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SEPTEMBER—OCTOBER 1973

# KANSAS FISH & GAME



S. L. LOEWEN  
Tabor College  
Hillsboro  
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# KANSAS FISH & GAME



September-October, 1973

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Front Cover—Jack Frost paints the autumn foliage with brilliant hues of gold and crimson. Kodachrome transparency by Vic McLeran.

Back Cover—Once persecuted, raptors like this rough-legged hawk are now protected by Kansas and Federal law. Ektachrome transparency by Vic McLeran.

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## NATIONAL HUNTING AND FISHING DAY

Several observances will be held across the state September 22—the day set aside to give national recognition to sportsmen and their contribution to conservation. The Kansas Forestry, Fish and Game Commission will be joining in this effort by hosting "open house" at each of six regional offices—Chanute, Newton, Dodge City, Colby, Concordia and Manhattan.

Considering the current anti-hunting campaign by certain groups and individuals, National Hunting and Fishing Day couldn't come at a better time.

Although a few outspoken anti-hunting organizations continue in efforts to discredit America's 17 million hunters, it is becoming increasingly obvious that these groups are indeed a minority. Only three major organizations, Friends of Animals, Fund for Animals and the Humane Society of the United States have taken firm positions in opposition to hunting.

On the other hand, 16 of the country's largest and most prestigious conservation organizations have voiced support for hunting, citing its importance to modern conservation and wildlife management.

Stating their official positions in a new booklet issued by the National Shooting Sports Foundation, "What They Say About Hunting", such organizations as the National Audubon Society, Wilderness Society and Sierra Club, did not oppose hunting although these organizations' purposes are not directly related to the sport.

The National Audubon Society, for example, stated, "The National Audubon Society, since its origin at the turn of the century, has never been opposed to the hunting of game species if that hunting is done in accordance with laws and regulations to prevent depletion of the wildlife resource."

Understandably, the degree of support stated by various organizations varies from group to group as do the grounds for that support. However, many themes were common throughout citing the hunter's significant contributions to conservation and the desirability of hunting as an ingredient of wildlife management.

Several groups also expressed the feeling that the hunting controversy presently involves too much of our current conservation-oriented energies, allowing the real threats to wildlife—environmental degradation and habitat destruction—to go unnoticed.

We hope many Kansans will take time on National Hunting & Fishing Day to learn more about hunting and the role sportsmen play in the conservation and management of our wildlife resources. We invite you, whatever your interest, to attend the "open house" celebrations in our regional offices and hope you will become actively involved if any celebration is planned in your community.

As you develop more awareness of the sportsmen's importance to wildlife conservation, we believe you will join with the majority of Americans and the majority of organizations who lend their support.

With your support, the Kansas Forestry, Fish and Game Commission can do a better job in protecting, preserving and propagating the wildlife resource in the state of Kansas.—Leroy Lyon



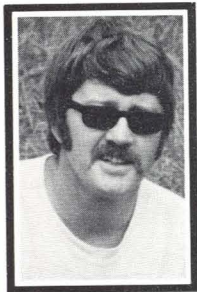
# Limblines for Yellow Cats

By Vic McLeran  
Editor

Taking flatheads, or yellow cats as they're called by some, with limblines is exciting and productive. Here are the methods used by experts.

**IT** WAS JULY on Milford Lake.

An early morning sun cast narrow shafts of light through the dense jungle of submerged timber in the reservoir's upper end. Mick Crawford,



McLeran

Wakefield bait and tackle dealer, was perched in the bow of the boat while Dick Cole, game protector for the Kansas Forestry, Fish and Game Commission was at the throttle.

"Swing 'er to the left a little," Mick said, pointing to a submerged stump. Cole eased the boat around the obstacle and threaded us through a maze-like clump of drowned cottonwoods.

Scanning the sunken timber ahead, Mick spotted his line. "Looks like we've got something on," he said. From my seat in the middle of the boat, I could see the line, a thick nylon cord, stretched around three dead tree trunks about a yard above the water. From this main line hung three smaller "drop" lines. And one of these drop lines was moving back and forth through the water, dipping and pulling the main line each time the fish surged.

"Easy now," Mick muttered as the boat edged toward the line. With one hand, he reached out and grasped the surging drop line. Slowly he began to pull up on the line, at the same time easing a large landing net into the water.

Immediately the water boiled as a

broad tail cut the surface, showering the boat with water. In one smooth motion, Mick swept the net under the fish and leaned back, dumping both the net and a big flathead into the boat.

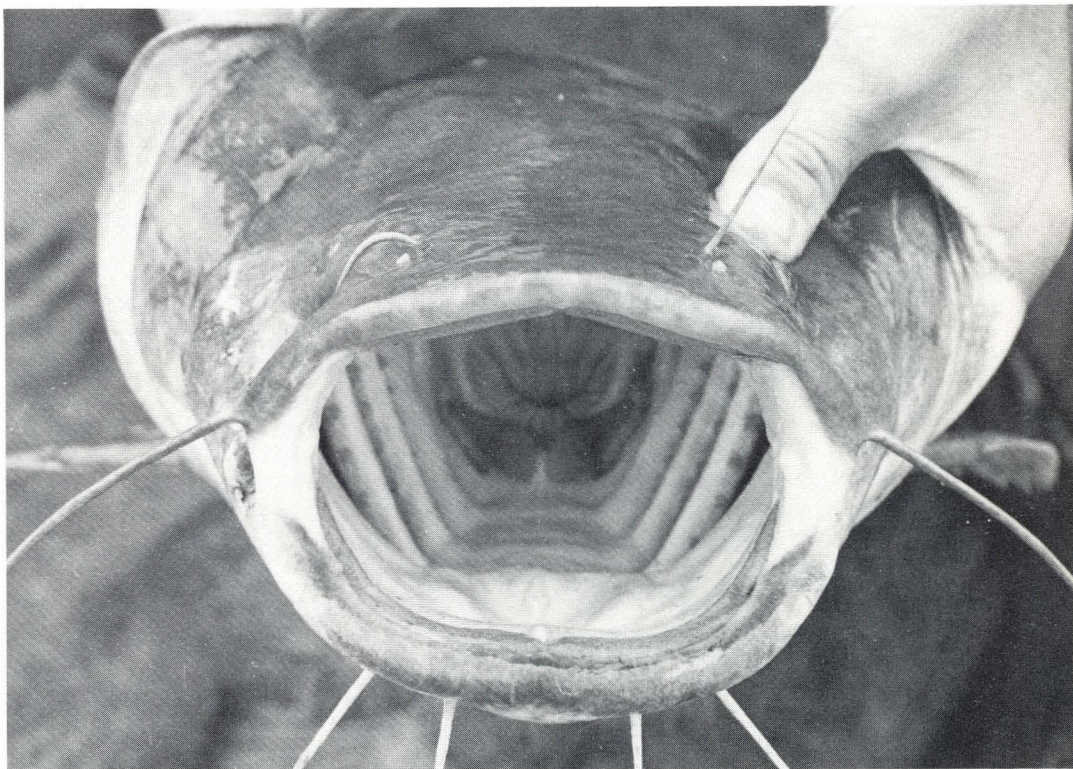
"He oughta' weigh 23-24 pounds," Mick panted. "This spot really seems to attract 'em."

"It sure does," agreed Cole, who often fishes with Mick on his days off. "This is the sixth or seventh good flathead to come out of this hole in the past couple months."

In some 30 years of limblining rivers and lakes, Crawford has learned that certain spots are more consistently attractive to big fish than others. "When I find one of these holes, I try and keep a line in it," he said. "It seems like as soon as you catch one big flathead another moves in to take its place."

I'd learned about Mick and some of his fantastic limblime catches from Cole. With his help, we lined up a fishing trip with Mick to Milford Lake. On this particular trip we were fishing

Flathead catfish are large effective predators on rough fish like carp and buffalo.



Photos by Clelland Cole





Crawford is one of the state's best setline fishermen. In a two-month period last year he took a phenomenal 750 pounds of catfish from his lines in Milford Lake.

the lake's upper end not far from where the Republican River flows into the impoundment. Mick prefers to fish this area of the lake for several reasons.

"All this timber and brush seems to make a good hiding place not only for flatheads but for the smaller fish they feed on as well," he said.

When making a set, Mick looks for a clump of downed timber and brush near the edge of the old river channel. "It seems like I catch more flatheads if I stay close to timber and brush. The channels seem to prefer more open water, at least that's where I catch most of them. And since I'd rather catch the big yellow cats, I fish the brushier spots."

After selecting a spot, he then lashes a thick nylon cord around several of the trees three or four feet above the surface. Nails are driven into the dead tree trunks under the line to prevent it from slipping. To this main staging Mick attaches the drop lines—several 80-100 pound test lines. These are long enough to let the bait down several inches into the water.

The depth at which Mick fishes his bait varies according to the water temperature. "During spring and fall when surface temperatures are cool, I'll fish shallow with the bait only six or eight inches deep," he explained. "But during the summer when water temperatures are warmer, I fish deeper—as much as two feet."

I asked Mick why he didn't tie his limb lines directly to some of the limbs on the submerged timber. Before replying, he reached out and snapped off a brittle limb.

The answer was obvious.

"All these trees are dead," he answered. "And dead limbs just won't hold a big flathead. The way I rig my lines there's plenty of tension and stretch which acts to 'play' the fish. Unless a flathead gets down into the snags, these lines will hold him," Mick said, twanging the tension in one of his main staging lines.

On his drop lines, Mick uses stainless steel swivels placed about 18-24 inches from the bottom of the lines. The swivels help prevent a hooked fish from twisting loose.

The business ends of Mick's lines are equipped with stainless steel hooks in the 8/0-10/0 size range.

"You need big hooks and big bait to catch big flatheads," he theorizes.

Unlike some anglers, who run their lines every couple hours during the night, Crawford prefers to check his only once—just about sunrise.

"I've got a lotta' confidence in my lines," he said. "I think for the most part, when I hook a fish, he'll be there in the morning. Sure, I've lost some fish this way but if you keep checking your lines all night, you're bound to spook some fish away too."

Bait, or lack of it, is often a problem for some anglers who fish with banklines or trotlines. But for Mick, a bait dealer, it's no problem at all. He's made arrangements with several local farmers to use their ponds for raising bait fish. He stocks these ponds with several pairs of adult goldfish or carp—his brood stock.

Several pairs of adults will produce thousands of offspring which Mick periodically traps for sale at his bait shop.

"My personal favorites for flatheads are small carp or goldfish in the 3-6 inch class," he says. "Bronze-colored goldfish which resemble small carp also work well."

Mick who is rapidly gaining a reputation as one of the state's best limb-line fishermen, was featured in the July issue of *Outdoor Life*. In an



article entitled, "Direct Line to Giant Cats," author Clelland Cole outlines Mick's strategy for catching lunker flatheads.

Cole, St. John newspaperman and outdoor writer, has seen a lot of limbliners in his day but he feels Crawford is one of the best.

**I'd have to agree.**

In a two-month period last year, Crawford took more than 750 pounds of flatheads and channel cats from Milford Lake on his limblines. His largest fish to date is a 45-pound flathead—an unofficial Milford Lake record.

Though he fishes mainly for flatheads, or 'yellow cats' as he calls them, Mick also takes quite a few channel catfish.

"To me, channel cats should be caught on light tackle rod and reel for sport," he said. "And when I'm fishing for big flatheads, channels on my lines are just a nuisance."

A lot of fishermen I know would welcome this kind of nuisance!

