expansion. The author does not moralize as do many ecologists—his tactics are more subtle as he reminisces the way things were in years past. Even though one cannot bring those days back, the memories may be brought into focus by someone such as the author who has seen them.

The book is about Texas and written by a Texan. Holdsworth gives factual accounts of different animal behavioral patterns that can only be obtained by spending many hours in their habitat. But if the reader looks beyond the documentation, he will find philosophical thought and logic in the outdoors.

The Coyote and the Whirlwind contains a few black and white sketches, but they are really unnecessary. The author's writing style is so light and colorful that he paints the illustrations for the reader.

In the closing words of the last chapter, the author summarizes the theme when he says that the coyote may have more determination to thrive than man, the whirlwind, who sometimes absorbs and disarrays obstacles in his path. The author concludes by saying, "The coyote shies away from all this commotion, but at the same time he is watching for anything that may result to his advantage. Perhaps someday the fury of this blast will die off to a whisper and finally cease altogether. And then perhaps the wail of the coyote will rise through the stillness with nobody to hear."—Terrie Whitehead





Javelina by Bill Reeves



Blue quail by Bill Reeves



Whitetail deer by Bill Reeves

South Texas' Wildlife

Too often its value and needs are forgotten in land management practices.

by Charles K. Winkler,
Regional Director for Wildlife, Rockport

South Texas is blessed with one of the finest arrays of wildlife in the world, both in terms of abundance and variety.

White-tailed deer and turkey populations are second only to those of the Edwards Plateau region of Texas, and the javelina population is the highest in the United States.

Ninety-five percent of the white-winged doves that nest in Texas are found in the Rio Grande Valley and, although quail populations are subject to great fluctuation, they are usually as high in South Texas as they are in any other area of the state. Waterfowl occur in abundance along the Texas coast, and 75 to 80 percent of the North American redhead duck population spends its winter in the Laguna Madre.

The abundance of South Texas wildlife doesn't stop with game animals. Predators, particularly coyotes and bobcats, are found throughout the brush country and, although they provide a good bit of sport hunting, are almost completely neglected as far as management is concerned.

Wildlife preservation cannot and should not be limited to those species which can be hunted. Several rare or endangered animals such as the whooping crane, bald eagle, peregrine falcon, osprey, brown pelican, Attwater's prairie chicken, American alligator, mountain lion and various aquatic mammals also reside in South Texas and must be carefully monitored to

insure their continued existence and enjoyment for future generations.

Although the Parks and Wildlife Department expends a major portion of its efforts in promoting hunting and fishing, it does not overlook the need to preserve wildlife for non-consumptive uses such as photography, nature study and bird watching. On a national scale, bird watchers are rapidly gaining on or have already passed the number of hunters. While this trend does not seem to be prevalent in South Texas at the present, there are areas, particularly on the coast, where management of wildlife for non-consumptive use is economically feasible and desirable.

With such a great natural resource available, it is a mystery that wildlife in South Texas is so neglected from the standpoint of both economics and habitat. Fortunately, more and more ranchers and farmers are realizing that wildlife is a valuable commodity that must be managed or developed to the same degree as their livestock operations.

Any conversation about South Texas wildlife usually ends up being a conversation about deer and deer hunting. While deer are the most valuable wildlife species in South Texas at present, there are other species that have just as much potential for development and management.

As previously mentioned, the deer population in South Texas is second only to that of the Hill Country and,



White-winged dove by Martin T. Fuller

based on figures reported by the Bureau of Sport Fisheries and Wildlife for 1970, South Texas has more white-tailed deer than any of the other 49 states. Oregon reported a population of 950,000 but their deer are the black-tailed and mule deer species. It would seem that in view of the emphasis placed on deer hunting in Texas and the difficulty in obtaining a hunting lease, deer would be developed to their fullest extent.

However, based on a survey conducted by the Parks and Wildlife Department in 1971, the potential of this resource is at least twice as great as the current level of utilization. There are approximately 17 million acres of deer range in South Texas, and deer hunting occurs on more than 15 million acres. However, almost half of this acreage is reserved for guest hunting. The survey also revealed that only about 12 percent of the actual deer herd is harvested annually, primarily bucks. If landowners and hunters would harvest antlerless deer in the quantities recommended by this department, the annual harvest could easily be doubled.

Lease fees for hunting privileges are quite variable, but it is not uncommon to find hunters paying \$1 to \$2 per acre for deer hunting privileges. It also seems reasonable to assume that these rates will continue to climb as long as the standard of living and the amount of leisure time available to the public increases.

Day leasing for deer hunting is almost unheard of in South Texas. In 1970, only 171,000 acres were hunted under this type of arrangement, although more income can be derived from day leasing and biologists feel that this system provides more hunting opportunities and a greater harvest of antlerless deer in overpopulated areas.

A species that is almost as popular as deer with Texas hunters, and much more heavily utilized, is the white-winged dove. The probable reasons for this high degree of utilization is that the whitewing is limited, both in range and in numbers, and its hunting season is usually short. Everybody wants to get a piece of the action while he can. This includes the hunter, farmer, motel owner, sporting goods dealer, restaurateur, service station owner and a wide variety of merchants on both sides of the border.

The economic value of the whitewing to the Rio Grande Valley has been estimated to be from three to seven million dollars annually, depending on the length of the hunting season. This estimate was obtained several years ago, before the leasing of whitewing hunting

privileges became a common practice. For the past three or four years, leasing for whitewing hunting has steadily increased. With hunting pressure ranging from 18,000 to 42,000 hunter days annually, as it has for the past five years, it is easy to see that lease fees are of considerable economic importance in the Rio Grande Valley.

It is difficult to see how the white-winged dove harvest can be increased unless farmers and ranchers exert more effort to provide the birds' vital necessities—food and a place to nest. Fortunately, most of the remaining native brush nesting habitat in the Valley is owned by, or at least under the control of, various conservation agencies. Food, however, is a more immediate problem. Most of the grains grown in the valley are of early maturing varieties that are harvested and the stubble plowed under before the whitewing nestlings learn to fly and feed by themselves.

As a result, the majority of the Texas-bred birds now fly into Mexico to feed where they are subjected to a tremendous amount of hunting pressure. It appears that possibly the best chance for the whitewing to remain a huntable resource in Texas is for the Rio Grande Valley farmer to become aware of the benefits to be derived from whitewing hunting and take an active interest in the preservation and management of this resource.

Two species of quail are found in South Texas, the bobwhite and the blue, or scaled quail. The bobwhite is most abundant in the eastern portion of the region but also occurs in more or less equal numbers with the scaled quail in the western half of the region. The combined populations of both species in South Texas are consistently as high or higher than those found in other areas of the state, yet this resource is almost totally neglected as a source of revenue. As a result, landowners don't manage their land for these birds.

One reason for this neglect could be the heavy emphasis on deer hunting in South Texas. We have found that the greatest amount of quail hunting occurs in those areas where deer are relatively scarce or completely absent. Another reason for this lack of interest in quail hunting may be the warm weather in South Texas which makes prolonged walking a chore and increases the danger of a good bird dog being bitten by a rattlesnake.

As might be expected, the greatest utilization of ducks and geese occurs in close proximity to the coast, where hunting leases range up to \$1 an acre on a seasonal basis and as much as \$25

Pintail drakes by Bill Reaves







The Texas whitewing hunter comes up short when South Texas landowners harvest early maturing grains, plow under the waste grain and stubble and force the whitewings to fly across the border to find food and be hunted.

for a half day of shooting. Most of the intensive hunting for waterfowl takes place along the upper Texas coast where there is a heavy demand for recreation; however, a good bit of hunting is done near Corpus Christi and in the bays from Flour Bluff northward. While there is some duck hunting in the lower Laguna Madre and on farms in the area around the Laguna Atascosa National Wildlife Refuge in Cameron County, the brush country of South Texas is completely disregarded as a waterfowl hunting ground by the rancher and the hunter. This is unfortunate, because in all but the driest years ducks can be found on most of the stock tanks.

