

# KANSAS WILDLIFE

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# Editorial

**I**t is time again for the smell of gunpowder and autumn leaves. It is time for the hunt.

"Can I take the 20-gauge on Saturday?" The freckles aren't yet gone from the impish face. Eleven he is, and a good boy. But a charge of shot has no mind of its own.

"Yes," you say. Because it is time for the hunt.

Your pepper-flecked setter is working too fast, swinging too wide. She's exuberant; and she's birdy. You speak harshly, then flog your own summer-soft muscles to keep up with her. She's locked now. Your fingers feel the old tingle. The walnut is suddenly wet under your palm. Heart hammerings are not just from the run through dew-toughened grass. A raucous cackle drowns your pantings as the hedgerow spews your quarry skyward. Up, up. In slow motion. But you are slower. . . .

"Why didn't you shoot after I missed?" Boys don't understand all there is to hunting, and you've no answer for the question. "Too slow," you mumble. To win is not always to kill. And the better you get at killing the more you search for excuses not to. It is a paradox. You can't understand it, either. Not any better than your freckled comrade.

Still, it is good to feel the grass tug at your ankles, to get your boots wet, to watch the dog and hear the hollow pop of the boy's scattergun.

"Let me have one of your empties." You sniff it and are reminded that you belong here. That it is, indeed, time for the hunt.

To the boy success is a dead pheasant. He will think that for awhile. Someday he will think differently. He will read of Corbett and his tigers, Cody and the bison; of Bell and Taylor; of Hunter, Cottar, and Patterson and the African veldt. He'll wonder that there are no more

passenger pigeons, when only two lifetimes ago billions stormed through the American skies, blotting out the sun with their numbers and snapping the stout branches of roost trees with their collective weight. He'll doubt that killing is good.

But if he's observant he'll see that in nature there are few tranquil deaths, that even the graceful swallow is a predator, that the shapeless fluff of a kitten will soon be able to gut a field mouse and play with its prey while it crawls, without hope and in great agony, for shelter.

"What happens to deer in winter, when the crops are gone, and the snow is deep?" You swing the old twelve-bore into the cradle of your left arm. It is a good question and deserves an answer. You pick your words carefully, because life in the wild is complex. Many are the contingencies, and he, in his freckles, cannot understand them all.

Yet you must tell him about things like habitat, carrying capacity, species adaptation, the sacrifice of a few for the good of the many. You want to do it so he'll comprehend it all—better, come to think of it, than you do. And you want to do it before the next bird.

"She's on!" It is time for the hunt. The flight is a short one, as the cackling rooster collides with a wall of six-shot. Its legs are hit, too, so it cannot run. The pepper-flecked setter retrieves it. Carrying capacity will have to wait. The boy beams as he lifts his prize.

The sun is burning off the dew now, and you smell hay—a late third cutting. A crisp breeze tugs at your ragged bird vest. You haven't bloodied it yet this year. Some of the tarnished brass peeking from the shell loops has been there four, maybe five seasons. Still, you've done a lot of hunting.

Would the cordite from a .470 case smell the same as the Blue Dot from this plastic hull? What would it be like to kill a cape buffalo? Do the birds in the Indian jungle really cry "tiger"? Would you have the nerve to set up a ladder in ten-foot grass,

climb it, and at 20 yards try to drill the brain of a bull elephant with a .303 service rifle? What are your roots? Are they still tangible?

The boy's feet hurt, now, and the pheasant he carries is heavy. The setter's tongue is hanging out. Small cottony clouds drift, like flak, against the deep cyan of a sky that will soon carry snow. Pheasants that survive the gun will then have to battle the wind and the coyotes, the horned owls and the farm cats.

The setter is on point again, her muscles quivering. The breeze plays with the loose hair on her burr-studded tail. You do not wait for the boy. It is time for the hunt.

You feel the swish of the grass, smell the hay, catch the lazy movement of the clouds from the corner of your eye. In the woodlot beyond are the red-leafed oaks, their rough gray trunks parting the nut brown of the field grasses. The smell of powder still lingers in your nostrils. It mixes with that of the hay and the grass, the dog and your boot leather, the Hoppe's on your gun barrel and fall-plowed dirt across the fence.

You step closer and the walnut feels wet again. The click of the safety catch punctuates the gentle rustle of the grass.

The setter leaps as a bird rockets away, its wings flailing frantically, but futilely. Six-shot is faster. The roosters—there are two in the air now—hang against the white flak, powerless. You know you will kill this time, and they seem to sense it.

The first pheasant falls and is blotted out by the recoiling gun. As the smoking hull spins away from the breech, feathers explode and the second bird loses its grip in the sky.

They feel heavy in the hand, these two. The boy, in his freckles, is quiet. He will accept what he cannot understand. He knows it is time for the hunt.





# Stalking the Kansas Gobbler

Tommie Berger

**T**he American wild turkey is truly a conservation marvel, one of the greatest wildlife management successes in our country's history. In colonial times, these birds flourished throughout what is now the continental U.S. They numbered in the millions and were so popular as game that the wild turkey almost became our national bird. But, unprotected and over-exploited, turkeys dwindled rapidly, and by the early 1940's there were less than 30,000 left in the whole United States, perhaps none at all in Kansas.

Fortunately, a number of sportsmen and conservation agencies became concerned and began turkey restoration programs. Turkeys were given game bird status and protected. Live trapping and transplanting efforts returned the fowl to much of its native habitat.

Turkeys seem able to adapt to their environment about as well as the ubiquitous whitetail deer. Today Kansas has more turkeys than there were in the whole country only four decades ago. And the total U.S. population of these birds numbers roughly 2,000,000. They abound in every state but Alaska, and turkey hunting is allowed now in 44 states.

There is some question as to whether any turkeys resided in Kansas as late as 1960. A few may have strayed across our borders from Oklahoma or Missouri, but the Kansas

*This wiley game bird seems to delight in making hunters look foolish. Here's how to save face.*

Gene Brehm photo



Fish and Game Commission did not start a turkey restoration program until 1962. In only 12 years, steadily-increasing populations prompted a 400-permit, gobbler-only season in the spring of 1974. Ten years later — this past spring — 4,300 permits were issued. By 1979, our turkey population had grown sufficiently to allow fall hunting. That year the fall season was for archers only. The following fall 300 shotgun permits were issued, and archery licenses were available to all who applied. This fall, the firearms quota will be increased to 1,000. Fall seasons allow the taking of birds of either sex.

Kansas currently hosts two subspecies of turkeys, as well as an established cross of these subspecies. The Rio Grande turkey (*Meleagris gallapavo intermedia*) is our most abundant bird, occurring in the southern and western portions of the state. This turkey was reintroduced in 1964 and 1966 with plantings from Texas and is adapted to open land with scattered riparian habitat. The eastern turkey (*Meleagris gallapavo silvestris*) lives primarily in the eastern one-third of Kansas. Restoration efforts on the easterns began in the early 1970's and have increased since then, with numerous releases of Missouri birds. This turkey is a woodland fowl and thrives in the wetter, more densely timbered areas of eastern Kansas.

Since these two subspecies have successfully interbred in the past, Fish and Game biologists are working to establish flocks of cross-bred birds by stocking Rio Grande gobblers and eastern hens, and vice versa. This cross is doing well in some areas of north-central and northwest Kansas.

Both subspecies are velvety black in color with iridescent greens, bronzes, and browns along the tips of the feathers. The gobblers weigh 12 to well over 20 pounds, have a single spur on each foot, and can be easily identified in the spring by their bright red featherless head. Hens are smaller, weigh 8 to 12 pounds, do not

grow spurs, and have a gray or light blue head. All gobblers have a "beard" — a hair-like bunch of feathers protruding from the chest area. Bearded hens make up a very small portion of the hen population and are legal game in the spring in most states with gobbler-only seasons. In fall, the beard is the only way to distinguish sexes, as the red head color of the toms fades after mating season.

Spring is the mating and reproducing season for wild turkeys. In early spring, winter flocks disperse up creek drainages. The gobblers establish breeding and display areas and announce their masculinity with repeated deep, throaty gobbles. Gobblers of different ages will often

rainfall and insect production, the poults grow rapidly and can fly within two weeks. By fall, poults will normally be one-half to two-thirds the size of the adults.

Most of the articles I've read on turkey hunting are about calling turkeys in thick hardwood forests where acorns are abundant, where the turkeys roost in pine trees, and where ridges and hollows are the hunter's major obstacles. That's not Kansas turkey habitat! There are several things a hunter must remember when considering where to look for Kansas birds. First, most of Kansas' turkey hunting territory is open. But the creatures still roost in trees — generally large cotton-



Gene Brehm photo

Croplands are good places to look for turkeys — though stalking one with all those heads up is only a little easier than sneaking into the control room at Kennedy Space Center.

stay together, but the mature birds soon establish their dominance and do most of the mating.

After mating, the hen seeks out a nesting area, generally semi-open grassland with sufficient low vegetation for concealment. Unfortunately, turkeys really like alfalfa for nesting, and many nests are destroyed with the first cutting of hay fields. Turkeys need water daily and most hens will nest near a water source. A clutch of 10 to 14 eggs is laid; incubation lasts 28 days.

After hatching, the chicks or poults leave the nest and forage with the hen. Under normal conditions of

woods, sycamores, or elms. Don't look for turkeys in small trees. Can you imagine a 20-pound gobbler trying to sleep on a small branch in our western Kansas winds? No way. These birds definitely prefer groves of mature timber that contain more than one big tree. And most roost sites aren't far from a stream, river, lake, or pond.

Now, just because turkeys need mature trees to roost in and a drink of water every day, don't expect to see birds perched in a big tree on a creek bank every time you go afield. Turkeys also must eat — things like fresh green alfalfa, tender shoots of green



wheat, mature heads of grain crops, grasshoppers and other insects. I've seen turkeys miles from any roosting habitat during midday — out in the sandsage prairie, along edges of crop fields, any place that affords food. Those foraging trips can make them vulnerable. It's hard to hide when you're a big bronze bird in a green alfalfa field! Many times when I haven't located my quarry by its roost, I head for the nearest cropland in the vicinity. Often the turkeys have beaten me there. Being able to see the birds at a distance here in Kansas is a big advantage; in the east, you don't often sight a gobbler till you've called him in.

Spring and fall turkey hunting are different games — primarily because gobblers respond to a call readily in spring but can rarely be called in fall. In fact, those same yelps and clucks that prove so effective in April will make a tom turn tail and run in October. I can only remember two times in my years of turkey hunting that I've heard a real honest-to-goodness gobble in the fall.

Turkey hunting, be it in spring or fall, is as exciting or as dull as you make it. Many hunters are simply out after a turkey and care little how they get one. Some measure their success by the length of time it takes them to get their trophy. Others try to infuse a little quality, enjoying the time spent in turkey country and the challenge involved in the hunt.

Kansas hunting methods vary as well. Sitting under a roost tree waiting for a gobbler to fly down is practiced by some (though shooting turkeys in a tree is illegal). Walking and flushing, still hunting, and stand hunting are all methods used successfully to hunt these birds. A call can be used in conjunction with any of these techniques.

Hunting turkeys here or in any other state takes preparation. To enhance your chances of bagging a trophy bird and having a quality hunt, you must first locate a productive area. Diligent preseason scouting is very important. Secondly, you must acquire camouflage clothing —



and the ability to sit or stand perfectly still for long periods of time. Finally, especially if you're hunting in the spring, you must be able to talk hen talk or have a friend or guide lined up to do the calling.

The turkey license application period for the Kansas spring season (April-May) is in January; that for fall hunting (October-November) is in August. You must choose your area of hunting preference at the time of application. Once a permit is issued, you should begin scouting immediately.

Spring turkeys can be a bit harder to locate than fall birds. If the area you plan to hunt is new to you, then remember several things. During the winter, turkeys tend to bunch up in large flocks. Some may move 10, 15, even 20 miles to their wintering areas. With the advent of spring, these large flocks break up and turkeys return to their summering areas by following major drainages. This generally occurs in March and early April, after which mating commences. Turkeys will often be in the same location when fall rolls around. By early November, some of the birds may be starting to move toward their wintering areas, but for the most part, they'll still be in their summer haunts. Most farmers and landowners keep fair track of turkey movements and can inform you as to the whereabouts of resident birds.

Once you have your hunting area located, it's time to get your equipment in order. Full camouflage from head to toe, including a face net and gloves, is a requisite for turkey hunting. Some woodsmen even use camo tape or spray paint to mask their turkey gun. But even more important than camouflage is total immobility on your part when the birds are in view. Turkeys have incredibly keen eyes. Occasionally, while standing in front of a tree or

*At home in the deep woods, "edge" cover, or cultivated crop fields, turkeys are keenly aware of their vulnerability when in the open. Timber hunting can put you closer to birds, but that doesn't mean the shot will be easy!*

*Gene Brehm photo*





Gene Brehm photo

leaning on a fence post or sitting on the open ground with no camouflage at all, I've called gobblers in very close. But a sudden movement, be it ever so slight, will put a turkey to flight at any distance.

Turkeys also have good hearing but, like most birds, only a token sense of smell. Wind figures in your hunting only to the extent that it can carry the sounds of your call to — or from — your quarry.

Shotguns are the only legal firearms for turkey hunting in Kansas. Most experts recommend a stiff charge of magnum 4's or 6's in a 10- or 12-gauge gun. I've killed turkeys with my 12-gauge, my 16, and even my 20-bore with an ounce of 6's. But with the lighter loads you must be close — within 20 yards — and have a clear, open shot at the head. By the way, the only good shot at a turkey *is* at its head and neck. A turkey's torso can absorb a lot of shot without any fatal effects.

If you can't speak hen turkey,

you're missing out on the most exciting aspect of a hunt — at least in the spring. Some hunters can call by mouth, but most of us rely on the tube calls, box calls, shaker calls, slate and striker calls, and mouth diaphragms manufactured for the purpose.

The diaphragms leave your hands completely free when calling and require no body movement to operate. Tube calls can be worked with one hand, while box calls, shaker calls, and slate and striker gear require both hands for operation. The less movement, the better, so I like diaphragms.

There are several ways to learn turkey talk. Probably the best teacher is the hen turkey herself. One day before the 1982 spring season, I took a friend out to help him gain confidence in his diaphragm call. He hadn't called in a turkey and swore up and down it wouldn't work. After listening to a few attempted yelps and clucks, I

*Immobility, camouflage, and a knowledge of turkey habit put this hunter in the perfect spot to collect his gobbler. Calling really helps in spring, is of marginal value in fall.*

soon realized why he hadn't been successful. I took him down to the river; we crossed to the south side and immediately spotted some turkeys along the edge of a weed patch about 75 yards away.

We each stood against a fence post, and I started with a series of seductive yelps I felt sure would bring a gobbler. Suddenly an old hen burst out of the weed patch and headed our way on a dead run, yelping up a storm. She stopped ten feet away, unsure of what to do. Every time she'd talk, I'd imitate her. For ten minutes she and I conversed while she strolled back and forth trying to figure me out. Meanwhile, three young gobblers moved well within gunshot range. I learned more in that ten minutes than I could learn in a lifetime from a record or a tape, or from an expert turkey caller.





*These two gobblers would make any hunter salivate. Body weight and beard length determine a bird's trophy status.*

Still, other instruction will work. In 1979 I bought my first diaphragm call and copied a friend's tape. That call, tape, and I spent many hours together in my pickup truck. After practicing for over a month, I went out on a Sunday morning to give the call a real test. I sat down on a log and pulled in a young jake within five minutes.

Calling in the fall isn't as easy as it is in the spring. In the fall, a gobbler doesn't have sex on his mind, is probably living in a bachelor flock, and couldn't care less how lonely a hen is. But calling can still produce results when the leaves turn color, especially on a flock of hens and poults or gobblers that get scattered. Autumn turkeys like company and when they get separated from the flock they start calling to each other in order to get back together. If you can make one of these lone turkeys think you are its buddy or, better yet, its mother, you're in business.

Remember two things about fall hunting. First, toms don't gobble much. Second, you can harvest either sex of turkey in the fall and the young poults will be the easiest to fool. Killing an adult gobbler in the fall is pretty darn tough!

The Kansas Fish and Game Commission sets up the spring season to coincide with the final days of breeding. Most hens are bred by mid-April and perhaps even nesting by that time. Gobblers then are more responsive to a call and easier to seduce. So the season runs from mid-April through early May. It was

a 19-day season this past spring, when nearly three-quarters of the state was open to gobbler-only hunting. In the near future, the entire state may provide opportunities for spring hunting. Public hunting areas support some turkey populations, but most of our turkeys are found on private holdings. This past spring a total of 3,407 Kansas turkey hunters went afield, and 1,430 harvested turkeys, for a success rate of 42 percent.

The fall hunting seasons for 1984 are October 1 to October 31 for archery hunters and October 27 to November 4 for firearms hunters. These seasons are limited to the southern part of the state, where turkey flocks have increased to the point they can tolerate either-sex hunting. Fall archery success is around 30 percent, while firearms success has averaged 60 percent.

Like other outdoor sports, turkey hunting has its share of myths. Some hunters claim you can't call a turkey downhill, across a creek, or in the evening. All untrue. Though our hills may not be as big as hills in other states, I've called turkeys here down some pretty steep canyon walls. I've also had turkeys run up to a creek, fly across, and come right on in. And, out of the eight turkeys I've bagged, two were killed in the evening.

The one hazard that really does leave you chewing your call in frustration is rain. In my opinion, nothing turns off a turkey's sex drive as fast as rain. Sure, they'll gobble in

the roost, but I've yet to call in a turkey when it's very wet outside.

Turkeys don't like to come to a hunter through thick brush or weeds, either. They like it open so they can see what's going on. Some hunters sit so far back in the brush that they can't see out. You've got to be able to see the bird before you can shoot it!

Whether you hunt turkeys in spring or fall, you're pursuing an extremely wary bird, one that is at home in the air, in a tree, or on the ground. Its eyesight is legendary, it can run faster than you can, and its feathers turn small shot like so much confetti. Its voice is raucous music to those who would entice it with a call, and its meat is among the best that nature provides.

Beyond this, though, the wild turkey is a success — a gift to all Kansans from the hunters and biologists who had the foresight to see the bird's plight, the resolve to do something about it.

*Hunt quality is at least as important as bagging a gobbler to veteran turkey hunters. Still, the weight of that bird sure feels good!*





# Arteries of the Hills

*Prize fisheries and idyllic scenery make these waterways a mid-Kansas treasure — albeit a delicate one.*

Rick Tush

**T**he Flint Hills in east-central Kansas held a fascination for early settlers. Today the bison are gone, replaced by cattle, and the prairie is fenced. Nonetheless, much of the region's original character has been preserved — its grass, its bluffs, its water.

Water, especially, is an essential ingredient in this ecosystem, where moisture in summer is limited and where its quality, as well as its quantity, figures in the area's future. Land use determines to a large extent the flow and purity of water in the Hills. These parameters in turn determine the kind of environment we Kansans will enjoy, the kind of production base Flint Hills ranchers will have to work with.

