

KANSAS FISH & GAME



JULY-AUGUST 1971

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KANSAS FISH & GAME



July-August, 1971

Vol. 28, No. 3

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Front cover, bullfrog Ektachrome transparency by Vic McLeran using a Pentax spotmatic, f/8 at 1/125. Related story on page 3. Back cover, mourning dove Ektachrome transparency by Ken Stiebben using a Pentax spotmatic, f/8 at 1/125. Related stories on pages 10, 18 and 23.

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PRINTED BY
ROBERT R. (BOB) SANDERS, STATE PRINTER
TOPEKA, KANSAS
1971



Editorial . . .

Wildlife programs seem to be gaining popularity as major television attractions. Nature in the raw has always been a fascinating subject, but until TV began featuring it, few people ever had a chance to see it as it is.

Nature has acquired a false image for the majority of its admirers. It is pictured as serene and beautiful, with its wild creatures roaming peacefully through woodlands or feeding in tranquil settings.

Nowhere is there any indication that the law of the jungle prevails, the weak either die from starvation or are killed by predators, that food supplies run short when populations are not kept in balance.

Even those of us who have penetrated remote areas of wildlife habitat as hunters or observers have seldom seen examples of how cruel nature can be. An occasional but fleeting glimpse of a snake dangling from a hawk's talons, a deer carcass mangled by dogs, or the remains of a partridge or a rabbit abandoned by a fox is all we usually see of nature's survival of the fittest law.

Television is beginning to change this. In an hour's span, viewers see more of what happens in nature than could be seen in a lifetime of hunting experiences or casual field trips. And it is being seen in all its bloody, crimson gore, just inches away from the T.V. tube.

Cameras zoom in on a deer being eaten alive by coyotes. We see every knee jerk, the wild, dilated brown eyes, the blood and the intestines.

We watch as thousands of pounds walrus thump and bloody each other. We see the death of an elephant, telescoped and edited into three minutes, a happening which normally runs into weeks or months, a sight rarely witnessed by man. And as they lay dying, they are eaten alive by vultures and hyenas. Those that do expire from weakness and starvation suffer the cruelest of deaths.

Nature is not always the pretty picture we see in backyards and roadside meadows. Compared with death by nature's law, a clean kill by man with a shotgun or rifle would appear to be more humane.

The American sportsman is a conservationist—which means he is also a hunter. If television programs tell it like it is in the wildlife kingdom, perhaps more people will come to understand the important role hunting plays in conservation, *i. e.*, helping to control population imbalance, and reducing suffering and waste.

Perhaps then more people will abandon their antihunting hysteria based on misguided emotion—John W. Marshman.

Of Frogs and Froggin'

By VIC McLERAN

It was a moonless night and shafts of light from our flashlights had shadows dancing among the cattails along the pond's edge. In the fields nearby, crickets maintained a steady symphony, punctuated periodically by the deep, bass bellow of a male bullfrog across the pond.

"There's one," muttered Dr. Dave Johnston, Pratt dentist, as he moved quietly through knee-deep water toward a large, green bullfrog sitting in a small pocket among the weeds. Keeping the light directly in the frog's eyes, he maneuvered into position, sliding his feet silently along the pond's bottom to prevent splashing the water.

With the light in his left hand, Johnston leaned forward, made a knife-like stab with his right and came up with the splashing, kicking bullfrog. Dropping the catch in a burlap bag, we continued around the pond.

Together with Bill Lee, Barber County rancher and Ken Stiebben, photographer for the Fish and Game Commission, we were froggin' the farm ponds on Lee's land. Although popular in western Kansas, the sport is more common in the eastern part of the state simply because of more water. Creeks, rivers, back-water sloughs, ponds, lakes and strip pits—all are home to the bullfrog. There are some minor variations according to the type of water being hunted, but the procedure for taking frogs is basically the same.

All you need is a valid Kansas fishing license (if you're between the ages of 16 and 65), flashlight, burlap bag and a quick pair of hands. Some froggers use hip waders but many prefer a pair of old pants and sneakers.

When working farm ponds, the frog hunter simply wades the perimeter, staying several feet out in the water, scanning the shoreline carefully with a flashlight. The frog's eyes reflect the light, making them easy to spot. Some frog hunters prefer battery-powered headlamps which leave both hands free. When a frog is located the hunter keeps the light directly in the frog's eyes and moves in quietly. For some reason a frog usually "freezes" when caught in the glare of a bright light. Unless startled by a sudden noise or splashing, he usually sits there long enough for the hunter to grab him. This isn't always true later in the season. After they have been hunted hard, the frogs are spooky and don't "hold" as well to the lights. For this reason, some hunters switch to a long-handled dip net later in the season.

One word of caution—since water snakes are also fond of froglegs you're likely to run across several during a night's hunting. Although non-poisonous, they can give a nasty bite if

grabbed or startled. For this reason, it's best to check the immediate area before moving in to grab your frog. Then too, since most bullfroggin' is done at night, mosquitoes are always a hassle so don't forget the insect repellent.

Shallow creeks are hunted in about the same manner with one man checking each bank. Rivers, lakes and strip pits which have depths or steep drop-offs that prohibit wading are worked more easily with a boat. In this operation, one man rows while the other sprawls forward over the bow with a light, set to grab the quarry.

In Kansas, the only legal methods for taking frogs are by hand, dip net or hook and line. Bow and arrows, gigs, spears, firearms and all other methods are prohibited. Fly rods and ultra-light spinning tackle are popular in some areas for taking the "bulls" during daylight hours. Another time-tested method involves a small piece of red cloth placed on a hook. The rig is then dangled and jigged in front

Known scientifically as *Rana catesbeiana*, the bullfrog is North America's largest frog. A one pound specimen is considered large in Kansas but southern states have recorded bullfrogs weighing more than three pounds. The bullfrog's color ranges from green to brown and is sometimes mottled. (Photo by Leroy Lyon)



of the frog which is supposed to mistake the object for an insect and eventually strike.

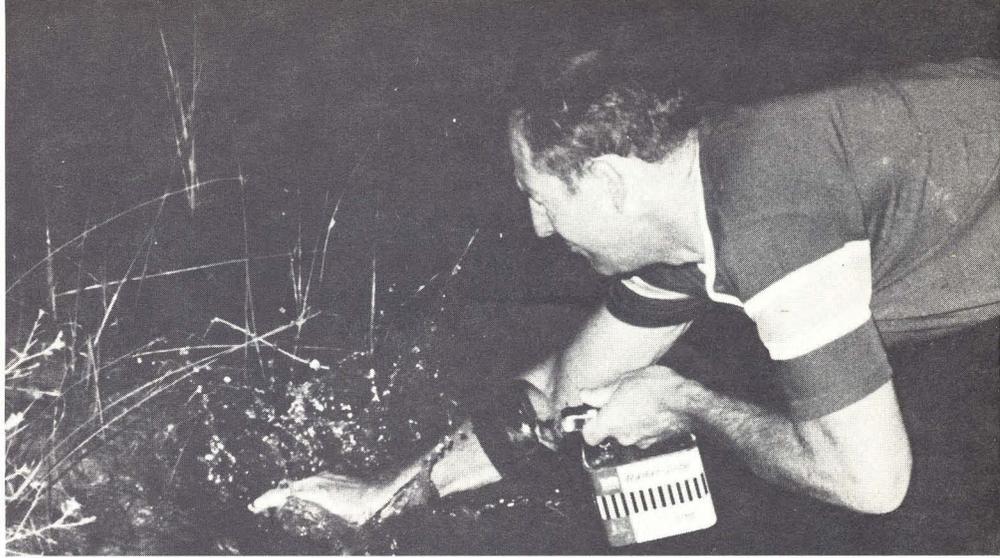
Frog season in Kansas runs from July 1 through September 30 with a daily creel limit of eight.

Life for a bullfrog starts when the female deposits thousands of eggs in the water during May or June. These are immediately fertilized by the male. Tadpoles that emerge later in the summer may take as much as two years before transforming into mature frogs. Bullfrogs spend the winters buried in mud at the bottom of streams or impoundments. Maximum size is not attained for about five years.

A large Kansas bullfrog won't weigh much more than a pound. In southern states, they grow much larger. One Texas giant which weighed almost four pounds had more than a half pound of crawfish and small frogs in its stomach.

Although they feed primarily on insects, bullfrogs will eat almost anything that moves, including other bullfrogs. One angler who had five bullfrogs together in a minnow bucket reached in and found only one. The largest had gorged himself on the other four and several legs dangling from the big fellow's mouth were all that remained.

In addition to small frogs, a big bullfrog is extremely fond of craw-



A silent approach coupled with good reflexes are requisites for taking the "bulls." Here, Dr. Johnston bags one with a quick right hand. When froggin' farm ponds and shallow streams, the simplest procedure is wading. When working deeper water with steep banks, small boats work best. (Photo by Ken Stiebhen)

fish. When dressing a mess of frogs taken from the strip pits of south-eastern Kansas, the author found several large crawfish in the stomach of each frog.

One frog hunter reported dressing a big "bull" and finding a small, live turtle inside. They even take an occasional duckling as well as fledgling red-winged blackbirds which fall from their nests among the cattails around a pool's edge.

Occasionally, even snakes are not immune to the bullfrog's enormous appetite. At the Ross Allen Reptile Institute in Florida, researchers observed a large bullfrog catch and swallow a small diamondback rattlesnake.

For the most part though, bullfrogs don't have an easy time of it in this "eat or be beaten," world. In addition to man, they serve as food for a host of natural predators including raccoons, skunks, possums, snapping turtles, owls, cranes, herons, largemouth bass and water snakes. A few years ago, I was fishing a small creek in central Kansas when I heard a squealing several yards upstream. The sound was similar to that made by an injured or frightened rabbit. Moving quietly through the creekside brush, I approached the area. There on the bank, a large *natrix* water snake had captured a halfgrown bullfrog and was attempting to swallow it. Upon spotting me, the snake disgorged his prey and slithered into the water. The frog, apparently unhurt, shook himself and dove into the creek, headed the opposite way.

Any live-bait bass fisherman can tell you the "linesides" love frogs. In fact, some anglers claim that when nothing else works, a small, lip-hooked bullfrog will bring the bass up. Channel catfish too, are fond of bullfrogs.

High restaurant prices on frog legs prompted bullfrog farming on a commercial basis in the South. But the frogs' space and live food requirements made most of these ventures unfeasible.

Although many hunters take only the frogs' hindlegs, old-timers know better. They skin and cook the entire frog except for the head.