There are at least three other species of wildlife in South Texas that could be developed to a much greater degree than at present. These are the wild turkey, the javelina and the mourning dove. The turkey and javelina generally co-exist with the deer, although they are affected to a greater degree by

habitat changes. Land clearing seems to be the most significant factor influencing their welfare.

Ranchers have found that the presence of turkey can increase their hunting lease revenue. At least one rancher has found that hunters are willing to pay as much as \$50 for each javelina they are allowed to kill.

Mourning dove hunting can be a real asset to the small rancher or farmer who doesn't have enough land to draw deer and turkey hunters. The variable mourning dove distribution found in South Texas probably can be attributed to lack of food. A small amount of grain left in the fields at harvest time can attract birds for hunters.

Although this discussion has dealt primarily with hunting and leasing practices and the cost of a hunting lease, this is only a portion of the expense borne by the hunter. Costs of lodging, transportation and meals during a hunting season have been estimated to run two or three times the cost

of the hunting lease. It's easy to see that the development of wildlife potential for any purpose, as long as it brings people to an area, is of significant benefit to the entire community, not just the man lucky enough to own the piece of property with wildlife on it. **

Editor's Note: Landowners seeking additional information on how to improve their land for wildlife may contact the regional extension biologist for their part of the state. For South Texas, contact Murphy E. Ray, Jr., 17 Fenwick, Laredo 78040, AC 512/722-3797. Other extension biologists are: George Litton, P. O. Box 153, Sweetwater 79556, AC 915/235-9577; Tommy L. Hailey, Ivan Star Route, Breckenridge 76024, AC 817/362-4463; Jimmy R. May, 530 South Beckham, Tyler 75701, AC 214/592-1604; and Dennis L. Brown, 1702B Airline Drive, Victoria 77901, AC 512/575-6306.

LONG SHOTS SHORT CASTS

compiled by Neal Cook

Front Cover — Martin T. Fulfer; Nikon F with motordrive, 400mm Leitz Telyt; Kodachrome II.

Inside Front — Bill Reaves; Nikon F, 50mm Nikkor; Kodachrome II.

Pages 2-3 — Leroy Williamson; Pentax, 50mm Takumar; Kodachrome X.

Page 4 (left) — Williamson; Pentax, 50mm Takumar; High Speed Ektachrome. — (right) — C. D. Stutzenbaker, Pentax, 50mm Takumar; from Ektachrome X.

Page 5 — Williamson; Pentax, 200mm Prinz; High Speed Ektachrome.

Page 7 — Fulfer; Nikon F2, 35mm Nikkor; Kodachrome II.

Pages 8-9 — Fulfer, Nikon F2, 24mm Nikkor; Kodachrome II.

Page 10 — Fulfer; Nikon F2, 24mm Nikkor; from Kodachrome II.

Pages 12-13 — John Suhrstedt; Hasselblad, 80mm Zeiss-Planar; from Ektachrome X.

Page 12 (left, right and bottom) — Reaves; Nikon F with motordrive, 560mm Leitz Telyt; Kodachrome II.

Page 13 — Fulfer; Nikon F with motordrive, 400mm Leitz Telyt; Kodachrome X.

Pages 14-15 — Reaves; Nikon F with motordrive, 560mm Leitz Telyt; Kodachrome II.

Page 16 — Paul Hope; Nikon F, 50mm Nikkor; Kodachrome II.

Pages 18-22 — C. O. Martin; gouache on watercolor paper.

Page 24 — Jim Whitcomb; Hasselblad 500C, 250mm Sonnar; Ektachrome X.

Page 25 — Ed Dutch; Nikon F, 80-200mm Nikkor Zoom; from Ektachrome X.

Page 26 — Reaves; Nikon F, 560mm Leitz Telyt; Ektachrome X.

Pages 26-27 — Tom Blackwell; Mamiya RB67, 90mm 3.8 Sekor; Ektachrome X.

Page 29 — Whitcomb; Hasselblad, 80mm Zeiss-Planar; from Ektachrome X.

Page 30 — Reaves; Nikon F, 50mm Nikkor; Tri-X.

Page 31 (top and bottom) — Reagan Bradshaw; Leica M-2, 35mm 1.4 Summalux; Tri-X.

Back Cover — Fulfer; Nikon F2, 80-200mm Nikkor Zoom; Kodachrome II.

Crazy Quail: The next time a boastful buddy tells you about his 200 straight in trap or skeet, you might quietly suggest a round of Crazy Quail, the game that has probably frustrated more clay target shooters than any other competition ever devised. It is a ten-target game in which the targets are thrown from a single trap that rotates in a 360-degree circle. The targets may be thrown in any direction—away from the shooter, directly back over the shooter's head and to either side of the shooter in a varying degree of angles—and it is impossible for the shooter to outguess the trap operator whose job is to confuse the shooter by changing the angle of rotation after each shot. The only thing the shooter can be certain of is that after he yells "Pull," a target will be thrown. After that he must figure the direction, the angle and the shot that will shatter it in approximately one second. In 1963, a Crazy Quail trap was installed at Nilo Farms, Winchester-Western's shooting preserve in Brighton, Ill., and since that time over 9,000 games have been shot there. In all of those games, the number of times the shooter has shattered all ten of his targets is 18.

Whale Problems: While we have been running the series of articles about whales, porpoises and dolphins found off the Texas coast, a bitter battle has been raging to gain more protection for these largest of mammals. The annual International Whaling Conference in Stockholm last year was the site of the beginning of the latest phase of the battle. There, quotes for the taking of eight species of whales were agreed upon by all of the whaling nations except Japan and Russia. These two countries declared that they would not abide by the quotas and are presently harvesting whales which are considered in danger of extinction. To make matters even worse, the whales are being killed primarily to make pet food and for feeding ranch minks to make coats.

Outstanding Game Warden: Game warden August Timmerman of Hondo was named the Shikar-Safari Club's outstanding game warden of the year for Texas. Timmerman joined the department in 1943 and spent his entire career in South Texas. During flooding in Median County in July 1973 he led rescue efforts to save 14 people. One family of eight was taken from trees which were inundated 40 minutes after the rescue. In the rescue action Timmerman sustained injuries which required hospitalization and surgery.

Dolphins of Texas

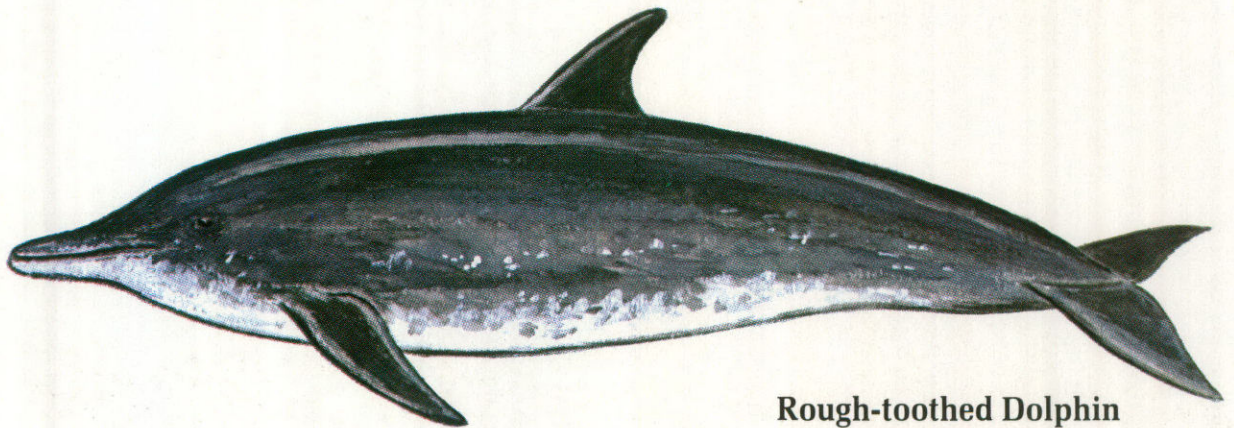
Part Three of a three-part series

by David J. Schmidly and Betty A. Melcher, illustrations by C. O. Martin
Department of Wildlife and Fisheries Sciences, Texas A&M University
Contribution No. TA 10778, Texas Agricultural Experiment Station

ROUGH-TOOTHED DOLPHINS

Rough-toothed dolphins, of the family Stenidae, are questioned by some as a valid separate entity. This family includes both freshwater and marine forms, and it is distinguished on the basis of anatomical features of the air passages. The **rough-toothed dolphin**, *Steno bredanensis*, is broadly distributed in temperate and tropical seas in a marine offshore habitat. Its snout is long and not as sharply demarcated from the forehead as in most dolphins, but tends to form a long, continuous smooth curve with the top of the head.