Most Flint Hills streams originate on rocky, grass-covered escarp-

ments, which may rise 300 to 400 feet above the surrounding terrain. On these escarpments native vegetation protects a thin layer of top-soil from erosion. Even after heavy thunderstorms, followed by rapid runoff, the water entering the stream systems is almost silt-free.

Springs, bubbling out from the rocks, flow year-round. The spring water is about 56 degrees Fahrenheit and very clear. In 1827 G.C. Sibly, leader of an expedition to route the Santa Fe Trail, noted that Diamond Springs (in what is now Morris County) was "... a very fine spring ... uncommonly large and beautiful, and the water very pure and cold. I have seldom seen so fine a spring anywhere. After so hot a day (11 August 1825) this fine water was a luxury to us all."

Springs like this are still prevalent in the Flint Hills. Spring-fed brook channels are characterized by small but deep pools, shallow runs, and fast-running riffles. Stream beds comprise slabrock, rubble, gravel, and sand. This provides a diverse habitat for minnows and small fish. Approximately 24 species of minnows live in this brook habitat, among them the Topeka shiner, a threatened species in Kansas. Other small resident fish include the creek chub, stoneroller, fathead minnow, and red shiner, all of which make excellent bait. Brilliant darters and orange-spotted sunfish add color to the underwater life in Flint Hills brooks. Downstream from the springs, the brooks converge, giving rise to small perennial creeks. For the next 20 miles or so these creeks



constitute prime fishing water. Stream fishermen call this water "rifflehole."

The outstanding features of these creeks are their pools, some eight to ten feet deep, dotted with gravel piles on their perimeters. Pool beds are formed when runoff water comes rushing down narrow valleys, digging and cutting, after downpours in the hills. One day these creeks may be running bank-full; a few days later they're likely back to normal, with clear, green water. The pools

Now and then the fishing may be slow. When this happens there's still plenty of entertainment at hand. Various species of brilliant wildflowers bloom throughout the spring and summer. The riparian woodland along stream banks is the home of many critters. You may flush a pair of wood ducks from a pool under a blooming redbud tree, surprise a hunting fox, or encounter a flock of wild turkeys.

Historically, Flint Hills streams have played an important role in

conservation then. A Flint Hills Resource, Conservation, and Development (RCD) Study revealed that 67,300 acres of upland soils were broken out during the homestead period in Chase, Morris, Marion, and Lyon counties alone. The average soil depth on these farmed sites was 12 inches. Today the soil depth there is four inches. Thus, during only a century of agriculture, eight inches of clay loam and silty clay soil were eroded and deposited in the streams. Brook waters were subsequently turbid, and aquatic wildlife populations underwent great stress. Deep-soil sites that were not farmed now grow the most productive of native vegetation; abandoned croplands support primarily cheatgrass, wire grass, and weeds. Conservation agencies are attempting to reseed these areas, but this is a costly operation — and often a futile one.

Now grazing is the primary agricultural practice in the Hills. A more scientific approach to row-crop and grain farming has slowed deterioration of soils and native stands of vegetation. Cattlemen commonly "take half and leave half" of a season's pasture growth, ensuring a continuing supply of luxuriant forage. Still, flooding occurs. And without the rank prairie grasses to slow runoff or catch the silt, the soil base on tilled or grazed land is slowly eaten away. To alleviate this loss, man has tried to alter the streams through channelization, to control their flow by building impoundments. But annual dredging costs are high, and downstream siltation is actually increased by these measures. Reservoirs require severe channel modifications below dams and are themselves problem areas for siltation.

Bill Browning is a rural resident of the Flint Hills. At first, he was all for the watershed plan and the new lake that went in on his place. Now, twenty years later, he's having second thoughts concerning these lakes.

"As a youngster growing up in the hills, I spent many idle hours along the brook running through our ranch," Bill says. "I fished for bull-



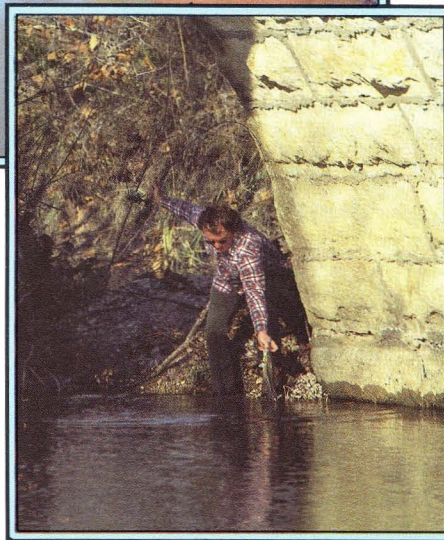
Kansas Fish & Game Photos

*The spotted bass is the trophy fish of the Flint Hills. This specimen is a dandy! Right, pools in these streams provide quality fishing and a sense of quiet solitude.*

then are often loaded with hungry fish.

Creeks in the Flint Hills are superb places to take a youngster or the family on a fishing trip. The serious bass fisherman, too, can find excellent opportunities here. Chunky spotted bass up to three pounds are the trophy catch of the Hills. These fish put up quite a fight and often jump several times before being landed. Largemouths to six pounds have been caught in the pools.

Spin-casting with light tackle and small lures is an effective and exciting way to fish these creeks. Small spinner-baits, artificial minnows, and plastic worms will often produce strikes. Wading upstream from pool to pool is the best way to approach the fish. If you're an angler, it's not hard to become addicted to Flint Hills streams!



building fertile valleys. The valleys were protected from erosion by a sea of grass — grass at one time up to eight feet tall. When heavy thunderstorms drenched the hills and streams overflowed their banks, soil was deposited, not washed away. This process built a deep and fertile soil.

With the settling of the Flint Hills, farmers took advantage of the incredibly productive land in the valleys. Unfortunately, they also sank their plows in the highly-erodible hills. But little was known of soil



heads and sunfish. I skipped rocks over schools of minnows. Some pools were eight feet deep and you could see the bottom. Swimming in the cool water was fantastic, and there was always a warm place on a clean gravel bar to sun and dry out.”

Many things have changed on that stream since Bill’s youth. A watershed lake has been constructed one mile upstream. The water is muddy and silt a foot or more deep in many places. The deepest pool is only four feet, but you can’t see the bottom. Cottonwood and willow trees have encroached to the middle of the water in places. Gravel bars are now silt bars.

Bill’s stream exemplifies some of the dangers of watershed development. Developed watersheds alter the nature of the runoff, which in turn changes the nature of stream courses. In some sections runoff is prevented from digging deep pools in the limestone bed, reducing water retention and stream size. Seasonal flows may become erratic. During the summer there is high evaporation loss from the surface water of impoundments, and little water goes through the overflows at dam sites. The creek below experiences severe

water shortage, which is especially critical if its only source springs are located upstream from the dam.

If watersheds do protect against downstream flooding, it may only be for the short term. Downstream agricultural interests will inevitably encroach closer to the stream bank, destroying valuable riparian habitat and increasing siltation. Where there is little to protect, there is little with which to afford protection.

Flint Hills streams are guarded to some degree by Federal and State legislation, including the National Environmental Policy Act, The Fish and Wildlife Coordination Act, the Federal Water Pollution Act, and the Kansas Nongame and Endangered Species Conservation Act. These legislative moves weren’t made to prevent all watershed development, but to require the input of natural resource agencies in planning and to consider the goals of both development interests and conservation groups. There appears to be room for compromise. It is possible that Flint Hills streams retain their pristine qualities without sacrificing farmlands, homesites, and pastures in the valleys downstream.

To date, man’s alteration of head-

water streams in the Flint Hills has been limited. Streams there remain clean, scenic, and full of recreational opportunities. When contemplating stream modification in the Hills, we must take care that our action — or inaction — is appropriate. Not only immediate results but long-term repercussions must be considered.

Aldo Leopold, in *A Sand County Almanac*, wrote “. . . Nearby is the graceful loop of an old dry creek bed. The new creek bed is ditched straight as a ruler; it has been “uncurled” by the county engineer to hurry the run-off. On the hill in the background are contoured strip-crops; they have been “curled” by the erosion engineer to retard the run-off. The water must be confused by so much advice . . . In the creek-bottom pasture, flood trash is lodged high in the bushes. The creek banks are raw . . . Patches of giant ragweed mark where freshets have thrown down the silt they could not carry. Just who is solvent? for how long?”

*Flint Hills streams must be protected if they are to retain their pristine qualities. Channel alterations and large-scale impoundments disrupt the processes that formed the streams and prevent them from functioning as natural watersheds.*



Gene Brehm photo



# Walk to Wild Kansas

Sally Ottaway

**W**yoming, California, New Mexico, Colorado, and Kansas. The first four are well known for their scenery and hiking opportunities — but Kansas? Yes, since the mid 1970's Kansans have been fortunate to have such organizations as the Kansas Trails

Council, the State Fish and Game Commission, and the State Park and Resources Authority hard at work establishing a network of trails throughout the state. Located mainly near reservoirs, the trails vary in length from half-mile nature walks to 15-mile full-day or overnight hikes.

I have hiked extensively in the western United States, but Kansas is my home, so a few years ago I decided to start learning more about

Kansas trails. Since 1982 I have backpacked all the major trails at least once and found them to be a pleasant alternative to mountain hiking. The lower altitude and shorter driving distances are more agreeable, and they are great places to take friends who want an introduction to backpacking. Too, you can see a surprising number of wild-life species on Kansas trails.

Three of the longer trails are



especially suited for overnight trips: Perry Lake, Webster-South Solomon, and Elk River. Since no drinking water is available along the trails, the cooler temperatures of fall make ideal hiking conditions. The trails are well marked and maintained, but none of them are "loop" trails. In other words, if you want to hike the entire trail and not backtrack, you must arrange for a car shuttle or pickup at the other end. Camping is allowed on the trails, but regulations vary, so check with local officials.

The Perry Lake Trail in northeast Kansas is one of several National Recreation Trails in the state. Located within 50 miles of Topeka, Lawrence, and Kansas City, it is accessible to a large number of people. While you may not meet many hikers on the trail itself, you may find the lake and campgrounds crowded. Presently this 15-mile trail follows the eastern shore of the lake from Slough Creek to Ferguson Road. Plans call for the trail to be lengthened to almost 30 miles and to form a "loop" so hiker transportation will be less of a problem.

The forested hills of oak and walnut and the streambeds of cottonwood and sycamore make autumn an especially beautiful time to hike the Perry Lake Trail. A group of friends and I (ages 29-69) first hiked this trail in 1983, and we found the most scenic parts to be near the trailheads. The trail is more hilly and wooded and seems more remote toward Slough Creek and Ferguson Road. Parts of the middle section weave in and out of coves, across an occasional field, and fairly close to residential areas. Our group was too noisy to expect to see much wildlife, but we did spot several squirrels and birds and lots of deer tracks.

The Perry Lake Trail is unique because it includes a public use area with drinking water, restrooms, picnic tables, and campsites. There is also a more primitive campsite nearby, and the Corps of Engineers encourages camping at one of these areas. This is the longest trail in Kansas; because the middle is accessible by car, you can choose to

rough it and carry all your gear or stash part of it in a vehicle at the half-way point.

Located in the northwest part of the state near Stockton, the Webster-South Solomon Trail offers more of a sense of isolation than some of the other Kansas trails. Except for an occasional farm road, you see little evidence of civilization along the 10-mile route as it follows the north shore of Webster Reservoir and the South Solomon River. A series of three-foot-high posts, numbered and painted yellow on one side only, mark the trail. In early spring and late fall these posts are fairly easy to spot, but the thick vegetation of summer can present navigation problems, as the posts become difficult to find. There are several marked campsites, but camping is permitted anywhere along the route. Fires are allowed only at the designated sites.

Five of us (and one dog) chose a cold, rainy weekend in March to walk this trail. The water had not been turned on yet at the reservoir campground, so we filled our canteens at a farmhouse. We started on the trail about 11 a.m. and walked until four, stopping for lunch and occasional breaks. The going was easy, our trail passing from wooded areas along the sandy river bottom to the slightly rolling prairie and dunes. The vegetation was typical of a midwest river bottom — cottonwood and mulberry interspersed with short grasses, cactus, and taller grasses in the open areas. We sighted a great horned owl, several deer, and lots of beaver sign.

There was very little water in the South Solomon River when we were on the trail, and we were glad we'd not counted on a full streambed. We found a good campsite close to a beaver pond and then hiked the remaining distance the next morning. The trail ended abruptly on a dirt road about a mile and a half south of Highway 24. We had planned to hitchhike back to our car, but found that five wet backpackers and a drenched dog are not good candidates for free rides.

A common reaction to the Elk River Trail is "I didn't know there was anything like this in Kansas!" Four of us who had hiked together in the mountains were surprised when we backpacked this trail to find so many steep hills and rocky bluffs. This is definitely the most rugged and strenuous trail in Kansas. Elk City Lake is just five miles north of Independence, and the 10-mile trail begins on the northwest shore of the lake, following the Elk River to Oak Creek Campground. This trail also is scheduled for expansion by the Kansas Trails Council during 1984.

I have hiked the Elk River Trail in every season, but fall is my favorite. The crunch of leaves and the smell of autumn make this trip special. There are some great places to camp midway on the trail, and the view upriver on a misty morning is well worth the overnight effort. Deer, great blue herons, songbirds, and small mammals abound. This is an extremely rocky area, so I have also encountered centipedes, scorpions, and an occasional copperhead. Be careful where you put your hands and feet!

I prefer to start at the east end of this trail because the topography changes dramatically in the first quarter mile — grassy park, stream crossing, and then straight up the limestone bluffs. The first few miles also have several terrific overlooks that make great lunch sites. The first and last three-mile sections are a series of ups and downs through hickory, oak, redbud, and walnut woods. The midsection leads you through the uplands among waist-high grasses and rocks. An occasional small waterfall adds color to the trip.

Kansas hiking trails are a little-known resource — something that youngsters and grownups alike can enjoy. Whether you stay overnight or make it a day trip, walk three miles or 15, these trails can put you in touch with nature and revitalize you for another workweek. Why not explore a trail soon — fall is the best time — and discover in Kansas what you thought was somewhere else!



# September Squirrels

*Rimfire riflemen are zeroing in now on pumpkin-bellied fox squirrels and elusive grays—surely, autumn hunting at its best!*

Mike Cox

**M**y alarm clock rattles to life — and keeps on rattling. It's dark, and I upend a glass of water trying to silence the contraption. Finally, in desperation, I find the cord and give it a jerk. The lamp comes crashing down on my wife. She turns over.

Then I remember. It's time to hunt squirrels.

Hurriedly I dress. A long-sleeve cotton shirt in camo pattern and light cotton pants are in order. I'll be stalking, so I'll forego the orange cap and jacket I often wear when sitting on stand. Squirrels would pick them up in a flash if I tried to move through the woods in them. My high-top boots provide protection against chiggers.

The coffee isn't quite hot, but it'll do. The horizon is turning purple. I grab my Remington autoloading .22, wipe the lenses of the variable scope, and stuff a box of long rifle solids into my pocket. The old gun shot well yesterday — about an inch high at 50 yards, with groups running the size of a quarter at that range.

I spray copious amounts of insect repellent on my hands and face, then slide into the car next to my thermos and rifle. Flashbacks of past squirrel hunts entertain me on the drive out to the woods. The dawn air is crisp as it streams through my open window, and it smells like fall. The hot summer is over. I ride the accelerator.

Half an hour before sunrise I slip into the timber. The leaves are damp from a heavy dew. Without the silencing effect of moisture on the forest floor my activities would be restricted to the creek bottom and its sloughs which meander throughout the timber. But now I move silently, halting finally be-



neath a large oak. This will be my initial stand. I sit down, carefully clearing the surrounding area of debris so that any later body movements can be made noiselessly.

As dawn spreads its fire across the eastern horizon, the woodlot comes alive with the sound of small birds. Suddenly I hear the electrifying "tscht, tscht, tscht!" of a squirrel tooting a hickory nut breakfast. Another alerts my attention as it swishes through the upper branches of an adjacent maple. Sounds are essential in locating squirrels, and I hope the wind stays down so the gnawing, climbing, jumping, and chattering of my quarry remains audible.

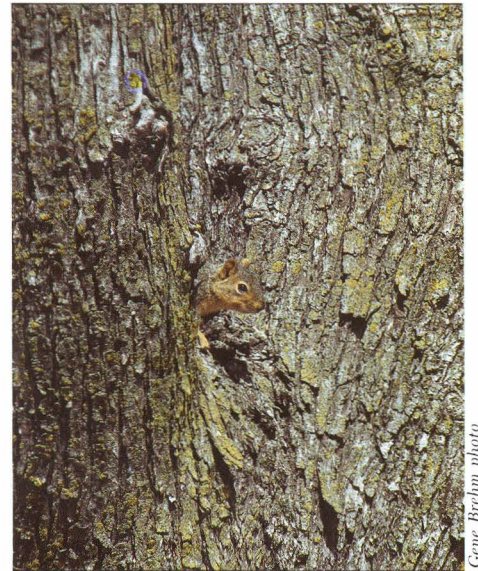
A fox squirrel is headed my way, skittering over the bowed silhouette

of an oak limb. I wait till the animal disappears behind the trunk, then step to the left and rest my rifle against a small coffeebean tree. He reappears, and at 35 yards I release the safety. He is unaware of my presence. I want a clean head shot and will wait until he stops moving completely. Picking an acorn, he scurries down the tree to a fork off the main trunk, then stops to feed. I release my breath slowly, locking my lungs as the crosshairs come to rest behind the ear. The crack of the .22 heralds my first squirrel of the day.

Once I've made sure of the kill. I mark where the creature dropped and wait, motionless, for things to settle down. For about three minutes everything is quiet, except the scolding bluejays. Finally a squirrel to my left starts to gnaw on a hickory nut again, and things are back to normal. I retrieve the downed squirrel. A young one, he is — just right for the frying pan.

The stalk to my next target is slow and cautious as he continues to work on the nut. A quick glance at the ground identifies brittle limbs and other obstacles which could cause noise. I look skyward repeatedly to catch movement in the limbs of the trees. Closing in on my quarry — still invisible in a cloak of leaves — quickens my pulse. The tree is a bitternut hickory and chances are good the animal is a gray squirrel. The bitternut has a smaller fruit than the shagbark or kingnut hickory and seems to be preferred by grays.

