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KANSAS





Vol. 37 No. 6

2

## Contents

After the Crowd's Gone Home	
Two biologists consider upland bird	
hunting in December and beyond	

**The Butcher** Taxonomists call the loggerhead shrike a song bird; the shrike thinks he's a hawk . . .

The Sharptail: Will he come home to Kansas? Bob Mathews takes a look at the chances of re-establishing the sharptail on the High 8 Plains

#### Rabbits on the Sit A .22 offers a change of pace to the rabbit

#### **River Ducks**

A handful of Kansas waterfowlers still hunt streams. Maybe they know something the rest of us 26 don't ......

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### Editorial

#### Nearly Time to Chip In

The tax paying public usually splits itself into two groups about this time of year. One group-a fairly small one-is already assembling the records they will need for their state and federal income tax returns. These people are the model of efficiency. By the middle of January, they'll have posted their returns and gone on with their business. I would be one of those well-organized souls myself if I were expecting a check from the state or the feds. As it is, I'll probably put off the hair-pulling, cussing, and check writing until April 14 or thereabouts along with most of the rest of the American citizenry.

I broach this painful topic to remind those of you who are planning on filing a return in January to take advantage of the one bright spot on the tax form and check a contribution for Kansas nongame. The nongame check-off will appear on line 13 of the Kansas short form (40A) and on line 34 of Form 40, the standard return.

Specific plans for use of the nongame check-off fund are necessarily tentative for the time being. Preliminary plans include: Development of urban nongame habitat improvement programs for city parks and backyards; identification and acquisition of unique areas for nongame species and public enjoyment; stepped-up participation in national studies of endangered species which occur in Kansas such as the bald eagle, whooping crane, and peregrine falcon; research on the population status and life histories of Kansas' own rare and endangered species; dissemination of nongame education materials to schools and the interested public; development of observation areas and nature walks; and others.

Kansas wildlife enthusiasts are quite fortunate to have the best nongame check-off law in the country. Even those of us who will pay taxes to the state will have a chance to contribute to nongame in the check-off program. Wildlifers in other states have been dismayed to find that their check-off programs only accepted contributions from people who were receiving refunds. Response to this kind of program has been gratifying in Colorado and Oregon where funds have already been collected but it's obvious that many taxpayers who wanted to help nongame could not. Their laws simply wouldn't allow it. Kansas' more liberal law gives the state's outdoor folk a chance to outstrip these other states.

Spread the word. The time is coming for *all* Kansans with concern for wildlife to chip in.

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## To Fish and Game Readers:

There's a change coming our way in January-February. KANSAS FISH AND GAME is changing its name to KANSAS WILDLIFE.

The name change is actually long overdue since the magazine has considered a wide variety of nongame animals and plants over the last decade. Our balance of articles will not change as a result of the new title. We feel that hunting, fishing, and trapping are a vital part of the wildlife scene in Kansas. We also know that sportsmen's interests include more than the game species they pursue. We will continue to look at the entire Kansas wildlife resource and the recreation its supports. Whether you're a hunter, birdwatcher, fisherman, canoeist, trapper, or outdoor photographer, we hope you'll enjoy coming issues. The name may change-we won't.

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## After the Late season techniques for pheasants and quail Crowd's Gone Home

"December Squall-Pheasants" provided courtesy of David Maass and Wild Wings Gallery, Lake City, MN 55041

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Lunting pheasants in January isn't for everyone. But, most late season hunters know that the experience can be much more rewarding than any opening day hunt. They also know the hunt may be a challenge. The late season hunter often bears little resemblance

### Pheasants By Randy Rodgers

to his opening day counterparts. While opening day

hunters frequently measure success by the number of birds bagged, or the number of shots fired, these factors are less important to the January pheasant hunter. He (or she) is more likely to measure the hunt in terms of quality rather than quantity. Snow and cold afford the chance to successfully hunt pheasants with only one or two close friends, one of whom may be a favorite black lab. This close companionship or the solitude possible when hunting alone is as important as, if not more important than, the birds in the bag. The large hunting parties necessary to work pheasants in fall stubble fields cannot, by nature, offer these qualities. Perhaps this is why so many late season hunters shun the opening weekend hunt and wait, in anticipation, for the weather that most people hate.

The January pheasant hunter is usually a bit more polished in his hunting skills than the opening day hunter. He has learned what combinations of cover are most attractive to pheasants and he searches for these



rather than marching through field after field until, almost by chance, some birds are flushed. He loves to see pheasant tracks in the fresh snow. Like the right combinations of cover, those tracks heighten the anticipation of the flush and that anticipation can make a good hunt, even if the flush does not come. He is also likely to be a better shot than his warm weather predecessors in spite of the fact that his hands may be numb with cold. But, when the winter silence is broken by a cock bursting from a snow covered weed patch, the hands respond and the cold is forgotten.

If the intangible qualities seem to linger in your memory long after tallies of birds bagged have faded, then there is a good chance you're already a winter pheasant hunter. If you're not, then you should give it a try. Before you go, here are several things you should know.

January pheasants are different from November birds. They're smarter! They've learned what the slam of a car door can mean and have found proven methods for avoiding hunters. The cocks that don't learn early usually find their way to the dinner table before



Christmas. This is why you're likely to find more adults in the January bag than you will on opening weekend. The adults have already had one or more seasons of hunter evasion experience. So, you'll need to change your tactics if you hope to be successful.

Winter pheasants seem to have split personalities. Which is expressed depends mostly on the weather. If you happen to be hunting on a relatively warm (for January) day, then you've accepted a tough challenge. When the weather is mild, the wary January pheasant is likely to run at sprinter speed, or to flush 200 yards away at the first indication of danger. These conditions are probably the most difficult a pheasant hunter will ever encounter. His best hope is to try to use the element of surprise. He can ill afford the luxury of slamming the car door or standing around to talk for five minutes before entering the cover. In this situation, it is often best to move quickly and as silently as possible. It may help to have a slightly unorthodox strategy ready prior to approaching the cover. Call it "planned chaos" if you like, but some unpredictability injected into the proceedings may confuse a cock just enough to get him within gun range. Of course, the confusion should not extend to the hunters. For example, it sometimes pays to approach a patch of cover from two or three directions simultaneously. If the pheasants somehow outwit your carefully constructed plan, don't give up: pay attention to what they do. Pheasants usually fall into a habitual escape pattern by late season and knowing these habits will pay dividends should you return.

Of course, it's cold and snow that most hunters hope for in the late season. This is when pheasants reveal the second side of their personalities. The wild evasion tactics of warmer weather seem to be abandoned when the mercury drops well below freezing and a blanket of snow covers the fields. Once this occurs, pheasants are likely to sit tight and allow a hunter to walk on past. A good close-working dog is now more valuable than at any other time of the season. He is able to pick up a scent better in the snow than in the dry, dusty stubble fields of November and he will still cover ten times the area an average hunter can walk. On top of these factors, many dogs seem to enjoy hunting in colder weather. Perhaps this is because they are better able to avoid the overheating often brought on by the exertion of hunting.

You can also have good success in the snow without a dog, but you had better slow down. Since pheasants usually hold tight in cold weather, a hunter should work cover thoroughly before he moves on. It can also pay to stop and stand quietly for a minute or so when you're in good cover. Several times I've turned and walked through cover I had just left only to surprise a cock that had mistakenly thought danger passed. For some reason, that kind of flush is especially pleasing.

When you do get a flush, even if it's a hen, be ready for action. Pheasants tend to bunch up when cold weather hits, particularly if there's been a snowfall. The flush of one bird may well precipitate an explosion of ten to twenty birds from the same weed patch. If this happens, you must be careful with shot selection. There are roughly three hens for every cock by the time January arrives.

You'll want to look for pretty heavy cover in cold weather. Weed patches and weedy or grassy draws are good places to find pheasants now, especially if they're near a food source. Good cover won't hold many birds if it's much more than a quarter mile from food. An ideal combination usually includes some heavy weed cover adjacent to wheat, milo, or corn stubble. Shelter belts are not necessary to complete the combination though they can attract large numbers of pheasants when in conjunction with weeds and food.

If you find the right combination in a location that's fairly isolated from other areas of good cover, you'll probably find pheasants. Isolated areas like this act like "ecological magnets" in that they tend to draw wildlife

in from surrounding areas of poorer habitat when cold weather sets in. Many dry western Kansas lakes act in just this manner to draw pheasants from one to three miles away. Dry lakebottoms are a relatively recent phenomenon which the Kansas Fish and Game has recently begun to manage with an eye toward pheasants. It appears there is little hope of these lakes ever refilling, so they should provide excellent late season pheasant hunting in the future.

What sort of gear will you need for a late season hunt? In terms of a gun and ammunition, you'll do fine with what you carried in November. Most pheasants are fully feathered by the beginning of the season in Kansas. Only a few cocks

Fish and Game

from very late hatching nests will show any signs of feather growth in November and this isn't significant. So, you need not shift to the larger four or five shot to be effective on January pheasants. Most hunters agree that heavy load sixes are ideal for pheasants and many like seven and a halfs when hunting where quail may be flushed.

Your clothing should be warm yet breathable to allow moisture to escape. Many hunters tend to overdress for a winter hunt and find themselves hot and sweaty after walking only a short distance. The exertion of walking through heavy cover generates a lot of body heat, particularly if you're walking in deep snow.

Hands and feet are usually more of a problem in the cold. For my money, you can't beat rubber bottomed boots with felt liners to keep your feet comfortable. The hands can be more difficult. You definitely want to avoid uninsulated leather gloves. These seem to suck heat from your hands faster than if they were bare. Insulated leather or some cloth gloves seem to work best so long as they're flexible and not so bulky as to hinder shooting.

Of course, it's always best to line up places to hunt in advance, but you may find that getting permission to hunt January pheasants is a little easier than early in the season. Undoubtedly, this relates to light hunting pressure as well as the fact that there is little chance of crop damage in January. Perhaps, it's also because farmers realize that late season hunters are likely to treat the land and the landowner with respect.

Certainly, January pheasant hunting isn't for everyone. It's for the hunter who likes the challenge of outwitting the pheasants that outsmarted other hunters. It's for the hunter who feels close to the land and to the creatures that live upon it. If you like tracks in the snow, it just might be for you.

