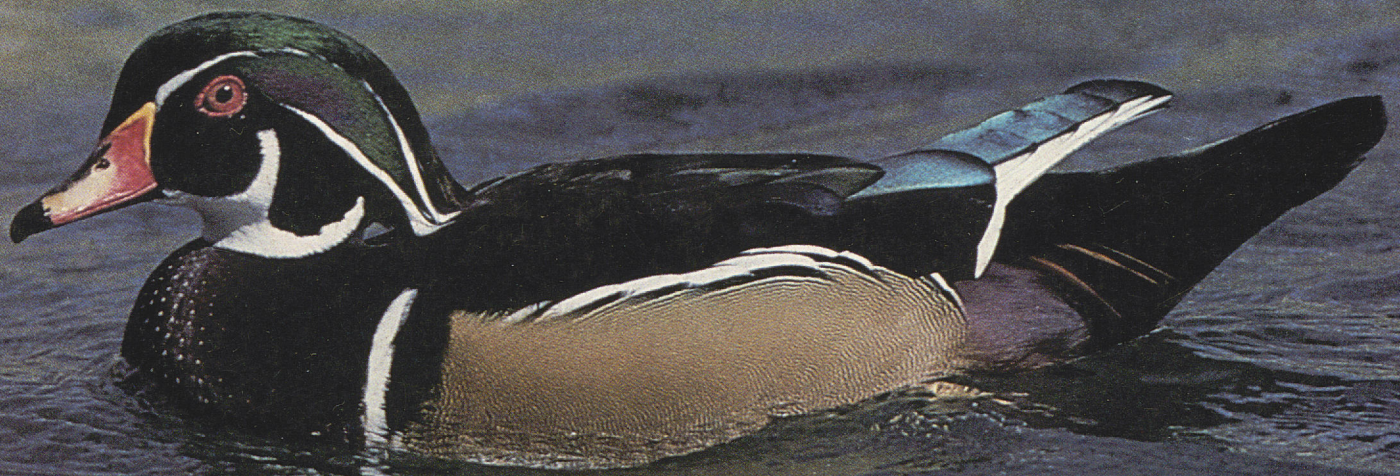


TEXAS

PARKS & WILDLIFE



December 1984



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MAGAZINE
(ISSN 0040-4586)

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

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Front and Back Covers: Male wood ducks sport flamboyantly colored plumage while the female's gray-brown coloring is more subtle. Wood ducks court and establish pair bonds during the winter and remain mated for the duration of the nesting season. (See story on page 2.) Photo by Richard Haverlah.

Inside Front: When disturbed, a gray fox moves behind a tree or other shield and waits for the intruder to pass. Photo by Tom J. Ulrich.

Published monthly by the Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744. Circulation: 512-479-4830; Editorial Office: 512-479-4992. Republication of materials is not permitted except by special written permission. The inclusion of advertising is considered a service to subscribers and is not an endorsement of products nor concurrence with advertising claims. Rate schedule available upon request. Subscription rates: \$8 for one year and \$15 for two years. Single copies and all back issues \$1. Foreign subscription rates: \$10 for one year and \$18 for two years.

Postmaster: If undeliverable, please send notices by form 3579 to 4200 Smith School Road, Austin, Texas 78744. Second class postage paid at Austin, Texas, with additional entry at Dallas, Texas.

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*I*magine many years ago in East Texas, an old sweetgum tree standing beside the waters of the Trinity River with the morning winter sun filtering through the fog-laden timber. The old tree is part of a vast bottomland forest, home to gray squirrels.

A pair of wood ducks flies to the tree and perches on a massive limb next to a cavity. The gaudy drake

preens himself while the hen vaults to the lip of the cavity and disappears from sight. The young hen is only a short distance from where she was hatched two springs ago.

Suddenly she reappears and flies off without hesitation, her mate at her side. Inside the cavity of the sweetgum is a single, freshly deposited egg. Thus begins another nesting cycle in the life of the wood duck.



In the early 1900s the wood duck was on the verge of extinction due to habitat loss from overharvesting of timber, drainage of swamps and marshes and predation by man for its flesh and feathers. The Migratory Bird Treaty Act of 1918 gave protection to the wood duck and the season was closed until 1941. Since that time this beautiful bird has remained the subject of substantial attention by waterfowlers, birders, aviculturists and biologists.

The wood duck, which belongs to

the perching duck tribe, is the only member of this tribe found in North America and is closely related to the elaborately colored mandarin duck of Asia. Like the mandarin, adult male wood ducks have beautiful plumage. In fact, the scientific name, *Aix sponsa*, is interpreted from the Latin as "betrothed duck," alluding to the extravagance of a bride's dress in similarity to male wood duck plumage. As with other North American duck species, the females and juveniles have generally drab, gray-brown plumages.

The wood duck's breeding range encompasses all of the United States east of the Great Plains. Wintering grounds are along the Atlantic seaboard and the Gulf coasts. A separate and disjunct population breeds in the Pacific Northwest and winters in California. In Texas the ducks live primarily in the eastern portion of the state, but may be found westward into the Edwards Plateau. Winter migrants are most numerous in East and Southeast Texas; however, they have been encountered in the Panhandle, west to El Paso and south to Brownsville.

range is known to many people, and has been given a variety of colloquial names. Names such as summer duck, woody, acorn duck, black, branchier, grey duck, plumer, squealer, swamp duck, tree duck, wood widgeon, crested wood duck and Carolina duck attest to its unique habits, features and haunts. The commonly used name wood duck denotes its affinity for trees. Wood ducks spend most of their life in or near forested areas. They often perch in trees during the spring and summer, and female wood ducks use tree cavities as nesting sites.

In comparison to other North American duck species, wood ducks are mid-sized birds. Adult males weigh slightly more than 1½ pounds, while adult hens average 1¼ pounds. Juveniles weigh about one pound when they reach flight stage at eight weeks of age. Ducklings one to two weeks old weigh about six ounces.

Males moult into drab eclipse plumage in June or July. During summer the flight feathers in the wings are renewed. In August or September the drake moults from its eclipse plumage

GRADY ALLEN

WOOD DUCKS

Dapper Bird of the Woodlands

by Carl Frentress and Mary Edelen May

It is important to note that two separate populations of wood ducks occur in Texas. During the fall and winter, adult birds that nested in Texas generally remain in the state. This also holds true for the young birds that were produced in the state during the spring and summer. Together all of these birds form a resident wintering population. Texas also is the winter terminus for waterfowl migrating from states and provinces to the north, consequently the state hosts a migrant wintering population of wood ducks. Both populations, the residents and the migrants, mix inseparably into one large, composite wintering population. In late winter these birds begin to sort themselves into breeding populations.

It is no surprise that a bird of such extravagant appearance and extensive

into full winter plumage. Females begin their post-nesting moult later than males since they must remain active with incubating and brood-rearing. During these summer moults, wood ducks are vulnerable from loss of the flight feathers and become secretive. Juveniles moult body feathers in their first fall of life. Adult plumage is perfected during the second spring.

Wood ducks are not shy with their vocalizations. If you have ever approached a group of feeding wood ducks, you are familiar with the squeals, clucks and squeaks they make while dining. At other times different sounds are made by both the male and female birds. Generally the male's calls are softer and less audible than those of female wood ducks. In fact, the calls of the females have earned the species the

widespread local name of "squealer."

Wood ducks reach breeding age the first spring after hatching. Yearling hens, which tend to nest later than the older adults, sometimes find all available cavities occupied by the time they are ready to nest. When this occurs, the yearling hens may not nest at all. A lack of nesting cavities may be due to too few cavities or too many nesting hens.

Preliminary findings from research in Texas suggest that yearling hens may be facing this problem in some locales. Thus, there may be some fallacy in the assumption that "wild" cavities are extremely abundant or underutilized. Apparently wood duck hens become more proficient at nesting as they become more experienced. Studies of known-age hens have shown that rearing success and production increase as the hens grow older.

Most wood ducks court and establish pair bonds during the winter. This seems to be particularly true for resident Texas wood ducks. Some out-of-state birds may pair in the autumn and migrate south as mates. During most of the year the drakes normally are tolerant of each other; however, during courtship the males often peck each other and chase drakes that come too close to the hen of interest. The actual pair-bonding behavior involves a series of specific movements and activities



RICHARD HAVIERLAH

that are exhibited by both the drakes and hens.

Once the pair bond is established, drakes and hens remain mated for the duration of the nesting season. If disaster befalls either of the pair before the nest is started, the remaining duck may select a new mate. Later in the breeding season there are fewer unmated individuals and the likelihood of acquiring a new mate decreases.

A noteworthy aspect of wood duck

biology is the fact that breeding populations for any given geographic area are maintained by strong homing tendencies in the hens. This behavior is strongest in older adult hens. One-half or more of the hens return to nest in the area where they were hatched and reared. This is an important concept in the management of wood duck breeding populations, since studies have shown that homing wood duck hens nest within five miles of their original rearing area. If the local population of hens is lost for some reason, it may take some time for nesting wood ducks to reoccupy the vacant breeding habitat. Drakes do not have this strong homing tendency; consequently any given drake may spend successive breeding seasons at various locations around the country.

The breeding populations of wood ducks in Texas are composed of females that were raised in the places where they are nesting, and males that come from anywhere in the continental wood duck range. The hens maintain the geographic integrity of the breeding population while the drakes provide for exchange of genetic material within the continental population. As nest initiation nears, the Texas hens take their mates to their respec-

At least half the wood duck hens (left) nest in the area where they were hatched. Drakes (above) may spend breeding seasons at different locations.



GRADY ALLEN

tive locales within the state while the out-of-state hens begin migration with their mates to the respective nesting areas where they were reared.

After pair-bonding the nesting season begins with the search for a suitable cavity in which the hen may nest. In Texas this activity may start in late January or early February. The search begins in the morning with the male accompanying the female. While the hen inspects a prospective natural cavity in a tree or an artificial nest box, the male waits outside perched on a nearby limb or other vantage point. If the site is unsuitable to the hen, she leaves in search of another site with the drake following. The male plays no active role in nest site selection although he does follow the hen throughout the process.

After she selects a nest the hen lines it with down plucked from her breast. She will use only down in the nesting cavity. Each day, usually in the morning, she lays one egg until 10 to 15 eggs have been deposited. Wood duck eggs vary in color from dull white to almost beige. They are the same shape as domestic chicken eggs only smaller. The female begins to spend long periods in the nest as the clutch nears completion and may start incubation within 24 hours after the final egg is laid. Most female wood ducks nest only once each year, but may reneest if something happens to the first clutch of eggs.

Sometimes two or more females deposit eggs in the same nest. These are known as "dump nests" and are usually the result of a shortage of suitable nest sites. Dump nests have been known to contain as many as four dozen eggs. Under some conditions dump nests may contribute to overall production since a greater proportion of young are hatched than in normal nests. However, abandonment before incubation is greater with dump nests than with normal nests.

Two or three days may elapse from the first pipping of eggshells until the ducklings actually emerge from the eggs. With the long nesting period in Texas the hatching peak may not be as pronounced as in other wood duck production states. Nonetheless, a large proportion of broods are thought to be hatched from mid-April to mid-May. Records from our recent Texas studies

show a hatching date as late as July 14.

The ducklings usually are ready to leave the nest the morning after they hatch. After checking for danger, the hen drops to the water or ground below the nest cavity and calls to her ducklings. The ducklings have been conditioned to respond to these calls by sounds uttered by the hen in the nest while they were hatching. Hearing the calls of the hen outside the nest cavity stimulates the ducklings to jump upward toward the entrance hole and ultimately to leap from the nesting cavity. As they fall to the water or

Little is known of the specific features that attract a hen to a given cavity, be it natural or artificial. It is known that the cavity should be dry and large enough to accommodate the hen's body. Research studies are currently underway at Stephen F. Austin State University to identify habitat features that may influence the use of artificial nest boxes by wood ducks. If certain features are especially attractive, and if they can be identified, it might be possible to make the most of nesting in boxes by placing them in habitat attractive to nesting wood duck hens.

RICHARD HAVERLAH



Wood ducks can remain an outstanding waterfowl species if proper habitat is retained.

ground, the hen gathers her brood about her. The shock of hitting the ground or water is believed to release feeding mechanisms in the ducklings. Seldom are the ducklings injured by the fall.