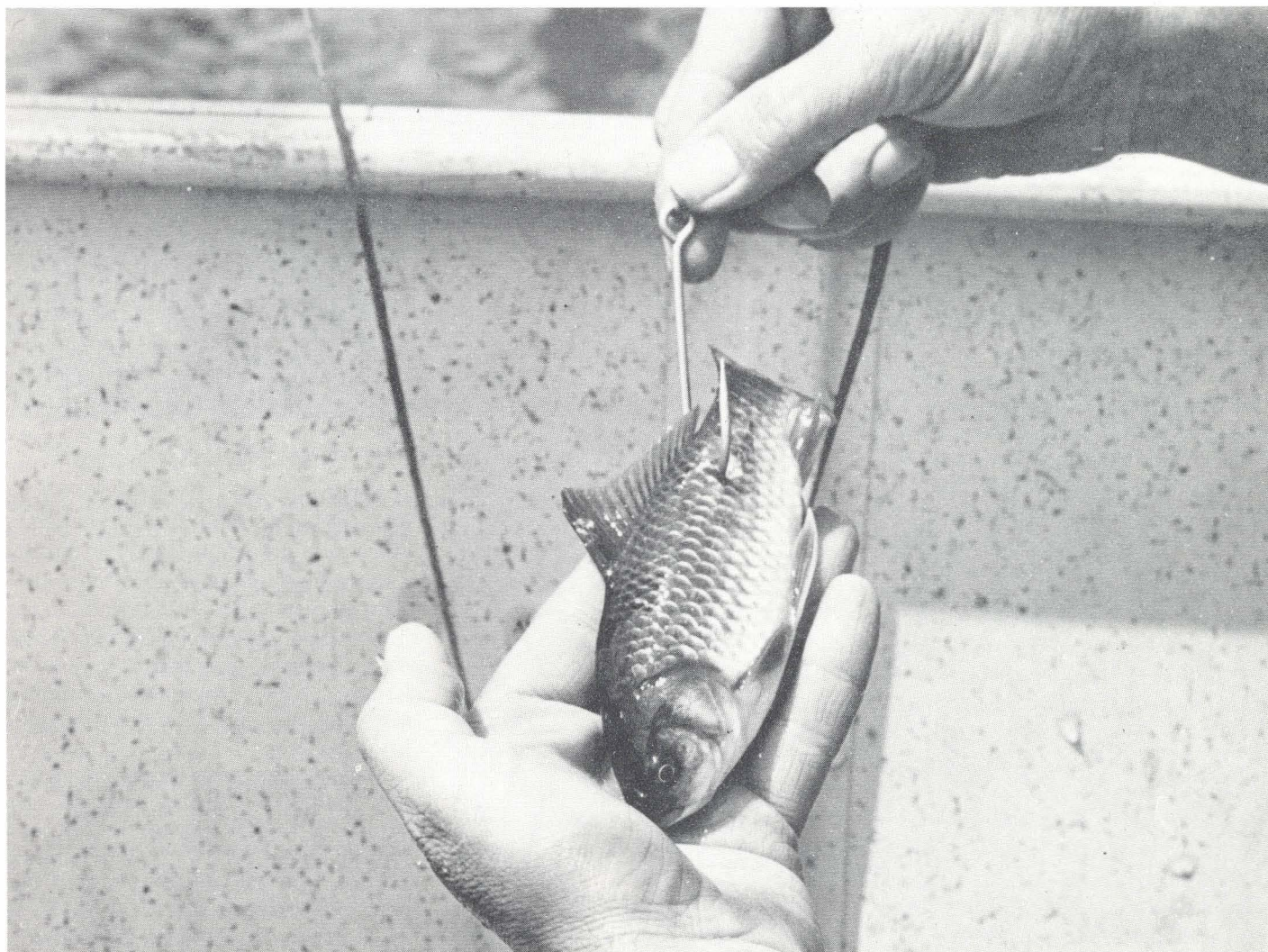
In addition to flatheads and channels Mick has had some surprise catches on his lines over the years. One of the biggest and meanest was a mature great blue heron. These large birds nest in a heronry on the upper reaches of Milford—right where Mick fishes. One morning he pulled up to a line and found an angry great blue heron thrashing around in the water. Standing four feet tall and equipped with a long, sword-like beak, the blue heron can serve up a nasty stab wound.

"It took me almost an hour to get that crazy bird off my line without gettin' stabbed," Mick recalled. "Evidently he'd seen the goldfish on my hook and figured it was an easy meal. The bird was hooked in the upper beak. Finally I got a landing net over him and got the hook out. Boy, that was one mad bird."

Other odd catches include gar, snapping turtles, eels and water snakes. Some limbliners have reported hooking barred owls and muskrats on their lines.

About a month or two after my trip with Mick, I visited with Mr. and Mrs. John Stumfoll down on the Neosho River near Erie. The couple uses a slightly different approach in their limblining. John Stumfoll is a retired

**Goldfish or small carp in the 3-6 inch class are excellent limbline bait.**





General Motors employee who has fished the Neosho for a good many years. Together, he and his wife have accounted for a number of lunker catfish. Their largest was a 54-pound flathead which earned them a Kansas Master Angler Award.

John Lingg, who was then game protector at Erie, arranged for us to go out with the Stumfolls when they ran their lines.

"We had two flatheads over 20 pounds last week," Mrs. Stumfoll told me as we loaded our boats early one morning.

A short time later, as we pulled up to the first lines, I recognized the rig as being similar to ones I'd used years ago on the Verdigris River near Coffeyville. The Stumfolls attach their drop lines directly to an overhanging willow limb or heavy grapevine—anything which is springy and has some give to it.

Thinking back to Mick's setup, I could see where his main staging line with its elasticity, served the same purpose as these springy limbs. They both have enough 'give' so that large fish don't have anything solid to pull against. This solid resistance is something setline fishermen avoid since it allows fish to break the line, straighten hooks or pull free.

Watching Mrs. Stumfoll rebait the empty hook, I noticed that she, like Mick, favored goldfish.

"We seem to catch more fish on goldfish and small carp than anything else," she said. "But we've also had good luck on crawdads and bluegills." This preference for goldfish and carp seems to hold true with most of the serious setline fishermen I've talked with. In fact, the Missouri state record flathead, a 94-pounder, was taken from the St. Francis River on a trot-line baited with—you guessed it, goldfish! Other good limblines baits include bluegill, sunfish, bullheads, crawdads, salamanders, sand toads, frogs, grasshoppers, night crawlers and catalpa worms.

Some baits will produce better in different waters so the beginning limbliner should experiment with several baits to determine which is most effective in his particular area.



Crawford raises his own goldfish for sale in his bait and tackle shop at Wakefield.

But leave it to the Texans to top all fish stories. Seems they've found a way to take flatheads using a 1952 Studebaker for bait. Not long ago this submerged Studebaker was found by some scuba divers in a Texas lake. The police department was notified so they could pull the car out. When the car was towed to shore, a thumping sound emitted from the trunk. Workers quickly pried open the lid where they found two bodies—a 67- and a 68-pound flathead, both very much alive!

Continuing down the river, we found two lines with the bait still on.

"The gar must have been asleep last night," said Mrs. Stumfoll, referring to the prehistoric scavenger's habit of stripping limblines and trotlines of bait.

Glancing downstream to where the next line was attached to an overhanging willow limb, Mrs. Stumfoll remarked, "Looks like there's something on."

Sure enough, as we approached, the line tightened, slicing through the water. The limb above dipped and bowed under the strain of a fighting fish. As Mr. Stumfoll maneuvered the boat in toward the line, Mrs. Stumfoll moved to the bow with a landing net.



"Ohh, it's a big flathead!" she exclaimed as the fish made a swirl near the surface. Leaning over, she grabbed the line with one hand and gently guided the flathead into the net.

"Thirty-pounder," Lingg said, guessing at the lunker's weight. I figured more but Mrs. Stumfoll said she thought it was just a little under 30. The lady has a good eye for fish—when we got back to the Stumfolls' cabin the flathead weighed an even 29 pounds.

The flathead catfish, *Pylodictis olivaris*, is also known as shovelhead, yellow cat and mud cat. The fishes' color is dark to olive-brown with dark brownish mottling on the sides especially in younger flatheads. Sometimes the fish are light tan or even yellowish in color—hence the nickname "yellow cat." The species' head is flat and broad with the under jaw jutting out from beneath the upper.

Unlike its cousin the channel catfish, which often feeds on dead matter, the flathead for the most part, likes his food alive. Accordingly he's quite an efficient predator. And they seem to get started on the predatory road while still quite young. In the book, *Iowa Fish and Fishing*, authors Harlan and Speaker write of this early predatory instinct:

"We have observed even small individuals, from 8 to 10 inches in length, feeding extensively on schools of young minnows in the shallow water along the riprap shores of the Mississippi River."

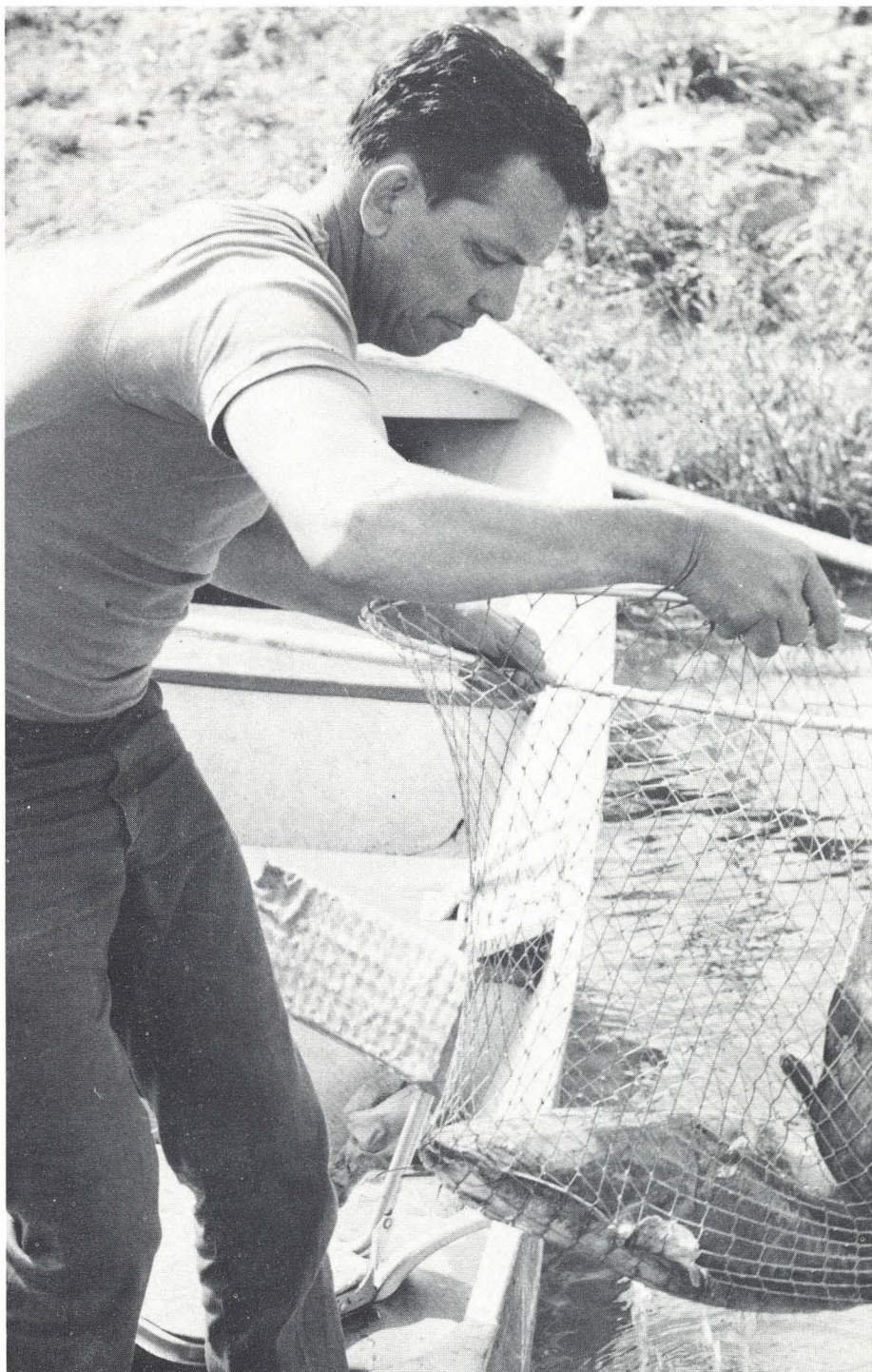
From an early diet of plankton, small crustacea and minnows, the young flathead graduates to bluegill, carp and buffalo as he gains in size. In addition to this rough fare, the flathead is fond of tasty channel catfish and bullheads—both of which make good flathead bait. In fact, it's not uncommon for a big yellow cat to come along and rip off all the channels which have been caught on a limpline or trotline.

A big yellow cat, when he's hungry, will even take a smaller flathead. Mick Crawford once got a close look at this cannibalism.

"I was checking my lines one morning," he recalled, "and found a 26-inch flathead on one of them. After netting the fish, I noticed raw places around his head right behind the eyes. And the last six inches of the fish's tail appeared to have been partially eaten away by acid. Apparently a

large flathead had swallowed the smaller fish tail-first up to a point behind the eyes. The smaller fish's tail must have been lying in the big one's stomach. Evidently the bigger flathead couldn't get the entire fish in his mouth and disgorged him before I got there."

It takes big tackle, including a large landing net, to handle lunker flatheads like this one.





Crawford still has the acid-eaten tail of the smaller fish in his freezer as evidence of the incident.

Sometimes the flathead's diet is downright astonishing. While fishing Milford Lake, old-timers John Rickley and Melvin Jones of Wakefield saw a big flathead roll up from beneath a partially submerged brush pile to inhale a muskrat! Ducks, snakes, rats, turtles and varied other critters have been found in flathead stomachs.

In view of the yellow cat's enormous appetite, it's easy to see why they're some of the largest freshwater fish in the country. The state record in Kansas is 86 pounds 3 ounces. This monster was taken by Ray Wiechert, Brazilton angler, who hauled the gi-

ant flathead from the Neosho River on August 24, 1966. The fish was caught on a trotline baited with sun-fish.

