

KANSAS FISH & GAME



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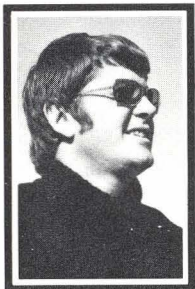
The Bobwhite

By Vic McLeran, Editor



Ken Stiebben

It's OCTOBER and the late afternoon sun casts long shadows across the eastern Kansas countryside. Two men emerge from the woods and approach a small farmhouse. One



McLeran

carries a pair of 10 gauge shotguns while the other struggles with a large, heavily-laden bag thrown over his shoulder.

Reaching the farmhouse, the man carrying the bag empties its contents on the

porch. Giving the bag a shake, he spills nearly 200 quail onto the weathered boards.

"Pretty good hunt," he mutters to his companion. The other man nods in agreement and begins to clean his big 10 gauge double. The pair had taken about 150 of the birds by ground shooting covies. The remainder were taken from nets and traps.

Poachers?

No, that's just the way things were in 1861 when Kansas' first quail season ran from September 2 through March 31 with no bag or possession limits. You could take as many birds as you could kill and there were no restrictions on how you took them.

This extremely liberal quail season continued until 1876 when it was cut to 60 days in length. There was still no bag or possession limit. In fact, it was not until 1905 that a daily bag limit of 20 was established for the little bobwhite. Then, for a short time during the twenties, there was a so called "season limit" of 50 on quail.

Although quail seasons, regulations, and management practices have changed a lot since 1861, the bobwhite quail is still the same saucy little game bird he was before the turn of the century. With licensed Kansas hunters annually harvesting anywhere from one to three million of these brown feathered bombs, the bobwhite is probably our most popular game bird.

Sporting a buffy brown coat flecked with delicate patterns of black and white, the bobwhite is a handsome little bird. His white throat patch and white eye stripes make him easy to distinguish from the hen whose throat patch and eye stripes are yellow. The bird's eyes, bill, legs, and

feet are black. The bobwhite's breast back, rump, wings, and tail are reddish brown streaked lightly with black, while the belly and flanks are tan.

Weighing five or six ounces and on rare occasions up to nine, the male bobwhite measures 10 or 11 inches in length with a wingspan of 14 to 15 inches. Hens are slightly smaller.

These brown markings make the bobwhite a master at camouflage. I've seen dogs and men fail to spot a quail although they were only inches from the bird. Quail seem to know they're good at hiding and usually wait until the last possible minute before flushing. This flush is actually an explosion of brown feathers which often unnerves both hunters and dogs. But it's exciting and it's what keeps quail hunters coming back year after year.

The bobwhite's annual cycle begins in April after the winter covies have broken up. Cock quail can be heard on spring mornings calling clearly, *bob-bob-white*, or a more muted *anh-*

bob-white. These calls are used primarily to attract a mate or establish territory. Should another male show up while one cock is calling, there is occasionally a fight. Leonard Lee Rue, in his book, *Game Birds of North America*, describes the scuffle. "With puffed up feathers, one male lowers his head and runs at another male. The second male usually runs away either because the first male is larger or simply because his own hormonal change is not as advanced. When a fight does occur, it is usually a hair pulling contest as each of the males attempts to grasp the other's head by the feathers. The scuffling about is usually not serious."

If the visitor is a female, the little bobwhite goes into his courtship display. Like a miniature turkey, the male fluffs his feathers and droops his wings. Then, with widespread tail, he charges the female who retreats coquettishly before the little male. This continues until the suitor is either accepted or rejected by the female. Unlike the male pheasant, which requires several hens, the bobwhite is monogamous and some biologists say quail remain paired for life.

Once paired, the birds select a nesting site, usually in a heavy stand of high grass. Together the birds build a small nest roofed over with a concealing arch of grass and lined with leaves and other debris. In Kansas, nesting is usually underway by mid-April barring a late cold snap.

After the nest is finished, the female begins laying her 12 to 15 eggs. This takes two or three weeks, at which time incubation begins. The youngsters tumble out of their shells about three weeks later. If the nest is destroyed, the hen will nest again. One hen quail in captivity, whose eggs were repeatedly taken from her, laid more than 150 eggs during the season.

Young quail are precocious which means they are able to run about and leave the nest an hour or so after hatching. The youngsters feed heavily on insects for the first few weeks, gradually shifting to seeds and grain. Ragweed, lespedeza, smartweed, corn,

milo, wheat, bristlegrass, beggarweed, cowpeas, and sunflower seeds are commonly eaten. Animal matter in the quail's diet includes, grasshoppers, crickets, ants, beetles, locusts, caterpillars, sowbugs, spiders, centipedes, and slugs. Like pheasants and doves, quail take grit as an aid to digestion.

As summer fades into the coolness of autumn, the birds begin coveying again. The covey is a tight circle of quail with their tails pointed in and heads facing outward, constantly alert for danger. The birds' bodies are pressed together tightly to conserve body heat during cold winter nights. The covey offers protection the birds wouldn't have if they were alone. Leonard Lee Rue explains: "The flocking circle is an important survival factor because some of the birds are usually awake to detect danger. Even if they are all asleep, the predator has more chance of being heard than if it were stalking a solitary bird. And, if the predator does get close enough to catch a quail, it can usually seize only one at a time, so that while one may die, many will live."

Quail enemies include free-ranging dogs and cats, foxes, coyotes, bobcats, hawks, owls, and weasels. Skunks, crows, and snakes probably get a few eggs during the nesting season. Dr. Frank Cross of the Museum of Natural History at Lawrence, once found a banded quail in the stomach of a channel catfish. But the quail had probably died of natural causes and washed in when it was found by the catfish. Predators normally have little effect on quail populations if there is an adequate amount of cover available for the birds.

During the fall, the covey arises at dawn to feed, resting, loafing, and dusting during the middle of the day. Later in winter, the birds may stay coved until things warm up around midday. This is the time of year quail hunters love best. Although eastern

Kansas has traditionally enjoyed the best quail hunting, the birds are becoming surprisingly abundant in certain parts of western Kansas.

In talking with quail hunters, you'll find there are almost as many gun and dog choices as there are hunters. Overall though, the 12 gauge auto-loader bored improved cylinder is probably as good a choice as any. Preference for shot size ranges from No. 7½ through No. 9. Since many shots at quail are fairly close, you'll want a fast-swinging gun with a broad pattern. A 26-inch barrel is much better than a 28 or 30. Some quail hunters even saw off their barrels. Glenn Welsh, a detective on the Coffeyville Police Department, has a little fast-swinging Browning he's chopped down to 20 inches. Welsh, one of the best quail shots I've ever seen, has little trouble dropping quail as they bore through the blackjack timber of southeastern Kansas.

It's a good idea to gut and draw your birds as soon as you shoot them especially if they've been gut shot. It only takes seconds and pays dividends in preventing spoilage and improving their flavor at the dinner table. Even though the weather may be chilly, the birds will retain body heat for some time, especially if they're lying in an insulated game bag. In addition, you get some idea of what the birds have been feeding on by checking contents of the birds' crops. For instance, if the quail is stuffed with maize, you're apt to pick up some birds by hunting edge cover along the maize fields; if the crop is full of ragweed seeds, you might try the ragweed patches.

In extremely cold weather, quail will often wait until the last possible second before flushing. In extreme cases, hunters have actually stepped on the tight-setting birds. During cold weather like this, it's a good idea for the hunter to walk very slowly

Licensed Kansas hunters harvest anywhere from one to three million bobwhite quail each fall.



The bobwhite quail is probably the most popular game bird in Kansas.

. . . This slow movement tends to spook and flush quail that are bypassed by fast walking.

When it comes to the "best" dog for quail there are a number of choices. Some hunters vote for a big wide-ranging pointer while others opt for a setter or a close-working Brittany. In the South, I've seen quail hunters who, in an attempt to get the best of both worlds, would use pointers to find the coveys. Then they'd load the big dogs and drop Brittanies to pick up the singles.

A much greater danger to quail than hunting or predators, is the trend in some areas to large scale "clean farming." Shelterbelts have been sawed down, hedgerows have been ripped out and tangled fence corners removed so that every available inch of land can be put to the plow. When

this has happened, quail have suffered.

On the other hand, some farming practices have been conducive to increasing the bobwhite's range. Jim Norman, supervisor of game research for the Kansas Forestry, Fish and Game Commission, says, "We had very few quail in western Kansas before 1900. But in the past 70 years the birds have been moving west and north, mainly because of farming practices which have broken up large tracts of grassland and created more edge cover for the birds."

Another danger which quail must face is the often severe Kansas winter. Without adequate food and cover, the birds soon perish in the face of a frigid ice or snow storm. When this happens, well-meaning sportsmen often clamor for grain to

feed the starving birds. Generally these grain distribution deals help the quail very little. In some instances they actually harm the birds by concentrating them. When this happens, predators often move in to take advantage. Then too, because of deep snow and ice, accessibility to the quail is often a problem for those distributing the grain. Too often the grain is dropped in areas where it does the starving little birds little good. The time to start helping quail is in the spring by planting cover and feed plots.

Following these severe storms which lower quail populations, there's almost invariably a cry for stocking pen-raised birds. Keith Sexson, small game project leader for the Commission, recently completed a report entitled "Survival and Harvest of Pen-

Raised Bobwhite Quail.” As a result of the study, Sexson concluded that stocking pen-raised quail is an extremely costly management practice. “The average cost per quail released from 1962-1969 was \$2.52,” Sexson wrote. Aside from the cost factor, the biologist found that survival of spring-released birds to the hunting season is practically zero, with few or no birds being taken by hunters.

Game biologists contend the best way to increase bobwhite quail numbers is to increase and improve the birds’ habitat. To this end, the Commission has initiated the Wildlife Habitat Improvement Program. Called WHIP for short, the project will provide game biologists to counsel landowners who want to improve their land for all wildlife — not just game species. Additional information and

application forms are available from the Commission’s game division.