Approximately 40 to 50 percent of the hatched ducklings survive to enter the fall population. Most duckling mortality seems to occur within two weeks after hatching. In very good habitat a high production density is considered to be two to five flight-age young per acre. In juvenile populations the proportion of males to females is approximately equal. In adult populations the males tend to outnumber the females slightly.

Besides being sought by nesting wood ducks, dry, roomy cavities also are used by a host of competitors such as starlings, screech owls, crested flycatchers, chickadees, wood rats, squirrels and wasps. These animals are considered to be among the more notable competitors for cavities since they commonly are found in hollows during the period when wood ducks are nesting.

Hardwood bottomlands of creek and river floodplains are traditional wood duck nesting habitats. Such habitat has suffered losses and there are concerns with the fate of the wood duck in Texas. Studies of the habitats used by these birds are important to develop

future management strategies for wood ducks in the state.

In Texas serious predators of wood duck eggs are raccoons and Texas rat snakes. Both are extremely proficient at locating and entering wood duck nesting cavities. All artificial nest boxes for wood ducks should be equipped with a predator guard, preferably as a metal, cone-shaped skirt. Overhanging or nearby limbs or tree trunks that could offer access to nest boxes should be eliminated. Similar measures may be taken to protect suitable natural tree cavities. Such protection from predators cannot be overemphasized. Predation is a factor often overlooked by persons eager to embark on a wood duck nest box program. A nest box without a reliable predator guard is not fully equipped and may become a death trap rather than a haven for wood duck hens or their eggs.

During different seasons of the year wood ducks will use a variety of habitats within the forested regions they inhabit. With the nesting season underway, the pairs are found where cavities are available to meet the nesting needs of the female and where streams or slackwater areas are available for the drake to loaf. Usually these nesting areas are selected with nearby wetlands to serve as rearing areas for the ducklings. The ducklings need adequate cover to escape predators and find shelter from the elements. Just as important, though, are the shallow, slackwater wetlands teeming with insects and aquatic invertebrates that provide the protein-rich diets for the rapidly growing ducklings.

When the juvenile birds reach fledgling age at two months, they begin to shift to seed diets and depend less on animal food supplies. In Texas many of the juveniles and post-breeding adults congregate in permanent wetlands in late summer and early fall. These areas provide an abundance of freshly ripened seeds for food at this time of the year. As the hard mast crops such as acorns mature and drop in late fall and early winter, wood ducks feed almost exclusively in the creeks, rivers and flooded areas of hardwood bottomlands. During the winter wood ducks truly become birds of the forests.

Also in the winter season the roosting concentrations become most obvious. Wood ducks, like many other

waterfowl species, like to be together. This is especially true of their nighttime roosting period. Roost flocks may range from only a dozen or so birds to aggregations of a thousand or more.



An intensive nest box program in suitable habitat can increase wood duck production.

Roosts are generally permanent water sites in remote areas. Flocks of wood ducks will stream in all directions from their feeding grounds toward the roost sites each evening. The greatest flurry of activity is just before dark when flight after flight of birds may drop into the roost. To a hidden observer in a large roost, this can be an exciting experience. The multitude of wood ducks splashing, calling and darting about on the water, coupled with the erratic and fearless flight of successive waves of incoming birds can create an atmosphere reminiscent of the hubbub of a large, modern airport. However, with the onset of darkness the roosting birds become relatively quiet until their departure before sunrise the following morning. Some roost sites may be used repeatedly throughout the winter and year after year. Other roosts may shift, particularly if birds are disturbed.

Wood ducks have the potential to remain one of the outstanding waterfowl species in Texas if proper habitat is retained and effective management plans are put into action. Selective har-

vests used in timber management practices are valuable in retaining or increasing the number of natural nesting cavities. An intensive nest box program in suitable habitat can increase the local production of wood ducks. Measures to increase the quality and quantity of brood-rearing habitat must accompany nest box programs. In areas where the breeding population has been eliminated or severely reduced, special pen-rearing techniques could successfully restock these locales.

Although these birds occupy wild forest areas, wood ducks can be featured in urban and suburban wildlife management plans. The numerous ponds, lakes and streams in city parks offer prime locations for wood duck nest boxes and habitat improvement practices. As an example, personnel with the Dallas Museum of Natural History and the Dallas County Audubon Society are successfully nurturing a thriving breeding population of wood ducks on the Old Fish Hatchery area at White Rock Lake just five miles from downtown Dallas.

With this versatility of response to management programs and the potential for involvement of persons from various sectors of the wildlife arena, the wood duck could become the center of a large-scale, integrated wildlife management effort in the state. However, the success of such a program will depend on cooperation among government, public and private concerns.

Texans interested in the fate of the wood duck might be challenged by the charge E.H. Forbush made to the American people in 1939: "The wood duck is part of Nature's heritage vouchsafed to the American people." Fortunately, with the wood duck we have the potential to engage in an effective management program. Yet this program must rely not only on the participation of the Texas Parks and Wildlife Department, but also on individual landowners, concerned citizens, other government agencies, private timber companies, civic groups, private wildlife organizations, youth organizations and other factions interested in contributing to the betterment of the wood duck in Texas. With this bird and its habitats, we are all challenged to demonstrate our sincerity in meeting our stewardship responsibilities. **

Making your own nesting boxes

Box Dimensions

Inside - 10" x 10" x 22" on front side, and 24" on back side.

Hole - 3" x 4" elliptical opening; 4" from top.

Bottom - See drawings.

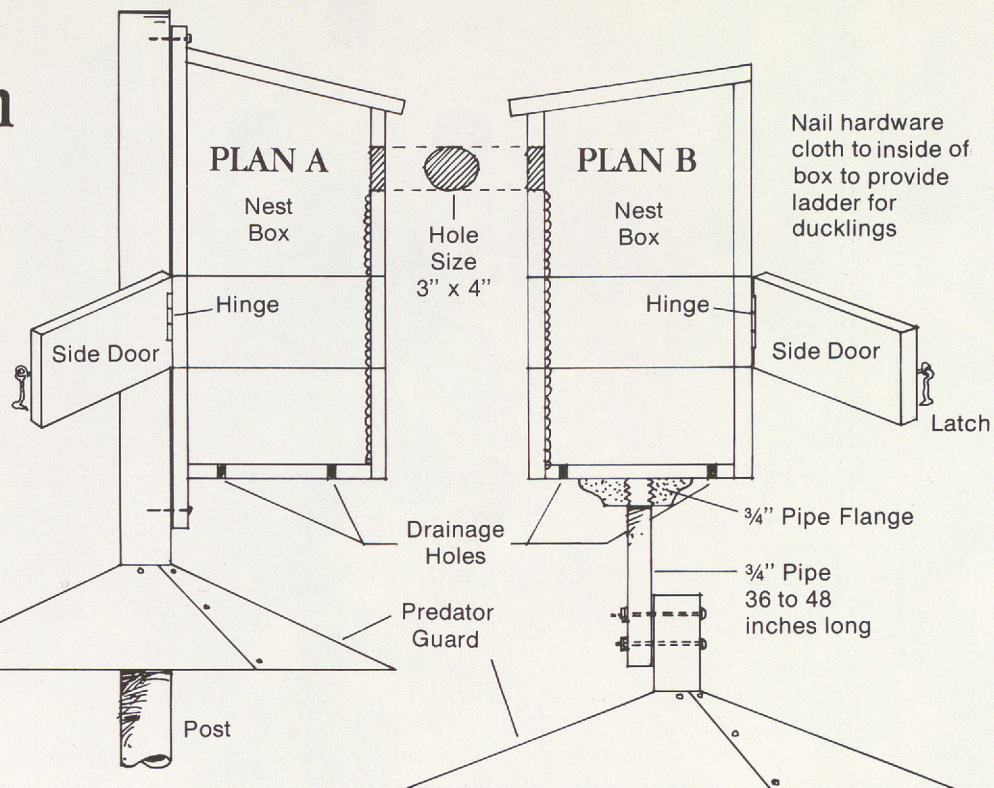
Side Door - 6" wide; 6" from bottom.

Construction

1. Make boxes out of rough-cut cedar, cypress or pine.
2. Tack three-inch strip of hardware cloth (metal screen) on inside front wall from bottom of box to hole entrance so baby ducklings can climb out the entrance hole.
3. Put three to four inches of wood shavings in box for nesting material.
4. The nest boxes in Plan A and Plan B are the same size, but show two different methods of attaching box to the anchor posts. The drawing also shows the placement of the predator guard on both plans.
5. The side door aids in servicing the nest and in observing nesting success.
6. Use lag screws or bridge spikes to attach box to the wooden post in Plan A. Use a 3/4-inch pipe flange to attach box to the galvanized pipe in Plan B.
7. It is imperative that predator-proof shields be placed on all anchor posts.
8. Several small holes should be drilled in the bottom of each box to provide drainage.

Placement

1. Boxes should be erected close to wood duck nesting habitat.
2. Locate boxes in or near water, but keep predator guards at least three feet above high water level.
3. Place boxes at least five to six feet above ground or water level.

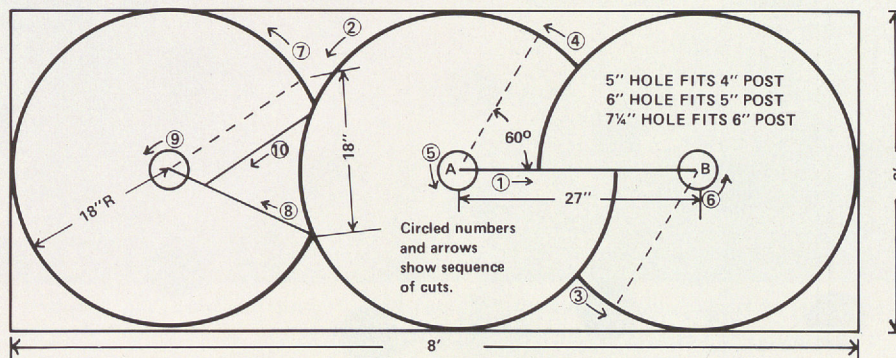


4. Space boxes about 50 to 100 yards apart or approximately two to four boxes per acre.
5. Place boxes out in the open and not in dense brush nor under small, low-branching trees.
6. Be sure overhanging limbs do not provide avenues for entrance from above by predators.
7. Face the entrance hole toward open water or a large opening to allow the hen an easy flight approach when returning to the nest.



Predator Guards

Here is a layout for cutting three predator guards from a three- by eight-foot sheet of 26-gauge galvanized metal. When installing the guard, overlap the cut edge to the dotted line. Cut in a counterclockwise direction. Use tinsnips and wear leather gloves.





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Hidden Underwater World

Article and Photography by Gwen Fidler

Unpolluted bodies of fresh water support a myriad of living creatures. In addition, these waters with no currents or with little wave action— farm ponds, backwater sloughs, small lakes and puddles—are visited by other animals.

Water lilies, cattails, water hyacinths and other flowering plants rooted in shallow areas enhance the beauty of these freshwater ecosystems. Duckweed plants and mosquito fern have only tiny rootlets. They float freely and may cover the entire water surface, making it look like dry land. Mosquito fern often smothers mosquito larvae, hence its name.

Anole lizards hang head-down searching for insects among the weeds near the edge of the water. They change from green to brown, and vice versa, while you watch. Another color-changer is the little green tree frog, which will desert its perch in favor of your finger with a bit of gentle coaxing. Other frogs often sit among the water plants submerged to their eyes. They watch—perhaps with a meal in mind—the damselflies and dragonflies that hover over the water.

The fishing spider walks on water and captures insects trapped in the surface film. It dives beneath the surface at the first sign of danger, then emerges dry because its body hairs trap air. This spider actually fishes. It sits on duckweed and dabbles a foot in the water to create tiny ripples which attract small fish the spider catches and eats, thereby earning its name.

While the water surface is a floor for the fishing spider and other such creatures, it is also the ceiling of a complex and hidden underwater world. A jar of pond water, collected

and allowed to settle, reveals some interesting inhabitants with special adaptations for living underwater. Some are easily seen with the naked eye; others, like the water fleas, require the use of a hand lens, while protozoa, algae and other minute animals and plants can be seen only with a microscope.

