

KANSAS WILDLIFE

JANUARY/FEBRUARY 1986



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KANSAS WILDLIFE

JANUARY/FEBRUARY 1986

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Just Words

Ethics is a dry subject. Nobody wants to read much about ethics, and once a conversation turns to ethics people start wandering away. Ethics are rarely discussed and too often preached. It's hard for most of us to talk about ethics *without* preaching.

Hunting is as volatile an issue as ethics is dry. People are emotional about hunting and they show it when they talk about it, pro or con. Combining hunting and ethics draws a mixed response. Some folks, who yawn automatically when they see the word "ethics", can't be raised above emotional dormancy. Others are torched by the word "hunting" and start talking immediately, if only to themselves. Any progress in hunting ethics usually stops somewhere short of a definition.

Wherefore hunting ethics? It is not in the singular, as "work ethic", and does not imply a cultural institution. Ethics is in the plural. It is behavior, and the attitudes spawning that behavior, that comprise ethics. Hunting ethics is the behavior of hunters afield. It may also be the reason more hunters will have to give up hunting.

Landowners and other people with an interest in what goes on outdoors during hunting season are becoming less tolerant of hunters. This isn't because they're getting irritable in their old age; it is because they're confused as to just who is a hunter and who is not. Sadly, most hunters are in the same condition — they can't recognize their own kind.

We hear a lot about slob hunters these days. Literally, these are people who hunt slob, presumably during the open season. In the vernacular, though, slob hunters are people who buy hunting licenses but have no sense of hunting ethics. They have no standards of conduct beyond what the law allows or what they can get away with. The un-

fortunate thing is that other people call them hunters. They aren't. Until there is an open season on slob hunters there will be no slob hunters. A hunter is not a slob and a slob is not a hunter.

Now, no one is perfect, and the most well-mannered sportsman — be he hunter, trapper, or angler — will make mistakes afield. He'll be quick to apologize if corrected, however, and quick to offer restitution if that is appropriate. He'll not willingly offend a landowner or a fellow sportsman. He'll respect game regulations, keep a clean camp, contribute what he can to the resource he cherishes. He isn't out to destroy, though he may kill. He isn't out to take, though he may keep his catch. Tangible rewards afield are of secondary importance to his outdoor experience, though a part of it. The sportsman is truly interested in his natural environment and eager to blend with it. He does not interfere with the outdoor activities of others.

All this may sound a bit like the Boy Scout pledge, a little euphemistic, too. Honestly, though, it is an accurate character sketch of a great many hunters — in the most distilled sense of the word, *all* hunters. Unfortunately, a lot of people who buy hunting licenses each year aren't hunters. They are slob.

You can call them other things, if you wish; slob is kind of a catch-all. Vandals fits some, thieves others. Burglars, poachers, misfits, delinquents, criminals — the list is long. These people shoot cattle. They steal things. They drive across growing crops and leave their refuse behind them. They are generally loud people, coarse in their talk and boorish in their actions. Many drink to excess. To them, hunting is killing and they will learn no different. Blood is success, a limit the measure of a day. Sometimes even a limit is not enough.

Away with them! you say. Certainly. As soon as we can sort them out. But we're having a hard time because we're being asked to reprimand hunters and hunters aren't the problem.

There's an identity crisis in the woods today. It isn't a case of misidentification so much as a study in semantics. The sign of the slob is clear, as unmistakable as the scrape of a rutting buck. Unlike the buck, however, the slob does not belong. He's surviving because he's disguised as a hunter. Slowly the slob is eating at the credibility of sportsmen and game agencies alike. More land is being posted; more people are being turned off to hunting. The sport itself, a

necessary tool of game management, is in jeopardy, being consumed by a cancer from within.

The only effective way to deal with this problem is to first isolate it. We must stop saying "slob hunter." If we see the acts of vandals, we must not say a hunter did them. We must not attribute to sportsmen a cut fence, a poached deer, a bullet-riddled sign. To purge the hunting ranks of rabble, we all must make clear what we expect of hunters — be they our neighbor or a stranger encountered afield. We all must be intolerant of unethical conduct, or we all will suffer for it.

There are many ways to catch a violator, but much of what we do in the outdoors cannot be defined in a written code. It is left to personal standards — ethics, if you will — to govern our behavior, direct our attitudes. Weeding out the unethical is a much tougher job than arresting criminals because slob do not always break written rules. Still, they are visible, and their actions speak for hunters who are not.

"Hunting ethics" is an odd combination of words, but the two terms are compatible. "Slob" and "hunter" are not compatible, and it is libelous to attribute to hunters the mayhem of slob. May we never be so careless in our speech.

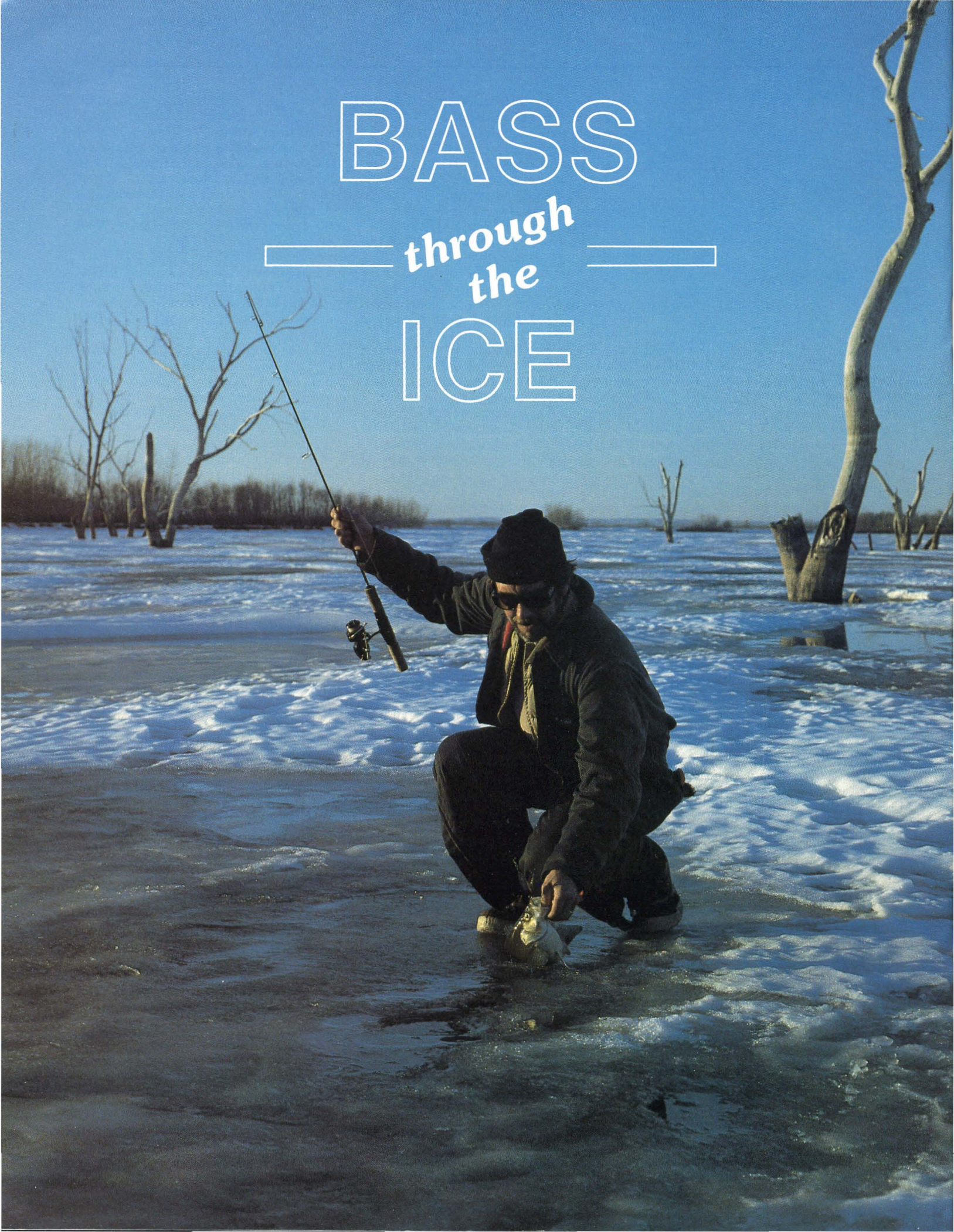
This will be my last issue as editor of **KANSAS WILDLIFE**. During the past two years I've become fascinated by your bountiful state — its land, its wildlife, its people. I'll miss it. I'll miss this magazine, too. You've supported **KANSAS WILDLIFE** so strongly that its circulation has nearly doubled in these two years. That says as much for you readers as it does for the publication. I'm sure you'll keep getting the best of Kansas' great outdoors right here in these pages. Though I'll be busy with another magazine, I'll be reading **KANSAS WILDLIFE** in months to come — and thinking of the many fine folks I met in the Sunflower State.



BASS

through
the

ICE



Winter should be spent outdoors. It's too short to be wasted inside — just ask any ice angler!

Scott Baugh

"That's a hot spot; give it a try." Ken McCloskey told me that just before he dropped his 1/8-ounce kastmaster through a nearby hole in the ice and immediately set the hook into the jaw of a five-pound walleye.

As Ken continued to fill his stringer, though, the inactivity at the bottom of my hole grew more noticeable. Eventually I did catch one white bass near two pounds in weight — probably the biggest I've ever caught — but it wasn't one of my better days. Others around us were having similar luck. Stripers and walleyes were both present here, but not very eager to bite.

While I had little activity that day, I was quite cozy in my insulated coveralls and felt-lined pacs. If I'm comfortable, I need not always catch a lot of fish to enjoy myself, especially when it's the first fishing trip of the year. Over the next few weeks, other anglers would join me on the upper end of Glen Elder and dunk their lines near submerged brush in old river channels. They would be enjoying a sport that too few Kansans take advantage of: ice fishing for white bass.

Throughout the fishing season, winter included, anglers are usually out to catch fish other than white bass. These species may provide better eating or more challenge, but few can be caught as readily. I've watched ice fishermen after striped bass at Wilson Reservoir load up on white bass. At Marion and Milford Reservoirs, where anglers are mainly after crappie, they also catch

white bass. When the target species comes down with a case of lockjaw, white bass can usually be counted on to provide action and fillets.

Most reservoirs in Kansas have good populations of white bass, but the popularity of other fish species influences the white bass catch. An example would be when a lake becomes noted for its crappie ice fishing — like Milford and Perry Reservoirs. When this occurs, the white bass catch may be minimal, as the best crappie fishing is in brushy coves — not the best habitat for white bass. White bass usually are more common in the main body of a reservoir.

Wilson and Cheney Reservoirs are a couple of the more popular lakes for winter white bass, with ice fishing at Glen Elder gaining popularity. A drawing card for these lakes has been the striper, a cousin of the white bass that can also be caught through the ice. Since stripers and white bass occupy the same areas, anglers often catch both. Most striper fishermen catch a considerable number of white bass for each striper, but few complain.

Several Kansas reservoirs provide at least some ice fishing for white bass. In the northeast region, it's Perry and Tuttle Creek Reservoirs; in the northcentral, Glen Elder, Kanopolis, Wilson, and Milford Reservoirs; in the southcentral, Marion and Cheney. Out west, Cedar Bluff provided some good white bass fishing last winter. The lack of ice in the southeast limits ice fishing, though a sleeper is John Redmond Reservoir. This lake usually has good ice for at least a short time each winter and contains some large white bass. Very little ice fishing has been done on the lake.



A spud bar's messy and slow, and an ax is dangerous, so every winter angler should own an ice auger. A hand auger like this is also the quietest way to get through the ice, and the exercise might just be welcome!

Kansas reservoirs with good white bass populations are at least several thousand acres in size. How, then, do you find fish in these large lakes? The best course of action is to check with area bait dealers, tackle store owners, the district fisheries biologist, or the local game protector. They can usually tell you if white bass are biting and what areas to try. If you can't find fishing locations by these means, you will need to do some prospecting to find fish. Moving around and trying new places will increase your catch — if you know what to look for. White bass are school fish and highly mobile. You should be, too.



To dress warmly doesn't mean to put on a few warm things. It means put on every warm thing you own, then go borrow. Inactivity and exposure to the wind will cool things off in a hurry for you — though a full stringer of white bass might make the chill less noticeable.

In reservoirs built on streams that have a continuous yearly flow, the upper third of the lake will usually be best for white bass in winter. This is especially so in reservoirs that have spring spawning runs of bass in the stream above the reservoir. The fish move up the lake to stage and await final sexual development so when conditions are right during the spring they can make their spawning run.

Ice fishing for white bass is best in water from five to twenty feet in depth — especially if some type of structure is present. Probably the most important thing to look for is an old river or creek channel. Most good catches of white bass are made along the dropoffs associated with these channels. If you can find a submerged tree or brushpile along the dropoff, so much the better. While white bass do not associate with

submerged brush as much as crappie, they are attracted to it. As a bonus, fishing around submerged brush often nets you crappie, walleye, and striped bass. If you fish a reservoir that has very little inflow from streams, locating white bass is more difficult, as they will be scattered through the reservoir. If they spawn in the reservoir, look for them near the main spawning areas, such as on the face of the dam, gravel bars, or rocky points. Here again, fish the edges of creek or river channels and dropoffs near the spawning areas. Also check out any old tree rows, road beds, and rock piles you can locate.

Equipping yourself for ice fishing isn't difficult. Extra warm clothes and an ice auger are necessary, of course, but most anglers use the same rods, reels, and lures they did earlier in the fishing season. Just as during warm weather,

ultralight spinning or spincasting outfits are popular. Four- to eight-pound-test line is a good choice with these outfits. It is not so heavy that it spooks fish but is heavy enough to land most white bass. Light lines also allow you to better manipulate lures, an important consideration when fishing in deep water. These line sizes are also capable of handling that occasional large striper or walleye.

Probably the most popular ice fishing lure for white bass is a 1/8- or 1/4-ounce jig, the same used for white bass in the summer. If you're fishing in extremely shallow water or the fish are especially selective, 1/16-ounce jigs may be necessary. White or yellow jigs usually work fine, but occasionally the fish will want another color. Sometimes a jig with a dash of red or pink in it will work better than a solid-colored jig.



Gene Brehm photo

able to feel the lure working on the line or you'll miss a lot of fish!

Many ice fishermen find minnows attractive to white bass. Still, there seems to be a trend away from minnows, as anglers find they can catch just as many fish on artificial lures. Good justification for using lures is that it eliminates the problems of locating live bait and keeping it alive.

To find white bass concentrations in the water column, let your lure down to where you feel it hit bottom, then raise it about two feet. When using a jig, gently work it up and down for a minute or two, then raise it about a foot, let it fall back to the original position, and repeat the process. If no action occurs at this depth, raise the lure a couple more feet and work it there for a short time. Periodically raise the lure and work it through the water column until you catch a fish or have tried all depths.

Once a fish is caught, continue to fish that depth, as most of the fish in that location will probably be found at the same depth. Most often the fish will hit as the lure drops back to its original position. For this reason you need to maintain some contact with the lure as it falls because you may not feel the hit with slack line. Often a slight tap is the only indication that a bass has picked up the bait. Even though the fish are moving slower than they do in the summer, they can still take and reject a lure before you can react. Once the hook is set, though, hang on! It's amazing how hard a white bass will fight. I always expect something twice as large to come up through the hole once the fish is ready to land.

A flasher depth locator can be a real help in locating prime bass habitat. The ones that fold up into a metal box and run off a couple six-volt batteries are handy for ice fishing because they are compact and relatively light. A simple way to check for a good fishing site is to pour a little water on the ice. Place the depth locator transducer in this water and turn the locator on. This will accomplish several things. It will allow you to check the depth, locate underwater structure, and spot concentrations of fish, all important information. The depth locator also saves a lot of time and energy by eliminating the boring of unnecessary holes. Even with a good ice auger, boring holes in fifteen inches of ice gets old fast!

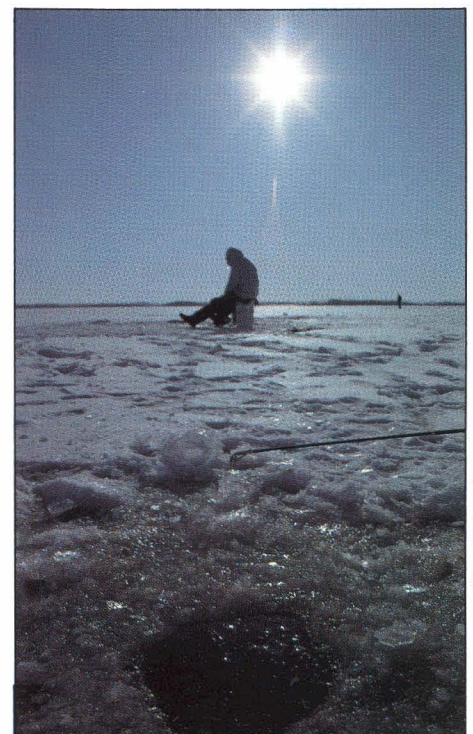
Speaking of holes in the ice, a good ice auger is the most convenient way to

get to water. Some people like a spud bar, but the auger is the easier way to go. There are several styles of augers and all cut a clean hole with relatively little effort if the blade is occasionally sharpened. A hand auger can be bought at a reasonable cost and will last for years. Don't use an ax to cut the holes. It's dangerous to yourself and others that may be standing around you — and the man with the ax usually get water and ice chips flying into his face. Finally, it's a good way to break an ax handle.

Unfortunately for ice anglers, Kansas is far enough south that often the winters do not provide a long ice fishing season. Usually we are lucky to have good ice from early January through the middle of February. Ice is considered safe to walk on if it's hard and at least two inches thick, but ice that will support one person may not support several people standing close together. Late in the season you must be especially careful. There may be five or six inches of ice, but it can be rotten and not support the weight that two inches of good ice will. Usually when anglers go through the ice, it is late in the season. Predictably, poor ice may coincide with the best ice fishing. The fish bite best as soon as the ice is thick enough to get on and just before it starts to break up in the spring. A good policy is to always fish with a friend and have a rope handy, especially early and late in the season. Do not take chances.

When you consider that white bass are abundant, fight hard, bite readily, and are good eating, it's no wonder they are fast becoming the bread and butter fish in our reservoirs and a fish for all seasons. If you haven't tried ice fishing for them yet, do it this winter — in warm boots and on hard ice! □

Other lures, such as the little george spinner, kastmaster spoons, and slab spoons, also produce. The kastmaster works particularly well when jigged, as it is shiny and reflects a lot of light as it spins and bounces. During the winter in most Kansas reservoirs the main forage species for white bass is gizzard shad, and the kastmaster imitates shad well. Do not use a swivel with a kastmaster, as the swivel will eliminate the spinning action of the lure. When the lure is raised it will slightly twist the line. When the lure is allowed to drop back to its original position the line will untwist, causing the lure to spin and twinkle. Often white bass will hit this lure as it unwinds. These lures should range in size from 1/8 ounce to 1/2 ounce. Usually the 1/8- to 1/4-ounce lures work the best, but for fishing in deep water heavier lures may be necessary. You must be



Gene Brehm photo

Kansas Ducks

photographs by Gene Brehm



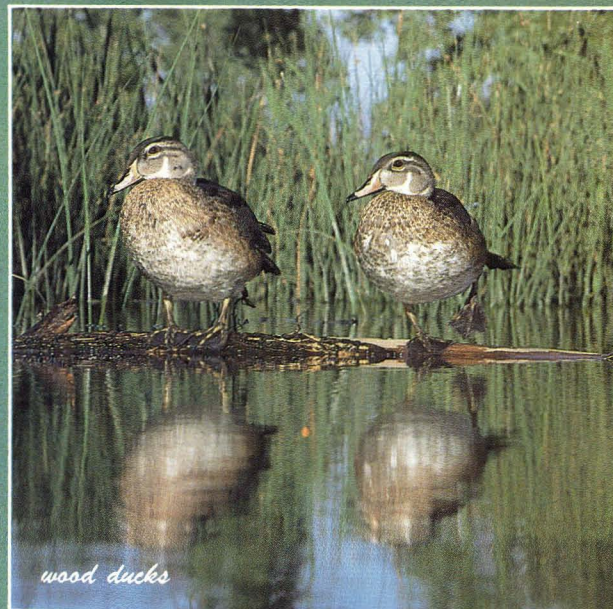
Puddle ducks. They're the dabblers, the fresh-water, shallow-water, inland ducks that most of us think of when we think of ducks. They have large wings that lift them straight off the water, feet that are centered in their torso to give them stability when walking on land. Diving ducks, those foul-weather fowl of the coastline, saltwater toughs with small wings and feet that attach at the stern, scuba birds that forage deep in the brine and sit low on the surface — they frequent Kansas too, but not in large numbers.