> The morning is clear with very little wind to disturb the illusion of warmth left by the thin sunlight. The conversation in the cab of the pick-up wanders from topic

## Quail By Roger Wells

to topic but always seems to return to shotguns, pointing dogs, and remembered covey rises. We pull into the farmyard and exchange a few words with the farmer who has some advice about where to find the birds.

We hold the dogs on short leads while we uncase guns and stuff shells and sandwiches into coat pockets. Then into the cover. We work the brush slowly to give the dogs time to work it thoroughly. There is a false point on a chickadee or mouse followed by a little coarse language from the dog's owner. We're almost to the end of the ravine when the lead pointer locks onto something real, and the other two dogs honor.

The uninitiated might be led to believe that, at this point, there was little left in doubt. Not so. We wade into the covey and they jump all around us. Ten seconds pass in slow motion; then, as the smoke clears, we trade alibis.

And so the day goes from one covey to the next, dogs hunting as well as they have all season, friends jabbing each other good naturedly about their wingshooting, the crisp day passing on into dusk. When the sun sets, we have eight birds among us, but we've seen ten times that number, and we've had every covey to ourselves to approach and handle as we saw fit. A typical January quail hunt.

During an average year, a Kansas quail hunter needn't plan any far-flung expeditions after bobwhite—the quail shooting out his back door is likely to be as good as any place in the nation. Although Kansas is on the western edge of bobwhite range, our harvest consistently ranks in the top three to five state quail harvests in the country.

About 150,000 Kansas sportsmen hunt quail each year. On the average, they go out five to six times during the season and take twelve to fifteen birds. Most hit the first two or three weekends hard and may hunt a holiday or two, but, by the time January rolls around, they've probably forgotten all about quail. That's a mistake. Late quail shooting can be some of the season's best.

Information collected from Kansas sportsmen during the 1979-80 hunting season shows that only about thirteen percent of all quail hunting occurs in January and that thirteen percent of the total harvest comes in that month. Fewer hunters are afield; quail are less

> Painting provided courtesy of Jerry Raedeke, Worthington, MN 56187



pressured, and the hunter's success is only slightly less than it was in November.

Sportsmen abroad in January can expect to find coveys that are as large as or even larger than the usual November covey. As the weather grows colder, coveys that are scattered across the prairies and fields press into the dense cover along stream banks, shelterbelts, and brushy draws. Hunters that have been hunting these areas through the season suddenly begin seeing more birds and often assume that the population has increased. Actually, quail are lost continually through the season to all sorts of predators and accidents, but, as the coveys decrease in size, they tend to mingle and may join one another permanently. Given a choice, quail seem to prefer maintaining a covey size of about fifteen. Many of the birds from sparser habitat have their first run-ins with hunters when they make their move to heavier cover. The coverts they frequent earlier in the season simply don't look like quail cover to many hunters and are neglected as a result.

Since quail inhabit the thickest cover they can find through the winter, they are quite often hard to locate. They're usually warier and, if the cover is thin, will tend to run more. When flushed, they seem to scatter more and will almost invariably head for their "covey headquarters" when pushed hard. This headquarters is usually in the most hunter-proof cover the birds have available. Once they have made it into this covert, they tend to hold better to a point in the late season because they feel more secure. They will try to hide rather than run. One exception to this tendency occurs when there is crusted snow on the ground. Quail usually run rather than holding when they are pursued on crusted snow. In such conditions, hunters will find quail to be at their spookiest.

A good bird dog is almost a must during the latter part of the season. Since the birds are in heavy cover, they generally are very difficult to locate. A hunter can walk by many coveys if he's not using a dog. In addition, a bird downed in the tangles of a winter covey use area is sometimes impossible to locate without the aid of a dog. When using a dog, it is generally best to hunt very slow through the cover. The dog must have a chance to work all of the available cover. Scenting conditions are usually better in January than in November, but winter quail territories are generally pretty small, sometimes only forty acres or less. The birds' daily movements are short and hence don't lay down a lot of scent trails as they do during early season. Taking it slow will allow the dog to locate the inactive birds. On bright sunshiny days, it sometimes helps to hunt the south slopes of any hillsides. These areas are protected from cold north winds and tend to warm quickly. As a result, quail search them out during mid-day. Always keep in mind that quail will seldom be very far from the heavy cover of their covey headquarters.

If the hunter is forced to do his quail hunting without the aid of a dog, there are some ways in which he can improve his chances of success. It's wise to start very early in the morning and listen for covey calls as the birds break from their roosts. Most of the time, quail whistle a little as they awaken and head toward their feeding sites. This whistling can be a very valuable tool to the man without a dog in locating the spot where a covey may be found. When you have reason to believe a covey is in the area, take it very slow and work out all of the cover. The birds could be anywhere and in heavy brush will tend to sit pretty tight.

If you are fortunate enough to have a fresh light snow on, you can track a covey, but, no matter how you go about it, you can expect to have a pretty tough go of things if you do not use a dog.

Quail found in late season are sometimes slightly lighter in weight and may not have the fat layers the early season birds may have, especially if any harsh weather preceded the hunt. When winter temperatures drop below freezing, bobwhite energy demands increase. In order to adjust and maintain body temperature at 32°F quail must take in about forty-four kilocalories per day. Even on a full feed diet of high energy milo quail cannot eat enough grain a day to supply the energy they need. As a result, they

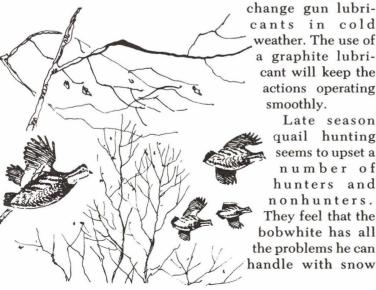
> will burn up some of their fat reserves to make up the difference. As this fat is used, the bird gradually loses

weight. If the weather has been particularly severe for an extended time, some birds may be found that appear to have used all of their fat reserves. When bobwhites are in this stage of stress, it is probably best to leave them alone since the energy expended in flight and re-assembling the covey will put an additional drain on the birds. Quail seldom deteriorate to this condition except after a long period of extreme cold accompanied by deep snow. With temperatures at or slightly below freezing, very few stressed birds should be found.

Dressing properly for the late season hunt can be an all important part of a successful outing. As a general rule, several light layers of clothing are better than a couple of heavy layers. In this way, clothes can be peeled off or added to suit the weather and level of exercise. Insulated coveralls tend to become too hot and don't allow for any air circulation. Jackets and hooded sweat shirts would probably be better. Remember you are going to be working pretty hard crashing through the heavy cover of a quail wintering area. Above all, you should not allow yourself to get too hot and then cool down too quickly. This can be very dangerous. All hunters should wear red or orange on these hunts. In heavy brush, hunters often lose sight of each other. Red or orange clothing can prevent a serious accident when the covey bursts from its hiding place.

Because late season hunting takes place in smaller coverts and heavier brush, most hunters prefer small groups during late December and January. Two or three is just about as many people as can properly hunt some of the winter areas.

Another aspect of cold weather quail hunting which a lot of sportsmen fail to take into consideration is the effect of low temperatures on the gun. Automatic and pump action shotguns can become stiff and sluggish or even fail to function at low temperatures. For this reason, some late season hunters use double guns or



and low temperatures without continuing harassment from sportsmen. In most normal winters, the only quail that are significantly threatened are birds that are trying to survive in marginal cover. Without secure roosting habitat and a consistent source of food, these coveys will probably disappear whether they are hunted or not. Even in extremely severe winters, quail losses won't be permanent if year-round quail cover is in good shape. Missouri biologists estimate that quail populations can recover from even the worst winter disaster in about three years, provided they have good nesting, brood-rearing, and wintering cover and aren't hit with more bad weather.

While late season quail hunting will probably never affect statewide bobwhite populations, there are a few things hunters can do to help their own coveys. Watching a good dog work out singles is one of the joys of quail hunting, but it's probably best left for the warmer part of the season. A covey that is followed persistently after the first flush will be forced to expend a lot of energy in repeated flights and in pulling itself back together. In the cold of the late season, that's energy the birds may need later on. It's in the best interests of the birds to bust a covey just once on a day's hunt before moving on. When a covey has declined to six or eight birds, late season ethics demand that it be left alone. There are other, more prosperous coveys to be found, even in January.

The bobwhite is a far more durable creature than most people realize. Year after year, quail bounce back from losses that may amount to eighty percent or more of their population. The January hunter's share of that harvest leaves no lasting mark.

The authors, Roger Wells and Randy Rodgers, are both upland bird biologists for the Fish and Game Commission. Randy Rogers is the commission's pheasant biologist; and Roger Wells is in charge of all small game in Kansas. Both are Kansas natives and have probably wasted as many hours in the field after upland birds as any hunter in the state.

The artists, David Maass and Jerry Raedeke, are both Minnesota natives who have made substantial reputations with their waterfowl paintings. Maass won the federal Duck Stamp competition in 1974 and also won the 1979 Minnesota state duck stamp contest. His "December Squall—Pheasants" leads this article. Jerry Raedeke was the featured wildlife artist at the 1979 National Wildlife Art Show, and won best-of-show in the upland game division at last year's show. He provided both the quail painting and pen-and-inks for this article.



"That shrikes should be songbirds will seem incongrous to many who know how they come by their popular name of 'butcher birds.' But they are so classified by ornithologists and not without reason, for they not only possess vocal organ, but some of the species actually make use of those organs in producing a sort of warbled song. Thus, they are song birds of prey." T. Gilbert Pearson, Birds of America

## The Butcher

#### George Anderson

As a kid hunting in western Kansas, I would occasionally come across a grasshopper or some other insect stuck on the barb of a fence or impaled on the thorn of a locust tree. I recall thinking this was a little strange but passed it off as the insect's inability to fly straight. I can even remember seeing a small snake and some kind of small bird in the same situation as the grasshoppers, held fast by some sharp object and dead.

I'm sure I've seen hundreds of these tiny hanging corpses since those early days but they apparently made no lasting impression on me until several years after I began work with the Fish and Game Commission.