The rough-toothed dolphin is dark gray on the back, shading through light gray on the sides to a light belly. Often white blotches, which are of various sizes and shapes and appear to be scars, may be found on the body. The common name is taken from the rugose, or rough-surfaced, teeth that characterize this species. Little is known of the animal's biology, but it is known that its diet includes fish, squid and blanket octopus. The rough-toothed dolphin is considered rare and only a single specimen is recorded from Texas waters. This animal beached near Galveston in late June of 1969 and was held in captivity at Sea-Arama before dying.



Rough-toothed Dolphin

OCEAN DOLPHINS

The ocean dolphins, of the family Delphinidae, constitute the largest family of the order cetacea, consisting of 14 genera and about 32 living species. They are the most abundant of all cetaceans and inhabit all the oceans of the world as well as the estuaries of many large rivers. Some forms occasionally ascend rivers. Seven different kinds of delphinids inhabit Texas coastal waters.

Included in the family Delphinidae are the most agile and speedy of all the cetaceans. They frequently leap clear of the water and are capable of speeds of up to approximately 30 m.p.h. Many forms follow

ships and frolic about the bow. They usually associate in schools of five to several hundred individuals, although single individuals and pairs are sometimes seen. Migration is known to take place in some species, and local movements because of food supply occur in others. The members of this family will school when frightened and will attack any disturber. They sometimes kill large sharks by ramming them. While underwater, they utter a wide variety of calls and noises including a danger whistle and a mating yelp. Cooperative behavior has often been observed when one or more cetaceans will come to the aid of another in an emergency, such as injury, sickness or birth, pushing it to the surface so that it can breathe.

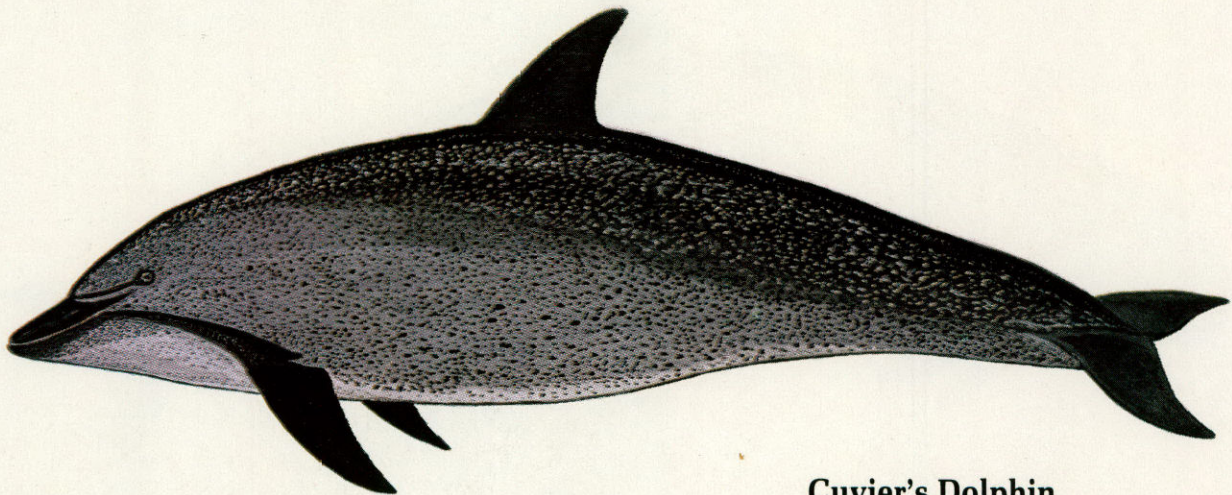


Spotted Dolphin

Swimming ahead of ships is sport for the **spotted dolphin**, *Stenella plagiodon*. These small, strikingly-colored cetaceans play about ships for long distances, rolling and jumping out of the water, easily keeping up with the vessels.

Spotted dolphins are conspicuously marked having white spots thickly studded on a purplish gray back and dark gray spots splattered on a light belly. At maturity this dolphin reaches a length of only seven

feet and weighs around 280 pounds. Fish are thought to be its main dietary component. Most natural history information, including the range of the spotted dolphin, is unknown. It is one of the more common Texas cetaceans but is seldom seen within 12 miles of the beach. Several individuals of this species were stranded along Padre Island National Seashore after tropical storm Fern in 1971.

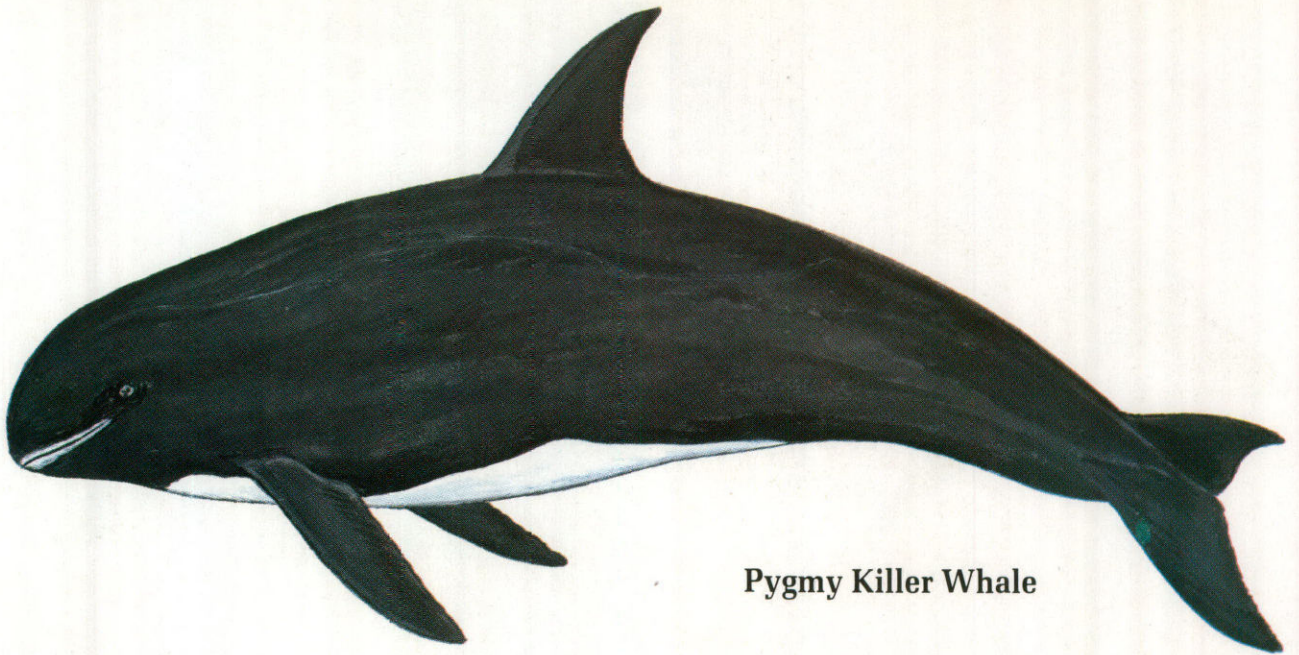


Cuvier's Dolphin

An array of spots and stripes are revealed when a school of **Cuvier's dolphins** roll at the surface or jump clear of the water. The base color of the adult Cuvier's dolphin, *Stenella frontalis*, ranges from brown to shades of black and silver above, with paler shades below. Some are spotted white, while others are streaked longitudinally with white, tan or blue stripes on the sides of the head, shoulders and back.