Fall is over, but if you paid attention as you should have, you noticed that some ducks came through early, before the leaves turned, before you covered the window air conditioner. These were the blue-wing and cinnamon teal, the wood ducks, and the big first flocks of pintails. Some pintails stayed north longer, to come with the green-wing teal and shovelers, the widgeon and gadwalls as the nights got crisp. Mallards, the mainstay of waterfowlers, came late, and many are wintering here right now. Come spring mallards will nest here, too, but not the same ones that arrived in December. Those are cold-weather ducks, and they'll be in northern Canada before ice-out.

The mallards that raise broods in Kansas will have come up from the Gulf Coast. Here they'll share nesting areas with blue-wing teal. Woodies will join them, but high off the water, in hollows in the trees and other unducklike places.

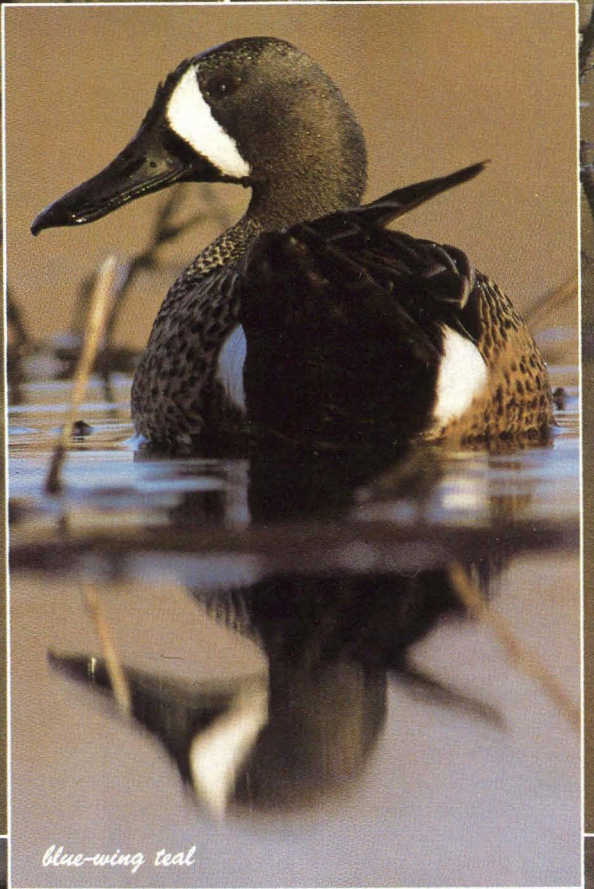
Male ducks aren't the only pretty ducks, but they are the most colorful, and color is the most obvious distinction between species. It also makes these birds especially photogenic.

—Wayne van Zwoll





green-wing teal



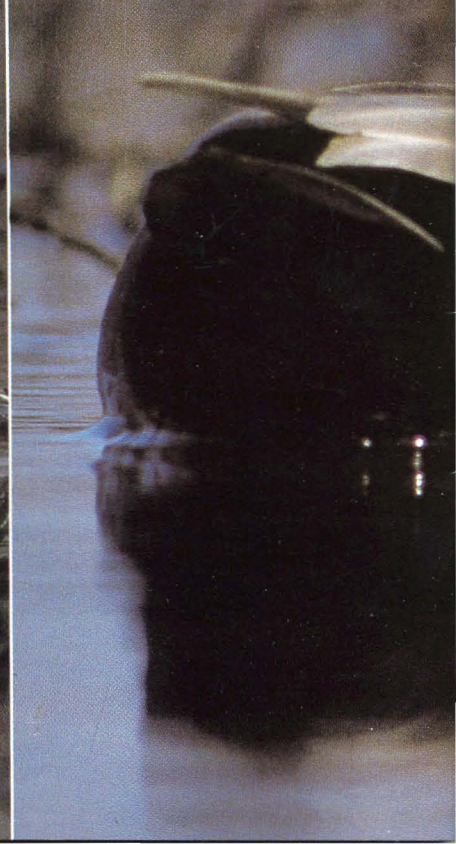
blue-wing teal



cinnamon teal



mallard

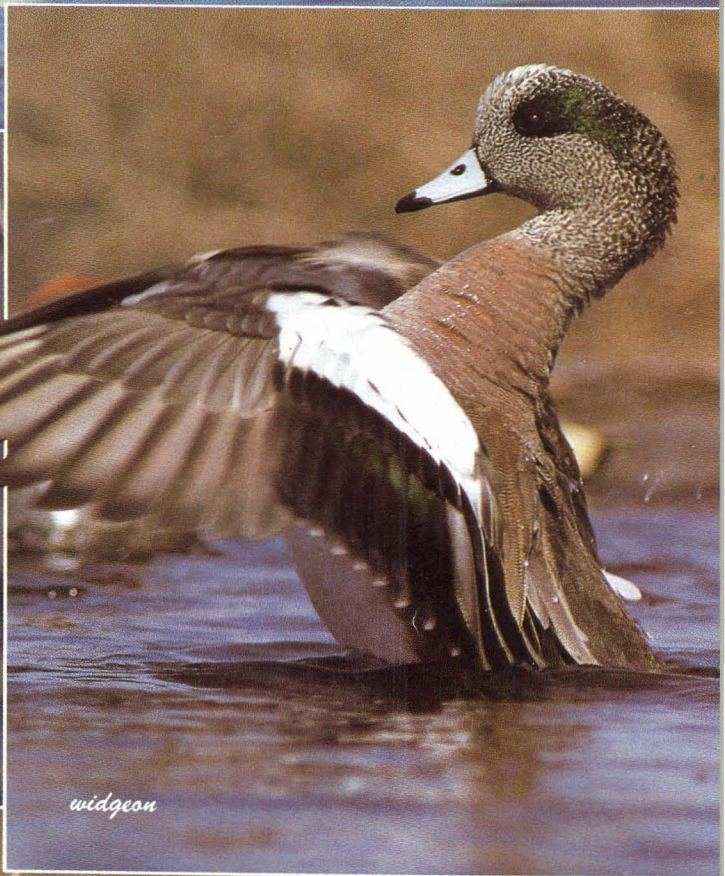




pintail



gadwall



widgeon



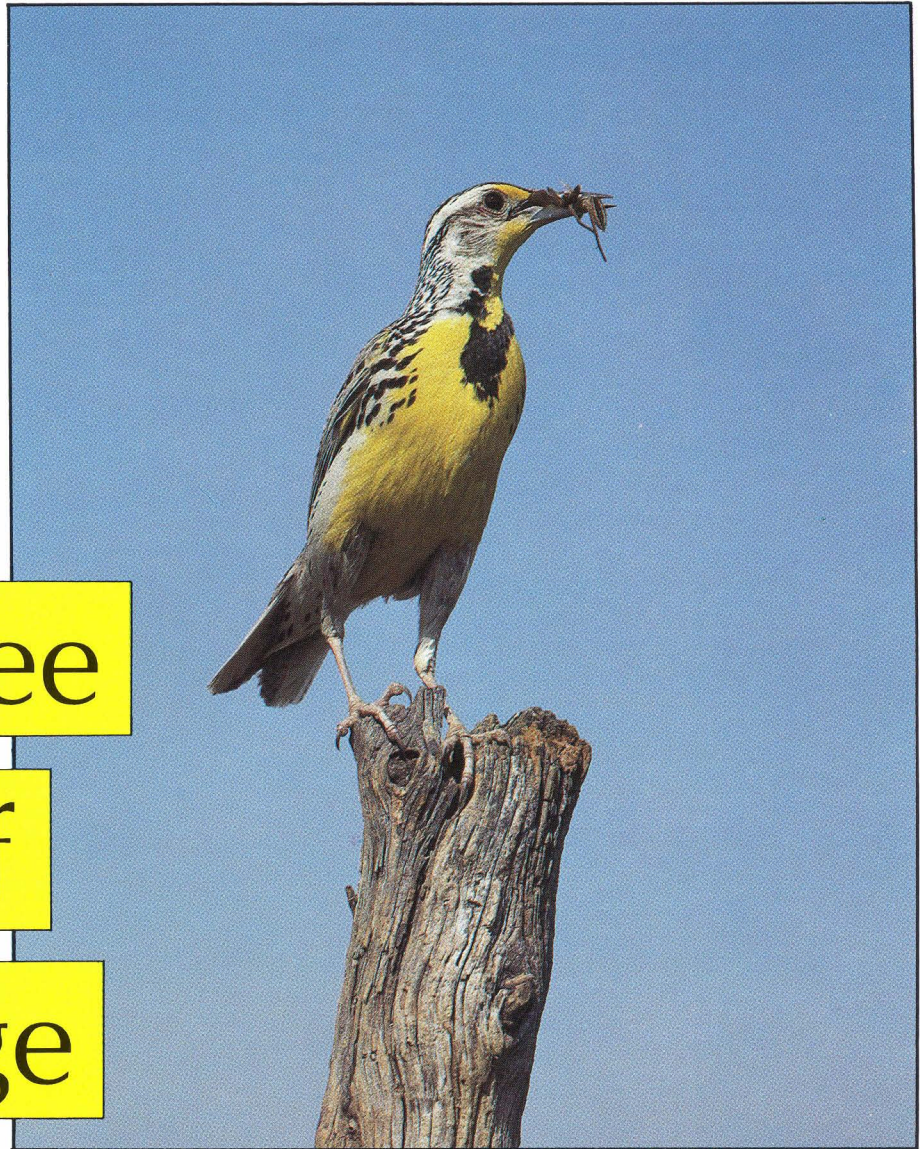
shoveler

The

Chickadee

Checkoff

Challenge



Take home this prize-winning photo for helping Kansas' nongame wildlife!

Joe Schaefer

What is the Checkoff?

The Chickadee Checkoff is a line item on the Kansas individual income tax form that allows taxpayers to make contributions for nongame wildlife.

What is Nongame Wildlife?

All wild animals (about 24,000 species) not typically sought by hunters, trappers, or fishermen are nongame

wildlife. Endangered species are nongame, but so are many common animals.

Why isn't hunting and fishing license money used for nongame wildlife?

License money received by the Kansas Fish and Game Commission is used to fund research, management, law enforcement, information and education efforts, and related activities that provide the best opportunities possible for our sportsmen. After all, it has been the sportsmen's dollars that have established and maintain healthy game pop-

ulations. But additional funding is necessary for nongame wildlife and the people who enjoy these species.

Where does the Checkoff money go?

Checkoff contributions are used to support projects in five major categories:

Reintroductions:

Wherever food supplies, cover, and other conditions are favorable, reintroductions are being considered for nongame species that were once native to Kansas. Past and present reintroduction

efforts have included chipmunks, mountain plovers, and swallow-tailed kites. Species being considered for reintroduction are ospreys and peregrine falcons.

Investigations:

Information concerning more than 100 nongame species has been obtained from funded studies. Such investigations have helped biologists understand, manage, and conserve these species.

Habitat Improvement:

Feeding perches for wintering bald eagles have been placed at reservoirs, bluebird nest boxes have been set up, nature trails have been developed, and trees, shrubs, prairie grasses, and wildflowers have been planted with Checkoff funds.

Information and Education:

Some nongame contributions have been used to print literature such as the Kansas Threatened and Endangered Species poster, the Kansas Birds poster, and the *Nongame Notes* newsletter that is mailed quarterly to several thousand Kansans. Educational materials such as films, slide series, learning kits, games, books, and VCR tapes are purchased with nongame funds and made available on a free loan basis to schools and other organizations through KF&G's Wildlife Reference Center in Pratt.

Urban Projects:

Kansas is one of just six states that have an organized urban wildlife program. Besides providing educational workshops, our urban program has converted an abandoned landfill in Lawrence into a 200-acre nature preserve and developed wildlife habitat and nature trails in Topeka, Wichita, Olathe, Kansas City, and Leawood.

What will I get in return for my contribution?

Besides receiving an 8 x 10 print of an award-winning nongame wildlife photo, you'll benefit by making your own environment a little better. The quality of our life is directly related to the quality of life we make for wild creatures around us. We share the earth with them but too often take them for granted. Many, like bees, are of economic benefit to the state. Some, like raptors, are important links in the food chain. Others, like warblers, simply make our lives more pleasant. Whatever your interest in nongame, your Checkoff contribution is the most tangible thing you can do for wildlife in Kansas.

How much do you owe nongame wildlife for the benefits they have given you this past year? () \$1, () \$5, () \$10 — or more? Check it off!

Kansas' first annual Chickadee Checkoff Photo Contest restricted entries to meadowlarks, ornate box turtles, and monarch butterflies. By the deadline of August 1, 1985, 33 contestants had submitted 161 photos — 40 meadowlarks, 66 turtles, and 55 butterflies. Many excellent photos were received, and selecting a winner was difficult. The box turtle was obviously the easiest to photograph. But composing an eye-catching turtle photo required creative talents. This year's prize winners were: first place and \$100 to Bob Gress (meadowlark), second place and \$50 to Gerald Wiens (ornate box turtle), and third place and \$25 to Mike Blair (monarch butterfly).

Each year the Chickadee Checkoff Photo Contest will provide Kansans with the opportunity to test their camera skills. An 8 x 10 print of the first-place photograph will be made available at tax preparer and KF&G offices for those who contribute to Chickadee Checkoff on the state tax form.

1986 Contest Rules

Category: Birds of prey — any vulture, hawk, eagle, falcon, or owl found in Kansas.

Film Type: Kodachrome color slides only.

Number of Entries: There is no restriction on the number of different species, but no more than six photos of each species may be submitted.

Deadline: Must be received by July 1, 1985.

Eligibility: Contest is open to anyone, except Fish & Game employees, who lives or works in Kansas.

Judges: Joe Schaefer (Nongame Biologist), Wayne van Zwoll (editor of KANSAS WILDLIFE), Gene Brehm (photographer for KANSAS WILDLIFE), and the Education Committee of the Nongame Wildlife Advisory Council.

Criteria: Slides will be judged on sharpness, exposure, lighting, composition, and general appeal.

Right to Copy: The Kansas Fish and Game Commission reserves the right to copy and print slides for purposes of promoting the Chickadee Checkoff Program. Appropriate photo credit will be given in publications.

Damage: The Kansas Fish and Game Commission cannot be responsible for any damage to slides.

Return: All slides will be returned to owner.

Identification: Owner's name and address must appear on each slide mount.

Send entries to: Joe Schaefer, Kansas Fish and Game Commission, P. O. Box 4750, Wichita, KS 67204. □



first place: The meadowlark opposite was photographed by Bob Gress with a Canon AF1p camera, Canon 100 mm macro lens, and electronic release held in a blind 40 feet from the camera.

second place: This ornate box turtle was shot by Gerald Wiens with a Minolta XD-5 camera, Tokina 90 mm macro lens, and two flash units.

third place: A monarch butterfly was captured on film by Mike Blair with a Pentax MX camera, Pentax 200 mm macro lens, and two flash units.

The Channel Catfish Story

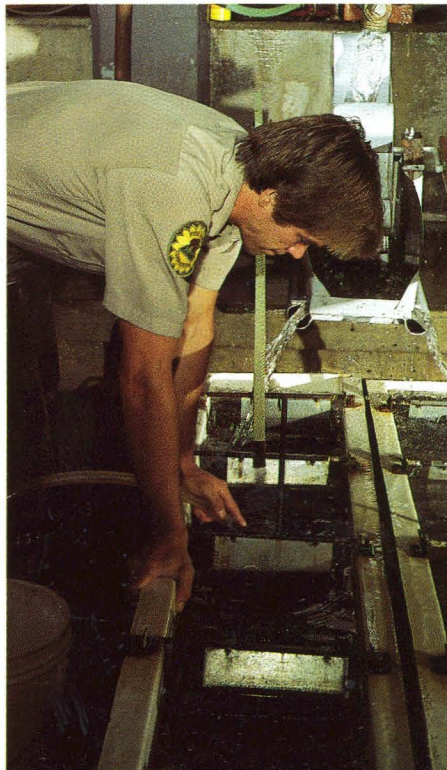
Chris Mammoliti

The channel catfish is one of the most popular and widely distributed game fish in Kansas waters. Good fighters and excellent table fare, "channels" are native stream dwellers that have been stocked in nearly every lake and pond in the state. Channel cats are characterized by a slender body, deeply forked tail, and long barbels. The young generally have dark circular spots that fade or disappear as they grow older.

Channel catfish are abundant in rivers with sandy or rocky bottoms and strong flow but do not require these conditions for survival. Along with good eyesight, these fish have a well-developed system of smell and taste which allows them to thrive in turbid lakes and ponds. In fact, the biggest catfish come from still water! While young channels feed mainly on aquatic insects, older fish will eat almost anything, alive or dead. Bass fishermen have been known to take an occasional channel cat on an artificial lure. With an abundant food supply, channels will mature in three years.

Even though the species is abundant, Kansas has established a creel limit of 10 fish per day. This is to spread the harvest among a greater number of anglers. To ensure good channel cat fishing, the Kansas Fish and Game Commission carries out an artificial hatching and rearing program that supplies catchable-size fish for stocking within the state. This program is currently carried out at the Pratt hatchery facility.

Hatching methods used today were developed over 50 years ago by Seth Way, a long time hatchery superintendent for the Commission. The first step is the selection of broodfish. Each spring, adult channel cats ranging from three to 10 pounds are removed from their overwinter ponds and carefully inspected to



determine the health and condition of each. Only those in good condition are selected and used as breeders. Young adults (at least three years old) are used to replace broodstock in poor health. These replacements are raised from fingerlings set aside each year for this specific purpose. Currently there are 1,000 adult broodfish at Pratt, ranging from four to 10 years of age, and another 1,000 replacements from one to three years old.

The chosen adults are sorted according to sex and stocked into spawning ponds. A ratio of two males for every three females is stocked because the male channel cat can spawn with more than one female in a season. As the spring progresses, the male develops a dark bluish coloring, and with his large muscular head can be distinguished from the female that is lighter in color, narrower through the head and has a swollen belly due to the presence of eggs. Egg development within the female actually begins the previous fall, but stops during winter and begins again as the days grow longer and temperatures increase.