All underwater animals require varying degrees of oxygen, and the water's

oxygen content determines which creatures can inhabit it. Thus, different bodies of water support different fauna. Aquatic animals obtain oxygen or air by many methods. The familiar mosquito larvae, called wrigglers, and their pupae breathe through a respiratory tube in contact with air at the surface. Some animals carry a bubble of air in a special cavity and visit the surface at



Frog eggs, duckweed and mosquito fern form a pattern on the water's surface (opposite page). Using duckweed as a perch, the fishing spider (above) creates tiny ripples in the water to attract the small fish it catches and eats.



Anole lizards (right) hang among the weeds. The fishing spider (above) walks on water. Animal life near bodies of fresh water can include a pond snail (center) or, less commonly, an alligator (below).





regular intervals to renew their bubble. Still others reside in a thin film of air from which they absorb oxygen through their body surfaces. Bubbles from underwater plants and oxygen dissolved in the water supplement these air supplies.

One regular surface visitor is the predacious diving beetle, a large beetle often found suspended head-down from the surface replenishing the air supply it carries in a cavity beneath its wings. The giant water bug, called the toe biter because of its painful bite, also hangs from the surface regularly. After mating, the male water bug cares for the eggs until they hatch, but this underwater husband has no alternative, as his mate firmly attaches her eggs to his back. Both of these insects are voracious predators and feed on other aquatic animals. Although their legs are adapted for swimming, they both can leave the water to fly from pond to pond.

Other pond animals have developed gills of diverse locations and structures. Tadpoles breathe first with external gills, then with internal gills, before they finally use lungs and leave the water as adult frogs and toads. The aquatic larvae of damselflies, called naiads, have three, leaf-shaped gills on their tails and can remain submerged indefinitely. Dragonfly naiads have internal gills. Still other aquatic creatures absorb all the oxygen they need through body surfaces.

Hydras, which can be seen with the naked eye and which breathe through their body surfaces, may be found attached to the walls of the water jar or to duckweed rootlets. They are relatives of the sea anemone and have tentacles equipped with stinging cells for paralyzing and killing their prey. In favorable conditions they reproduce by budding, thus a mature hydra may be found with a smaller one attached.

Some aquatic worms and larvae burrow into the bottom mud and debris and remain hidden, but others project gill structures above the mud surface to absorb oxygen. Crayfish, locally known as crawfish or crawdads, frequent the bottom. Along with water snails and other scavengers, they help keep the habitat clean. Some of these creatures may be seen in the water jar if a bit of the bottom debris is collected and allowed to settle.



A green clearwing dragonfly naiad (below) doesn't resemble the adult it will become (above). Naiads live in the water while adult dragonflies hover over it.



The transfer of food energy through a series of animals—the food chain—always begins with an animal that consumes plant matter, and ends with one that has no natural enemies. Most aquatic animals eat one or more other animals, and in turn are eaten themselves by still other animals, to form a complex food web composed of many food chains.

Algae are common microscopic plants and are often the beginning of freshwater food chains. They are eaten by tiny crustaceans such as the water fleas, which in turn are consumed by hydras, insect larvae and small fish.

Two voracious predators, the predacious diving beetle (below) and the giant water bug (bottom), often hang head down from the water surface. Hydras (center) can be found attached to duckweed rootlets. Hydras are relatives of the sea anemone.

Water beetles, water bugs, dragonfly naiads and spiders consume small fish, as does the great blue heron, which is at the end of a food chain since it has no natural enemies. In another chain, tadpoles eat algae and are eaten by fish. In a large body of water small fish are eaten by larger ones, which in turn might be eaten by the resident alliga-



tor, obviously the end of this food chain. The list continues like the "Who Eats Who" of fresh water.

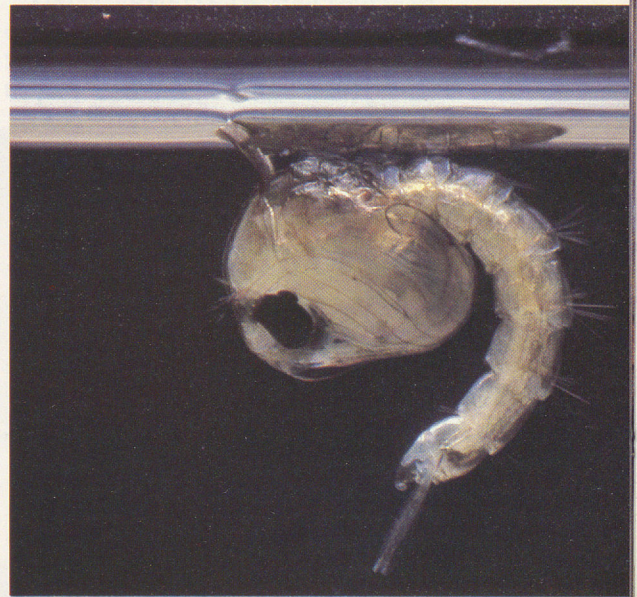
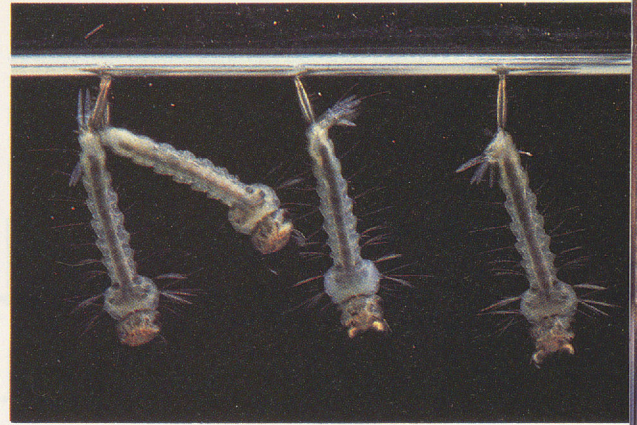
The larval stages of many insects are aquatic. Mosquitos lay eggs in any puddle they find. The eggs hatch and the wrigglers in turn become pupae from which the adults emerge. These cycles may take less than three weeks and are repeatedly overlapping in season. Only the female mosquito bites, the male feeds on nectar and ripe fruit. Some mosquito species are carriers of such diseases as malaria and encephalitis.

Female damselflies and dragonflies lay eggs in fresh water, sometimes while being held by the head or neck by their mates. Damselfly naiads are long and sleek, while those of the dragonfly are larger, stockier and more grotesque. Neither resembles the adult it will become. Both groups have a prehensile lower jaw, sometimes with hooks or claws, used to capture small animals for food. Imagine sending your lower lip to your dinner plate for a morsel. Mature naiads leave the pond and crawl up plant stems, where the adult emerges and leaves behind its larval skin. Some larger dragonflies spend more than a year in the aquatic larval stage and their naiads can be found all year.

Other flying insects with aquatic larvae include the mayflies, caddisflies, crane flies and the midges. Like its parent, the larva of the predaceous diving beetle is a voracious aquatic predator and thus is called the water tiger. Although this larva leaves the pond to pupate in mud nearby, the emerging adult beetle returns to the pond to live. The most familiar aquatic life cycle is that of the frogs and toads. Some lay thousands of eggs in ponds and puddles of all sizes and descriptions, thus tadpoles are found in most bodies of water at one time or another.

There is ceaseless activity beneath the surface of still waters. A pond in a nearby park may not contain an alligator, but it will have a food web all its own and a variety of interesting inhabitants. A quiet observer also can watch the comings and goings of the mammals, reptiles and birds that frequent freshwater ecosystems. Only a few of the thousands of aquatic plants and animals have been mentioned here. * *





Mosquito larvae (top) and their pupae (above) breathe through a respiratory tube in contact with air at the water's surface. Hydras (below) reproduce by budding. This mature hydra has a smaller one attached.



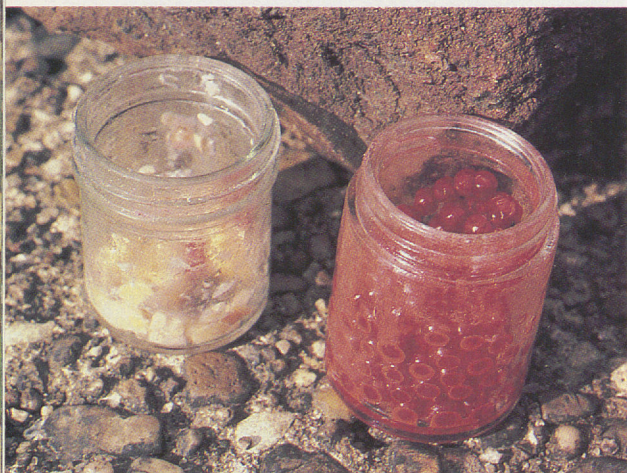
An Added Attraction

Combine the scenic beauty of a Texas state park with a lake full of rainbow trout and you have the makings of a refreshing winter outing.

Article by Jim Cox
Photography by Glen Mills

This scenario will be possible in six state parks this winter when the Parks and Wildlife Department expands its state park lake stocking program.

About 120,000 hatchery-reared rainbows are being distributed by state hatcheries to small lakes at Buescher, Tyler, Meridian, Bonham, Daingerfield and Lake Mineral Wells State Parks.



Salmon eggs and cheese (above) are good trout bait, as are canned corn and bread.



The program was launched last winter at Buescher, Meridian and Tyler State Parks. Increased visitation at the three parks during the normally slow winter period led parks officials to conclude that trout stockings contributed to the spinning turnstiles. The most dramatic rise was seen at Meridian, where attendance jumped 13.7 percent during December, 240.9 percent in January and 300 percent in February, compared to the same period the year before. After a relatively slow start in December, visitation at each of the three parks increased by more than 20 percent during January and February.

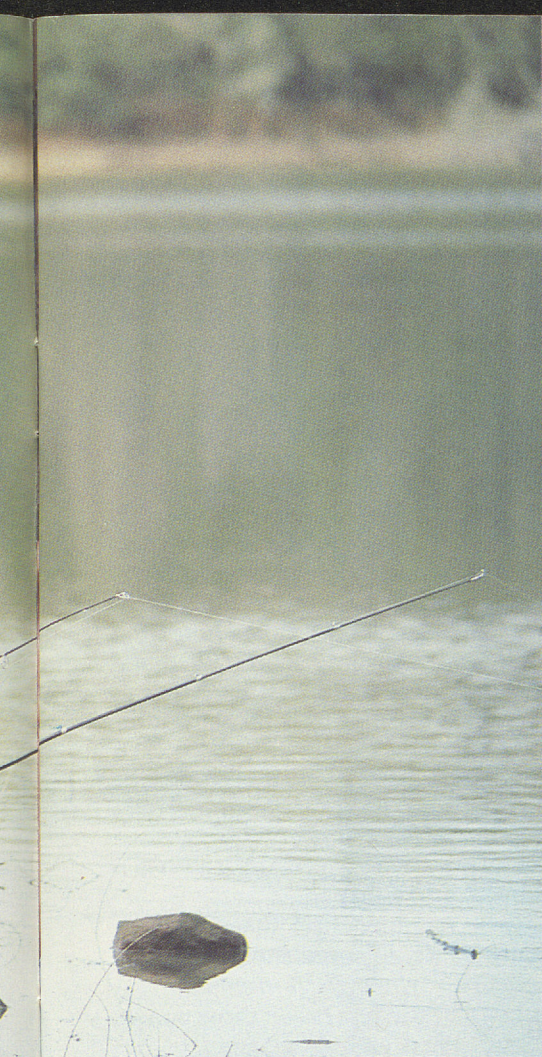
Trout for the state parks were purchased by the department. The normal shipment of about 230,000 rainbows from a federal hatchery in Arkansas will be distributed to the four main public fishing sites where stockings have occurred for the past several years. These are the Brazos River below Possum Kingdom Reservoir Dam, the Guadalupe River below Canyon Reservoir Dam, Boykin Springs Lake near Jasper and Foster County Park at

San Angelo.

All stocking operations started in mid-November, and most waters will be restocked at two-week intervals until March.

Texas trout fisheries are "put and take" operations, with most of the





trout being caught by anglers during the winter. Warm summer water temperatures prevent natural reproduction by the trout, and only in the colder running streams do the trout sometimes carry over to the following year.

Anglers usually find the stocked



trout highly cooperative, catching them on a variety of baits including canned corn, earthworms and bits of bread. The fish also will hit small spinners and flies. The daily bag limit is five in all fishing areas, with a possession limit of 10. No fees are charged for fishing in the parks other than standard entrance and facility use fees.