These fish-eating dolphins are small, varying from five to 12 feet in length.

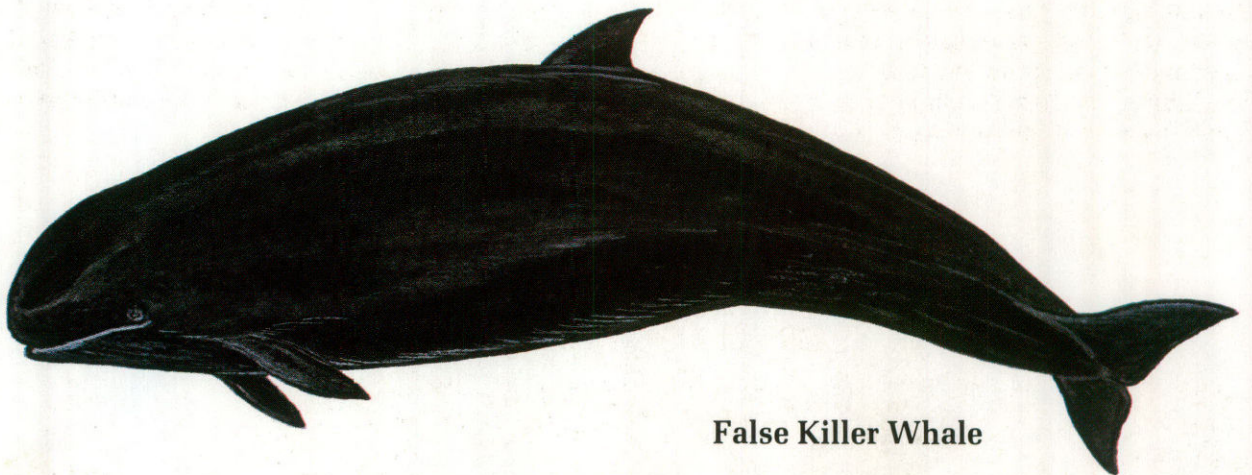
They inhabit the warmer waters of the western Atlantic ocean and can sometimes be found frolicking about ships in the deeper and clearer Texas offshore waters. This dolphin was found stranded along with spotted dolphins on Padre Island in 1971 after tropical storm Fern.



Pygmy Killer Whale

The first western Atlantic occurrence of the **pygmy killer whale**, *Feresa attenuata* was recorded just recently from Padre Island in 1969. This rare species is small, measuring about seven feet in length and

has nine slightly curved teeth in each side of the upper and lower jaws. Pygmy killer whales were known formerly from only the Pacific Ocean and the African coast.

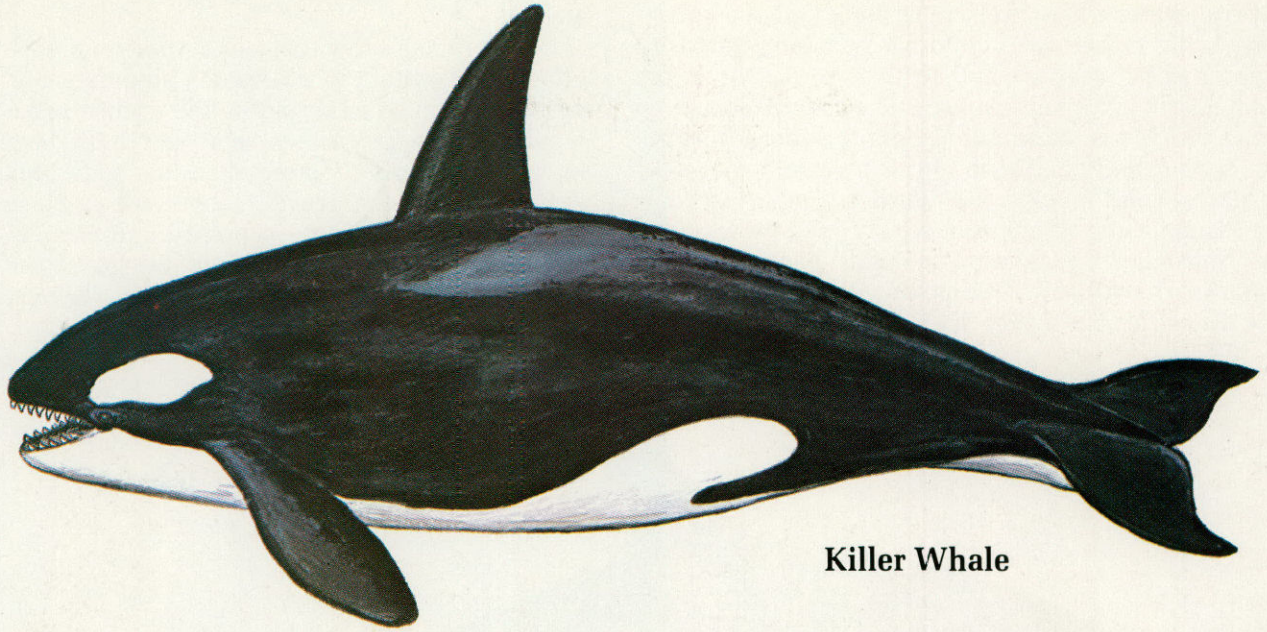


False Killer Whale

The only species of **false killer whale**, *Pseudorca crassidens*, is a deep sea mammal known to science chiefly through strandings and occasional specimens which wash ashore. False killer whales feed and travel in groups of several hundred individuals, and once 835 of these delphinids stranded at one time on the Argentina coast!

These squid- and fish-eaters are almost entirely black and reach 18 feet in length at maturity. Breeding occurs year around.

These somewhat scarce cetaceans have been seen in coastal waters of tropical and temperate oceans, but mainly inhabit the open seas. The false killer whale is not known from the immediate Texas coast but a single specimen was harpooned near the Flower Garden reefs, 120 miles southeast of Galveston in 1961. Therefore, this species could be an inhabitant of Texas waters and could wash ashore on our beaches. A complete skeleton of the harpooned specimen is deposited at the Houston Museum of Natural Science.



Killer Whale

Fearing nothing that lives, cosmopolitan killer whales usually travel in packs of three to 40 individuals and may occasionally attack other marine mammals, including larger whales. The **killer whale**, *Orcinus orca*, is the largest of the Delphinidae family, with females reaching 23 feet and males 30 feet in length when mature.