Our game laws have undergone quite a change since the 1800’s. Today’s laws not only provide for an annual harvest of the quail resource, but they also provide protection for the little brown-feathered bombs. And without this protection a lot of hunters would be a little poorer each November.

Unlike pheasants, quail are monogamous and some biologists say they remain paired for life.



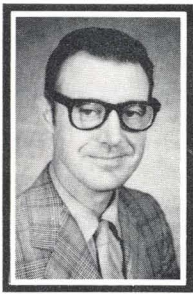
Ken Stiebben

The Sportsman...

A Game Management Tool

By Paul Bocquin, Staff Writer

THE SPORTSMAN's role in management of wildlife is perhaps not fully understood. But even the man with the gun plays a major part in helping to assure an adequate supply of game for the following season.



Bocquin

The science of game management involves not only our visible environment, such as habitat and available food supply but also hidden factors such as natural predators, disease, and weather conditions.

Some Kansans have questioned the longer upland game bird seasons now in force and a few have expressed fear this might thin out the wildlife resource. Not so, say game biologists.

Wildlife—particularly small game such as quail, rabbits, pheasants, and squirrels—have high reproductive capabilities when good habitat, food, and weather work together.

Few sportsmen realize, for example, the prolific ability of the bobwhite quail. As much as 80 percent of the population can be replaced in a single year, according to Jim Norman, supervisor of game research.

“Likewise, records in Kansas show average death losses have been about 60 percent for prairie chicken and 70 percent for pheasant,” he continued.

“These are also the average production recruitment rates, with some years varying higher or lower.” Perhaps the strongest argument to support the high annual turnover of small game in Kansas is that they are still here in plentiful supply. Unlike buffalo and other big game, small game has thrived and reproduced year after year, through decades of changes in farming practices and other factors that affect the ecological balance of their environment. Some species have been more adaptable to these changes than others.

It is interesting to note from a biological standpoint, Kansas could support quail and pheasant seasons lasting up to several months instead of a few weeks, without eradicating or even endangering either species. However, non-biological factors such as landowner tolerance would make such extended hunting pressure impractical.

Each year when hunting seasons are established in Kansas, sportsmen ask the question, “How are these seasons decided upon?” Here again, a variety of factors enter in.

For instance, the selection of *opening dates* is based upon (1) maturity of game animals, including their size, ability to give hunters a sporting chase and identifiability by sex or species; (2) time of year when most standing crops have been harvested; and (3) time of year when most seasonal grazing has terminated.

Selection of *daily bag limits* is based on (1) size of harvestable surplus; (2) number of hunters expected to participate and amount of time they are expected to spend hunting during the season.

Possession limit is based on a combination of the daily bag limit as well as size and general abundance of the game.

Finally, the length of a season is based on (1) expected size of harvestable surplus; (2) expected number of hunter trips; consideration of equal opportunity for all hunters wishing to participate; and (3) certain sociological factors relating to accessibility to the public wildlife resource on private lands.

Hunting season is set early in the fall so birds can be harvested before winter takes its toll. Most of the quail and pheasants would not survive winter anyway. Those that do and are able to outwit predators eventually succumb to disease, parasites, or other environmental pressures. Few die of old age.

By winter's end, only a few bobwhite have survived. But these survivors can reproduce in sufficient abundance to supplant the losses.

Cottontail rabbits are another good example of a species that cannot be stockpiled. The limiting factors of their range will kill off those that hunters fail to take home.

The rabbit is preyed upon by just about every meat eater, human and animal, so it must reproduce in large numbers. Available habitat and weather are also controlling factors in the rabbit population.

The animal food chain is a complex system. The rabbit must have a plentiful supply of vegetative growth to feed upon. The rabbit in turn provides a meal for the coyote, fox, red tailed hawk, and other species. To maintain this balance of nature, far more cottontails are produced than what is needed for breeding stock.

The female rabbit generally produces 18 young per year, but usually about one-half this number is lost, according to the Missouri Conservation Commission. The half that survives maintains the species.

Another basic principal of game management is *carrying capacity* which refers to the average number of birds or animals a given area can support. Any stockman knows how



Each September, dove hunters get the chance to harvest some of summer's excess birds.

Pheasant populations fluctuate according to environmental variances. The hunter simply harvests the surplus.



many cattle his pasture can carry. He calculates this annually on the basis of available grass and forage, water supply, land capability and other factors.

But carrying capacity on an area for wildlife is more complicated than cows in the pasture, Norman points out.

"The term carrying capacity is a concept: a more or less equilibrium level around which the population size fluctuates more or less irregularly according to the constancy or variability of the environment. It is also described as the upper level beyond which no major increase can occur (assuming no major changes in environment), also called saturation level," the game research supervisor explained.

For example, when pheasants were first released in Kansas, they found the environment suitable, increased in numbers and habitable range until the population reached carrying capacity. Since that time, the pheasant



The cottontail is another game animal whose populations are subject to great fluctuations.

mid-summer just after the peak of production, and are lowest in the spring, just before production begins.”

A formula for computing the expendable surplus of game would be as follows: early fall population minus number of breeders needed for recruitment in spring equals expendable surplus.

Expendable surplus is reduced or harvested by accidents, disease, parasites, toxins, predators, and hunters.

“Hunter harvest is compensated to some degree by reduced losses to the other mortality factors. For quail, the expendable surplus amounts to about 80 percent of the fall population, but safe hunter harvest falls somewhat between 50 and 80 percent. We don’t know the precise point yet, because we have not recorded or documented a hunter harvest that had such an impact on population level that it caused a shortage of spring breeders.”

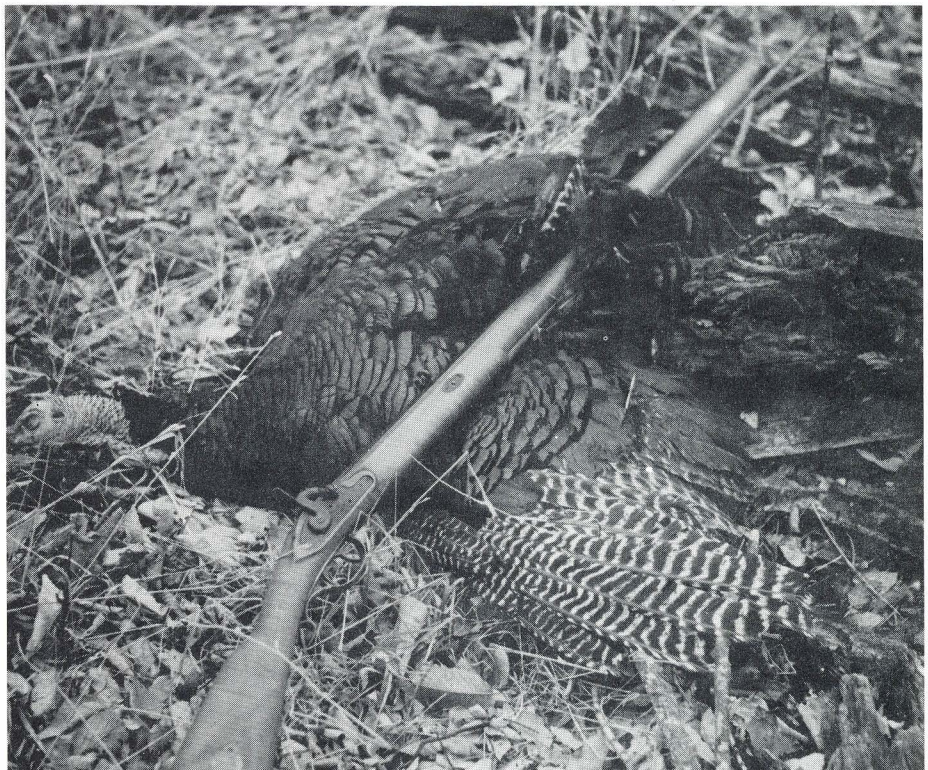
Turkey hunters aided game management by dispersing flocks and returning some native fear to the birds which were becoming tame after several years of protection.

population has fluctuated up and down near carrying capacity, depending upon annual variation in environment—changes in weather conditions and habitat quantity and quality.

The extent of periodic changes in population size depends upon the rate of change in environment, longevity of birds or animals within the population, ability of the species to reproduce or recruit new members, and the degree of population tolerance to environmental change.

At carrying capacity, with no variation in environment, annual death loss (mortality) would equal annual production (recruitment) with the result that population level would remain about the same—that is death losses being replaced by production recruitment, Norman explained.

“Death losses are likely to occur at any time during the year. Production recruitment occurs only during breeding season. Therefore, for most small game, densities are highest during



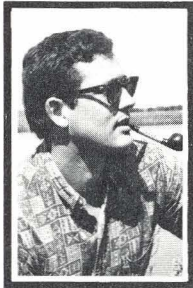
Ken Stiebhen

Iron vs. Lead: A Tradeoff?

By Bill Scott, Staff Writer

WE KNOW we got a problem.

The problem is three million ducks die in North America every year from spent lead shot they pick up while feeding on grasses, weeds and grains.



Scott

And we know we got a solution.

The solution is put the quietus to blasting lead through our Long Toms at ducks and shoot iron.

It's what's between the problem and the solution that's in a tizzy.

Between the problem and the solution is a maelstrom of ammo manufacturers, environmentalists, bird watchers, hunters, politicians, game managers and the kitchen sink.

This issue has been rumbling far off like distant thunder for 100 years. In 1894, Phillips and Lincoln wrote in *American Field* that two lots of ducks unfit for food were seized near Galveston, Texas at Stephenson Lake, where the disease had been noted for 20 years. The ducks weren't unfit in the sense of poisoning the person who ate them. They were unfit because the meat was all but gone. Just pitiful hunks of feathers and bone.

In 1908, still long before most of the present generation of duck hunters knew decoys from their lil' rubber duckie, lead was again indicted as a double-barreled killer. In that study, published in *Auk*, the American Ornithological Society's magazine, it was shown that lead can kill repeatedly after the initial shot is fired. As ducks

gobbled smartweed, wild celery and rice, coontail, duckweeds, sage pondweed or agricultural grains, the sinister lead was being consumed also. From exposed surfaces of the marsh and on the bottom underwater, ducks were picking it up, getting sick and often dying.

