

# TEXAS PARKS & WILDLIFE

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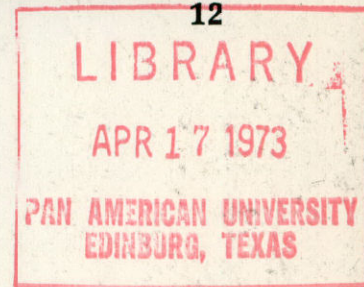
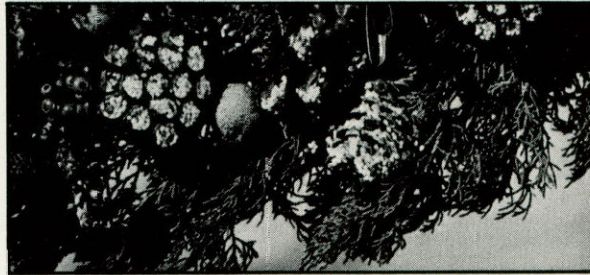
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To the hunter, the squirrels of Texas offer fine recreation and  
good eating.

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If part of the joy of Christmas has left you, try making your own  
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**Outside Front:** The hunter's favorite, an eastern fox squirrel, adds a  
pecan to its winter stores. Photo by Jim Whitcomb.

**Inside Front:** Like a Robert Frost poem, Central Texas has turned white  
in a rare snowfall. Photo by Leroy Williamson.









# from treetop to stewpot

by Neal Cook  
Photography by Jim Whitcomb

High in the treetops of Texas' woodlands live two of the most popular game animals in the United States—the gray and fox squirrels.

Crafty, fast and tasty, these animals test the patience and hunting skills of both young and old hunters from the East Texas bottomlands to the Hill Country and up to the Canadian and Red rivers.

The gray squirrel is the smaller and faster of the two species, and its agility and nervousness have given it the common name of cat squirrel. Weighing an average of one pound, adult gray squirrels are about 17 inches long from tip of nose to tip of tail. The largest concentrations are found in hardwood bottomlands centering around Brazoria and Matagorda counties and in the hardwood-pine areas of the Big Thicket, but they can also be found in areas of suitable habitat throughout the eastern third of the state.

Gray squirrels flourish in habitat containing large mature hardwoods with thick shrubs and smaller trees growing underneath. The wider the



variety of trees, shrubs and vines in the area, the more ideal the habitat for gray squirrels.

The larger cousin of the gray squirrel, the fox squirrel is a native species in suitable habitat throughout East Texas, Central Texas and the Panhandle. It has also been introduced into South Texas along the Rio Grande. Average weight of adults is 1½ to 1¾ pounds, and the adult fox squirrel averages 20 inches in length. The fox squirrel readily adapts to a variety of habitats, from mixed pine and hardwood ridges to thin strips of timber along creeks and streams. It also can be found in scrub oaks and heavy woodlands along large rivers.

Young animals of both species are found all during the year, but the two main breeding periods are during the winter and spring. Most are born during February and early March or in August and September. Although there are two breeding seasons, some studies indicate only about one-fourth of the females have two litters a year and average a little less than three young to a litter.

People have varied feelings on which species is preferable, the best hunting methods and which type of firearm is best for squirrel hunting.

Many people consider the gray squirrel as the most challenging to hunt. It is extremely alert and agile and will run rapidly along the ground or leap from branch to branch in a dash to escape the hunter. Its flesh is considered more palatable than the fox squirrel's.

Fox squirrels are prone to hide on a limb or tree trunk. Because of their habit of hiding, it is best to hunt with another person or a dog. One hunter or the dog can move to the opposite side of the tree after a squirrel has been sighted. This will make the animal move around the tree and give the other hunter a shot.

The successful hunter locates good squirrel habitat and feeding areas before venturing out. He looks for the remains of pinecones and cracked nuts under trees, on stumps, boulders and logs where squirrels sit in the sun eating and watching for enemies. And he looks for trees containing dens and nests. The nests are bunches of leaves and small branches high in the limbs or the crotches of large limbs.

The best times to hunt gray squirrels are in the early morning soon after dawn and in the evening. If

the weather is near freezing, the squirrels will remain in their dens or nests until it is warm and they can lie in the sun. Also when there is a lot of wind they will stay inside, as the wind makes it difficult for them to detect danger or jump from branch to branch. During the middle of the day gray squirrels rest and are hard to find. The fox squirrel is a little lazier than the gray, often does not begin to feed until mid-morning and can be found during most of the day.

The hunters' clothes should be of subdued colors which will blend into the background. Camouflage outfits are ideal for the spring and summer, but during deer season the hunter should wear a bright orange or red cap for protection against careless deer hunters.

Deer hunting methods can be used effectively in squirrel hunting. Stalking the game or stand hunting and waiting for the game to show itself are both effective hunting methods. Stand hunting is simply locating the feeding areas and then sitting still, moving the head slowly and easing the firearm up for a shot at the game when it shows itself. Squirrels will hide when you enter their feeding areas, but will resume their feeding after 15 or 20 minutes if the intruder remains still and silent.

Stalking squirrels calls for patience and excellent shooting. If the hunter has not had a chance to scout the area then stalking is the best method. Walking slowly and silently, the hunter can often hear the chattering squirrels, the scrape of claws against tree bark or nuts and limbs hitting the ground. He can hear the squirrels foraging through the leaves on the ground or running through the litter on the forest floor to escape the hunter.

When stalking squirrels, the hunter must be ready for a fast shot at the animals as they run to the tree or scamper through the limbs overhead. With most hunters using rifles it is best to wait for the squirrel to stop, but these running animals are a great challenge for the shotgunner.

What type of firearm should we use to hunt squirrels? Some people believe it unsporting to use shotguns but they have never tried to hit a squirrel running up the trunk of a tree, jumping from tree to tree or racing across the ground. In these instances a shotgun is a must. Everything from .410 to 12-gauge is used

by shotgunners. The hunter should remember that squirrels are hard to kill and unless shot at close range with a shotgun, many will be able to hide and be lost.

The .22 is the other popular firearm for bagging squirrels. Most shots with a .22 will be at an animal hiding with just its head showing. This gives the hunter a target about the size of a silver dollar that must be shot at rapidly. Many hunters swear by a .22 using hollow-point, long rifles and a four-power telescopic sight. This is an excellent combination if the hunter will remember that his bullet has a one-mile range. In populated areas a hunter should shoot only when there are limbs to stop the bullet.

Squirrel hunting has offered sport and table fare for Americans from the Indians and frontiersmen to today's hunters. Frontiersmen were such avid squirrel hunters they developed the famous Kentucky rifles capable of putting a ball through a squirrel's head at 50 yards.

Today the squirrel is an easily accessible game species for a boy to learn to hunt and offers adults many a pleasant day in the woods. It is not, as some may suggest, an easy animal to shoot. Hunting the squirrel requires patience and excellent shooting ability. Hunting them teaches a person to sit and be silent, to listen to the sounds of the woods and to interpret their meanings and origins. It teaches a love of nature and an understanding of man's heritage as a hunter. \*\*





The skill of the hunter does not end with the shot. For a successful hunt we must have quality meat, and the natural tenderness of small game is determined by the age of the animal. Young squirrels require less cooking than older, less tender ones. Here are a few of our suggestions for the

# perfect ending to a day's hunt

## BRUNSWICK STEW

- 3 squirrels, cut in serving pieces
- 3 quarts water
- ¼ cup diced bacon
- ¼ teaspoon cayenne
- 2 tablespoons salt
- ¼ teaspoon black pepper
- 1 cup chopped onion
- 4 cups or 2 No. 303 cans tomatoes
- 2 cups diced potatoes
- 2 cups lima beans
- 2 cups corn

Place squirrel pieces in a large kettle. Add water. Bring slowly to boil; reduce heat and simmer 1½ to 2 hours, or until squirrel is tender, skimming surface occasionally. Remove meat from bones and return to liquid. Add bacon, cayenne, salt, pepper, onion, tomatoes, potatoes and lima beans. Cook 1 hour. Add corn and continue to cook 10 minutes. Serves 6 to 8.

## BARBEQUED SQUIRREL

Select a young squirrel of the year. Do not skin. Heat a gallon of water to boiling and dip squirrel in water until hair slips. Scrape off hair (hog dress), clean, eviscerate and wash clean. Salt, pepper (freshly ground) and dust with paprika.

Let the whole animal marinate overnight in the following:

- 3 tablespoons salad oil
- 2 tablespoons French dressing
- ¼ stick (not ¼ pound) of butter
- 1 teaspoon salt
- ½ dozen peppercorns
- small onion cut up
- celery stalk cut up
- 1 cup Burgundy wine

Remove animal from marinade and wipe dry. Save marinade. Break open chest (rib cage) and spread animal 12 inches above coals to which has been added a small piece of hickory. Close oven and cook for 15 minutes, then baste with strained marinade and repeat every 15 minutes until animal is tender.

## FRIED SQUIRREL

Separate young and old squirrels. Cut into pieces. Par-boil with salt and pepper in open pan until tender (older animals taking longer). Roll in plain flour, fry in hot fat until golden brown. Drain and make gravy.