Although they usually stake out a 'home' territory, flatheads occasionally travel great distances. Crawford hooked a 28-pounder on one of his limb lines which had been tagged several days earlier by personnel of the Nebraska Game and Parks Commission near Guide Rock—a distance of more than 200 river miles!

Because of the fishes varied diet, flathead meat can come off a little strong if not prepared properly. When dressing small flatheads, Mick simply filets them quickly. With larger fish, he hangs the fish head up and severs

the caudal or tail artery, letting the fish bleed out. Next, he slices off a single large filet from each side. Fat and skin are then cut away from the filets. Before discarding the carcass, Mick always carves out a small crescent-shaped chunk of tasty meat from just behind each eye.

"The main thing to remember when dressing yellows," he says, "is to remove all fat, skin and the darker-colored meat. This is what accounts for the strong, oily taste some people object to in flatheads."

There are almost as many ways to cook fish as there are to catch them. Mick's favorite recipe, as prepared by his wife Sharon, is as follows:

Slice the filets in half lengthwise so they are no thicker than  $\frac{1}{4}$  inch through. Salt and pepper to taste. Dip in egg and roll in crushed cracker crumbs. Cook in deep fat or pan fry. Either way they're delicious!

Limblines, as well as trotlines, are subject to certain restrictions and regulations. Neither can be fished within 150 yards of a dam or within 200 yards of the mouth of a stream. In addition, setlines cannot be used on state property or on areas over which the Kansas Forestry, Fish and Game Commission has control—like state fishing lakes. Then too, some counties in Kansas require all limblines and trotlines to be tagged with the owner's name, address and fishing license number. Check with your local game protector to see if your county has such a tagging requirement.

The daily creel limit on both flathead and channel catfish is ten.

Kansas law prohibits use of more than 25 hooks on a trotline. In lieu of one trotline, the angler can set eight banklines containing not more than two hooks each. It is illegal to fish simultaneously with bank lines and trotline.

Fantastic size, exciting to catch and terrific on the table—it's all part of the flathead's appeal. And limblining is one of the most effective ways to put this super fish on the table, often in large quantities.

Set yourself a few lines and see if you don't agree.

No matter how you prepare them, flathead filets are delicious.





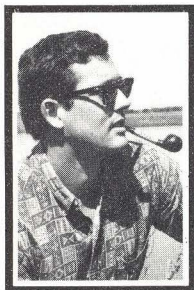
# From Whence We Came

By Bill Scott  
Staff Writer

**T**HE WRITER of Genesis was again inspired.

A Power beyond himself was restless once more.

His stylus bit into the clay tablet.



Scott

As the tiny mallet tapped its way along, these words were set down in wedge-shaped characters called cuneiform. It is what we now call Genesis 2:7:

"And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."

A desire to get back to the soil—to re-live from whence we came—seems to permeate the philosophy of the organic gardener. Whether religious in the traditional sense or not, an organic gardener has a deep reverence for all life, particularly for the soil.

Man, less in recent times than in generations past, has always felt an affinity for the soil. The earth gives us life, and we were once grateful for that.

But most Kansans—and Americans for that matter—are direct descendants of the peasants of northern Europe. As documented thoroughly by Dr. Lynn White, Jr., in his essay "The Historical Root of Our Ecological Crisis," it was in that region in the 7th century that a ruthless attitude toward the land first appeared. It was there, for the first time in civilization's history, that advancing technology allowed man to destroy nature. No longer was man required to be a part of nature. Now he was able to bring nature to her knees before him, while man stood, the proud conqueror.

Today, we usually equate land solely with dollars. It is to be bought, pillaged and hopefully sold at a profit.

No thought of living with the soil, of caring for it and replacing those nutrients we yank from it rankles our conscience or disturbs our mind. We're too busy making money.

The Rape of Persephone has been reality for centuries, not just Greek mythology.

**But there is a Silent Minority.** It is made up of sportsmen, ecologists, landowners who care, suburbanites who squelch profit motive by leaving wildlife habitat undisturbed—and the clan of the organic gardener.

The organic gardener demonstrates beautifully there is a world of difference between preaching ecology and practicing it. It takes hard work, sweat, time, persistence and a willingness to roll with the punches of nature when to interfere would injure the plant or animal life of a given area.

For precisely that reason it is not difficult to see how organic gardening relates to Kansas fish and game. Gardening in the raw usually leads one to a deep respect for the entire ecosystem, because it's hard to feel deeply about the soil and not love the creatures that live upon it.

**Spending a day with State Game Protector Gary Heskett** was to fall in love all over again with our astounding house we call Earth. I learned at Mankato that day there is virtually no end to the ways a man can live with the earth if he uses his head and is not afraid of work.

For example, high meat prices concern many people. And yet, we all need protein. Soybeans are a reasonable alternative, for they are extremely high in vegetable protein. Some doctors have been saying for some time that we Americans consume far too much meat protein anyway. I eat toasted soybeans, but they are 45¢ for 4½ oz. at the supermarket. Gary Heskett grows and toasts his own, saves a bundle, and does the earth a favor. They are also excellent food

**Organic gardening usually leads to a deep respect not only for the soil but for all the wild creatures upon it.**

for most people who suffer from food allergies. 'Beans are nearly free of allergenic substances, former president of the Kansas Healing Arts Board Dr. Cyril V. Black told me.

Heskett said, "Soybeans definitely fertilize the soil. Since it is a soil where I had the soybeans was broken up tremendously."

I munched appreciatively on the finished product. Toasted soybeans from the field are like crunchy, hard little peanuts with a bland taste. While I snacked, Gary's wife Judy produced *The Soybean Cookbook* by Dorothea Van Gundy Jones. She had cooked the beans according to one of the recipes, and the recipe for this tasty toasted temptation is reprinted elsewhere in this article. "I noticed they will roast better if you turn them now and then," Judy Heskett said. And it can get too salty. "You just about have to taste it. The salt just gets cooked right into it," Judy added.

**As Heskett talked**, he was puffing on a pipe. Smoking and eating organic foods seemed an interesting contradiction. I called his attention to it. He answered, "I don't necessarily eat health food because I am concerned about my health. It's an escape from boredom. The flavors are different from processed foods. I'm so independent I stink," Heskett observed in a brutal self-analysis.

Organic gardeners are not, by nature, vocal crusaders. Nor are they especially given to wildly unorthodox behavior like raising mung beans in their front yards or chives in their eaves. Let Gary Heskett describe his clansmen and himself:





Mankato Game Protector Gary Heskett's family displays the results of effective organic gardening.

"To be an organic gardener, you must be a very determined, bull-headed individualist. A man grows the organic way because he sees this as a direct, individual action against our synthesized society."

Just what is the difference between an "organic" gardener and a "conventional" gardener, then? The game protector's pipe strained mightily to obscure itself in a cloud of smoke as he said: "I can best explain the difference with an illustration. If an infestation of beetles attacked three different types of gardeners' gardens, one would preach the good points of organic gardening, but still spray with synthesized chemicals. The second guy would use every chemical he could get his hands on and brag about the quality of his food. The organic gardener would try every other means possible and let the crop fail rather than use chemicals."

To emphasize the difference, he pointed at a strawberry. "Would you eat it without washing it? Would you, knowing it had been sprayed?"

This doesn't mean all sprays are verboten in the organic gardener's book. Rotenone, because it is derived from the derris plant which is a member of the pea family is considered a legitimate natural or biological control. Pyrethrum, a derivative of the chrysanthemum family and specifically from the pyrethrum daisy, is another.

Pyrethrum's action is similar to rotenone, and is an old favorite around dairy barns for fly control. Since it works on any two-inch insect, it's also effective on pets for flea control. Latest studies indicate pyrethrum may be a little safer than rotenone for humans.

Generally, though, the organic code says, "Stick to materials you already

have; if you must buy controls, make sure they do not harm the environment." That's the code Gary Heskett follows in his control of striped cucumber beetles, moles and slugs.

If you ever got your squash off to fine start only to watch it crumple practically overnight in late June or early July, you probably were hit by the striped cucumber beetle. A thoroughly nasty character, the beetle can be held at bay without spray. Heskett does it with sticks, cardboard boxes, cheesecloth and shellac.

Cut the bottom out of a cardboard box. Discard the bottom and shellac the box. While still wet, stretch the cheesecloth over it and the shellac holds just like glue. Brace the box with sticks inside pushed into the ground on all four sides. This will hold it down in a wind.

You can pick up cheesecloth at a grocery that uses food from a packing house. The cheesecloth roof laughs at the beetle and diffuses sunlight, making a softer radiance for the tender plants.

This outfit should be good for two seasons. It's cheap insurance! Your investment? Your time, labor and a little dab of shellac.

Try to find fairly tall cardboard boxes, as this postpones the "Battle of the Beetle." As soon as the boxes come off, the beetle comes on. When he does, fight him with this spray: Mix two gallons water, two cups hydrated lime and two cups wood ashes. You've put on enough if the leaves turned white from the application.

A tunneling mole turning a garden into a mess of lumpy oatmeal sends growers into a frenzy, dragging out the poison. The organic man says, "Whoa now. Let's stop and consider what nature is trying to tell us before we kill what seems to be our enemy." As Heskett points out, "I don't get too uptight about moles. A lot of moles in the garden mean you probably have a grub infestation." Those moles are cleaning out your grubs for you, and probably the good they do offsets the harm they do to roots.

If they become too pesky, mole traps are available from Victor Company for about \$4.00. A hose attached



to your car's exhaust should also do the job. There is poison enough in that gas-gulping buggy of yours to kill humans. It will certainly dispose of a little mole.

Mulching, Heskett feels, may contribute to a slug invasion. They hide in damp mulch during the day and feed at night. Slugs are grayish, worm-like, slimy, legless, fat-bodied and ugly. They can devour tomatoes and carrots. Gary's method of control?

**Take a shallow pan** and fill it with beer. Place it near the plants. The slugs go so wild over that Rocky Mountain spring water they fall into the pan, and die.

Teetotaling gardeners may have a tough time with this one. The preacher may not be convinced if he spots beer in the house and you protest, "But I only control slugs in my garden with it!"

Mulching, which is placing grass clippings, old hay, dead weeds, sawdust or manure on your garden, has a place. It keeps a crust from forming on the soil so it can "breathe." This, in turn, allows moisture to percolate through to the roots. Mulch also keeps plants cool during the day and warm at night.

**But it has to be handled right.** As we've seen, constant mulching can lead to slugs. Heskett recommends that Kansas gardeners rotate their mulch; in other words, much two years, skip the third year, mulch two years, and so on. He recalls he once mulched three years in a row "and I had slugs all over the place."

"The proverbial compost pile," as Heskett calls it, stands at the south end of his garden. Leaves, grass clippings, table scraps, manure, sawdust, corn cobs and straw all find a home in a compost pile. The pile is nicely confined by a woven wire or wood slat (snow) fence formed into a circle. Things that will blow, like leaves and grass clippings, are sandwiched between dirt and manure, layer cake fashion.

**"It's a basic form of recycling,"** Heskett said. "If you put smelly things in it like fish heads, sprinkle it with lime. That way, the oils will leach out." No oil, no smell. "It takes

one or two years for a pile to break down completely," Heskett instructed.

As we walked through Gary's garden, I noticed the weeds. Between the rows the ground was clawed up in the customary way. In the rows, however, husky, healthy-looking pigweeds and giant foxtail were sticking up their defiant heads, thumbing their noses at us. I mentioned to Gary that the weeds seemed to be doing very well.

**"I have a philosophy on weeds.** Don't worry too much about them! A healthy soil will grow healthy weeds. Weeds are actually bringing

there were no flowers! Might as well give up and take your medicine," I thought.

**"Sunflowers?" I said weakly.**

"Well, you're not too far off," Gary said comfortingly. "They're Jerusalem artichokes, a cousin to the sunflower family. And they are wonderful. Historically, they are true Americans. The Indians used the tubers of the artichoke; they'd eat 'em like potatoes."

Gary continued. "Slice them and deep fat fry them, or eat 'em raw in salads. You c'n add cream and eggs to 'em and make 'em a side dish.

### RECIPE FOR TOASTED SOYBEANS

**Soak the beans overnight in salt water.**

**Boil one hour in same water.**

**Drain them.**

**Spread them out in a shallow pan and roast at 350 degrees for 30 minutes or until they are brown.**

*From The Soybean Cookbook*  
by Dorothea Van Gundy Jones

up nutrients close to the surface. I've grown some monster onions, for example, in weeds."

We walked on to the northeast corner of the garden.

**A dense cluster of tall, imposing-looking plants** hove into view. I had noticed them before, and wondered privately if Gary had dedicated one corner of his garden exclusively to the weeds.

I should have known better.

We moved up to the patch, and Gary asked, "Have you seen these growing out somewhere? Thought they were weeds? Whaddya think they are?" "Here it comes again," I thought.