Wes Wikoff, game protector at Hoxie, and I were driving by a grove of trees in southeastern Sheridan County one day when I noticed something move on the side of a locust tree along the road. I told Wes to back up. It took a little while to find the object that had caught my eye but I finally located it. A mouse. Not only was it a mouse, it was a dead mouse impaled on a rather long thorn on the trunk about seven feet off the ground.

"How do you suppose he managed to do that to himself," I asked Wikoff.

"I don't think it was a voluntary decision," he responded. "Looks like a little shrike sitting about four feet above him. He probably had a hand in putting him there."

I looked where Wes was pointing and, sure enough, there sat a small bird not a whole lot bigger than the mouse but a lot happier with its lot in life. If this little gray bird with the narrow black mask running through its eyes was the guilty party he seemed content with the deed.

We watched the bird for a short time and then drove off. "That was a loggerhead shrike," Wes informed me. "Sticking their prey on some sharp object is a common characteristic of the bird."

Since that day with Wikoff in northwest Kansas, I have yet to personally observe another shrike in the wild. That's not to say they aren't around because I have seen evidence of their presence. Critters hanging on pointed objects.

From what you have already read, you might get the idea that we are dealing with a sadistic little bird that thinks it's more hawk than songbird and there is probably some truth to that observation.

The loggerhead shrike, the species of shrike found most often in Kansas, belongs to the order of Passeriformes, the perching birds. The order consists of twenty-seven families of birds of which the family Laniidae claims the shrike. Other birds within this family include wagtails and vireos. Eight species and subspecies of shrikes occur in the United States and Canada.

In Birds of America, T. Gilbert Pearson comments

on the shrike's split personality: "That the shrikes should be 'song birds,' will seem incongruous to many who know how they come by their popular name of 'butcher birds.' But they are so classified by ornithologists, and not without reason; for they not only possess vocal organs, but some of the species actually make use of those organs in producing a sort of warbled song. Thus, they are song birds of prey."

From the material that has been written on shrikes, it is apparent that the bird forsakes many song bird habits and does hunt like a hawk.

Most everyone has observed hawks sitting high in the branches of a dead cottonwood or on top of a highline pole patiently watching the countryside for any sign of movement that could provide a meal. The shrike is no different than large raptors in this habit.

The shrike can remain motionless for hours perched on such structures, scanning the open spaces below with astounding eyesight capable of spotting a grasshopper moving on the ground at 100 yards. Then, with



a rapid beating of wings and a sail, it swoops in a steady, direct glide to its prey.

A fearless attacker, the bird kills by breaking the back or neck of its victim with its hooked beak and thrashing the dying animal to the ground. When the dust settles, the shrike usually pecks the head off and eats it first. Then the bird flies its prey to its larder or storage area. Hovering slightly off the ground, it transfers the intended meal to its feet and airlifts it to a convenient strand of barbed wire, sharp thorn or even a crotch in a tree where the meal is tightly wedged. Often a shrike will accumulate several such victims in its larder. The bird sometimes returns to feed, but to what extent appears to be a matter of debate among birdwatchers.

Why the shrike impales its prey has long been the subject of controversy or maybe just speculation. Some observers feel that the bird impales its prey for the sheer pleasure of watching the death struggle of the unfortunate victim it has caught. Others feel that it kills more than it can eat and stores its prey in this manner for future meals.

Most writings lean towards the idea that all shrikes have very weak feet and are unable to hold their prey while they feed on it. Actually, the bulk of the material I read on shrikes did not just lean toward the weak feet theory but stated it as fact. I'm not all that sure I agree that the shrike is weak-footed. Granted, I am not a shrike expert and have only observed the one in the wild. I have some difficulty believing that a bird that can kill something twice its weight, pick it up, fly a hundred yards and impale the subject seven feet up a locust tree is weak of foot.

This minor difference of opinion has been going on for many years and so interested Dr. Sylvester D. Judd, of the U.S. Biological Survey that he captured a loggerhead shrike and recorded his observations in "Birds of a Maryland Farm." The results were interesting.

"On the day after the shrike in question was captured, a dead mouse was offered it." Judd said. "The shrike raised its wings, moved its tail up and down petulantly after the manner of the phoebe, and then seized the mouse and dragged it about for several minutes, trying to wedge it into first one and then another corner of the cage. Failing in this effort, it tried to impale the mouse on the blunt broken end of a branch that had been placed in the cage for a perch, but the body fell to the floor. Then it tried to hold the mouse with its feet and tear it to pieces, but its feet were too weak. A nail was now driven into the cage so as to expose the point. Immediately the shrike impaled its prey, fixing it firmly, and then fell to tearing and eating ravenously."

According to Judd these experiments indicated that the bird is unable to tear to pieces food that is not securely fixed. A series of other experiments on mice and small birds resulted in the same conclusion.

Experiments were also conducted during this time using insects such as grasshoppers, caterpillars and centipedes. The shrike would clutch the insects with one foot and tear off mouthfuls until it was entirely consumed. Only very large insects were impaled by the shrike.

If the opportunity presents itself, the shrike will stick its prey on a sharp object. If nothing sharp is handy, it gets by without impaling the victim.

A California study conducted by Robert B. Craig of the University of California on the analysis of the predatory behavior of the loggerhead shrike related the following on their feeding habits. Shrikes are territorial throughout the year, primarily insectivorous, and nonmigratory in central California. They are known to feed heavily on arthropods, although small mice, birds, reptiles, and amphibians are sometimes taken.

The study area utilized in the California study contained ten resident shrikes and dealt only with the hunting behavior of the adult birds during fall and winter. It was conducted by a team of well-trained volunteer observers made up of college seniors and graduate students in zoology, all with prior field experience. The observers worked in two-person teams so that data could be tabulated without losing sight of the birds during the two-hour observation periods. These periods were divided into thirty-minute intervals of observation of a single bird.

The study revealed that the shrike is a very active bird. Between September 1972 and March 1973, 2,946 shrike attacks were observed on the area in 710 halfhour observation intervals. The overall average attack rate was 4.15 attacks per half hour, or one attack every 7.2 minutes. The success of these attacks was a surprise to me. An extremely high rate of success was recorded. Sixty-five percent; that's not bad shooting.

The attack rate is higher in February and March than would be expected to satisfy the bird's estimated caloric demand. However, in February, male and female shrikes begin to associate in precourtship display. During courtship, the female approaches the male, fluttering her wings and squawking. The male appears to be stimulated to attack prey by this behavior. He

The loggerhead shrike is done in shades of gray and black. In flight, the bird shows white patches on the undersides of its wings similar to those of a mockingbird, but it is squatter and less streamlined. The loggerhead is commonly seen on a perch with a good view, waiting like a hawk for small prey to happen by. Photo by Marvin Schwilling.

will attack soon after the female approaches and, when successful, he feeds the female.

In Kansas, breeding of the loggerhead occurs from as early as April 1 to as late as June 30, with a peak during mid-April. Nests are generally located in woody vines, shrubs and small trees in dense foliage four to twenty feet off the ground. They are bulky, constructed mostly of sticks and twigs, with a soft lining of rootlets, feathers or other cottony material. Thorny trees seem to be especially favored sites, probably because they provide protection from predation and a practice site for impaling behavior.

Both sexes help in the nest construction, and old nests from previous years are often used again. The female shrike incubates the eggs and during this time is fed by the male. Once the eggs have hatched, in about seventeen days, both female and male bring food to the young. It isn't long before the young shrikes gradually learn how to wedge or impale food items in forks, on thorns or other sharp objects, a behavioral trait that seems to have both learned and innate components.

In the protection of its young, no bird displays greater courage or more affectionate solicitude for its offspring. In his book, "History of the Birds of Kansas," N. S. Goss tells of climbing up to a nest of young shrikes on several occasions only to have the parents alight within his reach greatly excited actually biting his hand if given the opportunity. During such encounters, they were also very vocal making a peculiar crackling sound.

Additional observations have been noted by Robert Hartley in his article "Shrike Strike!" concerning territory and behavior of young shrikes near his home at Lindsay, Ontario.

"By June we were observing two pairs feeding young within two miles of our home," Hartley said. "It was a challenge to try and determine the boundaries of the territory, explain certain behavior patterns, and attempt to form an outline of the birds' summer activities. It was interesting to observe the pink-brown wash on the breast of the setting female and to listen to this same bird "crying" in the manner of a young bird, to be fed by the male. It was also perplexing to watch the male, at about hatching time, feed the female and then fly off to make ineffective passes at two house sparrows and a rock dove."

During July of that same summer, Hartley and his wife discovered additional shrikes in another area five miles away. These adults were observed feeding four very young nestlings, and simultaneously driving other full-grown birds out of their territory. They also observed what appeared to be offspring of an earlier brood of shrikes trying to make a living in a new territory that was already occupied, and not by shrikes.

"During a one-half hour period I saw the young shrikes attacked by a pair of eastern kingbirds and a great crested flycatcher," Hartley recalled. "Then to add insult to injury, they were driven away by a small *Empidonax* flycatcher." On this particular day, the Hartleys observed a total of seventeen shrikes in a two-hour period, a very large number in a given area.

During his observations, Hartley determined what he feels is primary habitat for shrikes. There were five dominant characteristics. The size was always approximately twenty-five acres and included grazed pasture, a minimum of twenty hawthorn trees six feet high with suitable hunting perches, and the last but important requirement . . . a minimum of human interference.

In Kansas, we probably still have some suitable habitat to support shrike populations and some areas even remain where human interference is not a factor. These areas, however, are becoming fewer and fewer as populations increase and destruction of our native habitat goes unchecked.

What is the current shrike status in Kansas? I asked Marvin Schwilling, non-game project leader for the Fish and Game Commission.

"Probably good," Marvin said. 'There appear to be a number of them around the state but any loss of habitat such as the miles of hedgerows that have been bulldozed out in the last decade can have an effect."

We know what the loss of one of these osage orange tree rows means to game birds such as quail or mammals like rabbits and squirrels. They have lost their home. Unfortunately, we often forget what effect this loss has on the countless species of non-game wildlife such as the shrike.

I don't mean to imply that the shrike is on its way to extinction. Far from it. But the shrike and more than 22,000 other non-game species in Kansas do need attention. Only scientific management of a variety of habitats can guarantee the future of the shrike and other non-game.