The following is a brief wrapup of the state parks that offer trout fishing, their locations, lake acreage and some of the available facilities:

BUESCHER: Located two miles northwest of Smithville in Bastrop County; take State Highway 71 then turn north on FM 153; 25-acre lake; campsites, picnic sites, group facility; connected

MERIDIAN: Located three miles southwest of Meridian in Bosque County on State Highway 22; 73-acre lake; picnic and camping facilities, screened shelters, trails and boat ramp (5 m.p.h. boat speed limit); (817) 435-2536.

BONHAM: Located 1.5 miles southeast of Bonham in Fannin County; take State Highway 78, turn southeast on FM 271; 65-acre lake; picnic and camping facilities, boat ramp (5 m.p.h. boat speed limit), group barracks and dining hall; (214) 583-5022.

DAINGERFIELD: Located southeast of Daingerfield in Morris County; take State Highway 49 southeast two miles to park entrance; 80-acre lake; picnic



Buescher State Park (top) is one of six parks whose lakes will be stocked with trout this winter. Stocking will continue at two-week intervals until March.

to nearby Bastrop State Park by scenic park road; (512) 237-2241.

TYLER: Located 10 miles north of Tyler in Smith County; from Interstate Highway 20 take FM 14 north two miles, then turn west on Park Road 16; 64-acre lake; offers picnic and campsites, trailer sites, boat ramp (5 m.p.h. boat speed limit), shelters and trails; (214) 597-5338.

and camping facilities, lodge, cabins, boat ramp and fishing pier (5 m.p.h. boat speed limit); (214) 645-2921.

LAKE MINERAL WELLS: Located four miles east of Mineral Wells in Parker County on State Highway 180; 646-acre lake; picnic and camping facilities, screened shelters and boat ramp (15 m.p.h. boat speed limit); (817) 328-1171. **

Texas Thumpers

by Ilo Hiller



SWAMP RABBIT BY GILBERT PALMER

JACKRABBIT BY GLEN MILLS



A like, yet different, is a good way to describe the eastern cottontail, swamp rabbit and California jackrabbit. The first two are true rabbits, but the jackrabbit is not a rabbit at all; it's a hare. Since all three reside within our borders, let's take a closer look at them.

One of the differences between hares and rabbits is the type of nest they build, and this is determined by the condition of their young at birth. Since a young jackrabbit (*Lepus californicus*) is born with its eyes open, its body fully furred and the ability to hop around within moments after its birth, it has no need for an elaborate nest. In fact, the jackrabbit mother builds no nest at all. A shallow depression in the ground or vegetation is adequate, and the births of young from the same litter may occur some distance from each other. The mature female can produce two to four litters with four to six young each year; however, the average number of young produced by each female is 10 per year.

True rabbits deliver their young in more sheltered nests. The eastern cottontail's (*Sylvilagus floridanus*) nest is a saucerlike depression three or four inches deep and about eight inches across. It is lined with mouthfuls of soft, dead grass mixed with hair from the mother's breast. A covering of grass and hair is used to hide the nest and keep the young warm and dry. At birth young cottontails are naked, blind and completely dependent upon their mother's care. Since conditions are harsh and predators many, less than half of the young will survive to leave the nest and many others will be eliminated before reaching maturity. Their 85 percent mortality rate is offset by their reproduction potential. Cottontails may have four to five litters each year with as many as eight young per litter. However, the average litter size is four.

Growth of the newborn cottontails is rapid. In six to eight days the eyes and ears begin to open and the young can move about and squeal. By the end of the second week they weigh a little more than three ounces, have a fully

Cottontails usually squat in vegetation, as the swamp rabbit above; however, they may assume a more alert stance, like that of the jackrabbit (left), in open areas.

COTTONTAIL BY RAY SASSER



developed fur coat and start venturing from the nest. In another week or so they are completely weaned and, since the mother probably is ready to give birth to another litter, they must begin to fend for themselves. In four or five months the young cannot be distinguished from adults.

The swamp rabbit (*Sylvilagus aquaticus*) locates its fur-lined nest in a hollow log or stump when possible. If no such shelter is available the nest is constructed in a surface depression like

of the day dozing at the base of a shrub or in a clump of tall grass, and begins foraging at twilight. During winter the same shrub or tall clump of grass may offer it protection from cold winds.

The swamp rabbit can be found in poorly drained river bottoms among the tangled shrubs, trees and vines or in the coastal marshes. Its preference for cane thickets on the coast has given it the local name of "cane cutter." It is well-adapted to a semiaquatic habitat and often is found in the water, cross-



This muddy tussock provides a refuge for a quick nap and the water serves as an escape route. Swamp rabbits are excellent swimmers and may outdistance a Labrador retriever.

that of a cottontail. Two or more litters per year with two to three young in each are usual.

Newborn swamp rabbits have characteristics of both rabbits and hares. They are fully furred like the jackrabbit, but their eyes and ears are closed like those of the eastern cottontail. When their eyes open in two or three days, the young are able to leave the nest and soon are on their own.

Ranges of the three species overlap in some areas of the state, but each has its own preferred habitat where it most likely will be found.

The jackrabbit prefers hot, dry scrubland and is seldom found in forested areas. It usually spends the hottest part

ing rivers and streams or hiding beneath overhanging vegetation.

Although the eastern cottontail occasionally shares the poorly drained river bottomlands of the swamp rabbit, it is more commonly found in the brush along well-drained streamsides. Unlike the jackrabbit that prefers a more open habitat, the cottontail chooses dense brush. It seldom strays far from the protection of brushy cover even when it enters more open areas to feed.

The eastern cottontail is the smallest of the three species, weighing two to three pounds. Next is the swamp rabbit, which weighs three to six pounds. The largest is the jackrabbit,



JACKRABBIT BY RAY SASSER

SWAMP RABBIT BY JIM WHITCOMB

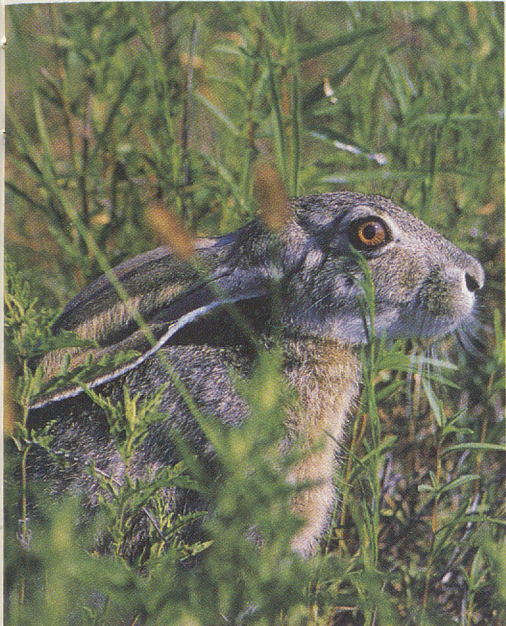
weighing four to eight pounds. The length of their ears follows the same pattern—eastern cottontail, 52mm; swamp rabbit, 70mm; and jackrabbit, 125 mm.

The jackrabbit's reputation for speed is well earned, and individuals have been clocked at speeds up to 45 miles per hour. Predators usually must rely on strategy to outwit or outmaneuver a healthy, mature jackrabbit. Cottontails rarely exceed 18 miles per hour, but an illusion of greater speed is created by the zigzag pattern they usually run. More often than not the cottontail will "freeze" motionless, relying on its ability to blend into its surroundings to escape detection rather than running.

Wide-spreading toes allow the swamp rabbit to get good traction as it runs on slippery ground, and definite toe prints are visible in its tracks. When it runs, its large hind feet loudly thump the ground. This rabbit usually runs in a circular pattern when being chased, and may take refuge in a rushing river as quickly as a dense thicket. It is said that the swamp rabbit can

The cottontail's mortality rate of 85 percent is offset by reproduction potential—four to five litters a year with an average of four per litter. Less than half survive the nest.

Standing erect or laid back against the body, the jackrabbit's black-tipped ears are a distinguishing characteristic. These ears, which are almost as long as the hind foot, grow to a length of six or seven inches.



JACKRABBIT BY NEAL COOK



COTTONTAIL BY RAY SASSER

outdistance a Labrador retriever in the water.

Contrary to what most people think, cottontails are not sociable creatures. They tend to scatter over their range, and a population density of one cottontail per 4.5 acres is common. Swamp rabbits establish a very definite range and are reluctant to leave it even when being pursued by a predator. A population density of one swamp rabbit per seven acres is normal. Their preference for areas with sparse vegetation tends to concentrate jackrabbits



COTTONTAIL BY WYMAN P. MEINZER, JR.



BABY COTTONTAIL BY TOM J. ULRICH

on poor, overgrazed rangeland. Periodic population explosions, which seem to peak every seven years, can produce densities of 400 jackrabbits per square mile. Such high concentrations are a good indication that the land is being overgrazed by livestock. When conditions are normal, jackrabbits are not numerous enough to damage ordinary pasture lands. * *

Jackrabbits have been clocked at speeds up to 45 miles per hour, but cottontails rarely exceed 18 miles per hour when they run.



COTTONTAIL BY GLEN MILLS

Editor's Note: Texas also has two other cottontail species—Davis Mountains cottontail, *Sylvilagus robustus*, and the Audubon cottontail, *Sylvilagus auduboni*.

The Davis Mountains cottontail inhabits the pinon-oak-juniper woodlands in the Chisos, Chinati, Davis and Guadalupe Mountains in Brewster, Presidio, Jeff Davis and Culberson Counties. It also ranges into the pinefir forests at higher elevations. Body weight varies from three to four pounds and the ears are 71mm long, almost 20mm longer than those of the eastern cottontail.

The Audubon cottontail inhabits the western half of the state, and can be found in a variety of habitats. It manages to make itself at home in grasslands, cactus deserts or brushlands and can be found in thickets of catclaw, mesquite, allthorn and other desert shrubs. In some areas this rabbit is known as the "prairie dog rabbit" because of its association with prairie dog towns. It weighs 1½ to three pounds and has ears 60mm long.