With a sinking feeling I noted the dark green, alternating leaves. But

They'll keep in the soil; last year I came out here in the snow and pulled 'em up like shallow potatoes. Since they're a perennial, they'll come up year after year. They're very low in starch, so they're good for diabetics and weight watchers. Each plant is capable of producing 20 pounds of tubers, and artichokes keep the ground real loose. The tubers are aggravating to peel, because they're knobby."

**I nodded dumbly.**

I found out later the labor in peeling artichokes is well worth it. The texture is crisp, the flavor nutlike.

**Before leaving I told Gary Heskett,** "If I can remember one-tenth of what I learned today, I'll be a wiser and better man for it."

I meant every word.



# THE RIO GRANDE WILD TURKEY: A PROFILE

By Vic McLeran  
Editor

**IT** WAS WINTER along the Chikaskia River.

Naked branches of stark cottonwoods were outlined against the gray December sky. A sharp northwesterly cut through the bare riverbottom timber, spitting traces of snow as it went. Occasionally the faint odor of wood smoke floated down from a distant farmhouse, to be whisked away by the wind. From upstream, the wind-muffled notes of a great horned owl sounded weird and ominous in the gathering dusk.

Not far from the river two biologists huddled in a blind. Earlier they had baited the area around a nearby cannon net with corn, hoping to trap wild turkeys for transplanting purposes. Now they watched as a flock of Rio Grande wild turkeys fed slowly along the edge of an alfalfa field 30 yards from the blind.

As the two men waited, they saw a coyote slip stealthily from a plum thicket 50 yards downstream. Eyeing the turkeys intently, the animal trotted forward. Spotting him the birds stopped feeding and formed a tight group facing the approaching coyote.

The animal stopped several feet from the birds. With heads lowered and necks outstretched, several old gobblers moved toward the coyote.

Suddenly with a rush of flapping wings, they charged. Bewildered, the little prairie wolf tucked his tail and ran.

Lee Queal, chief of the Kansas Forestry, Fish and Game Commission's game division, chuckled and turned to his companion in the blind. "It looks like the Rio Grande is gonna' do OK in Kansas," he said.

All this occurred several years ago when the Commission was in the infant stages of its turkey transplanting program. And Queal's prediction was true—Wild turkeys have done OK in Kansas. In fact, they've done beautifully, especially when you consider these birds were extinct in Kansas up until the early 1950's. Oh sure, there were a few wild turkeys in the state during the early part of the century. But market hunters and habitat destruction quickly wiped them out.

Then in 1959, the Commission learned about a flock of wild turkeys on the Arkansas River which had emigrated from Oklahoma. Trapping efforts there netted Commission biologists 26 turkeys. These birds were transplanted to several locations across the southwestern part of the state.

From this humble beginning, plus

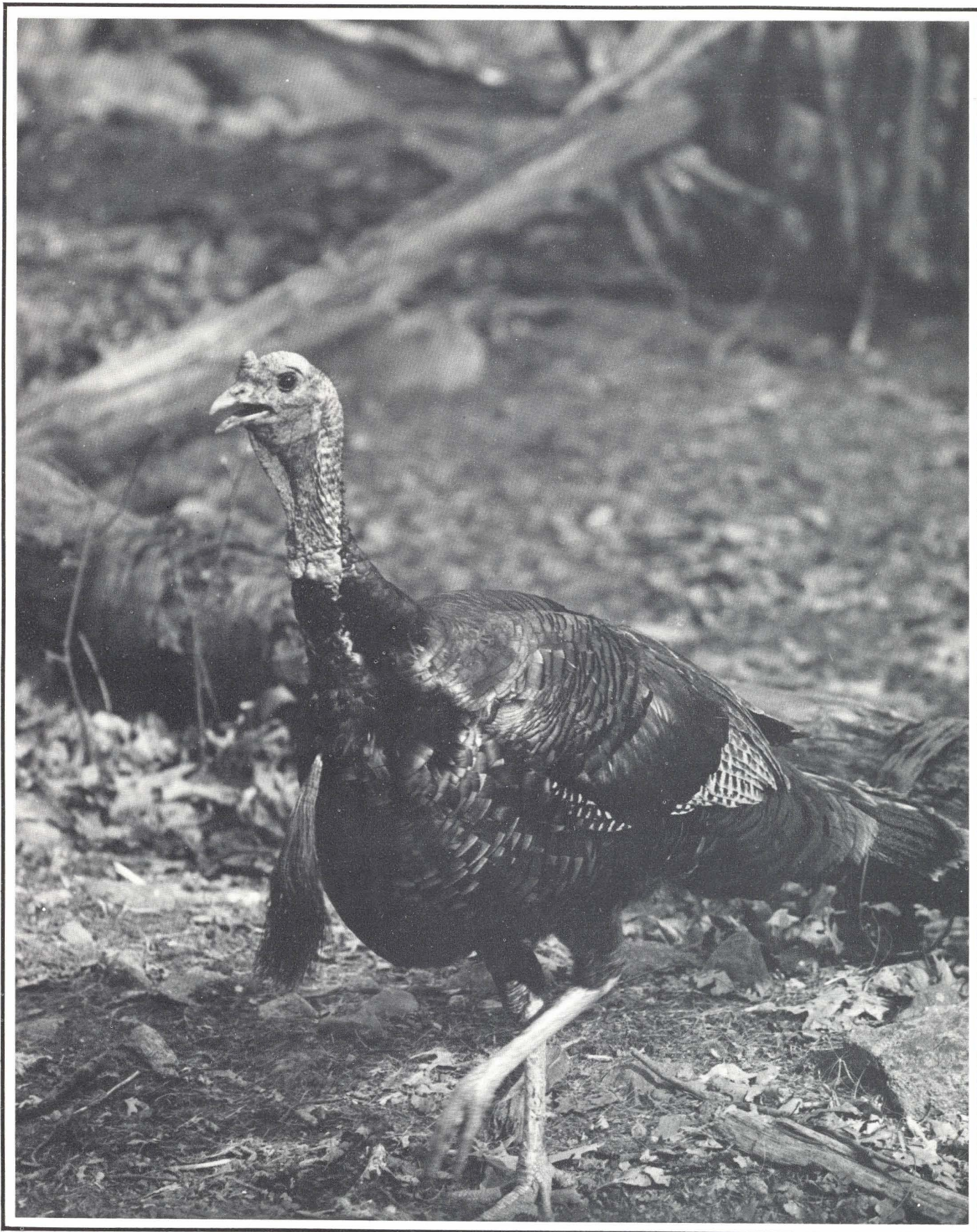
the addition of wild stock obtained from Oklahoma and Texas, the Kansas Forestry, Fish and Game Commission, with the cooperation of landowners, has developed the turkey population until it now numbers approximately 2,000 birds. In fact, the birds have done so well the Commission has established a limited season on gobblers during the spring of 1974.

The Rio Grande wild turkey is our largest game bird with gobblers weighing 16-23 pounds and hens averaging 8-10 pounds. Garbed mostly in dark gray with a coppery-bronze tinge, the Rio Grande's tail feathers are tipped in cinnamon-buff. Primary wing feathers contain wide bands of black interspersed with narrow white bars. The bird's lower back is bluish-black with a trace of iridescence.

Wild turkeys possess exceptionally keen eyesight and an extremely acute sense of hearing. The slightest movement on the part of a hunter and the bird is gone. By the same token, a sour note on the turkey call will send a gobbler sprinting for cover. In fact, many hunters consider the wild turkey more difficult to bag than big game animals like deer. Like most birds though, the turkey's sense of smell is poorly developed.

Gobblers are noted for a 5-6 inch







hair-like appendage on the breast called a beard. It's composed of bristles which are actually primitive feathers. Occasionally hen turkeys are seen with this beard but it's rare.

The gobblers also sport a pair of spurs on the back of their legs. These upward-curving weapons are used by the males in their courtship battles and for protection. Spurs rarely appear on hens. Biologists say the spur's length is a general indication of a turkey's age with longer spurs found on older birds.

In its native south Texas hill coun-

try, the Rio Grande wild turkey makes its home along sandy, riverbottom timber belts. The same type of terrain is favored in Kansas. Major river systems in the Sunflower State which support wild turkey populations include the Chickaskia, Arkansas, Salt Fork, Cimarron, Medicine, Ninnescah, Pawnee as well as a few small feeder streams and creeks. Bill Hlavachick, former big game biologist in charge of the Commission's turkey program and now technical services biologist, told me, "When a flock of turkeys becomes too large for a particular

stretch of river, a few of the birds will break off and form a new flock—often on one of these tributary streams."

The home range necessarily contains a good supply of food and grit. Wild turkeys are omnivorous, consuming a great variety of plant and animal food. Most crops such as acorns, beechnuts and pecans are utilized heavily as is succulent plant material like alfalfa and green wheat. Grain from feed crops and seeds of many plants and weeds are also eaten. Fruits and berries are consumed during the summer.

When winter snow covers the ground, turkeys will occasionally feed on buds. But the big birds aren't bothered by deep snow as much as quail and pheasant since gobblers have little trouble scratching through as much as a foot of snow to obtain ground food.

Animal foods include insects of all types (mainly grasshoppers), frogs, crawfish, salamanders, lizards, and several species of snakes. In A. W. Schorger's book, *The Wild Turkey, Its History and Domestication*, there's an interesting account of a wild turkey which was having trouble swallowing a small snake.

"The turkey was in conflict with a snake about ten inches long. He would pick it up and throw it and then seize it again as soon as it struck the ground. At length after the snake seemed pretty well disabled, he seized it by the head and began to swallow it. That part of the snake yet in sight thrashed around vigorously, sometimes winding itself around the bird's head and neck. This was too much for the turkey which then regurgitated the snake. Another attempt was then made to swallow the snake. But it was not until the third effort was made that success was achieved. The swallowing process occupied several minutes, the tail of the snake remaining active until it finally disappeared down the turkey's gullet."

Turkeys usually feed in the morning immediately after leaving the roost. They lounge and dust during the middle of the day and feed again in the evening before roosting for the night.

Wild turkeys have done so well in their comeback the Commission has set a limited spring season for 1974.

Ken Stiebben





# KANSAS FISH & GAME NEWS



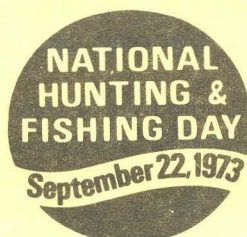
P.O. BOX 1028  
PRATT, KANSAS 67124

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

News contact: Ross Harrison

Phone— 316/672-6473

RELEASE \_\_\_\_\_



## THREE LAKES RECEIVE FISH

PRATT--About 450,000 one-inch largemouth bass have been stocked in Melvern Reservoir, just south of Lyndon. The stocking of young bass made up the initial introduction of largemouths into the new reservoir which closed its gates for the first time last summer.

Milford Reservoir north of Junction City recently received about 20,000 smallmouth bass, also about an inch long. This is the second consecutive year for smallmouth stocking at Milford in an experimental attempt to increase the range of the popular fighting fish in Kansas. Federal fish hatcheries at Tishomingo, Okla., and Cedar Bluff Reservoir in Kansas, provided the stockings for the two reservoirs.

Forestry, Fish and Game Commission officials stocked about 4,000 channel cat from four to five inches in size, 4,000 largemouth bass fry, and 300 pounds of fathead minnows in Hodgeman State Fishing Lake, southeast of Jetmore. The lake which has been dry now holds a good water supply and will remain closed to fishing until renovation efforts are completed this year and probably next year.

###

## NORTHERN PIKE POPULATION BUILDING

NORTON--An experiment in the tremendous growth of northern pike in southwest Kansas has resulted in the beginnings of another good pike population in Norton Reservoir.

Verl Stevens, hatcheries supervisor of the Forestry, Fish and Game Commission, said almost 1,000 northern pike, nine to 11 inches in size, recently were released in Norton, following a three-month growth study at Meade State Fish Hatchery.

The pike, hatched from eggs taken from Clark State Fishing Lake in late March, charted 11 inches of growth in just three months. Stevens pointed out this is not unusual in Kansas, but is much better growth than the pike has in more northern states. He said Kansas pike reach sexual maturity at one year, where it takes three years in Minnesota and North Dakota.

-more-



By this time next year, Stevens anticipates the 1,000 northerns will have more than doubled in size, surpassing 25 inches.

"The primary purpose of stocking the northern in Norton is to provide a source of eggs which we can collect and artificially hatch, rear and stock in other Kansas waters," said Stevens. Because northerns do not normally reproduce in Kansas, artificial hatching is the only way to provide more northern for anglers.

Norton Reservoir used to be one of the few Kansas waters where northern pike were available in good supply to fishermen and a good source of eggs for fish culturists, but Stevens said most of them were caught out.

Stevens said under Project SASNAK, plans are being formed to intensively culture northern pike so they will become more available to fishermen in the coming years.