In a natural environment, the male catfish seeks out a dark, secluded cavity for the nesting site. Holes in stream banks, beneath rock ledges, or underneath submerged logs are typical sites. As the water temperature approaches 70 degrees, culture biologists place milk cans in the spawning ponds to provide this type of environment. When the male locates a suitable site, he'll begin his housekeeping duties. Using his tail and fins, he sweeps the nest clean and readies it for the female and her eggs. When he has completed this task, he

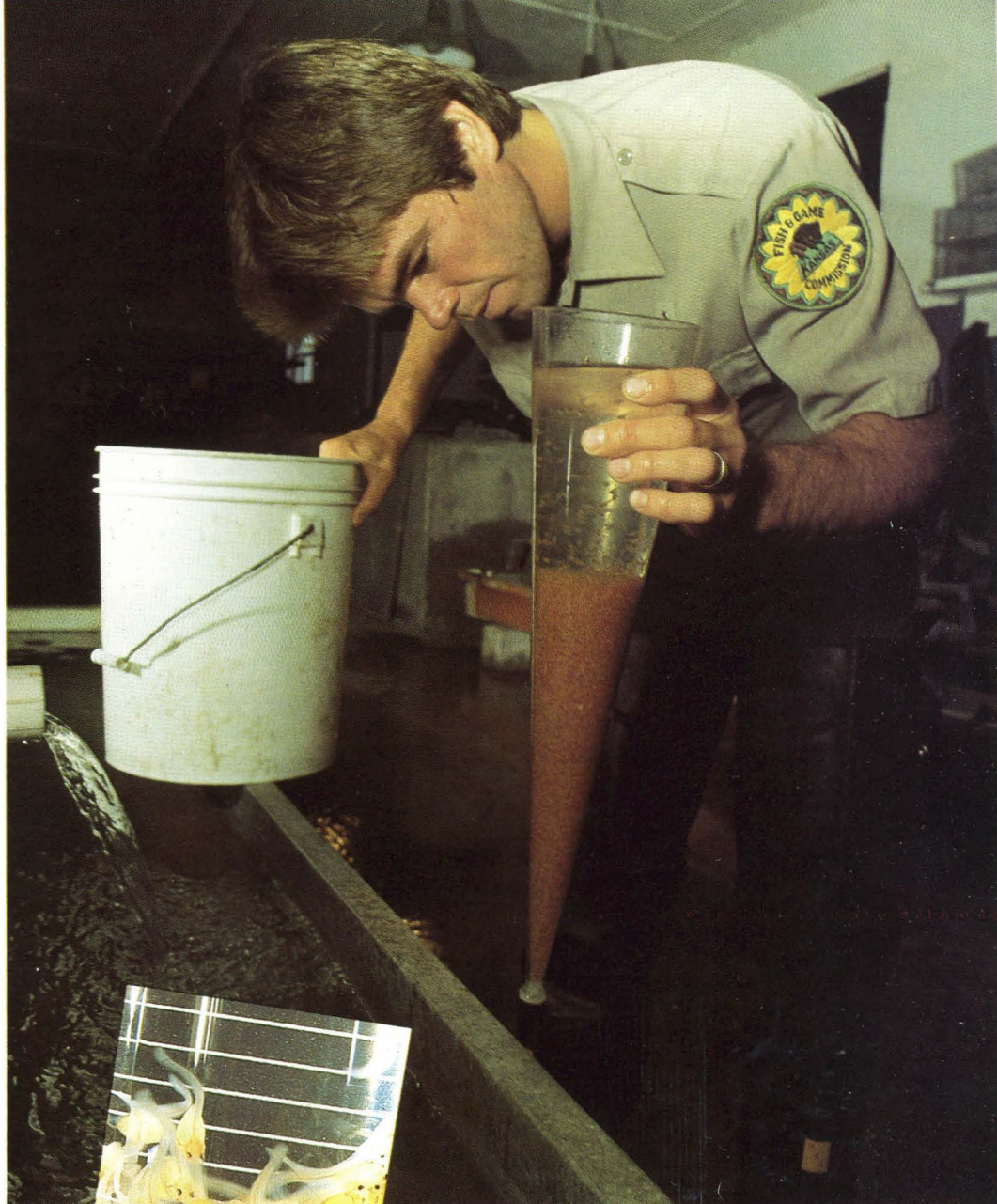
Gene Brehm photos
". . . the spawn is placed in a bucket of water for transport to the hatchery . . . Water flow activates paddles attached to the hatching trough. Movement of these paddles causes water circulation similar to the fanning motion of the male."

will actively search for a female and, if necessary, will bite, push, and bully her into his nest. The courtship may last for several hours, and when the female is ready to spawn she will lie alongside the male with her head toward his tail. Each fish will wrap its tail around the head of the other as the egg laying and fertilization ritual proceeds. The result is a golden cluster of several thousand eggs clinging together in one adhesive mass. The size of this egg mass depends on the size of the female; the larger the fish, the larger the egg mass. With egg laying completed, the male chases the female out and remains behind to guard and aerate the eggs. With tail and fins he keeps a constant circulation of water moving across the eggs to provide oxygen and keep silt and debris away.

During the spawning season, biologists check the milk cans twice a week for spawns. When eggs are found, the male is chased out and the spawn is placed in a bucket of water for transport to the hatchery building. Once inside, each spawn is weighed and recorded. Complete records are kept of the number and weight collected from each pond. This allows the biologist to analyze the reproductive efficiency of the fish in every pond. After weighing, the spawn is placed in wire mesh baskets and dipped in an iodine solution. This disinfectant helps prevent bacterial and fungal infections which could quickly spread and kill the entire spawn. The baskets are then placed in the hatching trough where they will remain for the next six to seven days.

Water flow provides power to a water wheel which, in conjunction with long wooden rods, activates paddles attached to the hatching trough. Movement of these paddles causes water circulation similar to the fanning motion of the male. Spawns are checked several times a day. Dead eggs are removed and the live ones examined for signs of disease. A brisk shake now and then helps prevent clogging of the openings throughout the sponge-like spawn. Clogging of these openings keeps water and oxygen from reaching the inner eggs and will cause their death. Small samples of each egg mass are weighed and counted to determine the number of eggs per pound. In this way the total number of eggs collected can be calculated.

As the eggs mature and their circulatory systems develop, they change color from yellow to orange to red. Hatching time depends upon water temperature. At 78 degrees the eggs will hatch in about seven days. A two-degree rise will shorten hatching time by one day, while a two-degree drop will add one day. As hatching draws near, the embryo begins to twitch and roll within the egg shell.



Gene Brehm photos

"As the eggs mature, they change color from yellow to orange to red . . . At 78 degrees the eggs will hatch in about seven days . . . When the embryo breaks free from the shell it drops through the wire basket and settles to the bottom of the hatching trough. At this stage, the tiny fish are called sac fry . . ."

When the embryo breaks free from the shell it drops through the wire basket and settles to the bottom of the hatching trough. At this stage, the tiny fish are called sac fry, because of the yellow yolk sac that furnishes their nutrition. When all eggs have hatched, the sac fry are siphoned from the hatching trough and placed in rearing troughs, where they will spend the next 10 to 12 days. Hatching troughs are then scrubbed, disinfected, and readied for the next batch of eggs.

Samples of sac fry provide information concerning the percentage of eggs



that hatch. For the first five or six days, the sac fry cluster on the bottom, absorbing their built-in food supply. As each day passes, the yolk sac becomes smaller and the sac fry become more active. A silvery gray skin coloration also develops during this time. When the yolk sac is completely absorbed, the fry swim to the surface and begin to actively search for food.

At this stage, the fry are fed a commercially prepared, high protein diet. These young fish are always hungry and are fed continuously throughout the day. Excess feed and waste products are siphoned out twice a day to maintain good water quality. After seven to eight days of feeding, the fry are moved outside into rearing ponds. Here again, samples are taken so that accurate numbers are stocked.

The fry are dipped up, weighed, and loaded into an aerated "live box" for transport to their next home. Between 75,000 and 100,000 fry per acre are stocked in each pond. These rearing ponds are treated before stocking to eliminate any predaceous fish or insects that might eat the fry. Not all the fry remain at Pratt; many are sent to the Farlington hatchery in southeast Kansas for rearing.

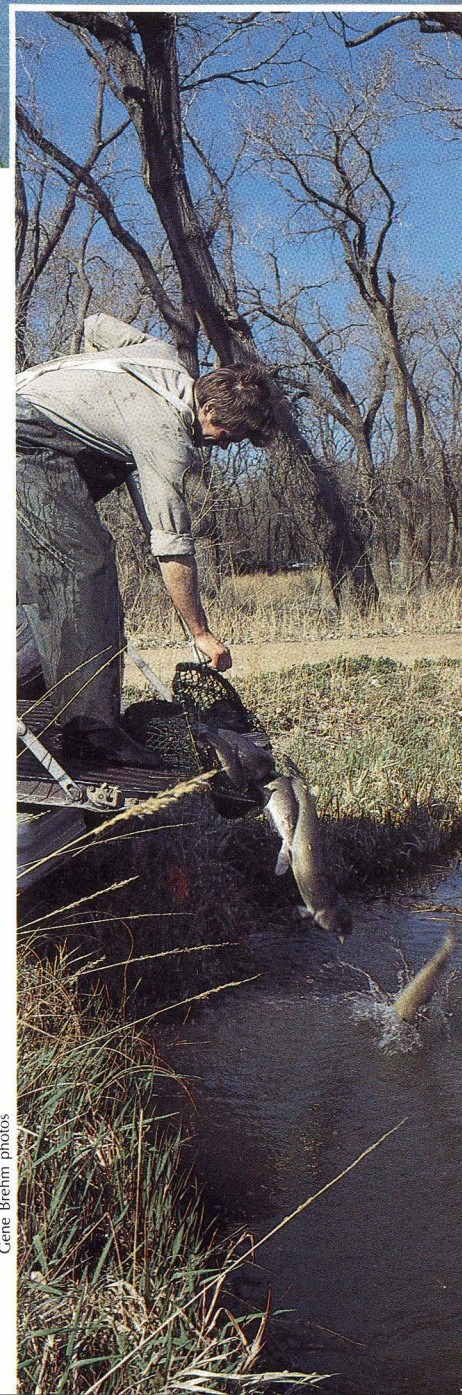
The young catfish, now called fingerlings, are fed twice a day for the remainder of the summer and into early fall. The feeding program is based on the number of pounds of fish in the pond, as well as water temperature. As the fish grow and the water temperature increases, the amount fed is increased.

"Between 75,000 and 100,000 fry per acre are stocked in each pond . . . When the fish reach a length of about one inch, they are switched to a small floating pellet and fed as much as they will consume in a 20-minute period . . . Following a second summer of feeding, these four- to eight-ounce channel cats are ready to stock in Kansas waters."

When the fish reach a length of about one inch, they are switched to a small floating pellet and fed as much as they will consume in a 20-minute period. Feeding activity is observed closely throughout the summer and is necessary to prevent over- or under-feeding. In this way the culture biologist stays apprised of the health and condition of the fish in each pond.

As the summer passes, feeding activity slows and eventually stops. From late September through October and November the rearing ponds are drained and the fingerlings are moved to their winter homes. In the past, all fingerlings were overwintered at Pratt and Farlington. Now they'll be sent to the new Milford hatchery or the rearing station at Colwich. Both facilities utilize warmer water, and feeding and growth can continue through the winter.

Following a second summer of feeding, these four- to eight-ounce channel cats are ready for stocking in Kansas waters. Although this continuing cycle of spawning, rearing, and stocking involves great time and effort, the demand for and popularity of the channel catfish make it time well spent. □



Gene Brehm photos

the center section

Edited by Rob Manes

LETTERS

BAD IDEAS

Editor:

When is the Kansas State Fish and Game Department going to bring an end to special hunting methods and related seasons . . . primarily archery? How many more special considerations are they going to give the archery group? It has become very similar to federal/state welfare service (SRS). Since the Fish and Game Department has made the archery season so attractive, it continues to bring in more archers who then demand more special considerations.

It is only fair to all hunters to allow special seasons for other types of primitive weapons, such as muzzleloading firearms, crossbows, spears, bolos, and boomerangs. Why not propose a special Alley Oop season where the hairy loincloth clad hunter (caveman style) leaps from a tree armed only with a stone ax and beats the deer to death. All primitive hunting methods have as much merit to the hunter that chooses to use them as archery does.

It is to the bow hunter's advantage to begin hunting during fantastic weather, rut, and with little competition. I feel the majority of archers would go back to modern firearms if the archery season was held concurrently with the regular hunting seasons for deer and turkey; especially during the second week in December.

The most disappointing fact about any primitive hunting method for deer or turkey is the wounding and waste. In many cases, this event occurs several times a year for the same bowhunter before he finally bags his deer. I am aware that wounding and waste of deer also exists for modern firearms. However, the high velocity and thin skin bullets of today bring the deer to bag, even if the carcass is in several pieces.

If we could eliminate the bowhunting waste and, then, when regular firearms licenses are not sold to Kansas residents in southeast and

eastern Kansas zones, sell them to non-residents covering deer/pheasant/quail for \$125 per individual.

Fred J. Sinclair
Cherryvale, KS

Dear Mr. Sinclair:

Your allusion to SRS makes no sense to me and is especially confusing in the context of Alley Oop. I distill only two valid points in your letter — a concern over crippling loss during archery seasons and a complaint about special deer seasons.

First, crippling can occur whenever a hunter uses poor judgment or makes a poor shot, no matter what his weapon. Because a rifle shot is audible and many hunters are about during firearms season and rifles reach a long distance, many crippled deer are shot by other gunners as they escape from one. This rarely happens in the archery season. Too, the initial shock imparted by a high-velocity bullet often allows for a follow-up shot, something rarely afforded a Bowman. On the other hand, archers are almost always aware of a hit, while many riflemen don't bother to check if their quarry doesn't drop at the shot and consequently lose deer they think they missed. An arrow makes a clean wound, one that seldom turns septic. Unless its body cavity is punctured, a deer quite likely will recover from a marginal hit. Rifle bullets destroy a great deal of tissue around the wound channel, and they splinter bone. Bullet wounds often, if not usually, become infected; and marginal hits frequently kill in time. No matter how you slice it, Mr. Sinclair, crippling is a function of hunter judgement, not weapon choice. It will be with us as long as we hunt. Good hunters — archers and riflemen — do all they can to minimize the chances of crippling. Like roadkill, crippling takes a portion of our deer surplus every year. Both are inadvertent

and regrettable losses; neither is entirely preventable.

As for the special seasons, you're right: Many archers would revert to rifles if they had to hunt in the regular season. Given the same harvest objectives, this would require an increase in the number of firearms permits, intensify crowding afield, reduce hunt quality, and deny more permit applicants the opportunity to hunt.

In the West, bow seasons have been made attractive specifically to draw hunters from the rifle seasons, thus spreading pressure on the game herds and improving hunt quality for everyone.

It is harder to get a shot with a bow, given its effective range, and archers need more time in the field to be successful. Even with Kansas' long archery season, the success rate is less than half that of firearms deer hunters.

Wayne van Zwoll

Editor:

I refer to the short article entitled "Loopholes" in your November/December issue. The National Wildlife Federation (and you, by the fact you reprinted the article) is guilty of the same crime as you accuse those of supporting zero hunting. That crime is ignorance! Some of the facts are:

1) Without incentives, many of the wells drilled would not have appeared to be economically viable projects and therefore would not have been drilled in the first place. Some of those wells were completed as good wells, some marginal, and others dry.

2) Many of the producing wells that barely make it or are merely surviving (stripper wells) make up a majority of the total producing wells in the U.S. and a larger percentage in Kansas.

3) These wells produced over 463,000,000 barrels of oil in 1984, approximately 15 percent of the nation's total.

4) These wells generate thousands of jobs and millions of tax dollars, as well as help reduce our dependence on foreign oil and therefore help with the trade balance.

5) Over 14,000 stripper wells were abandoned in 1984 because of low oil prices and

high operating costs some of which relate to changes in the tax laws.

The fact remains that without the independent oil man and the incentives received to explore for oil and gas, the industry would surely deteriorate. The loss of tax revenues alone would far outweigh the incentives given at present.

You won't stand for poorly reported, one-sided wildlife issues. Please don't relax those standards on your other articles.

I am a KSU grad, oil and gas consultant, outdoors enthusiast, and concerned reader.

Wayne L. Ewert
Billings, MT

Editor:

I read with distaste and dismay the short article in the September/October issue of KANSAS WILDLIFE concerning the possibility of a 1986 sandhill crane hunting season. It somehow seems wrong to open a hunting season on a bird, solely to provide another target for hunters.

I am not against hunting, for both my husband and son are hunters, but even they say that this idea is going too far and that shooting a sandhill crane would not be much challenge.

We commend the Kansas Fish and Game Commission for its wonderful conservation efforts and its continued strict enforcement of fish and game laws; but every now and then, like the rest of us, it comes up with some bad ideas. This one, we feel, is the worst, ranking right up there with Arkansas River trout fishing in Wichita.

Mrs. J.W. Atkinson
Belle Plain, KS

Dear Mrs. Atkinson:

The idea of having a sandhill crane season did not originate with the Kansas Fish and Game Commission. Sandhills have been hunted in neighboring states for many years, and some Kansans have expressed a desire to have that opportunity. It has long been recognized that regulated sport hunting generally benefits the hunted species, both as a management tool and by creating revenues to benefit the species.

Many of the arguments against the season have been proven false, and the studies that supported those arguments have been shown to be unsound. The issue will be examined thoroughly before any decision regarding the establishment of a Kansas sandhill crane season is made.

As for trout fishing in Wichita — this

agency does not intend to create a self-sustaining fishery via intermittent releases of rainbow trout in the Arkansas River at Wichita. The goal is to provide seasonal angling opportunities to a group of fishing license buyers who do not have ready access to other waters of this state. Trout were stocked because they were readily available at little cost to the state. Many Wichita anglers, I'm sure, do not share your opinion of that program. *Manes*

HELP WANTED

Editor:

I read your most interesting article on goose progress. It sparked a bit of hope for me.

Three years ago I placed a Canada goose nest on our farm pond in Brown County west of Hiawatha, knowing that the chances were slim that I would have any luck.

Many snow geese stop to feed, and Canadas have been seen but never stay.

I followed specific directions for building the nest, but it has all been to no avail. I would much appreciate any thoughts, encouragement, or suggestions you might have.

Mrs. R.L. Rogers
Shawnee Mission, KS

Dear Mrs. Rogers:

Brown County is most often frequented by snow geese. Though Canadas do pass through the area, it is not a prime nesting spot for them. This does not mean there is no chance that a pair will use your nest structure, but you may have to be patient for some time.

The only alternative is to bring a flightless pair of adults to your pond to nest. Until all the needs for breeding pairs are met in Kansas' prime nesting areas, the agency's goose reintroduction efforts must be directed there.

Manes

Editor:

I was at the Veteran's Hospital in Wichita, and I went to the library and asked about KANSAS WILDLIFE Magazine. They didn't have a copy. I showed them a copy of mine, and two people were interested. They are on limited funds, and would appreciate the magazine.

H. Leo Brown
Eureka, KS

Dear Mr. Brown:

Thank you for the suggestion. As a

result, we have sent one-year gift subscriptions to 165 hospitals across the state. *Manes*

IN SUPPORT

Editor:

Your magazine is an excellent one. You really care about wildlife and the future. People know exactly where your money is going, and you let people know how and where to improve wildlife habitat.

A friend of mine and I were in the Hays area in 1983 for a hunt. An ice storm made things troublesome, but we still enjoyed the trip.

I would like to thank your officers for being honest the next year in telling us it wouldn't be worth driving down for the 1984 season. I think that is excellent management. Keep up the good work, because I'll be back.

Tom Murry
Northfield, MN

Editor:

I am writing this letter to voice my support of the use of steel shot. If you would have asked me about steel shot a year ago, you would have heard something quite the opposite.

I felt waterfowlers were being forced to use more expensive steel shot due to politics, rather than a lead poisoning problem in ducks and geese. I reasoned that, if ducks and geese were ingesting lead, then all game birds must also be in danger of lead poisoning. I still strongly believe that if waterfowlers have to shoot steel, then everyone should shoot steel.

Until a year ago, a lead poisoned duck was someone else's problem. I had never seen one in four years of waterfowl hunting in Kansas. Last year, the group I hunt with shot a lead poisoned mallard drake. It was shocking and very sad to see the devastating effect lead poisoning has on a bird.

My other dislikes about steel were due to its price and my belief that steel was ballistically ineffective. I found my beliefs to be wrong. We are reloading steel at about \$7.50 a box, and after testing our loads, have found them to perform very well.

The bottom line is simply this: As hunters, it is difficult for us to do anything about loss of habitat. We can, however, stop lead poisoning. We must do all we can to preserve our wildlife legacy for our sake and the sake of our children.

David J. Higday
Conway Springs, KS

THE LAW

one paid \$400 in Wabaunsee County Court — a rather expensive birthday present. *Manes*

THE STING

TURKEY POACHERS

Shortly after 7:00 a.m. on October 28, a Pawnee County landowner was outside his house when he heard a shot. He looked up in time to see a gun barrel withdraw into the window of a truck, and a wild turkey flopping in the ditch.

The landowner ran inside and called the Pawnee County sheriff. Then he went after the poachers in his own car. Local Wildlife Conservation Officer Matt Stucker was only eight miles away, but the sheriff was unable to reach him by radio at first.

Meanwhile, the landowner had lost track of the suspects when they slipped behind a school bus, but not before he was able to note the license tag number of their truck. He passed that valuable information to the sheriff.

By that time W.C.O. Stucker received word of the poaching and went to Great Bend, where the owner of the truck reportedly lived. Unable to locate either of the suspects, he went back to talk to the landowner, who gave descriptions of the poachers. Stucker then proceeded to the Barton County sheriff's office, where he received help in making positive identification of the two men.