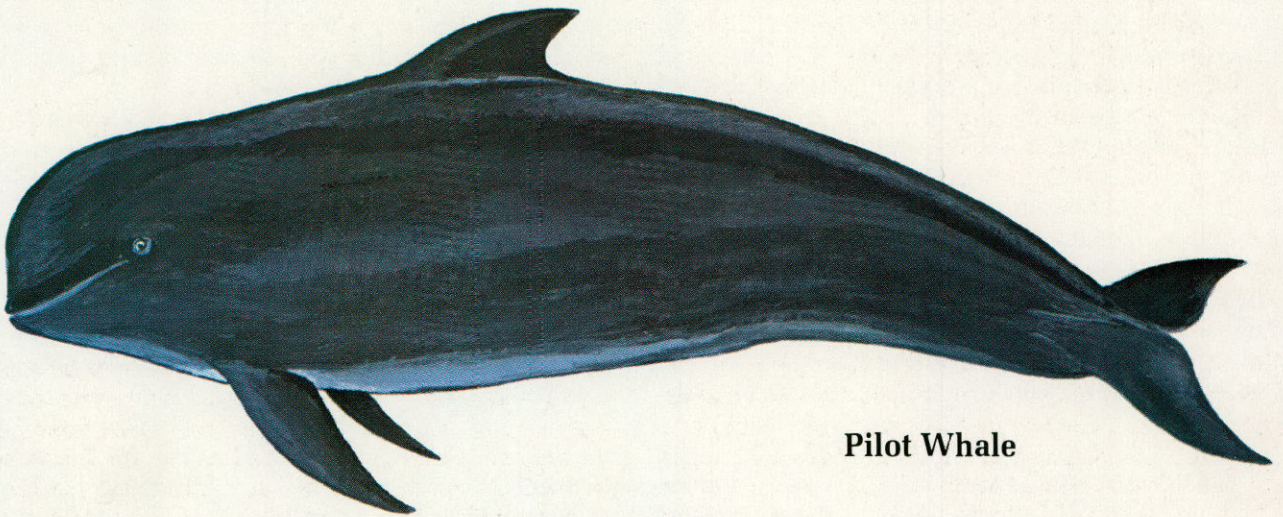
Ten to 14 large, conical, interlocking teeth on each side of the jaws have earned the powerfully-built hunters a reputation for great ferocity. Although the mouth and throat of these odontocetes are large enough to swallow seals, penguins and other dolphins, they feed mainly on squid and fish.

The killer whale has a dashing marked jet black head and back with snowy white underparts and a

large white patch just behind the eye. It has a bluntly rounded head, without a distinct beak, which merges imperceptibly with its forceful, streamlined body.

Killers sport enormous triangular dorsal fins, about six feet high in males, and have large, rounded flippers. They travel at a rapid rate in close formation, rising and diving in unison, or cruising at a uniform pace with their dorsal fins and parts of their backs exposed.

The killer whale is widely distributed and has been hunted at various times in history in different areas of the world, but because it is very intelligent, it is extremely difficult to catch. One killer whale was sighted on the Texas coast in 1951 southeast of Port Aransas.



Pilot Whale

The habit of following the leader is disastrous when a school of **pilot whales** heads toward the shore. Because these whales have a distinct social organization, once the leaders get stranded, the rest of the

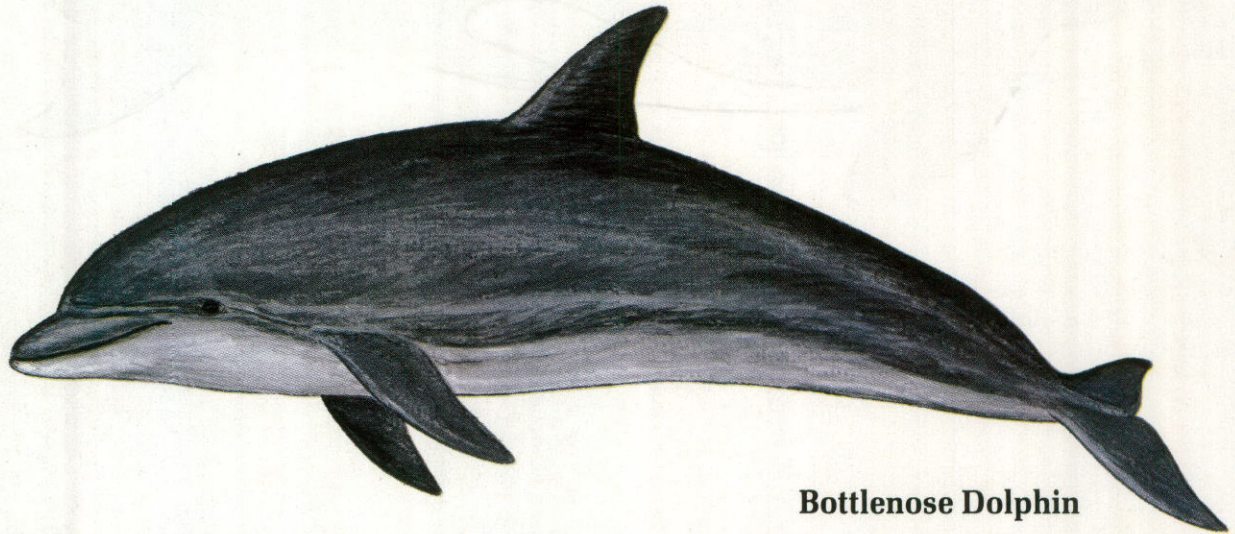
school follows. Mass strandings of 10 to 200 of these large, better known members of the dolphin family have occurred. Fishermen have taken advantage of their instinct to follow the largest male member of

the school and have driven them in numbers into shallow water where they are easily killed.

At birth, calves are five to six feet long. Maturity is reached between six and 10 years of age when the animal is 18 to 25 feet in length. The species occurring along the Texas coast, *Globicephala macrorhyncha*, has been called "blackfish" by fishermen because of its almost solid black color. "Pothead," another common name given to the pilot whale by early whalers, describes its large, almost globular head which is remarkably swollen in front above its very short beak. The dorsal fin has a long base and is rather low and

hook-shaped. Its long, tapering flippers are sickle-shaped.

While many other cetacean species are strongly attached to certain localities, the abundance of squid seems to be most important in the occurrence of pilot whales. These gregarious cetaceans have been seen in ocean schools of more than 100 individuals, although schools that travel inshore are much smaller. Pilot whales do well in captivity and can be easily trained to perform. Five pilot whales have been recorded from the Texas coast, two near Freeport and three around Aransas Pass.



Bottlenose Dolphin

Best known of all cetaceans and most familiar as "Flipper" on television is the **bottlenose dolphin**, *Tursiops truncatus*. This species has been subject to intensive studies with regard to its behavior, physiology and echo-navigational ability. It ranks high on the intellectual scale of mammals and it is estimated that the intelligence of this dolphin ranges between that of a dog and a chimpanzee.

Mature bottlenose dolphins attain a length of 12 feet, but the calves are only three to four feet in length at birth. Adults are colored light gray on top and are paler below, sometimes with a pinkish tinge. These cetaceans have distinct dorsal fins and short, well-defined beaks. The common name of these mammals is derived from the supposed resemblance of the beak to the top of an old-fashioned gin bottle.

Bottlenose dolphins usually travel in smaller groups

of five to 12 individuals and inhabit shallower waters extending about 12 miles offshore. Beyond this distance they are replaced by spotted dolphins. Bottlenose dolphins generally feed on the most abundant species of fish and often chase mullet very near the shore. The dolphins dislike sharks and sometimes engage in vicious battles with them.

Females become sexually mature at six years of age and gestation lasts approximately 12 months. Although calves take solid food at six months of age, they may nurse until they are two years old.