The eastern hardwood timber of Kansas supports a mixture of fox and gray squirrels. The latter are smaller and much faster on their feet than their orange-and-pepper cousins. They're also quick to take alarm and rarely stop to look back before disappearing in the labyrinth of limbs and leaves overhead. Often fox squirrels can't resist a last-minute peek at their pursuer. Comparing gray and fox squirrels is a lot like comparing whitetail and mule deer. The gray squirrel behaves in white-



Gene Brehm photo

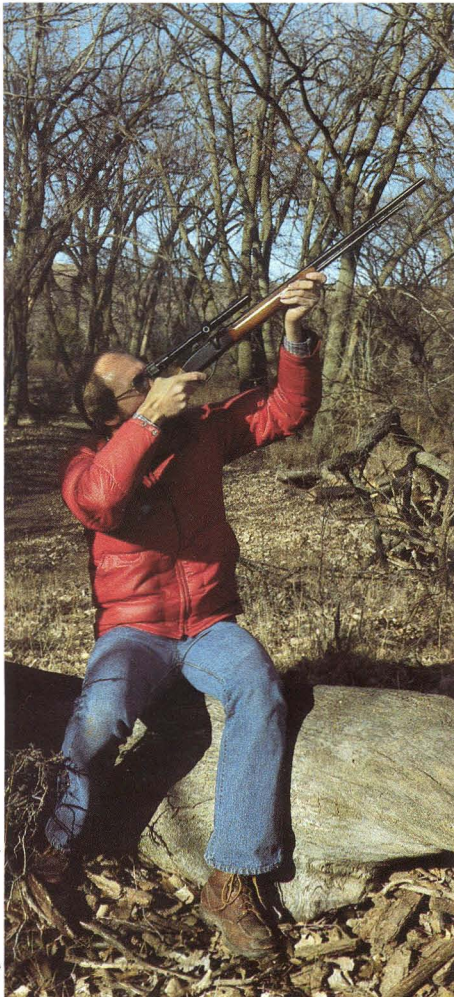
*Speed, agility, camouflage — and the uncompromising protection of 14 inches of solid hickory — give your bushy-tailed quarry an even chance. What hunter would have it otherwise?*

tail fashion — he's jumpy and shy — while a fox squirrel is curious, less easily frightened, and sometimes even bold.

Whether you're stalking fox squirrels or grays, the challenge is to see your quarry before it sees you. Alarming one squirrel will set off a chain reaction in the woods, as every creature seeks cover.

I always try to keep vegetation between me and the squirrel I'm stalking, and avoid walking in the open. This practice pays off now as I approach the steady stream of nut hulls issuing from the big hickory. Still, the leaves will not allow me to see my game. I have two options now: either wait him out or slip around the tree and try to get a look at him. I'm impatient and decide to chance a sneak. A clump of paw paw trees affords me cover.

After about 20 feet of stalking I spot a tail and rump near the top of the hickory. Unable to see the animal's head and with little chance of getting into a better position undetected, I choose the only recourse left. Steadying the rifle against a fallen tree, I release the safety and put the squirrel in the scope. Sucking air through the side of my mouth creates a barking sound which sim-



Wayne van Zicoll photo

*Shooting squirrels puts a premium on fine marksmanship. Rifles sighted in on the horizontal will shoot to a different (higher) point of impact when triggered at steep angles.*



ulates that of an angry intruder. Instantly the squirrel turns to confront his opponent. I touch the trigger, and my quarry — a sleek gray — catapults from the branch.

The woods remains quiet, so I retrieve my kill and walk, slowly, deeper into the timber. I stop every thirty yards for a couple of minutes to try to locate another squirrel by ear.

Rounding a hillock, I inadvertently spook a fox squirrel. He jumps on the opposite side of a large hackberry and stops, motionless.

peared. Then I heave the limb on the opposite side of the tree. The limb caroms from branch to branch before falling to earth. The squirrel scurries to my side of the tree, avoiding the commotion. My crosshairs jump slightly as the rifle cracks.

I spot the next squirrel in a small clearing where he is burying a nut. In September, I always keep an eye on the ground, especially in the late morning and early afternoon, because squirrels will be caching food for winter. Dawn and dusk are gen-

hear if the wind isn't blowing. What isn't so easy is the waiting; it is imperative that a hunter hold his fire until the squirrel stops long enough for a clean shot to be made.

This fox squirrel is so intent on a full stomach of sweet hackberries that I become lax about movement and cover. He spooks, dodging and darting through the limbs of oak and hickory. I sprint to a big shagbark, trying to head him off. His acrobatics prove too much for me, however, and as I leg it around an old apple tree, I lose sight of the animal.

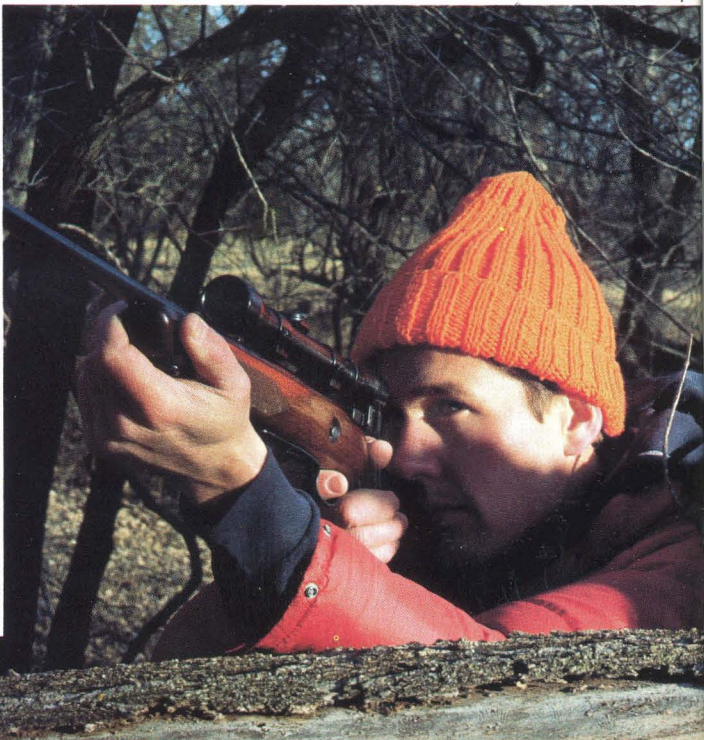
Ron Spomer photo



*This big fox squirrel is a culinary prize, as well as a worthy game animal. The smaller gray is flightier and a bit tougher to procure, though equally edible.*

*Using a rest is a pious idea for those who want to take home more than memories. Scopes are not mandatory; but nobody can shoot better than he can see.*

Gene Brehm photo



This is a common escape tactic of squirrels; they'll put a tree trunk between a predator and themselves quickly, then freeze until their antagonist moves. If the predator tries to circle the tree the squirrel will circle it too, always staying on the opposite side.

I find a piece of limb about a foot long and three inches in diameter and move to a nearby tree, resting the rifle in its crotch. Shouldering the gun, I lock the scope on the tree trunk where the squirrel disap-

erally foraging times for these creatures.

My shot again is careful, the kill clean. This fox squirrel is a big one, and probably old. But he'll taste good, anyway. My game pouch sags as I stuff him in.

Suddenly I hear another squirrel working over a hackberry tree. Hackberry fruit is a favorite of these rodents. They'll eat hackberries with great gusto, and the combination of squirrels gnawing, leaves rustling, and seeds falling is easy to

I stop. The whole woods seems to stop, too, waiting for the climax. A leaf ticks down; then another. The squirrel's chin, an orange spot in the crotch of a hickory, jerks back just as my 40-grain solid bites into the branch. Off he goes again, careening frantically through the tree tops.

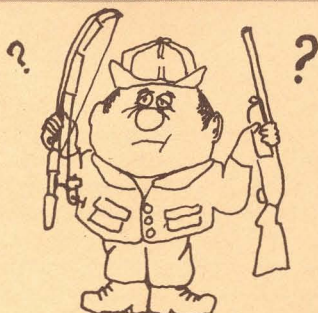
I do not follow. There will be other hunts. Besides, the bitternut stand just this side of the car always holds some grays. With one squirrel to go, I'd just as soon make it a gray. . . .



# the center section

Edited by Rob Manes

## READERS WRITE



### DRIFTING AWAY?

Editor:

It is with mild concern that I write this letter. Several months ago, one of my more strong-minded friends was upset when this publication changed its name to KANSAS WILDLIFE, saying that the name change spelled the end of a hunting and fishing oriented magazine and the launching of a more general nature magazine. I disagreed at that time.

However, upon receipt of the July/August 1984 edition, I noticed that we have no hunting or fishing stories; as close as we get is "Home Building for Bass." The remainder is aquariums, prairie dogs, toads and frogs, hawks, and finally snakes . . . six out of seven directed toward the armchair naturalist.

While all seven of these articles are entertaining and informative, I now too feel that there is a danger of this publication drifting away from the sportsman and toward the general population. I hope this is not the intent of the Kansas Fish and Game Department.

James W. Lambhe  
Wichita, KS

Dear Mr. Lambhe:

I appreciate response from our readership — especially if it addresses magazine content. Your concern with the direction of KANSAS WILDLIFE is shared by many. And I'm one. Let me explain.

KANSAS WILDLIFE is a publication of the state Fish and Game Commission, which is responsible for managing all of the wildlife resources in Kansas — those that are sought by sportsmen and those that are not. Just as the magazine must seek a balance between hunting and fishing articles, it must include information for both sportsmen and amateur naturalists. "Armchair" is really not an appropriate moniker, as many of these people spend much time afield and know more about Kansas wildlife — including game species — than hunters and anglers!

No, KANSAS WILDLIFE is not about to ignore the sportsmen. In fact, this issue is devoted almost entirely to hunting (I'll probably get some letters on that, too). Much of the agency's management is directed to — and paid for by — sportsmen. And KANSAS WILDLIFE will continue to serve this segment of its readership with timely articles on hunting and fishing.

In your assessment of our magazine, remember that it will treat subjects of seasonal interest in the appropriate issue. There isn't much hunting going on in July and August in Kansas, and fishing activity also tapers off in hot weather. What better time to talk of snakes, frogs, prairie dogs, and other wildlife? Many sportsmen, as well as budding naturalists, enjoy learning about the more obscure inhabitants of the Sunflower State.

KANSAS WILDLIFE cannot be strictly "hook and bullet." Few of our readers — including sportsmen — would want it that way. We intend to keep our current balance of hunting and fishing articles, our tempering of consumptive use with treatises on non-game wildlife. The unfinished task is to pack even more useful information into each article, to improve the quality of our photo selections, and to provide an attractive, well-rounded magazine to anyone interested in Kansas' outdoor world.

Wayne van Zwoll

### BUFFALOED

Editor:

. . . I am considering planting my back yard to grass and shrubs that would benefit wildlife . . . Would buffalo grass be suitable for an entire back lawn?

Ronald W. Burger  
Gardner, KS

Dear Mr. Burger:

Your idea is a good one. Back yard wildlife habitat can provide important food and cover for a variety of animals, and beautify the landscape as well.

Buffalo grass is native to Kansas, and generally natives are desirable in establishing wildlife habitat. In this case, however, it sounds as though you will keep the grass cut short, which will render it of little use to wildlife. Buffalo grass does offer the advantages of low demands for water, mowing, and fertilizer, and it makes a hardy, attractive lawn. Buffalo grass lawns are encouraged in the western half of Kansas for water conservation, but other grasses are better suited to eastern portions of the state.

You might consider planting one end or corner of your yard with native grasses, such as big blue stem, and switch grass. Left uncut, these species will provide both food and cover for wildlife, and will display some impressive colors in the spring and fall. For maximum benefit to wild animals, the grass should be planted adjacent to shrubs and trees which are beneficial to wildlife. This will create the "edge area" so important to wild animals.

Native grasses may be obtained through local Soil Conservation Service and A.S.C.S. offices. Planting usually takes place in early spring, but may also be done in the fall or winter. Manes



# THE LAW

## X-RAY CONVICTION

Game Protector Mike Smyth is known by fellow law men to be a cunning, intuitive enforcer of wildlife laws. He was on his way home, late at night, from a Thanksgiving dinner, when he saw a pickup truck with three men in it and a deer in the back. To most people the sight would not have seemed suspicious — it was archery deer season; but G.P. Smyth sensed something awry. So he wrote down the license number from the truck. The owner, an Ashland, Kansas man, said the trio had taken two deer, and the meat was hanging in a locker in Ashland. Then, pressed by Smyth, he admitted that his brother (one of the three men in the pickup) had killed a deer with a rifle. He said both men who shot the deer were from Emporia.

Smyth went to the locker to examine the meat. There was evidence that both deer had been shot with rifles, but the meat around the bullet holes had been trimmed away, making proof of the violation difficult to obtain. Still, Smyth felt he could convict the two Emporia men of taking the deer illegally.

He carefully cut away a small rib section from both carcasses and took them to Veterinarian Clint Rankin for x-rays. In Smyth's words, "You could see the bullet fragments as plain as day." That was proof enough, so he went to Emporia to issue the two subjects tickets. Both said they would bring lawyers and fight the case. Smyth hoped they would; but after driving all the way to Ashland with their lawyer, the culprits realized that Smyth had done his job too well, and they pleaded guilty.

Clark County Judge Michael Free-love was not impressed by their sudden attack of honesty, and ordered each of them to pay \$260 and serve one year's probation. Manes

## TELEPHONIN'

A tip from an upset fisherman on Labette Creek near Chetopa sent Game Protectors Dudley Foster and Jim Hollis looking for five men in a small boat who

looked like they might be "telephoning fish." Foster and Hollis were joined by State Trooper Jerry Turner and Chetopa Patrolman Clifford Davis as they searched the woods along the creek for the men.

Parked near the creek they found a pickup truck which matched the description given by the alert informant, so two of the officers waited in the heavy undergrowth while the others looked for another vehicle belonging to the alleged fish shockers.

In just a few minutes, the officers waiting near the truck heard a boat motoring toward them. They kept themselves hidden in the brush, and watched as four of the five men readied dip nets and bows and arrows. The fifth man began turning the crank on a hand generator taken from an old telephone. The game protectors watched, expecting large fish to float to the top, but nothing came up, and the violators motored away.

Sure that the five men would return to the pickup, the law men remained hidden nearby. It was about an hour before the culprits finally returned. Foster, Hollis, Turner, and Davis watched as the five men unloaded seven flathead catfish. They waited until the boat and all the other equipment was loaded before greeting the party with a not-so-pleasant surprise.

The five men received twelve tickets, and paid more than \$1,000 in fines and court costs. In addition, they lost the boat, motor, and all other equipment used in the illegal fishing incident.

Manes

## LIFE AND LIMB

David and Faye Phelan and their two teenage boys nearly became the victims of a fierce, early June storm that dumped more than 20 inches of rain on parts of Doniphan and Brown counties in northeast Kansas. The family was trapped in a pickup truck that was only moments away from being swept into the muddy, boiling current of the Wolf River near Leona. A daring rescue by Game Protector Dave Hoffman and State Trooper Ron Alvord pulled the family free from the truck just before it tumbled into the channel.

The Phelan's pickup stalled after they crossed a bridge on the swollen Wolf River. Water in a low area near the bridge was just about over the truck's headlights, and the motor stalled. Mr. Phelan knew the hazards of flood water, so he attached himself to the truck with a rope before attempting to walk for help; but the current was too powerful, and his feet were repeatedly swept from under him. Clinging to the rope, he struggled back to the truck and called for help on his citizen's band radio. The alarm was received by the Doniphan County Sheriff's Office, but they too were surrounded by churning flood water. So the distress call was forwarded to State Trooper Ron Alvord.

It was 11:30 at night when Alvord telephoned Game Protector Dave Hoffman for assistance. By 12:15 they were in a small boat, motoring toward the stranded family. Hoffman told Alvord that their underpowered outboard motor would never get them back to the river bank, but they continued.

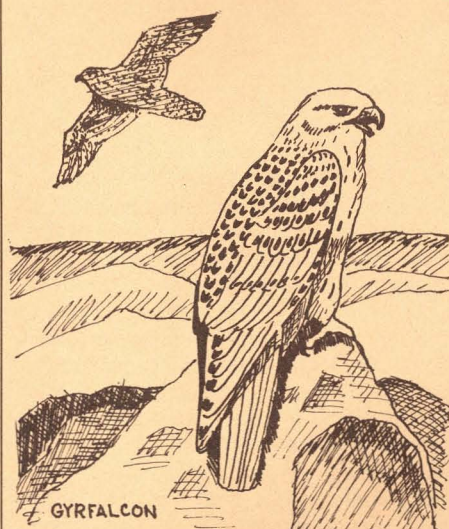
On the downstream side of the shuddering pickup truck, Hoffman and Alvord were able to hold the boat stable long enough to get the Phelans out and fitted with flotation devices. As they turned back toward the bank, a powerful rush of water coming around the end of the truck caught the boat, pulling it under. Reacting to their natural instincts, the passengers started to jump overboard, but Hoffman and Alvord forced them to stay in the swamped boat because they knew it wouldn't sink completely and would help keep them afloat. They told the family to remain in the boat until they drifted to the first row of trees, where they would climb to safety. The plan worked for everyone but Game Protector Hoffman. As the boat was unloaded, it capsized, throwing Hoffman backward into the churning water. Somehow he caught hold of the boat and floated with it until it lodged in some trees and he climbed on top of it.

With everyone in a relatively safe position, all that remained was to wait until the water subsided or more help came. It was about 1:00 a.m. when the Phelan's pickup truck came crashing by, pushed by the swollen stream. It would likely have been a death trap for anyone inside.

Shortly, three men arrived with a



larger, more stable boat and a 50-horsepower motor. The second team of rescuers, Gary Davis, Roland Keller, and Marlin Johansen, was able to reach the trees where the Phelans and the two officers were stranded. Even with the more powerful motor running at full throttle, the boat barely moved against the current; but after two painfully slow trips everyone was safe. It was past 2:00 a.m. when the Phelans, Alvord, and Hoffman stood wet, cold, and tired on solid ground once more. Manes



## FALCON CRUNCH

Secretary of the Interior William Clark and Attorney General William French Smith announced that U.S. Fish and Wildlife Service special agents and state conservation officers arrested over 30 individuals in 14 states in a crack-down against illegal commercial trade of birds of prey. Agents also seized a large number of live raptors, including Arctic gyrfalcons and endangered peregrine falcons, as well as cars, trucks, and aircraft thought used in the violations.

This action culminates a three-year undercover investigation, which exposed a thriving international black market in federally protected birds. Altogether, more than 80 felony charges were filed.

Undercover agents were able to infiltrate networks of individuals involved in illegal raptor taking and trading. The operation was carried out by 150 Fish and Wildlife Service special agents and an equal number of state wildlife officers who served search and arrest warrants in Arizona, California, Colorado, Idaho, Illinois, Louisiana, Minnesota, Missouri, Montana, Nevada, New Mexico, New York, Texas, and Utah. Others arrested included subjects from West Germany and Canada. At the same time, wildlife officials in Ontario, British

Columbia, Alberta, and the Yukon, assisted by the Canadian Federal Department of Justice, served 15 search and arrest warrants involving similar violations in Canada.

Government surveillance and undercover activities substantiated earlier information that the multi-million dollar illegal black market in birds of prey is a worldwide problem of serious proportions.