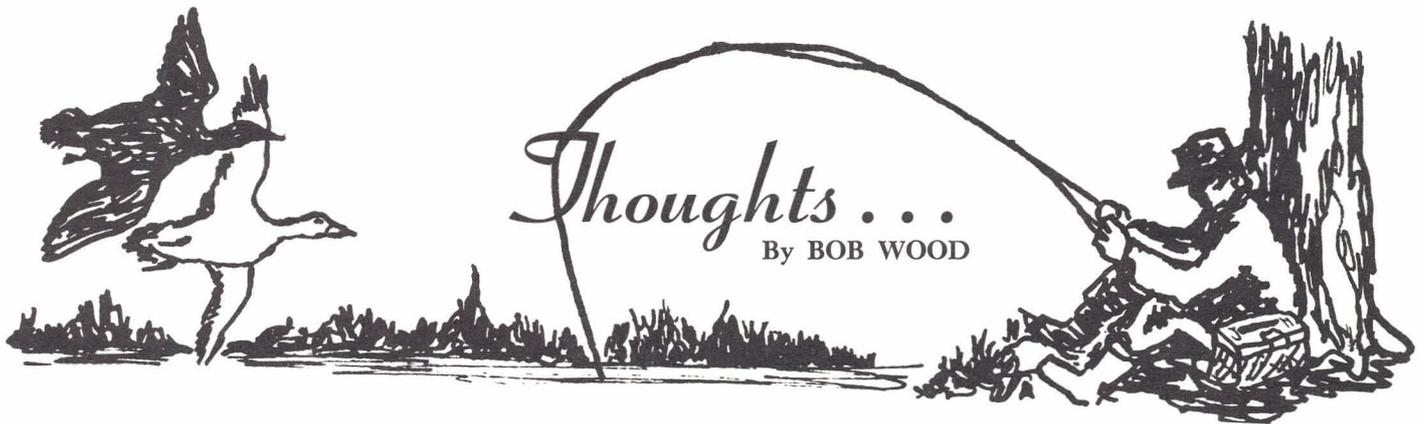
Some people are rather finicky about those human-looking frog legs kicking around the frying pan. To prevent this kicking or twitching simply place the dressed frog legs in a bowl and cover heavily with table salt. The action of the salt starts the nerves contracting rapidly. After an hour or so, this twitching stops and the legs can be cooked without the movement.

Frog legs have been recognized as a delicacy for ages and many exotic recipes for cooking them have evolved through the years. For the most part though, they are simply floured, dusted with salt and pepper and fried in hot butter or deep fat.

If you don't mind getting your feet wet and hassling the mosquitos or an occasional water snake, give bullfroggin' a try. A mess of frog legs, fried crisp and golden, makes all the effort worthwhile.



Checking the first frog of the night are Bill Lee (left) Barber County rancher; Dr. Dave Johnston, Pratt dentist (center) and the author. Although the sport is popular in western Kansas, the more abundant waters of eastern Kansas usually yield more frogs per trip. (Photo by Ken Stiebhen)



Although Kansas' population is not growing as rapidly as more urban states, human pressures on our state's natural surroundings are increasing steadily through advanced technology. One of our most recent "advancements" has been the development of various off-road vehicles. These creations have taken many forms: trail bikes, mini-bikes, snowmobiles and balloon-tired or tracked all-terrain carriers. Their inroads on Kansas wild areas is having a telling effect.

It would be impossible for anyone to undergo a true wilderness experience in Kansas. With our intensive agricultural economy, nearly every acre of land is actively producing goods or services for man. There is, however, a potential for quality *outdoor* experience with little or no interference by man's technology.

Through the years, a number of relatively small islands of land have been acquired by state and Federal agencies for the purpose of public hunting, camping, birding and other forms of relaxation away from everyday demands of earning a living, isolated tracts of public lands where a person can hike a mile or two and be virtually in company with only himself. Now, even that potential is endangered by off-road vehicles.

By necessity, a limited road system provides access to all public lands. But with public acceptance and demand for off-road vehicles, there is now, no parcel of land in the state where a person can be assured of being able to "get away from it all."

An explicit example of acceptance of off-road vehicles can be seen in the large number of campers who carry trail bikes on their pickups and vans. It would seem that campers would be the first to rebel at use of off-road cycles. The whole purpose of camping is being defeated by an incessant whine of motors. Be assured, off-road cycles are slowly but surely destroying the beauty and solitude of many of our state's public camping and hunting areas.

Not only are public lands being damaged, but private lands are also feeling the bite of the treads. On a recent prairie chicken survey, two Fish and Game employees walked in to a remote short-grass pasture in southern Meade county to count birds on a display ground. The birds were displaying on a large and active sand blow-out. Upon closer examination, it was found the blow's large dune was criss-crossed with motorcycle tracks. Thus, the cyclists' disregard for an active blow area was contributing to keep it active.

Another creation beginning to make its presence felt is the small motorized carrier, commonly referred to by ad men as All-Terrain Vehicles. It is doubtful there is a definite need for these vehicles anywhere in the world, but definitely there is no need in those delicate ecosystems where their major use is advocated. Promotional ads extol the ease with which travel across marshes and sandhills is possible in an ATV. No mention is made of resulting damage to ground cover. There are no marshes or sandy lands in Kansas where unlimited access by motorized vehicles is a necessity. Certainly, there are no public areas of such nature.

In response to a demand, certain roads and trails have been established to grant access to public lands by motorized vehicles. But, the outdoor sports of hunting, fishing and camping are by design, individual-oriented sports. They are structured to place an individual into his environment for an experience that does not influence, nor is unduly influenced by other men. Noise and ecosystem damage wrought by indiscriminate use of off-road vehicles removes an important quality from that experience. Only the individual guiding the machine may rationalize a gain, but that little gain for one cannot offset the loss to many.

MILFORD . . .

Sportsmen's *Total* Lake

By VIC McLERAN

"Milford Lake — Kansas' Largest and Bluest."

So billed by the Junction City Chamber of Commerce, Milford is much more to many people than just a big, blue lake. In fact, to quite a few sportsmen, Milford is the "total" lake. Total because it provides them with nearly all they could ask for in outdoor recreation.

Located four miles northwest of Junction City, the lake was constructed primarily as a flood control project but soon emerged as a major recreation area.

Construction on Milford began in 1962 and was completed in 1966. This 16,189 acre lake—largest in the state—controls runoff from 3,796 square miles down the Republican River from Harlan County Reservoir in Nebraska.

Milford has something to offer almost every sportsman, but to fishermen, it is exceptionally generous. Prior to the dam's construction, area anglers who wanted to fish close to home were limited to creeks, rivers and a few farm ponds. There was also a limit to the species for which anglers could fish. Milford has changed all that!

Jim Kidd, executive secretary of the Milford Lake Association and owner of a bait and tackle shop in the Rolling Hills area of the lake explained, "The construction of Milford

Lake has not only provided us with more fishing water, it's given us a great deal of variety in our fishing. Before the lake was here, most of us fished for catfish, bullheads, a few crappie and an occasional farm-pond bass. Now, in addition to those, we've got walleye, white bass, northern pike and plenty of crappie and bass fishing. It's kind of like having your cake and eating it too."

Since lake fishing differs from stream fishing, many local anglers had to learn to fish all over again when working the large lake.

"A lot of us who had fished the

streams with trotlines and limb lines had to re-orient ourselves to lake fishing," said Kidd. "This was especially true with regards to the new species which were introduced since there's a lot of difference between fishing for walleye and fishing for catfish."

Rush Lang, Junction City, game protector for the Fish and Game Commission, indicated quite a few anglers prefer the larger water. "There's definitely been a shift in fishing pressure from ponds and creeks to Milford Lake," he observed. "When checking fishing licenses, I find fewer anglers fishing the smaller waters than there were before the lake's completion."

Dick Cole (left) game protector for the Kansas Forestry, Fish and Game Commission, and Jim Kidd, owner of a bait and tackle shop in the Rolling Hills area of the lake, admire some large flathead catfish taken from Milford on set lines. (Photo by Leroy Lyon)



The presence of Milford has done a lot toward keeping Sunflower anglers fishing in Kansas. "Before the lake was in, guys around here were always taking fishing trips to Missouri, Arkansas and Oklahoma," said Darrel "Doc" Rittgers, Junction City sporting goods dealer. "But now, most of 'em are doing their fishing at Milford."

Rittgers also believes the lake has re-created a great deal of interest in fishing. "I know fellows around here who hadn't fished for years that are now avid anglers. This is especially true of some of the farmers."

For the benefit of cold weather anglers, there is a heated fishing dock located at Thunderbird Marina in the Curtis Creek area of the lake. It features chairs for anglers, a snack bar, table space and a supply of live bait.

Under fisheries management of the Kansas Forestry, Fish and Game Commission, Milford has been stocked with largemouth bass, bluegill, channel catfish, northern pike, walleye, crappie and white bass. Stockings such as these coupled with periodic test nettings to determine fish populations, insure Kansas anglers of a balanced fishing lake.

The rolling hills, wooded valleys and fertile river bottoms of the area have always provided excellent habitat for game. Consequently, the hunting was always good around Junction City. However, the construction of Milford and subsequent game management practices by the Fish and Game Commission have improved an already excellent situation for hunters.

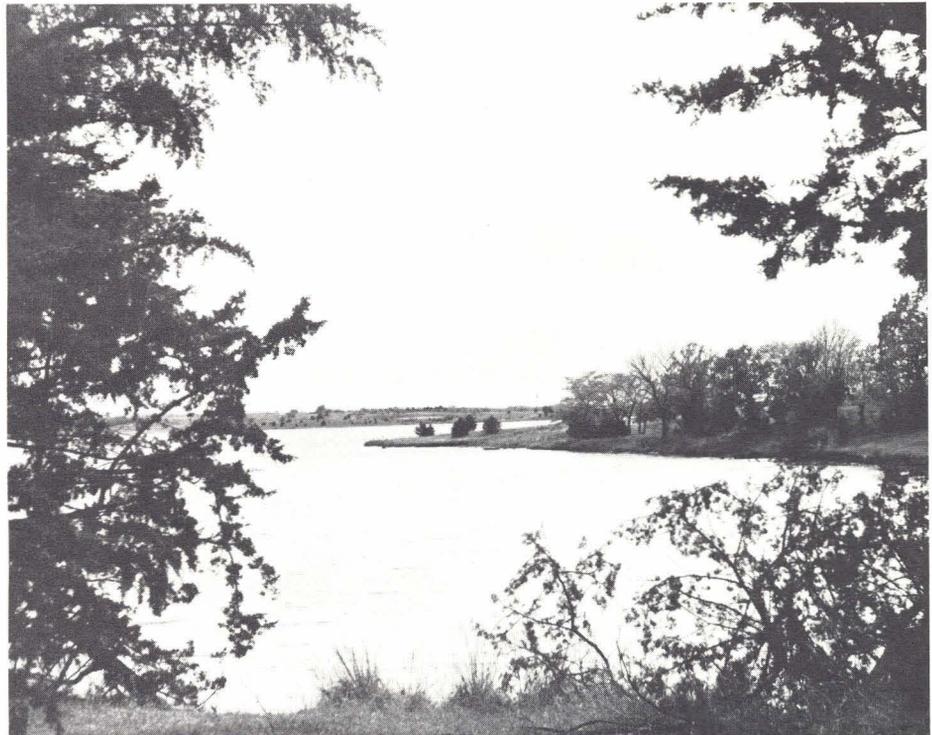
Waterfowlers especially, enjoy good hunting because the large body of water consistently attracts large numbers of ducks and geese. Kidd, a lifelong resident of the area, said, "There is no comparison to the duck hunting now and to hunting before the lake was here. We used to 'jump-shoot' the

farm ponds and sloughs along the river but the ducks were hard to bag. Now, most of the waterfowl hunting in this area is done from blinds over a big spread of decoys. Then, too, a heck of a lot more ducks seem to be staying later in the season due to more feed in the area.

The Commission has set aside 1,073 acres as a waterfowl refuge. By providing protected feeding areas as well

pheasant, quail and prairie chicken in season. Open fields with strip cropping, hedge rows and other game management practices by the Commission make the area a "mixed bag" favorite of many hunters.

"The acquisition and management of this area by the Commission has meant a great deal to hunters," noted Carl "Red" Gray, Junction City businessman and president of the Geary



Shaded, tree-lined coves such as this, offer excellent angling as well as a chance for campers and picnickers to "get away from it all." (Photo by Vic McLeran)

as resting and roosting sites, the refuge helps retain large populations of migrating waterfowl on the area for a longer period of time. The refuge area is closed to all types of hunting and is clearly marked with signs.