Governor John Carlin on April 18, 1980 signed into law the non-game check-off bill that will allow all Kansas taxpayers the opportunity to support an expanded non-game wildlife program. It will be available to you on the 1980 Kansas Income Tax form and will give you an option I think you've wanted for a long time, a means to really help our Kansas wildlife.

Hopefully, the shrike will never need an extensive restoration program that so many species are in need of. Maybe someday soon we'll start to live in harmony with the critters that make up our environment. I hope so because I sure get a lot of pleasure knowing, even if I've only seen one, that there is a little gray bird out there somewhere that sings like a songbird but thinks like a hawk—the loggerhead shrike.□

the YELLOW Pages	INDEX Page It's the Law 2 Letters 3 - 6 Magazine Name Change 7
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#### NONGAME ACT INKED

President Carter's signing of the Forsythe-Chafee Act has authorized the U.S. Fish and Wildlife Service to apportion \$20 million over four years to state fish and wildlife agencies for nongame conservation purposes.

The landmark legislation is named after the legislative sponsors—Rep. Edwin B. Forsythe (N.J.) and Sen. John H. Chafee (R.I.)—who provided the leadership that resulted in the law.

Apportionment of the funds will begin Oct. 1, 1981. States may use the funds to help plan comprehensive management programs that include all wildlife and to help implement those plans. The money may also be used to plan and implement strictly nongame management programs or to carry out special projects that benefit nongame, pending completion of a plan. Finally, the F-C Act directs the U.S. Fish and Wildlife Service to conduct a study of alternative funding sources to support the national nongame program after the fouryear funding authorization expires. The Service must complete the study and report its findings to Congress within 30 months.

#### + + + +

#### **KANSAN NAMED**

Missouri River Basin Commission (MRBC) Chairman Millard W. Hall has announced the appointment of David K. Peterson to direct comprehensive planning for water resources in the 10-state Missouri River Basin.

Prior to joining the Commission staff, Peterson was executive director of the North Central Kansas Regional Planning Commission, Beloit, for six years.

Among initial assignments as MRBC comprehensive planning director, Peterson will lead efforts to evaluate and revise the planning process mandated by the Water Resources Planning Act of 1965. The mandate charges the Commission to "prepare and keep current a comprehensive, coordinated joint plan" for water resources management in the 10-state basin. Peterson also will oversee the annual process of setting priorities for water projects and water-related federal programs in the Missouri River basin.

#### + + + +

#### CONSERVATION AWARDS WINNERS FETED BY WILDLIFE FEDERATION

The conservation efforts of several Kansans were recognized by the Kansas Wildlife Federation during a three-day meeting in Salina recently. The occasion was the 16th annual Conservation Achievement Program, sponsored by the KWF.

Garden City farmer and sportsman Walter Snell, a past president of the KWF, was named winner of the Governor's Award for Conservationist of the Year. Snell's involvement in soil and water conservation, wildlife habitat improvement, youth conservation education, hunter safety training, and environmental issues were cited during the ceremonies.

Other winners include:

Wildlife Conservationist of the Year — Lawrence R. Smith, Elkhart, for his wildlife habitat improvement work at Cimarron National Grasslands.

Land and Soil Conservationist – Robert A. Paris, who farms over 2,500 acres in Lane County, for his efforts in enhancing soil conservation on his farm.

Forest Conservationist — Houston Gray, Kansas City, Ks., for his conservation interests and accomplishments on his 24-acre tree farm.

Water Conservationist — Harris Ramsour, Alta Vista, for his efforts on 880 acres of farm land and construction of a pit system that controls pollution from a herd of 100 dairy cows by keeping animal wastes from stream flows.

Air Conservationist — Howard F. Saiger, Topeka, for his work as director of the Bureau of Air Quality and Occupational Health for the Kansas Department of Health and Environment.

(continued)

Youth Conservationist — Marc Branham, Lawrence, for his involvement in conservation through scouting and 4-H.

Conservation Educator — Wendell Mohling, Shawnee, for his environmental education efforts in the Shawnee Mission school district.

Conservation Communicator — Robert H. Fuller, an employee of the Soil Conservation Service in Garden City, for his public information efforts through radio, television, and print media.

Conservation Legislator – Sen. Jack Steineger, Kansas City, for his efforts as a legislator, including authoring a bill, now law, during the 1980 session that provides a state income tax check-off to nongame species management.

Conservation Organization — Pony Express Chapter-Soil Conservation Society of America in Kansas City for public educational projects sponsorship of the Mid-America Land Use Symposium, and promotion of sound conservation legislation.

Hunter Safety Instructor – William McAdoo, Topeka, who taught the first class ever conducted in Shawnee County and organized the county's hunter training program.



It's The Law.

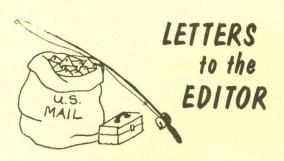
Wanna make a bad investment? Try hunting or fishing without a license ... or shooting a bird out of season ... or shooting the wrong bird. The cost may vary but, whether the fine is \$20 or \$2,000, it's money that can always be better spent elsewhere. And there are other costs, too, besides money. Following are four examples of bad investments:

- Gene Allan York, Asbury, Mo., discovered the real cost of shooting a bald eagle. U.S. District Court Judge Frank Theis fined York \$1,500 and put him on probation for two years, during which his hunting privileges are suspended. In his decision, Judge Theis allowed York the option of substituting \$1,000 of the fine with 200 hours of work for the Pittsburg (Ks.) Humane Society.

- It took awhile, but Greg L. Carriker, Coffeyville, finally paid for a deer poaching violation dating back to Dec. 5, 1978. The case had been under investigation since spring of 1979 but Carriker had been out of the state for much of that time. Coffeyville police picked him up earlier this year on an arrest warrant for the illegal deer. The suspect pleaded guilty to the charge. Montgomery County District Court fined him \$350 plus court costs and placed him in county jail for six months.

- Taking a pheasant several weeks before the season opened cost a Lone Wolf, Okla., man \$85. Odell H. Howell was charged by GP Bruce Peters, Lakin, with taking a pheasant during closed season and hunting without a valid license. Judge Clara Shore fined Howell \$50 for taking the pheasant, \$25 for not having a license, and \$10 court costs.

— Willie E. Jones, Sr., Iola, paid a total of \$110 in fines and court costs for attempting to obtain more than one deer permit for the 1980 season. Jones applied for both a bow permit and a firearms permit, and forfeited the fees he submitted with each permit application. The fines were levied in Allen County District Court.



We welcome letters to the editor, and ask only that they be kept as short as possible. Address correspondence to: Editor, Kansas Fish & Game, Rt. 2, Box 54A, Pratt, Ks. 67124.

#### LAST RITES

On Oct. 3 I saw a good friend of mine dying and, since the Kansas Fish and Game will not likely write an obituary, I'd like to take this time to do so.

My friend is a very old inhabitant of this community and this friend has been partially responsible for the settlement of Barton County and the county's pros-Without this friend I perity. would not have had the many enjoyable hours of fishing and camping which I have experienced. This friend has helped many species of wildlife survive drought and blizzard and even provided homes for the animals' offspring. My friend has given so much of its lifeblood that now this friend of Barton County is dying of anemia and only in death will people remember and wish that life could be restored. My friend is the Wet Walnut Creek which now shows the cracks of death in her bed north of Great Bend.

> John M. Snyder Great Bend

#### **HERON ID: ROUND 3**

Supreme Court appeal on "Mistaken Identity" letter in September/October magazine.

Although immature yellow and black-crowned herons look almost the same, the yellow-crowned is the bird with the white-fringed primaries and secondaries, whereas the black-crowned is whitetipped only. The "Audubon Society Field Guide" points out the difference on plates 21 and 22. I have feathers of both species.

I believe Mr. Lloyd D. Moore was right and Mr. Schwilling wrong. So much for trivia. Your magazine is great!

#### Pete Neumeister Shawnee Mission

#### **RARE DUCK**

I would first like to say you have a very readable magazine. Your articles should be of interest to both hunters and nonhunters alike. I also must commend you on the practice of putting game law violator's names in print. I hope, as I'm sure you do, this is a deterrent to others.

I am enclosing a photo of a drake black mallard I shot at Glen Elder Reservoir last season. Blacks are rare in Iowa, also. We saw only one last season with a flock of greenheads. My two hunting partners and myself spotted a total of eight at Glen Elder last year. To me, shooting this black duck was as great a thrill as shooting my first Canada, which was also at Glen Elder.

We only hunt drake mallards and Canada geese, but this was a nice bonus for me. We have hunted in Kansas for five years



#### Page 4

now, and the people of Kansas, especially Cawker City, have shown us the best in hospitality.

> Roger D. Hansen Council Bluffs, IA

#### APPRECIATIVE

Just a short note to let you know that I appreciate your magazine more than you might imagine.

I was born and reared near Cunningham some 62 years ago, so went through the Dust Bowl era and now, here in eastern Kansas, have gone through the big flood of 1951 plus a few lesser ones. So I know the vagaries of Kansas and what its wildlife has to contend with. I still like the prairies where you can see for miles to the horizon in preference to being hemmed in by the big trees here. Although I've travelled the states quite a bit I still think the beauty of a western Kansas sunset can't be beat.

#### Dora Belle Hatch Leavenworth

#### **RIGHT AND WRONG**

If that's a mule deer on the September/October cover I sure would hate to go pheasant hunting with whoever authorized this caption.

Most of the magazine is very interesting.

#### Mrs. A. Pearce Dighton

You're right. We were wrong. We know the difference between the two but got our signals mixed up when we packaged up pictures and copy to send to the printer. It's embarrassing for us, especially since we vowed to eat the next misidentified critter. But it could have been worse. We could have put a crow on the cover.

#### COUGAR COUNTRY

I read with interest the article, "Kansas Cougar," in the September/October magazine.

There have been cougar sightings reported along the Wakarusa from our farm west, south of Lawrence. Very few people ever get into this area as there are no roads nearby. A very good deer population has developed. In fact, this year their activities in my corn fields are more noticeable than ever (which I do not mind). We even have the largest buck I have ever seen-ten points last year. He survived last year's hunting season and is still around, keeping hidden except for tracks. I have seen him only two times. I have seen five does at one time crossing the yard by my house earlier this year.