Bottlenose dolphins span the Atlantic Ocean, Gulf of Mexico and European coasts. They were present in much greater numbers years ago when all life in shallow waters were more abundant, but they still appear to be the most common of the delphinids in Texas waters. **

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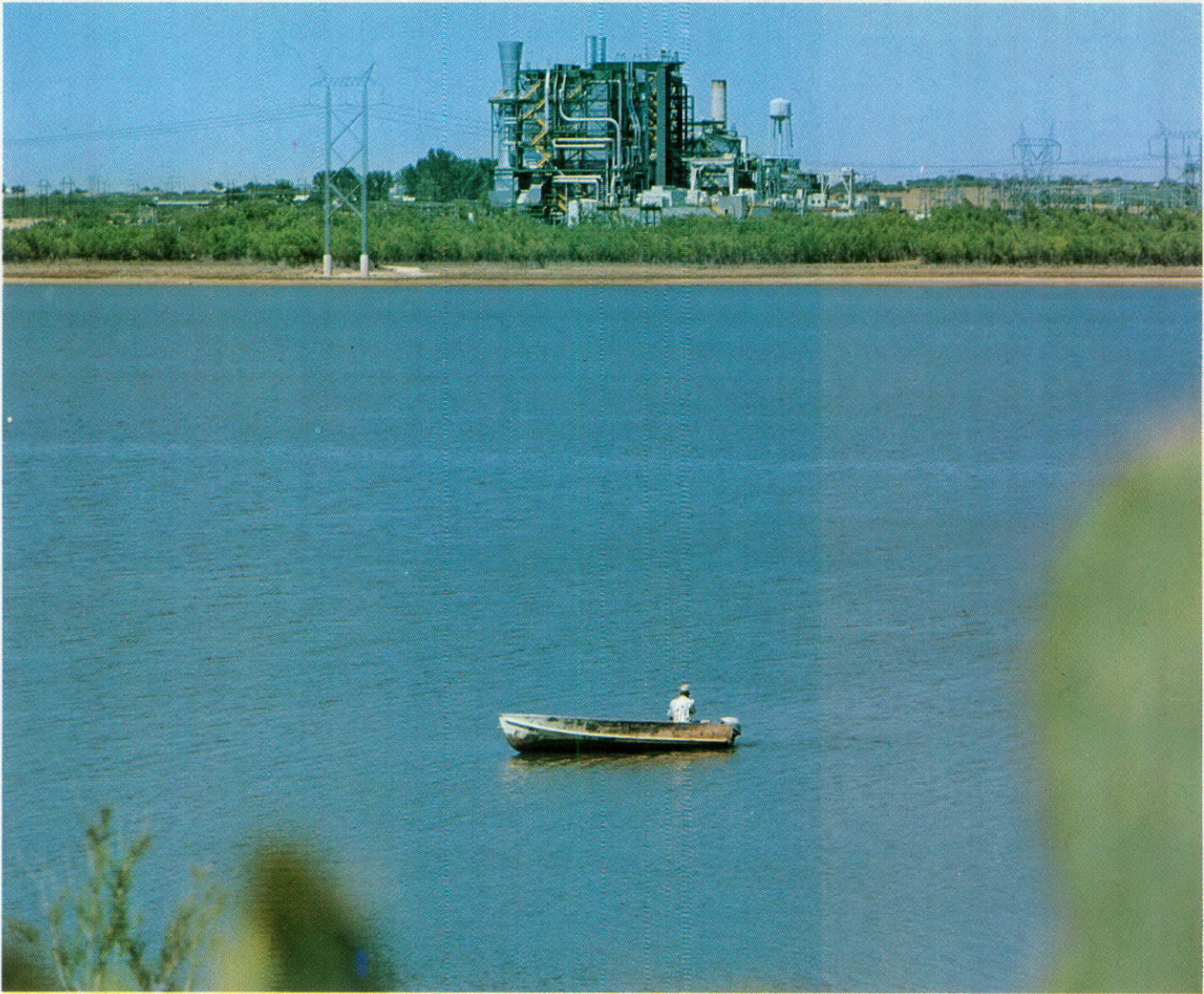
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Lake Colorado City

by Tim Leifeste

Affectionately nicknamed "Old Muddy" by local residents, Lake Colorado City shouldn't be judged on looks alone.

Under that turbid surface lies one of the most consistent producers of lunker bass and catfish in the state.

Offering welcome relief from its semi-arid surroundings, "Old Muddy," located seven miles west of Colorado City along I.H. 20, has almost limitless potential for water-based recreational activities.

Visitors from a 50-county, two-state area use the lake regularly and, with these predominately water-oriented visitors in mind, development plans for Lake Colorado City State Recreation Park were formulated.

Through a 1970 lease agreement, a 500-acre portion of the western shoreline of this 1,655-acre impoundment was acquired from the Texas Electric Service Company for state park land.

The lake itself is privately owned by the electric company, but is open to the



public. It and the power plant, located on a peninsula across the lake from the park, were completed in 1949 after Morgan Creek, a tributary of the Colorado River, was dammed to form this major play spot for Northwest Texas.

A favorite with fishermen, Lake Colorado City has always shown a very high game fish population. This may have been due to a 21-year electric company restriction against fishing a 700-acre portion of the lake. The company used the area solely for cooling its generators and, as a side benefit, provided a sizeable spawning sanctuary for game species. The warm water circulating in this area also prevented static water conditions. Both factors were extremely desirable from a biological standpoint and no doubt contributed to the high productivity of game fish.

Minute aquatic life flourished in this warm water environment and forage species readily devoured them to be

eaten in turn by game species. The results were bigger game fish and murky water due to the lake's high fertility.

This large, restricted portion of the lake was opened to the public in 1970 after the lake was selected as a site for a state park.

A survey that year by this department noted the continuing dominance of game fish in this old, heavily-fished reservoir with flathead catfish accounting for 48.66 percent by weight of all fish netted and 70 percent by weight of all game species netted. Channel catfish, white bass, largemouth bass and white crappie were also present in good numbers.

"Now that the large, previously protected area is available to the public, it will be of great interest to ascertain if the game fish, especially the flathead catfish, can maintain the presently high populations," the report concluded.

In 1973, survey results still showed a continuing high level of game fish

Now a mecca to many a pleasure-seeking visitor, Lake Colorado City was once used solely for cooling the power generators of its owner, the Texas Electric Service Company, whose plant dominates the skyline. A favorite with fishermen and boating enthusiasts alike, the lake and adjoining state park combine to make the area one of the major play spots of Northwest Texas.



Shade shelters provide welcome protection during those hot summer months, and the new pier that spans the lake affords year-round fishing opportunities.

present, but flatheads were down to 34.66 percent of the netted sample. However, it still may be too early to determine the effects of fishing the previously restricted area, but Lake Colorado City probably will always rank high as a game fish producer.

Its close proximity to Colorado City, Big Spring (30 miles west) and Snyder (25 miles north) and its location on an interstate highway make the lake and adjoining state park easily accessible to cross-county campers and local overnight visitors.

Containing more than five miles of shoreline, the parkland varies in width from 150 yards to one mile, with relatively flat mud plains on either end and steep rocky banks in the center portion. A sizeable portion of the western side of the park has been cropland and is not suitable for development at the present time. However, this area is scheduled for an extensive vegetative planting and management program in order to make it recreationally productive.

The remainder of the parkland is for the most part characterized by shrubby

vegetation, roughly 75 percent mesquite and 25 percent hardwoods. Thick cover exists in scattered areas along the shore.

Phase I of the park development has been completed and present facilities include 30 picnic sites, 10 with shade shelters, and 35 multi-use campsites without shade shelters but with water and electricity. A sanitary dump station has also been provided.

A designated swimming area with a sandy beach is available with restrooms and shower facilities nearby.

There is also a four-lane boat launching ramp, two boat docks, fishing barge, fishing pier and even a 75-acre trailbike and minibike area.

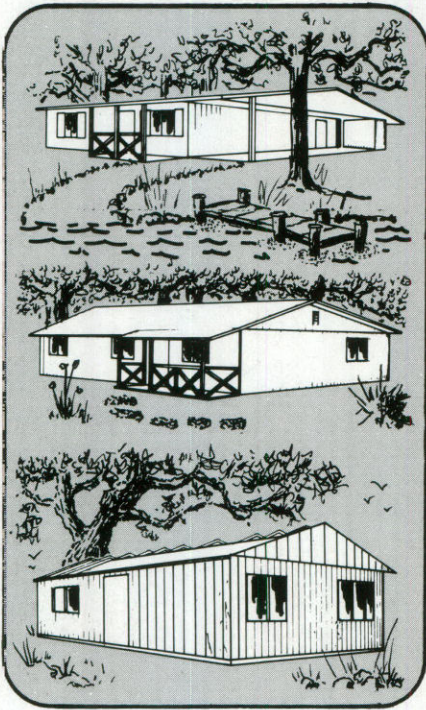
Park visitors may rent boats and buy bait, fishing tackle and food from the stores and restaurant located nearby. Entrance and camping fees are standard and may be paid at the new headquarters building.