###

#### BULLHEAD RECORD BROKEN

PRATT--A four-pound, six-ounce bullhead has broken the record for that fish in Kansas by  $2\frac{1}{2}$  ounces, according to the Forestry, Fish and Game Commission.

Charles Gunkel, Kinsley, caught the record bullhead at Ford County Lake and had his record confirmed on official scales of a Dodge City grocery store by state game protector Jim Kellenberger, Jetmore.

It measured  $17\frac{1}{2}$  inches and was caught on a piece of jackrabbit meat. The old record had stood since 1961.

###

#### FIRST TURKEY SEASON - APRIL 20-28

PRATT--April 20 through April 28 has been set as the first wild turkey hunting season in Kansas since the turn of the century, after action taken Thursday at the July meeting of the Forestry, Fish and Game Commission.

Four hundred permits will be available for a spring gobbler season in a limited area of southwest Kansas. The area is bounded by U.S. 50 on the north from the Colorado state line to Newton, then south on I-35W to Wichita, then east on U.S. 54 to Augusta, and south on U.S. 77 to the Oklahoma line. It is bounded on the west by Colorado and on the south by Oklahoma.

Big game biologist Bill Peabody, Emporia, explained that in the area just described there are two management units, the west lying to the west of U.S. 281 where 300 permits will be available, and the east lying to the east of U.S. 281 where 100 permits will be available.

According to Peabody, hunters will be able to obtain application blanks for turkey permits from the Pratt headquarters of the Commission later this fall and they will have to return completed applications between Nov. 12 and Dec. 14 to be eligible for the Jan. 8 drawing of successful applicants. Those who are successful in obtaining a permit will have to send in a \$10 check for that permit.

Hunters will be allowed to use a shotgun, gauges 10,12,16 and 20, a muzzle-loading shotgun or a long bow with at least 35 pounds of pull and a 28-inch draw, said Peabody.

Since the Commission started a turkey management program in the early 1960s," he said, "their population has increased from about 200 birds to an



an estimated 2,000 by this winter. This population is made up of 40 per cent males. And since it takes only one male to breed five or six females we can safely harvest a surplus of the gobblers and still have a growing population."

Peabody stressed that before applying for a turkey permit, potential hunters should scout out an area and be sure they have secured permission on a good place to hunt. "We do not want any hunters to waste their permit by waiting too long and not being able to find a place to hunt," he said.

He added that landowner-tenants will be granted 50 per cent of the available permits and general residents, from anywhere in Kansas, will have to compete for the other half as is the case with firearm deer permits.

A spring gobbler season was chosen by the Commission for a number of reasons, said Peabody.

"The last part of April is well after the main breeding season and during the time when hens are isolated while they incubate their eggs," he said. "The large winter flocks are dispersed and the gobblers stand out more. It is also a time when the gobbler is more easily hunted with a turkey call. Hunters will not be allowed to use dogs so there will be no molesting of the nesting females.

###

#### COMMISSION ESTABLISHES DUCK SEASON

PRATT--The Kansas Forestry, Fish and Game Commission established a 60-day split season on ducks for most of the state this fall. The first segment of the season runs from October 6 through October 21, while the second portion runs from November 10 through December 23. That part of Kansas west of U.S. Highway 283 will be open to duck hunting until January 8, an additional 16 days.

The 1973 season opens early to allow hunters a crack at early migrants such as teal, widgeon and pintails. It also provides an extra week-end of hunting.

As was true last year, the point system is in effect with the hunter required to stop hunting when the last duck bagged reaches or exceeds 100 points. Unlike the 1972 season however, redheads and canvasbacks will be allowed, each duck being a 100 point bird. Hen mallards, wood ducks and hooded mergansers are 70 point birds. Blue-winged and cinnamon teal, widgeon, scaup and mergansers, other than hooded, are 10 point birds. Mallard drakes, pintails, green-winged teal, gadwalls and all other species have been assigned 20 points each.

Since points on some species have changed since last year, the Commission advises waterfowl hunters to make sure they are aware of these changes.

The Commission also established a split season on geese, with the first segment running from October 6 through October 21. The second portion extends from November 3 through December 16. During these first two periods the season is open statewide for all species of geese. However in the third part of the goose season, running from December 17-28, hunting is open statewide only for snow and blue geese.

Bag and possession limits on snow and/or blue geese are five and five. Goose hunters are allowed a daily bag limit of one canada goose and one white-fronted goose. The possession limit is two canada geese or one canada goose and one white-fronted goose.

Legal shooting hours are from one-half hour before sunrise until sunset. Hunters are required to possess a valid Kansas hunting license and a migratory waterfowl stamp. All shotguns must be plugged.



# 1 9 7 3   K A N S A S   S P O R T S M A N ' S   C A L E N D A R

Season	Opening Day	Last Day	Daily Limit/Poss. Limit
Pheasant-----	Nov. 10	Jan. 31	*4 cocks/12 cocks
Quail-----	Nov. 10	Jan. 31	8/24
Greater-Lesser			
**Prairie Chicken-----	Nov. 10	Dec. 9	2/6
Squirrel-----	June 1	Dec. 31	5/10
Rabbit, Cottontail-----	Season open year around		10/20
Rabbit, Jack-----	Season open year around		No limit
Coyote-----	Season open year around		No limit
***Deer (firearms)-----	Dec. 1	Dec. 9	1/1
***Deer (archery)-----	(Split Season)		
	Oct. 1	Nov. 25	
	Dec. 15	Dec. 31	1/1
Dove-----	Sept. 1	Oct. 30	10/20
Teal-----	Sept. 8	Sept. 16	4/8
****Ducks, Coots, Mergansers-----	(Split Season)		
(Eastern Zone)	Oct. 6	Oct. 21	Point System
	Nov. 10	Dec. 23	
(Western Zone)	Oct. 6	Oct. 21	
	Nov. 10	Jan. 8	
Woodcock-----	Oct. 13	Dec. 16	5/10
Rails, Sora & Virginia-----	Sept. 8	Nov. 16	25/25
Snipe, Common (Wilson's)-----	Sept. 8	Nov. 11	8/16
Geese-----	Oct. 6	Oct. 21	See below*****
	Nov. 3	Dec. 28	
Bullfrog-----	July 1	Sept. 30	8/no possession limit

## \*\*\*\*\*Furbearer Hunting:

Raccoon, Red & Gray Fox,  
Spotted Skunk, Badger,

Opossum, Bobcat----- Oct. 1      Feb. 28      no limit

Muskrat, Mink, Swift Fox,

Weasel, Beaver, Ferret, Otter--No open hunting season

\*Possession limit for upland game birds effective on or after third day of hunting.

\*\*Greater Prairie Chickens open to hunting only in area east of U.S. 81 and I-35W.

Lesser Prairie Chickens open to hunting only in area south of U.S. 50 and west of U.S. 281

\*\*\*Special permit required to hunt deer.

\*\*\*\*Point values for ducks are as follows: Canvasbacks & redheads, 100 points; hen mallards, wood ducks, hooded mergansers, 70 points; blue-winged and cinnamon teal, widgeon, scaup and mergansers other than hooded, 10 points; drake mallards, pintails, green-winged teal, gadwalls and all other species, 20 points. Coots have a point value of zero with a daily bag limit of 15 and possession limit of 30.

\*\*\*\*\*Daily bag & possession limits on snow & blue geese are five and five. A daily bag limit of one Canada goose and one white-fronted goose is allowed. Possession limit is two Canada geese or one Canada goose & one white-fronted goose. On and after Dec. 17 no Canada or white fronted geese may be taken--only snow and/or blue geese.

\*\*\*\*\*Since this new regulation will not taken effect until Jan. 1, 1974, these furbearers may be hunted now, with season to end Feb. 28. It will re-open Oct. 1, 1974.



Prime wild turkey habitat always contains a good number of roosting sites. "For our Kansas Rio Grande turkey, this means a number of large, old cottonwoods with lateral branches situated so the bird can perch easily," Hlavachick told me. "In fact, when we're selecting a release site in our transplanting activities we always choose an area which has plenty of these trees."

In the spring, when redbuds start to bloom and lengthening days cast a green haze through riverbottom timber, the old gobbler starts strutting and calling for hens. This can lead to conflict among several old aggressive gobblers. But for the most part, the older, stronger males usually intimidate younger toms without a fight. Where courtship battles do occur they're generally short-lived with little serious damage done to either side.

Sometimes the old tom outdoes himself and ends up with more hens than he can handle. When this happens he often doesn't have enough strength to fight off other gobbler challengers—and consequently loses part of his harem. Nature has given the gobbler a breast sponge which stores excess fats and oils. This stored-up energy allows him to Don Juan it without stopping for dinner during the breeding season.

In a typical courtship display the gobbler will pull back his head, puff out his breast feathers and spread the tail into a fan-shape. The hen either responds favorably or rejects the suitor.

If the response is favorable and mating takes place, the hen builds a shallow, leaf-lined nest in which she lays five to 17 eggs. She continues to answer the gobbler's call each morning until the clutch is complete. In Kansas, the Rio Grande wild turkey often nests in brushy cover near the base of a tree, in an alfalfa field, or in grassy areas near field borders or the edge of clearings. Invariably the nest is near water and grit.

Hen turkeys are extremely shy during egg-laying and incubation periods. If disturbed, they often desert the nest and eggs. They won't renest as often as pheasant and quail. The young turkeys hatch approximately four

weeks after incubation begins. Within several hours the downy poults dry off and leave the nest forever. The hen usually takes her brood to brushy cover where insects are plentiful and where the youngsters will be protected. Three or four weeks later the young turkeys are able to fly. They stay with the hen for nearly a year.

**Turkeys, with their large size,** are fairly immune to predators. There is however, some casual predation on the birds. Snakes of several types have been known to eat wild turkey eggs. Rat snakes in Texas are known as predators on turkey eggs, and a copperhead in Missouri was observed

swallowing turkey eggs. The copperhead's cousin, the cottonmouth water moccasin, killed a hen turkey in Florida and ate the entire clutch of ten eggs. A black snake in Missouri was seen taking four eggs and in one unusual case, nine freshly-swallowed turkey eggs were removed from the stomach of a black snake. Surprisingly, the eggs were later hatched under artificial conditions. In Alabama, a large coachwhip snake was seen killing a turkey poult. Rattlesnakes, though they don't take eggs, will kill and eat the poults. Sometimes though, this taste for turkey

**Hen turkeys usually keep their brood hidden from enemies in weedy, brushy cover.**





gets the rattler in trouble. J. Frank Dobie, the late Texas author and historian, recorded the following incident in his book, *Rattlesnakes*.

"When the poult was about a foot from its point, I saw the form of a yellowish-brown rattlesnake shoot upward from short grass at the edge of the tree trunk and knock the poult to the ground.

"Its terrified cry brought the gobbler, gobbling sharply. The gobbler reached the poult just as it ceased to cry and fluttered its last flutter. Meanwhile the rattler was crawling out of the grass into full view on the grassless ground. The two confronted each other. The gobbler arched his wings, leaped and landed with feathers ruffled in defiance, facing the rattler five or six feet away. The rattler coiled, buzzing angrily.

"As he started to take another step, the weaving rattler struck. At the same time the gobbler shot upward, thrashing the air with his great wings. He had his legs pulled back so that his spurs could dig into the rattler. He came down beyond striking distance. The rattler moved forward and coiled. Again it struck, hitting the gobbler's beard a glancing blow that caused it to fly sideways.

"At a sudden move by the gobbler, the rattler struck again, missed and was knocked out of coil by one of the turkey's wings. Without giving the snake time to recoil, the gobbler spurred it a few inches behind the head, tearing a gash in its side. It left a thin trail of blood on the sand as it drew slowly back to a half coil, then revived sufficiently to complete the coil. Twice again it struck with diminished vigor.

"Now the gobbler leaped and came down, hooking a spur into the snake at the base of the head. At the impact the snake's body straightened out and the gobbler was instantly pecking his powerful beak into the reptile's back with the rapidity of a trip-hammer.

"Its head still hooked on the curved spur, the snake's body began to thrash about. With a startled cry the gobbler leaped up, kicking to release the snake. For a few seconds the air was full of flying legs, feet, feathers and

snake while the rattles still buzzed and the gobbler still gobbled. The gobbler's spur came free. The snake was dead and with nervous putts the victor backed off and stood eyeing his conquered enemy.

"When the turkeys left, I examined the rattlesnake. It had a gash an inch and a half long on its side, ten inches back from the head. The gobbler's spur, entering at the base of the head, had punctured the spinal column and come out through the top of the snake's skull. There were five punctures in the skull and eleven punctures along the back, a number of them made after the snake was dead."

Other bird enemies of the wild turkey include the crow, which is a notorious egg thief, the golden eagle and the great horned owl. In New Mexico, a golden eagle grappled with a wild turkey up and down the hillside for a distance of 30 or 40 yards. The turkey finally drove the eagle away but was seriously wounded.