#### John C. Gage Eudora

#### **RENO COUNTY COUGAR**

As a subscriber to KANSAS FISH & GAME, I found George Anderson's article "Kansas Cougar" most interesting. The reason for my interest is that I and a friend, Mike McEntarfer, who now resides in Las Vegas, Nev., are two of the apparently choosen few who claimed to have observed a cougar in Kansas.

This sighting occurred in the summer of 1959 on a very hot day, perhaps in July. The area was to the northwest of Hutchinson. Mike and I were year-around varmint hunters during our junior high and senior high school years. We constantly hunted jack rabbits, which were in abundance at that time, prairie dogs, and coyotes. Nothing uncommon about that except we hiked every inch without a vehicle, enabling us to see game that road hunters often missed.

On this hot day we had hiked from Hutchinson northwest to the flood control dike, then west to a machine shed. We had shot several jack rabbits along the way but the temperature was becoming somewhat uncomfortable. We got a good supply of cold water from an old hand pump at the shed and decided to do an about face and head for home. We backtracked our route since it was the shortest way home.

Upon topping the flood control dike, we crossed a large open field which, at its south boundary, harbored a deserted homestead where only a chicken coop and a large clump of bushes and trees remained. We rested in the shade of these trees for a few minutes and then began walking toward what is now 56th Street.

As we crossed the road, I glanced over my left shoulder and spotted movement from the trees where we had just been. I turned around and saw a large cat running east, about 75-100 meters away. I hit Mike on the shoulder, pointed toward it, and he uttered a few pronounced words.

The cat was a pretty sight, still clear in my mind today. Its fur was short, light tan in color. The tail was long and slender with a round tip. The body appeared muscular and the skin and fur to the front of the rib cage shook each time its feet hit the ground. The feet were large and ears were short and rounded. This I noticed when the cat stopped at the fence but it did not look at us.

While I was watching the cat. Mike had kneeled in the roadway and had taken aim with a .222 Remington. Not to be left out, I took quick aim, standing, with my heart pounding. In our excitement, we both fired quickly. The cat somersaulted into the air and landed on its back on the top barbs. The wires were loose and it became entangled for a moment, then fell to the other side. By that time we were running his way. The field to the other side of the fence was weed covered and not plowed under. We reached the spot at the fence where we hoped to find our prey but it had disappeared. We kicked the weeds and walked the whole field, but to no avail. We found no tracks on either side of the fence since the ground was sunbaked. There was no hair on the fence, no blood, nothing. We returned the nest morning at daybreak for another futile search. And, for all our hunting days that followed, we never spotted another, not even a bobcat. Few people seem to believe this story, but we know that we've seen a creature in Kansas that few have seen.

#### Gary Hutchison Hutchinson

#### LAY LOW, CAT

I read and enjoyed George Anderson's interesting and informative article, "Kansas Cougar." Of particular interest is the last paragraph wherein Mr. Anderson states that the confirmation of a cougar sighting in Kansas would be "a piece of unexpected good luck for Kansans and the cougar."

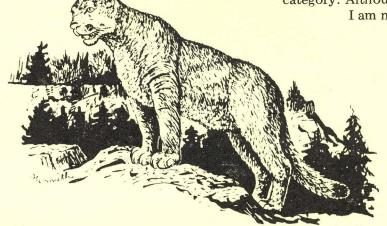
While a confirmed sighting would undoubtedly be exciting

for Kansans, I'm wondering what the insinuations of the same would mean for the Kansas cougar.

#### **PRO-COUGAR**

I just had to write and compliment you on the very fine article entitled, "Kansas Cougar."

I really enjoyed it, and I am also in the "Pro-cougar" category. Although I am not



Confirming that these cats actually exist in the wild in Kansas will almost certainly bring out the latent big game hunters. Can conscientious hunters and game management deter their effect? In the article, deer hunters Gray and Rawlins attempted to shoot for no apparent reason what they say was a cougar but were frustrated in that attempt by a firing pin malfunction.

Pessimistic? Perhaps so, but we are talking about a life form that developed over countless millenia and which man is decimating in what, by comparision, is a mere snap of the fingers.

I, like Mr. Anderson, am "procougar." I fervently hope there are cougars in Kansas. I hope also that, if he's there, he continues to hide that fact from us. I'm convinced it's his only salvation.

> Joe R. Martinez Topeka

among the fortunate few, I have heard first-hand cougar sighting reports.

Thanks for the terrific magazine.

> Steve Lacer Junction City

#### WALNUT RIVER CATS

I enjoyed reading your article, "Kansas Cougar." I've heard many tales of cats in Kansas along the Walnut River from the older folks.

My wife called my attention to the sketch on page nine that didn't correspond to the story. Quoting from page seven: "Unlike dogs, cougars usually eat through the rib cage first, taking the heart, liver, and lungs." The sketch shows the cat eating on the rear section.

Keep up the good work. I really enjoy the photographs.

E. E. Beye Whitewater Page 6

#### MORE ON COUGARS

Last January, myself and three other friends were hunting pheasant six miles southeast of Abilene. As we made our way through the underbrush, two shots rang out and someone yelled, "Coyote!" In the next few moments, more shots rang out and there was more yelling.

After everything settled down, two of the hunters said they saw a mountain lion! They definitely saw the cat! We returned to the landowner and told him what had happened and he told us that there had been rumors of a cougar.

We did not report the incident, but you don't have to convince myself or my friends. There are cougars in Kansas... or at least one.

#### Tom Forbes Emporia

#### **AND MORE!**

In your September/October issue, a portion of the "Kansas Cougar" story reads: "Unlike dogs, cougars usually eat through the rib cage first, taking the heart, liver, and lungs. Dogs, after pulling a deer down will most often attack the rear and buttocks."

Now, on page nine the picture shows a cougar attacking the rear of a deer. That's all I want to point out.

Do keep up your good work on the magazine. You make it very interesting.

> Perry Maus Garden Plain

#### INFORMED VOTERS SHUN REASONING OF "ANTIS"

"It is our very strong conviction that when people learn the biological and wildlife management facts of life they unequivocally support hunting and trapping," says the Wildlife Legislative Fund of America (WLFA).

This month, the support of the public for "consumptive" uses of wildlife has been measured at the polls in two states. South Dakotans were to vote Nov. 4 on a statewide initiative placed on the ballot by anti-hunters to outlaw dove hunting in that state. At the same time, Oregon residents were deciding at the polls whether to allow trapping to continue in their state.

Although the outcome of those votes was not known as this was written, some pre-election day work done by the WLFA and other sportsmen in the two states yielded some interesting results.

In an extensive voter attitude survey in South Dakota, the WLFA found that the higher the voter's level of knowledge the more likely he or she would be to approve dove hunting as a legitimate sport. The differences reported in the survey are dramatic: 82 percent of the informed vote is for dove hunting, while only eight percent of the uninformed vote is for it.

Another survey tested the level of knowledge about and relevance of the dove campaign to the nationwide anti-hunting movement.

"We wanted to know whether the voter's decision about dove hunting would be affected if he or she knew it were part of a campaign to stop all hunting," said the WLFA. The survey showed that such knowledge would have a dramatic effect, enough to win the election for pro-hunting interests.

The Oregon research showed equally clearly the relationship between biological and wildlife management knowledge and support for trapping. Timber and agriculture are major industries of the state. The use of trapping as a tool to control populations of species which can damage those crops must be realized by people who decide the issue—the voters.

"This conversion-by-the-facts phenomenon is precisely what produced the two-to-one vote for trapping in the 1977 Ohio statewide initiative," the WLFA reports. "The American people will support hunting and trapping. Surveys which seem to show the opposite really show that the majority of the people are uninformed."

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#### STATEWIDE GROUPS CATER TO FURBEARER HUNTERS, TRAPPERS

Furbearer hunters and trappers in Kansas who are interested in keeping in touch with their peers have a couple of statewide organizations that can help—Kansas Fur Harvesters and the Kansas Federation of Houndsmen.

For more information, contact: Kansas Fur Harvesters, P.O. Box 4336, Topeka, KS 66604, or Kansas Federation of Houndsmen, Bill Pike, Rt. 4, Emporia, KS 66801.

#### EAGLE NESTS OBSERVED

#### By MARVIN HAMILTON Southwest Law Enforcement Supervisor

Kansas — the land of plenty and home of the free — is also home for a few nesting eagles. In Kansas, there are two eagles of general distribution at different times of the year. Bald eagles are most often seen in the fall as they migrate south. The golden eagle is the only eagle observed nesting in the state; three nesting sites were observed in 1978.

Golden eagles nesting in Kansas lay their eggs in March. Normally, two eggs are laid but three eaglets were observed at one of the sites, a rare occurrence. Eaglets hatch in April after a four-weeklong incubation period. By the third week in July young eaglets are able to fly on their own, after several weeks of wing flapping at the edge of the nest. It takes about three months for eaglets to be fairly well feathered out. Both male and female gather food for their young, which are ravenous.

Nests I have observed have always been located in a tall cottonwood tree in a very isolated area. These nests were extremely large, measuring three to four feet across.

While the bald eagle is a scavenger, golden eagles are considered great hunters. Jack rabbits are apparently their favorite food in Kansas. They also feed on rats, mice, and prairie dogs and are quite beneficial in keeping these rodents under control.

It is a shame to see this great bird shot by someone who does not know or consider how beneficial this bird is in nature's scheme. Both bald and golden eagles are now protected by federal and state law. It is illegal to have feathers or other bird parts in possession, with the exception of American Indians, who can lawfully obtain feathers for religious and ceremonial purposes after applying to the federal game agent's office.



Farmers, sportsmen, or anyone who knows of a place where eagles have nested in the past but have not reported this site to the Fish & Game Commission should contact a local game protector. Landowners who have nesting eagles on their property should restrict public access to the area since adult eagles will abandon the nest permanently if harassed.

Any person who witnesses an eagle violation and reports it to authorities may receive half the fine if his or her information results in a conviction. The fine may be as much as \$5,000. Violators are sent to U.S. District Courts, located in Wichita, Topeka, and Kansas City.