## SQUIRREL POT PIE WITH ROLLED BUTTERMILK DUMPLINGS

- 2 to 3 pounds dressed squirrels
- 2½ cups water
- 1½ teaspoons salt
- 2 tablespoons butter
- ½ teaspoon black pepper
- Rolled dumplings

Wash the dressed squirrels inside and out with warm water. Cut them into serving pieces. Place in kettle, add water and salt, bring to boiling point, then reduce heat to a simmer. Cover tightly and simmer 2½ to 3 hours until meat is tender and falls from the bones. Add the pepper and butter. Then bring liquid to a boil. Lay the rolled dumplings over the top of the squirrel pieces, cover tightly and gently boil for 12 to 15 minutes. Do not lift the cover during the cooking.

Remove the squirrel to a hot platter and arrange dumplings around the edge. Pour the pan gravy over both squirrel and dumplings. The dumplings absorb enough liquid so that the gravy is automatically thickened without adding any flour.

## ROLLED BUTTERMILK DUMPLINGS

- 1 cup flour
- 1½ teaspoons baking powder
- ¼ teaspoon baking soda
- ¼ teaspoon salt
- ½ cup buttermilk

Sift the flour, measure it, sift it three times more with the baking powder, sifting it the last time into a bowl. Add the buttermilk and mix lightly with a fork. Turn onto a floured board. Knead dough lightly 4 or 5 times. Roll cut to ¼-inch thickness and cut it into rectangles 1 inch by 3 inches with a floured knife. Drop rectangles of dough on top of the boiling stew and proceed as previously directed.







# GATHER NATURE'S GIFTS

**Use your imagination instead of the department store for a bright, old-fashioned holiday.**

by David Baxter

**S**pice up your Christmas decorations and gifts this year with natural materials. Nature's decorating materials are of greater variety than man's, and they are less expensive. The results will speak highly of your creativity, patience and regard for Christmas.

For centuries natural decorations made of holly, mistletoe, pinecones and colored leaves have been used at Christmas. Dried flowers and plants such as broomweed, yucca, milkweed pods and purple thistles are used at Christmastime in the Southwest.

There are Christmas decorations which double as gifts for wildlife. Bird feeder wreaths are colorful and also help the neighborhood birds when food is short. To make a bird feeder wreath you need seed clusters of milo, bunches of red pyracantha berries, dried water lily pods, pinecones, suet, wild bird seed, an eight-inch heavy wire frame, a ribbon and a spool of light florist wire. Melt the suet and add the wild bird seed to the fat. Let the mixture cool. When the fat is almost set, stuff it into acorn cups, open pods or pinecones. Wire the milo spikes securely to the frame. Tuck in the pinecones and seed pods filled with fat. Add some colored berries, leaves and a bow.



**Using natural materials for Christmas decorations shows a person's ingenuity. Some Christmas decorations such as this wreath, which contains pyracantha berries, stalks of milo and a few seed pods filled with bird seed, can be hung in the yard to provide the birds with a Christmas gift.**



The Swedes and Norwegians have the custom of making a Christmas tree for the birds. It is a simple sheath of grain tied to the end of a long pole. The tree is placed in the yard near the house to attract the birds, who are supposed to bring happiness and good fortune to those within.

Garlands of raisins, popcorn and cranberries in a tree along with ears of corn in the branches will attract wildlife to your yard. And don't forget a water basin with a thermostat-controlled immersion heater if it gets below freezing in your area.

Bird feeders can be made from something as simple as a discarded coffee can. The two-pound size with a snug-fitting plastic lid will make a fine feeder. About one inch above the base of the can, make a slit parallel to the base and one-third way around the can. Pushing back the metal above the cut will expose a feeding shelf and seal off a chamber to hold corn. To put corn in, remove the plastic top. To allow corn to flow onto the feeding shelf cut a small hole in the part that has been pushed back.

Make a couple of nail holes in the upper back of the can and string a wire through them. Attach the can to a tree or post which is inaccessible to predators and close to some kind of cover.

Natural decorations depend on the part of the state in which you live. In West Texas snowmen and Santa Claus figures can be made of tumbleweeds. Three or four of the round plants are needed, one about two feet in diameter for the base, one a little smaller for the body and a still smaller one for the head. And for the mantel piece, how about a Christmas tree of red chilies attached to a cone of screen wire or a tree made from the flower stalk of a century plant and decorated with green and gold balls tied with bright ribbon?

Palmetto leaves can be manipulated into curves and stylized by cutting. Wire the leaves together to make a tree and place them in a bucket of moist sand. Trim the leaves with Spanish moss sprayed with bright paint. The base of the tree can be decorated with various fruits, either painted or in their natural colors. Make the most of natural colors and use paint only to highlight your gifts and decorations. Cover the fruit with a coat of lacquer to preserve them.

In East Texas, magnolia leaves make handsome door decorations. The magnolia foliage is wired together to form the swag, and about 10 sycamore balls are attached in a grapelike cluster. Set off the glossy leaves with a bright red bow.

Instead of a cut tree this Christmas, why not spend a little extra and buy a live one? You can plant it in the yard after the holidays. While the tree is in the house over Christmas, leave the roots balled in the soil and burlap they came in from the nursery. Put the tree in a bucket large enough to hold the roots and keep them moist. Right after Christmas is a good time to plant trees. Dig a hole for the ex-Christmas tree and mix subsoil with an equal amount of humus. Water the tree well and mulch with leaves.

Decorate your live tree with stars made from milkweed pods. Paint the pods inside and out and form a five- or six-pointed star with half sections of the pod, hollow side up. Draw the sections together and fasten with wire. Suspend it from the tree with wire.

The nuts growing in your area can be used in a variety of ways, wired in bunches, gilded or painted. Garlands of walnut shells are made by gilding the shells and glueing one half of the shell to a long piece of ribbon, hollow side to the ribbon. Glue the other half of the shell directly to the first half on the other side of the ribbon to make a tight fit. Repeat this with as many shells as it takes to fill up the ribbon.

Walnut shells are also good decorations by themselves. Smooth the insides of several shells and place the middle of an eight-inch piece of wire at the wide end of the shell. Pass the wire closely behind the rim up to the pointed end and twist to secure it. Make a hanging loop with the rest of the wire. Glue little figures to the inside of the shells.

The same thing can be done with clam shell halves. Spray paint a large shell and decorate the inside with seashore creatures such as small dried starfish. Glue a fake pearl to the indentation on the shell's hinge and hang the shell with a ribbon.

The clam shells can be sprayed with paint and decorated with bits of pearl, costume jewelry, sequins and shells. Fill the shell with small cakes of soap and wrap the whole thing in colored cellophane and use them for stocking-stuffers and party favors.

Wrap your homemade gifts in paper of your own design. Collect some colorful leaves and press them in the pages of a heavy book. Wrap your gifts in plain paper and tape down some of the leaves with clear tape. Cover the entire package with cellophane. Leaves can also be used as an outline. Pin the leaves in a design on the paper and spray paint the entire paper. Remove the leaves and you will have white leaf designs.

There are several ways to stamp designs on paper; an old way is the potato print. Cut a large potato in half. Draw a design on paper and place it on one of the potato halves. Cut around the design to a depth of about three-fourths of an inch. The design will then stand up in relief. Brush the design with colored ink or paint and stamp it on paper.

Leaf designs can be permanently made on scarves. Place the leaf vein-side up with the fabric on top and rub over it with a crayon until the leaf is imprinted on the cloth. Use several different types and sizes of leaves and colored crayons. To set the design, place a damp cloth over the pattern and press it with a hot iron. This melts the crayon into the fabric.

Aluminum trees with rotating colored lights, plastic wreaths and reindeer made of plastic foam get a bit monotonous. It doesn't take much creativity or effort to pick out your Christmas decorations at the local five-and-ten. For a little extra time and usually a lot less money you can make a Christmas both you and your family will remember for a long time. \* \*





No design should restrict a person's creativity. These ideas should be guides, but if a person wants to change the plan, add a decoration or use different material, he should. To make this stylized Christmas tree, we used the stalk of a century plant, some small berries and pinecones and some ribbon. Several of the gifts and decorations mentioned in the article are shown on the right. From the top they are a bird feeder, a Christmas gift of grain for the birds, a star made of milkweed pods and a decorated walnut.





# OUTDOOR BOOKS

**THE DOOMSDAY BOOK** by Gordon Rattray Taylor; Fawcett Publications, Greenwich, Conn., 1970; 320 pages, \$1.25.

Once we get past the ominous title we run into the frontispiece, which is a dire quotation from The Revelation of St. John the Divine filled with angels setting locusts and brimstone loose on the land. Then we get down to the really bad stuff.

*The Doomsday Book* is a catalog of all the horrible things which man has done to the earth and is planning to do such as the Aswan dam and the idea of using nuclear devices to dig canals. These are small compared to the Russian plan to build a dam across the Bering Strait, pump out all the cold water in the Arctic Ocean and replace it with warm water to make Siberia warm and habitable.

All of these projects sound absurd and a product of a science fiction writer. But they are on the drawing boards of Russian or American planners.