It took a couple more days of investigating for Stucker to learn that the key suspect was working on an oil rig near Pratt, and on November 8, he visited the man there. Faced with the evidence Stucker had compiled, the suspect confessed that he and a friend who also worked on the rig had shot the turkey.

When the friend was interviewed, he admitted he still had the illegal bird in his possession, and both suspects agreed to come to the Barton County sheriff's office. There Stucker confiscated the turkey and issued them citations for taking turkey out of season and taking turkey with the aid of a vehicle. *W.C.O. Stucker*

HAPPY BIRTHDAY

Three friends decided to celebrate a fourth companion's birthday by poaching a deer with a spotlight one early November night in

southern Wabaunsee County. The foursome drove the backroads near the Kansas River, searching the trees with a powerful light.

It was about 10:00 p.m. when their light froze a deer long enough for one of the parties to shoot it. At a nearby house, a farmer heard the rifle shot, and he heard one of the poachers call, "I got him!" The farmer hurried to his pickup truck and went after the culprits. Three of them hid in a field as the fourth one tried to elude the angry farmer in another pickup.

Meanwhile, the farmer's daughter telephoned Wildlife Conservation Officer Rick Campbell to apprise him of the situation. Campbell dressed quickly and arrived in the area of the crime within about 15 minutes. As he sped down a road near where the shot was fired, he heard someone whistle from the ditch. Campbell skidded to a stop and three of the poachers stepped onto the road, thinking it was their companion, as the truck they had been driving looked very much like Campbell's.

. . . the driver of the pickup had turned down a dead end road and was cornered by the farmer and two other men.

They were unpleasantly surprised to find it was officer Campbell instead of their friend. Campbell suspected the trio was part of the poaching crew, but he had no reason to detain them. So he took their names and addresses, and let them go.

Back at the farmer's house, Campbell received word through the Wamego Police Department that the driver of the pickup had turned down a dead end road and was cornered by the farmer and two other men.

When Campbell arrived, he confiscated the rifle and spotlight used in the crime and issued the driver of the truck a notice to appear in court. Then he went back to the area where the farmer heard the shot. He looked for two and one-half hours, but finally gave up the search for the deer at 1:30 in the morning. He found it in a nearby milo field the next morning.

Since he had obtained the names and addresses of the other three culprits, Campbell had no trouble delivering their citations. Each

So far, 15 federal and 32 state convictions have stemmed from an undercover investigation of a deer poaching ring which culminated with the serving of several search warrants in the Tulsa and Ponca City, Oklahoma areas. To date, fines totaling more than \$35,000 have been paid by those involved in the illegal hunts. State fines thus far have amounted to \$7,200, and federal fines total \$27,975.

Most of the charges relate to a group of poachers from Oklahoma who came into southeast Kansas and shot deer, often taking only the antlers and leaving the bodies of the animals. Many of the deer were transported across the state line and some meat and antlers were sold. Both acts are violations of federal law. Other convictions were for use of motor vehicles to take deer, hunting deer during closed season, hunting without a license, and illegal possession of deer. Additional charges involve illegal killing and handling of wild turkeys and bobcats.

State fines ranged from \$50 for hunting without a license and hunting during closed season to \$1,000 for illegal killing and possession of deer. The largest total state fine, \$3,225, was levied against a Tulsa man who was convicted on seven separate charges. The same man paid an additional \$3,100 in federal court for illegal interstate transportation of deer. Another man, from Sand Springs, Oklahoma, was fined \$5,100 in federal court on charges including two felony counts of illegal sale of deer. He also has six state charges still pending.

At this writing, twenty-seven other state charges are yet to be heard in court, but officials from the Kansas Fish and Game Commission are hopeful that dispositions on the cases will be soon in coming.

Reports of the deer poaching first came from landowners in the area. A federal undercover investigation which followed led to the poaching ring.

To establish the covert operation, a special agent from the U.S. Fish and Wildlife Service gained the confidence of suspected poachers, and observed many of the illegal shootings firsthand. When sufficient evidence was gathered, wildlife officers from Kansas, Oklahoma, and the Fish and Wildlife Service cooperated to serve search warrants which led to important evidence in homes and businesses of suspects.

Manes

WARDENS OF THE CITY

Not long ago, game wardens were thought of as officers of the countryside. Today, however, there is a whole new breed of wildlife conservation officer. They are among the best educated and trained of all law enforcement personnel — and they often work in the heart of the city.

The Fish and Game Commission now has three wildlife conservation officers who spend much of their time working in Kansas' largest urban areas. They know, as do all modern-day professionals in the field, that the key to wildlife management is people management.

Stationed in Kansas City is Wildlife Conservation Officer Tim Schaid. He grew up hunting and fishing near the southeast Kansas community of Independence. Schaid holds Bachelor of Science and Masters degrees in Wildlife Biology. He says many of his fellow wildlife officers and outdoorsmen wonder why he would want to work in a crowded city environment. "Diversity," replies Schaid, "I like the city because of its great diversity."

"In the city," he points out, "there's an ample supply of avid sportsmen who know more about hunting and fishing than I ever will. On the other hand, you'll find individuals who think there are only two kinds of birds — blackbirds and pigeons. You'll also find an overwhelming number of well informed, non-consumptive users of wildlife — hikers, bird-watchers, and photographers. These people are a joy to talk to and provide constant support for wildlife programs.

"Another plus for the city is its varied habitat. You will not only find an urban wildlife environment along city streets and backyards, but you also find significant woodlands, agricultural, and riparian areas.

"Another thing about the city is that you can never guess what will happen next. When

you mix wild animals and people, it's always interesting. This is sometimes a difficult situation. How do you tell a wild deer it has to stay south of 63rd Street and east of the Interstate?

"Once I received a call from a frantic lady," recalls Schaid. "Following a wind storm, she had picked up a naked baby sparrow that apparently had fallen from its nest. She was keeping it warm in her oven and feeding it tomato soup. It was difficult for me to explain to her that death is a part of nature. She was in tears. A major problem in the city is people trying to make pets out of wild animals.

"The city also provides an opportunity to work in a professional and well equipped law enforcement community," concludes Schaid. "This could be one of the major differences between the urban conservation officer's job and some rural officers. There are also well equipped rescue teams that are manned by experts regarding drownings and boating accidents.

"Some days my phone rings more than once every fifteen minutes. While most calls are simple questions on regulations or hunting and fishing information, some callers offer information regarding violators. Each call is an opportunity to promote modern wildlife management."

At six feet, five inches tall, Wildlife Conservation Officer Kevin Couillard has little trouble getting the attention of anglers he works with along the Arkansas River in his Wichita territory. Couillard holds a Bachelor of Science degree in Resource Management with a minor in Environmental Law Enforcement. He sees his work in the highly populated areas of Sedgwick and Butler counties as very similar to that of officers elsewhere in the state. As he puts it, "City people generally go to the country to hunt and fish." Along with enforcing wildlife laws, Couillard sites education as one of his main tasks.

He has encountered some unique situations in his work in the Wichita area. As Couillard

tells it, "Wild animals that stray into the city at night are always trouble when the city wakes up. Common calls I get are, 'There's an opossum in my garage,' 'There's a skunk under my steps,' and sometimes, 'There's a deer in my grocery store'."

In addition to these unique situations, Couillard has searched for rare snakes on an Arkansas River island, rescued squirrels from a young girl's bedroom, and performed many other tasks found in no other line of work.

Mack Long is the other wildlife conservation officer assigned to Sedgwick County. His college degree is in Administration of Justice, with a minor in Biology.

Long recalls a few experiences which make his job challenging and interesting: "While I was checking fishermen on the Arkansas River in downtown Wichita last fall, a lady ran out of her house screaming, 'He has a knife, and he's going to kill me!' The man stopped chasing her when he saw me."

Long's experiences have ranged from routine hunting and fishing cases to instances of ducks killed with blow darts. Some of the most humorous situations he encounters come through the telephone calls involving wildlife in the city. In one instance, a lady heard things crashing to the floor of her house during the night. She called the police advising them that someone was in her house. Actually, a pair of raccoons had become stuck in an old chimney, and they were knocking plaster and stove pipe to the floor. The two intruders were removed a short time later.

"Another problem occurs when deer wander into the city," says Long. "They have been everywhere from the waiting room of a restaurant, to dog pens."

As wildlife management becomes increasingly difficult, the management and education of people will become more critical. Kansas' urban wildlife conservation officers will be important in accomplishing that goal. *Manes*

S.D. GETS TOUGH

If you're thinking about becoming a poacher, South Dakota isn't the place to start. That state's legislature has recently stiffened fines for the illegal taking of game and fish. Prior to the law change, the fine for poaching buffalo was \$500, and it was only \$300 for poaching elk, mountain goat, and bighorn sheep. The new penalties are \$10,000 for poaching mountain goat and bighorn sheep, \$5,000 for elk and buffalo, and \$1,000 for deer and antelope. Even taking small game birds during closed season will cost law breakers \$500 per bird.

Manes



ISSUES

BOTTOMS STUDY PROGRESS

Early in 1985, the Kansas Legislature approved \$120,000 to study growing water problems and the ecology of Cheyenne Bottoms Wildlife Area. The study is now well underway, with several test wells drilled on the area to monitor underground water levels. Surveys will also be conducted to gain information about plants and wildlife of the 19,000 acre marsh.

The main trouble at the Bottoms is lack of water. Flows in the Arkansas River, which supplies much of the area's water, have diminished severely in recent years. The legislative authorization of the study requires the Kansas Fish and Game Commission to report its findings by January of 1987. The Kansas Geological Survey and Biological Survey are working with Fish and Game to complete the research.

Seven test wells have been drilled on the area, one more than 70 feet deep, to monitor fluctuations in ground water. Thirteen more wells will be drilled before the study concludes. The wells, along with a weather station and other scientific equipment, will provide researchers with a total picture of the water cycle of Cheyenne Bottoms and surrounding areas.

Researchers from the State Biological Survey will conduct a census of the vegetation present at the Bottoms and compare that information with historical records of plants present there. A bird census will also be conducted for similar comparisons.

Of the \$120,000 appropriated for the study, \$10,000 will come from Fish and Game's Nongame Wildlife Fund, \$50,000 from the State General Fund, and \$60,000 from Fish and Game's Fee Fund. *Manes*

MINIMUM DESIRABLE STREAMFLOW STATUS

Kansas is in its third year of setting minimum desirable streamflows for the state's streams. To date, protected flows have been established by the Legislature for nine streams, including Rattlesnake Creek, the Marais des Cygnes River, Neosho River, Cottonwood River, Little Arkansas River, Ninnescah River, north and

south forks of the Ninnescah River, and the Arkansas River from Kinsley to Hutchinson.

This year, the Kansas Legislature will be reviewing standards for nine additional streams, including the Saline, Smoky Hill, Medicine, Chikaskia, Big Blue, Little Blue, Republican, and Delaware rivers and Mill Creek. For the Saline, Smoky Hill, Republican and Big Blue river systems, the flow standards will be established above federal reservoirs in the state. Criteria for flow below the lakes will be established in succeeding years.

This program has already proven its effectiveness. On the Little Arkansas River in 1984, it was apparent that the established minimum desirable streamflow of 20 cubic feet per second was not being met during summer. According to the rules of the minimum desirable streamflow process, Division of Water Resources (DWR) sent personnel along the Little Arkansas River to determine if any junior (rights obtained after the streamflow right) water right users were taking water that was meant to satisfy the protected flow. They found a couple of illegal diversions from pump stations along the river and immediately ordered them to halt operation. They also instituted a requirement that all surface water users along the stream install meters so that water use could be monitored.

One of the most important benefits of this program is that established streamflow criteria give DWR guidance in how much water to appropriate. This is of great importance in avoiding over-appropriation in the first place.

There have been some important side benefits of minimum desirable streamflows as well. Perhaps more important than the streamflow criteria is the action some groundwater management districts have taken to control future use. The Big Bend Groundwater Management District Five took action in 1984 to greatly reduce the number of potential new water users in the large aquifer south of the big bend of the Arkansas River at Great Bend. This one action may do more than any other in protecting streams.

Another related benefit from this program has been the inclusion of the Stream Recovery sub-section in the State Water Plan. This addresses the revival of streams that have already been artificially depleted.

Additional creeks and rivers will be reviewed during coming years for possible flow protection through this program, and the

mechanics of minimum desirable streamflow administration will continue to be refined.

The Minimum Desirable Streamflow sub-section was the first to gain legislative acceptance through this water planning effort. It has paved the way for much broader attention to fish and wildlife concerns in water management. More importantly, it demonstrates that minimum desirable streamflow programs can work. *Ken Brunson*

APPLAUSE PLEASE

Special committees have been established to represent the interests of water users in twelve major river basins of Kansas. The Solomon River Basin Advisory Committee has shown exceptional insight regarding the importance of water for non-economic benefits to the quality of life in northwest Kansas.

The members of that committee acknowledged in a list of resolutions that economic benefits of irrigation water from Kirwin and Webster reservoirs might not be so great as the benefits of flowing streams and a healthy environment. In their words: ". . . the quality of life can be enhanced by other than monetary gain. Efforts should be made to maintain and improve streamflows . . ."

The committee also identified a number of water-related problems, including pollution from pesticide use, oil field spills, siltation, agricultural runoff, and leaking underground fuel tanks; depletion of groundwater resulting from irrigation, unlawful diversion, and water waste; and lack of public concern and education about water management issues.

The committee recommended that criteria be established to limit the amount of pesticides entering water supplies. The members also called for rigid inspection of oil drilling operations, increased education regarding water issues, increased funding for location and elimination of leaking fuel tanks, and continued water quality releases from certain reservoirs. The disposal of hazardous wastes in the area was generally opposed.

The Solomon River Basin Advisory Committee further resolved to ask the Division of Water Resources to establish intensive groundwater use controls in portions of the basin above Webster and Kirwin reservoirs, and they called for strict enforcement of the Water Appropriation Act to prevent illegal uses of water in the area.

Perhaps most significant was the committee's recommendation to adopt policies which would limit annual groundwater withdrawals to the amount which would be recharged to the water table in one year. *Manes*

HUNTING

HOW MUCH DO YOU WEIGH, DEER?

Speculation about how much deer weigh is common among hunters. Estimates often are high, because few people can accurately guess how tall a deer is (or isn't). Most adult deer measure less than three feet high at the shoulder. Biologists say the majority of deer taken in Kansas are less than two years old and weigh an average of about 145 pounds. Bucks weighing 175 pounds are not uncommon, but one weighing 200 pounds or more is considered to be a large deer in Kansas.

The field dressed weight of a deer is generally about 80 percent of its live weight. So an average 145-pound Kansas deer would weigh about 105 pounds after being field dressed.

The amount of edible lean meat a deer yields is around 40 percent of its live weight. So the average 145-pounder would dress down to about 60 pounds of meat.

Often hunters have no means to weigh their deer prior to field dressing, so this conversion can be used to estimate a deer's live weight once it is hanging in the locker, where scales are available.

For example, consider a field dressed deer that weighs 160 pounds at the the locker. To estimate its live weight, 160 is divided by .80 (80 percent), giving an answer of 200 pounds. An estimate for the amount of meat that will come from the same deer can be derived by multiplying the estimated live weight, 200 pounds, by .40 (40 percent), giving an answer of 80 pounds. *Manes*

DEATH AFIELD

Kansas suffered two hunting-related firearms fatalities during the first two months of the 1985 season. The first occurred in September, when a young man died as a result of an accidental self-inflicted gunshot wound while hunting doves. There were no witnesses, so how it happened is uncertain. The young man had completed the required Kansas Hunter Safety course, but the tragedy still occurred.

The other accident, which involved two hunters, occurred during the opening weekend of the 1985 upland bird season. It took place as the shooter was swinging to fire at a covey

of quail. His shot struck a hunting partner at close range. The victim received pellets in the chest and neck, and he died enroute to the hospital. Both the victim and the shooter were born prior to July 1, 1957, so they were not required to take the Kansas Hunter Safety course.

On the average, less than two hunters are killed while hunting in the state each year — but hunter safety instructors say one fatality afield is too many. This program is one of the best, but the hunter safety coordinator and the volunteer instructors won't be satisfied until no hunter dies while hunting in Kansas. *George Schlecty*

TESTING STEEL

Steel shot is not ballistically inferior to lead shot and does not cripple more birds. It is true

In 12 of the 15 shooting tests conducted to date there has been no significant difference in the number of waterfowl crippled with steel and lead shot.

that steel is lighter (actually less dense) than lead. Lead shot weighs about one-third more than steel shot of the same size. Therefore, a steel shot pellet leaving the shotgun barrel will lose velocity more quickly and will retain less downrange energy than an equal size lead pellet leaving the barrel with the same initial velocity. By using larger shot sizes and increasing the velocity at which steel pellets leave the muzzle, however, the ballistic performance of steel shot becomes comparable with lead. Most experts recommend using number 6 steel shot instead of number 8 lead, and number 4 steel instead of number 6 lead, and so on.

In 12 of the 15 shooting tests conducted to date there has been no significant difference in the number of waterfowl crippled with steel and lead shot. Of the three tests in which crippling differences were observed, two reported higher rates of crippling for the *lead* shot loads tested than for the steel shot loads. In only one of the 15 tests did the steel shot load cripple a significantly greater number of ducks than the lead shot.

Long-term monitoring studies conducted by

several state wildlife agencies have found that hunters who have used steel shot for several years and who have learned how to adjust their shooting habits are reporting the same or lower crippling rates than hunters using lead shot. The authors of one of these studies concluded that steel shot in the hands of the hunter population being studied was more effective in harvesting waterfowl than lead shot. The key to hunter success and reduced crippling rates is the hunter's ability, regardless of whether he is using lead shot or steel shot. *N.W.F.*

NRA LOSES PRESIDENT

National Rifle Association President Alonzo H. Garcelon, a champion marksman and long-time advocate of sportsmen's causes, died November 4, in Augusta, Maine.

"Doc" Garcelon served on the NRA board of directors for 21 years. Prior to his election to the office of president in April of 1985, Garcelon had served as vice president to the association since 1981. The current first vice president, James E. Reinke of Las Vegas, New Mexico has been named NRA president. *NRA*

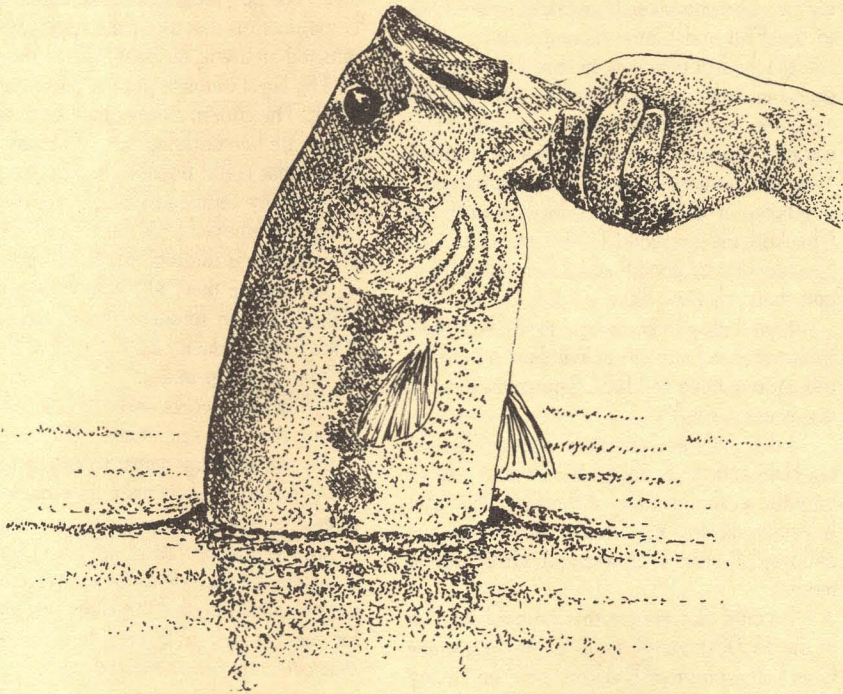
KEEPING IT SAFE

The people who put on the Lake Afton Hunter Safety Course near Wichita are shining examples of what makes the Kansas Hunter Safety program work. They received this year's President's Award from the National Rifle Association for their outstanding achievements in hunter education.