The issue still attracted little popular attention and quickly faded into oblivion.

Then in 1959, the Illinois Natural History Survey published Frank Bellrose' monumental study, "Lead Poisoning as a Mortality Factor in Waterfowl Populations." The Bellrose study blew the lid off, and waterfowling—that rain-soaked, mud-caked sport—hasn't been quite the same since. Although dated, the Bellrose study furnishes clues to the magnitude of the problem today.

Examples cited by Bellrose include an estimated 20,300 ducks dead in Louisiana from 1950-1955 at Catahoula Lake in La Salle Parish; from mid-December 1953 to mid-February 1954, 16,000 ducks, mostly mallards, perished at Claypool Reservoir near Weiner, Arkansas; and 5,000 were victims at Chautauqua National Wildlife Refuge near Havana, Illinois in January and February of 1957. And, as Bellrose writes, "In addition to the waterfowl die-offs that attract public attention, there are extensive day-to-day losses that pass unnoticed."

Behind figures like that lies an awful lot of suffering, enough to appeal to the most hardened cynic's humanitarian sense. The death of a lead poisoned duck is not a pretty thing to watch. It's a slow death, taking two to three weeks. Lead poisoning pa-

ralysis creeps through the bird's body it loses muscular control of its gizzard and wings. As its weight melts away, the breast bone becomes razor-like. With the gizzard unable to grind its food and its wings drooping, the stricken bird becomes secretive and crawls into vegetation to die. "You'll see the crop filled with corn but the bird has starved to death," Waterfowl Project Leader Marvin Schwilling said.

But here's where it gets complicated. To be objective, you have to take into consideration which flyway you're talking about, that all four flyways have "hotspots" within them, and that some ducks are more susceptible to lead shot poisoning than others.

According to George Carson, migratory bird biologist, the Atlantic Flyway has the greatest problem. It's followed by the Mississippi and Pacifics, with our Central Flyway "cleanest" of the four. However, our ducks are not as clean as they should be; the Texas coast is one of the worst areas in the United States.

Why certain flyways are "dirtier" than others and why there are hotspots within all flyways is the result of at least three factors. One is the number of hunters on a given area—the more shots fired, the more spent lead shot piles up.

Another factor is the relative tightness or looseness of the soil, which determines how slowly or rapidly the lead shot sinks underground, out of reach of a feeding duck.

This still isn't all of it. For example, Kansas in 1973 showed that lesser scaup have the highest lead levels,

followed by pintails and mallards a distant second and third. But mallards are dying in Kansas, while scaup are staying healthy! This puzzler may be answered by the third factor, diet. Frank Bellrose explains: "The higher the protein diet the bird has, the less toxic lead is to him. Coontail and sage pondweed are protein-rich, but corn and milo lack two essential amino acids making their protein levels inferior. I can't overemphasize

the importance of diet in determining how poisonous lead is to a duck."

It makes sense when you think about the different feeding habits of scaup and mallards. Scaup are diving ducks, and stay pretty close to water where they feast on the good stuff like weeds and grasses. They pick lead up off the bottom, but it doesn't hurt 'em because of their high protein diet. But asks any farmer with milo or corn if those mallards

don't appreciate his offerings. Pintails aren't quite so bad, but mallards swarm onto an unharvested field like housewives to a "closing business" sale. And when the mallards dabble about after they return to the marsh, the lead they pick up sickens and kills them.

Happily, Kansas has had relatively little experience with waterfowl die-offs due to lead poisoning. Two thousand ducks died at Marais des Cygnes

Frank Bellrose, Illinois waterfowl biologist shown here, started a storm of controversy with his pioneer studies in lead shot poisoning.



George Arthur, Illinois Dept. Conservation

Waterfowl Management Area in Linn county a decade or more ago and 200 ducks, mostly mallards with a sprinkling of pins, were victims at Elk City Reservoir in 1973.

We can't say lead poisoning won't occur here with increasing frequency, though. In 1973, 400 mallards, 400 pintail and 400 scaup taken by hunters in Kansas were examined by Commission biologists. Birds from 14 collection points were included. Of these, 14% of the lesser scaup, 4.7% of the pintails and 3.8% of the mallards had one or more shot in their gizzards. One shot, Schwilling points out, is enough to kill a duck if his diet is almost exclusively agricultural grains.

Iron shot has been proposed by the Bureau of Sport Fisheries and Wildlife as a possible alternative. Copper was considered, but subsequent studies showed it to be as toxic as lead over a longer time period. Iron, or soft steel, was settled upon because it was completely non-toxic and easily available.

This proposal has been assailed by many, but the most astute criticism

thus far has come from Winchester-Western's Nilo Farms. The Nilo studies, rivalling the Bureau's studies for thoroughness, completeness and accuracy, charge:

1.) That iron shot is ballistically so inferior to lead that the increased number of crippled ducks will equal the number now lost to lead shot poisoning. In other words, Nilo maintains, we face a tradeoff. Sick ducks for crippled ducks. It's not pretty to think about cripples crawling off into vegetation to die, either.

2.) That the hunter will use more shells and bag fewer ducks.

3.) That iron will damage gun barrels, particularly on double barrels. Visible bulges in the barrel appear, and Nilo learned of three barrel bursts during the experimental program on state and federal areas last waterfowl season.

4.) That the three million estimate of ducks lost annually to lead poisoning "is not statistically valid, contains bias and is dated information."

Attempting compromise, Canadian waterfowl research scientist Nolan

Perrett has conducted extension research on a 50% lead, 50% iron shot. The 50-50 compares well with 100% lead shot ballistically, and is far less toxic.

In one study, Perrett dosed ducks with lead and they were fed corn only. Within 22 days, half of the birds were dead. With the 50-50, it took 124 days to poison half the birds. Perrett points out that 124 days is usually long enough for the birds to move and change their feeding habits during migration. But Bellrose notes that birds often winter as long as six months in a given area on an essentially unaltered diet, which would still kill 'em—it'd just take longer to do it.

Then, into the middle of the controversy came striding an Environmental Impact statement. It may give indications of things a comin'!

In the summary statement, EI says: "Steel or other approved shot will be the only shot used to hunt waterfowl according to the following schedule—"

a. Use of iron shot required in Atlantic Flyway by 1976.

b. Mississippi Flyway, 1977.

c. Central and Pacific flyways in designated zones, 1978.

In other words, the Central and Pacific will use iron only in hot spots. However, the hot spot system isn't deemed feasible for the Atlantic and Mississippi flyways.

EI further says:

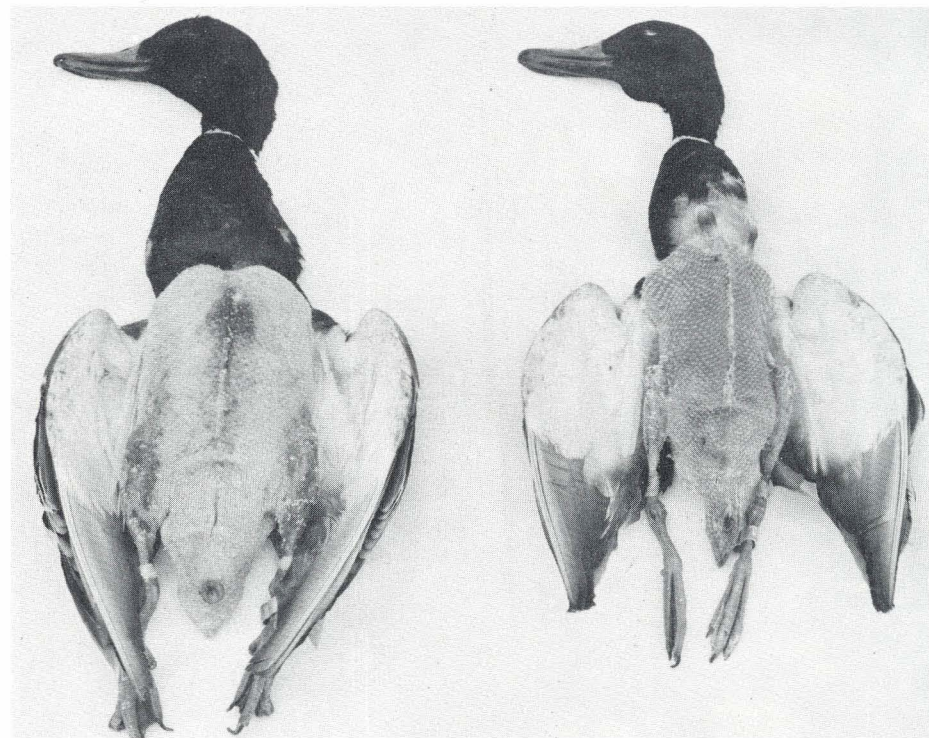
"A 25% ingestion rate for mallards in this country is not unrealistic." .5 to $\frac{1}{100}$ ppm (parts per million) of lead were found in wing bones out of a 4,000 sample tested, 2,000 of which were mallards.

EI also concluded that under field conditions $1\frac{1}{4}$ oz. of lead does have a slight edge over $1\frac{1}{8}$ oz. of steel, which hardly surprised anybody.

If this highly controversial and complex wildlife issue can be decided on the basis of what's best for the ducks and what's safe for hunters to shoot, it'll be worth the time, struggle and conflict that has gone into it.

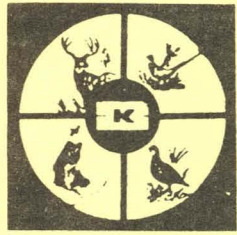
Both people and ducks deserve the best.

Two plucked mallards, one healthy when killed and one that died from lead poisoning. The mallard shown at the right lost 1.1 pounds and died on the twenty-fourth day after a dose of two shot pellets. The other bird was undosed and had a normal weight of 2.6 pounds.