A public hunting area for upland game, encompassing 11,000 acres, is also provided by the Commission, at the upper end of the lake. Hunters may take deer, rabbit, squirrels,

County Fish and Game Association. "This is especially true in terms of quail and pheasant hunting since there now appears to be more prime habitat for both species than before."

Availability of this public hunting land has reduced pressure on private farm lands. After obtaining control of this area, the Commission initiated an intensive wildlife management program of habitat development. Tall

grasses, legumes and shrubs were planted around and through crop fields to provide additional nesting cover and travel lanes. In addition, several food plots were established in grassland areas.

For nature enthusiasts like members of the Kansas Ornithological Society, an organization of amateur and professional bird watchers, the lake's completion has meant more and varied avian species in the area. Bob La-

Shelle, member of the board of directors and publicity chairman for KOS, said, "Since the lake was finished, we've seen species like pelicans, cormorants and certain types of gulls which weren't here before. The 1967 KOS spring convention was held here at Milford and a record number (155) of different species was observed. This record still stands," LaShelle added.

Pleasure boating and related water sports have been given a boost by the

construction of Milford Lake. "The lake's completion opened up several new areas of water sports like skiing and sailboating which weren't formerly available to most of us in this area," said Dan Moske, Junction City, former president and now on the board of directors for the Milford Lake Water Sports Club. "It's actually been quite a challenge since few of us knew much about water skiing and other water sports," Moske said. The water sports club sponsors a sailing regatta on Memorial Day and an annual water-ski show on Labor Day.

Like lonely sentinels, solitary windmills stand watch over deserted farm lands adjacent to the lake. Much of this land is under management of the Fish and Game Commission where the planting of tall grasses, legumes, shrubs and hedge rows are aimed at improving habitat for upland game. (Photo by Vic McLeran)

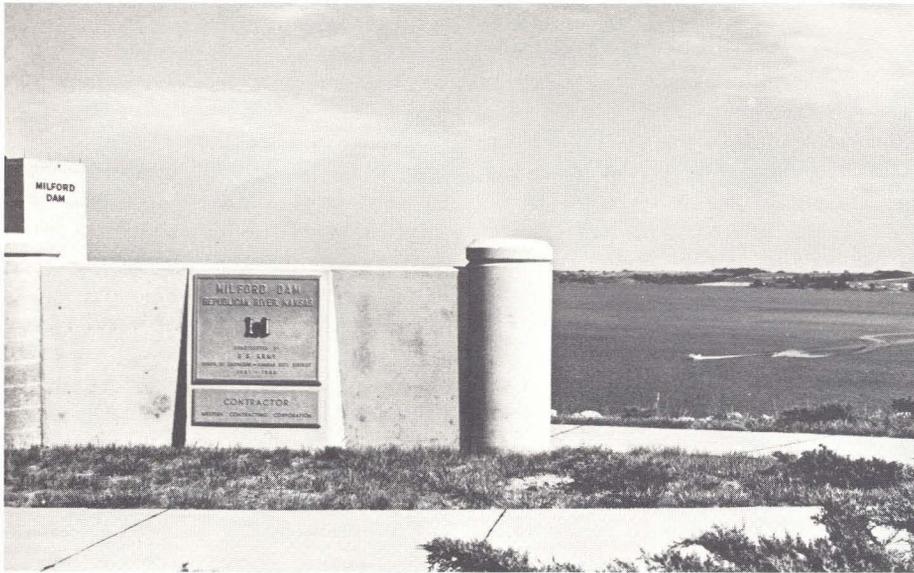


For the benefit of boaters and fishermen, the lake has three marinas: Thunderbird, located at the southwest end of the lake in Curtis Creek; Wakefield, next to the town of Wakefield; and Big K, recently completed in the Pleasantview State Park area.

For swimmers, a large sand pit in the downstream recreation area immediately below the dam features a 1200 foot sand beach, modern change houses, fresh water supply, toilets, black top roads and a parking area.

Another group on which Milford has had quite an impact are the campers. The lake is surrounded by 980 acres of park land containing large wilderness areas. There are nine parks which contain all the facilities necessary for camping. Pleasantview, located just off the north end of the dam, is the only park which requires a Kansas State Park Permit. Campers who use Rolling Hills campground are charged a one dollar user fee by the Corps.

In addition to the public park areas, there are also, two commercial camping areas on the lake. Wakefield Holiday Camp is located in the town of Wakefield while Flag Stop Camp Ground is situated in Milford City Park. Facilities such as these were instrumental in Milford being chosen to host the 1971 Outdoor Writers of Kansas convention.



Water skiing, boating and related water sports were given a boost by the construction of Milford, the state's largest lake. (Photo by Leroy Lyon)

Bob Price, president of the Junction City Lakers camping club, indicated his organization is happy with Milford's camping attractions. "We think it's great and most of the other camping groups we've talked with say the same thing." The Lakers, affiliated with the Kansas Campers and Hikers Association, hosted a campout at Milford during the summer of 1969 and had more than 3,000 campers in attendance. "We feel this large turnout is indicative of the enthusiasm which campers have for Milford and its facilities," Price added.

Evidently the popularity of Milford with campers has reached beyond the state's borders since Price said the lake is being considered as the site for the National Campers and Hikers convention in 1972. This event would draw about 35,000 campers.

Why all the raves and popularity? Size, beauty, facilities and accommodations are all undoubtedly part of the answer. But Leland Brown, reservoir manager at Milford, probably came closer to pinpointing the answer when he said, "I think the key to Milford's popularity lies in its versatility and accessibility. By versatility I mean its capacity for accommodating the interests of so many different groups.

Then too, our excellent highway system makes it possible for many distant sportsmen to reach the lake quickly and easily."

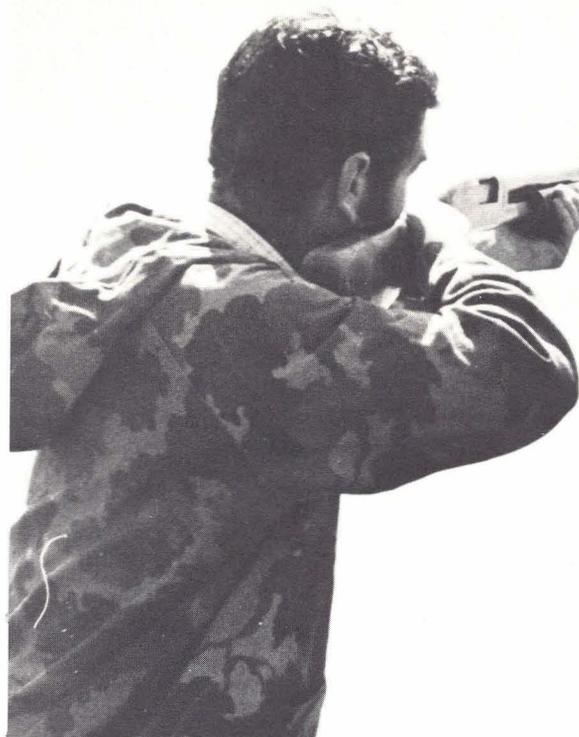
Looking like giant toadstools, conveniently-located lakeside shelters offer picnickers relief from the sun. There are nine major park areas located around the lake. Pleasantview is the only one which requires a Kansas State Park permit. Campers who use Rolling Hills campground are charged a one dollar user fee by the Corps. (Photo by Vic McLeran)



Webster's dictionary defines total as "entire, complete, concentrating all available personnel and resources on a single objective." Although Webster's doesn't specifically mention Milford, it's a pretty fair definition of the lake since Milford is nearly complete in what it has to offer so many different outdoor groups. It's total because its administrators—the Kansas Forestry, Fish and Game Commission and the Army Corps of Engineers—concentrate all available personnel and resources on a single objective—that of making Milford Lake as desirable as possible to all sportsmen.

So regardless of whether your thing is hunting, fishing, camping, hiking, birding or boating, when you take your next outing, give Milford a try. Like they say in Junction City, "Milford's got it all—a total lake."

Doves



Are

Dandy

By **GEORGE VALYER**

For some reason or another, I seem to have an aversion to sleet or cold rain blowing into my face and when the thermometer starts hovering below the 32-degree mark, I'd just as soon prop my feet up in front of the fire and lean back in my easy chair.

Maybe this is the reason dove hunting has so much appeal for me. Please don't misunderstand—I like to hunt ducks and I certainly don't mind taking out after a pheasant or two when the frost of a new Fall day gives a glimmering sheen to a morning sunrise. Still, my preference seems to run to that wild cousin of the pigeon, the mourning dove.

You certainly don't have to drag out the long underwear and insulated boots to go dove hunting. In fact, if it's too cold to sit comfortably in a weed patch for an hour or two, it's too late for much dove hunting—they have already gone south.

Some of the best dove hunting I have ever experienced came when the

temperature was hot enough to pop the perspiration out on my forehead and trickle down my nose onto the gun stock. Doves are warm weather birds and the first cool snap of Fall starts them winging south toward Texas and Mexico.

Yes, I really enjoy hunting this dipsy-doodle, crazy-flying jet of the bird world. And I am not alone. One out of every three Kansas hunters will be joining me in the fields come this September for a chance at making a charge of number eights arrive at a given locality at the same time as a dove.

Anyone who says that hitting a dove is easy hasn't tried it or is a pretty salty shooter. When a dove gets the idea that someone is after him, he just kicks in the after-burner, goes through a few evasive rolls and, before you can cram another hull in the old blunderbuss, he's just a speck on the horizon.

The dove is sporty and enough of a

challenge to make him the number one game bird in the United States according to figures from the Bureau of Sport Fisheries and Wildlife. This number one rating is figured on the basis of total number of birds harvested by hunters each year. In Kansas the dove rates second only to the bobwhite quail in numbers taken. It rates a strong third, behind pheasants and quail as far as hunter preference is concerned.

Another thing going for the dove in its popularity poll is the fact that you don't need a lot of special equipment to hunt it. Almost any shotgun loaded with hulls containing number seven and one-half or eight shot will down a dove and the cheaper trap loads are just fine. Naturally, the fellow with a .410 or 28 gauge will be at a little disadvantage because of the smaller number of shot but, if that is all you can muster in the way of armament, it will do.

As I pointed out before, you don't

need a lot of expensive hunting clothes either. Insulated boots, thermal underwear—you don't need 'em for doves. An old pair of sneakers plus some cast-off clothing of a subdued color are plenty good for this hunting. Since you don't use a blind, it is important to wear colors that blend with your background. Some hunters use camouflage suits but, in general it's not necessary.

Heavy production of mourning doves during the spring and summer produces a nearly stable population from year to year throughout the United States. In fact, it is the only game bird which nests in all of the 48 contiguous states.

Although the broods are small, compared to some other birds, the dove normally produces several broods during a nesting season. The average clutch of eggs is two but the young squabs grow quickly and, as soon as the youngsters are able to fend for themselves, another clutch is laid. In Kansas, as many as four or five broods are produced by a pair but the average would probably be between three and four.

The mourning dove is only one member of a fairly large clan in North America. In the U. S. there are six different species of doves and three species of wild pigeons, not including the rock dove which is a domestic pigeon gone wild.

The passenger pigeon, once numbering in the millions, but now extinct, was also a member of the same family. The fact that the mourning dove has not only survived but probably increased in numbers is a tribute to its ability to exist in close proximity to mankind and his "modern civilization." The demise of the passenger pigeon was probably brought on by the cutting of its natural habitat, the hardwood timber of the eastern United States, plus the fact that this bird was so easily taken in large numbers due to its communal habits. The open farming areas created by the timber cutting favored the mourning dove. Increasing grain production provided an abundance of food and nesting spots were no problem since

the dove nests both in trees and shrubs as well as on the ground.