Future expansion plans call for an additional fishing pier, more camping and picnic sites, screen shelters, additional restrooms, a concession and a hiking and nature trails study area. **





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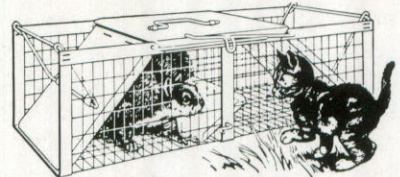
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Young Naturalist

Clean-up Campaign

by Ilo Hiller

Windy days in March are not unusual; everyone expects them. But, do they also expect the wind to whistle around the corner bringing paper cups, bits of trash and other forms of litter with it? Have we all become so used to litter that it does not seem unusual or out of place?

Hopefully, the young naturalist recognizes trash for what it is and is willing to make an effort to help clean it up. The problem is too large and widespread for one person alone to be very effective, but when several people work together on one project, a clean-up campaign can show results.

Since litter seems to be everywhere, it shouldn't be too difficult for you and some of your concerned friends to find a special area to clean. One good place to start would be the streets and front yards of your own neighborhood, but before entering a private yard, be sure to check first with the homeowner to get permission.

Once your own neighborhood is litter free, you might want to tackle something on a larger scale like the schoolgrounds or a local park or playground. Trash containers should already be located on these sites, so you won't have a problem disposing of the litter once it is picked up. Undertaking larger projects, such as cleaning roadsides, stream banks or beaches, may require the services of an adult or two. They will be able to supervise the activity for safety purposes, help clear away the larger objects and

provide pickup trucks or trailers to haul away the collected trash.

Scouting groups, Optimist clubs and other civic organizations may also be contacted for help. The more people who get involved, the more work that can be accomplished. Getting everyone's attention focused on litter and cleaning it up will also help to remind them not to litter in the first place.

Side benefits are available for groups cleaning up litter if they are willing to go to the trouble of recycling some of the material collected.

Pearl, Coors and Budweiser beer companies pay 10 cents a pound for any brand of aluminum cans delivered to their distributors on certain specified days. Call the distributor in your area to find out when they accept the cans for payment and if they must be packaged in any special way. Separating the aluminum cans from the tin ones is made easy with the help of a magnet. The magnet will not pick up or stick to aluminum.

Scrap metal may also be sold, but dealers only pay a penny a pound for iron and less than half that amount for tin. Copper, however, varies from 50 to 70 cents per pound. Check with the scrap-metal dealers in your area to determine the prices they are willing to pay.

Unbroken, returnable bottles may, of course, be turned in for their full deposit refund, but other types of bottles and broken glass are worthless unless you



happen to live in or near Corsicana, Waxahachie or Waco.

Chattanooga Glass Company in Corsicana buys glass for one cent per pound or one-half cent per bottle. Broken glass must be sorted by color, and they do not accept brown or amber glass.

Kerr Glass Company in Waxahachie buys only the brown or amber glass and pays \$18 per ton, which is a little less than one cent per pound. They require that the weight be certified by Paymaster Mills of Waxahachie before the glass is delivered to their plant. A payment of one-half cent is made for each unbroken, small brown bottle and one cent for each unbroken quart size.

Owens Illinois Incorporated in Waco buys broken or unbroken glass containers for a penny a pound if all metal and as much paper as possible are removed. The glass must be sorted by color and delivered only on Tuesdays. Fees charged by public weighing stations to weigh the glass before delivery are reimbursed by Owens Illinois if a receipt is presented.

Payment for these various materials may seem small, but you aren't doing it for the money anyway, are you? It is only a side benefit for those who want to take the time to see that some of the litter is again put to useful purposes. If you are interested in recycl-

ing materials before they become litter, contact your local chamber of commerce. They should be able to tell you whether or not your city has a recycling center or collection point, what types of materials are accepted and how they must be packaged.

Ideally, if no one littered, there would be no litter. But this ideal state will never occur as long as there are people who are thoughtless of others. One example is the dog owner who allows his dog to run loose in a neighborhood and overturn garbage cans while searching for food. This dog owner is responsible for the garbage, paper and other objects spread about by his pet. Another example is the truck driver who hauls trash without a cover of some type over his cargo to keep it from blowing out. He is responsible for the litter created as his truck travels along.

Accidental littering is forgivable, but there is no excuse for the thoughtless or intentional litterer. One way young naturalists can fight the problem is to be sure that no members of their own family are guilty.

When traveling, make sure your family saves the papers, bottles and cans from car picnics and deposits them in trash cans at service stations, roadside parks or your destination. Don't let little brother toss his soft drink can out the car window. Make sure big sister doesn't wad up her hamburger paper and pitch it outside. Mom and Dad may also need to be



It is wise to have the help and supervision of adults for a large project such as cleaning the banks of a stream. Remember, once those trash containers are full, someone has to carry them to a truck or trailer and haul them off to the community dump.

reminded not to throw out a tissue or napkin. If they know you are seriously concerned about the litter problem, they won't resent your reminders that trash cans, not scenic roadsides, are the proper places for cans, bottles and papers.

Boating trips for the whole family are lots of fun, but some people think a body of water is there to serve as a giant trash can for anything they want to throw away. Unwanted articles sink out of sight and the water's surface looks the same. They think no one will ever know. What they don't stop to realize is that all the trash adds up, and before long the bottom of the lake or river looks like a junk yard.

Some of the items thrown into the water can be dangerous as well as pollutants. Cans and bottles which float for a while before sinking may injure the skier who hits one of them. They may also wash into shallow water and sink where unsuspecting swimmers can wade in, step on them and get hurt. Those small pull tabs on drink cans should never be dropped overboard. One of them can internally injure and even kill the poor fish that mistakes it for a darting minnow and swallows it.

If we are all conscious of the problem, do our part to prevent as much of it as possible and clean it up wherever and whenever we find it, litter will one day no longer be the problem it is today. **



Reagan Bradshaw

LETTERS TO THE EDITOR

Fish Records

What is the state record for piggy perch?

Burl Baber
San Antonio

The Texas State Fish Records Committee has received other requests concerning the possibility of establishing records for piggy perch, but has determined that the species does not conform to the sportsfishing concepts of the records program.

Are warmouth, longear sunfish, shortear sunfish and green-longear hybrid sunfish open for record catch?

James H. Coleman
Clute

The Texas State Fish Records Committee will be glad to consider any of the sunfish species not already listed if you will submit a photograph of any outstanding specimen along with a notarized record fish form available from all Parks and Wildlife offices,

game wardens and businesses where hunting and fishing licenses are sold. Or, write to the committee in care of the department at the John H. Reagan Bldg., Austin, Texas 78701.

Russian Olives

I have read and enjoyed your articles and bulletins on quail management, but would like additional information on Russian olive trees. In particular, their adaptability and wildlife use in Central Texas and how to obtain them.

T. E. Patrick
Nederland

The Russian olive is being grown on our Gene Howe Wildlife Management Area ("Panhandle Proving Grounds" Feb. 1974), and we are informed by area biologist Vernon Morse that quail use it primarily for shelter. However, the fruit is eaten by deer, turkey, various birds, raccoons, coyotes and many other wildlife species.