Attorney General Smith said "Illegal trafficking in protected wildlife has become an enormous problem. A multi-million dollar illegal market is threatening the existence of some species, and creating an incentive for organized international criminal activities. I am encouraged, however, by our highly effective effort to penetrate the networks of illegal trade in raptors through cooperation, not only among federal and state agencies, but also with foreign governments. This type of cooperation is essential if we are to eradicate this unlawful commerce before it eradicates our protected wildlife." *Department of the Interior*

## EASY PICKIN'

During spring walleye egg-taking operations, Game Protector Jim Hale was patrolling the Melvern Reservoir dam in the darkness of early morning, watching to see that no one tampered with the nets used to catch the fish in the midst of their spawning run. The nets were set in the prime walleye spawning area, on the rock-covered face of the dam. Spotting two lights moving across the dam, Hale and accompanying G.P. Johnny Ray scrutinized the situation through binoculars. They could see two men wearing head lanterns and carrying long poles of some sort.

Moving to within 75 feet above the subjects, Hale and Ray could see they were carrying long-handled dip nets and fishing poles — strangely common equipment in the area during early spring. Hale watched as the subjects walked along the water's edge, shining their lights just a few feet out in the water. Then, through his binoculars, Hale caught the luminescent hint of a walleye in the water, as one of the subject's lantern light was reflected in the fish's glassy eye.

Hidden by the guard rail atop the dam, Hale saw the man use his dip net to lift the fish from the water. He quickly laid the net down and put his foot on it, and Hale moved in.

"I was just checking the fish for eggs," the man feebly explained.

"That's all good and well," replied Hale, "but it's not your job," and he began writing the Osage City man a ticket that cost him \$69 and his fishing license.

Hale and Ray took the eight-pound female walleye to a holding pen for safe keeping until morning, when the biologists would return and remove its eggs. The almost-poached fish contributed more than 97,000 eggs to Kansas' walleye hatching program before it was released back into Melvern Reservoir.

Hale says he suspects many of the long-handled dip nets seen during spring at Melvern have been used to take walleye illegally. He guarantees he'll be watching even more closely during future spawning runs of the prized sport fish. Manes

## OPERATION GAME THIEF

If you've ever seen a violation of state or federal wildlife laws and didn't know what to do about it, here is the answer. Just dial 1-800-228-4263. That is the telephone number of the new Operation Game Thief run by the Kansas Fish and Game Commission.

Operation Game Thief is designed to allow concerned citizens to report wildlife violations anytime, anywhere. The toll-free number rings in Fish and Game's headquarters in Pratt. The message is taken by someone in the Law Enforcement Division and then transferred by teletype to the sheriff's office in the county where the violation is reported. The sheriff's dispatcher then forwards the information to the local game protector.

All information and names of sources are confidential, but a numbered identification code may be used to allow law enforcement staff to contact informants to verify initial reports.

From 8:00 a.m. to 5:00 p.m., Monday through Friday, the telephone will be answered at the Fish and Game headquarters. Otherwise, it will be automatically transferred to the Pratt County Law Enforcement Center and then placed on the teletype.

Operation Game Thief is patterned after similar programs in other states, which have been highly successful. Law enforcement officials stress that Operation Game Thief and wildlife conservation depends on support from the public. They add that the toll-free number is for reporting wildlife and boating violations only, not for information requests. Manes



# ISSUES

## CENTER PIVOT AND WILDLIFE

Across western Kansas, center-pivot irrigation systems have found their way onto much of the prairie, and the practice is moving east. While irrigation can yield large returns in crop production (at least while ground water supplies last), other long-term effects are definitely adverse. Wildlife managers are particularly concerned about the use of center-pivot irrigation.

When a center-pivot system is installed, trees and shrubs in the path of the system obviously must be removed; but more significant to wildlife populations is the fact that irrigation has provided an economic avenue for breaking native grass pasture into tilled crop land. The wildlife that thrives in Kansas does so because proper habitat in the state supports each species. Much of Kansas' important wildlife habitat is native prairie, and that unique ecological system is rapidly being destroyed to make way for irrigation — but there is room for compromise between wildlife and irrigation.

Corner areas, which most center-pivot systems don't reach (some systems do irrigate complete squares), should be left in the native grasses, shrubs, and trees that originally covered the entire irrigated area. In a full section with four circle systems on it, each outside corner constitutes seven and one-half acres of potential wildlife habitat, and the areas between the circles total about 30 acres. If left undisturbed, these small plots can mean the difference between perpetuation and extirpation of wildlife populations.

In tough economic times there is temptation for landowners to put these small areas into dry-land wheat production or use them for cattle feed lots. When such practices are employed, losses of local wildlife populations may be complete.

Native grasses provide both food and cover for many wildlife species, but other important habitat types also may be easily developed in the corners

of irrigated fields. When trees and shrubs are cleared from the circle area, they should be piled out of the way in the corners. This will replace some of the important winter cover that is destroyed in clearing. Wildlife food can be provided by leaving narrow strips of the crop near corners or other areas of cover. These practices will cost landowners little in time and money.

Other effects of irrigation may prove to be more devastating. Lowering of ground water tables has left many streams in western Kansas without water. Vegetation along these creeks and rivers may be the only available habitat in some intensively farmed areas. In many cases, these trees and shrubs have died because the water table has been pulled out of reach of their roots, resulting in total losses of habitat.

Prime wildlife habitat that has been lost or is in immediate danger of being lost includes that along hundreds of miles of the Arkansas, Smoky Hill, and Solomon Rivers, as well as countless western and central Kansas creeks that once supported fine fisheries and diverse food and cover for land-dwelling wildlife. Cheyenne Bottoms, one of the nation's most important wetlands, is also threatened by dewatering.

Wildlife managers know farmers and ranchers depend on the productivity of the land for their living. They continue to search for compromises which will allow stewardship of natural resources, including wildlife, under a sensible system of multipurpose use.

Some people question why anyone should be concerned over the loss of certain wildlife populations; and Kansans have been slow to recognize the importance of the state's streams and wetlands. Aside from direct benefits to people, natural water courses afford critical habitat for a diversity of wildlife species.

The values of wildlife are many. Recreational importance may be only a minor consideration in wildlife conservation. Wildlife-related activities add almost 300 million dollars to the Kansas economy each year, and that figure is growing. Economics aside, protecting wildlife habitat means protecting the health and welfare of people as well. Conserving water for wildlife can only help to ensure water for future Kansans,

and efforts to conserve wildlife often prove to be safety checks on the quality of the whole environment. Much more is at stake than next year's opening-day pheasant hunt. *Manes*

## SUING THE PARK SERVICE

The Wildlife Legislative Fund of America has filed to join the National Rifle Association in its lawsuit against the National Park Service and G. Ray Arnett, Assistant Secretary for Fish, Wildlife, and Parks. The suit was brought over regulations made effective April 30, 1984, which the organizations believe represent the most extensive anti-hunting actions ever taken by a federal government agency.

"Frankly, we were shocked that this would occur under an administration that heretofore we believed to be supportive of scientific wildlife management practices and understanding of the important role that regulated hunting and trapping have played in it," said WLFA President James H. Glass in a letter to Secretary of the Interior William Clark.

In addition to National Parks and Monuments, the National Park Service manages millions of acres of lands where hunting and trapping have been allowed. The new regulations state that hunting and trapping will be prohibited on any recreational area for which enabling legislation has not specifically provided for hunting and trapping.

"More important than the lands that will immediately be made off-limits to sportsmen's use — and they are significant — is what portends for future uses of public lands," said Glass. "If these regulations stand, sportsmen will be forced to wage a major lobbying campaign to ensure that hunting and trapping may occur on every new recreational area brought under the jurisdiction of the National Park Service.

"Our contention is that the National Park Service should treat hunting and trapping as activities to be permitted on recreational areas where they are feasible." *Wildlife Legislative Fund of America*



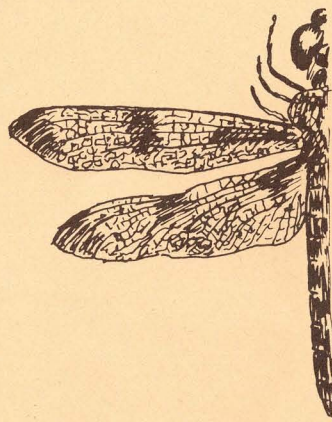
# Nature's Notebook

by Joyce Harmon

Wildlife Education Coordinator  
Kansas Fish and Game Commission

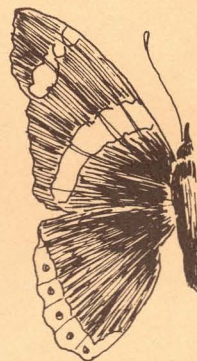
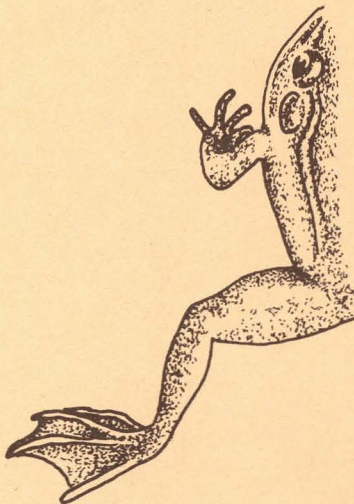
## TWO HALVES MAKE A WHOLE

Symmetry is a characteristic of some living and nonliving things where half of the body is a mirror image of the other half. A line of symmetry cuts something exactly in half. Look at the half drawings of animals below and complete the drawings as carefully as possible.





$$\frac{1}{2} + \frac{1}{2} = 1$$





# E is for ecological expressions

Directions: Given the following words, complete the exercise below. You may use a separate sheet of paper for your answers.

estivate	exotic	emu	echidna	eel
eagle	entomology	ermine	eider	environment
egret	echolocation	ecology	extinct	experiment
eddy	earth	elk	eaglet	ecosystem
edentate	endangered	egg	estuary	eland
echinoderm	earth science	edge effect	extirpated	erosion



- 1) Place the words in alphabetical order. Divide the words into syllables. Double check your work.
- 2) Look up each word in your dictionary. Write the word, its pronunciation, part of speech, meaning(s), and the guide words found on the dictionary page. Use the word in a sentence. The first one has been done for you. (Note: Dictionaries will vary in pronunciation keys.)

**estivate** (es' tə vāt'), verb 1. to spend the summer, as at a specific place or in a certain activity. 2. to pass the summer in a torpid condition. (also spelled aestivate.)  
 guide words: essentialist Estremadura  
 Some desert animals estivate in the summer to save energy.

- 3) Write at least five sentences using two or more of these words in each sentence.

The bald eagle is endangered because poisons in the environment caused the egg shells to be weakened.

- 4) Complete the following sentences using the words above.

Bats use a special radar called \_\_\_\_\_.

An arm of the sea at the lower end of a river is a/an \_\_\_\_\_.

An \_\_\_\_\_ species no longer exists.

\_\_\_\_\_ and \_\_\_\_\_ are adult birds that live in Kansas.

- 5) List all the words that name an animal or group of animals.
- 6) Write the correct word for each respelling.

ē'-lənd  
 ē'-myū  
 eg'  
 ēl'  
 ər'-mən

ent'-ə-māl'-ə-jē  
 es'-chə-wer'-ē  
 in-vī'-rən-mənt  
 i-kol'-ə-jē  
 ik-sper'-ə-mənt

- 7) Unscramble these words.

gtalee

yeoolge

gdnedeeanr

ysrutea

mycsoeet

oooyetlmng



# HIDE N' SEEK

Directions: Circle the names of wildlife that belong in each animal class represented below. Answers run forwards, backwards, diagonally, up, and down. Try making your own word-search puzzle.

larva  
skink  
salamander  
newt  
mudpuppy  
toad  
spadefoot  
tree frog  
spring peeper  
bullfrog  
tadpole  
turtle  
slider  
lizard  
massasauga  
garter (snake)  
box (turtle)  
copperhead  
rattlesnake  
gila (monster)  
gecko  
mud (turtle)  
racetracker  
coachwhip  
stinkpot  
python  
pygmy (rattlesnake)  
cobra  
water (snake)  
ribbon (snake)  
map (turtle)  
egg  
frog

## HERPTILES

S A L A M A N D E R M A R R B  
P C T O U D E L T R U T E P N  
A E A K D L W B F G D T D Y O  
D A D C P I T O A D O A I G B  
E V P E U Z E X H O L I L M B  
F R O G P A M G C I J K S Y I  
O A L S P R I N G P E E P E R  
O L E L Y D A E H R E P P O C  
T R E E F R O G O R F L L U B  
M A S S A S A U G A R T E R M  
E K A N S E L T T A R B O C N  
O C O A C H W H I P Y T H O N  
P W S K I N K T O P K N I T S  
R A C E R U N N E R E T A W R

ibis  
swift  
stork  
loon  
wren  
veery  
vireo  
oriole  
tern  
teal  
pheasant  
bluejay  
coot  
duck  
quail  
chickadee  
dove  
eagle  
finch  
gull  
heron  
kingfisher  
jay  
owl  
hawk  
crow  
lark  
junco

## BIRDS

A L J U N C O O T B  
K W A H C D W R E N  
I O Y R D O E R I V  
N R E F K V E E R Y  
G C O R T E L A E T  
F U O G L I A U Q N  
I T L G O B H K B A  
S I A L O I J C L S  
H E R O N S K U U A  
E C H I C K A D E E  
R L N R E T M N J H  
O O B I O L E P A P  
Q S W I F T R S Y T

sucker  
darter  
crappie  
burbot  
perch  
walleye  
sturgeon  
paddlefish  
gar (3 times)  
eel (3 times)  
shad  
trout  
pike  
carp  
shiner (2 times)  
chub  
dace  
buffalo

minnow  
killifish  
catfish  
madtom  
bass  
sunfish  
bluegill  
drum  
sauger  
reder  
molly  
goldfish  
guppy  
cod  
tuna (2 times)  
muskey  
ray (2 times)  
smelt  
lamprey

## FISH

H S I F D L O G L A M P R E Y T L E M S  
S T U R G E O N K S U C K E R A E D E R  
I H L R A Y S H I N E R M U S K E Y A C  
F E A T R O U T L C L L I G E U L B S O  
E M A D T O M D L A T U N A R E T R A D  
L B C A T G A R I T S U N F I S H A U G  
D G D C H U B U F F A L O M O L L Y G U  
D A A E E L N M I I E F W A L L E Y E P  
A R E N I H S A S S A B U R B O T G R P  
P I K E P E R C H H C R A P P I E E L Y



# HUNTING

## RECORD BOW GOBBLER

In April of 1984, Bowhunter Hall Of Famer, Al Weaver, of Wichita, arrowed a Kansas gobbler that attests to the success of the Kansas turkey reintroduction program. With an 11-inch beard, and weighing 27 pounds, 4 ounces, the gobbler was recorded as a national (and state) record in the *ABC Record Book Of Bowtaken Game*. It has been certified as such by the National ABC and the Kansas Fish and Game Commission.

Though weakened by several operations and radiation treatments, Weaver took the record gobbler at 40 yards with one arrow.

The former National Bow Eastern Turkey record is the 24-pound, 10-ounce Pennsylvania gobbler taken by Deano Farkas, of Allentown, Pennsylvania.

Weaver also has two other bow-taken animals in the record book — a black bear, taken in Colorado, holding second place to the national record, at 412 pounds; and a Kansas buck which is a third place national record for typical whitetail deer. He is a traditional bowhunter, often using longbows. He used a take-down recurve to bag his record gobbler. Manes

## GEESE FOR KANSAS

Since the Kansas Fish and Game Commission began its giant Canada goose reintroduction project in 1981, nearly 2,000 of the huge waterfowl have been established on nesting grounds in the state. This year has been another good one for the program, with about 700 geese being added to reintroduction flocks in central and eastern Kansas.

The giant Canada goose is the largest subspecies of Canada geese, with wing spans up to five and one-half feet and weighing more than 16 pounds. They were thought to be extinct until the early 1950's, when a small flock was located in Minnesota. Since then many state wildlife agencies have been trying to re-establish the popular birds across their former range.

The main principle used in goose and other bird reintroduction projects is that they return to nest in the same area

where they first fly. This allows biologists to release pre-flight aged goslings in targeted reintroduction areas, with a strong likelihood that they will return to nest at maturity, in three years.

This year, geese for Kansas were obtained from state wildlife agencies in Wisconsin and Colorado, as well as from Kansas' own production flocks located at Pratt, Marais des Cygnes, Cedar Bluff, the Sedgwick County Zoo, and other areas. Of about 400 geese from out of state, 150 will be held at Cedar Bluff Reservoir, where they will be used in gosling production. The remainder of the adults will be held at El Dorado, Fall River, and Cheney reservoirs, where they will decoy returning Kansas-hatched geese to refuge nesting areas. After the Colorado and Wisconsin geese have molted next year, they will be released to join other Kansas flocks.

Other goslings released in Kansas will learn to fly at Flint Hills pond sites located in Butler, Chase, Greenwood, and Lyon counties.

Another 250 giant Canada goslings were released in the Marias Des Cygnes area on about 10,000 acres of wetlands and private ponds.

Gerry Horak, project leader of the reintroduction effort, says there has been great response from landowners who are willing to place giant Canada geese nest structures at their ponds. He says that while reintroduction efforts are aimed at prime habitat in eastern and southcentral Kansas currently, the program is expected to expand statewide in the near future. Horak adds that parts or all of Greenwood, Butler, Chase, Lyon, Coffey, Woodson, Wilson, Miami, Lynn, and Bourbon counties in eastern Kansas are closed to dark goose (Canada and white-fronted) hunting for protection of reintroduction flocks.

Manes

## CRYSTAL BALL ON UPLAND BIRD SEASON

"Dismal," that's the word two of Kansas' most knowledgeable upland bird specialists used to describe the overall prospects for the 1984-85 quail season; but Kansas Fish and Game biologists, Roger Wells and Randy Rodgers,

agree the upcoming pheasant season could be about "normal."

Rodgers, who is stationed in Hays, says the 1984-85 pheasant season isn't going to set any harvest records, as the 1982-83 season did, but good chick survival could provide hunting similar to last year's near-average season. He said southeast Kansas is the only area in the state where quail populations could approach normal levels. "Baring any disasters," he added, "it will be 1986 before we have a chance for a normal quail season."

Wells, who is stationed at the Emporia research office, concurred that the southeast will be the best place to hunt quail, explaining that portion of the state was spared much of the severe winter that devastated the rest of Kansas. He also said the Flint Hills and southcentral Kansas could have near-normal quail populations.

"Pheasants were not really impacted by last year's harsh winter," said Wells. "Current population declines are due to extreme heat in the summers of 1980 and 1983. Long periods of high temperatures can cause pheasant embryos to die in the eggs, and last year's production was very low; but the pheasant population is not down so far that good reproduction couldn't give us a pretty good season." Manes

## CANINE COMPANION CLUBS

There are many organizations in Kansas designed to promote the use of trained sporting dogs. There is at least one club for almost any breed imaginable — pointing dogs, retrievers, hounds, and the rest. Belonging to such an organization may be one way for the new dog handler to learn more about training his dog, and experienced handlers can share valuable knowledge that has helped to make their hunting successful.