E. A. McIlhenny describes the great horned owl's method of attack in his book, *The Wild Turkey and Its Hunting*. "The owl lit on a limb between the hen turkey and the trunk of the tree. Uttering a low call the owl moved gradually toward the turkey, eventually forcing it from the end of the limb. As soon as the turkey was in flight, it was pursued and killed."

On the other hand, the turkey's aggressiveness sometimes proves more than the owl can handle. Game Chief Queal watched one such encounter.

"We were trapping turkeys in south-central Kansas at the time," Queal recalled. "It was nearly dark and we watched as a flock of 18 fed slowly along a hay field which bordered the Arkansas River. There were several bales scattered along the field's perimeter and we noticed a great horned owl sitting on one of the bales, eyeing the nearby turkeys intently. Upon spotting the owl, several big toms immediately charged to within several feet of the bird, surrounding him in a semi-circle. With heads lowered, necks outstretched and wings flapping vigorously, the big gobblers advanced menacingly toward the owl.

"Finally he could stand it no longer. The threatening sight of five angry tom turkeys with mayhem in their eyes unnerved the bird and with several sideways glances of his head, he jumped into flight."

Skunks and opossums are principally egg destroyers. But sometimes the opossum apparently goes farther in its depredations. Writing in a leaflet of the old U. S. Biological Survey, H. L. Blakely describes this predation on a turkey roost by an opossum.

"The opossum has been caught redhanded taking restocked birds from a roost. The animal carefully approaches the roost, seizes a bird about the neck and body in a death grapple and clings on until its victim is dead and falls from the roost."

Raccoons, foxes, bobcats and coyotes are other occasional predators on the wild turkey. Strangely enough though, turkeys often show little fear of coyotes. And other observers have recorded instances similar to the one mentioned earlier in this article where wild turkeys actually bluffed out the coyote.

Wild turkeys, with their size, strength and native aggressiveness, are pretty well equipped for survival in spite of these predators. The birds are adept at hiding, can fly 55 miles per hour and can run at speeds approaching 30 m. p. h. With these attributes wild turkeys average a life span of five years and some live as long as 15 years.

Because of the birds' physical attributes and keen senses, predators and predation have had little effect on wild turkey populations. Schorger, in his book, *The Wild Turkey, Its History and Domestication*, concurs, writing that, "The number of proven cases of predation is so small that it is now difficult to find a field biologist who believes that predators have an important effect on the turkey population."

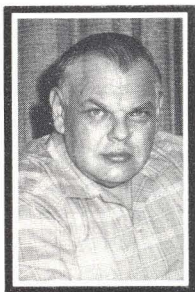
In the next issue of *Kansas Fish & Game*, we'll take a look at some game management practices which have been responsible for the turkey's re-establishment here in Kansas. At the same time we'll discuss the upcoming spring season on this magnificent game bird.



# CROW TALK

By George Valyer  
Staff Writer

**A** CHILLY SOUTH wind swept over the fields and swayed the tops of the cedar trees at the end of the alfalfa patch. Even the hardiest of hunters would have shivered in the cold November dawn.



Valyer

But the sun was rising in a clear sky and the day promised to warm as old Sol began his climb into the heavens. The two figures concealed in the protection of one of the cedars

seemed to tense as the faint guttural tones of crow talk came wafting in on the frosty air. Yes, the crows were beginning to move from their roost and into the fields for their breakfast. Soon now the air would be full of the flying black rascals and crow talk would cover the countryside with its raucous tones.

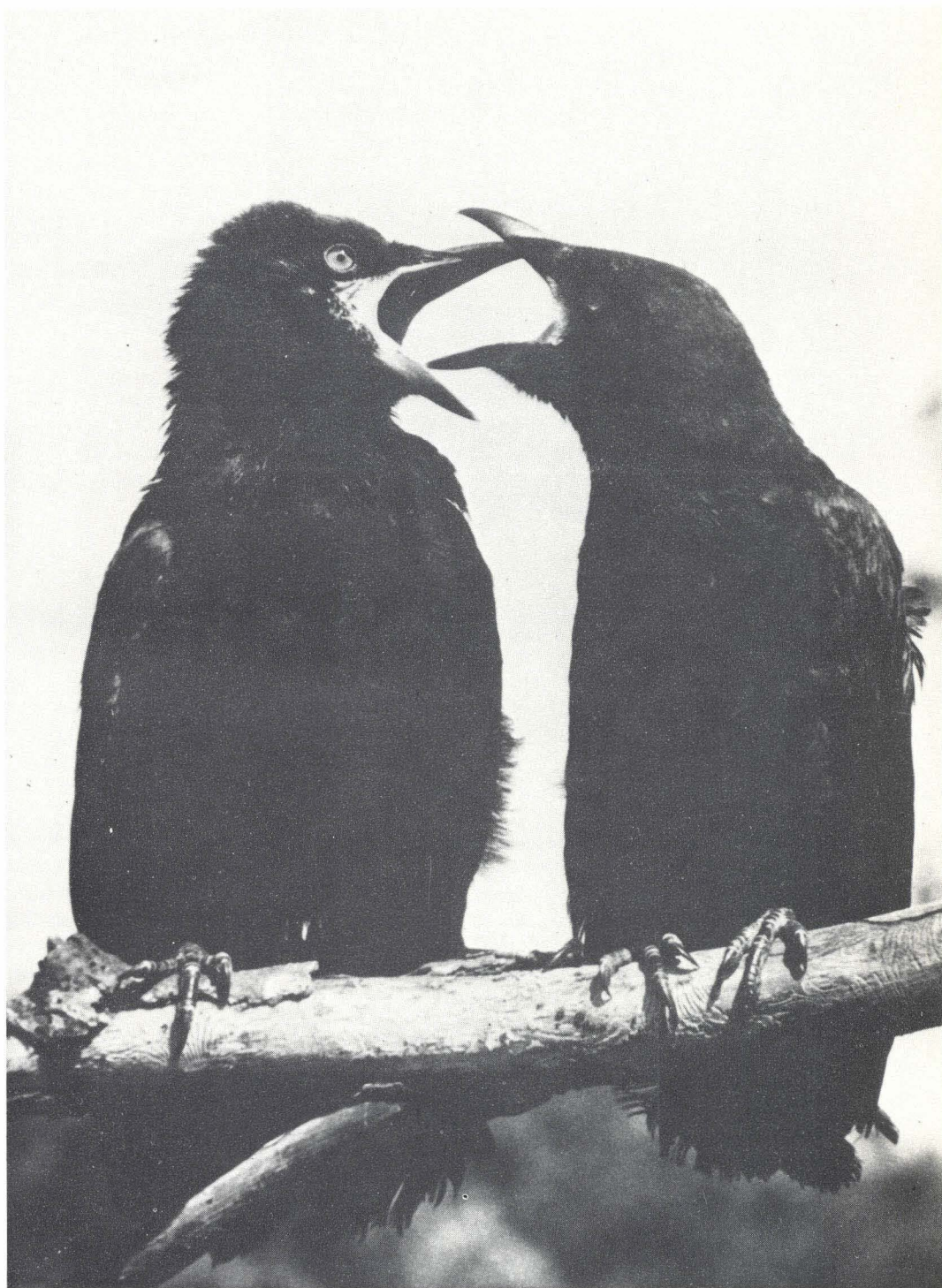
Our two crow hunters were well concealed beneath the branches of the protective cedar and additional concealment was provided by the tumbleweeds they had piled in front of them. For safety's sake, they were on opposite sides of the tree trunk and both were quartering slightly away from the papier maché owl they had placed

in a nearby sapling, now devoid of leaves. Beneath, on the ground, were two other hunks of papier maché molded into the shape of crows and painted as black as their living counterparts.

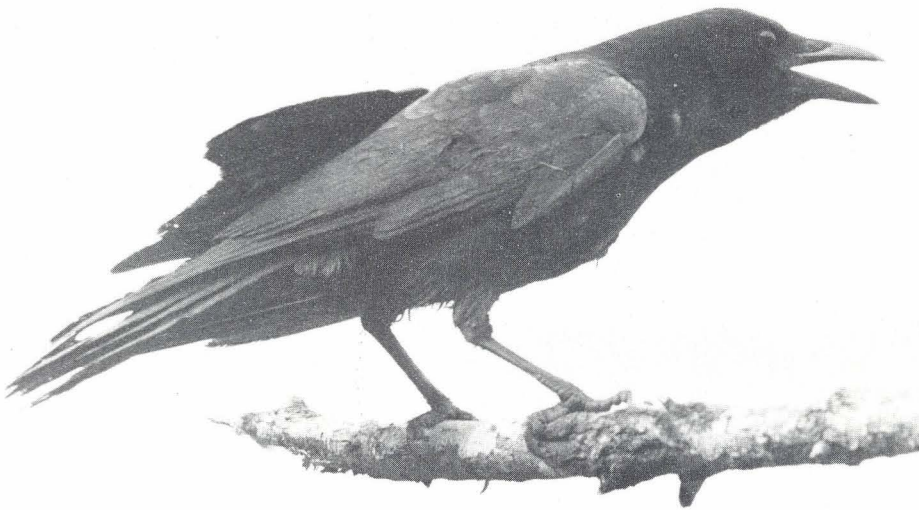
What it is that has created the hatred between crows and owls, man can only guess. Perhaps it stems from

occasional night time forays by owls on a crow roost. Whatever the reason, crows seem to delight in pestering the great horned owl during daylight hours and the wise crow hunter uses this hatred to his advantage.

As the vanguard of the approaching crows made their appearance over the shelterbelt at the far end of the field,







Crows are quick to spot dangerous situations and sound an alarm call.

one of the hunters ungloved a hand, reached into his shirt pocket and produced a crow call. Shortly, from beneath the cedar tree came the sound of a distressed crow and the approaching flight veered in the direction of the stuffed owl, now clearly seen in the brightness of the newly risen sun. As if drawn by a magnet, the incoming crows began diving at the fake owl and the early morning stillness was shattered by the blasting of shotguns. As fast as crows fell, more seemed to take their place and the action continued for 20 or 30 minutes before tapering off. In another few minutes, the scene would be repeated as more crows moved into one of their favorite feeding areas.

Ask a crow hunter why he hunts crows and he will probably mention the sport of trying to get a bead on one of the diving black jets. Another might point out the practice he gets for shooting at other game. Both will probably be quick to point out the service they are rendering to mankind and other wildlife.

As to whether or not the crow is the black-hearted villain some claim him to be is a matter of conjecture. Certainly, crows are known to rob the nests of game birds, especially waterfowl in the northland. Crows are also accused of crop depredations, especially newly sprouted corn. On the other side of the coin, there are those who maintain the crow does an invaluable service in helping to rid wheat fields of army worms and other crawling pests and his services as a scavenger are recognized everywhere. During the winter, crows make it a point to visit my back yard every morning to clean up the garbage discarded from the supper table. (There is no garbage collection where I live.)

The truth probably lies somewhere between the saint or sinner classes and, like other species of wildlife, the crow poses significant problems only when he becomes over-abundant in an area. Central Kansas is one of these areas in the wintertime when literally millions of crows migrate in from the northland. Some Kansas crow roosts

contain well over two million birds during a normal winter season and one of the largest is located just outside Hutchinson near the village of Medora. Other large concentrations are reported from Stafford, Rice and northern Kingman Counties. The concentration of crow droppings under a concentrated roost may pose a health threat and unharvested corn and other grain crops may suffer considerable damage when crows accumulate in such numbers.

Other large crow roosts are located in other states in the midsection of the nation with one of the most famous being near Fort Cobb in Oklahoma. Many crow hunters from all parts of the nation make an annual trip to these Kansas and Oklahoma crow roosts for some fast and fancy shooting.

But what of the future? Will there be crows to hunt 10 or 15 years from now?

Authorities agree that the common crow certainly is not in any danger of extinction, at least not in the foreseeable future. Crows are probably as numerous now as 20 years ago. Although their range may shift slightly from year to year and their winter roosts may change from season to season, prospects are that the crow will be with us for many years to come. The crow is credited with great intelligence for a bird and many crow hunters will agree heartily. Crows are quick to spot abnormal situations and many a hunter has been frustrated in his attempts to lure a flock of crows to within shotgun range.

"But," you say, "What about these rumors I hear about crows being protected? Can you even legally hunt them?" The answers to these questions may clear up a lot of unfounded rumors. Here's the way the situation stands at the moment.

In March of 1972, the governments of Mexico and the United States concluded a treaty which gave protection to 32 additional species of birds. Included on this list was the family Corvidae which includes the common crow. This was done to protect the



Hawaiian crow. Since the crow is a migratory bird, it is subject to regulation by the U. S. Government and, in particular, the Bureau of Sport Fisheries and Wildlife which is a division of the Interior Department. All migratory birds, both game birds and non-game species, which travel between states or from the U. S. to a foreign country are subject to such regulation and treaties of agreement.