Taylor's chronicle of doom is similar to that of Rachel Carson in *Silent Spring*. But Taylor's book is cool and unimpassioned with none of the outrage of Carson's. Taylor covers other engineering feats, the effects of pollution on the atmosphere, DDT and tetraethyl lead. In addition to the pollutants we all know, he devotes a chapter to radioactive pollutants.

A lot of Americans look to nuclear power stations as the answer to the power shortages of the East Coast. The incredible casualness with which people handle radioactive materials terrifies the author. And the reactor wastes continue to pile up. The only thing to do with such wastes is to put them where they will not hurt anything until they decay. The half-life of radioactive iodine-129 is 17,250,000 years, that is, in 17 and a quarter million years the isotope will be half decomposed. Radioactive wastes such as strontium-90 are taken up by the body and accumulate in human sex organs to cause mutations in future generations.

Taylor's book depresses me with chapter titles like "The Last Gasp" and "Breathe Only Out!" And the examples of doom are not always far removed. Not only is there mercury in Japanese tuna, but the oysters in Lavaca Bay are so filled with the heavy metal that they are unfit to eat.

Taylor concludes his book with an analysis of the American disposable life-style. "The people of North America, about 7 1/2 percent of the world's population, use one half of the world's resources." ". . . We still incline to believe that if the U. S. 'standard of living' is thirty times that of Bengal, Americans are thirty times as happy as Bengalis." The latter is perhaps not a valid parallel because of the civil war in Pakistan, but it gets the idea across.

William Buckley called Ralph Nader a "Luddite," which I guess means one who would return to a preindustrialized society and implies short-sightedness and lack of imagination. Is Nader short-sighted if he demands a decent product for the consumer with less pollution in the making? Are the hippy kids on New Mexico communes a burden to society for returning to subsistence farming? Or am I with my air-conditioner and Buckley with his Honda greater burdens to society? —David Baxter

**PARKS FOR PEOPLE** by Ben Whitaker and Kenneth Browne; Winchester Press, New York, N.Y.; 144 pages, \$5.95.

According to a dire quote in this book, "Winthrop Rockefeller has stated that he foresees the day when visits to parks and historic places will have to be rationed." Can you imagine waiting years for a permit to go to the Davis Mountains State Park but not getting a permit to see Fort Davis?

And yet on the opposite page from the quote there is a picture of rubbish stretching far into the distance — on land that could be used for recreation. Where can we get more parks? How can we use them best? What is the best design? How can we protect them and yet get the full use from them? This book attempts to answer these questions.

It is not a book about wilderness. A study cited by the authors indicates that people are more concerned with parks close at hand — a small place where they can walk in the afternoon. While larger areas are nice to go for vacations, we need parks for the weekends when we don't want to travel or for other times of leisure. Thus, the authors say, parks "should be visualized as part of the city's fabric."

There is a whole study of parks; you can study parks in college; and parks and park design have a history and a discipline just as music or art do. Caesar endowed the first public park in his will before he was killed; and many of the parks of Europe today were once the private property of royalty or noble families.

There is a kind of thumbnail education in park design. There are ways, for example, of making a small pond look like a long river or of giving the impression that green space extends to the horizon when actually there may be a highway just a hundred yards away. And of course park design can do a great deal to cut down on vandalism by providing something for potential vandals to do. In the authors' minds, vandalism is seldom planned but is generally caused by people bored with their surroundings. If they are in a park, they wreck signs or throw property in the river.

But the authors' basic idea is expressed in the title. Parks are for people. For example, children's playgrounds are designed by architects, and many undoubtedly make good architecture, but children do not use them. It is advised that planners consult with children about playgrounds. And of course, unstructured playgrounds built of simple, inexpensive materials are best because in the children's minds the materials can become airplanes, ships, cars, houses or whatever else children want at the time.

The authors are British. Americans will have no trouble with the language although a few words are consistently used in a way we do not use them. More significantly, most of their examples of parks are in Britain, and most readers cannot be familiar with them. However, parks from all over the world are cited as either good or bad. While they don't say anything about parks in Texas, they have some very good things to say about several parks in the United States.

Ben Whitaker, who wrote most of the book, is a writer and broadcaster and was a member of Parliament. Kenneth Browne is a townscape design consultant. He drew the illustrations and wrote the section on design. There are more than 100 illustrations — photographs of parks, both good and bad, and Browne's architectural drawings. All are closely keyed to the text so that when you read an idea you can see its picture.

This is not a book for light reading. It will appeal to people on a committee to establish a park and to people who think a park is needed in their community and would like ideas on how it might be established and designed. It might be especially useful if someone intends to destroy a park near you soon. — Don Walden



Front cover — Jim Whitcomb; Nikon-F, 400mm Leitz-Telyt; Kodachrome-X.

Inside front — Leroy Williamson; Mamiya C-33, 80mm; Ektachrome-X.

Pages 2-3 — Whitcomb; Nikon-F, 400mm; Kodachrome-X; Austin.

Page 3 — Whitcomb; Nikon-F, 400mm; Kodachrome-X; Austin.

Page 4 — Whitcomb; Hasselblad 500C, 80mm; from Ektachrome-X.

Page 6 — Whitcomb; 4x5 graphic view camera, 300mm; Ektachrome Type B.

Page 7 — Whitcomb; 4x5 graphic view camera, 300mm; from Ektachrome Type B.

Page 9 (left) — Whitcomb; Hasselblad, 80mm; Ektachrome-X. (right) — Annette Morris Neel; pen and ink on illustration board.

Page 12 — John Suhrstedt; Hasselblad 500C, 80mm; Ektachrome-X.

Page 13 — Suhrstedt; Hasselblad 500C, 80 mm; Ektachrome-X.

Page 14 — Richard Moree; Hasselblad 500C, 80mm; Ektachrome-X.

Pages 16-23 — Jim Whitcomb made all the photographs of the commissioners except the ones of Bob Burleson. He used a Hasselblad 500C and Ektachrome-X film. Reagan Bradshaw took the pictures of Bob Burleson, using a Hasselblad 500C with a 150mm lens and Ektachrome-X film. The picture on page 23 was made in Reagan Canyon on the Rio Grande in Brewster Co.

Inside back — Whitcomb; Nikon-F, 50mm Micro-Nikkor with extension tubes; Kodachrome-II.

Back cover — Whitcomb; Nikon-F, 50mm Micro-Nikkor with extension tubes; Kodachrome-II.

# LONG SHOTS SHORT CASTS

**Ear Care:** Target shooters and hunters should be aware of the fact that they are more than likely doing irreparable damage to their ears unless they are wearing protective coverings. Many people consider the ringing in their ears that comes from shooting as being a temporary condition but experts have shown that this condition becomes permanent after repeated exposure. One study showed that 103 Florida hunters had considerably poorer hearing of certain pitches than did 21 physicians who had not been exposed to gunfire. Most of these 103 hunters were not aware of their hearing losses. Experts recommend the muff-type of hearing protectors such as the ones worn by flight-deck and airline maintenance personnel for all trap, skeet and target shooters.

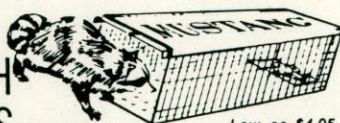
**Promises, Promises:** For a number of years the danger of lead poisoning in waterfowl has been recognized and the manufacturers of shotgun shells have been promising to develop a soft-iron shot that would not harm waterfowl that ate it. Now many conservation groups have gotten tired of promises of solutions and have demanded the end of lead shotgun pellets. One of the groups, the National Rifle Association, has asked that no lead shot be allowed during the 1973 season. As an example of how much lead is involved, the department's J. D. Murphree Wildlife Management Area near Port Arthur had an estimated 73,051 shots fired on it during the controlled hunts in 1970. This figures out to about 5,705 pounds of lead being deposited on this one hunting area.

**Cleaning up on Pollution:** A New York City mother and son received a \$12,500 government bounty from U. S. Attorney Whitney North Seymour. The two had observed concrete trucks being washed out and the runoff flowing into New York's East River. With the help of the Army Corps of Engineers, the mother and son took movies of the unlawful dumping. Release of industrial effluents into waterways is prohibited under the 1899 Refuse Act Permit Program, and informants receive half the fine collected from violators of the Act.

**Even-aged Stands:** Paper and lumber companies, to receive the highest yield per acre on forest lands, have in the past turned whole forests into nice, straight rows of pine trees that will all be ready for cutting at the same time. At a public hearing in Alabama to discuss protection of National Forest lands, an eight-year-old Brownie Scout stood up and said what many people feel, "Wildlife can't live very long on pinecones only." After summing up the situation in one sentence, the girl then sat down.

**Lots of Crude:** Enough oil and petroleum products to provide 75 million cars with 20 gallons of gas each were spilled on the waters of the world in 1970 according to the National Audubon Society. This amounts to five million tons of the world's crude oil production of about two billion tons.

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# RED SNAPPER- RESEARCH



John Suhrstedt

**A crewman of the research vessel "Western Gulf" hauls a red snapper aboard for study. The Parks and Wildlife Department is trying to determine the future of this important industry along our coast. The "Western Gulf" fishes the snapper banks and records the catch per effort at each location fished. Sample fish are weighed, stomach contents analyzed and other information recorded.**

Is the red snapper fishery declining? Fishermen say that it is, and commercial landings in Texas dropped by more than one-half from 1964 to 1969. However, fluctuations of this magnitude have occurred in the past, and one can read the same lament in literature in the late 1800's.