Persons interested in learning more about sporting dog organizations may contact the Law Enforcement Division of the Kansas Fish and Game Commission, Rt. 2, Box 54A, Pratt, KS 67124, (316) 672-5911. Any organization which has sponsored a field trial in the state will be on record. Manes



# FISHING



## KANSAN CLAIMS WORLD FISH RECORD

Elden Bailey of Lawrence was fishing for walleye at Glen Elder Reservoir with two buddies in early June, but the catch of the day was no walleye — it was a world record channel catfish.

Bailey was motoring across the lake in his boat, when his depth finder indicated some big fish near a dropoff. He threw out a marker buoy and circled back to the spot. One of his buddies, Gary Miller, was the first to get his jig-and-nightcrawler (standard walleye bait) into the water. Immediately Miller landed a five-pound channel cat. Next, Bailey pitched his bait overboard, and in just a few minutes he was in the midst of the angling battle of his life.

Using an ultralight outfit Bailey calls his "buggy whip" rig, he set the hook. Bailey's other fishing companion, Brad Schelley, saw the fish was going to put up a hard fight, so he timed the battle.

After 15 minutes, no sign of an end to the struggle was in sight. Bailey said his problem was that he just couldn't move the fish off the bottom. As an hour passed, the fish began to give in. Bailey had been fighting the fish for an hour and five minutes, when he finally pulled the huge channel cat to the surface. They were a half mile from the buoy which marked the spot where the fight started.

One of the other men in the boat carefully slipped a dip net under the fish, but as he began to raise it out of the water, the handle broke, and the channel cat nearly broke the line and

slipped back into the depths. Acting quickly, Bailey grabbed one side of the net frame, his buddy grabbed the other, and they pulled it into the boat. The trio was in awe of the three-foot-long channel catfish, but Bailey was ready to release it.

"Let's at least weigh it," reasoned Bailey's buddies, and he agreed.

The official weigh-in was witnessed by Outdoor Writer Mike Pearce and Kansas Fish and Game Biologist Richard Sanders. The huge female channel cat tipped the scales at twenty-two pounds, two and one-half ounces, not a state record — but possibly a world record in six-pound line class. (Bailey thought he was using six-pound test line.)

When Bailey's line was strength tested, it turned out to be four-pound test, and his catch beat the old world record for that class by more than seven pounds.

Now the fish Elden Bailey was going to throw back into Glen Elder Reservoir is being mounted to hang on his wall, where it can support his story about catching a world record. Manes

## CHUMMING URBAN WATERS

Urban Fisheries Biologist Doug Nygren is painfully aware of the problems caused by "taming" the Arkansas and the Little Arkansas rivers in Sedgwick County. Channelization has removed most of the natural debris and structure which would have provided fish habitat; and water control structures make it nearly impossible for fish to move upstream into the city, where the demand

for fishing opportunities is high.

Carp are among the most abundant sport fish in the rivers, and they provide much of the angling action in the urban area; but even carp are at low densities. To make for some faster fishing, Nygren is "baiting" carp into accessible fishing spots.

In an area near the 11th Street Bridge on the Little Arkansas River, Nygren has placed "permanent chum" in the stream, using 50-pound sacs full of corn. To ensure the attraction, he throws another 50 pounds into the 100-yard-long baiting site each day.

Nygren says carp are an abundant and underutilized resource, and the baiting program could have benefits to people who like to catch other fish species, "It should attract other fish besides carp, like channel catfish and flatheads," he says. "Crawdads are coming to the corn, and the catfish should move in to feed on the crawdads."

Nygren suggests that fishermen try chumming (it is not illegal in Kansas) with corn in other areas on the river. He added that recipes for preparing carp are available at Kansas Fish and Game's Wichita district office. Manes

## CARP ON RECORD

The Kansas fish records for white amur (also called grass carp) and common carp were recently broken. The old record for common carp, 36 pounds, 4 ounces, was broken by a 37-pound 5-ounce fish taken by William N. Nagle of Overland Park. The carp, which was over 40 inches long, was caught out of Shawnee Mission Park Lake in Johnson County on a black, Texas-rigged plastic worm.

The white amur record was broken by a 29-pound, 7-ounce fish taken from a Wyandotte County farm pond by Gary Altieri of Bonner Springs. The catch was unusual because white amur are fairly strict plant eaters and seldom take a baited hook. Altieri caught the three-foot fish on a top-water, plastic frog lure. Grass carp are known to be among the most determined fighters of all fish. They are used in ponds and small lakes to control problem vegetation, and are often seen foraging in shallow water, with their backs and tails exposed. Manes



# NATURE

## THE LONELY SENTINEL

Fred the Prairie Chicken takes nothing from anyone.

Fred is the name given to the last bird from an Audrain County, Missouri flock of prairie chickens. He staked out a road junction as his territory. The lonely male bird was an heroic sight as he went through the elaborate prairie chicken mating ritual with no hope of attracting a mate.

"I had to call him something," says Rich Cannon, a wildlife biologist for the Department of Conservation who is doing a survey of Missouri's remaining prairie chicken range.

"He's a symbol of what has happened to prairie chickens in Missouri," Cannon says. "I thought about moving him in with another flock in Audrain County, but I've decided to let him play out his destiny."

Prairie chickens, or pinnated grouse, are as much a symbol of the prairie as buffalo. The pioneers found them in huge flocks, but the hunting season was closed shortly after the turn of the century. Changes in land use have wiped out much of the prairie chicken's native grass habitat in Missouri and other states.

There is no native grassland near Fred's territory and almost no cover to shelter him through bad weather. In some cases, prairie chickens have nested successfully in wheat, which substitutes for the tallgrass where they normally would nest.

Cannon found Fred by accident, when the bird challenged his car. The bird's aggressiveness is unusual, but understandable. He "booms" (inflates neck air sacs and makes a three-note booming call) to establish his territory and to lure females, but no matter how much he tries, no other birds come—either males to fight or females to breed.

The bird attacked Cannon, grabbing the back of his hand hard enough to draw blood. But far from being upset, Cannon was enthralled.

"This guy Fred is something else," he says. "I wish there were some way everybody in north Missouri could see him and what has vanished because of what we've done to the land."

In April of this year, Fred was hit by a car and killed. *Missouri Dept. of Conservation*

## THE ARK IS REBORN

The Arkansas River has made a temporary comeback in southwest Kansas. Dried by depletion of water tables in the area, the Ark has had little or no water running in it for more than a decade, but this summer, excessive runoff from melting snows in Colorado sent new life to the otherwise dead river. People in southwest Kansas took advantage of the rare opportunity to enjoy the flowing water.

Game Protector Bruce Peters reported people floating down the river in stock tanks outfitted with lawn chairs, ice chests, beach towels, and other fun-in-the-sun gear. Peters, who has been a game protector for more than 18 years, said, "It wasn't long ago that you could have driven a dune buggy in the river bed from Lakin to the Colorado line. This is the most water I've seen in this part of the Arkansas River for 10 years or more."

Once a major river across Kansas and Colorado, the Arkansas still has navigable stream status, making the stream bed public property and allowing persons who gain access legally to float the length of the river. The snow melt left Colorado's John Martin Reservoir full to the point that water could be released into Kansas via the Arkansas River, running more than 40 miles east of the Kansas-Colorado border. *Manes*

## SNAKE EATS GIRL

A 16-year-old girl on a religious mission in Peru was swallowed whole by a boa constrictor and then mercifully carved out of the 26-foot snake just before her heart stopped beating.

Marjorie Saris quickly revived after her lungs were emptied of river water, but she will never forget the terror that gripped her as the big snake dropped on her from a tree and dragged her beneath the surface of the river she had been bathing in.

"I feel so lucky to be alive," said

Marjorie at her home in El Monte, California. "I was dragged under the river while bathing one afternoon. I blacked out, and then woke up on the bank surrounded by Indians. They had peeled the snake that was swallowing me away like a banana skin."

Marjorie had been traveling upriver by canoe, carrying medical supplies and talking to the Indians about the need for eternal salvation. She had been in the Amazon only a few weeks, but she took to the missionaries' life with great zeal.

Marjorie had been bathing in a quiet pool when the snake dropped on her from a tree overhanging the bank. The great constrictor pulled her underwater and held her there until she stopped moving.

Then the snake dragged her downstream several hundred yards and began to swallow her. Meanwhile the Indians missed the girl and began a frantic search to find her. They discovered her in the nick of time, just as her head was about to disappear down the snake's gullet. They quickly fell upon the immobilized snake and sliced it from end to end.

The Indians thought Marjorie was dead, but as they watched in amazement the healthy teenager moaned and moved her arms. They quickly moved to drain the water from her lungs, and within minutes she was sitting up and talking to them.

Boa constrictors have been known to swallow small people, but no one had ever been on record as living through the experience.

Constrictors generally kill their prey before eating it head first, but this one must have been in a hurry to have gone for the wrong end and not to wait for its victim to die. *Kansas Herpetological Society*

## WISDOM

*Fishing is the chance to wash one's soul with pure air. It brings meekness and inspiration, reduces our egotism, soothes our troubles and shames our wickedness.*

—President Herbert Hoover

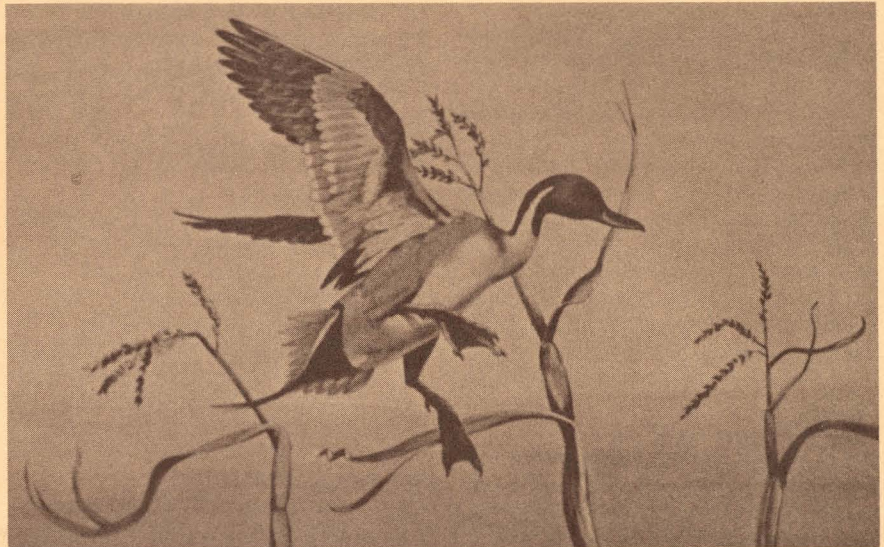


# WILD DESIGNS

## SADLER'S ART

Rob Sadler is a career artist who, after studying at the Washington University School of Fine Arts in St. Louis, has devoted his full energies to his work. He has produced an extensive, award-winning body of art in charcoal, watercolor, and oil. Sadler's paintings reveal his understanding of the subtleties of nature. Utilizing the skilled eyes of a naturalist, he creates wildlife scenes that impart a feeling of motion in the ever-changing light of the outdoors.

For more information about Rob Sadler's work, contact Jan Royston, Kansas Fish and Game Commission, Rt. 2, Box 54A, Pratt, KS 67124, (316) 672-5911. *Manes*



# SPECIAL NOTES

## NATIONAL HUNTING AND FISHING DAY 1984

September 22 marks the 13th annual observance of National Hunting and Fishing Day. The event was established by Congress in 1972 as a means of giving recognition to hunters for their many contributions to wildlife conservation. National Hunting and Fishing Day is sponsored by more than 40 of the nation's leading conservation organizations, including the National Wildlife Federation, the Izaak Walton League, and the Wildlife Society.

This year's National Hunting and Fishing Day Honorary Chairman is Washington Redskin's professional football player John Riggins, of Centralia, Kansas. One of football's most outstanding running backs, Riggins is also an avid outdoorsman, and he understands the importance of hunting and fishing to wildlife management:

"Some people mistakenly think that all wildlife is endangered. That just isn't so. Because of scientific wildlife

management and habitat acquisition programs financed mostly by hunters and fishermen, the populations of many wildlife species are larger today than they were in 1900."

In many towns across Kansas, major National Hunting and Fishing Day celebrations will take place. Events will include wild game feeds, frog-catching contests, waterfowl and predator calling competition, fishing contests, children's shooting ranges and fishing ponds, and other public participation activities. In addition, there will be demonstrations of wild game cooking, primitive camping, casting, and archery and black powder shooting. A major wildlife art show will be held on September 22 and 23 in Wichita, at the Cessna Activity Center.

National Hunting and Fishing Day events will take place at the following locations in Kansas: Kansas City, Manhattan, Topeka, Wichita, Concordia, Wilson Reservoir, Paola, Big Hill Reservoir, Hays, Dodge City, Cheyenne Bottoms, Great Bend, Liberal, and Pratt. For more information, contact regional Kansas Fish and Game offices or the agency headquarters in Pratt, or write

NHF Day Headquarters, P.O. Box 1075, Riverside, CT 06878. *Manes*

## NATIONAL HUNTING AND FISHING DAY POSTER CONTEST WINNER

Jimmy Frizell of Cherryvale, Kansas is a winner in the 1984 National Hunting and Fishing Day Poster Contest. His poster, illustrating the contest theme "How Sportsmen's Duck Stamp Dollars Benefit Wildlife", had already been selected as a winner in a locally sponsored poster contest before being entered in the nationwide contest.

Jimmy, a seventh grader at Cherryvale Middle School, won a Merit Award and will receive a \$50 Savings Bond. His entry was sponsored by the U.S. Army Corps of Engineers.

Jimmy's poster was one of thousands entered in local National Hunting and Fishing Day poster contests sponsored by schools, sportsmen's clubs, and civic organizations throughout the country. In addition to local prizes, there were 53 national awards, totaling \$5,550 in U.S. Savings Bonds. *Manes*



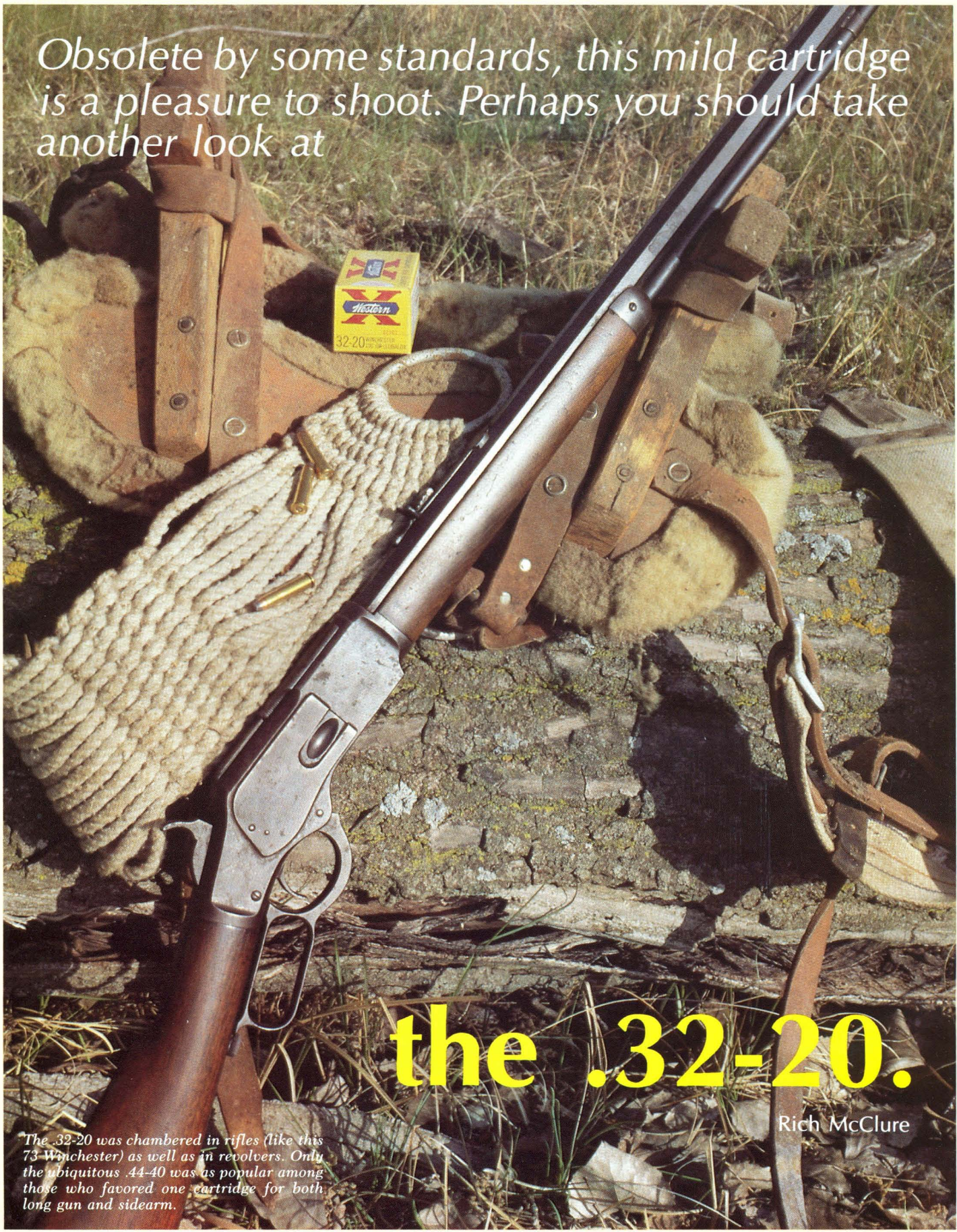


## DROP IN!

If you're an outdoors enthusiast, you won't want to miss the fifth annual hunting and fishing day exposition and wildlife art show. Scheduled for September 22 and 23 at the Cessna Activities Center in Wichita, the show will feature top-quality paintings, sculptures, and sketches from over 60 renowned artists—most of whom will be present. There'll be free fishing clinics and outdoor equipment exhibits, too. Representatives from state and national conservation groups will be on hand, and buckskin-clad "mountain men" will show you how it *really* was in the good ol' days!

It's a worthwhile stop, so bring the family—and drop in for a real outdoor experience!





Obsolete by some standards, this mild cartridge is a pleasure to shoot. Perhaps you should take another look at

# the .32-20.

Rich McClure

*The .32-20 was chambered in rifles (like this 73 Winchester) as well as in revolvers. Only the ubiquitous .44-40 was as popular among those who favored one cartridge for both long gun and sidearm.*

Gene Brehm photo



Once in a while something comes along that is just too good to keep to yourself. And sometimes your discovery antedates that of others who have, for some reason, kept the secret under their hats for years. I'm not saying they're selfish, but anyone who has shot the .32-20 cartridge and not told a fellow shooter about it has covered up a good thing.

The .32-20 has been around a long time and is one of the few vintage centerfire cartridges for which both rifles and revolvers were chambered. Also known as the .32 WCF, the .32-20 was designed by Winchester about 100 years ago for the 1873 Winchester rifle. Since then, it has also been chambered in Marlin, Savage, and Remington rifles, Colt and Smith and Wesson handguns.