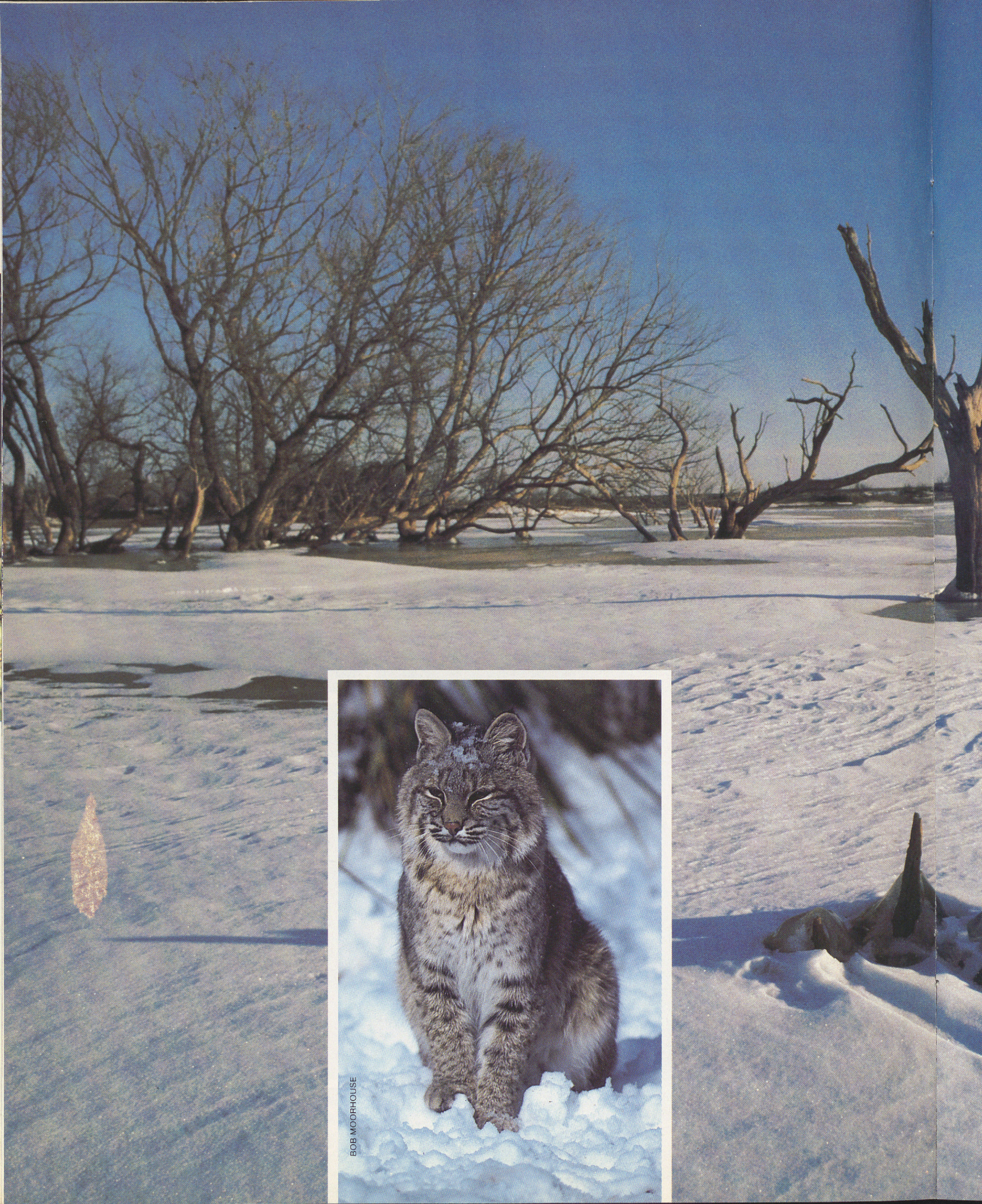
JACKRABBIT BY GLEN MILLS





JACKRABBIT BY BILL REAVES





BOB MOORHOUSE

DECEMBER/1983

A Memorable Month

by Mary-Love Bigony

There was nothing exceptional about the first half of December 1983. But beginning on December 16, dry, sub-zero air masses from northwestern Canada kept Texas temperatures near freezing for the rest of



WYMAN P. MEINZER JR.



RAY SASSER

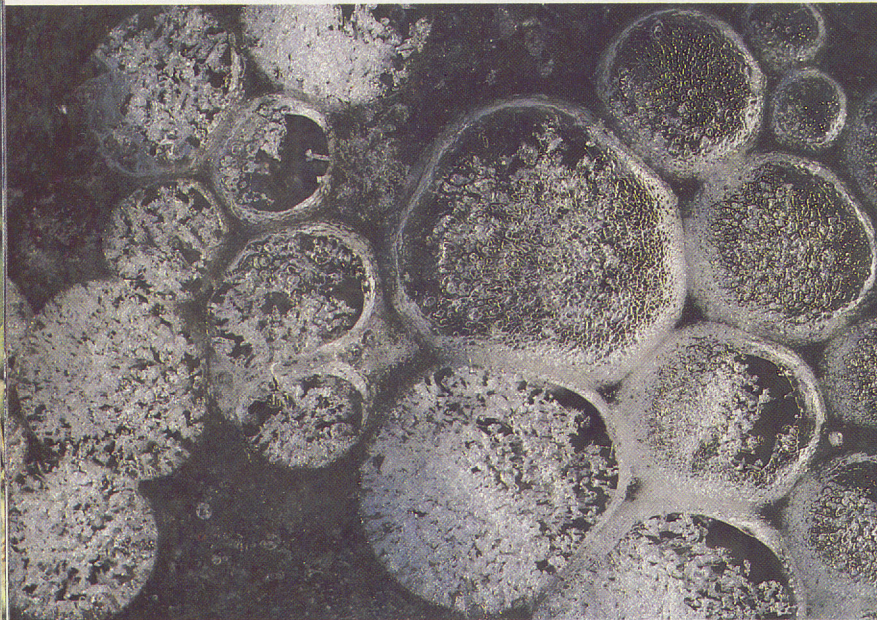
the month. The cold's impact on most wildlife species was minimal, but some animals succumbed to the freezing weather.





Cities across Texas had their coldest December of the 20th century in 1983. Wichita Falls spent 303 consecutive hours at 32 degrees or below and Dallas shivered through 296 hours of subfreezing temperature. In Brownsville the temperature fell below freezing on seven nights.

BILL REAVES



BILL REAVES





PAUL M. MONTGOMERY



PAUL M. MONTGOMERY

GLEN MILLS





WYMAN P. MEINZER JR.

BILL REAVES



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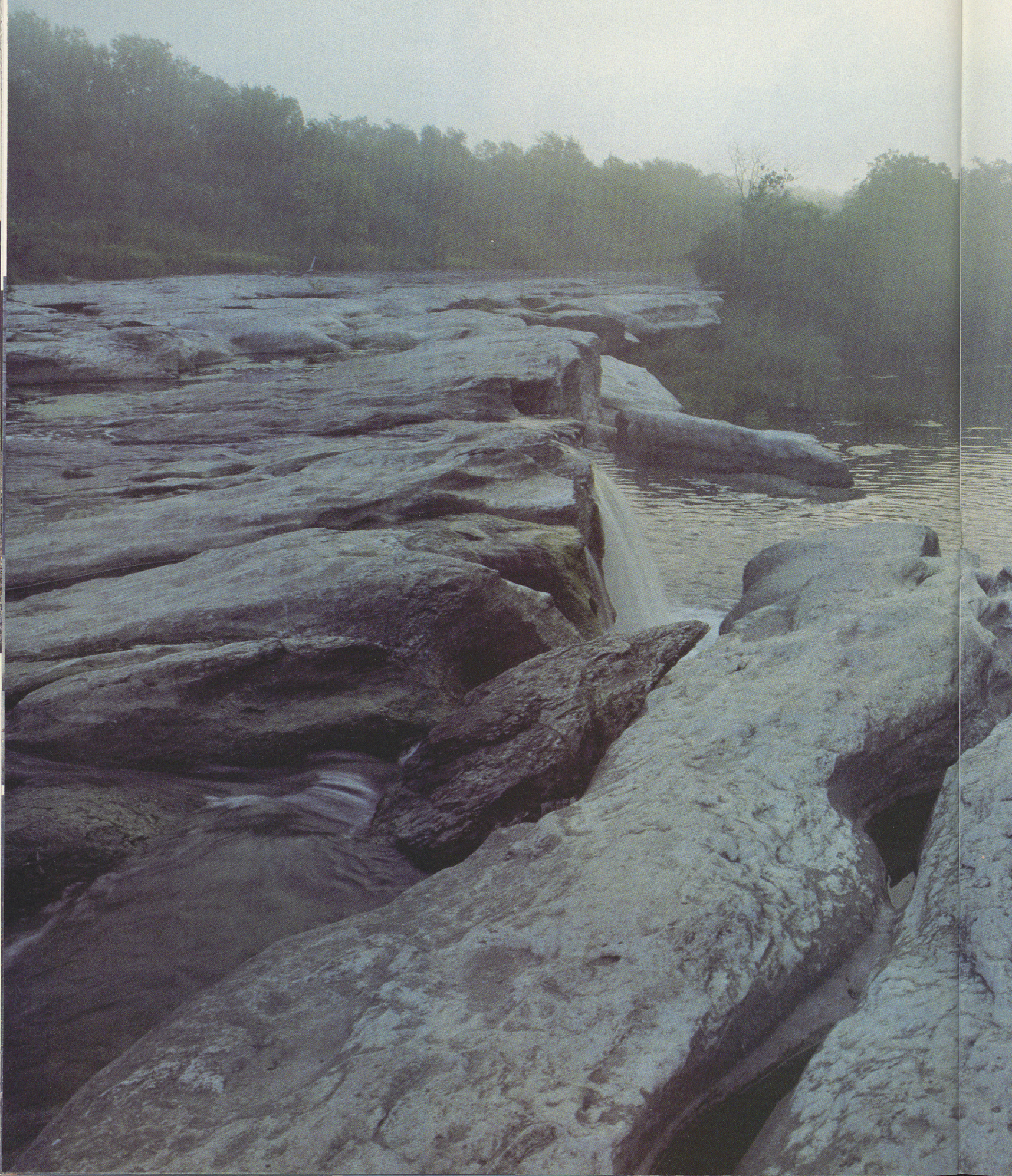
WYMAN P. MEINZER JR.



Most wildlife populations escaped serious damage during December 1983's record-breaking cold weather. White-tailed deer fared well since they were in reasonably good condition before the prolonged freezing temperatures arrived. The unusual weather had no impact on the turkey population and little on pheasants, but quail losses were heavy in several parts of the state. The bad news came from the Texas coast. Millions of redfish, sheepshead and other fish died when they were trapped in shallow bays as water temperatures nosedived. It was one of the worst fish kills in history, and it affected the entire Texas coast.



FRANK AGUILAR



PAUL M. MONTGOMERY

In a typical year the lowest temperatures occur in mid-January, but December 1983 was anything but typical. Records fell daily as frigid air assaulted Texas, bringing the longest cold spell on record to many



PAUL M. MONTGOMERY

parts of the state. On Christmas Day 1983 thermometers showed single digits in North Texas, near 10 over the central part of the state, 20s in the Rio Grande Valley and low and middle teens over most of the rest of the state. Galveston's 14-degree low on Christmas was 35 degrees below normal for the day. Laredo's low that day also was 14 degrees—the coldest temperature ever recorded in the 20th century. It was a memorable month.

Whittling Birds

Article by Jim Cox and Photography by Glen Mills

Bill McCorkle is getting used to art show visitors inquiring about his "stuffed" birds. Whether it's an injury-feigning killdeer or a wood duck in flight, all of McCorkle's creations simply look too real to be carved from wood.

Painstaking attention to detail is what sets McCorkle's carvings apart from others, and probably accounts for the blue ribbons on the mantelpiece at his home in Round Rock, an Austin suburb. Another unusual aspect of his work is his emphasis on indigenous Texas bird species or migratory visitors.

"I guess I first became interested in Texas wildlife during the mid-1940s, after a high school trip from Gatesville to the State Fair of Texas," McCorkle said. "The Parks and Wildlife Department (then called Texas Game, Fish & Oyster Commission) had a booth

there, and I decided to spend a hard-earned dollar on a year's subscription to the magazine (then called *Texas Game & Fish* magazine)."

Although his carving hobby was not to begin significantly for another 30 years, McCorkle nurtured a keen interest in hunting, fishing and enjoyment of the outdoors during his years as an auditor for the state.

McCorkle dabbled in simple whittling and watercolor painting until about 1972. "That's when the bug bit me real hard," he grinned.

As with many skilled artisans, the advice of an older practitioner pro-

vided the spark McCorkle needed to rise from a casual whittler to serious carver. A retired wood carver in San Marcos, Al Fanning, consented to show McCorkle some of the techniques he had acquired through decades of carving. McCorkle used this apprenticeship and increasing contact with other carvers in the Central Texas Woodcarvers Association to fine-tune his skills—a process that evolves every day he carves.

McCorkle said patience is as important as skill in this type of carving, since it takes him 30 to 40 hours to complete a small bird and up to 100 hours for a half-sized eagle or wild turkey. "I've found I can produce 20 to 25 birds a year, and three or four of those are made specifically for shows," he said.

McCorkle's reputation as a competitive carver hit a peak during 1983 when his renderings of a mockingbird and killdeer won first-place ribbons and a turkey carving took second at the Dallas Woodcarvers Show. His overall entries won the merit award, which represents the best collection of carvings entered in the event.

The only parts of McCorkle's birds not made of wood are the eyes and feet. The eyes are similar to those used in traditional mounted birds, and the feet are delicate metal castings.

Very few power tools are employed by wood carvers such as McCorkle. A band saw is used only to hew the rough basswood outline of the bird to be carved, and a tiny grinder is employed to remove wood from the insides of small birds' beaks.



Bill McCorkle's creations look too real to have been carved from wood. Details on the pintail above and other birds at right have earned McCorkle recognition as a woodcarver. He concentrates on indigenous Texas birds and migratory visitors.