Are the numbers of red snapper truly decreasing? If they are, what is the reason? An answer cannot be given until we gain more knowledge of the fishery and the fish that make it up. The red snapper has been an important food fish since before the Civil War, and in more recent years has become avidly sought by sports fishermen. Yet we know relatively little about its habits. Until we do it will be impossible to make sound judgments concerning its population status and management techniques.

In order to obtain more information, the crew of the Parks and Wildlife Department's research vessel *Western Gulf* has embarked on a study of the fish and the fishery. Some very good groundwork has been laid by others, but many questions remain unanswered.

The red snapper is found from Brazil to Massachusetts, but the largest concentrations are off the coasts of Louisiana, Texas and Yucatan, Mexico. They inhabit, but are not necessarily confined to, hard limestone and irregular bottom formations. In Texas the many large snapper banks that rise 40 to 50 feet above the relatively smooth Gulf floor have long been popular fishing grounds. Fishermen using fathometers also look for small depressions, lumps and wrecks where fishing is usually successful. Very young fish are caught with shrimp trawls on muddy and sandy bottoms in the Gulf of Mexico.

Red snapper are usually found in deep water, but have sometimes been caught in the passes between the Gulf and the bays. Fishermen catch them from a 45-foot deep reef north



of Port Mansfield to as deep as 720 feet. Most, however, are caught between 120 and 480 feet.

Very little is known about their migrations. Tagging studies done in Florida indicate that there is not much movement by adult snappers, but tag returns were too few for definite conclusions. Tagging of this species is difficult due to its deep-water habitat. Fish are usually in poor condition after their ascent from the

great pressure of the depths. Since the reefs off Port Mansfield are in relatively shallow water, an attempt will be made to initiate a tagging program in that area. The tag will consist of a plastic disc placed in the stomach cavity with an attached plastic streamer that protrudes from the body. The yellow streamer is readily noticeable when the fish is caught, and the blue disc may be removed when cleaning the catch.

These tags should be returned to the Parks and Wildlife Department with the location caught, date, weight and length. A number and address is imprinted on the tag.

Spawning on the Texas coast begins in early June and lasts through the middle of September. Very little else may be said about the spawning habits and the development of red snapper until more data are collected. One of the prime ques-



John Suhrstedt



# RED SNAPPER— RESEARCH

Very little is known about the red snapper, and studies of the fish are difficult because of its deep-water habitat. The "Western Gulf" collects samples off the Texas coast for a tagging program to determine the snapper's migration. The Parks and Wildlife vessel will also attempt to learn a little about the fish's spawning and development.

tions that needs answering is: Where do they spawn? Reports by fishermen that red snappers rise within a few feet of the water's surface to spawn have never been verified. There have been many reports of the fish coming near the surface, but the reason for this movement is unknown.

Work done on age and growth indicates that they reach about 10 inches in length during the first year and probably grow at a rate of three inches per year up to age four. This growth rate was determined by reading rings on the fishes' scales, similar to telling the age of a tree, and by tag return data. These earlier estimates of growth rates were substantiated later by a tag returned in Florida. A fish tagged at 15 inches in length was caught 5½ years later when it was 30 inches long. As the fish grows older the rate of growth decreases, and in very small snapper

the growth is accelerated. Fish that average two inches in length may be three inches long one month later. The average fish caught by fishermen weighs from one to four pounds, but they are known to reach 30 to 35 pounds.

Food habits have been studied with some difficulty because the fish's stomach turns inside out when the fish is brought from the pressure of the depths. However, data collected from several sources indicate that red snapper will eat almost anything that is available. As a general rule the adult snappers feed primarily on other fish, while the young eat crustaceans such as crabs and shrimp. In the springtime, a favorite food is a tunicate commonly called "tapioca" by fishermen.

Fishing methods are still essentially by hook and line. Other methods such as traps, hoop nets and trawls have been attempted, but so far have proved to be impractical. An attempt will be made to design a trap or other device that will make fishing for snapper and other reef fish more efficient.

In order to accomplish the red snapper survey, the crew of the *Western Gulf* fishes the various areas using electric and manual reels. The catch per effort for each sample is obtained, and each fish is weighed, measured, its sex determined and stomach contents analyzed. Supplementary samples are also obtained from commercial fish houses and aboard party boats to aid in evaluating the fishery.

Bottom trawl samples are taken in transects from inshore water seaward, in order to catch young snappers and determine their distribution. The same procedure is used with them as with the adults after capture. With each sample the temperature, salt content, current and amount of oxygen in the water are determined to find how these factors influence the fishery.

Interested persons have urged a study of the red snapper fishery since the late 1800's. Some work has been done, but much more is needed before we may be assured of preserving this old and important fishery. \*\*

Information for this article is from a study conducted in cooperation with the Department of Commerce, National Marine Fisheries Service, under Public Law 88-309, Project 2-109-R.



Richard Moree



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# This Is Your Texas Parks and Wildlife Commission

by Jim Cox and Howard Barnett



**JACK R. STONE**



**CHAIRMAN  
PEARCE JOHNSON**



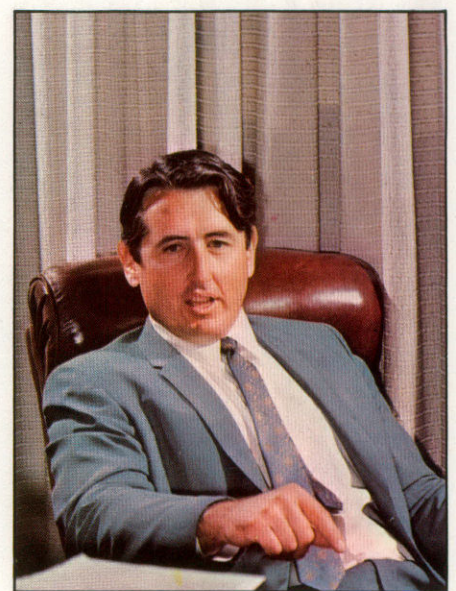
**HARRY JERSIG**



**MAX L. THOMAS**



**JOE K. FULTON**



**BOB BURLESON**



## PEARCE JOHNSON

Pearce Johnson, chairman of the Texas Parks and Wildlife Commission, has done what many aspire to but only a few achieve. He has attained success through the years by doing things he truly enjoys. From the time he became a full partner with his father in the cattle business at age 16 until being named by Gov. Preston Smith to the commission two years ago, Johnson has pursued ranching, aviation, politics, law, hunting and fishing as the years have rolled on.

Johnson feels the commission chairmanship is perhaps the most time-consuming responsibility he's tackled in years. "I've hardly even popped a shell at a quail since I got on the commission," Johnson grinned from under his western hat, looking out across the landscape of his ranch near Austin. "It seems like I have a hard time getting around to even opening the mail that stacks up on my desk."

The 313-acre ranch near suburban Del Valle offers a handy retreat from the rigors of operating a law firm and heading up the commission. It's more than just a hideaway, however. It's a homestead which reflects the versatility of its owner. The sprawling ranch house is decorated with original oil paintings selected by Johnson. Antique furniture, utensils and machinery are seen both indoors and out. A full-sized red barn



**This Brahma bull is part of a herd of fine beef cattle on one of Chairman Johnson's ranches near Austin.**

and a miniature replica of his father's original store in Del Valle were both designed and built by the chairman with a minimum of assistance.

"My father was a farmer and the postmaster at Del Valle when all the community had was two stores, a blacksmith shop, a gin and a confectionery," Johnson said. The area has grown, but Johnson still has the same mailing address as that of his father.

The chairman attended a two-room school at Del Valle before changing to Allen Junior High in 1928. He graduated from Austin High School in 1933 and received his law degree from the University of Texas at Austin in 1940.

"I started practicing law at the Brown Building where my office is now—but then I think it was in somebody's spare closet. I borrowed a desk from the attic to start with," he recalled. Shortly after, World War II broke out, and he decided to join the U. S. Army Air Corps. After several stateside flying and flight training tours of duty, Johnson spent the rest of the war at Luke Field in Phoenix, Ariz., where he was test pilot, director of flight training and a member of various military boards. He still enjoys piloting his own two-engined plane when he has time.

At war's end, Johnson returned to Austin and was elected to the Texas Legislature as a representative. He served in the Legislature 10 years, until 1957.