#### SAME MAGAZINE - NEW NAME

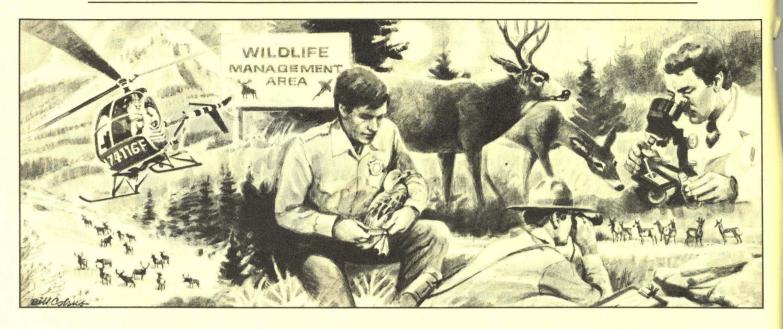
We're about to change our name. KANSAS FISH & GAME magazine will become KANSAS WILDLIFE with the next issue.

23

The contents of the magazine will remain the same: wildlife profiles, fishing and hunting stories, environmental issues, fish and wildlife management, colorful art, superb color photography, and the like. But we think the new name more accurately reflects the wide variety of wild residents and outdoor experience in Kansas.

So, when your January/February 1981 magazine arrives, it should look familiar despite its new moniker.

## America's Best P.R. Program



ctually, America's best P.R. program has nothing to do with public relations. It's the Pittman-Robertson, or P-R, program that for over the past forty years has been the financial backbone of wildlife conservation in the United States. To date, the P-R program has provided more than \$1 billion for wildlife restoration activity.

The program is funded by manufacturers' excise taxes on sporting arms and ammunition and archery equipment. Receipts are apportioned among the state wildlife agencies for use in biological research, habitat acquisition and improvement and for programs to restore species to new areas. Some 33.5 million acres of wildlife land has been preserved as a result of the P-R program.

Whether sportsman, birdwatcher, or both, most all Americans enjoy and appreciate our tremendous wildlife heritage. The Pittman-Robertson program is one big reason why we still can, each in our own special way.

For more information write to NSSF at the address below.

National Shooting Sports Foundation 1075 Post Road Riverside, Conn. 06878



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Bring someone home for the holidays – and all year long. Give them a gift subscription to KANSAS FISH & GAME . . . a little bit of Kansas in each and every issue.

KANSAS FISH & GAME magazine offers 40 pages of articles and superb color photography focused on Kansas wildlife in a way no other publication can. Endangered species, feature articles on many of the different species of Kansas wildlife, the passing of rare corners of unique wild country, finding places to hunt and fish, as well as the political and economic happenings that affect wild Kansas.

A great gift for students, teachers, hunters, fishermen, birdwatchers, environmentalists, or arm-chair naturalists . . . anyone with an interest in wildlife-wild country.

A FREE November-December issue will be mailed along with a gift card to each recipient on all paid orders received before December 20th! So order your gift subscriptions NOW! and get an extra issue FREE!

1

# The Sharptail: Will he come home to Kansas?

Bob Mathews Photos by Frank Heidelbauer t's not hard to understand why the plains bison took most of the press and public notice among early pioneers crossing the prairie. Huge herds of these massive creatures inhabiting a new land overwhelming in its vastness presented unforgettable scenes that were well worth writing home about.

The endless vistas of Kansas and other plains states appeared lonely and frightening to human emigrants reared in eastern forests. To some, the midland prairie may have seemed as featureless as it was vast . . . except for the buffalo herds. But a variety of habitats supported a diverse wildlife community.

The prairie grouse of pre-settlement Kansas exemplified that diversity. Greater prairie chickens, lesser prairie chickens, and plains sharptail grouse each occupied a particular niche that was subtly different than that of its cousin. Greater chickens preferred the taller grasses of the Flint Hills and eastern Kansas. Lesser chickens were most common in the sandsage prairie of the southwestern region. Sharptails occupied the mixed grasses and brush north and west of prairie chicken country. Although the distribution ranges of the three grouse species may have overlapped on the edges, each primarily inhabited a region particularly suited to its special needs.

Lesser and greater chickens exist in huntable populations in the state today, but the sharptail has been gone for some fifty years now. Why did that happen? How were prairie chickens able to regenerate under pressures of human settlement, dramatic changes in land use, and the disastrous 1930's while the sharptail was not? Was it the uncompromising lifestyle of the bird itself? Was it simply because Kansas sharptails lived on the southern fringe of the main North America sharptail range and were always subject to wild population fluctuations that finally swung too far? A combination of these and other factors?

Questions about the sharptail may all be addressed more systematically if a project proposed by Fish and Game biologists is allowed to proceed. These preliminary questions all lead to the proposed project's ultimate question: Can we re-establish sharptail grouse in Kansas?

Although precise information on the range and relative population of sharptails in pre-settlement Kansas is sketchy, several early naturalists reported the bird was common in the northwest quarter of the state. One observer plotted the sharptail's range extending south and east from the northwest corner over roughly onefifth of the state's total land area. Dr. Francis Snow, a pioneer Kansas naturalist, commented that sharptails were often seen as far south as Garden City as recenty as the 1920's.

Despite the minor disagreements today about the exact historical range of the species, there is substantial



documentation to prove their existence in the state until the 1930's. By the time the Dust Bowl decade arrived the plains sharptail already was being pressured by human settlement, overgrazing of native pasture, and conversion of rangeland to cropland. Even as early as 1891, ornithologist N. S. Goss was predicting a bleak future for the sharptail in Kansas.

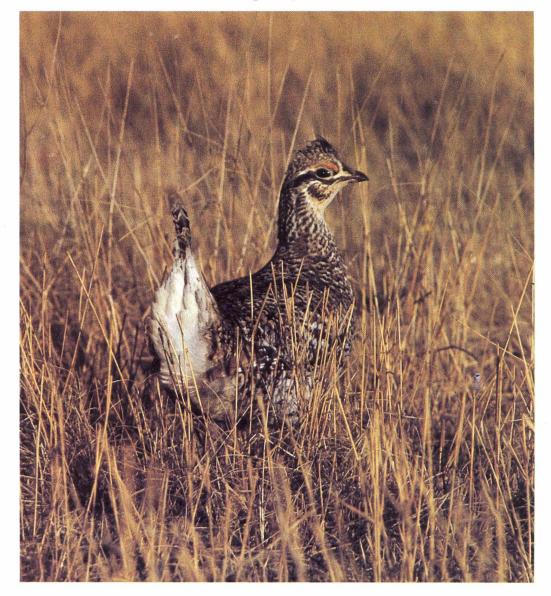
"Being a bird of the wild prairies and the open woodland," he said, "it is gradually retreating westward as the settlements advance, and will soon be a rare bird, to be looked for only in the sand hills and unsettled portions of the state."

Of course, Goss was right. Prairie wildlife reacted to settlement and farming in much the same way as forest wildlife further east. Wilderness prairie animals like the bison, elk, and pronghorn began to decline almost immediately. The response of the sharptail may not have been as quick nor as dramatic as the decline of the large mammals indigenous to the state, but the ultimate impact was the same.

The sharptail bears his name for obvious reasons. He differs from the more familiar prairie chickens in a number of ways: his neck sacs are smaller and more purple than the chicken's pinnae or ear tufts; he has V-shaped markings on his breast, not the barring of the chicken, and he is slightly smaller. The sharptail's extirpation from Kansas probably involved the creation of somewhat isolated populations via habitat destruction, surmises Randy Rodgers, Fish and Game biologist who proposed the project to study the feasibility of re-establishing the bird. As more native prairie was broken out and converted to cropland, the sharptail's range was fragmented into smaller and smaller units. Local sharptail populations became smaller and more isolated, cut off from their major range in plains states farther north. Uncontrolled hunting, especially that which occurred during the spring when sharptails congregate on their breeding grounds, may also have played a hand in wiping out the shrinking local populations.

After the 1930's, sharptails were unable to replenish their numbers since the fragmented populations existing in the state were separated from the major range further north by man-made interruptions in the landscape.

Although they have been absent from the state for



several decades, there still are occasional reports of sharptail sightings in northwest and northcentral Kansas. Biologists are generally skeptical when they hear those reports, though. For one thing, the closest healthy population of sharptails is in the 20,000square-mile Sand Hills region of northcentral Nebraska. And Nebraska biologists contend that sharptails are very rarely seen south of the Platte River, which lies well north of Kansas' northern tier of counties. Another possible explanation for the occasional Kansas sharptail reports is the return of the prairie chicken in recent years to some areas as far west as Decatur, Norton, and Gove counties. Since prairie chickens and sharptails closely resemble each other in appearance, there is a good possibility that the two grouse species are sometimes confused.

Still, there is some reason to believe that sharptails can exist in some parts of the state, whether they occasionally wander inside our boundaries or not.

"I feel quite strongly that sharptails could re-estab-

lish if there are enough large expanses of pastureland," says veteran Fish and Game biologist Marvin Schwilling. Finding potential suitable sharptail habitat is one of the first, and thorniest, problems addressed by the proposed sharptail re-establishment project.

Among North American prairie grouse, the sharptail occupies the largest geographical area and contains the greatest number of subspecies. The species once occurred in at least twenty-nine provinces and states of the United States and Canada. They now are found in twenty-one, having been extirpated from eight states (including Kansas) at the fringe of their historical range. Their broad distribution and variety of subspecies reflect the many ecological conditions in which they exist. As a species, the sharptail's habitat varies from sagebrush prairie to aspen parkland and even boreal forest-grassland mixtures.

Each of the subspecies, however, shares a common preference for open rangeland interspersed with brushy areas. Most studies indicate sharptails can get



by nicely in terrain that consists of from five percent to more than fifty percent brush, with the balance in grassland and crop interspersions. Any more or less brush than those two extremes and they are rarely found.

There have not yet been any habitat studies in Kansas aimed specifically at mapping potential sharptail territory, but Rodgers is optimistic that sharptails can be successfully re-established.

"While these populations would again be somewhat isolated," he theorizes, "modern regulations would be sufficient to protect them. Modern grazing systems are increasingly common in the sharptail's original Kansas range, too, further increasing the probability of successful re-establishment." Among areas of the state with some promise as potential sharptail range, Rodgers lists the upper reaches of the Saline, Solomon, and possibly the Smoky Hill rivers, a region reasonably well-endowed with pheasants but currently lacking any species of native prairie grouse.