Kansas Fish and Game's Hunter Safety Coordinator George Schlecty says there are about 3,200 volunteer Hunter Safety instructors in Kansas who deserve the same recognition. "These people give a great deal of time, energy, and even money to help kids learn about handling firearms safely," he points out, "and they don't receive nearly enough credit for it. The volunteer Hunter Safety instructors in Kansas have trained about 215,000 kids since the program started, and the Lake Afton group alone has handled about 12,000 since 1970. That's quite an accomplishment."

The Award was presented by N.R.A. Executive Vice President C. Ray Arnett at the 15th Annual Lake Afton Hunter Safety Course on October 5. Members of the group, known as Young Hunter Safety, Incorporated, donate more than 7,000 hours each year to put on the course, which is free to anyone over 10 years old. Hunter safety training is required of anyone born after July 1, 1957 who hunts in Kansas. Other states offer similar training and certification, which is valid in Kansas. *Manes*

FISHING



THROW 'EM BACK

There is a right way and a wrong way to release fish which an angler does not intend to keep. Done properly, it can ensure that the fish will live and grow for someone else to enjoy. A careless release method often is fatal to the fish.

A fish which is not going to be taken home should be released as quickly as possible. If pictures are to be taken, the camera should be ready and at hand. The longer a fish is out of the water, the less are its chances of surviving, even though it may look healthy when it swims away.

It is also important not to play a fish longer than is necessary to land it. The stress of the fight and thrashing against bottom debris can be lethal to a fish.

A fish that is to be released should be handled carefully when the hook is removed. The angler should wet his hands before touching the fish, because dry surfaces rub off the mucus which covers fish to protect them from diseases and parasites. Similarly, measuring boards or other surfaces that will contact the fish should

be thoroughly wet. Of course, the fish should not be gripped tightly.

It is best not to touch the fish at all while removing the hook. This can often be done simply by grasping the hook shaft with pliers and twisting it so that the fish drops into the water. If the fish is hooked too deeply to remove the hook without injury, the line should be cut as close as possible to its mouth, and the hook should be left in.

Finally, fish should not be "thrown" back. They should be placed gently into the water. A hard impact with the water's surface can damage a fish's internal organs, resulting in death.

Careful handling of fish which are to be released can help to ensure good angling opportunities for generations to come. *Manes*

LITTLE MASTER ANGLERS

Trisha and Joy Linder of Ashland, Nebraska showed their mom and dad how to catch walleye one May weekend at Glen Elder Reservoir. The girls, age seven and nine respec-

tively, caught the only big fish of the day, and each qualified for a Kansas Master Angler Award in the process.

The Linder family was at Glen Elder for the weekend, as they had been several times before. They had landed a few smaller walleyes that day, but the good-size fish eluded them — until 11:00 a.m., when fourth grader Joy felt a hard hit on the white Hot-n-tot she was trolling. The walleye she hauled to the boat officially weighed eight pounds, five ounces, easily a Master Angler catch.

Mr. and Mrs. Linder were still without respectable catches at 6:30 that evening, when second grader Trisha landed a six-pound-nine-ounce walleye. She also was trolling with a white Hot-n-tot.

The two big ones Trisha and her sister caught were, by far, the best fish of the weekend, but it was almost as much fun for Mom and Dad, just watching the girls — almost.

A Kansas walleye must weigh at least six pounds to qualify for Master Angler status. The state record walleye, taken from the Little Blue River near Manhattan in 1972, weighed 13 pounds, 1 ounce. *Manes*

WELL KEPT SECRET

Year after year, the list of Kansas' favorite black bass lakes remains the same — Clinton, El Dorado, Glen Elder, and a few others. It only makes sense to fish where success is greatest, but bass anglers could be overlooking a hot spot or two.

Bass tournament data reported to the Kansas Fish and Game Commission in 1984 indicated that Toronto Reservoir produced more and bigger bass per hour of tournament fishing than any of Kansas' most popular bass reservoirs.

Toronto, like many of Kansas' smaller, turbid reservoirs, has a limited amount of good bass habitat located in the upper end of the impoundment. Low angling pressure, due mostly to the murky water conditions, results in the build-up of respectable bass populations. Although these populations are not large enough to support intense angling, they could be ideal for small tournaments or non-competitive bass fishing.

There is a secret to tapping the Toronto bass resource — fall fishing. As the water cools and inflow decreases, water in the reservoir's upper end becomes surprisingly clear. Under these conditions, bass that are not disturbed by frequent angling pressure are vulnerable to artificial baits. A fall trip to a lake like Toronto could result in the catch of a lifetime. *Jim Beam*

NATURE

WISDOM

Let children walk with nature let them see the beautiful blendings and communions of death and life, their joyous inseparable unity, as taught in woods and meadows, plains and mountains and streams

John Muir

GROUSE NEWS

During 1985, 57 ruffed grouse were released in northeast Kansas. The birds were trapped by biologists in Wisconsin and shipped to Kansas through a three-way trade with the Missouri Department of Conservation. Under the terms of the agreement, 20 percent of the grouse which come to Kansas are given to Missouri. In turn, Missouri sends wild turkeys to Wisconsin. Since 1983, 237 ruffed grouse have been shipped to Kansas. Fifty of those have gone to Missouri.

Eastern Kansas was inhabited by ruffed grouse prior to the coming of European settlers. Their disappearance is blamed largely on overgrazing of small wooded areas around the turn of the century. This removed the understory, or shrub-type vegetation, which grew among the trees. Without that key habitat factor, the grouse could not survive. Improved land management has provided areas where ruffed grouse can again live in Kansas.

When the re-introduction project was first conceived, lack of funding was a major obstacle, but the Kansas City chapter of the Safari Club International came through, providing almost 100 percent of the needed funds.

Kansas' ruffed grouse seem to be doing quite well, according to biologists. Though no brood sightings have been confirmed to date, some unofficial sightings of hatchlings have been reported. Experts are optimistic about the outlook for Kansas ruffed grouse. *Manes*

MANY THANKS

Last year, for the first time since the Chickadee Checkoff program began, the Kansas Fish and Game Commission was able to send letters of thanks to all 19,026 people who gave money for the benefit of nongame and

threatened and endangered wildlife. This began an overwhelming stream of correspondence from thousands of Kansans who are concerned about the wild resources of their state. Following are comments taken from letters written back to the Fish and Game Commission.

"It's the first time we can remember that any state organization has taken the time to send out letters (and photos) of thanks explaining how our money is used to improve things. Thanks! We will continue to support this program."

"Keep up the good work for Kansans. The Checkoff gives a good feeling at tax time."

"I feel really good that we have a contribution that helps wildlife."

"I am happy to contribute to the Nongame Program since I also am an avid hunter and contribute to hunting and fishing programs through my license fees."

"I definitely am interested in the wildlife of our state and the country, as I believe it to be essential to the ecology of the land and want it preserved for my child, as well as her children. I only wish I could afford to do more."

"I would like to note that probably not all of the 19,000 contributions to the Chickadee Checkoff were from Kansans. I am sure many of us who no longer call Kansas home have a deep affection for the Sunflower State and include a contribution."

"Since we are not hunters, we feel left out, even though we are nature lovers. The nongame program sounds more like what we are interested in."

"We are very glad to have the opportunity to support wildlife programs through income tax contributions." *Joe Schaefer*

FERRET TROUBLE

The best judgment of the Game and Fish Department is that all of the ferrets within the infected area will probably die of the disease.

In October, one of the six ferrets taken to the Wyoming Game and Fish Department's Wildlife Research Unit at Sybille for captive

breeding died. The cause of death was diagnosed as canine distemper, probably the worst event that could have occurred in the ferret population. Ferrets are highly susceptible to distemper and the disease is easily transmitted from one ferret to another. Once a ferret contracts the disease, treatment of the animal is usually ineffective.

This raises immediate concern over the balance of the ferrets in the central population area. The best judgment of the Game and Fish Department is that all of the ferrets within the infected area will probably die of the disease.

The latest estimate put the ferret population at 31. The current number may be even lower. There are two outlying areas that may contain ferrets that could possibly escape the disease.

As many ferrets as possible are being captured and removed from the area where the risk of mortality is the highest. It will be impossible to capture them all. The captured ferrets will be held in isolation and observed daily. If the ferrets remain healthy, they will be used for captive propagation.

All human access and activity, other than normal ranching operations, will be curtailed in the two outlying areas, so as not to further stress the ferrets or increase transmission of the disease.

The Wyoming Game and Fish Department will continue with plans for a captive breeding program, realizing that this is the best alternative for the creation of a new ferret population.

Black-footed Ferret Newsletter

BIG BEAVER

If you're not a furharvester, you probably don't have a good idea about how big a beaver can get. They can weigh nearly 100 pounds and measure as long as four feet from snout to tail tip.

An average adult beaver is about three feet long and weighs about 30 pounds. They are common throughout Kansas, wherever surface water is available. *Manes*

SWEET DREAMS

New studies show that a creature's sleep time may depend not only on its metabolic rate, but also the animal's "danger factor." Animals that have few natural enemies, like the opossum and the bat, sleep as much as 20 out of every 24 hours. But the small roe deer, which has many predators, dozes only two-and-a-half hours a night. *National Wildlife*

NOTES

FIRST KWF PRINT

The Kansas Wildlife Federation is offering its first Wildlife Conservation Print and accompanying stamp. The painting, "Workin' The Fence," by Glenn Nicholas, depicts a Brittany spaniel on point with flushing quail in the foreground. The prints are available in two sizes, 14½ by 18 inches and 19 by 25 inches. Prices for the reproductions range from \$5.00 for a mint stamp and \$7.50 for a signed stamp to \$180 for a large print with a four-stamp block. Remarqued prints are available for an extra \$75.

To order the 1986 Kansas Wildlife Conservation Print, write to the Kansas Wildlife Federation, Box 1711, Wichita, Kansas 67127; or call (316) 522-2577. *Manes*

1986 POSTER CONTEST

The National Hunting and Fishing Day Headquarters announced its Ninth Annual Poster Contest for students in grades five through twelve. This year's contest features nearly 100 prizes totaling over \$7,500 in U.S. Savings Bonds.

To be eligible, posters must illustrate the theme, "Sportsmen and Conservation — Working Together for Wildlife," and they should be no larger than 22 by 28 inches. Each entry must be accompanied with an information sheet listing the artist's name, address, phone number, grade, school name and address, and the school phone number. Entries must be sent to NHFD Headquarters, 1075 Post Road, Riverside, Connecticut 06878. The deadline is April 4, 1986. There is a Junior Class for students in grades five through eight and a Senior Class for grades nine through twelve. *Manes*

PHOTO CONTEST II

The Kansas Chickadee Checkoff program is sponsoring the second annual Nongame Wildlife Photo Contest. A grand prize of \$100 will be awarded for the best photo entry. Prizes of \$50 and \$25 will be given for second and third place photos.

Copies of the winning photograph will be available from tax preparers and Kansas Fish and Game Commission offices for people who

contribute to the Chickadee Checkoff through their state income tax forms. The top three photos will be featured in the January/February, 1987 issue of KANSAS WILDLIFE Magazine.

This year's contest theme is "Birds of Prey." Pictures of vultures, hawks, eagles, falcons, or owls, of Kansas will be accepted. Only Kodachrome color slides are eligible.

The contest is open to all Kansas residents, except Fish and Game employees. The entry deadline is July 1, 1986. The owner's name and address must appear on each slide frame.

The Kansas Fish and Game Commission reserves the right to copy and print winning slides, with appropriate credit, for promotion of the Nongame Wildlife Improvement Program. All entered slides will be returned to the owners, but Fish and Game assumes no responsibility for damage to the photos.

Slides to be entered in the Chickadee Checkoff Photo Contest should be sent to Joe Schaefer, Kansas Fish and Game Commission, P.O. 4750, Wichita, KS 67204. *Manes*

LANDOWNER RECOGNITION

Kansas Outdoors Unlimited announced that nominations are open for the 1985 Kansas Farmer-Sportsman of the Year Award. The annual award is sponsored by Industrial Expositions in cooperation with K.O.U. The 1985 award winner will be announced at the Wichita Sports, Boat, and Travel Show to be held February 19 through 23 in Century II.

It is especially important to recognize Kansas landowners for continuing to provide wildlife habitat, while facing an uncertain farm future. The annual award is a "thank you" to Kansas farmers who show their concern for wildlife.

Nominations for the 1985 recipient may come from any individual, firm, or organization and must be for a landowner-operator farming and living in Kansas. Nomination forms are available from Kansas Outdoors Unlimited, Inc. P.O. Box 470, Herington, Kansas 67449, or from major Kansas Fish and Game Commission offices, the Soil Conservation Service office in Salina, and County Extension Service offices. Nominations must be postmarked on or before January 10, 1986 and must be mailed to Kansas Outdoors Unlimited. *K.O.U.*

DEER WARNING

The SAV-A-LIFE Corporation is marketing a vehicle accessory it claims will reduce animal-vehicle collisions by more than 80 percent. Known as the SAV-A-LIFE Animal Warning Device/Deer Alert, it emits an ultrasonic signal that will keep most deer (and many other animals) from crossing the road in front of cars, trucks, motorcycles, and even trains.

The SAV-A-LIFE Security System consists of a pair of two-inch, chrome-finished instruments, which resemble small jet engines, that easily mount on the front of a car, truck, or even a motorcycle. When the vehicle attains a speed of 30 m.p.h. or more, air rushing through the cylinders creates an ultrasonic signal that can be heard by deer and other animals up to a quarter of a mile away. Inaudible to humans and animals riding in the vehicle, the sound alerts animals to the approach of the vehicle, keeping them off the roads and highways.

Guaranteed for 30 days, the SAV-A-LIFE Security System sells for under \$30.00. For information contact: SAV-A-LIFE, Inc., P.O. Box 1226, New York, NY 10025.

COMMUNICATOR AWARD

The Outdoor Writers of Kansas have selected Jerry Dal Porto of KCTV 5, Kansas City as the first recipient of their Conservation Communicator of the Year Award. The award is given annually to a communicator or educator, not professionally employed in a conservation field, who has made a significant contribution in promoting the wise use and management of natural resources in Kansas.

Dal Porto received his professional training in the United States Air Force and began his broadcast career in 1964 at KCOY-TV in California. He came to Kansas City in 1973 to work with what is now KCTV 5. He is currently employed as a field cameraman.

Dal Porto's enthusiasm for the outdoors was developed on childhood hunting expeditions with his father. Today he enjoys many types of hunting, fishing, and other outdoor pursuits. These interests provoked Dal Porto to bring stories about outdoor sports to KCTV 5 in 1984. He enjoys developing these stories and recognizes the need to inform people about fishing, hunting, and other outdoor activities.

In an urban area that traditionally receives only sparse media exposure to the outdoors, Dal Porto has made a substantial contribution to public awareness of natural resources and their management. *Mary Kay Spanbauer*



Application for Tree Seedlings Spring 1986

State and Extension Forestry, Kansas State University

How to order: Tree seedlings may be used only for windbreaks, firewood plantings, woodlots, erosion control plantings, wildlife plantings or Christmas tree plantings. The plants may not be used for landscaping. **Purchaser must sign agreement below.**

Indicate number of units and price for items on the form below.

Delivery information: Orders for bare-root seedlings, stratified seeds and marking flags will be shipped to your address as soon after March 1 as weather permits. Orders for container-grown

seedlings received before March 20 will be shipped to a location in your county in April. You will be notified when and where to pick up seedlings.

Orders for container-grown seedlings received after March 20 will be shipped to your address.

Orders will be accepted through May 9. Order early to be sure of getting the items you want.

Please check box at bottom of form if you wish to pick up your order at the State and Extension Forestry office, 2610 Claflin Rd., Manhattan. You will not be notified when your order is ready.

Please call (913) 532-5752 before coming to be sure your order is ready.

Special rates: Orders of bare-root pine for 10 units or more of a kind are \$6.25 per 50. Orders of any container-grown species of 16 units or more of a kind are \$21 per 30.

Claims: Claims must be reported by July 1 of the current year.

Payment: Payment must accompany application. Make check payable to: **State and Extension Forestry.** No sales tax is required. Price includes freight.

Agreement: I agree seedlings will be used for (check one—primary purpose):

windbreak firewood

woodlot erosion control

wildlife Christmas trees

Signature

Name _____

Address _____

Town _____ State _____ Zip code _____

Telephone (daytime) (_____) _____
Area code _____

Mail white and canary copies to:
State and Extension Forestry
Kansas State University
2610 Claflin Road
Manhattan, Kansas 66502
Pink copy to County Extension Office
Goldenrod copy to purchaser

Office use

Order no. _____

Amt. due _____

Received \$ _____

Rec'd by/Date _____

Order no. _____

Bare-root plants			
\$12.50 per 50 of one kind. See special rate above for large pine orders.			
Shrubs	Unit	No. Units	Price
American plum	50		
Autumn olive	50		
Cotoneaster	50		
Fragrant sumac	50		
Honeysuckle	50		
Lilac	50		
Sand hill plum	50		
Evergreen trees	Unit	No. Units	Price
Austrian pine	50		
Ponderosa pine	50		
Scotch pine	50		
White pine	50		
Eastern redcedar	50		
Arborvitae	50		
Deciduous trees	Unit	No. Units	Price
Blacklocust	50		
Bur oak	50		
Green ash	50		
Hackberry	50		
Honeylocust	50		
Lacebark elm	50		
Pecan	50		
Redbud	50		
Russian mulberry	50		
Russian olive	50		
Siberian elm	50		
Silver maple	50		
Black walnut	50		

Stratified seeds	Unit	No. Units	Price
\$6.50 per 100.			
Black walnut	100		
Pecan	100		
Container-grown plants	Unit	No. Units	Price
\$25 per 30. See special rate above for large orders.			
Austrian pine	30		
Scotch pine	30		
Ponderosa pine	30		
Eastern redcedar	30		
Wildlife bundles	Unit	No. Units	Price
\$31 per bundle (130 plants). Contains 5 black locust and 25 each redcedar, honeysuckle, cotoneaster, fragrant sumac, autumn olive and choke cherry.			
Wildlife bundles	1		
Nongame wildlife bundles	Unit	No. Units	Price
Partially financed by Kansas Fish and Game Commission from contributions to Nongame Wildlife Checkoff on state income tax forms. \$9 per bundle. Contains 3 redcedar, 5 honeysuckle, 5 cotoneaster, 4 fragrant sumac, and 3 autumn olive.			
Nongame wildlife bundles	1		
Marking flags	Unit	No. Units	Price
\$6.50 per 100.			
Marking flags	100		
Total			

From
State and Extension Forestry
Kansas State University
2610 Claflin Road
Manhattan, Kansas 66502

Please type or print clearly.
Complete address required.

Shipping Address:

_____ Name _____

_____ Address _____

Town _____ State _____ Zip Code _____

County _____

Telephone (daytime) (_____) _____
area code _____

Live Trees—Perishable

Keep from Heat and Frost

Nursery License No. 5451

This is to certify that the nursery stock now being grown by Kansas State Extension Forester has been officially inspected and certified for sale in the state of Kansas.—State Entomologist.

I will pick up order in Manhattan.

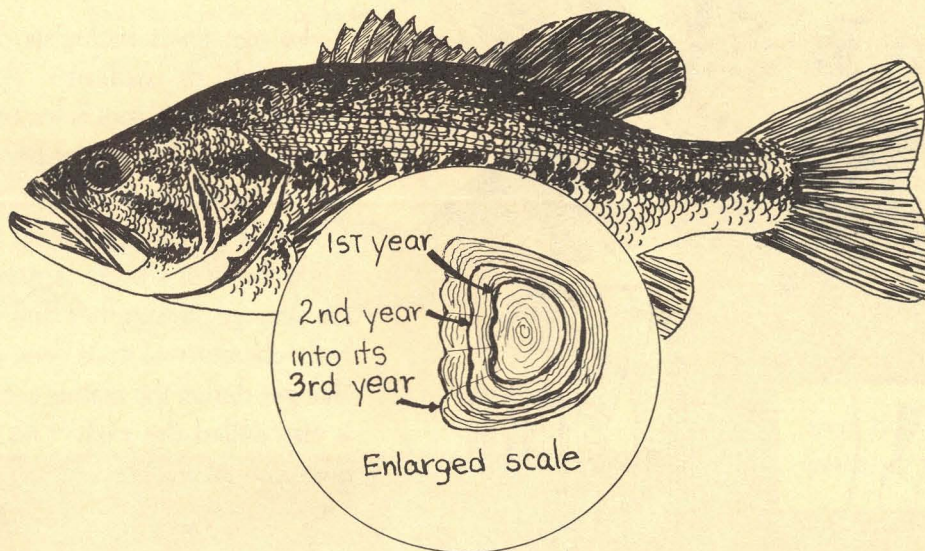
NATURE'S NOTEBOOK

by Joyce Harmon Depenbusch
Wildlife Education Coordinator
Kansas Fish and Game Commission

AS OLD AS THE HILLS

The old saying, "Don't look a gift horse in the mouth," hints at one way the age of an animal can be determined. Techniques used to age wildlife are more complicated than checking a horse's worn teeth, because wild animals won't stand still to be examined. Let's take a closer look at a few of the ways biologists discover how old wild animals are.