Illinois Natural History Survey

KANSAS FISH & GAME



NEWS

P.O. BOX 1028
PRATT, KANSAS 67124

EDITOR'S NOTE: The following news items have been condensed from the Kansas Forestry, Fish and Game Commission's weekly news release. Compiled by the Information-Education Division the release is mailed to news media throughout the state. In coming months, we'll select items of interest in this news insert.

News contact: Paul Bocquin

Phone— 316/672-6473

SPORTSMAN'S CALENDAR

<u>SEASON</u>	<u>OPENING DATE</u>	<u>LAST DAY</u>	<u>BAG LIMIT</u>	<u>POSS. LIMIT</u>
Bullfrog	July 1	September 30	8	8
Dove	September 1	October 30	10	20
Teal	September 7	September 15	4	8
Rails	September 7	November 15	25	25
Snipe	September 7	November 10	8	16
Antelope	September 28	September 30	1*	1*
Woodcock	October 12	December 15	5	10
Pheasant	November 9 December 16	December 6 January 31	4	12
Quail	November 9 December 16	December 6 January 31	8	24
Prairie Chicken (Lesser & Greater)	November 9	December 6	2	6
Squirrel	June 1	December 31	5	10
Cottontail Rabbits	Season Open Year Around		10	20
Jack Rabbits	Season Open Year Around		No Bag Limits	
Deer (Firearms)	December 7	December 15	1*	1*
Deer (Archery)	October 1 December 21	November 30 December 31	1*	1*

* Special Permit Required



FIRST BLUE CATFISH

(released July 19, 1974)

RECORD IN KANSAS

PRATT--For the first time, Kansas has an established state record of a blue catfish being caught and the size and weight certified, according to the Kansas Forestry, Fish and Game Commission. Harold Hunsinger and Gordon Chappell of Lawrence were the lucky anglers.

The fish was taken the night of June 21 from the Kansas River near Lawrence using bank line and gold fish lure. It weighed 33 pounds, 12 ounces on state inspected scales. The blue cat measured 42 1/4 inches in length and 23 7/8 inches in girth. Dr. Frank Cross, curator of fisheries, University of Kansas and Jeffrey Hunter, Rusty's IGA, Lawrence, witnessed these measurements.

Hunsinger and Chappell said they caught the big blue on bank lines. They checked with George Schlecty, the local game protector to find out what the record blue catfish was in the state and discovered that no previous record existed.

The Commission has stocked blue catfish in recent years at several state fishing lakes and Marion Reservoir. It was believed the new record fish may have been stocked in Tuttle Creek Reservoir several years ago and migrated down the Kansas River.

The blue catfish is difficult to distinguish from the channel catfish by the average fisherman, according to Roy Schoonover, chief of the Commission's fisheries division. They are also difficult to distinguish in a photograph, even by authorities. So anyone wishing to certify a record catch should have it identified by a recognized authority.

####

STRIPED BASS TAKEN
FROM WALNUT RIVER

WINFIELD--There's some indication anglers in the Winfield-Arkansas City area should be seeing more striped bass in the future. The photo below shows Mark Ogden of Winfield holding a 6½ pound striper taken from the Walnut River. Ogden, his brother Jeff, and Allan Brooks caught the striper on a trotline according to Bill Taylor, managing editor of the Winfield Courier. Taylor supplied the photo which was taken by Bob McLain of the Courier staff.

Striped bass catches are becoming more common on both the Walnut and Arkansas Rivers. "Each spring a number of these fish are taken from the two rivers," said Bob Hartmann, assistant chief of fisheries for the Kansas Fish and Game Commission.

"Apparently they're coming upstream to spawn from Oklahoma's Keystone Reservoir. The Walnut feeds the Arkansas which flows into Keystone," explained Hartmann.

Biologists suspect stripers are spawning somewhere in the two rivers but haven't been able to pinpoint the spawning fish yet. The dam at Winfield on the Walnut River and the Oxford Dam on the Arkansas River are the first obstacles the fish meet in Kansas. Both areas are good spots to fish for stripers during the spring.

####



TRAFFIC SLOW DOWN
CURBING DEER LOSS

(released July 5, 1974)

PRATT--Kansas motorists are hitting fewer deer since the 55 mph speed limit was invoked, according to figures compiled by the Forestry, Fish and Game Commission.

In past years more than 200 deer have been killed on Kansas roadways in the month of May alone, one of the peak periods of deer movements. This May, however, only about 100 deer were killed by motorists.

Big game biologist Bill Peabody collects road kill deer reports from game protectors and biologists every month. He said major causes of the decline in deer-vehicle collisions is the reduced speed limit and less night driving due to closed gas stations. Peabody said the State Highway Commission reports traffic volume during May was down only slightly.

Peabody said he has also compiled figures showing the dollar value of the 4,111 deer harvested by hunters in the 1973 season. Based on the December price of ground beef chuck at \$1.39, he said hunters netted a total of \$328,852 worth of boneless venison.

####

KWF SCHOLARSHIP
FUNDS AVAILABLE

(released July 5, 1974)

The Kansas Wildlife Federation announced the establishment of a \$500 scholarship to provide professional encouragement for students engaged in academic preparation for careers in the field of applied ecology.

The scholarship recipient will be selected by KWF following a review of applications by at least three Kansas educators. Funds for this program have been provided by the combined membership of KWF affiliate organizations.

Scholarship eligibility is unrestricted as to sex, race, creed or national origin.

The scholarship becomes effective with the academic year 1974-75 and will be supported with contributions amounting to at least \$500 per academic year.

####

6,000 WALLEYES
STOCKED

(released July 5, 1974)

PRATT--Thirteen Kansas lakes received a portion of 65,000 three-inch walleyes, stocked across the state last week by the Forestry, Fish and Game Commission.

Eleven state fishing lakes each received from 2,000 to 10,000 walleye fingerlings, and Fall River and Elk City Reservoirs in southeastern Kansas were stocked with about 10,000 each.

State fishing lakes stocked include: Logan, Sheridan, Scott, Clark, Kearny, Bourbon, Neosho, Butler, Cowley, Pottawatomie #2 and Leavenworth. Stocking walleyes as fingerlings is only about two years old in Kansas and is still in the pilot stage until rearing facilities can be improved.

####

TWO BOOKLETS
FOR KANSANS

LAWRENCE--The State Biological Survey of Kansas has recently published two excellent booklets of interest for Kansas outdoorsmen. Chiggers in Kansas by Edward Martinko and Ticks in Kansas by Keith Waddington, are both informative and readable.

Unlike many publications which are authored by biologists, these two booklets make extremely interesting reading for the average outdoorsman. The authors have compiled all the information you'll need to know about chiggers and ticks. In fact, the pamphlets contain so much useful information, we intend to print portions of them in coming issues of KANSAS FISH & GAME.

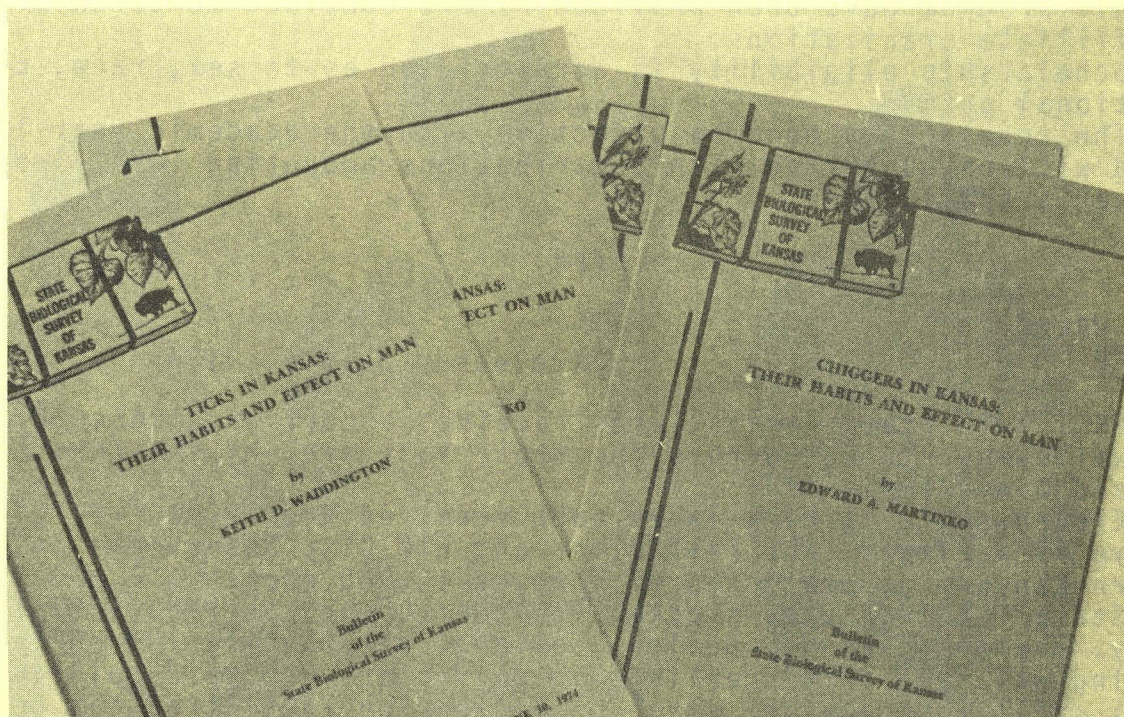
Topics covered include ecology and life cycle, the attack, relationship to man, physical description of the species in Kansas, personal protection from the pests, and control and removal of ticks.

Dr. Ronald L. McGregor, director of the State Biological Survey, said, "Individual copies may be obtained free of charge by writing the State Biological Survey of Kansas, 2045 Avenue A., Campus West, Lawrence, Kansas 66045."

If you've ever been bothered by chiggers or ticks while fishing, hiking, camping, berry picking or mushroom hunting, you'll want copies of these excellent booklets.

Dr. McGregor said booklets on other aspects of the Kansas outdoors are slated for publication in coming months. As these become available we'll keep you posted.