Although the crow is not a game species, the Bureau of Sport Fisheries and Wildlife has established regulations to allow sport hunting of crows in 48 states. (Alaska and Hawaii have no populations of the common crow.)

The rules would allow a four-month crow hunting season each year to be selected by the individual state.

The proposed four-month season would not cover the entire six-month period when crows pose a significant problem in parts of Kansas.

However there is a provision for standing depredation orders which allow crows to be taken when committing or about to commit depredations on trees, crops, livestock or wildlife. They may also be taken when concentrated in such numbers as to constitute a health hazard or other nuisance.

Further regulations may be forthcoming from the Bureau of Sport

Fisheries and Wildlife. In the meantime, the Kansas Forestry, Fish and Game Commission probably will not establish a specific season on crows. The standing depredations order will be in effect and crow hunting may continue as in the past.

So, when the frost is hanging in the air on a chilly morning and you hear crow talk from the fields and groves, let me know. I might desert this over-worked old typewriter and join you in a blind somewhere. Better practice on that crow call, though. Those wily black rascals need a lot of foolin' to lure them into range.

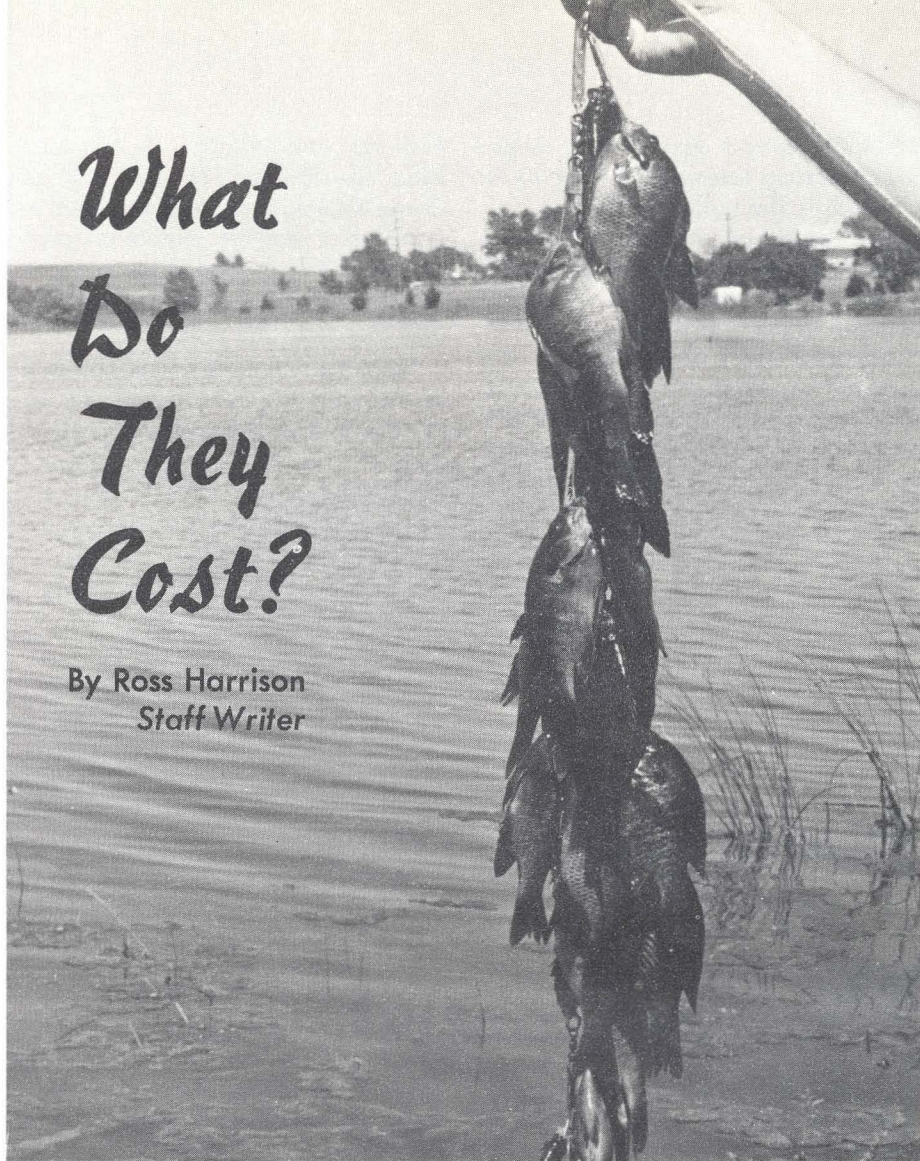
During winter months, crows build up in large concentrations over parts of Kansas.





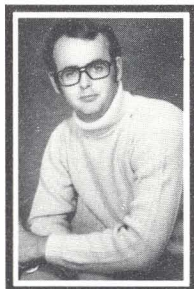
# What Do They Cost?

By Ross Harrison  
Staff Writer



**A** LOT OF people have a mistaken idea that if a lake has water in it, it will provide good fishing.

Some who give fishing a little more thought, may still mistakenly believe that to provide good fishing all you have to do is stock the water with more and more fish.



Harrison

But probably most don't really care one way or the other, just so long as they can catch fish.

On the other hand, there's the fisheries biologist whose primary responsibility is to provide anglers with the highest possible harvest of game fish. In his school training and on the job, some of the first things a fisheries biologist

learns are that it takes a lot more than H<sub>2</sub>O and a lot more than just stocking to make good angling.

If a lake is going to produce for fishermen, it has to be managed that way, and that requires considerable money, manpower and materials as we shall see. Since the biologist puts the fishermen's license dollars to work in that cause, it makes for better working conditions when the fisherman understands just what the biologist is up to.

A recently completed three-year study produced a wealth of fascinating information, the first of its kind to be collected in Kansas, on costs of state lake management. What this study found should prove enlightening to those anglers who want to better understand the management of their sport and where their fishing license dollars are being spent.

Although the study's findings per-

tain to the lake at which it was run, it provides a good example of the situation at most of the other 40 state fishing lakes.

From 1970 through 1972 the study was conducted at Barber State Fishing Lake, north of Medicine Lodge. It was a time when fisheries biologists played two roles—that of a fisheries manager and that of an accountant.

So, in addition to continuing their management efforts at the 77-acre Barber County lake, fisheries biologists produced some fancy bookkeeping, too.

Their bookkeeping was divided into two ledgers—one recording the costs of their inputs to the lake, the other recording the output of which the most important is fishermen's use of the lake and what they caught.

On the input side there are three main expenses: (1) cost of building the lake, (2) cost of grounds maintenance and (3) cost of fisheries management efforts.

Barber State Fishing Lake cost a total of \$140,400 to build, fence, create a public water supply, add sanitary facilities and pumps for a dependable water supply to the lake. In order to turn these costs, which are called capital improvements into a yearly figure, accountants defray them over a 50-year period at four percent interest. This amounts to an annual repayment of \$6,650. (Like a long-term house mortgage, interest through the 50-year period comes to more than the cost of the whole lake—about \$192,000 in this case.)

Grounds maintenance costs through the three-year study averaged \$3,900 a year. Covering such items as operation of the pumps, mowing and agricultural supplies, trash, latrine and road maintenance and salaries of grounds keepers, this is an essential cost of a lake which few people realize exists.

The third area of cost, fisheries management, averaged about \$3,100 a year. This includes herbicides for weed control, fertilizer to enhance aquatic life, fish for stocking, survey work and salaries of fisheries biologists and their aides.

The three areas of cost amounted to an average yearly input of \$13,650.



As mentioned earlier the most important output of a state fishing lake is fishermen's use of the area and what they caught. This, however, is not the total output. As a matter of fact, fishermen accounted for just 33 percent of the total visits to Barber, which is close to the state average. Visitor counts revealed an average of 25,700 visitations a year to Barber during the study. Fishermen numbered 8,400; sightseers, campers, picnickers and others totaled 17,300.

Still, Barber and the other state fishing lakes in Kansas were constructed and are maintained primarily for fishermen. Those three major costs totaling \$13,650 a year would be just as high if only fishermen used the lake. So, in making the lake open to these other users, fishermen can boast that their fishing license revenues made it possible.

So what did users of the lake get for that money?

Just for the sake of reference, we can see from the information already given that for \$13,650 a year, the lake supported a total of 25,700 visits. Dividing input by output, it cost 53¢ to provide each visit. If a man was running the lake as a business and he

just wanted to break even, he would have to charge each user 53¢ at the gate. But because the prime concern is fishing output, let's pursue that in a little more detail.

Since there were 8,400 fishing trips each year to Barber, divide the yearly cost by that number and you'll find it took \$1.62 worth of input to provide one fishing trip. If only fishermen used the lake the man at the gate would have to charge each fisherman \$1.62 every time he went fishing at Barber just to break even.

That should make the cost of a \$3.25 fishing license seem cheap, especially if a man made more than one fishing trip to the lake!

To find how many fish were caught, their weight and species, biologists conducted extensive creel censuses, which are extremely valuable aids in planning fisheries management. From interviews with a scientifically set, random sample of the fishermen, creel census information was expanded by formulas to arrive at a fairly good yearly estimate of fish harvest. The creel census revealed some intriguing results, some of which biologists are still scratching their heads over trying to figure out.

It averaged that 16,000 fish a year were caught, amounting to a weight of 7,600 pounds, or almost 100 pounds of fish harvested per acre from the 77-acre lake.

One hundred pounds per acre is a darned good harvest figure for a public fishing lake in Kansas. If a 10,000-acre reservoir did as good, which most don't even approach, that would mean anglers would catch 500 tons of fish a year from it.

With fish harvest figures you can find what it costs to produce any particular number of fish in the creel, or any weight.

Dividing the \$13,650 yearly cost by the 16,000 fish caught each year results in a cost of 82¢ for each fish on the stringer. Substituting weight for numbers produced a figure of \$1.81 as what it costs to produce one pound of fish on the stringer.

The creel census also showed fishermen spent an average of two and three-quarters hours on each of their visits. This means Barber supported a catch rate of three-quarters of a fish an hour (that is if you can catch three-quarters of a fish).

Up to this point we've been saying average this and average that for the

Fisheries biologists spray herbicides to deter growth of excessive shoreline and aquatic vegetation.





three-year period of the study. Averages can give you an idea of the kind of figures we are dealing with, but they'll foul you up if you rely on them as being typical and you sure can't manage a lake on an average condition. For one thing, averages just don't exist in nature.

**A lake is a dynamic community** of fish, plants, amphibians, insects and other life forms which constantly are reacting with each other and with the nonliving properties in their surroundings. This means balances within the lake are continually shifting and the lake is ever-changing, though from the surface it may appear the same each year.

It is this variation from one year to the next, the fluctuation in the number of fish caught, the different kinds of fish caught and the poundage of fish caught from one year to the next which really tells the story. These changes show up dramatically in the creel census and they provide the biologist with information he needs to identify the effects of his management on the lake and the fishing.

**The first year of the study, 1970,** Barber had just re-opened to the public following a renovation of the fish populations. Largemouth bass, channel catfish and bluegill had been stocked in 1968, along with fathead minnows as a forage fish. They were allowed two years growth before any-

one could fish at Barber, a common practice where state fishing lakes have been renovated.

That first year's creel census, as predicted, plainly showed one occurrence common to most lakes which have just opened to the public after they've been cleaned out and restocked. Right away, the largemouth bass are the first to go.

**Largemouth made up 80 per cent** of the total number and weight of all fish caught in 1970 at Barber. Bass numbered 11,300 with an average weight of  $\frac{1}{2}$  pound compared to the total catch of 14,300 which included about 2,200 bluegill, 330 channel catfish and 400 bullheads. Exposed to fishermen for the first time in their lives, largemouths are quite vulnerable to the hook and line.

The following year, 1971, the number of fish caught at Barber fell to only half of what it was the first year. Bass fishing dropped to only one-quarter as good as it was in 1970, but their average weight had come from about a half-pound to a little under a pound. By the third year, 1972, the largemouth spawn of 1970 was beginning to show up in the creel. That year the number of bass increased two times from 1971, but their weight was down to a half-pound again.

**Channel cat harvest at Barber** was quite low the first two years although they averaged .85 pounds apiece in

1970 and 1.2 pounds in 1971. The third year the number of channels harvested had doubled from 1970 and the fish were averaging better than two pounds apiece. Reports indicate channel cat fishing may have been even better this past summer. Biologists contend the initial stocking of channels must have had a low survival rate and that the later upswing in harvest was due to more recent supplemental stockings.

Although black bullheads were not stocked by biologists they always seem to show up, probably from well intentioned anglers or watershed drainage. Because Barber is not a muddy lake, therefore allowing bullheads to be preyed upon by other fish, their populations don't get out of hand. In fact, while bullhead harvest numbers stayed somewhat low, their excellent condition made them a popular item. Their average weight went from better than a pound in 1970 to  $1\frac{1}{4}$  pounds in 1971 and  $1\frac{1}{2}$  pounds in 1972.