My first .32-20 was a Marlin 94 with 20-inch octagon barrel. I promptly bought a set of RCBS dies and ordered a Lyman #311316 double-cavity gas check mold for a 115-grain bullet—which Lyman's handbook said would cast at .313 diameter. Since the bore of my Marlin measured .3125, I ordered a .313 sizer and was very surprised to have lubricant squirting out around bullets in the sizer. The bullets actually measured under .311! I shot them unsized and fingerlubed, seated on top of 3.5 grains Unique. That load consistently shot into an inch and a half at 50 yards. Noise and recoil were very mild.

I remember sitting on the edge of an alfalfa field early one spring, shooting at ground squirrels from 25

to 40 yards distant. That mild .32-20 load seemed more effective than a .22 long rifle hollow-point. I soon tired of hand-lubing all my bullets, however, and borrowed a .310 sizing die. That cut my time at the reloading bench and left me more hours in the squirrel pasture.

My next .32-20 rifle was an 1892 Winchester with a very smooth bore that miked .3115. Like the Marlin, it was equipped with a Lyman tang peep sight. And, again like its predecessor, it could keep good handloads under an inch and a half at 50 yards. That kind of accuracy might not win any matches, but it's equal to what many sporting .22's will do, and better than some.

Satisfied that my previous light load of Unique would perform as well in the Winchester as in the Marlin, I turned my attention to working up a heavier formula. I finally settled on 13 grains of 4227 behind the same 115-grain Lyman #311316. This load chronographs at 1548 feet per second (10-round average) and proved itself effective on squirrels out to 75 yards. It should also make fine turkey medicine—deadly, but not so explosive as to damage meat.

Whatever the charge, loading the .32-20 is easy. (One caution: As with any revolver cartridge, the cases are very thin and may crumple if not guided into the sizing die.) I use small rifle primers in the heavy loadings for my rifles, small pistol primers for the light loads. A charge of 4.5 grains Unique behind the 115-grain Lyman bullet seems just

right for my six-inch Colt police positive, as the gun shoots this load to point of aim with its fixed sights. This finely-made revolver has accounted for many ground squirrels and several grouse, the latter taken while I was big game hunting.

The .32-20 is not, incidentally, a big game cartridge. Loaded as hot as is practical in a strong rifle, it still falls far short of delivering the energy needed for clean kills on deer. A case in point was told me by an old woodsman who used a .32-20 for all his hunting during the Depression, when the diminutive cartridges came 50 to a box instead of 20. Economy was an important consideration—no matter that the .30-30 and .30-40 Krag were touted powerhouses, the .30-06 a veritable ball of fire!

One chilly morning in a brush-choked draw, the hunter—Bully was his name—started a buck. It was a nice one, with four heavy points to a side. He shouldered his rifle in one easy motion and milked the trigger as the buck cleared the sagebrush about 40 yards away. The dull thud of a solid hit blended with the snap of the rifle. Then the buck was gone. Seconds later, Bully's partner floored the big muley with one shot from a .30-40 Krag. Dressing the animal, the two hunters found Bully's .32-20 slug lodged in the deer's neck. It had not even penetrated to the spine.

Provided you use the .32-20 wisely, though, this old cartridge can be a lot of fun. Here are my favorite loads:

	<i>chronographed velocity</i>	
	<i>rifle</i>	<i>revolver</i>
Remington factory 100-gr. lead	1019	713
Western factory 115-gr. jacketed	1112	796
13.0 gr. 4227, #311316 115-gr. Lyman gas check	1548	too hot
4.0 gr. 231, #311316 115-gr. Lyman gas check	1141	845
4.5 gr. Unique, #311316 115-gr. Lyman gas check	1100	800 (estimate)
3.5 gr. Bullseye, #308252 80-gr. Lyman	1294	901
4.7 gr. 231, #311419 92-gr. Lyman gas check	1366	977
4.0 gr. 231, #311-120-2R 120-gr. Lee	1154	899
4.5 gr. 231, #311-100-2R 100-gr. Lee	1325	977



# PRONGHORNS

A pronghorn antelope stands in a field of tall grass, looking directly at the camera. Its large, dark, spiraling horns are prominent. The background is a soft-focus landscape of rolling hills under a hazy sky.

Wayne van Zwoil

*... tools and tactics  
for the hunter*

**P**ronghorns have a way of seeing the invisible. To be an antelope hunter, you mustn't be satisfied with invisibility. Not if you want to get close. The only thing that really works is not being where you are at all. Few are the hunters who achieve this state, and fewer still the number who can shoot well in a crosswind from being where they are not.

These were hardly positive thoughts; but I'm a realist and had to admit that I was falling short as a killer of pronghorns. Six hundred yards away — no, seven — a herd with one very fine buck was dusting the prairie in its haste to leave me alone.

Sure enough, soon I *was* alone. I thumbed back the safety on my 722 Remington and shouldered it. Perhaps a long, circuitous stalk.

Hunting pronghorns is relatively



easy for a rifleman who's not averse to long shooting and doesn't mind taking mediocre heads. But for the archer, front-loader, handgunner, or photographer — or for those who want to tape, mentally, a trophy before it is shot — stalking these animals is sport indeed!

Getting a close-up look at the head is a must if you're after an antelope trophy. Horn and prong length as well as four circumference measurements determine a score, and your first appraisal can be misleading. A good horn must stand high, obviously. From the side it should appear at least as long as the head of the animal. In addition, the hooks should curve well inward. Heavy horns quickly outscore light ones. The width of the horn should be carried well up its length, the prong situated high. The length of the prong is important, too, as is the degree to which each horn matches the other. Truly fine horns look big; those that, from a distance, *might* make the grade usually don't.

Antelope horns can be as long as 20 inches, though a 15-inch buck is considered a big one. The best antelope ever taken came from Yavapai County Arizona in 1975. Its horns measured over 18 inches, with prongs longer than seven inches. Scoring 93, it supplanted a record head that had been on the books at 101 6/8 since the inception of the current records system in 1950. Scrutiny of those incredible horns in 1979 showed them to be ineligible: both had been skillfully lengthened at their bases! Taken by an unknown hunter late in the 19th century, the buck was so much superior to the best pronghorns currently being shot that it had been considered a lost genetic strain before the tampering was discovered. The fakery, done with paper maché and lamp-black, remained invisible from the outside. Only when the horns were removed from the mount was it noticeable.

To collect a trophy pronghorn — or any pronghorn, if you're hunting with a short-range weapon — you must first reckon with the animal's eyes. They're phenomenal. Still,

I'm tired of hearing them compared to 8X binoculars. You can bet your last box of 25-caliber Noslers that no one has seen the world from an antelope's perspective — nor is anyone likely to. The degree to which pronghorns perceive color (a function of the cone cells in the eye) has not been determined. Nor has their ability to pick up and identify movement or detail in a landscape. As for distinguishing objects in low light, pronghorn vision can beat binocular-aided human sight hands down. That is because the human eye has fewer light-gathering rod cells and cannot take advantage of optical exit pupils larger than seven millimeters. An 8x56 binocular with its 7mm exit pupil simply magnifies images that in poor light are indistinguishable to the unaided human eye. In other words, it only makes them bigger, not clearer. Larger objective lenses gather more light, but it is light that the fully-dilated human eye cannot use.

The 8X-binocular story (also applied to sheep and other game animals that have outwitted hunters) probably originated with a novice nimrod who spooked a herd of antelope so far distant that to see the animals run through the dust he had to use his binoculars. The fact that he was perched on the horizon, looking into the sun while brandishing a highly-polished rifle probably never entered into his calculations.

Or, come to think of it, the comparison could have started with a compatriot of mine who hunted prairie goats with a bow. Having successfully stalked a buck to within 40 yards, this fellow released a perfect arrow at the broadside animal. He maintains the pronghorn saw the shaft approach, then, with a hit imminent, swung around 90 degrees to watch the arrow fly harmlessly past its shoulder. Other bowmen have had similar experiences with arrow-dodging antelope. Electronically-quick reflexes combined with those radar-like eyes leave many archers chewing their nocks.

Pronghorn eyes *are* superbly suited for life on the plains. Set high on the head, they're very large and

protrude from prominent sockets. This arrangement provides a field of view unexcelled in North American big game animals — roughly 320 degrees. The antelope's senses of smell and hearing, while functional, are relied upon to a lesser extent than those in other large ungulates. It is the penchant of whitetail and mule deer to seek cover when alarmed, running upwind when possible to detect danger in the path of their retreat. Pronghorns behave differently. Distance is their security, a straight flight across open ground their assurance that no ambush awaits.

But keen vision isn't the only thing a pronghorn hunter need consider. The prairie goat, though frail in appearance, is a good distance runner, and a tough target when on the move. That means you'd better be in shape to chase 'em and a practiced rifleman to slide 'em to a stop!

A pronghorn's speed, like its vision, has often been overrated. No hoofed creature can crank itself up to 80 mph. Or 70. Even 60 is an optimistic figure, but antelope can come close. Somewhere between 50 and 55 mph is top speed for most pronghorns, though they can maintain this pace for well over a mile and have averaged 30 mph over a seven-mile run.

Tagging a pronghorn on the blitz is not impossible. Antelope run "flat", with little vertical movement. Though they sprint half again as fast as a deer at full throttle, they're easier to hit because they don't bound. Still, swing and lead must be perfectly executed. And distance from the gun is a significant variable. Bullet flight time on a deer crossing the hunter's front at 25 mph 50 yards from the muzzle need not be considered if the rifleman is swinging with his target. At 100 yards it cannot be ignored, at 200 it can cause a complete miss. Double the acceleration of the target and you have problems even at 50 yards! Note the accompanying table (1) if you still think high-velocity rifles obviate the need for lead and follow-through.



The pronghorn's eyesight and speed are its most highly-touted defense mechanisms. With peripheral vision approaching a full circle and a "top end" of over 50 mph, antelope are well equipped for life on the prairie.



Gene Brehm photo

One of the dangers of shooting at any running game is that of wounding the animals. A moving gun increases the risk of error when the margin for error is small. Too, pronghorns are herd animals; though mature bucks nearly always bring up the rear, sometimes they run close to the main group. Even a well-centered hit can cause death or injury to non-target animals on a pass-through. Running shots are only good shots when they result in clean kills. Making every bullet count is an achievement—and a skill that should be cultivated.

The sun was well into the sky now, burning, blazing. Heat waves coiled and flattened in front of my glasses as a gusty wind tugged at the black sage in the basin. They weren't here. Again I shouldered the rifle, puzzled. Pronghorns have a short memory and will normally stop running after a mile or so,

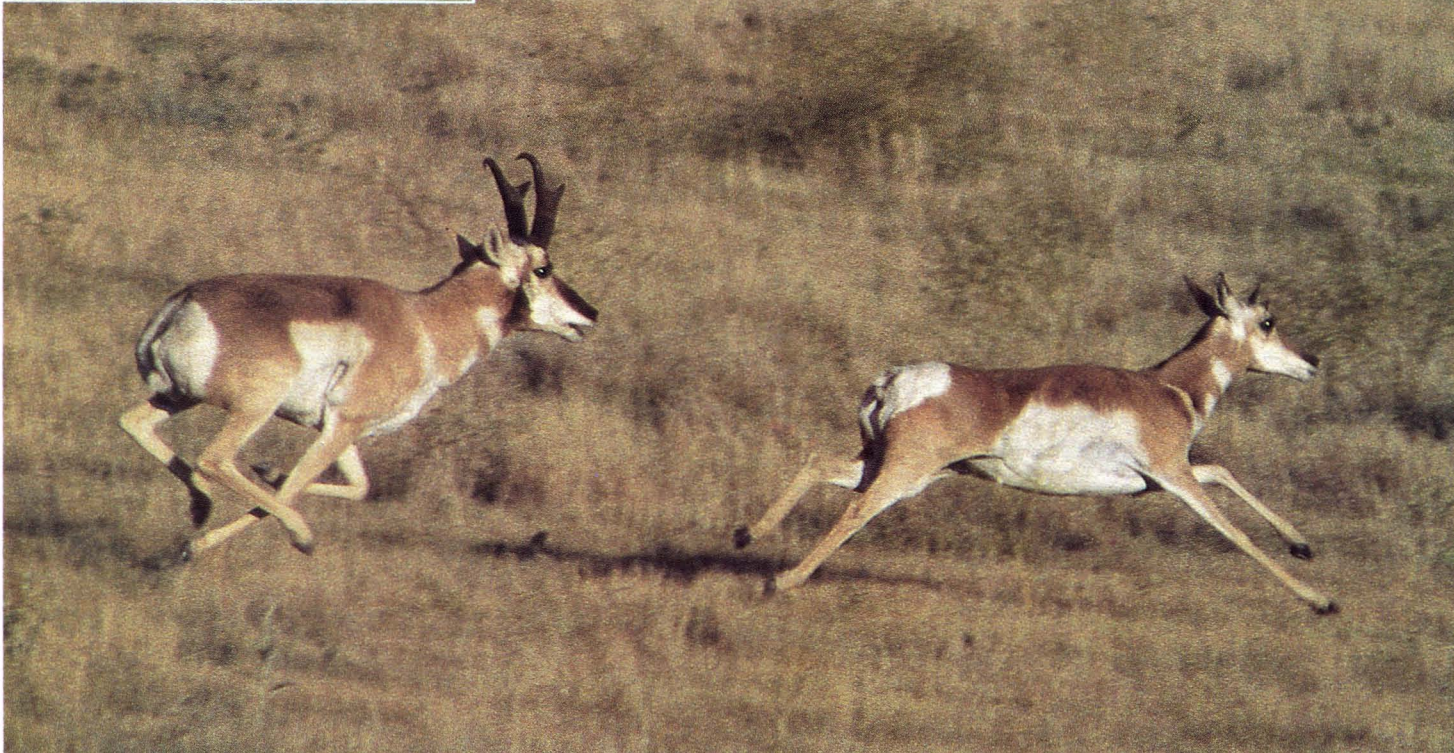
especially if they can put a ridge between themselves and a perceived threat. I was on a hogback that should have been the perfect security wall, and the flat below me was large enough to afford alert pronghorns a big buffer zone of safety.

But they weren't here.

I picked my way down the ridge and around the edge of a small limestone outcrop at its base. As I rounded the corner of the white rocks, I caught the glint of sun off a horn tip. I froze, but too late. A scant 20 steps to my right, two dozen pronghorns turned on their afterburners in unison and jetted into the open. Twice I milked the trigger on the little .244. Neither time did the trailing buck flinch at the report. The dust hung in a thin thread across the basin as I pocketed my empties.

They were gone, and soon the wind swallowed up their dust.

Pronghorns may feel secure in the open, I mused; but to assume they never use cover is to err. I thumbed a couple more 100-grain handloads





into the magazine, recalling the mature antelope buck I'd once encountered at 5,000 feet on a timbered Oregon mountainside. Never say never.

The wind was picking up now, erasing the mirage but making a long shot with the 6mm more difficult. The sun was too high to use as a backdrop — a tactic I often employ to make myself invisible to pronghorns. And my throat was parched. I couldn't move the sun or stop the wind, but I *could* have brought some water. Tightening my binocular strap, I broke into a trot across the basin. . . .

There are easier ways to hunt pronghorns. Probably most of the antelope tagged by archers are shot from blinds, usually erected or dug near water holes. Favored feeding areas can also be staked out, as pronghorns are creatures of habit. Some prairie goats have no doubt been clobbered by hunters using abandoned windmills as elevated stands, while others have been taken at fence crossings. Antelope don't like to jump fences, much preferring to crawl under the low strand of barbwire or find a hole in woven mesh. The animals tend to use the same crossings repeatedly, offering well-camouflaged marksmen a short-range shot.

Because antelope have keen eyes and recognize areas that could hide predators, blinds must blend with the landscape and be completed several weeks before the season opens. The pronghorns must accept your blind as an innocuous part of their environment, or you'll never get a close shot from that hiding place. Even if they are just mildly suspicious, you probably won't be able to shoot from the structure, as it will always be under scrutiny.

A pit blind I once occupied was a prime example. Just 18 steps from a water hole, it was made to house an archer and accommodate the movement of the lower bow limb during the shot. I never put it to the test, however. Every pronghorn that came to water at that seep used the far end

of the hole — 60 yards distant — and kept a wary eye on the mound of dirt in front of my blind. I'd cut a small 'V' in the top of the mound to give me a view of the area without exposing my head. The way the antelope kept my blind under surveillance, I dared not blink while looking through the notch. A shot — with exposed upper bow limb and torso and draw movement — was out of the question.

That hunt taught me about camouflage clothing, too. My partner and I wore faded woods patterns, knowing that the light grays and tans of sagebrush and prairie would contrast with darker clothing. Still our garments were too dark. We

prairie; and shadows caused by the three-dimensional human form are accentuated by dark garments.

Though primitive-weapons buffs are all but obligated to wear camouflage, hunters who use centerfire rifles may actually choose not to. The reason is that you are much better able to keep track of a hunting partner if he is wearing at least one piece of brightly colored clothing. And other hunters, shooting bullets that travel unimpeded across hundreds of yards of prairie, are better able to see *you*. Finally, of the discrepancies an antelope can spot at long distance, an odd color is among the least likely to alarm.



Gene Brehm photo

*This M70 Winchester in .243 is a superb pronghorn gun: flat-shooting, accurate, and capable of clean kills on antelope to 400 yards. And it is a pleasant rifle to shoot. The scope here is an 8X — fine for long shots, but a bit more powerful than necessary. A 4X or 6X glass would be ideal.*

concluded that the best pronghorn camouflage was not available commercially, that it would require a khaki background with light green and gray mottling and perhaps a few thin dark gray 'branch-lines' woven through it. Because pronghorn country is so often well lit, with little shadow, and the rocks as well as the vegetation are of light neutral colors in fall, any dark clothing becomes immediately noticeable. Even medium-tone camo clothes look almost black on a sun-drenched

My throat was really dry now. The pronghorns had run for two miles before halting in the center of a large flat. My route would take me around that flat, on a course that was close to four miles long. The sun, liquid yellow, almost crackled with heat as it blasted the painted rocks, the rough-barked sage, my back and shoulders. The hot wind was no reprieve. I wiped the sweat from my rifle and found my T-shirt to be wetter.



On the ridge, belly to the ground, I inched forward, trying to keep the muzzle above the dirt. There he was, his herd scattered around him. The sling keeper snuggled itself against my bicep, and sweat dripped into the ocular lens of the 4x Lyman scope.

Two breaths, 350 yards. The little

able-power scopes as a substitute for binoculars, but this is generally not a good idea. Because a scope is mounted on your cumbersome rifle, you'll wind up using it less than you would a pair of binoculars. The extra movement necessary to employ it might also give you away to your quarry. And scopes deny you

for locating your quarry, spotting scopes enable you to judge its headgear from a distance. That prerogative can save you lots of time and not a few cactus spines gathered in stalks on substandard bucks!