####



BIGGEST YEAR FOR
STRIPED BASS STOCKING

(released July 19, 1974)

PRATT--More than 100,000 striped bass fingerlings were stocked in seven Kansas reservoirs recently. This is more than any other year since the fish was introduced to Kansas in the mid-1960's.

Development of techniques to rear the very small striped bass fry, obtained from South Carolina and Georgia, from a fraction of an inch to fingerling size was the key to this year's success, according to Verl Stevens, hatcheries supervisor of the Forestry, Fish and Game Commission.

According to Stevens, Kansas may not be able to obtain striped bass from southeastern states in the future. He said the supply of striped bass brood fish which southeastern biologists collect eggs from is low. Stevens took steps this summer to make Kansas self sufficient on striped bass, however.

Milford Reservoir, near Junction City, was stocked heavily with the young stripers, about 50,000 for about half the total stocked. Stevens hopes that Milford will produce brood fish of its own. He said chances for a "natural" spawn are low, but biologists could collect eggs from these adults in several years and artificially rear them for eventual stocking.

The following reservoirs received a share of the 1974 striped bass stocking: Milford, 50,000; John Redmond, 3,500; Cheney, 3000; Tuttle Creek, 8,000; Webster, 7,000; Glen Elder, 13,300.

####

HAND FISHING COSTLY
IN OSBORNE COUNTY

(released July 19, 1974)

OSBORNE--Hand fishing on the south Solomon River above Glen Elder Reservoir has proven costly to 10 persons who paid out fines and court costs amounting to \$1,186.50, according to Arch Moberly, district game protector for the Kansas Forestry, Fish and Game Commission.

The following persons were each fined \$100 plus \$11.15 court costs and had their fishing licenses revoked--

Stephen St. Clair, Harlan; Bruce Jones, Smith Center; Dennis Corbett, Osborne; Eldon Blackburn, Beloit; Joseph DePay, Beloit; and Richard E. Swarts, Smith Center.

The following were each fined \$100 for hand fishing, \$15 for fishing without a license and were assessed \$11.15 court costs: Ronnie St. Clair, Jody F. Billings, Gene Jones, and Joe D. Jones, Smith Center.

They appeared before Judge Ethel McCammon, Osborne city court.

####

FURBEARER RUNNING
TO OPEN AUGUST 1

PRATT--Running seasons for raccoon, opossum, red fox and gray fox open Aug. 1 in Kansas and continue through Sept. 30, according to the Forestry, Fish and Game Commission.

These furbearers can be run with hounds during this season, but there is no open running season on any other furbearer. Running is defined as the pursuing or chasing of these animals but not killing.

The period of March 1 to July 31, 1974, has been the first closed season on these furbearers in more than a decade. It was established by the Commission to provide increased protection for furbearers, deer, and other wildlife during the reproduction season.

Public hearings to review proposed changes in regulations regarding furbearing animal field trials, night hunts and hound dog training are tentatively scheduled for mid-September.

These regulation changes are relatively minor in scope and will clarify many of the questions which surround the running of furbearers and the training of hounds during the closed season according to Lee Queal, game division chief.

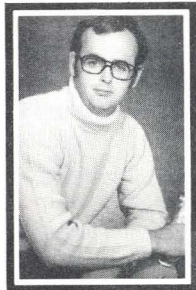
Official notice of the dates and locations of the public hearing will be announced.

####

The Kansas Forestry, Fish and Game Commission recently approved a split season for duck hunting.

The first segment opens Oct. 19 and runs through Dec. 8. The second period is Dec. 23 through Dec. 29 in the eastern zone lying east of highway US-283. In the High Plains Mallard Management Unit lying west of US-283, the second period is Dec. 23 through Jan. 5, 1975. The season on geese runs from Oct. 19 through Dec. 29 statewide with no hunting of Canada geese allowed after Dec. 15.

LONG BEFORE cowboys and Indians were shooting it up on Kansas prairies, Zebulon Pike had made an historic trek across the state. Among sites recorded by the explorer in the



Harrison

autumn of 1806 were vast panoramas of tall and waving grass, many varieties of bird life and of course great tides of buffalo.

Nowhere in his writings can any accounts of prairie chicken in Kansas

be found. Since Mr. Pike was a noted keeper of excellent records, it is probably safe to assume that prairie chickens, prior to pioneer settlement, were not abundant.

Even in 1840, a small troop of men hiked from Independence, Mo., to Labette County, Kan., and no mention was made in their accounts of any prairie chickens in Kansas. For two days on their journey, supplies ran short and they resorted to shooting upland plover for meat. Prairie chickens were just not numerous enough, it would seem, to depend on for food.

As settlers trickled into the prairies of central North America, plots of virgin prairie grassland were planted to crops. Wooded groves were cut and made into homes and fences. This early settlement proved to the liking of both the greater prairie chicken in the central prairie states, including the eastern one-half of Kansas, and the lesser prairie chicken in the southwest.

Small intermittent crop fields exposed the birds to new food sources which lessened the hardship of prairie winters. Many weedy grassland areas sprung up where wooded groves once stood. Insect life, so important to very young prairie chickens, flourished as it always seems to when man interferes with natural systems.

The greater prairie chicken temporarily expanded his range by several hundred miles west and north to include southern portions of the Prairie Provinces of Canada and the northern reaches of the Great Lake States, west-

Memoirs of the Prairie Chicken

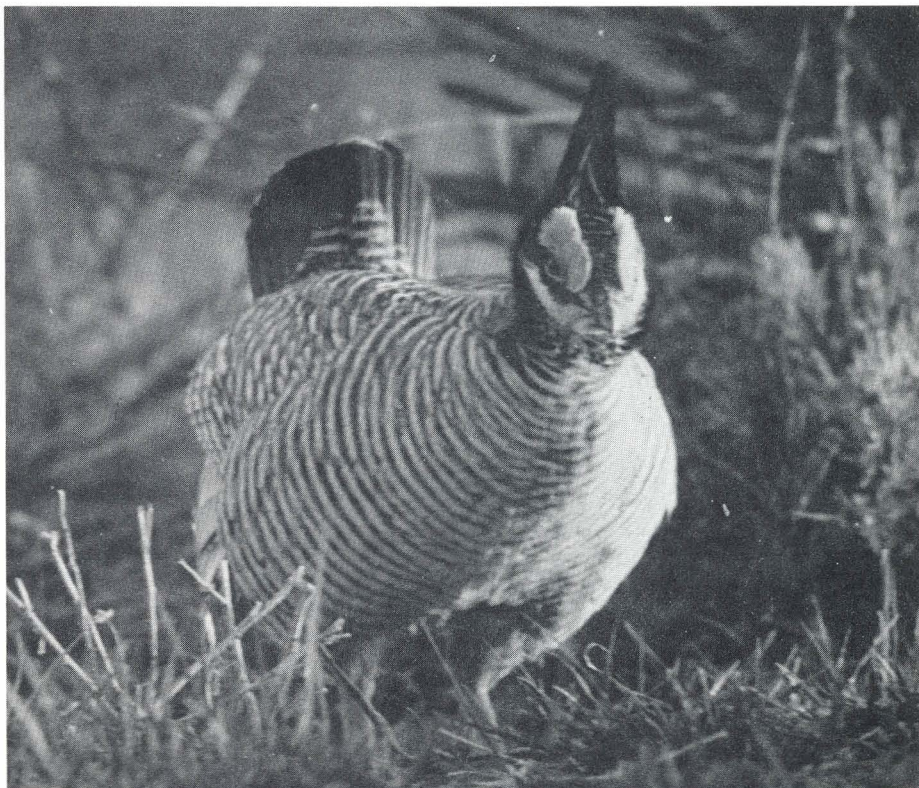
By Ross Harrison

ward to Montana, Colorado and Wyoming. Preferring the more arid mixed grass prairie habitat, the lesser chicken temporarily expanded its range, perhaps through much of western Kansas, northeastern Colorado and extreme southwestern Nebraska.

In addition to expanding their range, prairie chicken numbers also took a great upswing around the middle of the 1800s. For several decades the prairie chicken thrived strongly.

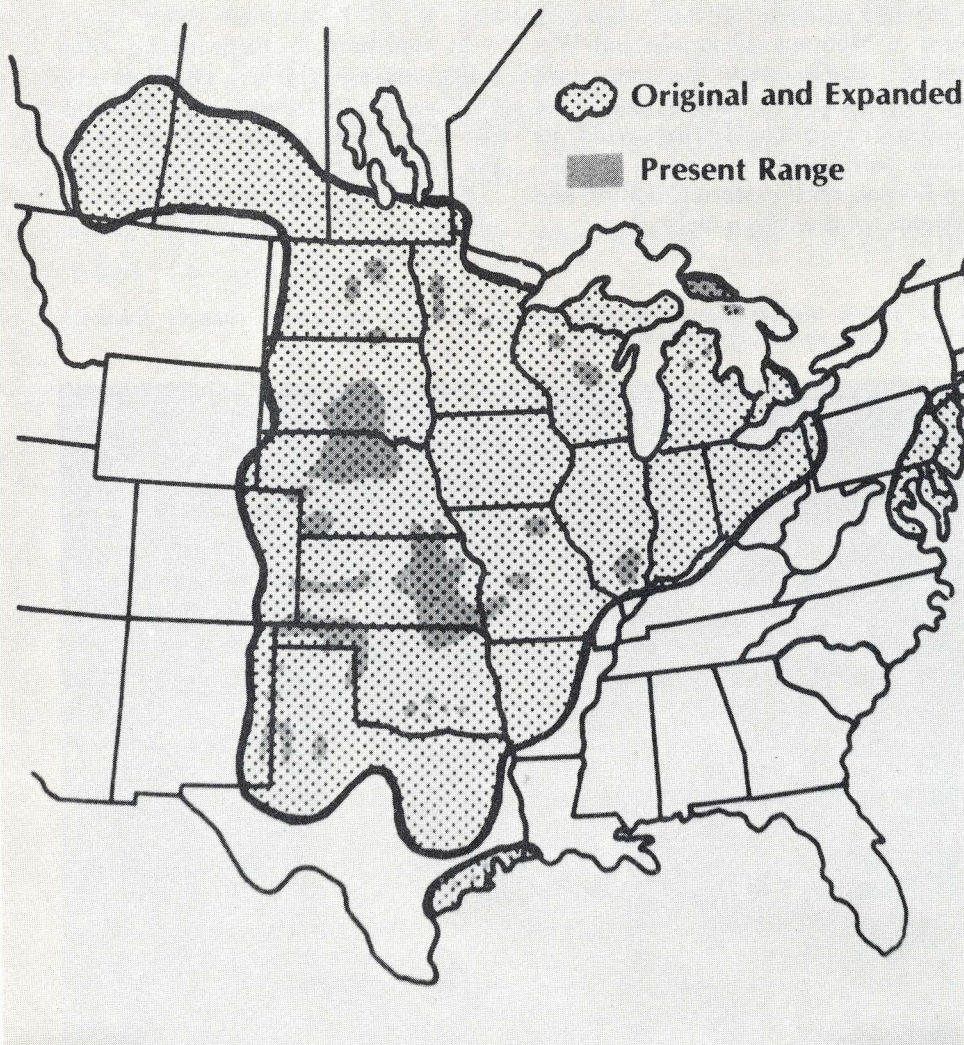
Predictably, man moved hastily to utilize and abuse the plentiful grouse.