In Kansas, doves are where you find them and they are almost everywhere. A fellow doesn't have to drive 100, 50 or even 20 miles to find plenty during the first part of the season. You will need to get out ahead of time, though, to spot the fields, water holes and roosts they are using. Early morning and the last two hours before sunset seem to be the times when doves move around most on their way to and from locations. Once you determine their feeding and watering spots, the hunting is easy.

The next step is to find the landowner and get permission. This is the most important part of planning any hunt and one that shouldn't be bypassed. It isn't a bad idea to line up several places to hunt so that the doves at any one particular spot won't be harassed too frequently. Most dove hunters will tell you that a water hole or roosting area can be hunted heavily enough to cause the birds to move on.

When you are scouting out that water hole, pass by the ponds with a lot of cover growing right up to the water line. Doves like an area which is relatively bare. The same holds true for a feed field. Harvested areas with some waste grain are the best bet.

One hunter I know is a confirmed "elevator" hunter. His favorite spot is a grain elevator located along a little-used rail line in a rural area. A cer-

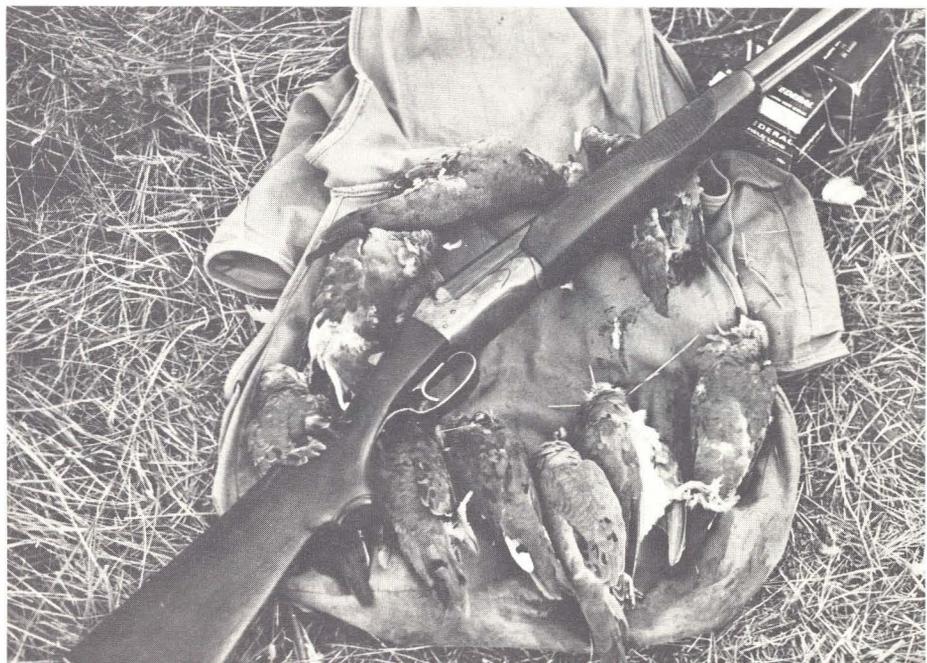
tain amount of grain is spilled on the ground when the boxcars are loaded and the table is set for doves.

Since there isn't a lot of walking necessary in dove hunting, it's an ideal sport for training a youngster in proper gun handling. An experienced hunter can keep an eye on a boy, correcting him when necessary, while the two of them watch for incoming flights.

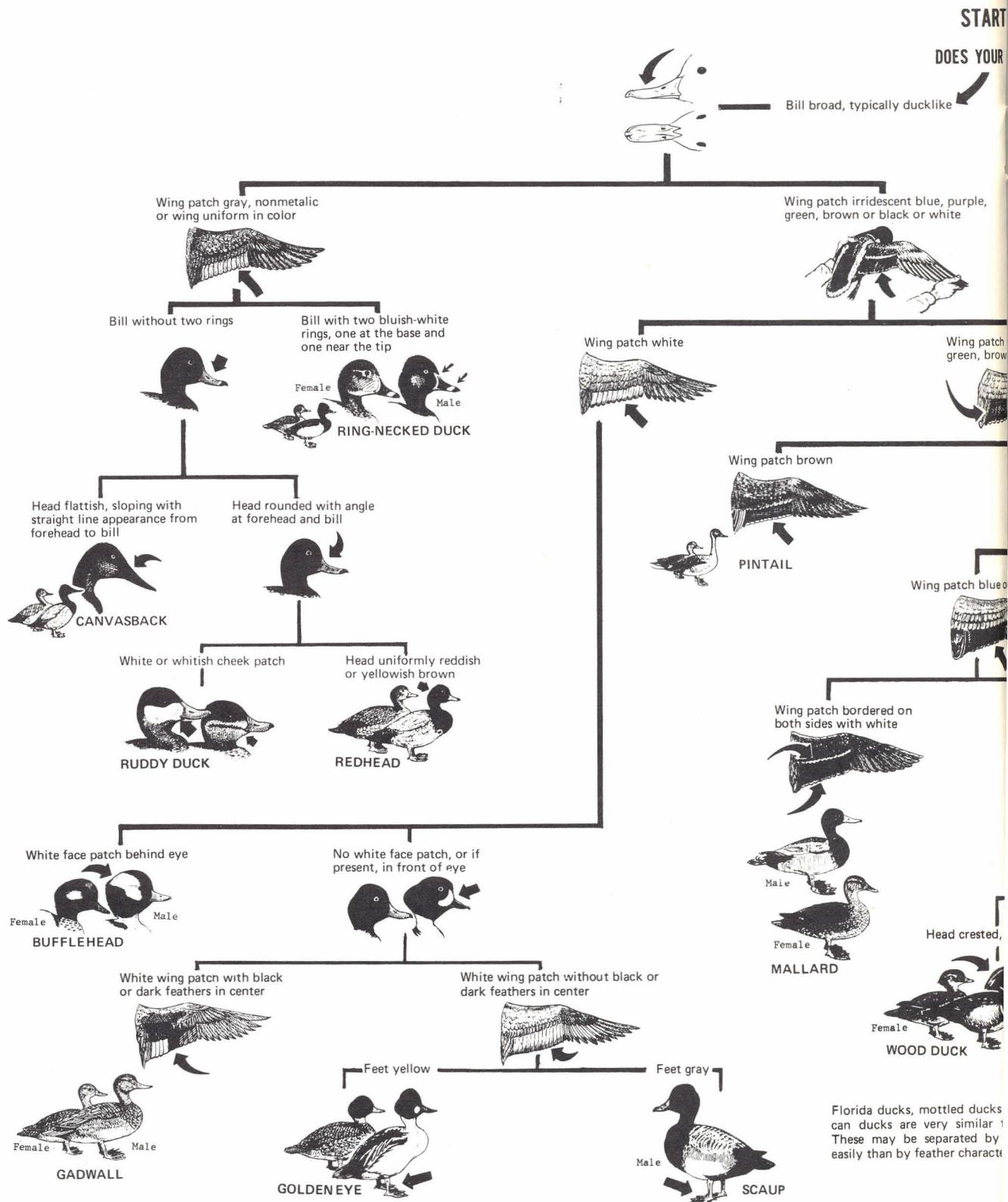
Some consider dove hunting as the lazy man's sport and it is if you want to make it that way. If you have selected your spot properly, you don't have to move out of your tracks to get plenty of shooting. If you take along a boy or a good retriever, you won't even have to move when you down a bird. Shooting like this is ideal for persons who have physical limitations due to a heart condition or some other ailment.

An important thing to remember is that the mourning dove is a migratory bird and comes under regulation by the Federal government. Although you do *not* need a duck stamp to hunt them, repeating shotguns must be plugged so they hold no more than three shells.

One final bit of advice for dove hunters—take along plenty of shells! Just because you can break 20 straight on the trap field doesn't mean that you can down a limit of doves with 10 or 15 shots. Chances are, if you are a normal hunter, you'll need a lot more than that.