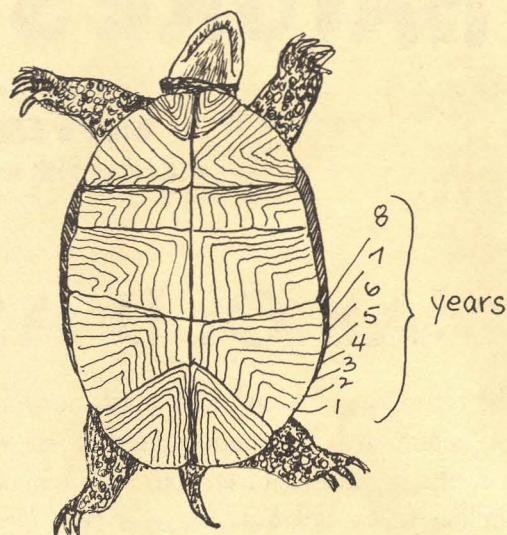
Aging certain wildlife and plant species is made easier by **growth rings**. The rings are formed when the tissue of the animal or plant grows rapidly for one part of the year and then very slowly, or not at all, during another part of the year. This change in tissue growth forms bands or rings that can be counted, with each one representing one year. The bands are also called **annual lines** or **annuli**. You may have counted the rings of a tree stump to age it. The growth rings of animals are similar.



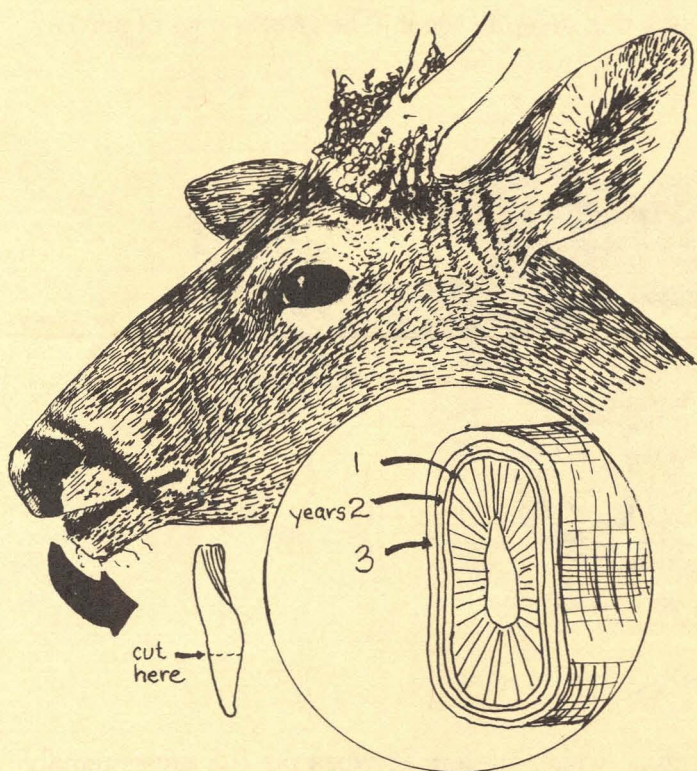
The **scales** of many fish have growth ridges, which are formed when the fish grows rapidly in warm weather and slowly in cold weather. Fisheries biologists count these ridges under a microscope. The ridges grow in the spring and summer. When the weather turns cooler, growth is slowed, causing the ridges to form close together. In winter, growth stops, leaving incomplete ridges. Fish can be aged by counting the dark bands left by the winter ridges.

Some fish do not have scales, so bones, such as ear bones or vertebrae, are used to age them. Catfish have **pectoral fins** with **spines** that show growth rings when they are cut open.

Some turtles, such as the box turtle, have annual lines on the top shell, or **carapace**, and bottom shell, or **plastron**. Counting these lines gives an accurate age for turtles younger than five years and is fairly accurate up to 15 years of age, but this technique does not work for older turtles.



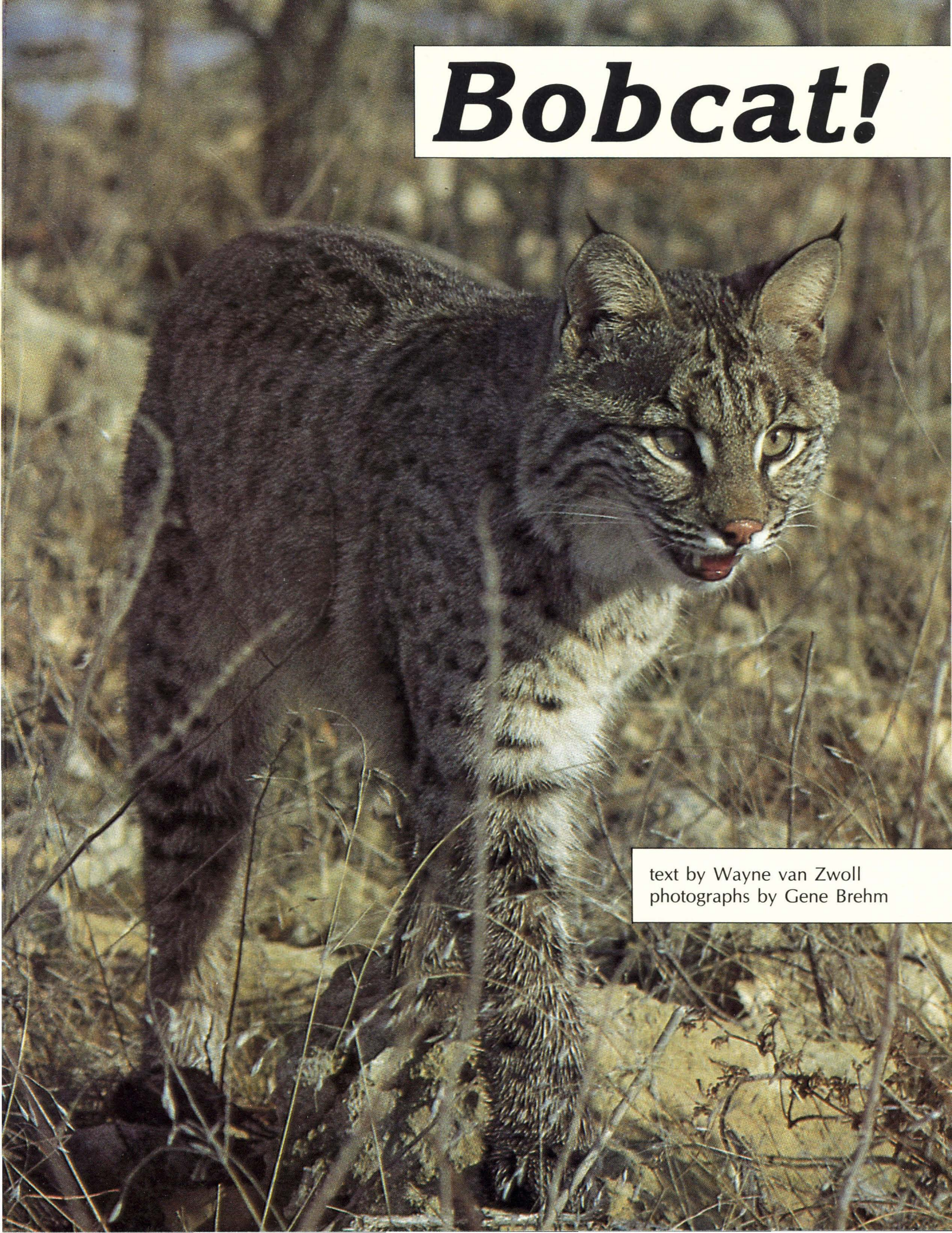
The growth rings of fresh-water mussels, appear as ridges that are higher than the rest of the shell. These ridges are formed when growth is slow during part of the year.



To age deer, biologists check their front teeth, or **incisors**. A very thin slice of the tooth root is looked at under a microscope. The **cementum**, or outside cover of the root, has annual lines. The lines are formed during the winter, when the deer's body is **adapting** to the change in weather and diet. The body chemistry of male deer, or **bucks**, changes during the mating season, which is also called the **rut**. This may form false annual lines.

Rams, or male bighorn sheep, have horns with prominent annual growth rings. These rings can be counted to age sheep with some accuracy. As the ram grows, his horns increase in size. They may live for as long as 15 years.

Bobcat!



text by Wayne van Zwoll
photographs by Gene Brehm



Reports of cougars notwithstanding, the bobcat is the only native wild feline still found in Kansas. In the eastern part of the state, bobcats inhabit wooded areas with thick undergrowth, while farther west they prefer rocky outcrops, overgrown stream courses, and patches of shrub. Both the eastern (*Lynx rufus rufus*) and western (*Lynx rufus baileyi*) subspecies are extremely well camouflaged and use cover expertly to avoid being seen. The bobcat's keen eyes and

ears make it a capable hunter at night as well as in the daytime. Padded feet enable it to ghost through timber and slip, silent as a prairie breeze, over the rimrock. Many Kansas outdoorsmen have yet to see their first bobcat, though the animals are quite plentiful.

Bobcats breed as early as January and as late as August, but peak mating activity is between February and May. Females may breed their first season, but males aren't sexually mature until a year and a half old. The young are born after a 63-day gestation. Litter size ranges from one to seven, though three kittens are the norm. Their eyes closed tight at birth, new-born bobcats weigh only about 300 grams (11 ounces). They spend their first five weeks in the den, usually in a rock crevice or hollow log, or under a blowdown.

After the kittens are able to leave the den, the female continues to bring them food. Most of the time that means a rabbit, bird, or small rodent. The young are weaned at two months of age; at four months they are following their mother on the hunt. By the time they're eight months old, the kittens have dispersed, though litter mates may travel together for several months after this time.

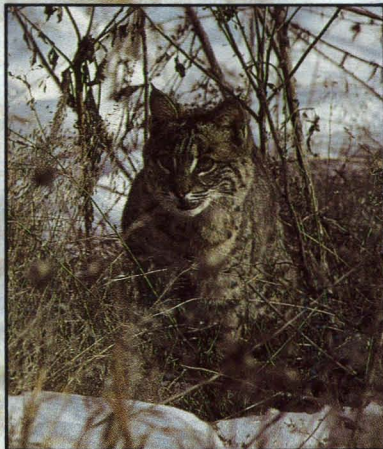
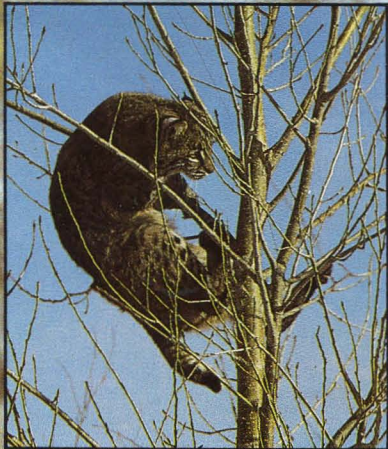
Bobcat territories range from 2.4 to 100 square kilometers (up to 38 square miles). Topography, cover, and food determine the size of individual home ranges, and the largest are in the arid western reaches of the state. Tolerant of each other under low population densities, bobcats fight when crowded. They often travel great distances in search of a home range — sometimes as far as 160 kilometers (98 miles).

In the eastern part of Kansas, rabbits and cotton rats comprise about half of a mature bobcat's diet, though deer — especially fawns — are a significant food source in areas and under circumstances that make them vulnerable. Injured deer and those hampered or exhausted by deep snow often fall prey. In the West jackrabbits are important fare, though bobcats have proven themselves as adaptable as coyotes and almost as omnivorous.

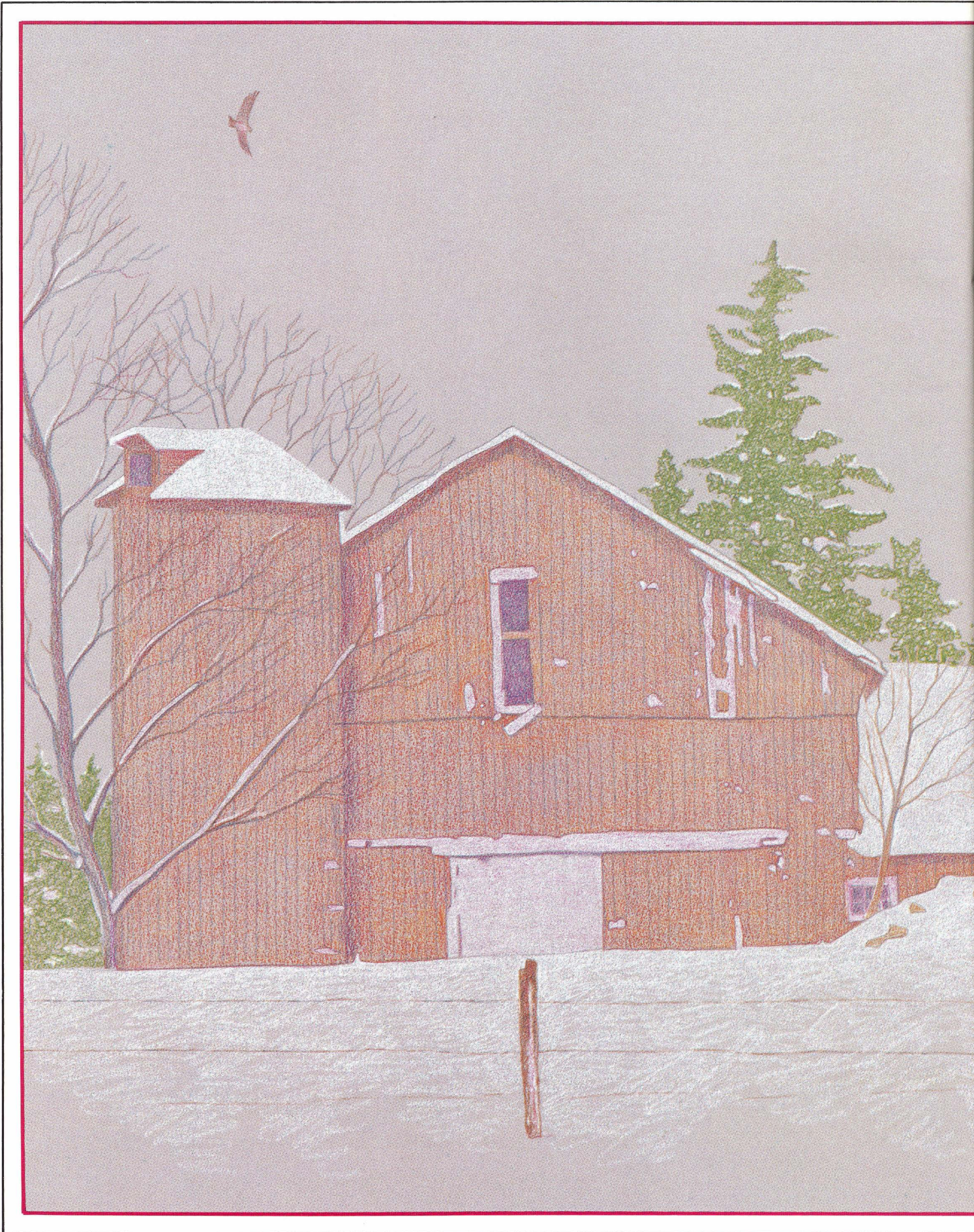
Adult bobcats normally weigh up to 9 kilograms (20 pounds), though larger ones have been recorded. They are buff to red in color, with black spots and a white belly. The ears have black tufts and a white spot on the back side. The tail is short and black-tipped; cheek tufts are black and white. Bobcat pelts are marketable, and demand for them pushed prices above the \$300 level a few years ago. Consequently, natural resource agencies like the Kansas Fish and Game Commission closely regulate bobcat harvests. It is legal in this state to hunt and trap bobcats during the months of December and January. Season dates may change from year to year; a furharvester license is required.

The lifespan of bobcats in the wild is about 14 years, though in captivity they have lived to be 25. □





Bobcats are at home in many different environments, from swamps to treetops. In western Kansas they favor brushy draws and rocky bluffs, in the east deciduous woodlands and edge cover around agricultural lands. They stalk their prey much like domestic cats.



The Chickenhawk

Wayne van Zwoll

illustrations by Ken Raney

He was going to miss the school bus if he didn't stop it right now. That's what his mother had said and she was right. He'd waited a long time, though, and it was very cold. To wait that long without a shot seemed like such a waste. He curled his toes in his rubber shoes. They hurt, especially on the tips.

Down the road he could hear the bus coming. He could hear the driver rev the engine, could hear her clash the gears. Women didn't make very good bus drivers, he decided. When he was old enough to drive he wouldn't clash gears. He could already power-shift the tractor without grinding most of the time. He did it when his father wasn't around.

Now he could see the snow, a billow of lacy white streamers sweeping behind the dirty orange dot that was the bus. It was coming over the hill. One more stop and it would be at the bottom of the drive. He'd better get going.

"Roy!" He looked hard once more across the corn field where all the stalks had snow ramps on them and wind gutters in between, where the gold and amber of autumn's harvest was now dull brown and gray. Corn stalks were like school buses: When they got old and dirty they didn't look like what they were supposed to.

Seeing nothing, he turned quickly and ran for the house, shucking the .22 cartridge out of the Remington. The cartridge fell in the snow. He stopped to pick it up. "Roy!"

"Comin'! I'm comin'!" He could hear the bus again, revving. He had a minute and a half, maybe two. He found the cartridge in the hole in the snow and fumbled it in stiff fingers. "Roy! The bus!"

He jammed the little round in his jacket pocket and ran to the back door. His mother took the rifle as he flung the door open. "He didn't come," he said. "The gun's cold; wipe it off when it

sweats, will you Ma? Magazine's full. Thanks." The screen door slammed behind him.

He ran down the drive as fast as he could. The air stung his lungs. The pale sun shot sparkles through the snow as he kicked it up, but he didn't see them. They were behind him. The school bus hadn't yet come around the corner but he could hear the motor wind down. He stamped his feet and wiggled his toes some more. Maybe he would drive a school bus someday.

It was warm in the bus when he got on. It smelled of baloney sandwiches and cold vinyl and exhaust fumes. It was a smell he never smelled anywhere else; it was strictly a school bus smell. Sometimes, when he sat in the back, it smelled like perfume. But not today. Laura Jane was not riding today. Either she was sick or she had got a ride with her mother. Roy sat in the middle, by himself. He looked out the window at the naked field and the snow boiling out from under the bus. He thought about the hawk. At the next stop Joe got on and trudged down the aisle and dropped into the seat next to Roy.

"Did ya get him?"

"Naw. He didn't come. Sometimes he waits till just about noon, even. He's smart. But I'll get him." Roy looked very serious and squinted hard out the window at the snow. He knew Joe was watching.

"You been tryin' for a week."

"He's smart. But he's not bulletproof. I'll get him."

"You missed him once." Joe was rummaging in his lunch sack already, talking as if to himself. "It's against the law, you know."

Roy watched Joe pull out a box of raisins and open it up. He didn't say anything, just watched. Joe threw a handful in his mouth. They rattled from the box as he dumped more in his hand. They were cold, must have been outside for a while.



Roy's fingers were thawing now, and they hurt. He flexed them but couldn't make them do any work. Just as well. He'd need his lunch at noon. Sometimes it was better to hold off eating, anyway, even if you were hungry. His father always ate a lot, but never before he was supposed to eat. The hawk ate when it wanted to.

The bus rumbled on. It was cold, and Roy's breath clouded the window. He knew this kind of weather made animals hungry — it made him hungry. The hawk would be circling in the gray sky now, looking for mice. It wouldn't get any more chickens because there were no more to get.