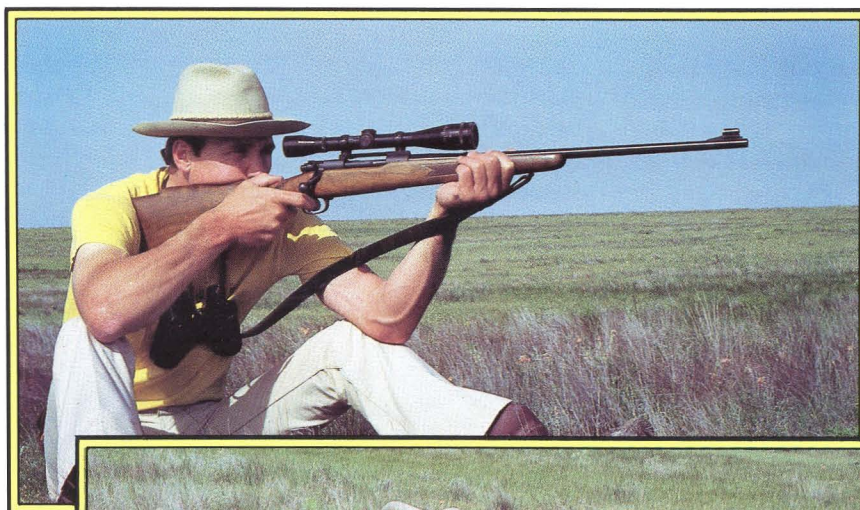
Volumes have been written on big-game rifles. Too often recommendations are made for combination guns — those that will work for several species. Overlooked is the fact that most centerfire rifles will kill most big game under the right conditions and that recommendations, if there are any, should be for the *best* gun for a given species under the hunting situation most likely to be encountered.

Unlike deer, which may vary in body weight from 80 to 350 pounds and are found in a great variety of topographic and cover types, pronghorns are of predictable size and occupy pretty homogeneous habitat. They are light-boned and frail; the country is open. So the demands on a pronghorn rifle are specific.

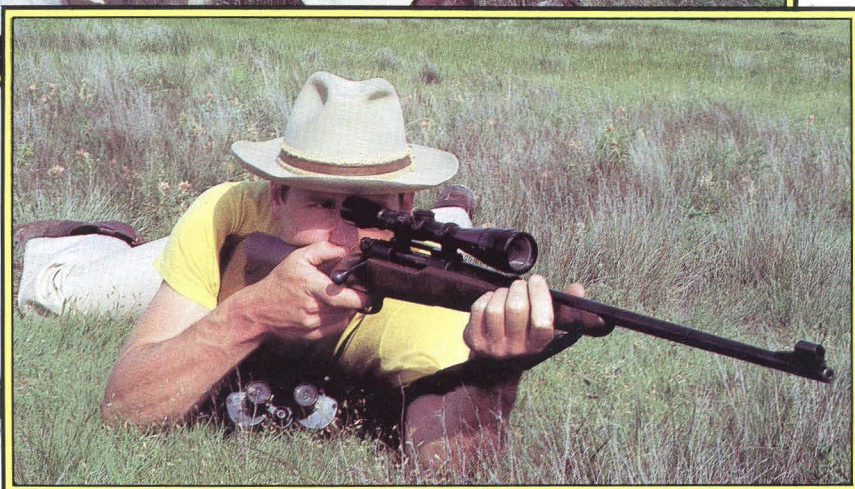
The gun must be accurate, as your best opportunity may come at reasonably long range. It must also be a light-weight weapon if you, like me, wish to stalk your quarry instead of waiting in a blind. And it must have a scope, preferably a four- or six-power glass of the finest quality you can afford, set in low rings on a solid top mount. Finally, it must be equipped with a shooting-type sling to enable you to precisely place your bullets from prone, sitting, and kneeling positions.

Good antelope cartridges are plentiful. The .243 Winchester and 6mm Remington (a renamed .244) are made to order, as are the hotter .25's. Savage's .250 and the .257 Roberts are fine for all but very long-distance shooting. The .25-06 is a superb long-range cartridge, with a much flatter trajectory. Weatherby's .257, like the firm's .240, is also an outstanding performer. Bullets in the .24 to .25 class should be 100 to 120 grains in weight and of spitzer configuration to hold their velocity downrange.

A bit more powerful than necessary, but of unquestionable merit,



Gene Brehm photo



Gene Brehm photo

*Even if a standing human figure didn't alarm antelope, shooting from the prone or sitting position would still be the only smart thing to do. A tight sling makes them steady indeed.*

dot steadied on his backline and the trigger broke. My quarry bolted, then stopped at an even 400 yards. The wind was stiff, and I forced myself to hold a foot high, more to the left. The buck jumped and I knew it was over, even before the 'whop' of a hit floated back.

To maximize your chance of spotting pronghorns — which often means locating pieces of pronghorn hide, the glint of an eye, or the curve of a horn tip — you must have good optics. Some hunters use vari-

the binocular vision so important in determining distance.

Binoculars need not have baseball-size objective lenses, as pronghorns are diurnal animals, and most of your hunting will be done under brightly-lit conditions. Magnification should be from seven to ten power. I favor 9x35 and 10x40 glasses, using them from a rest to minimize wobble.

Spotting scopes are very useful for pronghorn hunting — especially the compact models recently designed for that purpose. Besides giving you increased magnification



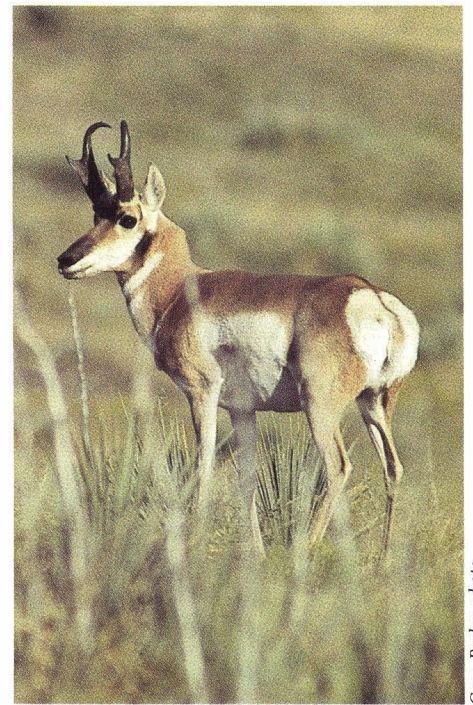
are the .264 Winchester, .270 Weatherby, 7mm Remington, and 7mm Weatherby rounds. The .270, .280 (7 mm Express), 7-08, and 7x57 unbelted cartridges are excellent too, used with 130- to 145-grain spitzer bullets. On pronghorns varmint pills expand too violently, while heavier slugs are simply unnecessary, requiring shoulder-bruising loads to push them to acceptable velocities.

The world-record pronghorn was taken with a .300 Savage, and certainly cartridges of this class will kill prairie goats. But it and other mid-range 30-caliber rounds are far from ideal. The .30-06 and .308 with 150- or 165-grain spitzers do a fine job on antelope. Still, the ballistic coefficients of these bullets are lower than the b.c.'s of many adequate slugs in smaller calibers. To get high b.c.'s in the 30-bore requires that you up bullet weight far above that needed for pronghorns. While ballistic coefficient (weight of the bullet divided by the product of its form factor and diameter squared) isn't everything, it does figure heavily in long-range

shooting. A ballistic coefficient of at least .350 in a bullet of no less than 100 grains driven at a muzzle velocity of 2700 to 3500 feet per second guarantees adequate retained energy downrange. These requisites are met by the 100-grain spitzer in the .243 Winchester.

The energy your rifle delivers at the antelope is far more important than what it delivers at the muzzle. Distance absorbs energy and compromises bullet performance. When evaluating rifles for pronghorns and when estimating kill distances afield, allow 800 foot-pounds as a minimum acceptable energy figure. Our baseline .243 will turn in 800 foot-pounds at 425 steps, while the .25-06 carries the same clout well over 500 yards — in other words, beyond realistic shooting range. The .270, .280, .284, .30-06, and medium-bore belted magnums are in the same class, with the 7X57, 7-08, and .308 close behind.

Energy figures alone, however, do not a pronghorn gun make. Handgunners will note that of all popular revolver cartridges, only



Gene Brehm photo

*Judging pronghorns on the hoof isn't always easy — though this pose gives you all the information you should need. These horns are well-formed and evenly matched, with the beginnings of good hooks. They are very average in length, mass, and prong size, however. Definitely not a trophy-class buck!*

the .44 magnum and .45 Winchester magnum generate over 800 foot-pounds of energy — at the muzzle! Both these rounds fall short of that figure at 50 yards; and black-powder guns, depending on bullet type and powder charge, can fail the same test. Are such weapons inadequate?

Of course not.

Bullet energy can be computed in many ways. Foot-pounds is the most popular yardstick and is derived by multiplying bullet weight in grains by the square of the velocity in feet per second, then dividing the product by 450,240. Some shooters feel high velocity figures too heavily in this calculation, that cartridges like the .220 Swift, propelling light bullets near the 4,000 fps mark, rate much higher than they should, while slower offerings, like the weighty .358 Winchester slug, rank

*Fence crossings are good places to lie in wait for pronghorns, as they'll generally use the same ones repeatedly. They like to go under wires rather than over them, and tight, closely-strung fences seriously impede herd movements.*



Gene Brehm photo



artificially low. Obviously a .44 magnum revolver bullet will perform just fine on pronghorns at 50 yards. It weighs over four times that of a .22 centerfire and opens a hole roughly four times as big. Muzzle-loaders of .45 caliber and up can also turn in good short-range performance. Poor ballistic coefficients sap velocity quickly from these projectiles; but that doesn't affect their up-close punch! Bullet weight and diameter are more significant factors in other computations of bullet energy. These are beyond the scope of this article.

Foot-pounds are only transferred with a hit, of course, and good sights and careful shooting are essential for clean kills. Though your belted boomer may deliver the requisite energy and bullet weight at 600 steps and shoot a bullet flat enough to take pronghorns with a foot-over hold at 500, it will only miss and cripple if misdirected. More power and violin-string bullet paths only benefit conscientious riflemen with well-equipped weapons.

Proper bullet construction for pronghorns might be described as cohesive, but easy to open. Light bones and a small body call for quick mushrooming. Bullets designed for mule deer and elk are often too strongly put together for pronghorns and fail to open adequately — especially at long range where impact energy is low. Quicker kills come with bullets of hollowpoint design and those soft-points with lots of lead exposed at the tip. This is not to advocate varmint bullets; if you stay away from slugs of less than 100 grains in the 24 and 25 calibers and less than 130 in the 26-to-30 calibers, you'll not need to worry about using a bullet that's too fragile.

Pronghorn rifles are best sighted in at 200 yards. Most flat-country cartridges will then print two or three inches high at 100, four to six inches low at 300, and 16 to 20 inches low at 400. You'll need to compensate only at ranges beyond 250 yards with this formula. A high shoulder hold will get your goat at

To hit a running antelope, you must know the lag time of your bullet and the yardage the pronghorn will cover in that interval. A smooth swing and follow-through are important, too! Here are some leads calculated for a target moving at 50 mph 90 degrees to the bullet path. Lead for animals running at a more oblique angle or those traveling slower will, of course, be less.

Table 1: Approximate lead (in feet) required for pronghorn running at 50 mph across line of fire.

Bullet	Range, Yards			
	100	200	300	400
.257 Weatherby				
100 spitzer @ 3300 fps	6.6	14.6	22.6	32.1
.270 Winchester				
130 spitzer @ 3000 fps	7.3	15.3	24.1	35.0
7x57 Mauser				
139 spitzer @ 2700 fps	8.0	17.5	27.7	38.7
.300 Savage				
165 spitzer @ 2400 fps	9.5	19.7	30.7	43.8

Wind has a significant effect on bullets over long distances and is often a factor in antelope hunting. Here are some deflection figures derived for the military .30-06 M1 boattail bullet weighing 172 grains and fired at 2700 fps. This bullet has a ballistic coefficient of .56; most hunting bullets are not as streamlined and will be affected to a correspondingly greater degree by wind.

Table 2: Deflection in inches of 172-gr. .30-06 bullet in crosswinds of varying speed.

Range, Yards	Wind Speed, MPH					
	5	10	15	20	25	30
100	.35	.70	1.05	1.40	1.75	2.11
200	1.32	2.64	3.96	5.27	6.59	7.92
300	2.99	5.98	8.97	11.96	14.95	17.95
400	5.46	10.91	16.36	21.82	27.27	32.73
500	8.80	17.60	26.40	35.19	43.99	52.80

Deflection formula:  $D = W (T - T_v)$ , where  $D$  = deflection in feet,  $W$  = wind velocity in feet per second,  $T$  = time of flight, and  $T_v$  = time of flight in vacuum. A simpler formula, though not as precise, gives essentially the same information:  $D = \frac{RW}{C}$ , where  $D$  = deflection in minutes of angle,  $R$  = range in hundreds of yards,  $W$  = wind velocity in miles per hour, and  $C$  is a constant for a given bullet at known velocity.  $C$  for a 150-grain flat-base .30-06 bullet (ballistic coefficient .41) is 10, so deflection in a 20-mph wind at 300 yards is:  $D = \frac{3(20)}{10} = 6$  m.o.a., or 18 inches. Note that this figure is significantly higher than that for a 172-grain boattail bullet with its ballistic coefficient of .56. The table below emphasizes the role ballistic coefficient plays in a bullet's battle with the wind.

Table 3: Drift (in inches) of bullets of different ballistic coefficients in 10-mph crosswind (muzzle velocity: 3,000 fps).

Ballistic Coefficient	Range, Yards			
	100	200	300	400
.240	1.3	5.5	13.5	26.0
.300	1.0	4.3	10.4	19.5
.360	.8	3.6	8.4	15.7
.420	.7	3.0	7.1	13.2
.480	.6	2.5	6.1	11.2
.540	.5	2.3	5.4	9.8



300 steps, and placing the horizontal crosswire even with the eye of an alert buck is good advice for that 400-yard effort . . . if you can't get closer.

Wind is a constant companion on the plains, and you, as a pronghorn hunter, must learn to cope. Arrows, black-powder balls, and handgun bullets all deflect sorely in even a gentle breeze, but the ranges at which they're used don't require a lot of wind-doping skill. When you're pushing a high-velocity bullet 300 yards across a sage flat, however, the wind can wrestle that slug an amazing distance off course. Lighter bullets and those of low ballistic coefficient are most susceptible to the seductions of prairie breezes, but *every* bullet is affected to some degree. Tables 2 and 3 should give you some idea of what to expect in terms of cross-wind deflection. To go pronghorn hunting without shooting your rifle from the bench under varying wind conditions is akin to entering a sailboat race never having unfurled your cloth!

It was some years later, but the sage and the grass and the cactus spines were the same. The breeze was cold this time, though, the sun a banana-cream yellow against the shower-curtain gray of skies that carried the chill of late fall onto the prairie.

I'd crawled through the dust and cactus after many antelope, had put my mental tape on a few. The .270 I carried today hadn't been fired. But now I was hopeful. This buck had looked good, lounging in the pocket of a gentle slope that hung on a long ridge to the north. His harem included perhaps a dozen does. Two lesser bucks accompanied them.

I crawled, crosswind, behind a finger of the ridge, then worked north and east along it. Sometimes I rose to a crouch, but mostly I just crawled. The cactus hurt. Finally even in elevation with the herd but

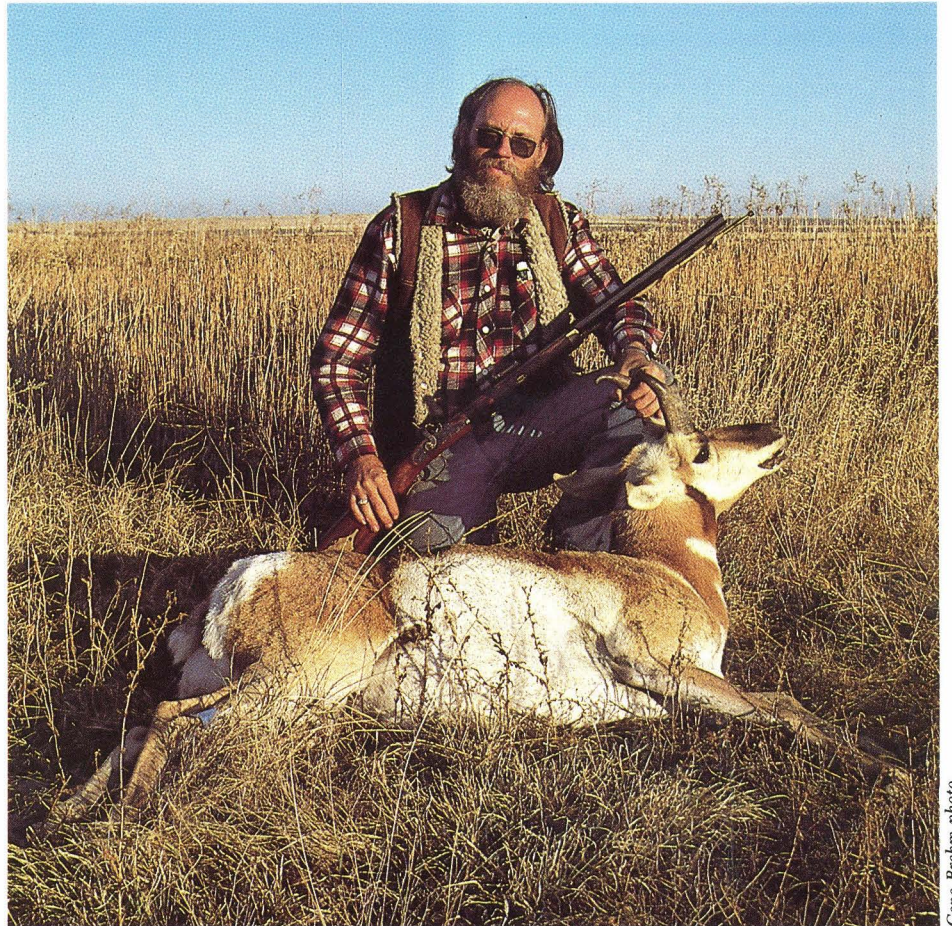
unable to see any save a few does, I reached a spot I felt was only 200 yards from the buck. Cautiously I got to my knees, tightening the sling on my arm and swinging the old model 70 out in front of me. The does, all of them now between three and four hundred yards distant, began to get restless. One buck, a twelve-incher, broke into a trot.

My quarry was not in sight.

I swiveled the rifle on my knee, scanning the swale through my 6X Redfield scope. Slowly I rose to my

clump of bluestem away from the objective lens of my scope. Ghost-like, through the feathery fingers of prairie grasses, the antelope suddenly appeared. The young buck stepped forward first; the big one followed. Fourteen inches? Fifteen? His horns were well-matched and heavy, and they carried high prongs.