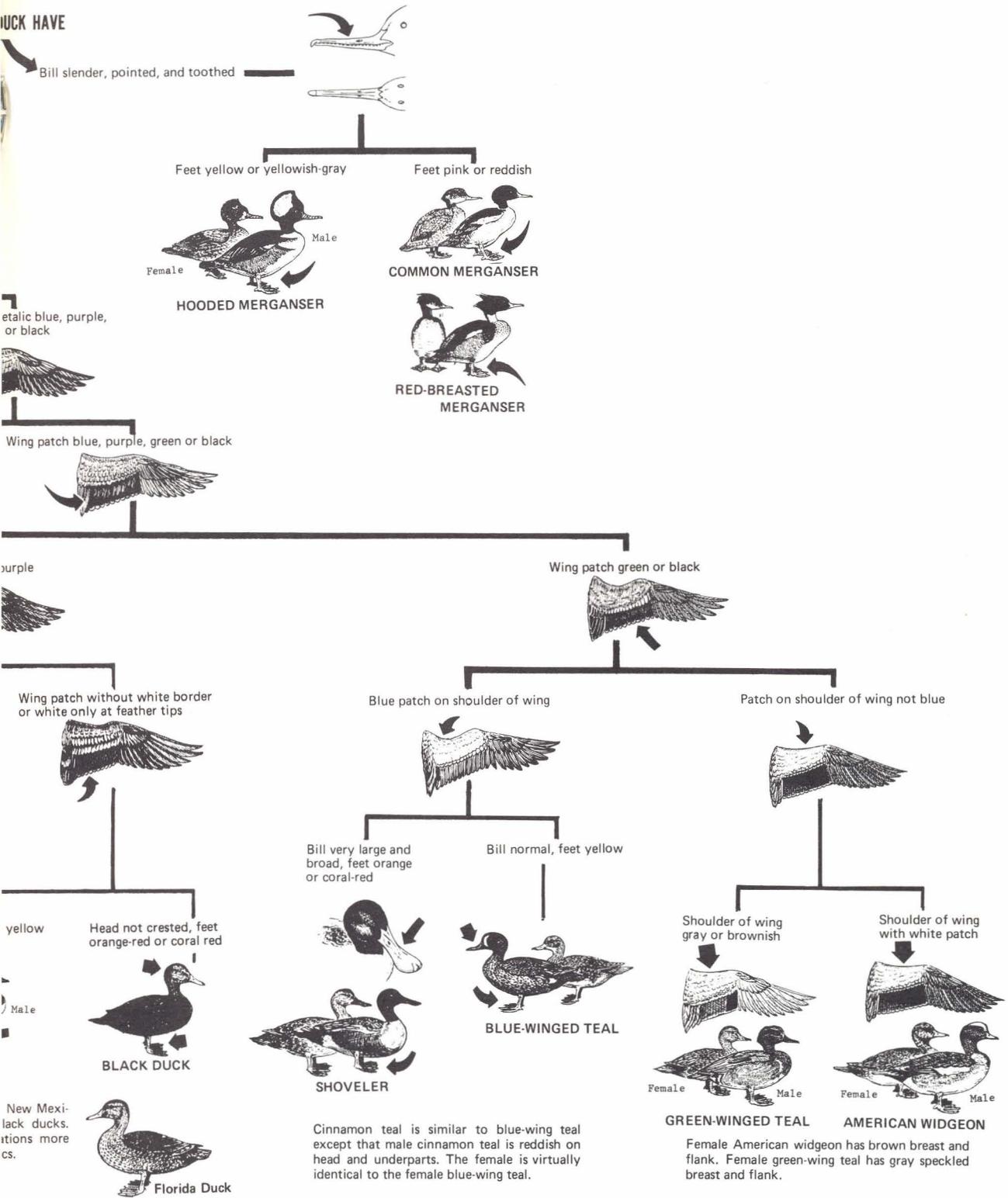
Duck Ident



Identification

HERE

DUCK HAVE



Metallic blue, purple, or black

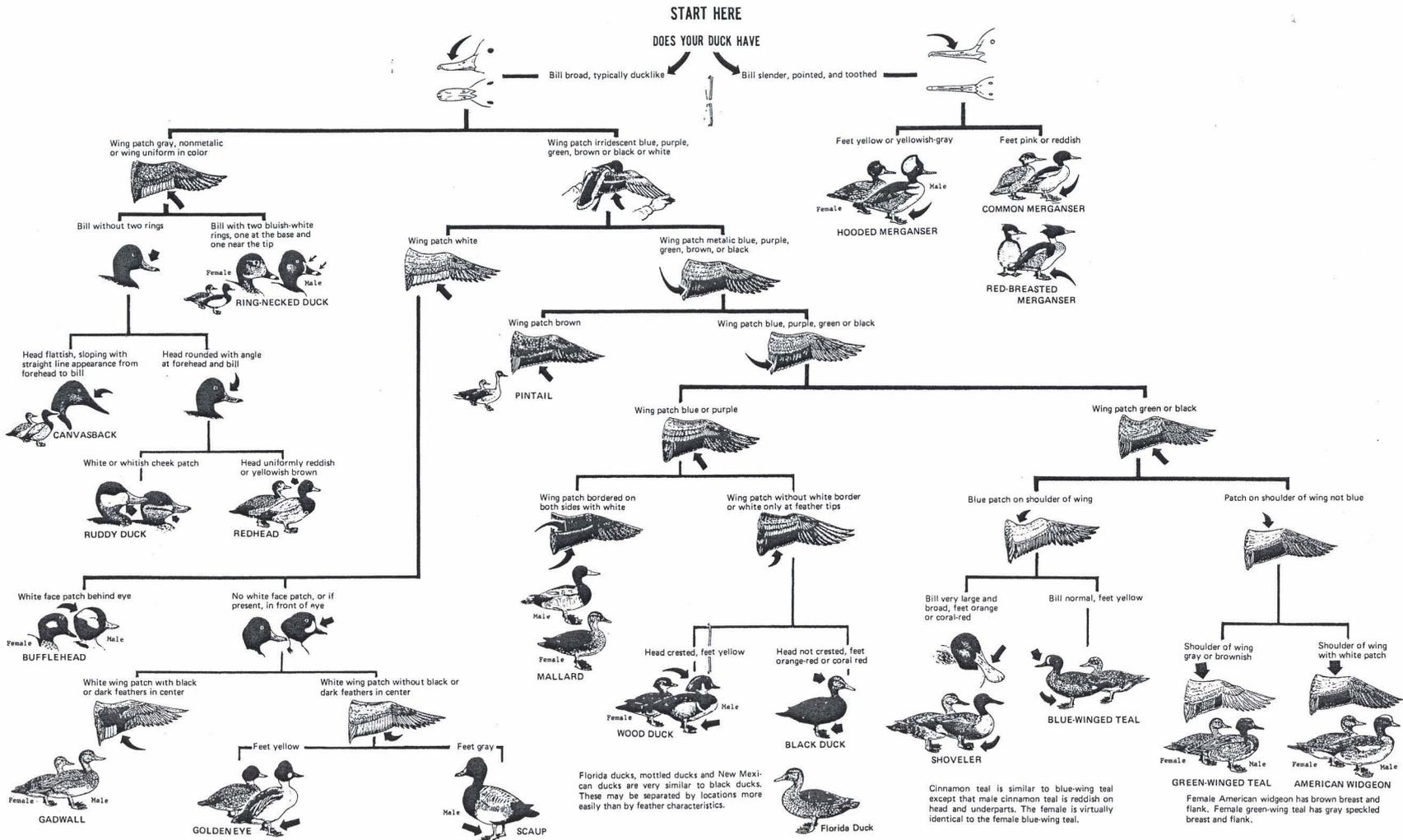
purple

yellow

Male

New Mexico-lack ducks. variations more CS.

Duck Identification



Young Hunter Safety

By VIC McLERAN

They say "you only go around once in life," but the *Wichita Eagle-Beacon* newspaper is giving many young Wichitans, especially young hunters, a second chance.

A second chance at life? Indirectly, maybe so! But more specifically, a second chance to attend their Young Hunter Safety Clinic. Last October, the *Eagle-Beacon* sponsored a free, Young Hunter Safety Clinic and the response was unbelievable. More than 750 applications were received. Since the clinic could accommodate only 400 youths, 350 had to be refused.

This year, the *Eagle-Beacon* is again sponsoring this same clinic. Additional space has been provided and the clinic will be able to handle 600 kids. So those 350 who got left out last year, will get a second chance.

It all started more than a year ago, when Dave Chamberlain, field representative for National Shooting Sports Foundation, approached Britt Brown, vice-president of the *Eagle-Beacon*, with the idea of sponsoring such a clinic. Brown, an ardent hunter, re-

ceived the idea warmly. A call went out for volunteers to assist with the clinic. Almost 200 citizens including *Eagle-Beacon* employees, law enforcement and military personnel, game protectors from the Kansas Forestry, Fish and Game Commission, gunsmiths, sporting goods dealers, civic organizations, business firms, sportsman's organizations, gun clubs and many others, answered the call. Under Chamberlain's guidance, assignments were made and the project started rolling. The Veterans of Foreign Wars donated space in their park where a .22 caliber firing range was constructed. Firearms for the clinic were furnished by National Shooting Sports Foundation. Since these rifles will not be available this year, the *Eagle-Beacon* is accepting donations for the purchase of rifles which will be used solely for future clinic instruction.

The idea of a youth hunter safety clinic originated with James A. O. Crowe, outdoor writer for the *Detroit News*. Chamberlain obtained many of his ideas from Crowe's success with clinics during the past seven years.

Instructor John McCarty provides some help on the firing line for a pair of young Wichitans, Al Moon and Kenny Goodyear. Coordinators for this year's event hope to have one volunteer instructor for each young hunter on the firing line (Photos courtesy Wichita *Eagle-Beacon*)



Britt Brown, (right) vice president of the *Wichita Eagle-Beacon* newspaper accepts the Hunter Safety Award from Dave Chamberlain, field representative for the National Shooting Sports Foundation in appreciation of the *Eagle-Beacon's* participation and sponsorship of the Young Hunters Safety Clinic last October in Wichita.

Prior to the *Eagle-Beacon's* clinic, the *Kansas City Kansan*, under Chamberlain's tutelage, had sponsored a similar project in Wyandotte County Park near Bonner Springs. Key personnel and instructors for the *Eagle-Beacon* clinic attended the *Kansan's* affair to learn more about conducting their own clinic.

Open to youths 10-16 years of age, the Wichita clinic offered instruction in five areas. During a guns and ammunition class, the kids were shown various types of ammunition, how to load and unload a gun properly and the proper type of ammunition to use in various guns. A hunter safety-farmer relations course dealt with gun safety, gun laws, wildlife conservation and good farmer-sportsman relations. The survival and archery segment of the clinic demonstrated archery safety and showed the proper clothing and equipment for hunting trips. The

“a second chance”

fourth portion of the clinic, entitled gun safety in the field, showed safe and proper methods of carrying a gun, getting in and out of an auto with a gun, crossing fences with guns and safe hunting from boats. The kids spent the fifth segment of the clinic on the rifle range, firing live ammunition. There was a coach for each two or three young hunters.

“We had about 200 volunteer helpers for the 1970 clinic, but with the increased number of kids, we’ll need more volunteers this year,” said Dick Kuhns, promotion coordinator for the project. “Ideally, we’d like to have one adult working with each youngster on the rifle range.”

After taking part in the five areas of instruction and passing a written examination, each young hunter was awarded a certificate indicating he was qualified to hunt in any state requiring completion of such a clinic.

This is important since many states now have such a requirement for

hunters. Colorado, for instance, recently passed a law which requires all hunters born after January 1, 1949, to successfully complete a hunter safety course prior to being issued a hunting license. Young Wichitans, planning to hunt in Colorado and other states with similar requirements, should make every effort to attend the clinic.

The success of last year’s clinic is unquestionable. “Letters and comments received from parents and the kids themselves indicated the clinic was overwhelmingly successful,” Brown explained.

What’s the future of young hunter safety clinics in Kansas? “An increasing number of hunters coupled with more and more states requiring instructions of this sort, lead us to believe the clinics have a stable future,” Brown said. “For our part, we intend to continue the clinics and we’ll be glad to assist other newspapers in starting clinics of their own.”

Continuing interest in hunter safety programs has prompted two more 1971 clinics in the Sunflower State. The *Topeka Capital-Journal* will hold its first clinic September 25 in the Topeka area. The *Kansas City Kansan* will conduct its second clinic August 28 at the Wyandotte County Park near Bonner Springs. Details will be announced later by both newspapers.

Application forms for this year’s clinic, to be held October 2 at the VFW Park in Wichita, will appear in the *Eagle* and *Beacon* newspapers sometime in late August. Wichita residency is not required of applicants. Young hunters interested in the program should watch the papers carefully, fill out the forms and mail them in once they become available. Like last year, applications will be processed on a first-come, first-served basis.

Remember, more than 350 kids were turned away from the 1970 clinic. This is your second chance—grab it!

Dave Chamberlain supervises the hour-long demonstration period that concluded the first annual Wichita *Eagle-Beacon* Young Hunter Safety Clinic. More than 400 youngsters attended the 1970 clinic, held in the Wichita VFW Park.



Float Fishing Revived

By **BETTE FOWLER**
and **JOHN C. HAY**

Dale Carnegie once said, "When someone hands you lemons, make lemonade," and Kansas fishermen take that kind of advice seriously.

When the huge steam shovels, with their clawing and tearing at the earth, left much of the once beautiful farm and pasture land of southeastern Kansas in gray, shaly mounds, a large part of the area was turned into a virtual "ugly duckling."

But Kansans, being the ingenious people they are, discovered some "swans" for the ugly ducklings. They took the leftovers from the diggings of the steam shovels, some old inner

tubes and created a new sport—float fishing.

Any old inner tube in good repair would do, ranging from car to truck or tractor size, depending on the height and weight of the angler. A homemade harness fastened around the tube with two straps over the angler's shoulders were used to hold up the tube while getting in and out of the water. To form a seat, canvas was cut to fit the circumference of the tube and holes were cut out for the legs.

Even though it seemed awkward on land, it was simple for the angler to step into the legholes, adjust the harness and waddle into the water, much like a duck. Once in the water, magical gracefulness, similar to that of a swan, took over and the fisherman could glide smoothly with the help of his paddling feet.

About 40 years ago, float fishing was a popular way to fish the strip pits. Accessibility to the pits was tedious and in many instances, limited. These factors eliminated heavy, cumbersome boats as a mode of transportation on certain pits. The float was light, easy to carry and the angler could reach any area of the pit he chose. After aluminum boats and rubberized rafts hit the scene, the float began to lose its popularity and float fishing gradually died out.