Laura Jane's mother's car passed them before they got to school and he could see Laura Jane in the back seat. Laura Jane had won a lot of ribbons at the county fair last year and always did well in school. She was one of those girls who always had the right answer and never made mistakes even when she was talking, just off the cuff talking. She smelled good and looked good no matter where she was or what she was doing. She was just one of those girls.

"See ya," Joe said. The bus had stopped and everybody was getting off. "See ya."

The school building was brick. It was a bigger one than Roy had started in because several small schools had consolidated, and now he rode over twenty miles to do what he least liked to do: sit at a desk. But he did it — partly because he had to and partly because of Laura Jane.

Math went slow, and so did grammar, and so did history. At noon he met Joe. Joe had already finished his lunch. Roy unwrapped his.

"Will you hunt tonight?" asked Joe.

"I'm going to kill that hawk."

"What don't you hunt rabbits. You'll have better luck, and you can eat 'em. Besides, it's legal."

"You go hunt rabbits. That hawk took my chickens, and I have to get him." Roy bit into a hard-boiled egg, then added salt. The salt was in one of those little paper packets you get at drive-ins and Roy's mother had picked it up for his lunch. They didn't eat out often, but his mother always picked up salt if they went to a drive-in.

"That hawk had to eat, too, you know. A coyote took one of Dad's little calves once. Dad shot him." Joe didn't know where he was going with all that, but Joe wasn't very bright and Roy didn't care. He knew what he was about.

"Want an apple?"

"Sure!" Joe was still hungry, but Roy felt full. He didn't eat much at school.

The afternoon went as slow as the morning. Out the window, the people's breath still showed, and cold engines

trailed white exhaust as cars pulled onto the highway. The school was on the outskirts of town so you didn't see too many people walking, but you could see lots of cars across the grounds on the highway. Roy knew it would be very cold waiting for the hawk. But he would wait.

The bus ride home was shorter, because Laura Jane got on. Joe talked of rabbit hunting, but Roy figured he wouldn't go alone. Maybe on a nice Indian summer day, but not today, not with the snow like it was and the temperature in the teens and the wind still up. Joe wasn't like that, not a go-getter. Hell, if the hawk had taken *his* chickens, he probably wouldn't have even tried to kill it.



Nobody had any baloney sandwiches left, but the bus still smelled like them. When Laura Jane stepped by, she smelled like perfume, but as soon as she was gone it was baloney and vinyl and exhaust. The driver still clashed the gears at every stop.

Roy said good-bye to Joe and wished him luck in the woods then jumped off the bus into the snow and cold and wind. He ran up the drive, trying not to suck too much air through his mouth. The cornstalks still had those grainy white ramps, and the fenceposts were all bare on the same side. He would dress warmly.

It had been hot at the fair last summer. He remembered the smell of popcorn, the shouts of the hawkers at the booths, the squeaking machinery with the silver-worn seats that he'd ridden with Joe. Joe hadn't gotten sick. This year he was going to take Laura Jane, going to

ask her, anyway. But he wouldn't go on any wild rides, just the easy ones. He'd make it fun for her, then he'd show her the ribbons he'd won, the big blue ones that would match the ribbons she was certain to win. She was just that kind of girl.

But the cold wind whipping the dry corn leaves, skating across the snow, biting his face, made him remember the chickens and why he was out here. Without chickens there would be no ribbons, and with no ribbons no Laura Jane. If you couldn't do math or play football or sing or blow a trumpet you had to do it with chickens. And he'd had good ones.

He could see the hawk, now, a black speck in the low gray sky, circling. It would come closer. Roy cracked the bolt on the Remington, and the little brass case winked back at him. It was more than Laura Jane now. It was a question of honor, of evening things out, of proving to himself that he was capable of looking out for his own. It was, he thought, the most important thing he could do right now.

Now he could tell that the hawk would not pass over the granary. It was circling to the west, nearer the silo. He let the bird's arc carry it behind the silo; then he ran for it, hard. The hawk seemed supernatural in its ability to gaze through the concrete walls as he slumped in the weeds at the silo's base. He peeked over the door he'd propped against the bottom rung of the ladder. The wind was stiffer out here, away from the other buildings, and it stung his eyes. The hawk circled, maybe fifty yards up.

Some things you have to prove as a young man, Roy's father had said. You have to go up against what is stronger than you and wrestle it to the ground. Roy watched the hawk and saw the lean, streaked breast, the hardened pectoral muscles underneath driving the thin, almost fragile wings. In the tucked belly he saw the black lines that were the legs, then those clenched, sharp-taloned feet that had bloodied themselves on his chickens. The beak of the hawk was sharp, too, and cruel as it had torn his birds asunder. And the eye, that eye that looked through you to see your failures, the eye that could make you miss before you aligned the sights. . . .

"You'd better eat that potato," his father said.

"Pass the gravy, please," Roy said.

He dipped some thick milk gravy onto the potato and blackened it with pepper. Then he scooped some peas on top and forked a little of everything into his mouth.

"How was school?" his mother asked.

"O.K."

"Did we get those math problems all right last night?"

"Yeah. Thanks. I couldn't have done them without help."

"You could have done them if you'd kept trying to do them," his father said. "Your mother just helped you understand them."

That was easy for him to say, Roy thought. He could do anything. He just bowed his neck and did it. He could shoot, he could farm, he could mechanic, he could even play a harmonica.

Roy took another scoop of gravy and mixed his peas up in it. "I'm just not good in math. And I won't be running the mile next spring either. Coach says. Says I haven't got enough kick."

"Kick is in your guts, Roy," his father said.

"You have to kick with your legs." Roy stirred his peas hard. "And lungs."

His father didn't say anything for a while and his mother got up to cut the pie.

Roy wiped his plate with a bread crust and handed the plate to his mother. She took it and put a saucer with a wedge of pie on it in front of him. Then she went to the frig and got some cream. She handed it to Roy.

"That's all the cream, and we've got a whole pie," she said.

Roy put just a little bit on. He didn't like pie without cream.

"Joe said he was going to hunt rabbits this afternoon," Roy said. "Bet he chickened out." The wind was still howling outside and the hot pie felt

good going down. Roy's fingers still tingled from the cold.

"Joe had to work, I imagine," said Roy's father. "Russell told me today they found leptospirosis in their cows."

"Joe didn't say anything about that." Roy was surprised.

"Oh."

"They must have insurance." Roy mouthed more pie.

"No insurance for that." His father felt bad for Joe's family, Roy could tell. His father was soft a lot of times. Roy didn't always like that, but he liked Joe and it was O. K. to be soft on Joe.

"Russell said he'd give you some more chicks, Roy, when they're ready. He was sorry about what happened to yours."

"I can take care of my chickens," Roy said.

His father looked at him, then through him.

"I mean, they don't have to do that, now that they have leptospirosis."

"You shoot well, Roy." His father said that matter-of-factly, but his mother was bewildered. She just ate her pie. She knew his father.

"You shoot well. It's too bad they don't give ribbons for shooting at the fair."

Roy scraped his saucer with the edge of his fork while the wind moaned outside. He thought of his father shooting at the fair. His father didn't spend much but always bought three shots at the .22 booth to see if he could knock a diamond or a triangle or a heart out of a

playing card. They were designed so you couldn't knock them all out with three shots because they were big enough to show around the bullet holes if you bent the tattered edges back. His father was the only one he'd ever seen win something at the .22 booth. The Remington was what he'd chosen, and he'd given it to Roy.

"You'd win the blue every time," Roy said.

"You'll whip me good one of these days," his father said. "But I don't care, because that won't prove anything."

Roy looked out the window past his father.

"Shooting doesn't prove a thing, and killing doesn't and blue ribbons don't. A report card can't and a four-minute mile won't."

"Did you ever run a four-minute mile?"

"No."

Roy was vaguely aware of how hard it was to run a four-minute mile and knew, down deep he knew, that his father had never run one. But he was disappointed. He'd figured somewhere, at some time, his father had tackled a four-minute mile and wrestled it to the ground.

"You've got to prove yourself," Roy echoed his father's words of long ago.

His father looked through him again. "You ate well tonight, and you eat well every night. The hawk that got your chickens only eats well once in a while. You've been after her like a hound of hell." Roy looked up because his father never swore. "And someday you'll get her. But you won't prove anything that you can't prove by tossing a bottle in the air and breaking it with that pump gun. And then I'd hit a smaller one. And if Ad Topperwein were still around he'd shoot the socks off me."

The wind had died somewhat, but the panes rattled occasionally, and the hard snow still ticked the glass.

"Some coffee, Mum, please. Thank you." His father's cup was steaming and Roy watched the steam.

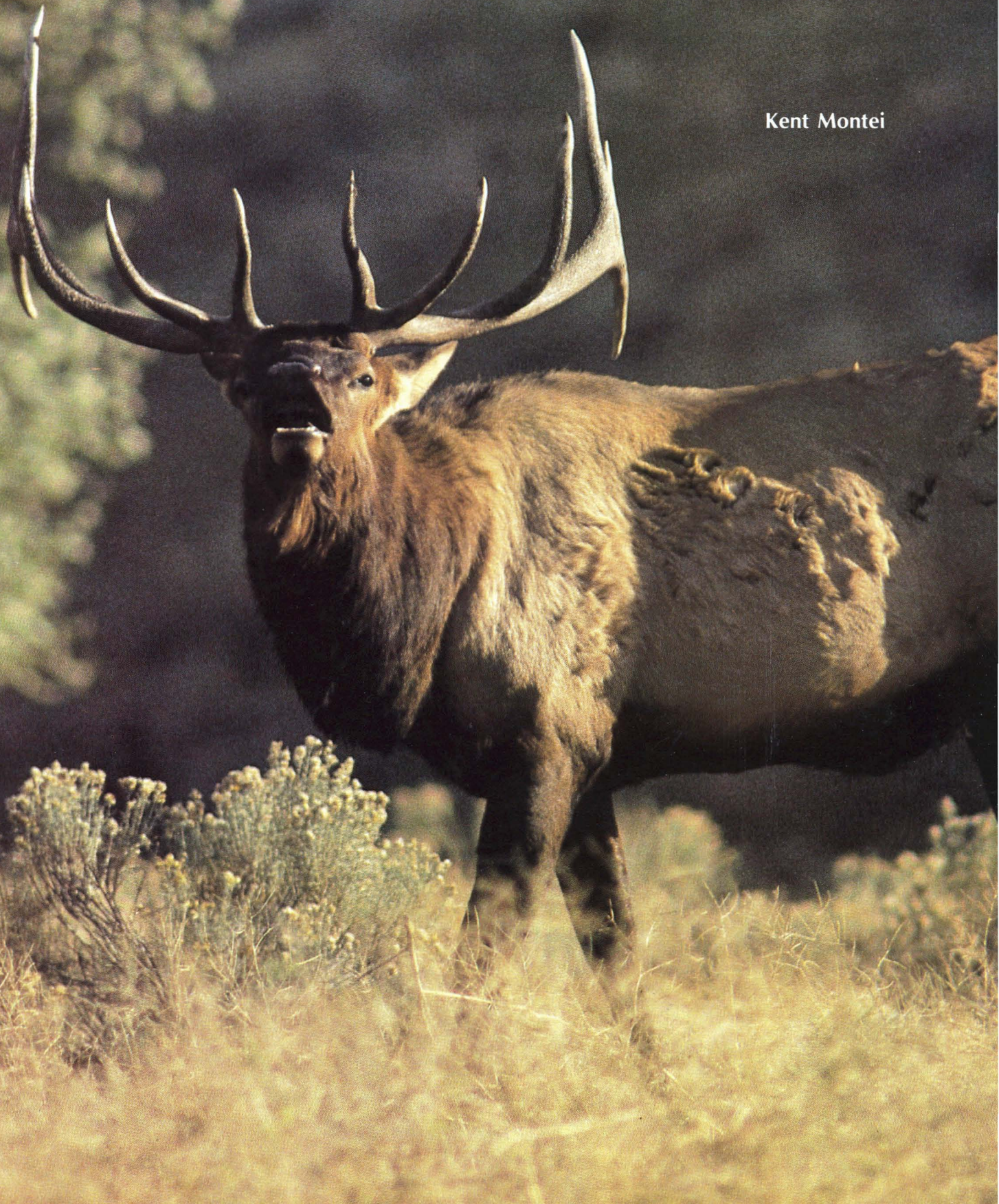
"That's really too bad about Russell's cows," his father said, talking to the coffee. "It takes quite a man to start from scratch again, after all those years of building." Then to Roy: "You'd better take him up on those chickens. I'll help you stretch some wire over the pen. We don't want to lose any of Russell's birds."

Roy was going to tell his father how he'd already shot the hawk, straight overhead he'd shot it and it had fallen, *plunk*, right at his feet, and how he'd centered the chest with the little hollowpoint, and how he'd proven that he could. But then he thought of how Russell was going to get back at the leptospirosis and he decided he wouldn't tell his father. Not ever. □



update on ELK

Kent Montei





Title page: A herd bull bugles a challenge during the September rut. Left: This bruiser has just finished ridding his antlers of velvet in preparation for the rut.

Back on the prairie again, wapiti are thriving in Kansas.

By day's end, the five bull elk had traveled over eight miles, pushed by the helicopter maneuvering just above them. The hazing was to move the animals into the river bottoms and out of the corn fields.

Corn fields?

The popular image of elk habitat is a mountain meadow or conifer-covered slope. At least, it is not the Kansas prairie. But in presettlement times, elk were found on the Great Plains and as far east as the colonies! The east coast elk disappeared in the early 1800s, while the plains elk hung on for another 50 years. By the early twentieth century, even populations of mountain elk had reached all-time lows. Due to educational efforts and proper management, elk populations in western states have since rebounded, and the big ungulates can now be found just about anywhere there's suitable habitat. Even Kansas has a free-roaming elk herd.

Actually, Kansas has two elk herds. One, established in the Flint Hills at the Maxwell Refuge in the 1950s, is fenced in a 2,500-acre enclosure. The Maxwell Refuge was purchased and donated to KF&G through the estate of H. I. Maxwell in 1944, to be managed as a wildlife preserve. Elk and bison (buffalo) were

released on the area in 1951. Although confined, the elk are still very secretive and considered wild. About 170 bison roam the refuge as well. The Maxwell area is located six miles north and two west of Canton, in McPherson County.

Kansas' second and truly wild herd of elk evolved because of problems at Maxwell. During the late 1970s, elk from Maxwell were escaping onto private ground, and some of the landowners were complaining about them. The 20-year-old wire fence needed major repair. Fixing the fence was simply a matter of obtaining authority to spend the required funds, but the budgeting process would take at least a year — too long to wait.

Until the fence could be repaired, elk that were continually leaving the refuge would have to be destroyed or moved. Moving the elk was the preferred option, but since elk compete with cattle for forage, most landowners would not allow them to be released in their area. Consequently, during the late 1970s, some elk were destroyed and their meat sold.

At about this same time, the U. S. Forest Service, which manages the 108,000-acre Cimarron National Grasslands in extreme southwest Kansas, ex-

pressed interest in adding elk to the area. Pronghorn antelope had recently been re-established on the Grasslands, and the elk was another likely candidate. In 1981 KF&G and the Forest Service agreed to an elk management plan for the Grasslands that called for a herd of between 30 and 50 animals. Excess animals would provide limited hunting. Local groups like the Cimarron Sportsmen's Club and Morton County Grazing Association supported the venture. In 1981 twelve Maxwell elk (eight cows and four bulls) were tranquilized with a dart gun and moved to the Grasslands. In 1984 seven elk were received in a trade with Oregon. Two young bulls found their home at the Grasslands and five arrived at Maxwell to improve that herd's bloodline. By this time the Maxwell fence had been repaired.

Since established, the Grasslands elk

herd has grown to at least 26 members. Some animals have been lost to natural causes, poaching, and vehicles; but the herd is increasing and will soon reach the management plan's objective of between 30 and 50 head.

The addition of a truly wild elk herd in the Grasslands pointed out several problems. Though southwest Kansas got a healthy group of elk, the animals had no legal protection and KF&G had no authority to manage them. Under Kansas law, elk were not considered wild animals nor granted any form of protection. In 1981, law changes made the elk a wild game animal and thus brought it under the management and control of KF&G. The final step was granting KF&G authority to charge for elk permits when a season became a reality. In 1985 the agency introduced legislation to grant this authority. It was voted

down. Those opposed to this bill felt surplus elk should be moved instead of hunted and were able to block the bill's passage.

KF&G is now in a very awkward position. A signed agreement between it and the Forest Service states the Grasslands herd is to be maintained at 50 animals. But the political system prevents KF&G from allowing the harvest of surplus. One answer could be to move the excess elk; but, again, to where? There are no other areas in Kansas where all landowners would be willing to allow elk re-introductions — at least, none the Commission knows about. A possible exception is Fort Riley. Fort representatives have expressed interest in releasing elk on that facility. This may occur in the near future, but the elk would probably come from the Maxwell herd because of its proximity. Moving animals will be undertaken only if the results will benefit the public and are economically sound. Each move costs the license-buying sportsman a lot of money.

KF&G undoubtedly will at some time introduce legislation that will allow the agency to establish an elk permit fee. If it fails again, the option is still available to hold an elk season, allow a limited number of permits, and not charge for these permits. This option returns benefits to the sportsmen who paid for the wild elk herd, honors the Grasslands management plan, meets the original project's goal, and helps control damage problems that may be occurring. A hunting season is the most efficient means of controlling most big game wildlife populations. This would hold true for Kansas' wild elk herd.

Back to the cornfield. The Grasslands elk have been staying along the Cimarron River near the Colorado-Kansas border. Occasionally they have entered some of the irrigated crop fields south of the river. When this occurs, KF&G and Forest Service personnel or members of the Cimarron Sportsmen's Club have driven the elk away from the fields. When the fields have standing grain, harassment from the air is the best way to move the animals. This method is very expensive and is used only as a last resort.

What is the future of wild elk in Kansas? A herd of 50 should continue to survive on the Grasslands; and maybe a similar population can be established on Fort Riley. It is doubtful if any other elk herds will be started. For the time being, Kansans will have to be content knowing there are captive "wild" elk at Maxwell and a small free-roaming herd on the Grasslands. But when you think about it, that's a lot more than we had even five years ago. □



Gene Brehm photo

Not all Kansas elk are this impressive, but in the absence of hunting most bulls will eventually carry big antlers. Though cows seldom reach 600 pounds live weight, a big bull can scale nearly twice that.

ELK

... philosophically

There's something about them that makes people who don't get excited about other animals excited. They're big, of course (though thousand-pound bulls aren't as common as some people would have you believe), and those wide-sweeping, back-brushing, multi-tined antlers are almost hypnotic. Elk are only brown — I mean, you can't say they're colorful — but they know how to make brown pretty. In spring elk are reddish-brown, in summer more chestnut. They turn brown as fall comes, except for the bulls, and *they* turn tan, cream, some almost the color of unprinted newspaper. The rumps are yellow, of course, which is brown, too, if you care to look at it that way. Old bulls may have black necks, and lots of elk have black legs. But, like black bears, elk don't really wear any black — the black parts are actually dark dark brown.

For being so big and brown, elk can hide very well in green foliage, and for being so heavy they can tiptoe around in there very quietly. They smell well, hear well, see well; you can't sneak up on elk very often. They run fast, too. Not like pronghorns, mind you, but if pronghorns had to negotiate the kind of stuff that elk run through they wouldn't run nearly as recklessly as they do. Maybe that's why they've stuck to the sagebrush and let the elk risk their necks in the snowy timbered norths of the Rockies.

Elk aren't particularly intelligent — sometimes they're even stupid. They often run through fences instead of jumping them; they stay in herds when it would be smarter to split up. Rutting bulls behave in ridiculous fashion at times. Last year one killed himself fighting with, of all things, a snow marker. Big, old, woodwise bulls that could easily elude battalions of seasoned hunters in November are killed by novice bowmen blowing on plastic bugles in September. Plastic bugles are the rage now.

Antlers in velvet are blood-filled and sensitive. While his headgear is still growing, a bull will avoid conflict with other animals — even contact with brush. Come August the blood vessels will dry up, and the velvet will wither on the hardened antler. The bull will then scrape it vigorously on trees, peeling it off and polishing the antler underneath.