While pheasants are the most popular game birds in the state, biologists expect there would be no significant competition between ringnecks and sharptails. The pheasant is more devoted to life in and around agricultural crops. Sharptails, on the other hand, will feed on grain crops if they're available but prefer a diet that leans more toward naturally-occurring weeds and forbs.

Harsh winters pose little problem for the sharptail, a bird that is better acclimated to the weather extremes on the plains than even the hardy pheasant. A heavy undercoating of feathers on its body and legs, special nares in the beak for cold weather breathing, and modified feathers along the toes forming natural snowshoes for winter traipsing, all combine to equip the sharptail nicely for the coldest winter. In regions of the northern plains where snow can bury ground vegetation, the sharptail commonly feeds on tree buds above the level of snow cover. When temperatures plummet and blizzards howl, the bird burrows beneath the snow's surface to weather out the worst of winter's storms. All in all, it's one tough bird that has relatively little trouble dealing with the natural elements.

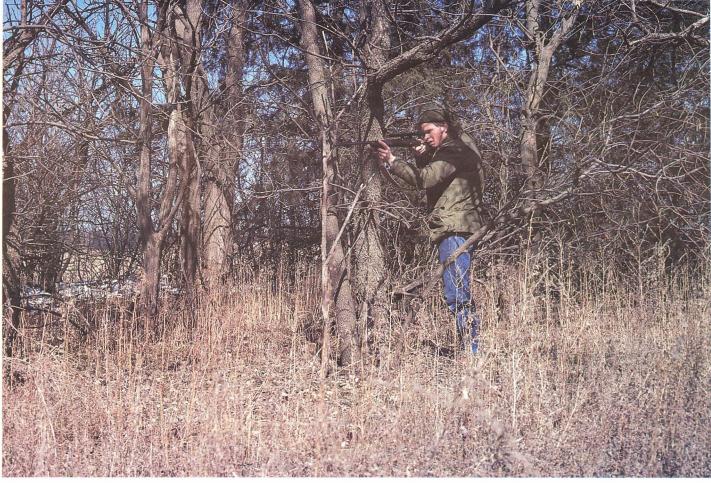
Like most wild creatures, sharptails are opportunistic feeders. Although their menu may include up to 300 different food items, they apparently prefer a few standard offerings. In Nebraska, sharptails subsist largely on the fruits of the wild rose, plum, poison ivy, goldenrod, juniper berries, ground cherry, nightshade, and snow berry through autumn and winter. If crop fields are nearby, they feed there to supplement wild foods. During late winter, they munch on tree buds and rose hips. They obtain most of the moisture for their diets through the succulent foods they eat and have no great need for standing drinking water. Beetles, crickets, grasshoppers, and other insects are important summer foods.

Once established in an area, the sharptail's lifestyle makes it relatively easy for the wildlife manager to gather distribution and density information due to its spring breeding displays. Like the booming ground of the prairie chicken, the dancing ground of the sharptail is the local population's community activity center. From mid-March to late May, males congregate on the dancing ground, usually located on a small hill or rise with little standing vegetation, for an elaborate courtship display that resembles that of the prairie chicken. Instead of the resonant booming sounds produced by prairie chickens, the sharptail utters a low cooing call by expelling air from the purple-tinged air sacs on the neck. There also is much strutting, blurry-quick stamping of the feet, mechanical clicking of the tail feathers, and aggressive charges with wings drooping and tail erect.

The attending hens make their choices, mating is accomplished on the dancing grounds, and hens retreat to their nests—modest hollows located in thick clumps of grass or near shrubs and lined haphazardly with grass, leaves, and feathers. After three and one-half weeks of incubation, the eggs begin to hatch. Clutch size usually averages about a dozen. The precocial chicks grow rapidly on a diet consisting almost entirely of insects. By ten days of age they begin testing their wings, and by four weeks they are well-feathered and able fliers. At about three months of age, the young grouses' diets switch more to succulent plants, dry seeds, and fleshy fruits and away from insects.

Whether we ever get a chance to see sharptails dancing, nesting, and growing in Kansas again depends on several variables. The first hurdle involves approval by the people who control the fiscal year 1982 budget in which the proposed sharptail project is included. Locating suitable sharptail habitat will be another major challenge, as will the acquisition of seed stock, possibly from other states with healthy populations. If and when that stage of the proposed re-establishment is reached, subsequent efforts would primarily involve periodic monitoring of the reintroduced birds . . . and their own abilities to survive in the new surroundings. If the project is undertaken, it will be several years before it can be labeled "success" or "failure." But the successful return in recent years of some other historical members of the Kansas wildlife scene-deer, wild turkey, and pronghorns-has given residents of the state a special appreciation for the real value of those creatures that were here before we were.

The photographer, Frank Heidelbauer, is a long-time resident of South Dakota where the sharptail is still hunted. Frank is a tireless worker for Ducks Unlimited, a deadly duck hunter, former world goose calling champion, and, as these pictures show, a superb wildlife photographer.



# Rabbits on the Sit

he farmer that works the ground west of my house isn't quite as spry or as hungry as he once was. I imagine there was a time when he used his forty acres along the Ninnescah for pasture as most of the other landowners along the river do, but now I think he'd rather have it raising quail than cattle. Most of the timber was bulldozed off a number of years ago and pushed into three house-sized brushpiles for burning, but the owner never got around to starting the fire, and the brush has slowly grown into the landscape. The forty has come up in sand plum, goldenrod, and native grass, and it supports more than its share of pheasants, quail, deer, and dickeybirds. Most of all, though, it's a rabbit place.

These rabbits are an interesting problem for a hunter. The cover is unusually dense and covers a rabbit's retreat almost instantly. And there are those brushpiles. It's hard to believe even a rabbit could get into them. A beagle never could. Neither could a fox, farm feist, owl, coyote, or bobcat. About the only rabbit predator that could follow a cottontail into one of those piles would be a weasel, and judging from the relaxed attitude of most of the rabbits, it's been a long time since the last weasel visited. Once snow is on, the rabbits stay within half a dozen jumps of one of the three fortresses. If something seems threatening, there is a momentary flicker of movement, and no rabbits.

On toward the end of January when I get a little tired of busting brush and walking cross-grain through corn stubble after a pheasant I'm not likely to catch anyway, this forty and its rabbits begin to exert a little attraction. The hunting is close to home, a little more relaxed than most of my fall expeditions, and it seems to fit my usual lazy mid-winter mood. Sometime during the first new year thaw, I case my shotgun and head over to the cover patch with a little bolt-action .22. It's a plain little rifle, older than I am by a few years but well cared for and more accurate than I can hold it. The two of us work those brushpiles. It's fifty yards or thereabouts from one pile to the sunny southern margin of the next. Perched on one of the bigger branches, I can see down into the goldenrod and ragweed in every direction. It's usually cold up on top, but on a clear, fairly calm day, the snow on the south side of the piles often shows signs of softening, and every rabbit in the area slips out to absorb a little sun. When there are four or five in sight, I start to work.

For a hunter who likes to put a lot of meat in the

freezer, this style of hunting can be a disappointment. Like most other small game animals, cottontails are most abundant and vulnerable just after the end of breeding season in late summer, but I have a hard time getting excited about rabbit hunting so early in the year. The best rabbit cover is an impenetrable tangle of sequoia-sized ragweed, green raspberry canes, and rank grass, and the cottontails are scattered and well hidden. Some of my reluctance may also be a hangover from a family caution with tularemia. Although a cottontail with rabbit fever can be cleaned and eaten safely if handled properly, we've always been inclined to put off our serious rabbit shooting until a month of winter has thinned most of the sick rabbits out of the population. And tularemia or not, there's just too much to do during October, November, and the first half of December to pay much attention to cottontails. After the glamour seasons wind down and a month of frost and snow has flattened some of the cover, there's still plenty of time for rabbit sniping.

There are a lot of ways for a rifleman to approach rabbits. In among my brushpiles, sitting up on a high vantage point seems to work best. A hillside or deep ravine can be hunted the same way, especially when there is snow on the ground so that the rabbits show up well. The best time to hunt such cover is during late afternoon or early evening. Rabbits often move to the edge of heavy cover to catch the late sun, and activity nearly always picks up as the shadows deepen. If there are no high places near a good piece of rabbitat, a rifle hunter can bring his own. A couple of enterprising Missouri shooters I've heard of started carrying folding aluminum step ladders a few years ago. They say the ladders are easy to pack and make a great perch in the tall bottomland cover they usually hunt.

If rabbit activity in the brier patch is a little slow, it may be time to get somebody else to wade through the cover and stir things up. The hunters involved should get into their positions as quietly as possible, and the driver should pause for a few minutes before he starts rattling the brush so that spooked rabbits have a chance to settle themselves. Actually, the hunter down in the cover isn't really a driver since he doesn't push a mass of cottontails past the man on the stand. Rabbits try hard to stay in the one- or two-acre core of their home range and will side-step an approaching predator whenever they can. As the driver moves through a good weed patch, he'll usually push a bow-wave of rabbits ahead of him, most of which quickly slip off to one side and let him go by. He may not see them, but the man on high ground should have a field day. Obviously, the shooter should take great care to keep his field of fire away from his approaching partner.

Watching a driver move through a piece of cover and its rabbits will give you an inkling of the problems a rifleman faces when he tries to walk up a rabbit on his own. Farther east where rabbit hunting has lured generations of intensely interested hunters, stalking a cottontail is especially tough, but in most of Kansas, rabbits don't see much hunting pressure and are a little

A typical sitting shot at a cottontail. This rabbit feels secure one jump away from the safety of overgrown equipment and has stopped to examine his pursuer. He may never realize his mistake. Photo by Bruce Kintner.



easier to approach. An inexperienced rabbit may pause thirty or forty yards after he flushes to examine his back trail, especially if the hunter who kicked him up remains motionless. With practice, a hunter can even begin to pick out rabbits before they flush. It's a matter of looking where they're likely to be—usually deep in a clump of grass or in a corner of heavy brush—instead of where you would like to see them. It's easy to let your eyes drift toward open spaces without examining the cover on either side, and when that happens, you're bound to stumble over a rabbit that held in thick cover until you stepped on him.