In the 1800's, uncontrolled market hunting coupled with agricultural changes drastically reduced the prairie chicken population.



Ken Stiebhen

PRAIRIE CHICKEN RANGE



The prairie chicken's original range.

Market hunters reaped a "full measure" from the prairies.

One early writer tells of 300,000 prairie chickens shipped out of eastern and southeastern Nebraska in 1874 alone. In Iowa, three men killed 410 prairie chickens in one hour on one 80-acre field! The demand of Eastern restaurants and an efficient railway shipping system from the heartland of the country to the markets began to take away from the prairie chicken its recently gained prominence.

As if uncontrolled market hunting wasn't enough, a stronger blow was developing on the agricultural scene. John Deere invented and began mass producing a plow which changed the face of Mid-western prairies from grassland to corn and wheat. Although limited farming may have been beneficial to the bird, permanent grassland in vast acreages was still its primary habitat requirement. Where grassland acres were reduced to half or less of the cropland acres, the prairie chicken was almost eliminated.

By 1912-13 greater prairie chicken numbers in eastern Kansas reached an all time low. Throughout the U. S. and Canada, good prairie chicken habitat was reduced to scant remnants of the original and temporarily enlarged range.

Lesser prairie chickens in southwest Kansas were not affected by increasing agricultural pressure as early as the greater prairie chicken in the east. The lesser's arid, mixed grass habitat wasn't as suitable for intensive farming. But, when the great drought of the 1930s and 40s struck, lesser prairie chicken range took a severe beating. Populations dwindled until just a few were left as seed stock in scattered spots in southwestern Kansas.

So, both the greater and lesser prairie chicken populations have had their ups and downs in the last 150 years. From a period of naturally balanced, though not abundant populations prior to settlement of the prairies they rapidly expanded their ranges and numbers during early settlement. Then, they fell down, below original population levels with uncontrolled market hunting and disappearance of permanent grasslands being

the causes for the greater's decline, and the great drought acting to severely reduce the lesser prairie chicken.

Recognizing, a little belatedly, that prairie chickens were on the way out, most states, Kansas included, severely restricted or even outlawed all hunting of the prairie chicken.

Because wildlife management was in its infancy at this time, not much consideration was given to protecting the chicken's grassland habitat—the real key to its survival. If wildlife managers back then would have understood the true picture, most states could have continued hunting prairie chicken without harm under a closely controlled season. A scientifically set, controlled hunting season would crop

only surplus birds which would be lost to other causes anyway. Such a season would not bite into the breeding stock. And, it would allow the chickens to produce another harvestable surplus the following year.

Populations of prairie chickens would have continued their early 1900s decline, with or without a hunting season, as long as more of their habitat was destroyed each year.

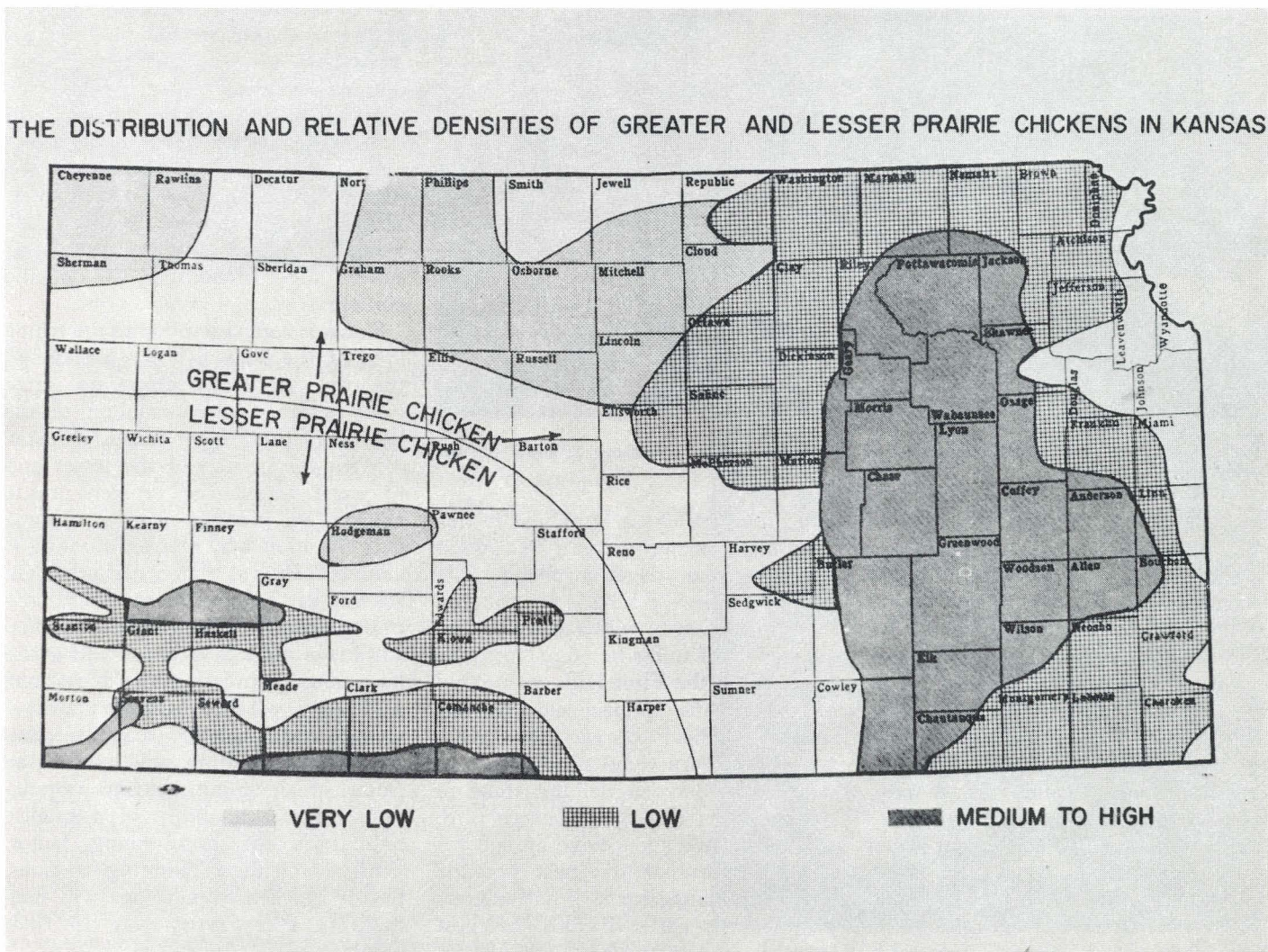
Although the prairie chicken continued its decline in the Great Lake States, Iowa, Missouri, the Dakotas and Nebraska, Kansas remained more fortunate. More than any other state, Kansas still had extensive areas suitable for the greater prairie chicken, mostly in the Flint Hills in the east-central portion of the state. The

Flint Hills have a limestone substrate that is too close to the soil surface to accommodate a plow. Permanent grasslands have long been maintained throughout the region for cattle grazing.

And, after the affects of the 1930s and 40s drought wore off in southwestern Kansas, the lesser prairie chicken regained some of its stamina.

In Kansas, a daily bag limit was put on prairie chickens for the first time in 1905, when 15 could be taken in any of the 31 days of the season. Up to the late 1950s, hunting seasons became progressively restrictive, with about half of those years having no open hunting seasons on prairie chickens. Through the 1960s and 70s greater prairie chicken hunting sea-

Prairie chicken range in Kansas.



sons were still limited to the eastern one-third, then later one-half, of Kansas, and season length increased from three days to about 30 days.

Lesser prairie chickens were opened to hunting in southwest Kansas in 1970 for a two-day season, and for the last two years have had the same, four-week seasons as the greater.

In the last 10 years, an average of 40,000 hunters each year have harvested about 40,000 prairie chickens annually. Most hunting occurs in the range of the greater prairie chicken

than during the late days of market hunting and for several years following.

Wildlife biologists, however, cannot predict that the future of the prairie chicken will always be as rosy.

In southwest Kansas for the last few years, circular irrigation is claiming thousands of acres of grasslands annually. Where corn replaces grass, pheasants and even quail may increase their numbers, if they can find suitable spring nesting conditions.

However, lesser prairie chickens

Sometimes, however, ranchers of the Flint Hills do not give their pastures ideal treatment.

Controlled burning is necessary to maintain the native grasses, but used too frequently, burning may not be in the best interest of the vegetation or prairie chickens. Rotation burning every three to five years is far superior to burning the same tract every year, according to Jerry Horak, prairie chicken biologist of the Kansas Forestry, Fish and Game Commission. Yet, some ranchers persist in annual burning due to the short-term benefits it provides in making grass more appealing to cattle.