Recently the float has again crept into the life of fishermen. Of course, a few of the natives who live close to the pits have always used the float, but the city angler is now discovering its many advantages. The float is lighter and easier to carry than either the aluminum boat or the rubberized raft. A fisherman can be his own boss and go his own way regardless of where his companions care to fish at any particular moment.

A float is easier to pack in the trunk and takes less room than a boat. Also, it doesn't require any special rack or trailer. In fact, this makes it ideal for

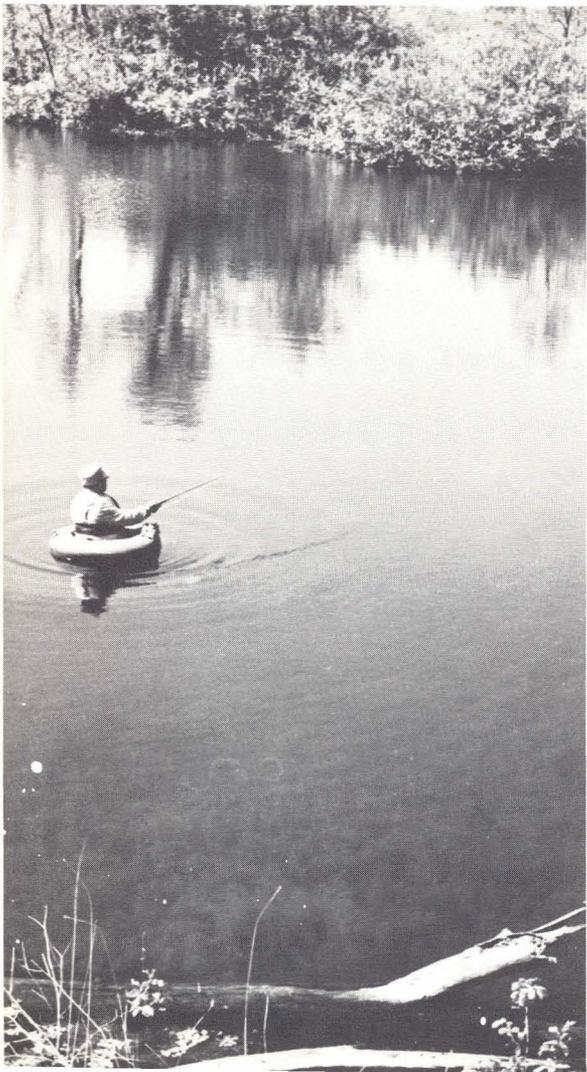
that sort of day when one doesn't have time for the bigger production of getting a boat to the water. For the angler who has just a few hours but would still like the mobility of on-the-water fishing—a float is the perfect answer.

Floats can be ordered commercially from most sporting goods stores in eastern Kansas. They come in various sizes and are made with a complete canvas or nylon covering, reinforced leg holes and harness suspenders. Some are equipped with zipper pockets to hold fishing tackles. Special fins which help propel the float may be ordered also. These involve an ankle harness with hinged fins which fold to the outside of the ankles. As the foot comes forward the fins hinge back to the side of the ankle, offering little water resistance. As the foot is moved backward, water pressure brings the hinge forward, propelling the fisherman on.

Although some anglers use regular swim fins for propelling the float, most agree that the special hinged fins are better. In setting the hook, float fishermen should constantly use a strong kicking motion in the opposite direction of the fish to keep the float in an advantageous position. Don't allow the fish to use the float to its own advantage. When playing a fish, tread your feet to maintain the float in the best position.

Floats are ideal for pond fishing and early-bird ice fishing. The fisherman can wear the float as a precaution against falling through the ice and also as a restful seat.

The float is a delightful companion for today's busy world. It can be squeezed into a few hours of fishing or into the narrow recesses of a small pond or pit, where larger boats are impractical. With the strip pits now well stocked, providing some of the best fishing in the state, that old saying, "One man's trash is another man's treasure," does seem appropriate.



Readers' Response

Friends Borrow His Copy—"I wish to commend you on your publication from the Fish and Game Headquarters; it provides not only good reading, but is quite educational also.

I have been receiving your publication for some time now, and read it from cover to cover.

I wish to submit two names to be added to your subscribers list as the two gentlemen named below also read my copy and if I do not read it as soon as I receive it, I am forced to hunt for it."—**W. G. Carroll, Florence, Kansas.**

Delighted With Special Issue—Quite by chance, the first issue of KANSAS FISH & GAME that I am to receive from now on was the SPECIAL ISSUE (Vol. 28, No. 1). Needless to say I was delighted with it. There is a wealth of information on game management in this issue, clearly stated, effectively illustrated. I should explain that I receive Fish and Game journals from some 30 states which are studied from cover to cover. If this issue is any indication of the quality of reporting to follow, then Kansas will experience little difficulty in challenging other states for front-running position.

I believe I indicated in my request to receive this publication that I am willing to make a paid subscription. Is there a provision whereby an out-of-state party can reimburse the cost of the subscription?—**Donald A. Spencer, Ph. D., Consulting Ecologist, National Agricultural Chemicals Assn., Washington, D. C.**

KANSAS FISH & GAME magazine is mailed free of charge to environmental organizations directly associated with conservation and ecology.—**The Editors.**

Wonderful Reading—"The special issue in which you reviewed the past ten years made wonderful reading. It was encouraging to read a report of solid, positive accomplishments. At a time when we so frequently read and hear discussions of problems and potential solutions of problems, it is encouraging to know that the Kansas Forestry, Fish and Game Commission has been pursuing a program of accomplishment, not just talk."—**James F. Duncan, Shawnee Mission, Kansas.**

One of the Best—I think KANSAS FISH & GAME magazine is one of the best in the United States.—**B. B. Kennedy, Lawrence, Kansas.**

RIGHT ON!—**The Editors.**

To Read and Save—"Occasionally I borrow (but have to return) copies of your KANSAS FISH & GAME magazine from a sportsman friend. A wonderful magazine it is!"

"So that I might have my own copy, to leisurely read and save, I would certainly appreciate being placed on your mailing list for this magazine."—**Jack H. Douglass, Wichita, Kansas.**

Deeply Impressed—"Having seen one of your magazines, I was deeply impressed with the knowledge the various stories bring. It's very valuable to the beginner as well as the veteran sportsman. Please add me to your subscriber list."—**C. M. Cotterill, Independence, Kansas.**

KANSAS FISH & GAME invites all readers to submit their comments, suggestions, likes and dislikes to Readers' Response. In each issue the magazine will feature as many letters as space permits. We reserve the right to edit and condense letters.

—**Editor.**

Satisfied non-Resident—"You are to be commended on your last special. It is very informative for the sportsman and lover of natural resources. I promise I won't set this issue on the shelf but will keep it handy on my desk for reference when the need comes my way. I've been a non-resident hunter in your state since 1947 and with all the nearby water areas I may find time this summer to get over to the courthouse for a fishing license.

Request Permission To Reprint—"In your May-June issue we were interested in the "Tyin' a Jig" feature by Vic McLeran and the thought occurred that if it were not too much trouble, we would appreciate prints of the illustrations and permission to reprint this interesting feature."—**Bill Brown, Editor, American Field Publishing Co., Chicago, Ill.**

They're on the way.—**The Editors.**

Finds it Interesting—"I have had occasion to see a copy of your excellent publication, find it quite interesting and would appreciate being placed on your mailing list."—**W. T. "Bill" Morris, executive vice president, Kansas Restaurant Association.**

I enjoy receiving the magazine and please keep sending it. A satisfied non-resident.—**C. E. Lockhurst, Kansas City, Mo.**

Since KANSAS FISH & GAME magazine is funded solely by revenue obtained from the sale of hunting and fishing licenses, out-of-staters must have purchased a non-resident license the past year before they are eligible to receive the magazine. When writing for KANSAS FISH & GAME, they should include the number of their non-resident hunting or fishing license.—**The Editors.**

Primer for Doves

By VIC McLERAN
Photos by the Author

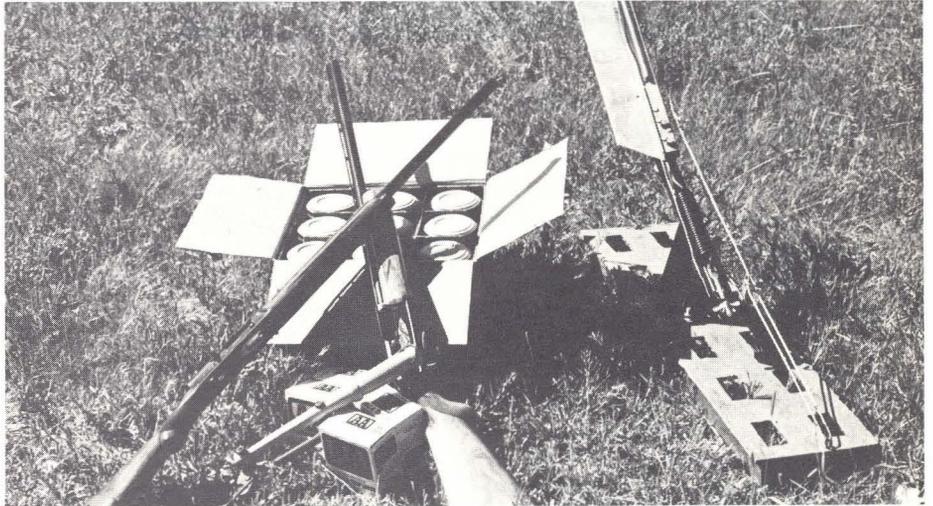
How many shells did you go through in getting your first limit of doves last fall? Ten, fifteen, a box, two boxes? For a lot of us, this can be an embarrassing question since doves, with their swift, erratic flight, make difficult targets.

Even though the shell-per-bird ratio isn't the most important factor in determining a successful hunt, many sportsmen still get a great deal of satisfaction out of knowing they took their limit with a minimum of shells—especially on doves!

Since dove season opens in September, a man is confronted with an awful tough target right off the bat. There is no chance to “work up” to doves. As a result, those first few birds can come hard—real hard. A little pre-season practice with a hand trap and some clay pigeons can be a lot of fun and at the same time, sharpen your reflexes in preparation for those gray-feathered missiles.

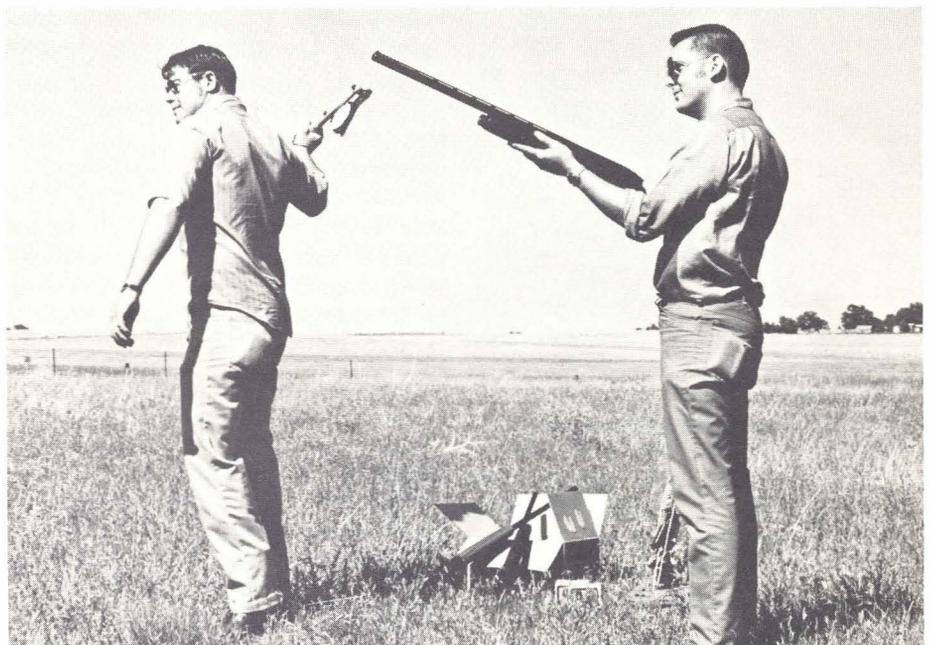
You don't have to be a member of an expensive gun club to enjoy busting “blue rocks.” All that's required is a hand trap, shotgun, some clay birds, a few shells and a companion.