Persons who have confronted Johnson while he's presiding at a commission meeting have doubtless noticed his ability to slice through layers of information to get at the heart of the problem at hand. And as chairman he readily admits he has encountered some headaches, particularly in the area of providing parks for a growing number of out-

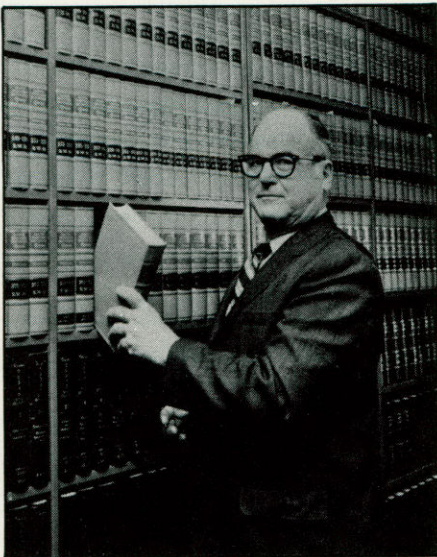
door-oriented Texans. "It's certainly possible to overuse a park," Johnson warned. "They've already done it in some other states, and I don't want it to happen here. This means we need more than just 'playground' type of parks . . . we need minimal development parks in natural areas and also parks closer to large population centers."

Johnson pointed out that some states are having to limit the number of persons who enter parks on a given day. "We already are to the point where we may have to do that in some of our parks, because putting too many people in a park simply destroys it," he said. Two other problem areas are sewerage facilities in the parks and the skyrocketing cost of construction, particularly in the more isolated areas.

There is, however, a bright side. "The Legislature was extremely kind to us in the past session," asserts Johnson. "We have been able to put in new bookkeeping and operational procedures which will cut down delays in bill payments and other transactions which were getting bogged down, and of course there's the dedicated fund." This is the fund earmarked by the Legislature to be used for park acquisition and development, coming from a portion of the cigarette tax. It will bring an estimated \$10 million annually for parks use.

"Now we need to concentrate on park acquisition because we are just now overcoming the underfinanced condition that used to be the case," Johnson continued. "Federal funds from the Bureau of Outdoor Recreation are greater now to go along with the dedicated fund, so we need to get some implementation and see which direction we're heading."

Johnson praised the total effort of



**Pearce Johnson researches through his Austin law firm's library.**



the department but expressed concern about maintaining the proper balance on research, planning and implementation. "Research and planning should be directed to specific problems or projects, and the end product is the conversion of these efforts into benefits for the people of Texas. We must not research or plan for its own sake, but always should keep the end product in mind," he said.

In fish and wildlife work, Johnson feels the two main goals should be to determine what's to be done to assure adequate wildlife habitat in the years to come and, secondly, to find ways of extending the productivity of large lakes.

Johnson said he encounters only slightly fewer problems in operation of his Del Valle ranch and four other acreages than in the state park system. "It's hard to get good help and hard to maintain machinery—but you have to have both to operate," said Johnson. Most of his property is in the Travis County area, but his newest acquisition lies along the shores of the San Marcos River. Most of his land is farmed, with healthy green fields of coastal bermuda and Johnson grass for hay being the main crop. He maintains a herd of cattle, including several large Brahma bulls.

Johnson and his wife Sara enjoy sitting by their swimming pool during rare moments of relaxation. The State Capitol can be seen over the treetops in the distance—a reminder of the busy arena in which the versatile Del Valle resident finds increasing demands on his time. \*\*

## HARRY JERSIG

Hunting and conservation are two topics which gladden the heart of Harry Jersig. The Texas Parks and Wildlife Commission member from San Antonio feels that hunting and wildlife conservation are more than just compatible—they are interdependent parts of the state's natural heritage.

Commissioner Jersig is highly knowledgeable in both fields. His big game hunting exploits have won him international acclaim, while his efforts in wildlife restoration and conservation have earned him the respect and friendship of Texas sportsmen and landowners.

"The hunter is a conservationist," the commissioner asserts, "because

he's the one who pays the bill for governmental game management programs." In most cases, Jersig points out, controlled hunting does no harm to game populations, and in some cases it is a necessary tool for prevention of overpopulation and starvation among game herds.

Jersig also is interested in another kind of conservation—the acquisition of park land for Texans to enjoy now and in the future. "I think one of the greatest needs of the Parks and Wildlife Department is to continue to obtain more property for parks and game management areas. But it needs to stay on a 'pay as you go' basis where the users of the park can cover most of the expenses of its development and maintenance."

Much already has been done in the field of park acquisition, Jersig points out. "The Texas state park system was smaller than New Jersey's just a few years ago in 1967," he said. "But the \$75 million bond issue gave us a chance to go ahead and get some good park sites, so now we have more than 13,000 additional acres." He added that the Dedicated Park Fund approved by the 62nd Legislature is a tremendous boost for the park system. "Bond money can only be used to acquire and develop new park lands, but the dedicated fund money can help the state with needed projects in existing parks," he explained. The dedicated fund amounts to \$10 million a year.

Jersig's businesslike approach to the operation of a state agency probably comes easy for the silver-haired commissioner. He founded the Lone Star Brewing Corporation in 1939 and is chairman of its board of directors. He is the guiding light behind the San Antonio brewery's becoming a showplace which attracts thousands of tourists each year and which was swamped with more than a million

visitors during the HemisFair in 1968.

The brewery's famed "Buckhorn Hall of Horns" includes mounted specimens of hundreds of species of game animals and birds. This collection will soon be complemented with a "Hall of Fins" display of game fish from many of the world's waters. Add to these outstanding attractions an olympic-sized swimming pool for brewery employees, a spring-fed lake for bass and catfish feeding experiments, and a restored cabin which was used by famed short story writer O. Henry in 1882 and you have the makings of a tourist magnet.

But Jersig's interest and influence in wildlife and the outdoors goes far past his projects at the brewery. His Auerhahn Ranch in the Hill Country near San Antonio is the center of experiments in propagation of such exotic animals as red deer (Germany), fallow deer (England), axis deer (India), sika deer (Japan) and black-buck antelope (India), in addition to a sizeable herd of native white-tailed deer. Two members of the sheep family, the mouflon from Corsica and Sicily, and the aoudad from North Africa also are among the species prospering at the ranch.

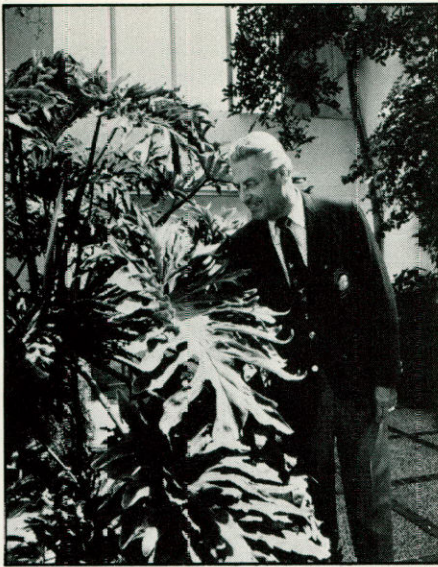
The 1,500 acres of fenced land contain flocks of bighorn wild guinea fowl from Africa, which surprisingly fraternize closely with native wild turkeys, and spotted sand grouse. "The sand grouse will have to be considered a failure," Jersig sighed. If they are a failure, they can be counted as one of only a few Jersig misfires among a flock of successes. One of Jersig's best-known successes is the stocking of the Guadalupe River below Canyon Dam with rainbow trout. He instigated the first feasibility studies and provided thousands of trout for the successful "put and take" operation.

This trout stocking project has



Seated on the right, Harry Jersig confers with Lone Star Brewing Company officials.





**Tropical plants growing at the San Antonio brewery receive Commissioner Jersig's attention.**

not only provided countless thousands of man-hours of fishing pleasure for anglers, but it has also helped answer a multitude of questions about how well trout can live in Texas waters. Another stocking project Jersig directed recently had a more ironic twist—he sent several pair of blackback antelope to their native Pakistan where they had been wiped out from various causes.

Jersig has the most tenure of the six commission members, having been selected by Gov. John Connally in 1967. He prides himself on his independent views as a commission member. This independent nature probably led to his starting his own wholesale candy company while a student at the University of Texas more than 40 years ago.

His early days as a distributor of candy products are somewhat notable nowadays because of his first employee—a gangling teenager named Lyndon B. Johnson. Young Johnson rode with Jersig in a Model T Ford and opened gates for his 22-year-old boss. Jersig paid Johnson 50 cents a day, plus all the peanut brittle he could eat. When Jersig visits his now-famous friend at the LBJ Ranch, he always takes along a small gift—a bag of peanut brittle. \*\*

## JACK R. STONE

Wells, Tex. (Pop. 671) is a pocket-sized community tucked away in the postcard prettiness of East Texas' Piney Woods. Rustic storefronts line

the three-block main drag in this town which refuses to be steam-rolled into the conflict and confusion of the 1970s. Its people are friendly, straightforward and given to independent thinking.

Like many other small towns, Wells enjoys the advantages offered by nearby urban centers without sacrificing its comfortable "small town" status. Likewise with one of Wells' outstanding citizens. Jack R. Stone is in many ways a prototype of the East Texas business leader, but, like his community, he is not physically or philosophically tied down to home base. More than anything else, Stone stresses the need for serving all the people of Texas—not just East Texans.

If anyone ever had a background conducive to being partial to East Texas, Stone does. Born in Nacogdoches, he graduated from Stephen F. Austin University there and then worked five years for the local Texas National Guard unit as an administrative assistant before joining the First State Bank in Wells in 1956. He became president of the bank in 1965, and was made chairman of the board in 1969. He lives with wife Shirley, son Bryant, 8, and daughter Robin, 7, in one of the town's larger homes, and he owns three farms in the immediate area.