In the past we have obtained Russian olive plants from Plumfield Nurseries, Inc., P.O. Box 410, Fremont, Nebraska

68025. According to them, Russian olives will grow in almost any soil in upland as well as bottomland areas. For individuals wanting seedlings for windbreaks, shelterbelts and wildlife, the Plumfield Nurseries have a special conservation price list. These plants will be less expensive than regular retail prices, but must be purchased in quantities of 50 or multiples of 50. Current prices for the Russian olives range from nine to 21 cents depending upon plant size. To obtain these special prices, mention you saw this information in our magazine or get written authorization from your Agricultural Extension Service county agent.

Roadrunner Print

The roadrunner print, which I received for giving a two-year Christmas gift subscription, is beautiful and I hope you make a similar offer in the future. I have always enjoyed Nancy McGowan's artwork and would like to know how to contact her.

W. C. Richardson
San Angelo

Nancy McGowan, who is now Mrs. James G. Pruitt, left the department to specialize in freelance artwork. She may be contacted at her residential studio at 8304 Polar, Austin 78758, with regard to her paintings.

License Increases

I would like to commend the Texas Parks and Wildlife Department for the recent increase in hunting and fishing license fees. The Texas sportsman that truly cares for the fish and wildlife of this state should welcome the opportunity to help support the program. Personally, you can raise the licenses again next year as far as I am concerned. Hopefully, this might discourage some of the abusers who really have no concern for the proper management of our fish and wildlife.

Perry Scott
Abilene

BACK COVER

This angler prefers a flyrod for crappie because he can feel their sensitive bites more easily. Regardless of the tackle you use, remember crappie schools congregate at different depths, and to be successful year-round, you must locate their level. See related story page 6. Photo by Martin T. Fulfer.

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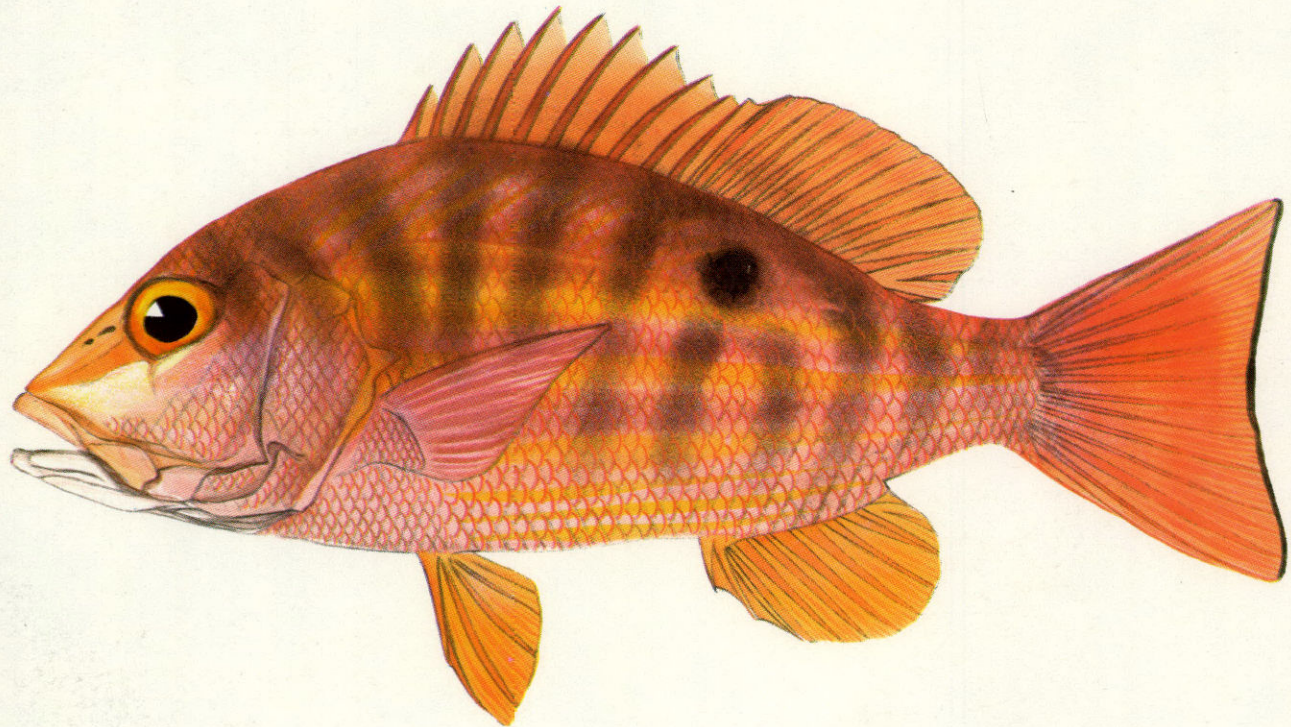
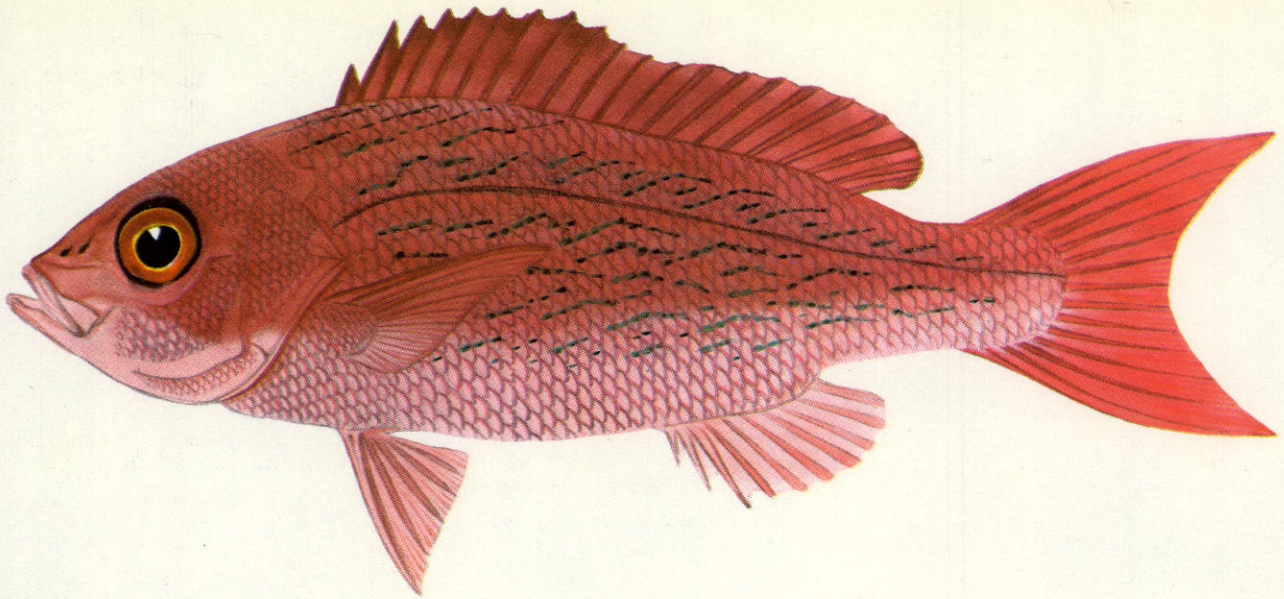
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TEXAS SALTWATER FISHES

The vermilion snapper (top), known in Texas as the bastard snapper, is found in the Atlantic from South Carolina to Brazil. This fish spawns in the early spring, and grows to a length of 15 inches. Little is known about its feeding habits, but it is found on the snapper banks in Texas.

The Lane snapper (bottom), also called the redtail snapper and spot snapper, inhabits the waters around

Florida and the West Indies, Gulf of Mexico and Caribbean Sea. Although its average weight is one to two pounds, adults sometimes reach four pounds. This snapper eats shrimp, other small crustaceans and fish. Adults apparently stay in the deeper waters as do other snappers, but very young ones can be found in the bays.

Artwork by Henry Compton.