I took a deep breath, let it half out. The young buck walked across the horizontal wire and I nudged the reticle upward. The big buck eased



Gene Brehm photo

*Pronghorns are especially challenging to those who carry primitive weapons. This black-powder hunter is justifiably happy with his buck. Archers and (where legal) handgunners must work even harder at their sport.*

feet — then dropped flat on my belly. Less than a hundred steps away the horn tips of two bucks were visible through the grass. During the stalk the smallest buck had moved near my target animal and both had bedded down. I knew I was not invisible; if I'd seen their horn tips, they'd seen me.

Prone now, I wriggled forward to a slight rise and carefully bent a

into the scope field and the .270 slammed my shoulder.

It was a short run, and his last. When I reached him, he was dead.

The soft glow of the sun was lost in the musclings of a cloud. The wind picked up. I slipped the empty cartridge into my pocket and felt the polished curve of the hooked horn at my feet. I was thankful for the hunt.



## ... their life story

**P**ronghorn antelope are not really antelope at all, not related to the scores of African antelope species. No, pronghorns are an American original, as much goat as antelope and the only member of the family Antilocapridae. In some circles the males are known as bucks, in others billies. Females are usually does, though. The species' scientific name is *Antilocapra americana*.

Both bucks and does may have horns. Appearing to be agglutinated hair, they are instead hollow and formed of the same keratinous material as the horns of bovines. Unlike those of domestic cattle, however, an antelope's horns are branched and cover a small bony core that is attached to the skullplate. They are also shed annually. While a mature buck's headgear will be over a foot in length, a doe's horns are rarely more than two inches long. And only about 70 percent of antelope does have horns at all!

The life cycle of a pronghorn begins with the rut in early October.

The necks on the mature bucks swell, and these animals defend more aggressively the territories they've occupied since April. As the mating urge increases, the male hierarchy becomes more apparent as older, dominant bucks chase young males from among the females and begin to collect harems. The size of a harem is not necessarily a function of a buck's size or aggressiveness; the

groups and head back toward spring range. Pregnant does soon split from these bands to search out a place to have their young. Nearing the end of the 252-day gestation, and for about five weeks after parturition, these does prefer to remain alone — though occasionally they can be seen accompanied by last year's offspring.

A pronghorn fawn weighs about



Ron Spomer photo

terrain, sex ratios in resident herds, and the number of pronghorns in the area all affect the harem by making it harder or easier to control. A buck can successfully service more does than he can manage to keep in his harem.

After the rut both bucks and does shed their horns, and small breeding bands coalesce to form larger herds. Some number as many as 2,000 animals. These herds will winter in the same area they used as summer range — if it will support them. If not, the animals may journey as far as 100 miles to find suitable winter range.

As the snow melts from the prairie, the large herds break into smaller

seven pounds at birth. Its incredibly long, awkward-looking legs are functional in a few hours, and by the fifth day on the ground it can outrun a man. For the first week the fawn (usually one of a pair, though singles are the rule for first pregnancies) protects itself by lying flat in the prairie vegetation. The doe, never far away, visits it only at feeding time, to avoid attracting predators to her newborn. The fawn is so well camouflaged and remains so still when unattended that even in short grass it is very hard to see. By the end of the first week it is able to follow its mother around, and in just three weeks it is nibbling vegetation. Weaning occurs in September for male fawns, October for females.

Succulent grasses comprise much of a mature pronghorn's diet in spring. Prairie forbs become more important in summer as the grass matures. In autumn, when forbs lose their succulence, sprigs of woody plants are consumed in increasing quantities. Come winter the menu is often almost 100 percent browse. Where agriculture provides crops like alfalfa and wheat, pronghorns relish the new growth and occasion-



Gene Brehm photo





Gene Brehm photo

ally eat mature seedheads. Grazers as well as browsers, antelope make full use of the potpourri of plant species that covers the prairie. As ruminants, they can extract maximum nutrition from materials high in cellulose. An inordinately large liver is thought to enable them to eat plants high in selenium (alkaloids), while sizable kidneys probably allow greater excretion of toxic substances. Pronghorns have a small stomach — about half the size of a domestic sheep's. This may be to make room for the large heart and lungs so necessary for running.

Antelope actively seek the most succulent of vegetation and, when they can find it, do not need to drink. Free water becomes important to these animals only when their forage dries up in summer and fall. Then pronghorns have been known to drink as much as a gallon a day in hot weather. In some areas of the Sonoran desert, antelope thrive without free water, obtaining moisture from the chain fruit cholla and other desert succulents.

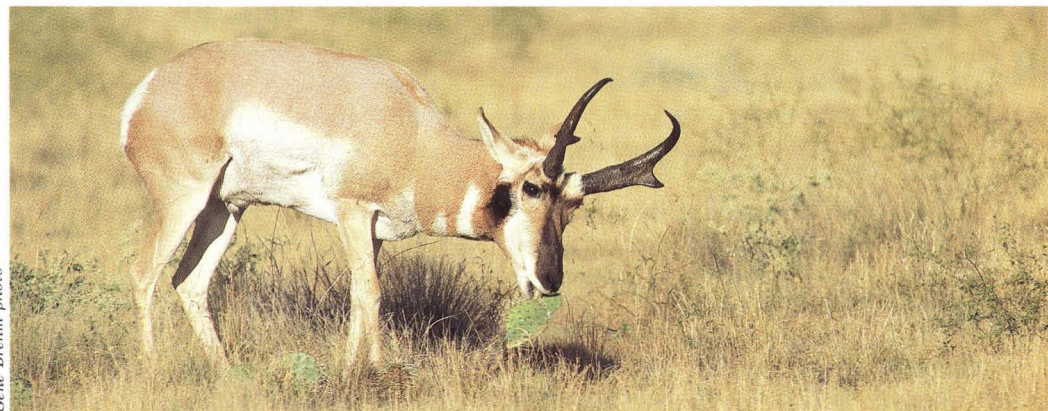
Summer herds of pronghorns, comprising yearling animals and doe-fawn pairs, generally contain from five to twenty individuals, with a dozen being an average figure. Adult bucks sometimes accompany these herds, but more often form small bachelor groups of their own, joining the females in September.

Pronghorn bucks are sexually mature as yearlings and actively seek does during their first rut at 17 months of age. In healthy herds, however, the larger, older males do almost all the breeding. Antelope

does are generally considered fertile at 17 months, though a few will breed and conceive their first fall (at five months).

A mature pronghorn buck weighs about 125 pounds, a doe 110. Each stands about 34 inches high at the shoulder. The hoofs are padded to cushion the blows when the animal runs on rough ground. They have no dew claws. The rear hoofs are slightly larger than the front and probably bear most of the weight at high speed.

Both does and bucks have four interdigital glands (one on each foot) and two ischiadic glands (on the rump). In addition, the buck has a subauricular gland below each ear



Gene Brehm photo

and a median gland in the middle of his back. All three play a role in courtship, and the subauriculars are used to mark territory.

Large hollow hairs make the pronghorn's winter coat a warm one. These hairs can be erected at will on any part of the body, increasing the insulating effect. The large white rump patch is often erected when danger is sighted.

A pronghorn's main defense mechanism is its speed. Sprints exceeding fifty miles per hour are possible and quickly leave all animal predators in the dust. Large eyes, set high on the head, give a commanding, almost circular view of the open prairie. Antelope are quick to spot movement and can pick up even stationary irregularities at a surprising distance. The ears and nose are sensitive too, and, with those wonderful eyes, form a detection barrier that is tough to penetrate.

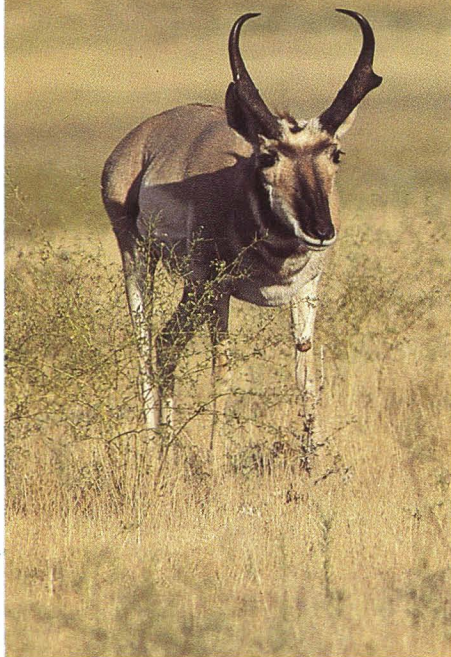
Pronghorns are light-boned, with a dainty demeanor and a hide so thin that it is worthless as leather. Nonetheless, they are hardy animals, thriving in terrain and weather that would soon finish other large ungulates. Heavy snow and extended periods of cold and wind can damage antelope herds, and where pregnant does are relegated to low-quality forage, fawn mortality may be very high. Coyotes, feral dogs, cougars, bobcats, and eagles will take young pronghorns, but few predators save man can routinely bring down adults. Fences impede migrations and account for many luckless antelope that become entangled while

trying to get through the wire. Automobiles take a significant toll in some regions. Occasionally, overworked range will cause starvation or malnutrition in adult pronghorns, but given the mobility of the species, this almost always occurs when a hard winter limits forage availability and animal movement. The average lifespan of a pronghorn is seven to ten years.



## ... Kansas prairie goats

Gene Brehm photo



All the Great Plains states had an abundance of pronghorns — perhaps as many as forty million — in the early 1800's; but the westward push of civilization spared little wildlife. By the turn of the century not only the bison, but antelope were in danger of extirpation. Though conservation measures saved both, only token bands remained in most areas.

In 1962 an aerial survey revealed only 56 antelope in Kansas. All were sighted in Wallace County. Fish and Game Commission biologists decided to beef up the pronghorn population by transplanting animals from other states.

The National Bison Range in western Montana provided 75 ante-

lope in 1964. These were released on two sites in Wallace County. Two years later 50 additional pronghorns were obtained from Colorado and released in Barber County. Some were subsequently moved to McPherson County. The following winter 85 Nebraska antelope were loosed in Ellsworth and Edwards Counties.

The success of these early transplants varied. The first, in Wallace County, took root, producing an annual population increase of roughly 17 percent the first five years and yielding a herd count of 250 animals in 1969. The eastern and southern plants were not as encouraging. Predators, automobiles, and domestic dogs accounted for some of the antelope, while others simply rejected their strange environs and headed west. Two does traveled 90 miles from their release site. This dispersion and the failure of another plant of 350 antelope in the late 1970's scuttled plans to build new herds east of the Arkansas River, though to this day a few pronghorns remain in the Flint Hills.

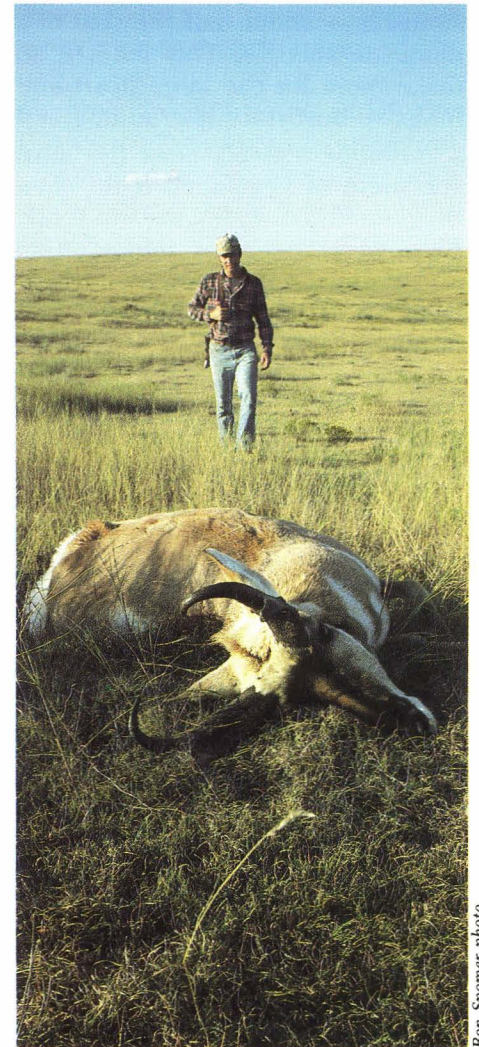
By January 1973, 531 antelope were occupying 250,000 acres in Wallace, Sherman, and Logan Counties in western Kansas. Biologists recommended an either-sex hunting season for 1974, with 80 permits to be allocated. That year, Kansas hunters took 70 pronghorns. All but two of the riflemen who actually hunted scored — a whopping 97% success ratio!

Herd numbers continued to climb, despite a similar season and harvest in 1975. In 1976, 50 archery permits were issued in addition to the 80 rifle tags. Bowhunter success was 17% — incredibly high for antelope.

In 1977 100 riflemen and 60 archers were allowed to hunt. Kansas' pronghorn population then stood at 845 animals, clustered in bands averaging 11 animals. Since that time pronghorn hunting has increased in popularity in the state. As they've become rifle-shy, Kansas prairie goats have added challenge to the annual hunt, which is as much

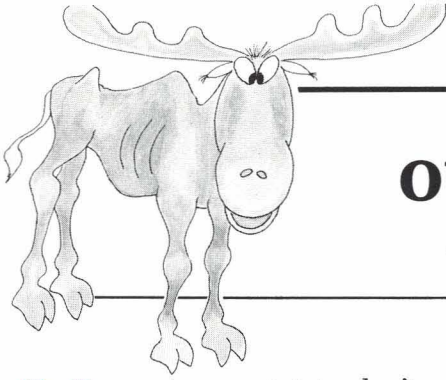
a population control measure as it is a favor to the sportsmen who support the herds. Hunter success has slipped slightly, though it hovers at a high 90 percent. Roughly one of seven bowmen scores. This year the southern boundary of antelope unit #2 will be extended south, from highway 96 to highway 50, opening new territory for pronghorn enthusiasts. Total tag allocations for 1984 are set at 150 archery, 420 firearms.

Whether or not you hunt these delicate prairie speedsters, their re-establishment in the Sunflower State certainly proves that sportsmen contribute tangibly to the game they pursue. And the steady herd increases of recent years show that hunting pronghorns, in the context of controlled seasons, is not only an acceptable but a desirable part of antelope management.



Ron Spomer photo





## off trail

... with Stub Snagbark®

**K**ansas is a great state, don't get me wrong. But once in a while a hunter ought to get out and see the world — book a trip to an exotic place. Of course, a dream hunt requires advance planning, so I decided to look into some possibilities for 1985 while waiting for this year's hunting seasons to open.

The first place I called was highly recommended by the last man to kill a record-book gerenuk in Uganda under the Amin regime.

"Hello, this is Ungulates Unlimited, safari outfitters for Stuart Edward White's nephew. Can we be of service?" The clipped British accent was very impressive.

"Yes," said I, in my very best Richard Burton. "I'm looking for something smashing. A hunt that would include small stuff like Dall sheep, kudu, jaguar, tur, and banteng as well as *real* big game. I'm talking magnum elephants and a rhino that I'd have to bend if I wanted a full mount in my living room."

My accent was suffering at this point, and I paused to catch my breath.

"Sir, you seem to be asking for our deluxe five-continent package."

"Of course I want your deluxe package!" I bellowed. "Who do you think I am?"

Duly intimidated, the salesman nonetheless replied, "Our five-continent packages are all booked for 1985, sir. We do have an opening during the summer of '86, however. That hunt is on special this week for only \$54,000. Would you like me to reserve a spot for you?"

It was tempting.

"I haven't time in the summer of '86," I replied. "My accountant informs me I'll be taking possession of a new Learjet in June of that year,

and I'll be wanting to make some short hops around the world to visit friends. The wife insists."

The voice at the other end chuckled knowingly. "Perhaps, then, you'd prefer to limit yourself to the northern hemisphere in '85. We could fly you to Hudson Bay for a polar bear, collect red stag in Germany on our way to a Russian tur, then finish up with *Ovis poli* in Mongolia. It's a very popular trip, especially if you're on a tight schedule. We've had clients complete the hunt in as few as 27 days, though your \$41,000 naturally entitles you to a full month."

"Drinks included?"

"Of course. And for a limited time only we're offering free a bogus Red Chinese passport in case you have to explain to border guards that you're trailing a trophy ram into Manchuria and not on a yak ride to Peking to assassinate the Premier."

This was a deal, indeed. But I'm not one to commit prematurely. "What else have you got on special?"

"The only thing for 1985 would be our Cape Buffalo Caper package. It includes plains game as well as the cat of your choice and is a real bargain at \$23,500 plus tax. We guarantee shooting, of course, and should you and your guide fail to stop the buffalo, rest assured that your life and belongings are on file with Lloyds' of London at no additional charge."

"What country is that in?"

"We have camps set up all over southeast Africa, sir. I can't tell you which will be your headquarters — those pesky guerillas keep burning our tents. But the facilities will be first class, your staff trained in the use of grenades, submachine-guns, and flamethrowers. The boys also carry traditional army surplus

machetes, so you can feel at ease during the dry season when company regulations prohibit the use of incendiary weapons. Incidentally, handguns are forbidden in most of our concessions, and you'll not be allowed to load your rifle until game is sighted. For your own protection, you know."

"I'm afraid my trophy room just won't accommodate another cape buffalo," I said. "Have you anything stateside?"

"Certainly, sir. We can put you into trophy walrus from a kayak off Greenland or enter a sealed bid on the next desert sheep available in the Southwest. We're very big in Alaska too, and offer a full complement of northern sheep, as well as goats, moose, caribou, and other furry creatures."

"How much," I asked, "for the Alaskan trip?"

"Do you want a 40-inch ram or will you be satisfied with a small one? Must your guide speak English or do you know Tlingit? Can you ride a horse or must we provide a trail bike? How many cases of liquor will you require? I might add, sir, that we have a special on Cutty Sark running until Mother's Day in 1985."

I took quick advantage of his pause for breath. "Forty, English, horse, and Doctor Pepper," I said.

"Then it will be \$11,800 plus tax and gratuities — provided you furnish your own insect repellent. I must add, sir, that at this price, you are required to shoot all your own animals. We have no room to bargain with authorities."

"But I'd intended to hunt fairly," I said indignantly.

"Then why are you booking with us, sir?"

"You were recommended."

"My dear man, so is milk of magnesia. I must ask, do you need our services, or are you going to hunt like an aborigine?"

"Why don't I get back to you," I replied. "I'll have to check with my butler to see that I don't book while my second Rolls is in the garage. The wife just hates to be without wheels."



*Have you wandered in the  
wilderness, the sagebrush  
desolation,  
the bunchgrass levels where  
the cattle graze?  
Have you whistled bits of  
rag-time at the end of all  
creation,  
and learned to know the  
desert's little ways?  
Have you camped upon the  
foothills,  
have you galloped o'er the  
ranges,  
have you roamed the arid  
sun-lands through and  
through?  
Have you chummed up with the  
mesa?  
Do you know its moods and  
changes?  
Then listen to the Wild—  
it's calling you.*

*—Robert Service*