On the matter of serving Texas citizens, Stone agrees with Johnson and Jersig that securing and maintaining good park lands probably is the single most important mission of the Parks and Wildlife Department. "The state has done well with what it has had," Stone said, "but now we should be able to do much more since we have the new dedicated fund authorized by the last Legislature."

"Outdoor recreation," Stone declared "is number one." He explained that Americans are increasingly turn-

ing to outdoor pursuits such as hunting, fishing, hiking, nature study and camping. This is creating a tremendous demand for parks of varying descriptions—ranging from highly developed recreation parks to primitive natural areas.

Stone, who glows with the enthusiasm of one who loves the outdoors, takes pride in the East Texas environment. He feels that his area has benefited from the department's game management and game law enforcement efforts through the years. Deer and a number of smaller game animals and game birds abound in the Wells area, and the streams and lakes offer fine fishing.

But his pride in the area's condition is tempered with the fear that pollution is taking its toll in insidious ways. "I would like to see the department become more active in pollution control, but as of now I think it's doing about all it has the authority to do," said Stone. "It seems to me that the youth of this country are showing more intelligence than the older folks on the subject of ecology." He added that he believes the ecology movement is a valid and growing concern among Americans—and not just a fad. "People are getting interested simply because we're destroying our environment," he said flatly.

Stone has a high opinion of the Department's wildlife restoration programs, although with typical candor he says "I can't vote for all the research programs, but I know many of them are valuable." Those receiving the commission member's favor are those which seek to improve habitat for major game species such as deer and turkey, and programs aimed at improving fish production in the state's lakes.

"I think the commission should accede to the wishes of the citizens



**Jack R. Stone looks over operations in the First National Bank of Wells where he is president and chairman of the board of directors.**



in their own areas wherever possible, as long as it's consistent with good management practices. Game and fish management is actually people management," he points out. "If you can't get the cooperation of the citizens out there in their own communities, then none of your programs are going to be successful. This goes for law enforcement and any other part of the department's work." Stone's empathy for the wishes of individuals and groups in the decision-making process was apparent recently when he spoke in favor of protection of spike bucks in one East Texas area and favored opening of the Canadian River area to public hunting. Both of these decisions, Stone feels, gave the local citizens what they wanted and what they were sufficiently concerned about to petition the commission.

Stone is concerned not only with wildlife, but also with the Wells community and how it's meeting the needs of its residents. He is president of Wells Housing Corp., a non-profit organization set up to provide low-cost rental housing in the city. And a 28-lot subdivision on the outskirts of town in a heavily wooded area was backed by the corporation to fill another need—that of attractive homesites for future Wells residents. Most Wells citizens work in the timber industry, but many commute to jobs in nearby Lufkin or Nacogdoches. Stone expects more and more commuter residents to make Wells their home in the future.



**Commissioner Stone takes pride in the East Texas environment such as this scenic stretch of the Neches River.**

Stone has also been active in Boy Scout work and is past president and charter member of the 2,000-member Cherokee Wildlife Association, a group dedicated to the improvement of hunting and fishing through conservation. He was charter president of the Cherokee County Livestockmen's Association and is active in the Chronister Wildlife Conservation Club.

East Texas is the greatest place in the world to live, Stone feels. It has been overlooked somewhat by the commission in the past, in his view, and as a result is behind some other areas in park lands. But this is soon to be corrected, Stone believes.

This optimistic outlook is another trademark, and it flavors all his activities. He joins with the department's executive director, James U. Cross, in championing an "affirmative attitude" as a must for the success of any individual or organization. "I think the Parks and Wildlife Department is moving in the right direction now," Stone assessed, "and I believe the agency's image to the public is going to improve constantly as it moves forward." \*\*

## MAX L. THOMAS

Whether darting through Dallas traffic in his Mercedes 600, following an English setter through the brush or barking rapid-fire oilfield parlance into a telephone, Max L. Thomas conveys the indelible impression of muscle and mobility. Even seated at his custom-made teakwood desk he radiates vitality and impatience. And this high regard for the productive use of time is reflected in his extreme candor. The new Texas Parks and Wildlife Commission member from Dallas does not mince words, especially when the subject interests him.

The Parks and Wildlife Department's role in the improvement of hunting and fishing is the primary Thomas target for improvement — particularly in the field of fisheries research and lake improvement. "We're just going to have to find a way to keep these lakes productive," he said, "or they're all going to be in bad shape." Thomas has more than just pedestrian interest in fishery matters. He has conducted fish stocking experiments on several of his own lakes and has collected a considerable amount of data on fish hybridization.

"I think it's a shame that the department doesn't own a lake, or the State of Texas doesn't own a lake it can control its experiments on. We have the responsibility of managing all the Corps of Engineers lakes but we have no control over them otherwise," Thomas said.

Thomas' way of attacking a problem is always head-on. This method boosted him to success as an independent oil operator beginning in 1949 and now as an oil producer with oil properties in several states.

Now that he has been named to the commission, he plans to move forward in several areas. The planting of striped bass in freshwater lakes has been fascinating to Thomas for several years, and he intends to do what he can to encourage further study of the species as an addition to the state's game fish picture. "Texas is lagging behind several other states in the release of striped bass," Thomas said, "and there is no reason in the world why these lakes in Texas can't support striped bass and benefit from their being there."

The striped bass is a saltwater species, but it was discovered that they thrive in freshwater conditions. It will probably be a put and take proposition but when stocked properly, they provide valuable production for fishermen and also help control forage fish populations.

"I think also the department has failed to conduct research into some of the hybrid species that are being developed in other parts of the country," Thomas said. "There have been some fascinating results from white bass and striped bass crosses, and remarkable hybrid smallmouth bass strains."

He said also that there are some chemicals that are being used in various states' fisheries that should be experimented with in Texas.

Thomas, when time permits, hunts quail and works with his prize-winning English setters. One of his dogs, Holocaust, recently won a regional field trial event of the Southwest American Field Trial Association, and will compete in the national field trials in Georgia this month.

Just as his hunting time has been curtailed in recent years, so has his skeet-shooting time. But Thomas and his wife have garnered enough national honors to enjoy a well-earned retirement from clay pigeon competition. Both have won world titles in





**Max L. Thomas pores over maps in his Dallas office as he coordinates far-flung oil producing activities.**

international competition. In 1965, the team of Commissioner Thomas and Martin F. Wood, also of Dallas, set the world record by hitting 503 straight clay pigeons. Wood is the son of the late Frank Wood of Wichita Falls, who once served on the Texas Game and Fish Commission. Thomas is a past president of the Dallas Gun Club and past director of the International Skeet Shooting Association. His other activities include a director's post for the Dallas Cowboys football team organization and a past directorship of the Preston Trail Golf Club.

Thomas was born in the town of Ben Hur, Limestone County, and was reared in Irving, which was just a tiny town of 1,200 residents in the early 1930s. He decided to join the Army Air Corps in 1939 after graduating from Terrell Prep. His military career, which continued to 1949, included flying and instruction in most of the types of aircraft of the day. During World War II, he flew 35 European reconnaissance missions in P-38s, and then was stationed in Greenland where he flew B-17s and B-25s on anti-submarine and weather missions.

Thomas stayed closer to the ground after 1944, when he was director of training for the Air Transport Command's Ferry Division. He returned to the Dallas area when he became base operations officer at Hensley Field, and he remained there until retiring as director of training for the Air Force Reserve at the base.

Still something of a flying enthusiast, Thomas nevertheless keeps a full-time pilot to fly his two-engined plane. "I still feel like I can fly," he grinned, "but when the weather's bad I sure don't mind an expert doing the piloting."

Thomas feels the department should seek more park lands to meet future recreational needs, but with reservation. "I don't think parks should be bought at the expense of other programs. We should be able to do both."

The side of Max Thomas seen the least by the public is the botany side. He sometimes retreats into a crowded greenhouse nestled beside his North Dallas home and spends hours experimenting with plants.

The unusual part is the type of plants he comes up with. He takes pride in some rare color patterns he has developed in his orchids, but he also enjoys experimenting with interesting — if less glamorous — plants such as peppers and tomatoes. He gives guests samples of his latest product — a hybrid pepper which is half cayenne and half jalapeno.

Understandingly enough, Thomas developed an interest in botany while physically restrained. During a lengthy stay in the hospital several years ago, he used his excess energy to study all the books he could find on the subject. What he learned then, plus knowledge accumulated since then, has made him conversant in the field of genetics — in plants, fish and other animal forms.

Thomas is confident he will play an active role in the commission's future deliberations. "I may be wrong on some of these things I like to talk about, but by golly I can't find out until I get in there and try."

For a dynamo like Thomas, trying and achieving are usually synonymous. \*\*

## JOE K. FULTON

Joe Kirk Fulton was not known by everyone in the South Plains area in 1953, but it wouldn't be a long time coming. Not that he was an unknown when he entered Texas Tech University — he was the son of a pipeline contractor and rancher and quickly became active in campus activities. He also was to become the first masked "Red Raider" horseman mascot at Tech football games.