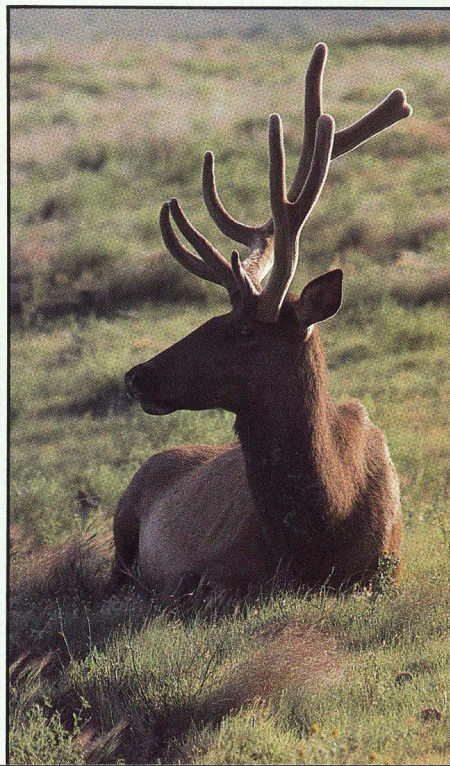
Kansas Wildlife



Gene Brehm photo

Eyeball to eyeball, these two young bulls are feeling the effects of the rutting season. In a well-balanced population, immature animals like this are not allowed to run with the cows; bigger bulls pull the females into harems and guard them jealously.

Not that early-fall elk hunting is easy. Once an elk figures out what is going on, he can be very hard to catch. His stamina is quite incredible, and if you track him in snow you'll find you must make several steps between hoofprints. To race with an elk is to lose.

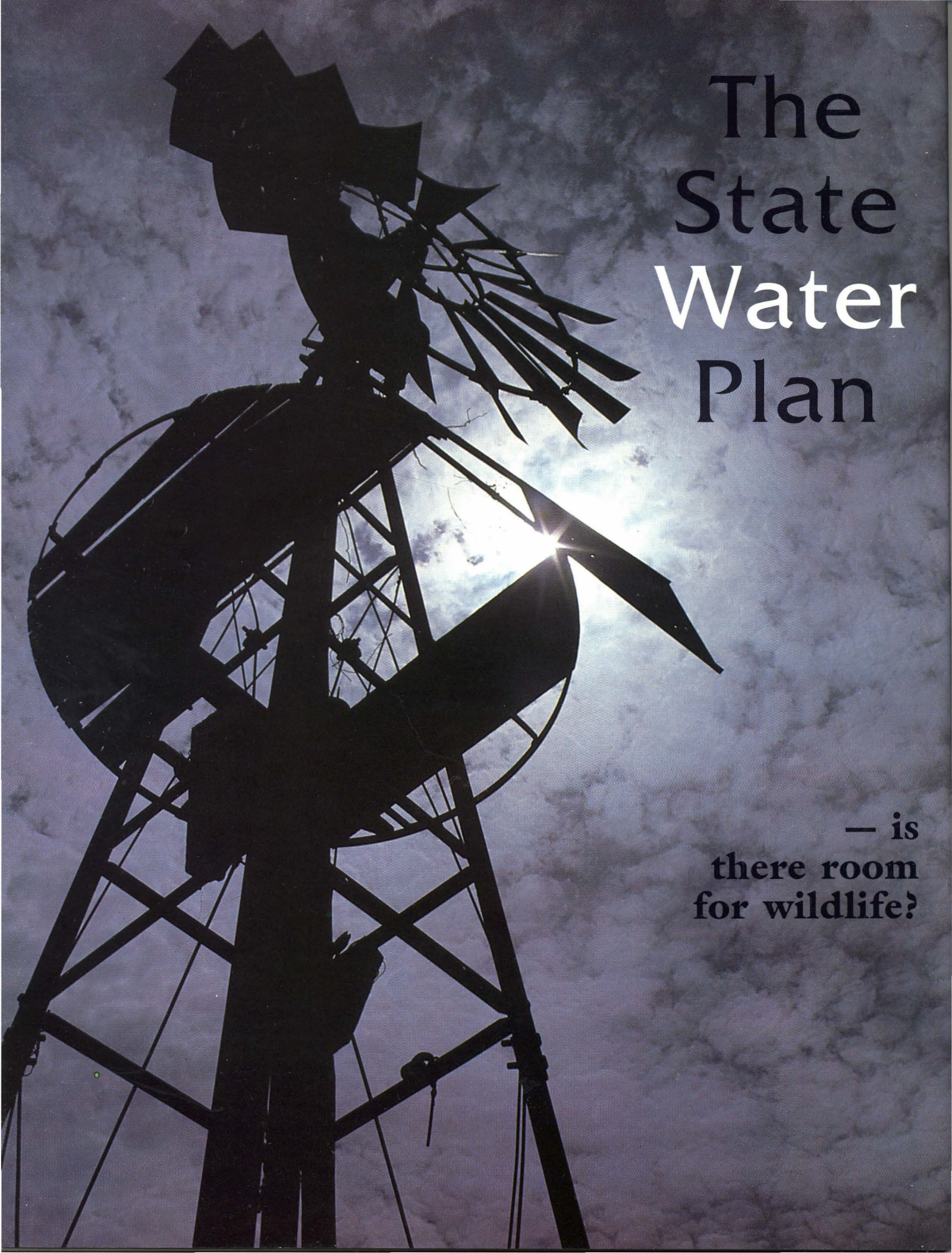


Gene Brehm photo

There aren't enough elk to go around nowadays. Everybody wants to hunt them, to hang those big, flank-raking antlers in the den or maybe just tack them on the barn. It's getting more expensive to go elk hunting — and less satisfying because you see all those other people out there looking for the same elk you're looking for. Your chances of finding him aren't great, either. Oregon, for example, gives you one in seven odds of finding a bull — any bull — in their eastern hunts. Nine of every ten bulls taken are yearlings. Really big bulls are about as common as feathered fish. Lots of states are like that now, and lots of hunters will never shoot at an honest-to-gosh good elk.

But that's OK. It's the way things are and will continue to be, so it has to be OK. We can still watch elk and study elk. They're big and brown and they command attention for being so. It's just a little sad that the senses that make an elk different from cattle and horses, and the resourcefulness and machine-like stamina that propel him through the hunting seasons can't be seen in any other setting. They are, after all, what make elk wild — what, in the final sift, make elk elk.

— Wayne van Zwoll

A black and white photograph of a windmill silhouette against a cloudy sky with a bright sun or moon. The windmill is the central focus, with its complex wooden frame and large, curved blades clearly visible. The sun or moon is positioned behind the windmill, creating a strong backlighting effect and a lens flare. The sky is filled with soft, textured clouds.

The State Water Plan

— is
there room
for wildlife?

Bill Layher

photographs by Mike Blair

Fish and wildlife are among the few resources in Kansas which are owned by the State, at least until they're legally harvested. The only other resource that might fit this category is water. These — fish, wildlife, and water — are all public trust resources. That is, it's the responsibility of state government to see that the public interest is served in managing, developing, conserving, and utilizing them.

Fish and wildlife management is the charge of the Kansas Fish and Game Commission. KF&G receives no general fund assistance from the State, relying on sales of hunting, fishing, and fur harvesting licenses to support its programs. This is somewhat of a paradox in light of services rendered to a much broader public. Notably in the last year, the State legislature did provide some general fund monies to study and provide management guidelines for the operation of Cheyenne Bottoms, a large wetland in southcentral Kansas currently threatened by water depletion.

Though KF&G manages the Bottoms and other wetlands in the state — and, in fact, holds more water rights than any other party in the state — it has little authority to protect the quality of water necessary to sustain wildlife.

The agency responsible for handing out the water allocations for water rights, and in general most responsible for the current water situation in Kansas, is the State Board of Agriculture. Some 85 percent of all water appropriated and used in this State is for agricultural purposes. The actual administration of water rights is done by the Board's Division of Water Resources. That's curious, because the Secretary of the State Board of Agriculture is not appointed by the Governor or the Legislature but a 12-member board made up of delegates of farm organizations who are elected at an annual convention of the State Board of Agriculture!

At one time, KF&G had almost total control of any activity related to water. These powers were largely removed by other interests over time. Most notable was the Water Appropriations Act of 1945. Since the act, DWR's philosophy appeared to be that water not being used was wasted and in general reflected society's attitude toward a resource perceived as being unlimited. Water rights were handed out ad-infinitum in some areas, until the resource was gone. When it was gone, or nearly so, more appropriations were made in case there might be more water at a later date! No apparent efforts were made to

assess a drainage basin's or aquifer's capacity for supplying water. Streams dried up (over 700 miles of them to date), wetlands were lost, and farmers irrigating had to drill deeper and deeper and spend more money to pump the water greater distances. No management strategy was established to protect the water resource.

That situation is changing now. Unfortunately, as with most environmental law, something isn't done until a crisis mandates action. In recent years DWR has come under new leadership and many beneficial changes have taken place. The agency is considering water appropriations before issuing them. In some areas water appropriations have been cut back. At least for the present, it appears a responsible attitude prevails at DWR, and the changes probably represent a more concerned public.

Other agencies have a major role in determining the future of Kansas water. The Kansas Water Office is charged with preparing a State Water Plan. KWO was created in July of 1981, though its roots date to 1914. In that year the Governor requested that a water plan be developed. It wasn't. In 1917 a similar request was made, and the legislature created the Kansas Water Commission to "work out a systematic general plan for the complete development of each watershed in the State." No money was provided for the effort, and the Commission was abolished in 1927. That same year DWR was created and housed with the State Board of Agriculture. Planning functions related to water were not authorized until 1942. In 1945 the afore-mentioned Water Appropriations Act established a "first in time, first in right" principle which is derived from a legal doctrine known as prior appropriations. Prior appropriations replaced the riparian doctrine which allowed a landowner a right to water whether he used it or not. Prior to 1945 this philosophy flourished in eastern Kansas. Western Kansas was different. Water was often scarce and settlers there perceived riparian doctrine as a barrier to economic development. The prior appropriations system arose to distribute a finite resource.

The date of water appropriation rights governs who gets water and who doesn't in scarce times. A water right preceding another is "senior", while one issued later than another is "junior." In any one basin there may be a long list of rights. The first issued is senior to all others. The last issued is junior to all the rest. Those in between are senior to some


and junior to others. Currently no use is of higher priority than any other. Protected from further appropriation are "vested rights", those established before 1945 by prior long-term use.

Also complicating Kansas water law is the "use it or lose it" concept. To maintain water rights (except vested rights) one must use his appropriated amount. Not to use it puts the right in jeopardy. Once a water right is issued it becomes a property right to be bought and sold like land. The State cannot take away water rights if they're being exercised, even if the public interest is in jeopardy.

Too, water rights can only be issued if water is diverted — presumably for some tangible use. So a landowner who enjoys his babbling brook or spring cannot obtain a water right unless he puts it to "proper use" by diverting it. Additionally, DWR is mandated to grant all water right applications as long as existing water rights and the public interest are not impaired. Public interest is not defined, nor is it a concept widely recognized in Kansas water planning. Is it in the best public interest to irrigate crops so some can make more money while the government pays others not to produce? On the other hand, can we take water rights from an individual who has invested thousands of dollars in irrigation equipment? The questions are far from simple.

Enter KWO. The Office's main direction is "to formulate on a continuing basis a state water plan for the management, conservation, and development of the water resources of the state." At the time of KWO's creation, the Kansas Water Authority was established as a policy-developing body for water issues in Kansas. Now KWO writes the water plan while KWA receives and approves it and ensures that it is aimed at State policies and not items of only local significance. Since their inception in 1981, the roles of the two groups has been misunderstood — sometimes by the bureaucrats running them! it appears now that these roles are becoming better defined.

In 1983, KWO took a proposed State Water Plan to the public. It didn't get far. The plan was withdrawn and the Office, after some reorganization, re-drafted it. In 1984 the plan again went to the public. This time it met with approval, except for a few items. Members of the Audubon Society, the Sierra Club, and the Kansas Natural Resources Council — as well as concerned citizens — openly criticized the plan because it had no provisions for ensuring the future of fish and wildlife resources. The

A large silhouette of a windmill is positioned on the left side of the page. The background is a dark, gradient sky transitioning from a deep blue at the top to a bright orange and yellow near the horizon, where a sun is visible. The windmill's structure, including its tower and large circular blades, is clearly defined against the lighter sky. The overall mood is serene and rural.

Kansas Wildlife Federation, representing 8,000 Kansas sportsmen, pointed out that nearly a billion dollars are spent annually in Kansas on hunting, fishing, and other outdoor recreation. KF&G attended public meetings and voiced its concern over the lack of recognition paid the State's fish and wildlife resources and suggested the inclusion of a section addressing them. KWO and KWA appeared to listen. They promised the next year (1985) that a fish, wildlife, and recreation section would be developed.

In January of 1985 KWO contacted KF&G and requested that background papers be developed addressing fish and wildlife problems associated with water. The Environmental Services Section of KF&G was charged to oversee the development of five reports on the issues. By late February, 1985, KWO had received reviews of the major water problems associated with wildlife resources. The report addressed wetlands, reservoirs, riparian resources, stream resources, and environmental law. A task force of state agency representatives was developed to review the reports and their accuracy and begin working on the fish, wildlife, and recreation section of the plan.

Federal agencies (U.S. Fish and Wildlife Services, U.S. Army Corps of Engineers, Bureau of Reclamation, and others) were also invited to lend assistance to the planning team. Several months later KWA appointed a committee to review and evaluate the proposed actions. Finally, KWO, at a meeting in Larned, presented the plan for the first time. After some heated discussions and minor revision, it was approved by KWA for public review. In August, 1985 KWO conducted 12 public hearings across the state to obtain comment on six subsections of the fish, wildlife, and recreation sec-

tion of the plan. Based on that review, the plan has been altered somewhat.

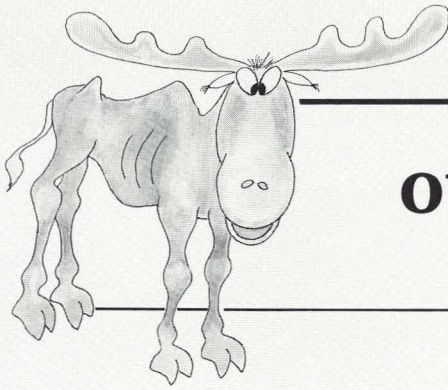
A wetland and riparian protection section has been added and a property tax exemption incentive replaced with easement programs. The plan will include wildlife, water quality, aquifer recharge, and other natural resource considerations. Access to lands under the plan would still be controlled by the landowners.

An environmental coordination section proposes review of water planning and development by affected state agencies, ensuring that such projects will be environmentally sound.

A river recreation section proposes public use on some of Kansas' larger rivers, but only after a complete management plan for each river is developed. Floaters could maneuver down the waters but would have no right to enter streambank property, except at designated access areas owned by the State.

A stream recovery and aquifer recharge section will direct the State to explore the feasibility of recovering streams. After removing the reservoir recreation section from the plan, KWA voted to release it for public hearings in November. The future of the plan now rests with KWA. The Authority can delay it by asking for modifications, or approve it — even scrap it. Because the Authority has recognized the ecological concepts at the heart of the plan, though, approval should be forthcoming.

Even if the entire plan gets the nod, the Kansas legislature must follow recommendations in it. Funding will then be required to make the water programs a reality. Public support will be needed too. If it can be mustered, fish, wildlife, and recreation *will* have a place, and a secure one, in Kansas' future. □



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In his theory of relativity, Einstein could have said that all things are relative and let it go at that. Instead he gave us atomic energy. Now, atomic energy can do lots, but I think the idea that all things are relative shouldn't be lost in the mushroom cloud.

Take weather, for instance. Prairie winters are suppose to be rough — biting wind and drifting snow and all that. But prairie winters aren't nearly so impressive as winters in the far North, where the wind is too cold to bite and the snow on the level is so deep no one bothers to measure the drifts. Kansas winters are kind of nice as winters go, and that's a good thing to remember because you might as well think you're better off here than somewhere you're not unless you plan to move there.

The wet winters on the West Coast aren't appreciated by people who live there and joke morbidly about the bicyclists who drown if they get too close to the curb. It's wet west of the Cascades, but not *that* wet. And what falls as rain doesn't fall as snow. Where else can you see azaleas in full bloom in February, or wear designer ponchos?

Desert folks complain of the searing heat that keeps everything brown all the time. Anything green, they say, is quickly eaten by animals that are also brown. The only green things that can survive in the desert are those with spines, another problem desert people are quick to point up. But desert heat is dry and good for you, and you don't have those high winter heating bills. Your car won't rust in the desert, either, and, if you take care of it, may become a classic before it conks out on you.

Comparing your lot with that of others has merit only inasmuch as you can see a way to improve your lot. It does no good to wish that Kansas' steamy summers were cool like those in Siberia

unless you're willing to look for a summer job in Siberia. After all, if you really wanted a change, you'd make one, wouldn't you? Some things are impossible, sure; but if they're impossible, why think about them? Most folks have enough trouble doing what's possible and shouldn't be bothered contemplating the impossible. Once in a while it's good to tackle something that's impossible, just to deepen your appreciation for what's possible and check to make sure you're not assuming something's impossible that's really possible. If you find it possible to do the impossible, it's possible more impossible things are possible as well and should be tackled as soon as possible.

January is a good time to think about all this because it's a time of renewed commitment to those things you always said you would like to do but never did. We laugh off resolutions like we laugh off the Easter Bunny, but resolutions not kept are failures. We wish this and wish that, but when it comes down to making a move we're cowards. Those of us who have been at the game a long time are careful to wish only those things we can't change so nobody can say it's our fault they aren't different. I think that's why so many older folks talk a lot about the weather. It's one thing nobody can change.

There's a right way and a wrong way to talk about weather, though. It's foolish to say things like "Boy, it sure is cold around here" or "Wish it would warm up a bit" or "Phoenix never gets this humid." Observing that it's cold is fine; if you add the 'around here', though, it sounds like you wish you were somewhere else. OK, why don't you go? If you wish it would warm up a bit, either go where it's warmer or change your tune to "I'll bet it's *really* cold in Great Falls today." And though Phoenix isn't

humid, you might find that 115 degrees is uncomfortable regardless of the humidity.

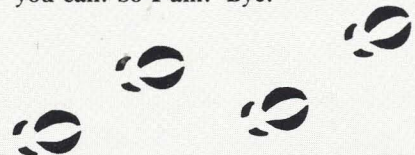
Because so many things are relative, the theory of relativity has almost as broad an application as Murphy's Law. A friend of mine once shot a buck that looked pretty good standing in the middle of his scope field. The animal looked good on the ground, too; it was a honey of a buck. My friend caped the deer and mounted it and it looked very nice on his wall. I came over to look at it and I said the mounting job was a good one and that he was fortunate to find a buck so big. "Yeah," he said. "But it only scores 187, and the minimum book for typical mule deer now is 195. I wish it had another couple inches on that left beam, and just a bit more spread."

Instead of saying "Why didn't you let him walk away, then?" — which is what I felt like saying — I didn't say anything. We've all been guilty of such gaffs. Of course my friend was proud of his buck; it may be the biggest he'll ever shoot. But he wanted just a little bit more without cost. The buck didn't shrink eight points after he shot it. If he'd really wanted a record deer, he'd have waited until something came along that was so big it couldn't help but make the minimum. He was no fool, however, and knew the odds of meeting up with a 195 mule deer were only slightly greater than those of winning the Irish sweepstakes.

There's a fine line between wishing and whining and we all blunder back and forth over it. Wishing in its purest sense is dreaming, and we all need our dreams. Bellyaching about what cannot be or shrinking from the risk and effort needed to change things is no longer dreaming. It's failing.

We all fail a lot. We're all still pretty comfortable, though, because "a lot" is also subject to the law of relativity. That is, we fail more than some, but a good deal less than others. It's nice to have the others around because then we don't feel pressed to improve our track record. Instead we hunker down with them and talk about the weather.

No thinking person believes everything on this page. This time, though, I've given it to you straight — no joshin'. Once in a while it's good to up and move, just to prove you can. So I am. 'Bye.



Cover photo: bobcat by Gene Brehm

*Animals are nothing but the
forms of our virtues and vices,
wandering before our eyes, the
visible phantoms of our souls.*

— Victor Hugo