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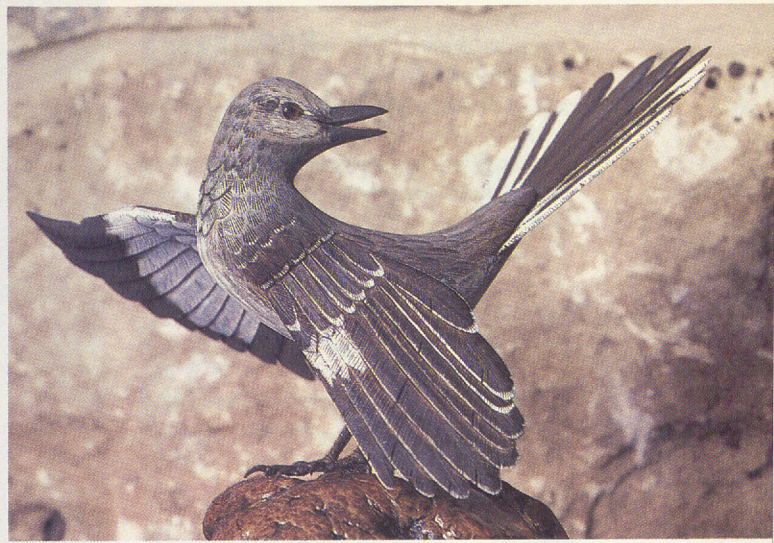
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LIFE







Here are two of McCorkle's award-winning carvings. The mockingbird (top) and killdeer (above) won blue ribbons at the Dallas Woodcarvers Show in 1983. McCorkle spends 30 to 40 hours to produce a small bird; larger ones take up to 100 hours.

The tool that enables McCorkle's creations to appear so lifelike is the electric wood-burning tool. With it he etches tiny feather patterns, duplicating all the subtle nuances of the wild bird's plumage.

Although he has had opportunities to be featured in various publications, McCorkle unabashedly declares that his desire all along has been to be featured in the magazine that first provided the inspiration to pursue a wildlife-oriented hobby. "Being featured in *Parks & Wildlife* magazine would be the culmination of a lifelong dream," he declared. "Everything else would be secondary." **

young naturalist

Nature Crafts

Article by Ilo Hiller
Photography by Bill Reaves

Finding the perfect gift for everyone on your shopping list is no easy task, especially if you are one of those individuals who enjoy giving something unusual—something handmade.

Your local library may have several books on craft projects that are suitable for this purpose. However, if you are looking for something for a person who enjoys the outdoors, you may want a gift with a touch of nature.

Place mats and bookmarks decorated with dried wildflowers or autumn leaves may be just what you are looking for. And you get to have the fun of gathering the materials used to make them.



Pressing and drying wildflowers can be an interesting experience if you have never tried it before. They don't always turn out the way you think they will, and you may be surprised at the color changes that occur during the drying process.

Choosing the blossoms to be pressed is a matter of availability and logic. You are limited in your selection to those wildflowers that are growing at the time you are collecting. Since you want your finished product to be flat, it is best to select flowers that do not have bulky centers. The more colorful blossoms should retain the most color when the drying process is done.

Wildflowers should be pressed as quickly after picking as possible to avoid wilting and petal curling. If it is not practical to take along your plant press and newspapers when you are collecting, a few flowers can be slipped between the pages of a book until you can get home and press them properly. But do not try to press flowers in a book; you may ruin it.

A plant press can be as elaborate or simple as you wish. Some collectors build a wooden press that can be tightened once the flowers have been placed inside. Others simply rely on the weight of a heavy object. Whichever you choose, the secret to pressing



plants is to make sure they have enough paper layers on either side to absorb the moisture in the flowers. (Since newspapers are now using colored inks that could transfer to your wildflowers, be sure that only black and white pages are touching the blossoms. Use old newspapers so the black ink will be as dry as possible.)

If the flowers are wet at the time they are collected, it may be necessary to change the papers every other day to prevent mold and mildew from forming. The flowers should be dry within a week's time.



Now your creative abilities must come into use. You must decide what you want your place mat to look like. If you want it to be clear, you won't need the fabrics, construction paper or solid-colored place mat to serve as a backing for your leaves or wildflowers.

To make a clear place mat, cut two pieces of contact paper an inch or so larger than you want the finished mat to be. Lay one piece aside for later use. Lift the protective paper backing a little at each of the four corners of the



Autumn leaves also should spend a few days in a plant press to remove any moisture they might contain and flatten them for later use. They should keep the colors they have at the time they are pressed.

While your leaves and wildflowers are being pressed, you will need to collect the other materials required for your nature project. A few items you might want to consider, in addition to a roll of clear plastic contact paper, are construction paper; a piece of fabric, such as burlap or linen; and a solid-colored place mat.

other one and tape it to your work area, sticky side up, to hold it flat. Leave the paper backing in place until you are ready to put the leaves or wildflowers in place. Arrange them on a piece of paper the size of the place mat. Once you are satisfied with the way they look, remove the paper backing and expose the sticky side of the contact paper. This is much easier to do if someone helps. Carefully transfer the wildflowers or leaves to the contact paper, making sure they are where you want them to be before allowing them to touch the sticky surface.

When they are all in place, you are ready to seal them in. Use the piece of contact paper that was set aside in the beginning. Lift the protective backing along one edge and place this exposed edge, sticky side down, on the contact paper taped to the table. Again, this is much easier if two people work together. It is quite difficult for one person to keep the sticky paper straight and avoid wrinkles. Remove the backing a little at a time, pressing the two sheets of contact paper together. Work slowly making sure the edges are straight and no wrinkles appear. Once they are stuck together you can remove them from the table and trim the edges to the right size.

Place mats and bookmarks can be made with a few dried flowers and leaves. Brilliant blossoms retain the most color, but may change when dried. The magenta wine cups turned purple. Fireweeds, with their thick centers, do not press as flat as wild verbena or wine cups.

The process is basically the same when construction paper or fabric is used as a colorful backing for your leaves or wildflowers. Once the first piece of contact paper is secured to the work area and the sticky side exposed, the construction paper or fabric is stuck to it. This background material will need to be smaller than the contact paper so a sealed edge can form around it. Arrange the leaves or wildflowers on the background material and then add the top piece of contact paper as before. It should stick to the material and the exposed edge of the bottom sheet of contact paper.

Using a solid-colored place mat as a backing is the quickest way to make your wildflower place mat. Simply arrange the wildflowers on the place mat and cover the whole thing with a piece of contact paper. Trim the contact paper to match the edge of the place mat.

Bookmarks are made in the same way, but are much smaller and easier to handle. Keep in mind that the wildflowers used for this purpose must be small enough to fit.

Use your imagination and you may come up with a number of other ways to use these materials. And remember, there's no rule against making a gift for yourself. * *

Three Record Fish Hooked in One Day

A father and son team from Hitchcock set three state records in a single day of fishing in the Gulf of Mexico out of Galveston on July 3.

The Texas Parks and Wildlife Department's fish records committee certified a one-pound, 14-ounce lane snapper and a two-pound, 11-ounce Atlantic bonito caught by Ken Stepchinski, and a two-pound, 15-ounce gray triggerfish caught by his father, Nick.

Each of the three fish opens a new category in the record book.

The elder Stepchinski said that fish such as lane snapper are not unusual, but often are misidentified by offshore fishermen. "None of these fish were very large, but it's a way to get them into the record book and give other fishermen something to shoot for," Stepchinski added.

He said all three were caught about 30 miles south of Galveston.

Redfish Cases Highlight Game Thief Rewards

Anonymous callers to the state's Operation Game Thief line provided information needed for game wardens to file a bevy of cases involving illegal transportation and sale of redfish during the past six months.

The Operation Game Thief Committee, meeting in October at Texas Parks and Wildlife Department headquarters in Austin, paid \$2,200 in rewards to 12 callers who used the toll-free number, 1-800-792-GAME, to report suspected game law violators.

One of the most significant cases made possible by the OGT program

OUTDOOR ROUNDUP

COMPILED BY
THE PARKS AND WILDLIFE
DEPARTMENT'S NEWS SERVICE

The caller turned down the reward offered by OGT.

A tip from another caller led to the arrest and conviction of a man who was in possession of illegal redfish valued at \$600. The Gulf Coast Conservation Association, an organization dedicated to the protection and enhancement of the state's redfish and spotted seatrout fishery, matched OGT reward of \$200 in an effort to encourage more coastal sportsmen to report redfish and trout violations.

The OGT committee, which serves without pay, meets in Austin every six months to review cases and disburse rewards funded by donations from individuals and organizations.

Last week's meeting marked the completion of the program's third year, during which \$24,550 has been paid to 133 callers. Since the program's inception in 1981, more than 2,400 calls have been received. Of these calls, 255 resulted in the arrest of 532 violators and 916 convictions were obtained for a total of \$114,704 in fines collected.

Lake Somerville Habitat Being Revitalized

A group of fishermen and merchants at Lake Somerville is launching a "revitalization" project which may serve as a model for future private enterprise fishery projects at other reservoirs across the state.

John Levee, a Somerville boat dealer, said he organized the non-profit Lake Somerville Revitalization Project to reverse a downtrend in fisherman success and participation at the 11,400-acre reservoir located roughly between Bryan and Brenham. "Somerville almost has been abandoned by bass fishermen in the past several years, and it seemed that the only people using the lake were local catfish and crappie fishermen," said Levee.

Levee rounded up as many interested individuals and bass clubs as he could contact and then requested assistance from the Texas Parks and Wildlife Department. This resulted in a plan to construct and place artificial reefs to attract and harbor game fish, along with related projects to clean up shoreline areas and enhance access for anglers.

"We have placed about 300 large cedar tree reefs in the lake, and they are already paying dividends with good catches of bass and crappie," he said. "Now we have more than 200 bundles of tires. In all, we hope to have 20 to 25 major reefs of cedar and tires combined in various sites on the lake."

The TP&WD has cooperated in an advisory role so far, and has provided materials for binding the reefs. The agency also will provide personnel and a large boat for the project. Levee said Frank Reynolds of Big Creek Marina also will provide a barge for hauling reefs to the sites.

TP&WD officials point out that submerged tires and brush in effect create mini-ecosystems, providing a

home for micro-organisms and attracting other species higher on the food chain, including game fish.

Levee said he hoped funds for future projects will be raised through a picnic and country music concert planned for next Easter weekend.

He added that so far members of bass clubs from Brenham, LaGrange, Bryan and Washington County have participated, and statewide bass organizations have indicated an interest as well.

"We feel that all the people and organizations who donate their time and money to this project will be rewarded with better fishing," Levee said. Those interested in participating can call Levee at 409-289-4272.



Attorney General Clarifies Fish Filleting Regulation

A recent opinion issued by the Texas Attorney General's Office has declared that spoil islands along the Texas Gulf Coast may not be considered the "final destination" of fish caught in coastal waters, and anglers headquartered temporarily in camps on spoil islands are prohibited from filleting or removing the heads or tails of finfish until returning to the mainland.

The final destination regulation was established by the Texas Parks and Wildlife Department to enhance identification of fish for law enforcement purposes.

Operators of state-leased fishing camps or spoil islands contended that their camps constituted the final destination, thereby allowing them to process their fish before returning to the mainland.



OPERATION GAME THIEF

Reward for information leading to the conviction of game and fish law violators. Call day or night.

1-(800)792-GAME

involved a tip from a fish market operator who reported that he had been approached by suspects who offered to sell him redfish without proper documentation. Investigations led to the arrest of 11 persons. Convictions were obtained on a number of charges, including possession of illegal redfish and flounder for the purpose of sale, and certain license violations. Game wardens filed 38 cases, and fines exceeded \$5,700.

Officials said the Texas program's 10 percent conviction rate on calls received is comparable to or better than other states operating similar programs.

Members of the OGT Committee are Harry Tennison, chairman, Fort Worth; Ed Spencer, Dallas; Walter Fondren III, Houston; Mrs. Clayton Williams, Jr., Midland; Howard Watson, Killeen; and William LeBlanc, Fulton.

The opinion stated, however, that the normal means of transport of fish from spoil islands to the mainland is by boat, creating problems for game wardens who often check boats to determine numbers and species of fish caught.

The only finfish species exempted from this regulation are broadbill swordfish, shark and king mackerel.

Cypress River Chain Offers Good Fishing

East Texas fishermen are blessed with an abundance of large public reservoirs that offer excellent fishing, but they may be overlooking a bayou system that also boasts high game fish populations.

Texas Parks and Wildlife Department biologists have been conducting surveys on the Big Cypress, Little Cypress and Black Cypress Bayous in Harrison and Marion Counties to determine overall populations of the various species.