But the event which thrust Fulton, now a Texas Parks and Wildlife Commission member, into the campus limelight was an accident. "We were playing LSU one Saturday," Fulton recalled, "and I was making one of my first rides around the football field before the game started."

In the noise and confusion, Fulton led the Raider team onto the field and galloped his spirited black mare behind the LSU bench. As he passed the home team's student section, a male LSU cheerleader — who had been forewarned of the horse's course — inexplicably ran into its path and was knocked on a horizontal trajectory an estimated 15 feet.

"Needless to say," Fulton chuckled, "that strained relations with LSU a little, but I'd have to say they were nice about it." The cheerleader was not hurt seriously. Whether or not the incident affected the game is in doubt, but the Tech team lost.

After the game, DeWitt Weaver, who was head coach at that time, came roaring out of the dressing room. "Joe Kirk," he yelled, only half hiding a grin, "that was the only decent block we threw all night." Fulton said the coach further rebuked him for not picking the opposing quarterback instead of a cheerleader.

It's part of a West Texan's makeup



**Experimentation with cross-breeding of plants and animals is just one of Commissioner Thomas' hobbies.**



to find humor in most any situation. The sometimes harsh weather and bleak terrain apparently cause South Plains folk to turn to humor of the type made famous by Will Rogers, whose statue stands at the entrance to the Texas Tech campus. Fulton, who is known only as "Joe Kirk" throughout the South Plains, even found humor recently when a horse stepped on, and broke, his big toe.

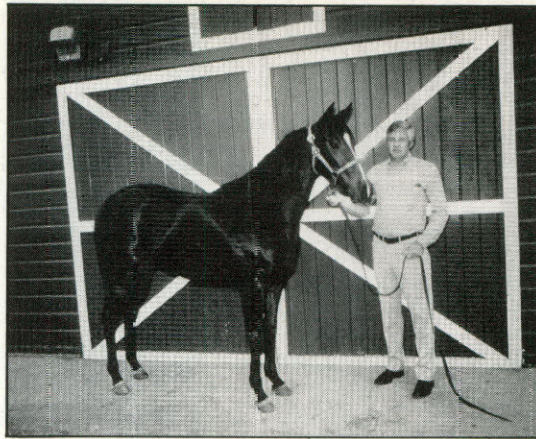
Tiring of his knee-length cast, Fulton donned a steel-toed hunting boot on the injured foot, kept a regular shoe on the other, and continued to work. "When everyone I saw asked about my shoes I just told them that was the latest style, and if they wanted to get with the fashion I had another pair just like it at home — only for the opposite feet." And it wasn't even his own horse, Fulton complained.

Fulton's love for horses began long before he became the first Red Raider, and it has not diminished. He maintains a stable-full of registered quarterhorses for both show and racing, and some of them have attained great heights. Aledo Bar's Lady was world champion halter mare in 1963, and the Fulton Quien Sabe Ranch has produced a number of other horses approaching that level of success in recent years.

Fulton is chairman of the board of the Plains National Bank of Lubbock, but his role as a banker remains on the periphery of his activities. He



**Joe Kirk Fulton is chairman of the board of the Plains National Bank in Lubbock.**



**Commissioner Fulton shows one of his prize-winning quarter horses at a farm near Lubbock.**

and his father operate a ranching empire which includes approximately 180 000 acres along the upper reaches of the Canadian River in the Panhandle and another sizeable tract near San Marcos. Fulton keeps a herd of 6,000 to 7,000 hereford cattle and some 300 to 400 head of charolais and charolais-cross cattle on the Panhandle spread.

Fulton, at 40, is one of the commission's younger members, and he admits he was surprised when Gov. Preston Smith appointed him to the commission. "Let's just say I was surprised, but it's something that I had thought about before and something I've always wanted to do," said Fulton.

Basically complimentary about the department and commission, Fulton said he feels the state's park and wildlife programs are ahead of most states. "It seems to me that particularly in game management Texas is at least better than the other states in this part of the country," he said. Law enforcement is also a concept of great importance, in Fulton's opinion, in the job of maintaining the state's game populations.

"I think the department's field personnel are a terrific help to landowners, and I think they can probably be even more valuable in the future," Fulton said. "This is both in law enforcement and habitat problems that landowners face."

For recreation, Fulton enjoys flying his two-engined airplane, shooting skeet, hunting and backing Texas Tech athletic programs. His skeet shooting exploits have included membership on a five-man team which was state champion and runner-up in world skeet competition.

A glance at his list of organization affiliations gives one an idea of his interests. He is on the boards of directors of the Texas Tech Univer-

sity Foundation, the Red Raider Club, the American Quarter Horse Association and Golden Spread Quarter Horse Association. He is past director of the West Texas Museum and the Lubbock Salvation Army organization. He is chairman of tuberculosis drive this year and was campaign chairman of multiple sclerosis drive in 1969. He is also chairman of the board of the First National Bank of Lockney near Lubbock.

Fulton and his wife, Mary Alice and sons Kyle, 10, and Joe Kirk Jr., 14, call Lubbock home. They are well-known on the South Plains now and he has almost forgotten the cheerleader incident secure in the knowledge that he would probably have been a respected personage even if he had missed the mark that night in '53. \*\*

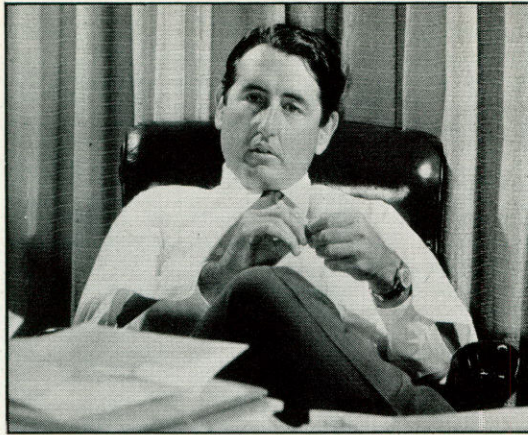
## **BOB BURLERSON**

When one of those infrequent snowstorms blankets Central Texas, and the whole world seems encased in a crystal sheath of ice, most of the folks huddle next to the home fires and wait for better days. But to Bob Burlerson, one of the newest Texas Parks and Wildlife commissioners, snow and ice offer a unique opportunity to enjoy the out-of-doors. He straps a canoe to the top of his car and heads for the eerie, sparkling beauty of an ice-shrouded river at dawn. According to Burlerson, a river is the best place to be anytime, but after a snowstorm, it has a special attraction. "It's like being in another world," he said. "It's beautiful."

The 33-year-old Temple attorney has for several years maintained a love affair with rivers, whether they are idle streams flowing past stately cypress trees or raging torrents dashing against rocks. He has traveled down at least a portion of nearly



**When not outdoors, Bob Burleson spends much of his time behind a desk at his Temple law firm.**



every canoeable river in Texas plus some in Mexico, New Mexico, Arizona, Colorado and Arkansas. Burleson is recognized by other river runners as one of the most skillful white-water enthusiasts in the state.

Burleson's love of rivers is contagious. "I'll bet I've taken a thousand people on their first river trip, and they've all come away enthusiastic about running rivers," he said. He keeps a stable of 14 canoes and kayaks in his backyard so he can infect new acquaintances with the river fever.

Along with another passion, backpacking, Burleson's love of rivers will probably influence his activities on the commission. He notes that backpacking and canoeing have grown into significant forms of recreation in the past few years and cites the reasons why these pastimes will become more and more important.

"People are looking for a quality outdoor experience," he said. "Canoeing and hiking provide this experience, and the activities are limited only by the individual's physical condition and sense of adventure. These activities are so inexpensive that just about any family can enjoy them.

"I will represent the active outdoor sportsmen's point of view on the commission," he said. Translated into terms of specific action, this means that Burleson is committed to the protection of wild rivers from the encroachment of civilization. He will also work for those who like to walk for recreation with emphasis on acquiring large tracts of land and railroad rights-of-way, he said.

Burleson says acquisition of large tracts of land, whether they are developed immediately or not, should have top priority since land prices are skyrocketing.

Protection of the rivers from con-

struction projects is extremely important for both recreational and ecological reasons, according to Burleson. "I am sure that many of the dams we have today were absolutely necessary when they were built," he said. "But now we have to take other factors into consideration when we build a dam. We have to consider the value of a stream or river in terms of fish and wildlife. We have to make sure there is enough fresh water getting to our estuaries. And we must consider the stream's value to recreation and remember that, once it is gone, there is no getting it back."

The disappearance of wild rivers would be a tragedy, according to Burleson. "Rivers are some of the only wild places left in Texas," he said. "When you drop below the bank of a river, you are in another world. You are isolated, although there may be a city just over the hill. And the river and its floodplain are the last refuge of many species of wildlife."

Burleson's dedication to saving rivers is more than just talk. He is an environmentalist and belongs to 15 environmental organizations including the Texas Explorer's Club, the Sierra Club, the Texas Ornithological Society and the Wilderness Society. He recently organized and led a trip for a study group from the Department of the Interior down a section of the Rio Grande so they could determine its potential to be included in the Wild Rivers System.