Once in a while, it's possible to flush a cottontail out of narrow shelterbelt or isolated brushpile and take him on the run as he crosses the surrounding pasture or plowed field. The fine-honed rifle shots who play this game consistently usually use .22 pumps or automatics and are in it more for the glory than the meat, although they can score surprisingly often if they have time for four or five shots.

For some odd reason, hunters who use beagles don't seem to lean much toward .22s. Their preference for shotguns would make a little more sense if they were breeding their dogs to push rabbits hard, but the trend among field trailers and meat hunters over the last decades has been just the other way. Beagles are getting smaller and slower all the time. Any rabbit with half his growth will run away from a modern beagle and fall asleep waiting for him to catch up-which is exactly the way beagle men want it. An unhurried cottontail usually moves in an uncomplicated circle right back over the feet of the waiting hunter. If he's pushed, he's likely to go to ground in a chuck hole somewhere. Beagle men and riflemen share a common desire-they want a rabbit to be comfortable while he's being stalked. That way, he's likely to get careless.

Last Christmas, I was waiting on a rabbit race with a good friend of mine. John had kicked a cottontail out of a shallow ravine, and the hound man we were hunting with put his beagles down on the hot track. The two of us took a good position and enjoyed the dog music for ten minutes or so, listening as the rabbit made a wide swing across the creek bottom with the two dogs far behind, unerringly following the scent. They turned him on the far side of the valley.

"Hear that chop mouth dog!" the hound man said from up the ravine. "He won't track a lick or do a damn thing but follow little Sam, but you always know where he is."

We watched the edge of the cover down the hill from us as the dogs came on. There was a flicker of movement up the far bank not more than thirty feet from us. It was the rabbit, an old hand by all appearances, lolligagging along a couple of hops at a time, completely unconcerned about the uproar behind him. John drew down on him with his 20 gauge, then hesitated. He was too close and too easy for a shotgun. There was a long pause. It looked as if the rabbit might work his way up behind a tree which would expose his head while shielding his hindquarters from shot, but the suspense in the meantime was unbearable. When the chance finally came, John's palms were wet and his eyes blurred from five minutes of staring down the rib. The shot went two feet high, and the rabbit took off for other environs, suddenly much wiser concerning beagles and their masters. John cussed and raved for a good ten minutes, but it wasn't really his fault. At a range of five yards, it's tough to catch a rabbit with the edge of the pattern. Trying to hit him "just a little" generally means you'll miss him altogether.

Many of the shots a beagle gives a hunter demand a 20 gauge or a .410, but on most good hunts, there will be a few chances made to order for a rifleman, especially in good cover that hasn't been heavily hunted. A lone hunter can cover himself both ways by carrying a .22-shotgun combination, but when there are other hunters along, a better solution is to encourage one man to carry a .22. He can save rabbit hams that a close-range shotgun blast would pulverize.

The right .22 for every kind of rabbit hunting probably doesn't exist. In narrow creek valleys, the shooting can turn into a scaled-down varmint hunt with a hunter positioned on a hillside where he surveys an entire opposite slope and can take anything that moves within eighty yards. Such shooting demands the last razor's edge in accuracy from a rim-fire rifle and its owner. A good scope with some magnification is useful, and the really finicky rifleman may even outfit himself with match ammunition and a sporterized target rifle.

Most .22 rabbit hunting isn't this precise. It demands quickness with a rifle and hunting skill, not Camp Perry marksmanship. A pump or automatic often fits a rabbit hunt better than a bolt-action since the hunter can maintain his sight picture while he shoots, a valuable advantage when the first shot misses and the intended target gets a head start across a plowed field. A scope is also an advantage because it's hard to see iron sights when they're on a background of dead grass and rabbit fur, but there's no reason for anything more than 2X.

No matter how carefully you choose your shooting equipment, you're handicapping yourself with a .22 on a rabbit hunt. That's not all bad. A rifle enforces a fundamental change in a hunter's style that's welcome after a season of beating out cover patches and seeing only the hindparts of their residents. A rifle hunter unconsciously starts putting his feet down with more care, listening, watching. Like generations of American hunters before him, he learns to approach game so that one good chance with a rifle is all he needs. And for a Midwestern scattergunner, that's a lesson worth learning.



Jim Kellenberger River Ducks

The duck's eye view of Kansas has changed drastically in the last fifty years. A mallard coming in from Alberta these days is faced with a choice between more than 230,000 acres of reservoir water, another 193,000 acres of smaller lakes and ponds, and more than 30,000 acres of artificially managed wetlands. This artificial water attracts and holds a lot of ducks. In fact, Kansas probably winters far more ducks now than it has at any other time in history.

Two generations of Kansas duck hunters have adapted themselves to these new lakes and wetlands about as fast as the ducks have. Waterfowlers who can't afford big spreads and reservoir-worthy duck boats jump shoot smaller water, and the men who can afford the equipment have developed a style reminiscent of the old-time Chesapeake Bay and upper Mississippi gunners—hundreds of decoys, specialized guns, loads, and boats. According to Fish and Game surveys, ninety-six percent of all Kansas waterfowlers focus their efforts on artificial water.

The other four percent continue to pursue a more traditional Kansas waterfowling style on rivers. These hunters don't hunt flowing water out of nostalgia; they do it because it works. Early in the fall, streams in the eastern half of Kansas hold substantial numbers of homegrown wood ducks and other early migrants like widgeon and teal. Once these birds leave, there may be a waterfowling dry spell until the lakes and marshes start to freeze up in early to mid-December. The overwhelming majority of ducks in the state by this time are mallards, many of which will pass the winter in Kansas, taking advantage of abundant waste corn and milo. With most of the state's impoundments and marshes locked up tight, the birds are forced to look elsewhere for open water, and the natural place for their eyes to wander is upstream from the lakes where swifter current and spring seeps maintain an open channel. Concentrations of ducks along streams can be spectacular-a few years ago, an aerial survey along a ten-mile stretch of the Cimarron River turned up



40,000 mallards. Duck populations along most streams aren't nearly this concentrated, and may vary substantially from year to year, but a number of streams across the state will have pairs and half dozens scattered all along their length with an occasional bunch of fifty or more in a particularly congenial hole.

There are three ways to hunt rivers and streams: jump shooting, floating, and blind-and-decoy hunting. Jump shooting is probably the least complicated of the three. A hunter outfitted for an upland shoot is fairly well equipped to jump some ducks on the way. Small streams lend themselves best to this style of shooting. The ducks will tend to favor secluded sand bars, eddies along cutbanks, and slack water around fallen timber. Stalk likely spots carefully. It isn't unusual to flush ducks right under your feet as you top a steep bank. As with most other kinds of duck hunting, a well-trained retriever is an asset on a jump shoot since the birds nearly always fall in the creek or on the far bank. The dogless hunter is well advised to wear hip boots so that he can cross the stream after downed ducks and so that he can get on the right side of a good-looking bend before he starts his stalk. Jump shooting often yields a mixed bag because quail and pheasants both favor streamside cover, especially later on in the year.

On streams in eastern Kansas, float hunting can be productive and mighty enjoyable. The best way to



handle the day is to leave a car downstream and use a second vehicle to take the boat up to the put-in point. A number of kinds of boats will work on a float hunt, but the best are relatively small with shallow drafts. The man in the stern will have to steer on his own for the most part since any movement in the bow will spook ducks early. Willow, tamarack, or streamside grass tied on the bow will make it seem more natural to loafing ducks and will break up the hunter's outline. The man in the bow should do the shooting. The stern man will seldom get a clear shot at the birds as they rise, and if he zigs when the man in the bow zags, both hunters are likely to end up in the water. Because of the risk of a turn-over, both hunters should wear life vests, and the Photo by Bruce Kintner

man who is not shooting should probably have his gun tied into the boat. The shots will often be long on a float hunt, or on a jump shoot for that matter. Magnum loads in larger gauges come in handy, and a minimum shot size is probably number six. Fours are even better.

Both these methods work well on their own and are excellent ways to scout a stream. After a few prospecting expeditions, however, hunters usually find that there are two or three "honey holes" along most watercourses that hold lots of ducks nearly all the time. These birds may be coming in for water late in the morning or at mid-afternoon, or they may have set up permanent winter residence on a particular bend. Their use pattern will dictate the time of day a hunter



should be around, but in either case, he is most likely to be successful using decoys and a blind.

The blind should blend into the surrounding landscape as much as possible. It's advisable to use material from the immediate blind area to cover the outside, although the structure itself can be built of almost anything and can be as simple or elaborate as the hunter cares to make it. The blind silhouette should be low, and it helps to have some overhead cover.

Since the blind hunter will be sitting for long periods, he has to wear warm clothing. He also needs hip boots or chest waders, rubber gloves for handling wet decoys, and a five or six-foot pole which he can use as a staff and depth probe when he is wading the stream. As many trout fishermen can testify, wading a stream is treacherous work, and a dunking in early winter can mean discomfort, hypothermia, or drowning.

The hunter's main tool is his decoy spread. On a river hunt, the huge spreads of decoys common on lakes and reservoirs aren't necessary. One to three dozen mallard decoys are usually enough. Anchor lines should be much longer than the depth of water in which they are used, and heavy mushroom or pyramidal anchors should be used where the current is swift. Decoys are expensive, and there's no reason to risk losing one or more because of inadequate rigging.

A duck call properly used can enhance the effect of a



good spread of decoys. Poorly used, it can wreck everything. The best advice on duck calling is to keep quiet when the birds are coming your way.

Stream duck shooting can be red hot and is almost always uncrowded, unhurried, and generally a change from the scramble on many public areas. It stays that way because the lion's share of good stream mileage in Kansas runs through private ground. As a result, duck hunters have to get permission before they start hunting. Most landowners are fairly normal people, not inclined to sic the dog on a hunter or call the police when he shows up on their doorstep. You'd never know it to talk to most hunters, though. Maybe that's a good thing. If most hunters refuse to deal with private landowners, they leave more good hunting for the few hunters who do. Four percent of Kansas duck hunters know first hand how good the shooting on a river can be. Maybe it's better that the other ninety-six percent never find out.

Photographer Gene Brehm has supplied a number of wildlife pictures for recent issues of FISH AND GAME and has also appeared in PETERSON'S HUNTING. He specializes in game animals, especially waterfowl and deer.