The survey area includes sections of the three streams from the Lake O' the Pines Dam to Highway 43 near Karnack. The Cypress Bayou system drains into Caddo Lake on the Texas-Louisiana border.

Biologist Mike Ryan of Marshall said his crew found good numbers of largemouth and spotted bass, flat-head and channel catfish, white bass, hybrid striped bass and crappie.

"On a pounds-per-acre basis, flat-head catfish were the most dominant fish, at 69 pounds," Ryan said. "Largemouth bass accounted for 25 pounds per acre, which compares favorably to the mean standing crop in most area reservoirs."

Anglers should take advantage of somewhat higher river flows during the winter, Ryan said, adding that the fish usually are more active in the stronger current. Boat-launching access also may be easier at that time, he said.

Three public boat ramps are available on the Big Cypress Bayou, located at the tailrace below Lake O' the Pines, FM 134 in Jefferson and SH 43 near Karnack.

Hybrid Striper Record Bested by One-Half Ounce

If football is a game of inches, fishing could sometimes be called a game of ounces and grams.

Dallasite John Haney is holder of a new state record in the hybrid striped bass category, and he probably doesn't care that his 19.66-pound fish beat the old record by only a half-ounce.

Haney was fishing at Lake Ray Hubbard near Dallas on June 20 when he hooked the hybrid on a live sunfish.

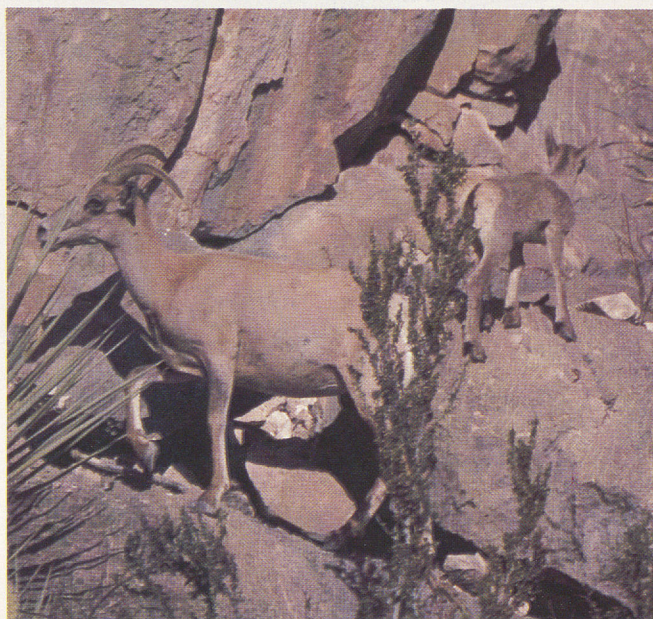
In addition to the closeness of the weight to the former record fish, there was some doubt as to whether Haney's fish was a hybrid or a true striper. An examination by Texas Parks and Wildlife Department biologists Chuck Milford and Bobby Farquhar confirmed it as a hybrid.

Lake Ray Hubbard also produced

the former record, a 19-pound, 10-ounce hybrid caught by Billy Cansler of Dallas on January 27, 1983.

Haney's fish was 35.16 inches long and 22.63 inches in girth. Haney said he was drifting a live sunfish in 28 feet of water with 17-pound-test line.

With the two recent catches, Lake Ray Hubbard has stolen the limelight from Lake Nasworthy at San Angelo which produced a succession of record-sized hybrids.



Desert Bighorn Restoration Program Still Progressing

The Texas Parks and Wildlife Department's desert bighorn sheep restoration program suffered a setback recently with the loss of six lambs and a ewe from disease, but the program still is on the upswing largely because of the efforts of sportsmen's organizations and individuals.

Charles Winkler, big game program director, said 11 lambs born during 1984 still are alive and have been inoculated against parainfluenza which felled five of the other six.

Winkler said the state's bighorn restoration program is centered around a 40-acre fenced brood facility at the Sierra Diablo Wildlife Management Area near Van Horn. "The facility was built by the Texas Bighorn Society, and it provided a secure place for the brood animals we have obtained from other states," he said.

The Texas Bighorn Society is a fund-raising organization dedicated to restoring the rare native sheep to areas of the Trans-Pecos region where the animals had been extirpated. The society is comprised of several sportsmen's organizations, including the Texas and National Chapters of the Foundation for North American Wild Sheep; the Houston, Dallas and Paso del Norte Safari Clubs; Game Conservation International (GAMECOIN); Sportsmen's Clubs of Texas (SCOT); and many individuals interested in restoring the desert bighorn to Texas.

"Individual sportsmen also have played a key role in the program," Winkler pointed out. He explained that Bill Leech of Arlington and Bill Ledford of Dallas were high bidders for ram hunting permits in Utah and Nevada, respectively, and they in turn asked the state game departments each to donate a sheep to the Texas program instead of harvesting a surplus ram as authorized by their permits. As a result, two rams and two ewes were added to the brood herd.

Officials anticipate the lamb crops being produced in the brood facility will increase the herd sufficiently to allow some releases of sheep into the wild next year.

Sabine Lake Anglers Need Louisiana License

Texas residents who plan to fish on the Louisiana side of Sabine Lake are now required to have a Louisiana Saltwater Angling License in addition to a Texas fishing license.

Officials of the Louisiana Department of Wildlife and Fisheries told the Texas Parks and Wildlife Department that because of a reciprocal agreement between the two states, the Texas resident fishing license still will be recognized as the basic license for fishing all of the saltwater lake on the Texas-Louisiana border. However, the new \$5.50 saltwater license also will be required for all Texas residents except those 65 years old or older fishing on the Louisiana side.

The dividing line between the two states extends through Sabine Lake, which is located on the outskirts of Port Arthur. No buoys or markers indicate the specific location of the border.

Rainbow Runner Sets Record

A 12-pound, three-ounce rainbow runner has been certified by the Texas Parks and Wildlife Department as a new state record in the saltwater division.

James S. Gunnin of Katy caught the fish September 13 about 42 miles southeast of Aransas Pass. It was 37½ inches long and 16½ inches in girth.

The fish beats a 11.13-pounder caught out of Freeport in 1983.

The rainbow runner is a colorful member of a family of fish that includes pompano, amberjack and jack crevalle.

Safari Club Supports Wetland Research

The Houston Safari Club (HSC) has donated \$10,000 to the Texas Parks and Wildlife Department (TP&WD) to be used for wetland research in Jefferson County. The money will help the department pay its share of the cost of a three-year (1984-86) research project in the Salt Bayou Basin.

The research is designed to improve almost 60,000 acres of publicly owned wetlands, including McFadden National Wildlife Refuge, J.D. Murphree Wildlife Management Area and Sea Rim State Park, for waterfowl and other wetlands wildlife. Officials said any improvements

would be accomplished in a manner that would not interfere with the use of the wetlands as spawning and nursery grounds by marine shellfish and finfish.

Ted Clark, the department's Wildlife Division Director, praised HSC for the donation and for several past contributions to wildlife projects. "I only wish more conservation-minded groups and individuals would donate funds for wildlife habitat acquisition, research and management; we need all the help we can get," Clark said.

All such charitable donations to TP&WD are tax deductible.

South-Central Texas) is January 12, 1984, through February 10, 1985. The daily bag limit is three and the possession limit is six in all zones.

Ron George, sandhill crane program leader, said hunters also are advised to brush up on bird identification before going hunting. "Zone boundaries are drawn so as to assure hunting activity will not occur where endangered whooping cranes are likely to be," George said. "However, there's always an outside chance that a whooper could stray into a hunting zone, especially some of the foster parent-raised birds that winter at



Permits Required Of Crane Hunters

Texas Parks and Wildlife Department officials remind prospective sandhill crane hunters they need to obtain a free permit from the department to hunt cranes in any of the state's three hunting zones.

The permits must be obtained by mail or in person from the department's headquarters at 4200 Smith School Road, Austin, Texas 78744. When requesting permits, list the name, address and county of residence of each hunter.

Data collected from the permit issuance will be used to assess hunter participation in the various zones.

Complete information on season dates and zone boundaries may be found in the department's Late Season Migratory Game Bird Hunting Regulations leaflet, available at department offices and hunting license outlets across the state.

The Zone A (roughly the Trans-Pecos, Permian Basin and Western Panhandle) season is November 10, 1984, through February 10, 1984; Zone B (Eastern Panhandle) is December 1, 1984, through February 10, 1985; and Zone C (portions of the Edwards Plateau, South and

Bosque del Apache National Wildlife Refuge in New Mexico."

Adult sandhills are easily distinguished from adult whooping cranes, being dusky gray in color. Adult whoopers are white, with black wingtips. "Hunters might have some difficulty in distinguishing juvenile birds of the two species, since young sandhills are gray-brown, and young whoopers are a rusty brown color," said George.

He added that this problem might be pronounced during early morning hours when visibility is poor. Shooting hours for sandhill cranes are 30 minutes before sunrise to sunset.

Public Waterfowl Hunter Information Available

Just when public waterfowl hunting areas appear to be shrinking, the Texas Parks and Wildlife Department has opened up additional acreages on wildlife management areas for public hunting.

Murphree WMA near Port Arthur, Engeling WMA near Palestine and Matagorda Island WMA near Port O'Connor all require registration and a fee of \$5 per day of hunting.

Five areas of the Eastern WMA only require signing in at roadside registration boxes and no fees are charged. These areas are: Dam B Unit near Jasper, Granger Unit in Williamson County, Toledo Bend Unit in northeast Shelby County; Somerville Unit around Somerville Reservoir in Washington and Lee Counties; and the Pat Mayse Unit near Paris in Lamar County.

Four areas are available for waterfowl hunting in the national forests on a registration-only basis. These areas include: Alabama Creek WMA near Apple Springs in Trinity County; Bannister WMA near Broadus in San Augustine County; Caddo WMA in Fannin County and Moore Plantation WMA in Sabine County.

Not all areas are open for hunting every day of the season. For instance, areas that have public gun hunts for deer will be closed during the deer hunts.

For additional information on waterfowl hunting, write to the department at 4200 Smith School Road, Austin, Texas 78744.

In addition, ducks, geese and coots may be hunted at Sea Rim State Park near Port Arthur. For additional information on Sea Rim hunts contact the park at P.O. Box 1066, Sabine Pass, Texas 77655 or call 409/971-2559.

Hog Brucellosis Requires Caution By Hunters

High populations of domestic hogs gone wild in many areas of Texas have prompted landowners and hunters to pursue them both for food and sport.

Officials of the Texas Parks and Wildlife Department and the Texas Agricultural Extension Service remind persons interested in hunting or trapping feral hogs that precautions should be taken against the disease brucellosis.

A study by Dr. Bruce Lawhorn of Texas A&M University found brucellosis virus in eight of 76 recently captured and domesticated East Texas hogs, and pseudorabies virus were found in another 14.

Dr. Lawhorn said clinical disease has never been shown to occur in humans exposed to pseudorabies virus, but brucellosis is transmittable to humans. "Human infection may occur through cuts or abrasions following handling infected wild hogs, their viscera or meat," he said. "Exposure is possible by breathing in the bacteria, ingestion by mouth or contamination of the eyes."

Dr. Lawhorn advised those pro-

cessing wild hogs to use disposable rubber gloves and wash hands thoroughly with an antiseptic or disinfectant soap afterward. Eating meat of brucellosis-positive swine is not known to be hazardous following thorough cooking, he added. Parks and Wildlife Department officials said feral hogs are not classified as game animals, and may be hunted or trapped anytime. They should not be confused with javelina, which are classified as game animals for which hunting seasons and bag limits have been established in areas where they are known to range.

Electric Fence Firm Stops Producing Red Insulators

A Minnesota electrical fencing firm has announced it has discontinued production of red-colored insulators for its fencing after hearing reports that the insulators were electrocuting hummingbirds and other bird species. (See *Texas Parks & Wildlife "Outdoor Roundup,"* August 1984.)

The problem was discovered a year ago when James Wilson, an ornithologist with the Missouri Department of Conservation, observed that the red insulators were attracting the birds, which mistook them for flowers.

Bruce Thompson, nongame species program leader for the Texas Parks and Wildlife Department, said Texas residents who have brightly-colored insulators on their electric fences should replace them or paint them black. "The birds can be electrocuted if they perch on a wire and probe the insulator with their beaks," he said.