Although he terms his home and business life "low-keyed," Burleson still feels the need to get into the "wilderness" and suspects there would be fewer ulcers and nervous breakdowns if those persons under more pressure than he is would do the same.

Burleson noted that after his six-

year appointment many outdoor writers voiced their fears that because of his reputation as a conservationist, he would be against hunting. Burleson said he hunts and fishes, although these aren't his favorite activities. "As long as hunting is in line with good conservation practices, hunters in Texas will get a fair shake from me," he said, adding that hunting and conservation in Texas seem to be consistent with each other.

Although Burleson's conservation efforts along with his appointment to the Texas Parks and Wildlife Commission seem to be full-time jobs, there is no pay involved. So, somehow, Burleson specializes in enough jury trials to keep his desk piled two feet deep with correspondence. As a member of the Temple firm of Bowmer, Courtney, Burleson and Ferguson, he is keeping alive a family tradition which dates back to his grandfather's time—being an attorney in Temple, where he lives with his wife, Mickey, and daughter, Clair.

Burleson graduated from the Baylor University Law School and has been practicing law since 1961. On top of his environmental and professional duties, he is president of the Bell-Lampasas-Mills Counties Bar Association and is a member of the Texas Association of Defense Counsel.

All of this seems to be consistent with Burleson's philosophy — "Do what you can, keep your nest clean and make a contribution." \*\*



**White-water canoeing is just one of the outdoor activities enjoyed by Commissioner Burleson.**



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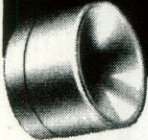
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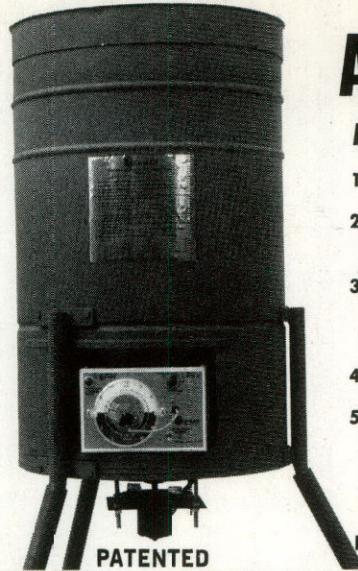
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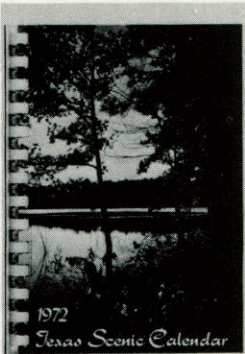
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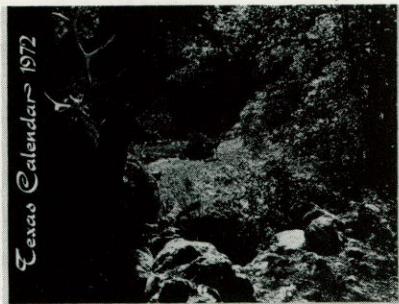


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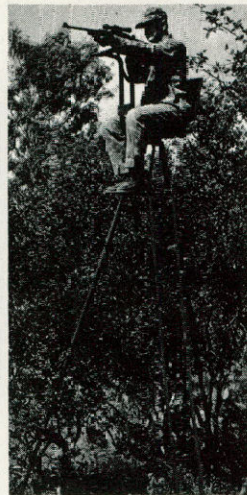
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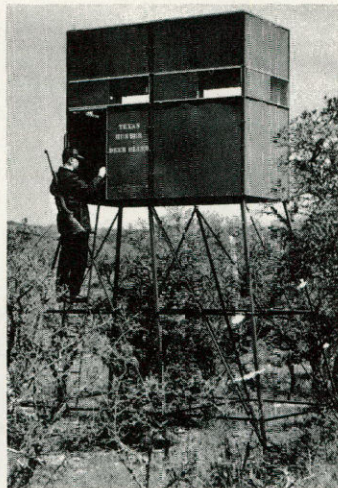
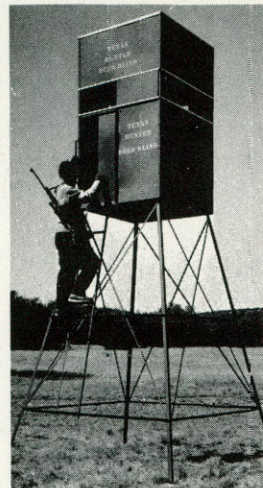


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*for the furtherance of ideals and purposes of the National Rifle Association; to combat all unfavorable laws against such purposes and ideals; to encourage the building of suitable ranges; to secure the issuance of arms and ammunition to practice on such ranges; and to create a public sentiment for the encouragement of rifle practice both as a sport and as a necessary means of National Defense."*

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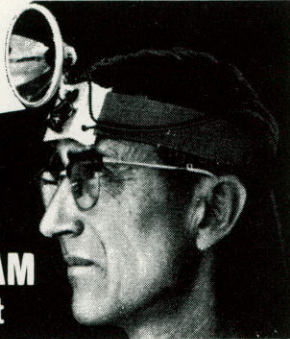
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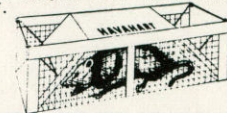
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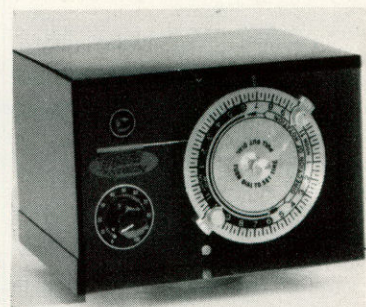


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Compiled by Ilo Hiller

To assist our readers in locating items appearing in our publication during the past year, the following subject index has been prepared. If for some reason you do not have a complete set of our 1971 magazines, most back issues are still available and may be purchased for 53 cents each. This price includes the state tax.

- ALDERFLIES:** "Dobsonflies and Alderflies" by Dr. Kenneth W. Stewart, 7-71, p. 12.
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# LETTERS TO THE EDITOR

## Palo Duro Battle

Your article and pictures of Palo Duro Canyon in the August issue were most interesting and beautiful. As a family, we have also camped there and enjoyed it very much and found it most fascinating.

I believe with additional research you will find the statements referring to the battle incorrect. Your article states that only four Indians were killed. History does not contain such a kind picture of our treatment of the Indians there. I think readers ought to behold that canyon as another place where the Indians were dealt a defeating and inhumane blow. There was much mistreatment given to a people who attempted to retain their lands that were originally theirs . . . it ought to be admitted.

In the article written by J. C. Dykes in the book "Great Western Indian Fighters," it becomes evident that in the battle of September 28, 1874, the Indians suffered terribly by the treatment of the Fourth Cavalry under the command of Colonel Mackenzie. The Indians were in their

winter camp, not a war camp. The Fourth Cavalry attacked them and destroyed all their lodges, buffalo robes, all other supplies and captured all their horses. Approximately 75 Indians were killed. Colonel Mackenzie kept a few of the horses he needed for replacements; the others he ordered shot. It is estimated in various figures. Presumably, nearly 2,000 horses that belonged to the Indians were destroyed.

Your article stated the following year the Indians went to Indian Territory. It is hard to imagine how they could have existed and survived a winter without supplies and equipment. Therefore, the Indians without horses, buffalo robes or food had no other choice but to begin migration immediately to a reservation if they were to survive the winter.

History has much unfortunate bloodshed in it. Tell it how it was.

C. J. Freudenberg  
Seguin

**Reports written shortly after the battle substantiate the small number of casualties among the Indians. Colonel Mackenzie's journal of the cam-**

paign cites three Indians killed by the advance troops, who were then recalled to concentrate on the stock and camp equipage. A New York "Herald" correspondent lists the Indian dead at four.

Along with the lodges and equipment of the tribesmen, 1,048 horses and mules were destroyed after the battle. This destruction was a planned step to remove the Indians' bases of operation, thus hampering their war-making capabilities.

Migration to the reservations in Indian Territory did in fact begin shortly after the Red River Campaign. However, General John Pope, in a report to the 44th Congress, stated that it was June of 1875 when the last band of Indians surrendered to the authorities at Fort Sill.

## Catfish Breeding

I would like some information on the breeding and habits of the catfish. A second grader, the son of a friend of mine, brought a book home from school, and I read that the catfish will pick up the eggs of his mate and carry them around in his mouth. This is in the hatching process, and they also do this in case the eggs are in danger from other fish. I have never seen or read that the catfish does this. I assume they were talking about the American freshwater catfish. The book did not say.

Jim Reeves  
San Antonio

The male of the marine catfishes of our area, which include the sea catfish (hardhead) and the gafftopsail catfish, incubate the eggs in their mouths. The male parent may carry as many as 30 relatively large developing eggs in his mouth. Some young fish may still be found in the mouth even after they have begun to feed independently.

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## BACK COVERS

**Inside:** The common house fly, *Musca domestica*, is a carrier of several diseases which plague mankind. Photo by Jim Whitcomb.

**Outside:** A colorful and harmless Texas garter snake, *Thamnophis sirtalis annectens*, suns himself beside the water on a cypress knee. Photo by Jim Whitcomb.