For those who want to spend more money, there are some portable traps which have the advantage of being able to toss out doubles and even triples. Most of these are adjustable so the speed, elevation and direction of the target can be varied.



A shotgun, some clay pigeons, a few shells and a hand or portable trap are all that's required to enjoy busting “blue rocks.”

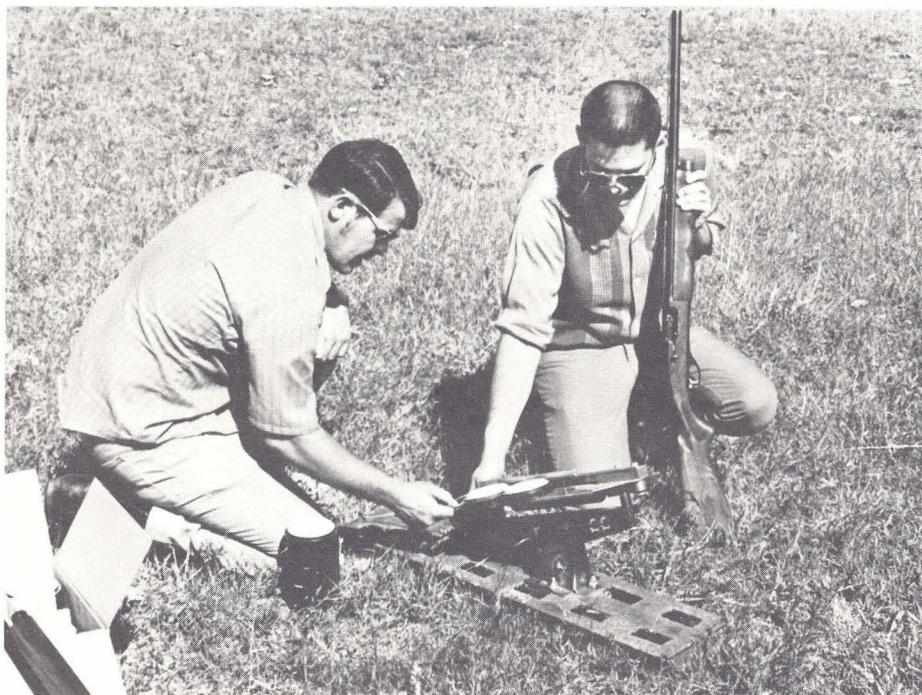
Bob Doolittle, (left) of Pratt, prepares to toss a “rock” for Don Patton, also of Pratt. Starting out with slow, easy tosses, gunners can work up to faster, more difficult angle shots.



You'll need to get out in the country with plenty of room and if you don't have land of your own, be sure you obtain permission before going on someone else's property.

It's also important to make sure

there are no cattle nearby which could be hit by stray shot. Then too, make certain that hogs will not be grazing the area in which you're shooting. The clay is poisonous and will kill them if they eat it.



The fact that a portable trap can toss out singles, doubles or even triples makes it more versatile than the less expensive hand traps.

Although "there ain't no meat on a blue rock," busting clay pigeons is a sure sign the shooter is getting his eye ready for the upcoming dove season.



Start out with slow, easy gliding tosses and gradually build up the speed and increase the angles at varying elevations. To simulate the flight of directly oncoming doves, have the guy doing the tossing stand behind an embankment and throw the rocks out toward you. For safety's sake, make sure the embankment is high enough to protect the thrower from stray shot.

Positioning the thrower atop an old outbuilding or barn at right angles to the shooter can result in a high-flying type of flight which is good practice for pass-shooting doves.

With a little practice, you can simulate covey rises, cock pheasant flights and other types of wing shooting situations which arise in upland gunning. After awhile, throwing becomes almost as much fun as shooting and it's a challenge to see whether or not the guy doing the tossing can slip a few past the shooter. By holding an extra rock in his free hand, a quick tosser can imitate a late-rising single.

After you've had some practice and feel the shooting eye and reflexes are coming around, try this little test of quickness: Have the thrower stand behind you several yards and toss targets to the left and right of you over your head. Keep your head and eyes directly to the front so you won't know which direction the rock is coming from. Hold the shotgun the way you normally carry it in the field. By the time you've spotted the target, it will be out quite a distance and will take some quick, accurate shooting to "get on 'em." It's a lot of fun to get several shooters together and keep score for friendly competition.

A few practice sessions with hand trap and blue rocks prior to the dove season won't necessarily guarantee you ten doves for ten shells, but it will sharpen those reflexes. And even though that old saying, "there ain't no meat on a blue rock," is true, this pre-season primer can go a long way in assuring hunters of more doves on the table once the season opens. And who knows, maybe it will provide an unembarrassed answer to the question—"How many shells did you go through in getting your limit of doves?"

“Iron” For Waterfowlers

Photo by Duane L. Kerr

Due to toxic lead still being used in today's shotgun shells by leading American and Canadian ammunition manufacturers, some one million ducks, geese and swans will die this year because of lead poisoning.

They will die for the most part emaciated and unnoticed after ingesting some of the 6,000 tons of lead shot which is scattered across the bottoms of our wetlands by waterfowl hunters each year. The pellets—which shallow-feeding waterfowl confuse with grit—generate toxic fluids in birds' gizzards resulting in debilitation and frequent death. This shot fouls up duck digestive systems causing them to die of starvation even though their crops may be full of food.

The problem of lead shot poisoning in waterfowl is nothing new and was documented nearly a century ago. Warnings that waterfowl losses caused by lead poisoning might shorten duck hunting seasons or force bag limit reductions were first issued to ammunition producers by the Director of the U. S. Bureau of Sport Fisheries and Wildlife in 1965.

Systemic poisoning due to ingested lead is a recognized waterfowl fatality factor. Spent shot on certain marsh bottoms is ingested by dabbling ducks sifting for seeds. The amount and availability of “accessible” shot varies from marsh to marsh. Shot settles in soft bottoms beyond the birds's reach. Shot that has fallen in marshes where there is a high rate of siltation, or into tidal water, poses little or no threat. There is no precise data where waterfowl find the shot they ingest. The sources generally are believed to be relatively shallow waters with what might be characterized as thin, hard bottoms. Not all marshes are sources of shot to feeding ducks.

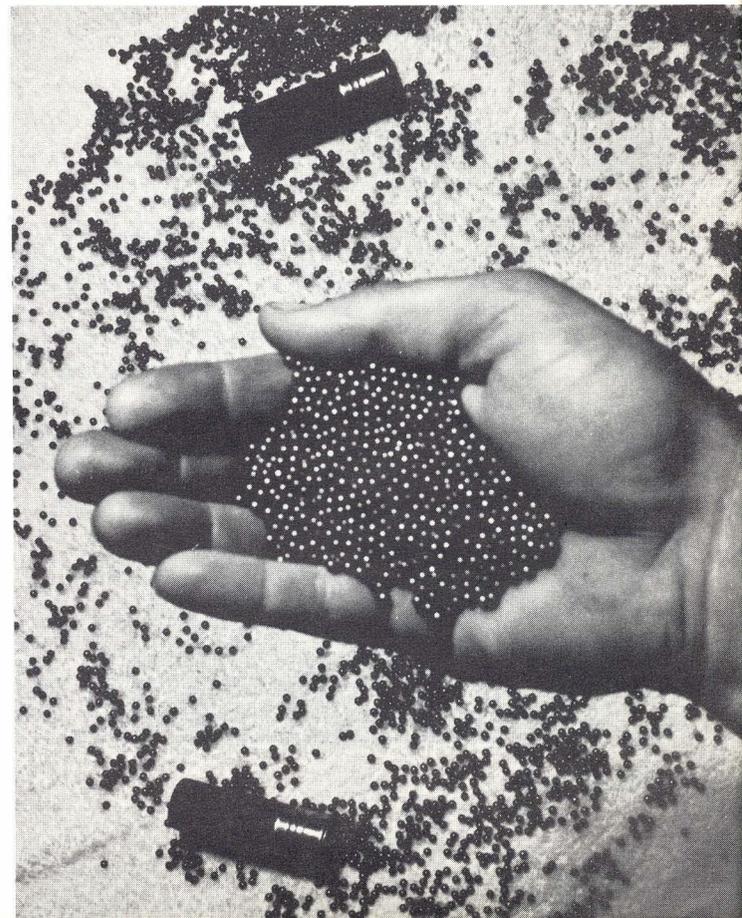
Following the warning in 1965, the Sporting Arms and Ammunition Manufacturers' Institute (SAAMI), the trade association of ammunition and firearms producers, initiated studies in 1966 leading toward development of a research project to find a modification of or substitute for lead in shot. Though lead had long been criticized as a toxic pollutant, its performance in shotshells was superb.

In 1967, SAAMI selected the respected Illinois Institute of Technology Research Institute (IITRI) to conduct the industry-sponsored project to come up with a lead modification—something that would retain lead's excellent ballistic characteristics but eliminate its toxic effect.

When IITRI studies were completed in 1969, results were made available to the industry, the government, and to all who made inquiry.



Lead shotshell pellets may soon be phased out provided a suitable non-toxic substitute can be found. It is estimated that lead poisoning by lead shot may annually kill up to three per cent of North America's total duck population.



Since anti-trust laws restrict the degree to which competing companies can exchange current ideas and engage in cooperative activities, the ammunition companies felt obliged to undertake separate, independent programs to apply the knowledge gained from the SAAMI-IITRI project.

IITRI tested bio-chemical modifications of lead. What seemed a good theory failed. Metal and plastic coatings for lead were tried along with lead "composites" and alloys. The strong grinding action of a duck's gizzard abrades protective coatings and exposes the bird's digestive system to metallic lead which reacts chemically with digestive fluids. Typically, paralysis of the duck's digestive system follows with resultant starvation and subsequent death from physical debilitation or predation.

IITRI's research efforts turned next to non-toxic substitutes for lead. Glass and ceramics and certain metals failed for lack of density with resulting poor ballistic performance. Various heavy metals such as silver and nickel would serve, but their rarity and cost excluded them from serious consideration. The avenues of exploration all returned to iron.

Iron as a substitute for lead in shot is not a new proposal. For generations steel has been used in BBs for air guns. Small iron rounds in an unbelievable range of sizes are produced by the billions for a host of industrial purposes. Why not use iron instead of lead for shot in waterfowl ammunition?

What sort of iron? Ordinary iron shot might shoot well. But it also tears up shotgun tubes. Its ravages in a shotgun barrel create genuine concern for gun and shooter safety. Such iron quickly erodes chokes and renders them useless. A shotgun's ability to produce an effective pattern is diminished after firing relatively few rounds of ordinary iron shot loads.

In 1968, the SAAMI-IITRI research project uncovered a soft iron wire. Its production was irregular, because it had few if any commercial applications. Its ballistic and performance characteristics were unknown.