Horak also explains that moderate stocking rates of cattle in large pastures is also a benefit to the chickens. Associated with proper numbers of cattle, there is usually some overgrazed areas. However, this provides good habitat for booming ground mating activities of the fowl. Areas moderately grazed provide good loafing and roosting areas, while some portions of the pasture where light grazing occurs provides good nesting and brood rearing conditions. When market prices go up and ranchers attempt to graze all pastures too heavily, nesting and roosting sites suffer and, obviously, so do the chickens.

Horak is concerned that in the fringe area of the Flint Hills, especially to the east, more row crops and tame grass pastures are encroaching on the habitat of the greater prairie chicken.

With the habitat of the lesser and to some extent the greater prairie chicken in possible jeopardy, some may question why chicken hunting is allowed. But, as stated earlier, scientifically set hunting seasons will continue to make use of only that annual surplus of birds that do not add to the long range population levels. As long as trained wildlife managers are responsible for hunting season recommendations, hunting will not be the cause of declining chicken populations. The availability of a quality habitat is the determining factor. With or without hunting seasons, prairie chicken populations will fluctuate in direct response to their habitat.



Ken Stiebben

Each March and April, prairie chicken assemble on age old booming grounds for the spring courting ritual.

in eastern Kansas, due to tradition and close proximity of more hunters.

Today in Kansas population levels of both species appear much the same as they did 10 years ago, even with close to half a million of them being harvested by hunters since then. Current population densities in Kansas may very well be equal to or greater for both species than they were before the pioneers came. Their numbers are certainly lower than during the period of early settlement when prairie chickens responded so favorably to primitive and early farming. Today's status of prairie chickens in Kansas is much more comfortable

will probably take a back seat to this new form of agriculture. To what extent circular irrigation changes the face of southwest Kansas is probably the same extent to which lesser prairie chickens will suffer.

Although the Flint Hills stronghold of the greater prairie chicken has resisted radical change for many years, there are some subtle changes which may have a definite stake in the future of this more eastern bird.

Wildlife managers have agreed for a long time that the best possible long-term management of native grass pastures for cattle is also the best possible management for prairie

The Southwest

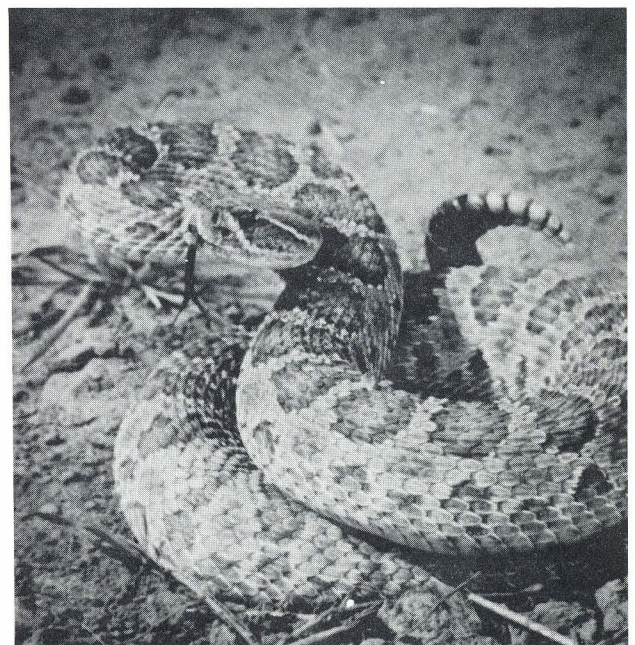
By Vic McLeran, Editor



It's HARSH, RUGGED country—arid and windswept in the summer, cold and raw in the winter. It's country with a spartan beauty all its own.

It's a land of big sky, a little bit of New Mexico and west Texas, splotted down in the southwestern corner of Kansas; and the area has an ecosystem unlike any other in Kansas. Basically, it's rolling prairie grassland, laced here and there with sand dunes, wooded prairie canyons, river bottom timber, and always, the ubiquitous sage and yucca. Down in Morton and Stevens counties, there's a 108,000 acre plot known as the Cimarron National Grasslands, administered by the U. S. Federal Service.

As you ride or walk through these grasslands, you get a sense of the old southwestern history which seems to hang over the area like a soft river mist, gently penetrating the sandhills and the wooded prairie canyons. Years ago, the Santa Fe trail cut through this part of the country. And as you trudge along the dry sandy bed of the Cimarron River, you can almost conjure up ghosts of the old Kiowa and Comanche raiding parties. These warlike bands slipped down out of the sandhills to hit trail drovers as they pushed



Prairie rattlesnake by Ken Stiebben

Log cabin by Ken Stiebben



Burrowing owl by Ken Stiebben



longhorns up the trail toward Dodge City and its railheads. For awhile, these lean, bronzed horse men ruled the area now known as Morton and Stevens counties. But in time, homesteaders, barbed wire, ever-diminishing herds of buffalo and a relentless Federal Government forced the proud warriors onto reservations.

The Kiowas are gone now; so are the Comanches. In their place are wiry, sunburnt ranchers in pickups and four-wheel vehicles with rifles stacked across the rear window. And although the buffalo and antelope are gone, the ranchers still enjoy good hunting. Because, southwestern Kansas is home to an abundant supply of game.

Mule deer and Rio Grande wild turkeys haunt the timbered riverbottoms of the Cimarron and Arkansas. Quail, both bobwhite and scaled, thrive on grain crops and edge cover. And southwestern Kansas harbors one of the largest huntable flocks of lesser prairie chickens in the country. Gaudy ring-necked pheasants are found in or near croplands and along the riverbottoms. Dove hunting in September can be fantastic around the area's waterholes and stock tanks. For an area with limited waterfowl habitat southwestern Kansas offers some surprisingly good duck shooting. Small potholes along the river as well as irrigation ponds often host amazingly large numbers of waterfowl. Coyotes and prairie dogs attract riflemen with a scope.

Although southwestern Kansas offers some excellent hunting, things get a little lean for the fisherman. There are a few ranch and farm ponds scattered throughout the prairies, and the Cimarron National Grasslands has several small ponds that have been stocked with largemouth bass and channel catfish by the Commission. Lake McKinney, north of Garden City, offers some good channel catfish and bullhead fishing. But Clark State Fishing Lake, south of Kingsdown, and Barber State Fishing Lake, north of Medicine Lodge, probably offer the greatest angling opportunities in the southwest.

In fact, the Clark County impoundment has been called one of the finest fishing lakes in the state. It's cool green waters contain northern pike, largemouth bass, crappie, and channel catfish in good numbers.

Southwestern Kansas has something for just about everyone interested in natural history or ecology. For the bird watcher, there are some species found in southwestern Kansas that you won't see elsewhere in the state. The striking black and white magpies are an example. These big cousins to the crow construct large unusual basket-like nests of sticks in trees along the rivers and creeks. The little brown burrowing owls, found around prairie dog towns are another example. Fluttering up into the air like great brown moths, these diurnal owls feed on grasshoppers and other insects around the dog towns. In addition to these unusual species, there's a varied assortment of other birds; the fan-tailed Swainson's hawk, wheeling high above the prairie in great lazy circles; the Baltimore oriole, flashing orange and black through green riverbottom thickets; bluejays, cardinals, meadowlarks, kingbirds, and tiny brown wrens flitting through the sagebrush around a water hole.



Mississippi kite by Vic McLeran

For the herpetologist, there's a dusty-colored prairie rattlesnake coiled at the base of a spiky yucca clump; or a large bull snake stretched out along a low hanging willow limb in the Cimarron river bottom; racerunners, skinks, and lizards of all sorts racing through the sage-covered grasslands, and the quick glimpse of a coachwhip streaking across a sandy riverbed.

Mammalogists, too, will find some unusual animals, some of them common only to the southwestern part of the state. The elusive spotted ground squirrel, zipping into a small burrow alongside the road; a nocturnal long-tailed kangaroo rat leaping through the weeds on its hind feet is caught in the headlights' glare; the tiny swift fox peeking from a den 30 yards off the road; an old flat-backed badger shuffling across a prairie dog town; the odd loping gait of a startled black-tailed jackrabbit, its ears flared in alarm; and always, the lean rangy coyote trotting across the prairie to disappear from view in a small draw.

Southwestern Kansas is a unique part of our ecosystem. You owe it to yourself to get out and see this unusual and interesting part of Kansas.

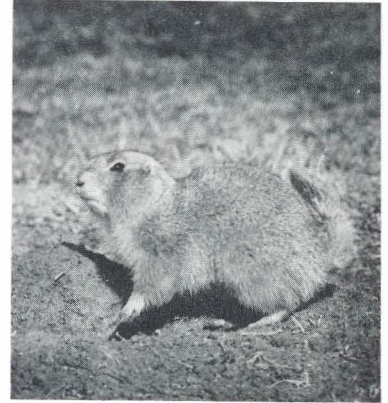


Prairie flower by Ken Stiebber



Prairie chicken by Ken Stiebber

Coyote by Vic McLeran



Prairie dog by Ken Stiebhen



Jackrabbit by Ken Stiebhen

Bullsnake by Vic McLeran



Mule deer by Ken Stiebben



Fish and Game Forum



Q. Are there any cottonmouth water moccasins in Kansas?

A. To date, only one true cottonmouth has been found within the borders of the Sunflower State. That specimen was taken in 1937 by the late Dr. Henry Hall, former biology instructor at Kansas State College of Pittsburg. Dr. Hall captured the reptile from one of the murky backwater sloughs along the Neosho River in western Cherokee County. Another specimen was taken from the Spring River, three-quarters of a mile across the line in Missouri. Both snakes were captured immediately after a flood which leads some herpetologists to believe the reptiles were washed in with high flood waters. Writing in *Transactions of the Kansas Academy of Science*, Dr. Hall noted, "These reports from localities near Kansas lead us to believe that more than one (cottonmouth) snake has probably been carried into the state by backwater, and that the species has become established within the boundaries of Kansas." In addition to the specimen located just across the Missouri line, cottonmouths have been located near Vinita, Oklahoma—approximately 30 miles south of the Kansas line.