January in . . .

TEXAS PARKS & WILDLIFE

Nature assumes a festive appearance in fall and winter, decking many plants with touches of red. Animals that sport red all year long add to the colorful scene, and a photo story in the January issue will present the many shades of red found in nature at this time of year. Birding is one of the top tourist attractions in the Rio Grande Valley and next month we'll take a look at some of the best spots for pursuing this sport year around. Other stories in January include raccoons, state natural areas, sandhill crane hunting and aoudad sheep in Palo Duro Canyon.

1985 "FIRST" TEXAS NONGAME STAMP PRINT



by **KEN CARLSON**

The Texas Nongame and Endangered Species Conservation Fund was established by the sixty-eighth Texas Legislature with passage of House Bill 1064. Its creation was a combined effort of conservation and sporting groups from throughout the state. The purpose of the law is to establish a new revenue source and maintain funds which will be used solely for nongame wildlife research, management, habitat acquisition, and education.

Money from the sale of collector stamps, decals, and royalties from art prints created by this legislation will be placed in the new Nongame Fund and administered by the Texas Parks and Wildlife Department.

Ken Carlson's design of whooping cranes for the 1985 First Texas Nongame Stamp Print continues the Texas tradition of offering the very finest art of the world's most famous wildlife artists in its stamp programs. Texas' unanimously acclaimed "most successful" duck stamp program has sold over 43,000 prints in its first four years, and yet these editions remain among the most collectible of all duck stamp prints. The nationwide attention that collectors have given the Texas Duck Stamp Program is sure to continue with the Texas Nongame Stamp and Print

Program. Texas' proven ability to attract the top names in duck stamp art — names such as Hayden, Reece, Maass, and Carlson — assures the continuing viability of this new series.

Ken Carlson's stamp print designs include the 1979-80 National Wild Turkey Federation Stamp, the 1982 Foundation for North American Wild Sheep Stamp, the 1982 Texas Duck Stamp, the 1984 Boone and Crockett Stamp, and the highly successful 1984 First Texas Turkey Stamp. Carlson's art and the credible conservation projects it has supported have in a few years brought national prominence to his very special talent.

The 1985 First Texas Nongame Stamp Print will be a signed and numbered edition limited to wholesale orders received by January 31, 1985. The image size will be 6½" x 9"; overall size, 12½" x 14". The print will be \$135; the accompanying stamp and decal are \$5 each.

Additionally, a special medallion edition will be available. This edition will include a silver medallion which is 99% pure silver. The print and medallion will be \$250; the accompanying stamp and decal are \$5 each. There will be no remarques. Shipment is expected in March 1985.

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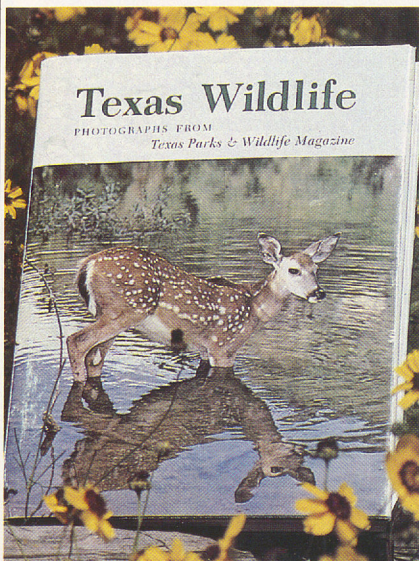
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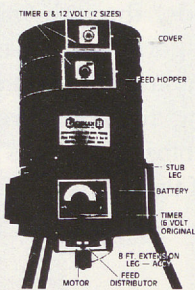
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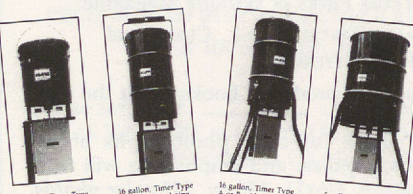
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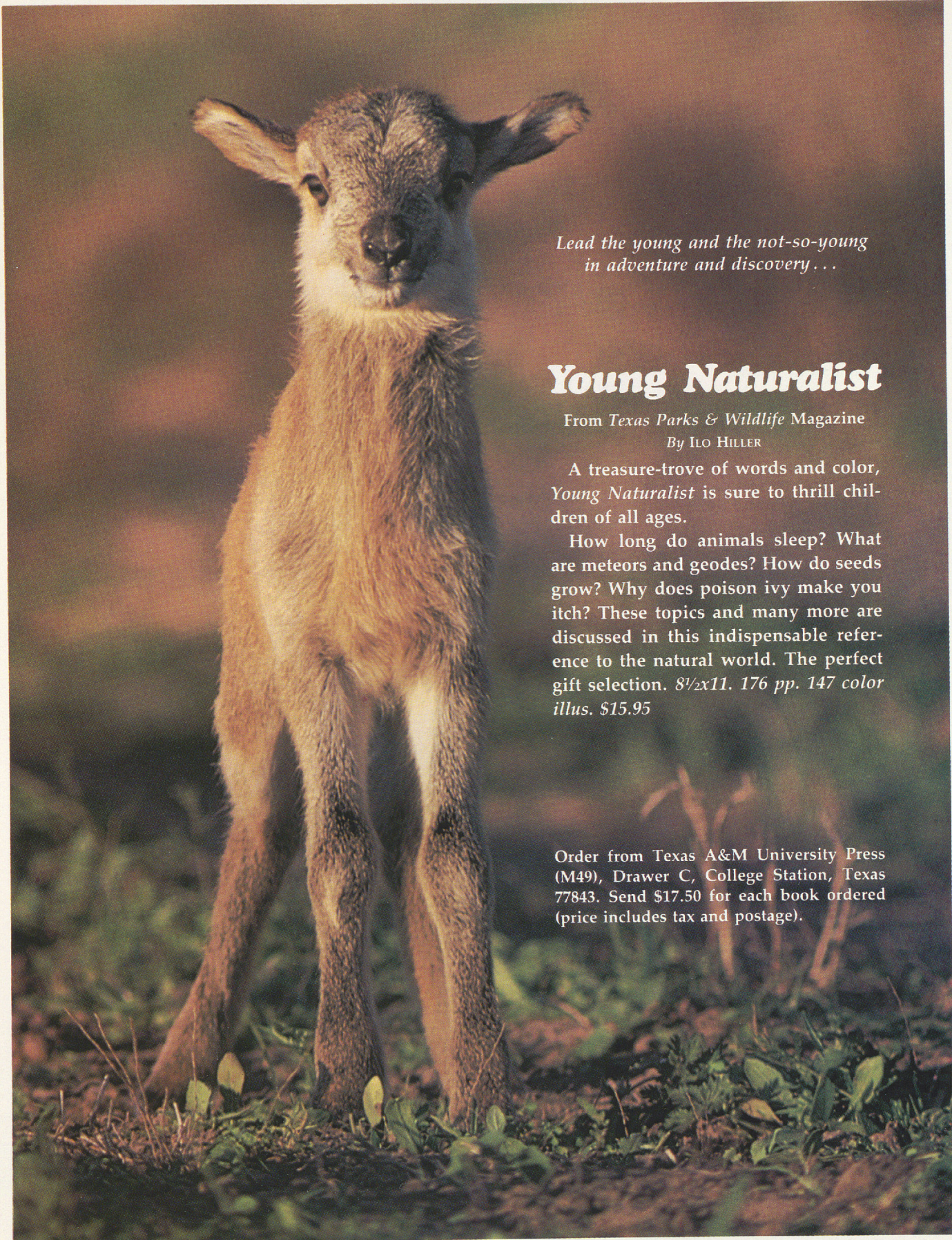
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Letters to the Editor

No More Reruns

When I was a little boy I stole some of my sister's makeup, but after my Daddy explained to me that nice little boys did not steal and he-men did not wear makeup I did not do it again.

The trick you pulled on your readers in the September issue when you stole the makeup and pictures of the Fulton Mansion story from your sister publication (*Texas Highways*) deserves the same lecture I got. But since some of the words my Daddy used have had their meaning changed, let's just say no more reruns, please.

Joe Strickland
Austin

■ *Texas Highways* is published by the State Department of Highways and Public Transportation, a different state agency than the Parks and Wildlife Department, so it is not a sister publication to our magazine. Occasionally, there is some overlap in choice and timing of feature subjects, especially in the case of state parks such as the Fulton Mansion. For our story on that park the copy, photographs and layout were all the work of our own staff, without any reference to *Texas Highways*.

Asps

My thanks to you for the article in the October issue on asps. I am a secretary for a pest control company and was very interested in the article. Last November I was stung by what I called a woollyworm. My friends said it was an asp. None of our books and literature at the office has anything about the asp and I enjoyed the information in your article.

This was the first time I had read *Texas Parks & Wildlife*. I hope to read more articles about insects.

Edith Harrison
Longview

Weather Articles

On behalf of the National Weather Service, I would like to commend Mary-Love Bigony and *Texas Parks & Wildlife* magazine for the excellent articles published this year concerning weather and weather-related events.

"The Greatest Storm on Earth" in the September issue was especially timely and informative in that it preceded Hurricane Diana's battering of the Carolinas and the subsequent September tropical storms and

hurricanes. The May 1984 "Rainy Day Danger" and July 1984 "It's Not the Heat, It's the Humidity," articles were also particularly appropriate. The impressive, well-written information in all three features covered just about all seasons and consisted of a "grand slam" of Texas weather events.

Thanks to you, persons previously unfamiliar with flash floods, heat stress and hurricanes have been educated to the dangers of these phenomena and the number of lives lost, injuries sustained and property destroyed will be reduced, despite the tremendous growth and increase in population in Texas.

Please accept my congratulations and the congratulations of the National Weather Service for a job well done.

Billy J. Crouch
San Antonio

Definitions

Every once in a while my cousins in Texas pass on to me copies of your magazine. How I enjoy them! I read every article and study each photo. The articles are always well-written, the quality of the photographs superb. Congratulations.

Now and then I run across an expression with which I am not familiar, such as *playa* or *playa lake* in the article "Trouble in the Promised Land" in the February 1984 issue. Here, *playa* is generally used as *beach*, as in *las playas de Acapulco*. Is the expression used in the Panhandle for a shallow, natural depression or is it a manmade lake?

I would also appreciate a definition of two other words: *slough* and *bayou*.

Renee Burmester
Mexico City, Mexico

■ A *playa* or *playa lake* is a natural depression in the land that sometimes fills with water. These shallow lakes attract migrating waterfowl in the fall and winter, and are good hunting spots in the Texas Panhandle. A *slough* is a muddy swamp, usually an inlet from a river or a creek in a marsh or tidal flat. A *bayou* is a creek or small river that is a tributary to a larger river or a lake.

Warden Recognition

I fully concur with your articles on game wardens in the September issue. It is high time these silent workers get some recognition. Only the law breakers view them as bad people. Fortunately, most of us realize

the tremendous service they render to their communities.

I am an old man and all my life I have loved plants and animals. I hunt only with a camera (I don't like venison or any wild taste) but I fully realize that controlled hunting is necessary to maintain a healthy population of wild animals. Your magazine is super, just the right proportion of hunting, fishing and just plain admiration of wildlife. May you keep up the good work for a long, long time.

R.H. Kloss
West Columbia

Dissatisfied Customer

My husband and I do not want to receive your magazine any more. All your talk about hunting is making us sick. How can anyone have fun in killing innocent animals? Please do not send it to us any more.

Dr. and Mrs. C. Nanninga
Galveston

Canceling

Your magazine has beautiful pictures, but unfortunately along with the pictures one reads, "Hunters will be able to add the white-tipped or white-fronted dove to their game bag this season for the first time" (September).

I am canceling our subscription. I was under the impression that your magazine was a national parks and wildlife magazine—not an information magazine for hunters. It's such a joke. Concern for the animals in nature, then concluding with ads for automatic wildlife feeders to attract animals and enclosed deer blinds and swivel high chairs for more comfortable and accurate shooting. Modern man does not need to forage for his food. He merely enjoys killing.

Jeanne Collier
Lubbock

INSIDE BACK COVER

Shy and retiring, bobcats usually hunt at night and retire to their hideouts during the day. They prefer the rocky canyons and outcrops in the western part of Texas, but in other areas of the state thickets are suitable for den sites and protection. Photo by Bob Moorhouse.

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