One ammunition company produced

a batch of shot from this soft iron wire. The heading process (common in BB shot production) was used, followed by annealing in a controlled atmosphere to reduce work hardening. A second ammunition loading company took the soft iron shot and produced loads similar to lead shotshells commonly used for waterfowling.

The Patuxent (Maryland) Wildlife Research Center, operated by the Bureau of Sport Fisheries and Wildlife, ran tests with live ducks to learn the "mortality efficiency" of the soft iron shot. This had nothing to do with the shot's performance as related to its effect on gun barrels. Those tests in 1969, and comparisons with data on lead shot, indicated soft iron loads were suitable when fired within reasonable ranges up to 50 yards. The two shotgun barrels fired showed no discernible barrel scoring from the soft iron shot. So far as that one test showed there was no apparent choke deformation nor discernible movement of metal in the forcing cone of those particular guns.

Then why not get on with soft iron shot? Until late 1970, there was no reliable source of soft iron wire. Today, according to SAAMI, there still is no proven practicable soft iron shot production process for bulk manufacture. Shooting tests of soft iron loads in various makes and models of shotguns also have shown some of the same problems caused by ordinary iron shot—barrel scoring, choke deformation, and forcing cone changes. This raises problems of safety along with doubts of satisfactory performance as related to patterning ability.

These facts have been discussed with the Bureau of Sport Fisheries and Wildlife. At a session of the National Waterfowl Council in March 1970, during the North American Wildlife and Natural Resources Conference in Chicago, a spokesman for the Sporting Arms and Ammunition Manufacturers' Institute reviewed most of this. He expressed confidence that soft iron shot loads could be universally available by the mid-1970's, and specified the 1975 or 1976 waterfowl seasons.

That spokesman also predicted that

soft iron loads might be offered by 1972 or 1973, but not with positive assurance everyone will be pleased by their performance. SAAMI also claims no one can estimate costs for iron shot loads.

When can duck hunters look for soft iron shot in waterfowl loads? No loading company can announce a time schedule yet. Two steel companies have claimed ability to supply soft iron wire. One company reports having made wire deliveries to potential shot manufacturers.

Next it's a question of solving shot production problems to assure economic feasibility. Concurrently essential and extensive firing tests are being conducted to determine soft iron shot's performance capabilities and characteristics in a variety of shotguns and barrels of different makes and models, both foreign and American.

It is too early to speculate what those firing tests with soft iron shot will tell. But shotgun owners have several critical questions and the firearms and ammunition loading companies are working independently to provide the answers. As soft shot becomes available, guns of nearly every make will be tested. The outcome of these tests SAAMI says, must be awaited before anyone can accurately predict when soft iron shot will be offered as a substitute for lead in waterfowling loads.

As of last spring, five ammunition loading companies were working separately to product soft iron shot or to find production sources. At least three other companies not in the ammunition business were working to perfect soft iron shot manufacturing processes. At least three ammo loading companies were conducting independent tests to learn what sportsmen will demand to know about iron shot's performance in existing shotguns. SAAMI says all the companies are working to bring about introduction of a non-toxic shot for waterfowling and will continue their efforts as aggressively as possible.

SAAMI also contends that state or federal regulations to prohibit lead in waterfowl loads will not contribute to a speedier development of non-toxic

substances. Rather, SAAMI argues, forcing the production of inadequately tested iron shot could be contrary to the best interests of sportsmen in terms of gun safety and diminished gun performance capabilities. And, according to SAAMI, it could very well compound needless losses of waterfowl as a result of crippling caused by poorly patterned shot.

In a recent news release SAAMI said, "The public must recognize that lead poisoning in waterfowl will not cease miraculously the day a non-toxic substitute for lead in shotshells is introduced. There is no way to remove from marsh bottoms the lead shot that has fallen upon them over the past century and more. There will never be an assurance that all lead shot in those marsh bottoms will settle out of range of feeding ducks, although shot sizes No. 4 and larger will sink beyond reach of dabbling ducks in most soft-bottomed ponds and marshes. Natural siltation also will help cover spent shot. Soft iron shot can only be expected to relieve, not eliminate, the problem.

Thomas L. Kimball, executive Director of the National Wildlife Federation, recently sent a letter to Rogers C. B. Morton, Secretary, Department of the Interior, stating that, "We need a cooperative crash program by industry and government to solve this problem, and we need it now."

"Despite all these encouraging signs,

An estimated 6,000 tons of lead shot are scattered across the bottoms of wetlands by waterfowl hunters each year. Frank C. Bellore, Jr. of the Illinois Natural History Survey says the average hunter fires five shots for every duck he bags. "As many as 1,400 pellets may be deposited on waterfowl hunting grounds for every duck killed," he claims.



the fact remains that the problem is still with us today after nearly 100 years, and recent industry announcements hint that no solution is in sight. Mr. Secretary, this is simply not acceptable," Kimball wrote.

"After exhaustive research by my staff, I'm convinced presently available technology would enable the ammunition industry to mass produce a non-toxic shot for waterfowl hunting by the beginning of the 1973 waterfowl season. This is why the National Wildlife Federation recently adopted a resolution urging the Secretary of the Interior to prohibit the use of lead shot in waterfowl hunting and require a non-toxic shot substitute in all migratory waterfowl hunting by this date. The resolution is similar to one adopted by the International Association of Game, Fish and Conservation Commissioners in 1970.

"Our resolution does not imply that we assume the lead shot problem can easily be solved. But we have watched ammunition industry initiative and ingenuity successfully fulfill the American hunter's needs in the past; and in all candor, Mr. Secretary, there has never been a time that the American hunter needs SAAMI's talent so much as he does now. For the rich tradition of hunting and yesterday's respect for it as a game management tool is being sold short by much of the American public today.

"The fact that the Pittman-Robertson

Act pushed by sportsmen in the 1930's supports 75 percent of our State programs in wildlife research, land acquisition and development through its federal excise tax on sporting arms and ammunition is conveniently ignored by the growing anti-hunting movement. Likewise for the duck hunter's money which has been channeled from migratory bird stamp revenue into acquisition of National Wildlife Refuges and waterfowl production areas since 1934.

"But they will point quickly to the unnecessary loss of several million lead poisoned waterfowl each year; and to the American hunter, the Bureau of Sport Fisheries and Wildlife and the ammunition industry who have done precious little to alleviate it.

"We cannot afford the luxury of simply reiterating the sportsman's good deeds of the past. People who are not aware of these values will not take time to learn about them today. Solving the lead shot problem is a major opportunity to do justice to American hunting traditions, to demonstrate that the American hunter's concern and respect for wildlife is not a museum piece.

"Because American waterfowl and hunters are long overdue for a non-toxic lead shot substitute, I urge you on behalf of our three million members to initiate an Interior Department timetable in cooperation with Industry geared to ban toxic lead shot's use in waterfowl hunting—and produce a non-toxic lead substitute—by the beginning of the 1973 migratory waterfowl hunting season."

When a substitute for lead shot does become available it will help substantially to alleviate a mortality factor that has plagued waterfowl for decades. And when that day arrives, the nation's waterfowl hunters must do their share through the graceful and willing acceptance and use of iron shot. The conversion will reduce and ultimately eliminate a major source of waterfowl losses.

Fewer ducks dying from lead taken internally will mean more ducks to harvest come the chilling days of autumn and more ducks for all to enjoy.

Mourning Dove

Travel just about anywhere in the United States and you'll find the mourning dove, one of America's most common and familiar game birds. Because of its wide distribution, it is the only game bird which breeds in all 48 adjoining states.

The mourning dove, *Zenaidura macroura* to the scientist and called a turtle-dove by others, is a member of the pigeon family and a cousin of the now extinct passenger pigeon.

The name turtle dove originated centuries ago when Roman soldiers invaded England where they noticed the bird's cooing call resembled the word "turl" in their language. Later, when it was established that the bird was a dove, English sailors brought the name turtle-dove to this country.

No newcomer to this continent, the mourning dove has been around for some time. The LaBrea tar pits in California and the Pleistocene cave deposits in Arizona have both yielded remains of the species.

A sleek, streamlined bird, the dove resembles a small pigeon with a weight varying from 3½ to 5 ounces. The bird ranges in length from 11 to 13 inches with a wingspread of about 18 inches. The tail, which is narrow and pointed, averages six inches in length.

The brilliantly colored male is covered above with a bluish-gray to olive-brown shading while underparts are gray. Tail feathers are characterized by a black crossbar with a white tip. The breast is gray with a rosy-pink metallic sheen.

The slightly smaller female, though duller in color, is similar to the male in appearance although she shows more brown in her plumage.

The juvenile bird has much duller plumage than the adult male, is smaller, and has a shorter tail.

With the arrival of spring, the mourning dove fulfills its symbolic role as a bird of love. The male takes advantage of his brilliant colors, vocal talents, and aerial skills to woo a female.

In Kansas, courtship activities may begin as early as mid-March when the first migrants arrive from southern wintering grounds.

The male first selects a nesting territory which he defends vigorously against other male intruders. He then attempts to attract a female by his constant cooing. This sound, which is most commonly heard in the spring, gives the bird its sad, mournful reputation. Cooing is at its highest intensity during early morning hours, tapering off in the heat of the day and picking up again during evening hours.

A system of counting these calls has been developed which provides biologist with an indication of the size of the breeding population.

According to "coo counts" conducted by the Kansas Forestry, Fish and Game Commission the central third of the state has the largest breeding population.

In addition to his cooing, the male also performs a courtship flight. With deep, forced wingstrokes he gains altitude and circles gracefully, with tail spread and wings rigid, over his territory and back to his perch or the female dove.

When nesting begins, the female undertakes the task of architect forming the loose platform nest while the male carries the twigs and grass stems for construction material. In some areas, particularly in western counties, doves nest on the ground.

The female begins laying as soon as the nest is completed. Usually just two eggs are laid; clutches of three or more eggs are rare. Incubation starts when the second egg is laid. The pure white, elliptical-oval shaped eggs hatch 14 days after incubation begins.

Both parents participate in incubation and in the care of young squabs. They are helpless and practically naked at birth but grow rapidly and fly when about two weeks old.

Nestlings are fed "pigeon milk" during their days in the nest. It is a granular milk-like secretion from the crop of both

parent birds, which is regurgitated directly into the youngster's mouth. After several days, seeds are gradually worked into the squab's diet. The mourning dove's diet is limited almost totally to seeds.

Nestlings remain in the nest for about two weeks after hatching then leave the nest to begin life on their own. Within a few days after the young leave, the parents may begin reneating. The reproduction potential of the mourning dove is relatively high, and unlike many other game birds which lay only once a year, two to five dove broods may be reared in a season. The dove's courtship activities end in August and the last of the juveniles are on their own in early September.

By late August or early September doves form loosely-knit flocks of 20 to 30. Migration follows soon after with most of the actual flying done in the morning and late afternoon. The first major cold front each fall usually pushes most of the doves out of the northern part of the state.

During winter, doves congregate near areas which provide a plentiful food supply and good roosting cover. Eastern Kansas retains some small wintering flocks, but most Kansas birds move south into Oklahoma, Texas and Mexico.

Doves are relatively short-lived—even if they are not hunted. The average life span is from nine to ten months. Since the mourning dove's natural mortality is high, properly regulated hunting tends to crop some of the expendable surplus without damaging the following year's breeding population.

Like waterfowl, doves hold migratory game bird status under federal laws. But in some states, doves are classed as songbirds and are fully protected by law.

In Kansas doves are a game bird and about one million birds are harvested annually without harming the next spring's breeding population.

Songbirds or game birds, all will agree the mourning dove is truly one of America's outstanding birds.

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