Ray Ashton, herpetologist and Director of Public Education for the Museum of Natural History at Lawrence, and Joseph T. Collins the Museum's herpetologist and vertebrate preparator feel southeastern Kansas has the right kind of habitat to support a cottonmouth population. "The backwater sloughs along the Neosho River near Chetopa constitute as fine a cottonmouth habitat as we've ever seen," say the pair. They should know. Both men are veteran snake hunters having collected cottonmouths in Louisiana, Arkansas, Tennessee, Kentucky and Georgia. However, the fact remains that since 1937 no cottonmouth moccasin reports

EDITOR'S NOTE: Each month, hundreds of letters reach Fish & Game Commission headquarters with questions regarding various phases of the department's activities, policies, projects and plans. In addition, we receive numerous queries about hunting, fishing, trapping and wildlife. As space permits in future issues, we'll publish some of these questions and their answers to provide Sunflower sportsmen with a greater appreciation and understanding of their Fish & Game Commission and the Kansas outdoors. If you have a question, mail it to FISH & GAME FORUM, Box 1028, Pratt 67124.

have been verified in Kansas. Each year though, thousands of people cry "cottonmouth" every time they see one of the nonvenomous natrix water snakes. Because of these nasty-tempered water snakes, the "moccasin myth" will probably be with us for years to come.

Q. What are the "swamp rabbits" I've heard about down in southeastern Kansas?

A. According to Dr. E. Raymond Hall's *Handbook of Mammals of Kansas*, the swamp rabbit, *Sylvilagus aquaticus* occurs only in the extreme southeastern corner of the state—in Cherokee, Labette and Crawford counties. This rabbit is larger than the cottontail with some specimens weighing four or five pounds. Cottontails, on the other hand, average only a couple pounds. The swamp rabbit is also darker and shorter-haired than the cottontail. Those who have eaten it, say the swamp rabbit is better on the dinner table than the cottontail.

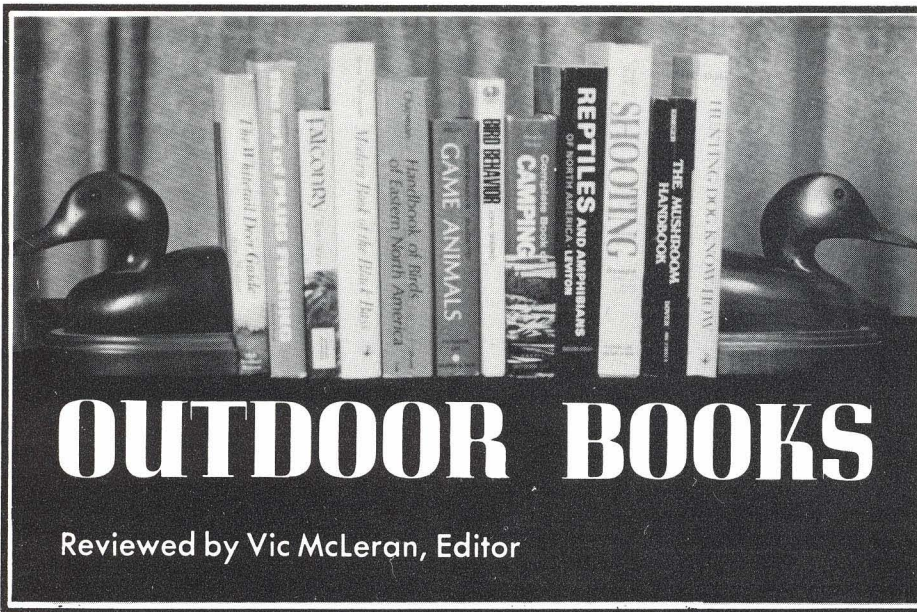
Q. What is the current status of the black-footed ferret in Kansas?

A. The last verified sighting of black-footed ferrets in the Sunflower State occurred in 1970 at a prairie dog town on the Cimarron National Grassland in Morton County. Stu Adams, a

ranger on the grasslands saw a ferret in 1969 and again in 1970. The dog town where the ferret was sighted has since been poisoned out by persons unknown. Alleged sightings continue to filter in from southwestern Kansas. But there's a feeling among biologists that some of these "ferret sightings" may actually be bridled weasels. At a glance, these animals are similar to ferrets though they lack the ferret's black feet and legs.

Q. What's the story on woodcock hunting in Kansas?

A. The woodcock, or "timberdoodle," as he's called in some areas, is not a plentiful bird in Kansas. He's most common during the spring and fall migrations. But there are a few woodcock killed each fall—usually inadvertently by quail hunters who happen across the little birds while seeking bobwhites. Since the woodcock feeds heavily on earthworms, he requires habitat where the ground moisture is high. The eastern tier of counties along the Missouri line seems to offer the best hunting in Kansas. Woodcock have been seen around the Marais des Cygnes waterfowl area in Linn County and in the strip pits of Cherokee and Crawford counties. Bob Hartmann, research fisheries supervisor for the Commission, hunted woodcock when he was a district fisheries biologist at Pittsburg. "I found the birds in strip pit areas where heavy ground cover like honeysuckle kept the soil moist," Hartmann says. A 12-gauge bored cylinder and loaded with No. 8 or 9 shot is a good choice for woodcock. They don't fly far when flushed and can often be jumped again. Hartmann says the birds taste similar to doves though slightly more "livery." As with doves the woodcock's breast is usually the only part eaten since there's little meat on the bird's frame.



PRACTICAL BLACK BASS FISHING by Mark Sosin and Bill Dance; Crown Publishers Inc., 419 Park Avenue South, New York, N. Y., 10016; 216 pages, \$7.95.

Still another bass book—Mark Sosin, one of America's leading outdoor writers has teamed with Bill Dance, one of the country's top bass anglers, to write this extremely informative publication. Like the title implies, the book's approach is practical. ". . . we decided from the beginning to present the practical aspects of the subject," write the authors in the book's preface. "By eliminating nonessential material, it became possible to offer a basic yet detailed approach to bass fishing. There are others to be sure, but we know this one will work." It has worked for co-author Dance to the tune of nearly \$40,000 in professional bass tournament money over the past several years. A sampling of chapter titles includes: Understanding Your Quarry; Establishing a Pattern; Locating Structure; More on Structure; Fishing the Shoreline; How to Fish an Unfamiliar Lake; Rivers and Creeks; Weather, Water and Seasons; Choosing and Using Lures Effectively; Flyrodding for Bass and much more. A chapter of special interest to many Kansas bass fishermen is titled, Farm Ponds. In it, the authors discuss the fine points of fishing farm ponds including many tips which are applicable to farm ponds in the Sunflower State.

Throughout the book, it's obvious the authors want you to catch more bass. To this end, they offer solid, authoritative and complete information on understanding the quarry, on plugs, plastic worms, spinners,

baits, jigging, fishing a shoreline, fishing an unfamiliar lake, fighting and releasing bass, fly-rodding for bass and a wealth of other material that will help both the beginner and the advanced fisherman. Structure fishing, one of the most important and least understood of the new fishing techniques, receives exceptionally good treatment. In fact, it's some of the most thorough coverage I've seen on the subject.

As Lamar Underwood, editor of *Sports Afield*, says: "This book is loaded with the hard-to-find detailed information today's bass fisherman needs to know. This one will help you—regardless of where you fish." I agree. *Practical Black Bass Fishing* is a book Kansas bass anglers will want to own and study.

GAME BIRDS OF NORTH AMERICA by Leonard Lee Rue III; *Outdoor Life/Popular Science Publishing*, Harper and Row; 490 pages, \$12.50.

Author-photographer-naturalist Rue has combined his talents to bring sportsmen another excellent book—this one on our native game birds. Utilizing the skills of wildlife artist Douglas Allen to illustrate the text, Rue provides natural history sketches of 75 species of game birds in a volume that's as beautiful as it is practical. Waterfowl, upland game birds, shore birds and nuisance birds are covered in depth. On each species there is accurate and comprehensive information on size and appearance, distribution, communication, breeding and nesting, eggs and young, flight, migration, habits, food, life span, tracks and other signs, natural enemies and quality as table fare.

Unlike some natural history authors, Rue provides more than just the basics about the various species. Much of the text is spiced with observations of unusual and interesting behavior Rue has seen during his many years of study. In addition to 25 drawings by Douglas Allen, there are 75 photos by the author and 25 maps showing migration routes and distribution of various game birds throughout North America. *Game Birds of North America* is a book that will appeal to hunters and nature lovers alike.

CREATIVE FISHING by Charles J. Farmer; Stackpole Books, Cameron and Kelker Streets, Harrisburg, Pa., 17105; 192 pages, \$5.95.

If you're a pondowner, or would like to be, you'll want to read *Creative Fishing*. Charles Farmer, a young writer-photographer who lives with his wife near Jackson Hole, Wyoming, explains how you can build your own farm pond. In 15 chapters Farmer describes every step of pond creation from purchasing land and building the dam to what species of fish to stock, where to get help, how much it will all cost, and how to maintain it in top condition year after year. In easy, entertaining style with many firsthand examples of fish ponding, he discusses what a fish pond is and the history of ponding, which has culminated in 3,000,000 pond-acres in private ownership today. Pointing out that crowded lakes and recreation areas almost make it easier to catch cold than a bass, Farmer explains why fish ponding makes sense and then begins with the basics. Quoting pondowners in six states, Farmer shows both sides of the coin. He reviews pertinent laws and liabilities, provides a bibliography for further research, and then to make it irresistible he describes the fun to be had observing fish—on the surface or underwater. As Farmer puts it, "In a time of shrinking habitat for fish and wildlife, *Creative Fishing* opens another door to the environment for the wildlife photographer, conservationist, ecologist, bird watcher, farmer, rancher, camper or hunter. All can share in the world of the fish pond . . . a complete, natural world waiting to be created now."



M. Jenkins
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