**The most interesting fish story** at Barber, however, is that of the bluegill. Biologists still can't figure out why bluegill harvest behaved as shown by the creel census.

Creel census figures showed only about 2,200 bluegill caught in 1970 and 2,500 in 1971. But the bluegills being caught were in top condition, averaging about  $\frac{1}{2}$  pound apiece each year. Test nettings by biologists showed a lot more bluegill were available than what anglers were catching.

It wasn't until the third year that bluegill fishing took off, and then it really went! In the third year of the study, 23,400 bluegill were caught (10 times as many as the year before) and they averaged better than  $\frac{1}{2}$  pound apiece. According to biologists, bluegills should have followed the same general harvest trend as the bass, fast at first then tapering off.

**Indications are that bluegill fishing** has slowed quite a bit this summer at Barber, this fitting a more normal trend downwards for the bluegill until special management steps are taken.

Bluegill are both the bane and blessing of managing a state fishing lake.

Biologists test net various water to gather data on fish populations.



Ken Stiebben



On one hand, they are popular game fish if they grow to a good size and because they are prolific spawners, the young of bluegill are valuable food items to bass and catfish. Yet, if correct management is not adhered to for one reason or another, bluegill population can get out of control. The next thing you have is overpopulation and stunting. Bluegill then lost their value as a game fish and they crowd a lake so much they tend to eat other young game fish out of house, home and sometimes body!

While one practice of fisheries management, stocking, provides for the establishment of fish (*see KANSAS FISH & GAME*, May-June, 1973, for article on stocking) it takes other management efforts to maintain these populations so anglers can harvest them. The reasoning behind this is sometimes so obvious it may escape the casual observer. Simply stated it's like this:

Lakes in Kansas are not naturally existing, man put them here. While bass, channel cat and bluegill may well have existed in Kansas without the aid of man, it is not the nature of these fish to exist in lakes in the number and size which fishermen now desire. Therefore, to provide them in the number and size that fishermen desire, they have to be stocked and managed through artificial means.

Control of lake vegetation has been one of the major management problems of state lakes in Kansas for a long time.

Herbicides are used to knock back cattail, lilies and bull rush which then affords anglers better access to the shoreline. In addition the removal of these plants helps keep bluegills from overpopulating. Without shoreline vegetation to provide shelter from predators like bass and channel cat, bluegill numbers can be held in check. That is, if too many predator fish aren't caught out of the lake.

Fertilizers serve as a source of nutrients to the water which in turn makes for lush "blooms" of plankton. The plankton blooms shield the sunlight from penetrating the water and therefore cut down vegetation growth (or escape cover). In addition, plankton blooms serve as a food source at the bottom of the food ladder, eventually showing up in better game fish populations higher up the ladder.



Shorelines are seined periodically to determine growth rates of small fish.

As fisheries management techniques advance, new and more efficient methods are being used to control vegetation and provide anglers with better access to the water.

Deepening the shoreline of a lake and piling the spoils of the diggings into fishing jetties is not new, but it is being used more and more. Once considered too costly, if shoreline deepening is viewed as a capital improvement and is spread over a 50-year repayment period, it can become a fairly cheap replacement of herbicide and fertilizer application.

For example, there is a proposed plan on the books for Barber which calls for massive shoreline deepening to cost about \$10,000. Comparatively annual costs of herbicide and fertilizer application is about \$1,000.

Defraying the \$10,000 shoreline project over 50 years, even with interest, would cost only about half as much as the herbicide and fertilizer program it replaces. But there are other considerations which have to be taken into account to determine whether or not Barber's shoreline will be improved.

Taking one last look at the creel census figures from Barber, there's

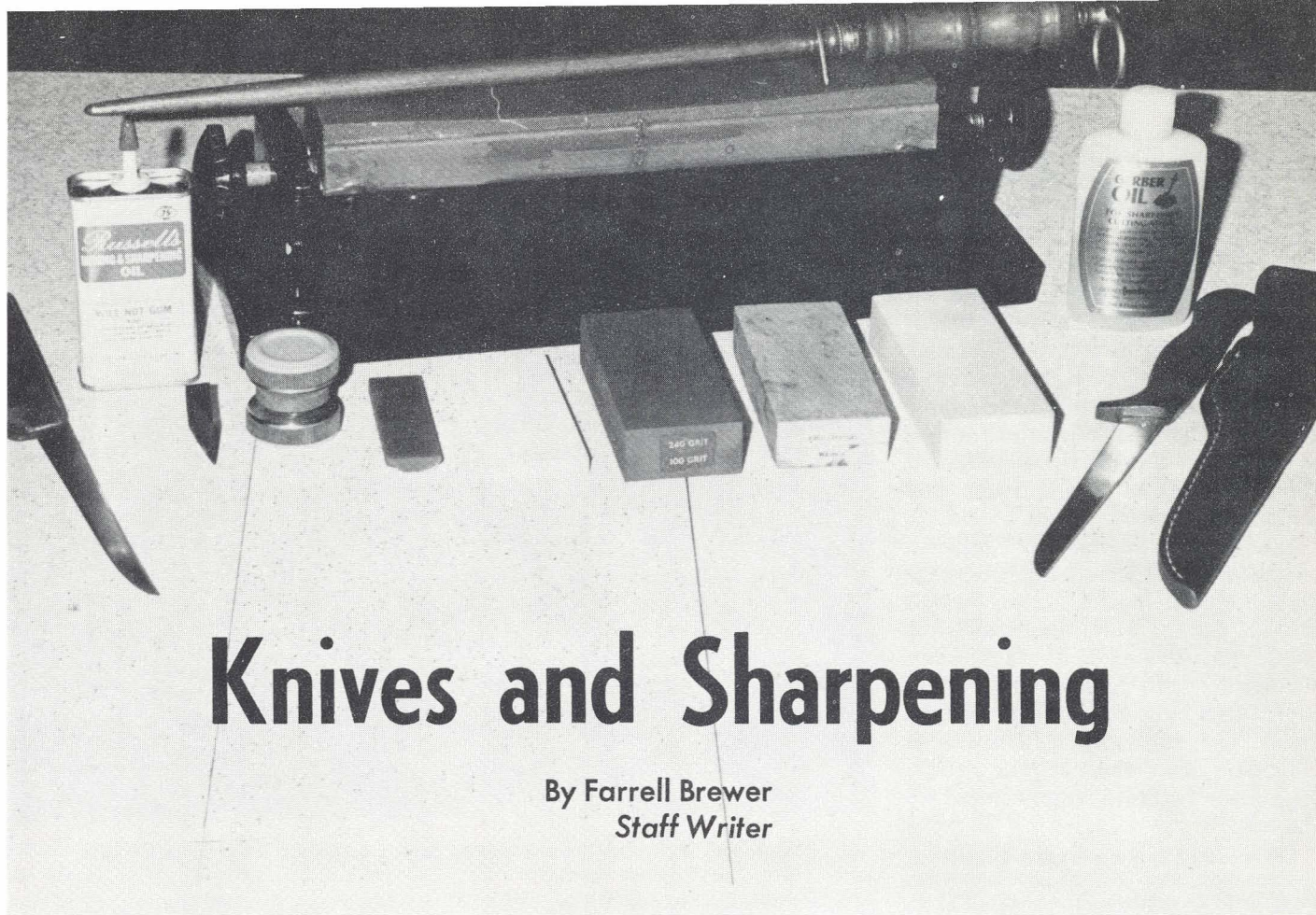
another way to view the output of the lake. The American Fisheries Society has developed a table of figures showing the value of certain sizes of certain species of fish, this value being what it would cost to replace the fish through artificial propagation. As it pertains to Barber, these values are:

\$2.50 for a one-pound bass  
\$1.75 for a ½-pound bass  
\$1.25 for an 8-inch bluegill  
\$1.00 for a 7-inch bluegill.

Applying these values to the total number of fish caught at Barber we find that during the three years of the study, anglers extracted from the lake a total of \$71,400 worth of fish! At the same time, input for the three-year period amounted to about \$41,000.

From this you can draw a number of conclusions, one of which could be that Barber State Fishing Lake has produced some fine fishing, enough so that it returned about 75 percent over and above the cost of three-year investment (or input). That in itself is pretty good justification for the lake's existence, not to mention the hours of excitement, relaxation and learning that are always generated from a properly managed body of water.

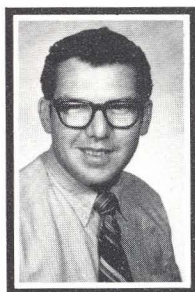




# Knives and Sharpening

By Farrell Brewer  
Staff Writer

**T**HE SELECTION and sharpening of a knife remains a mystery to many. This need not be the case. With a little practice one can master the art of sharpening a knife. The selection



Brewer

of a knife poses more of a problem, but not one the average man can't solve. First, one should become familiar with knives and what it takes to make a good knife.

The most important part of the knife is the metal from which the blade is drawn. There is quite a bit of controversy among knife manufacturers as to the best steel to use in knife making. However, one item they all seem to agree on is that the highest quality steel available has to be used to obtain a high quality knife. Some manufacturers use stainless steel, while others use high carbon tool steel in their knives.

Once the steel is selected, the de-

sign of the knife is the next step. One thing a person should look for in selecting a knife is that the tang, or that part of the knife the handle is formed around, is forged in one piece with the blade and extends the length of the handle. In some knives the tang does not protrude through the handle, and therefore they are not as strong as those that do.

In wooden handle knives one can easily determine the length of the tang. Watch for the number of rivets in the handle; generally, manufacturers place a rivet at the end of the tang. On moulded handle knives it sometimes is not possible to determine the tang length; here one must read the manufacturers to determine the quality of the knife. If literature is not available, consult and question the salesman about this quality in a particular knife.

The knife that today's sportsman chooses for himself will vary. The choice should be based upon the task for which the knife is to be used. The variety of designs, shapes and lengths are staggering to contemplate and

confusing to the average man. There is not, sad to say, any one all-purpose knife, although some knife makers claim they make a utility knife. There are some that come close, but obviously one can't skin a rabbit and an elk with the same blade.

First, one should decide for what purpose he is going to use the knife he plans to buy. Let's say, for example, he needs a knife to fillet fish with. One shouldn't buy the first knife he looks at. Ask a friend who has one what he likes and dislikes about his knife. He may say that it is too stiff, or dulls easily. If this is the case, steer away from that particular knife. In a fillet knife, I look for a flexible blade, and one that holds its edges well. Also, I look for a knife that has a very fine bevel (no more than 20°); this allows the knife to make a thin cut through the fish and get close to the backbone.

The fillet knife I finally selected has a flexible blade and is sharpened on a 15° bevel. It is a Gerber Coho, and is one of the few knives sharpened on this bevel. Most are sharpened on a



20° bevel. If the knife is not made of high quality steel, this is a hard edge to maintain. The Gerber is made of 440-C stainless steel and holds a sharp edge through many uses. Even with this fine steel, periodic touch-ups and sharpening are required to obtain the full benefit of blade performance.

Another feature I like in the Gerber knife is the handle. It is constructed of solid cast aluminum with a non-slip surface that is ideal for filleting fish because the knife can be held firmly, even when one's hand is wet and slimy.

If a knife is needed that will cut directly into big bones at a 90° angle one should be selected that is sharpened on a 20° or greater bevel since this type will maintain the cutting edge longer.

If a person is completely in the dark about the type of knife that should be selected for a particular job, some expert help should be sought. This is readily available in most Kansas communities. Many sporting-goods stores located throughout the state have excellent knife displays and their clerks are usually knowledgeable on what knife is suited for certain tasks. One might also check with the local butcher shop. The butcher makes his living using knives, and is familiar with what knives are suited for what jobs; he can lend some excellent help in the selection of a knife.

Knives range in price from the old dollar-and-a-quarter pocket knife to the \$600.00 custom-made knife. The latter is usually purchased by the collector rather than the average sportsman. This is not to say that the \$600.00 knife is not a good one, but that a ten-dollar will do the same job as well.

There are some DO's and DON'T's after a knife has been selected, these apply to all knives, whether it be the housewife's kitchen knife or the big game hunter's knife.

DO keep a knife clean and dry; this should be done after each use.

DO keep a knife sharp; a sharp knife is safer than a dull one because it easily cuts where it is supposed to.

DO keep a knife in a sheath; this will protect the cutting edge. This

need not be an expensive leather sheath. I made sheaths for our kitchen knives from cardboard. Simply lay the knife on the cardboard and trace the outline, double it and cut it out. The open edge can then be stapled or sewn together and the knife inserted, keeping the cutting edge away from the staples.

DON'T joke or horseplay with a knife.

DON'T throw a knife, as it can easily be damaged or damage someone else.

DON'T use a knife for a pry bar, screwdriver or hammer.

I stated, "DO keep a knife sharp"; now for some methods to do this.

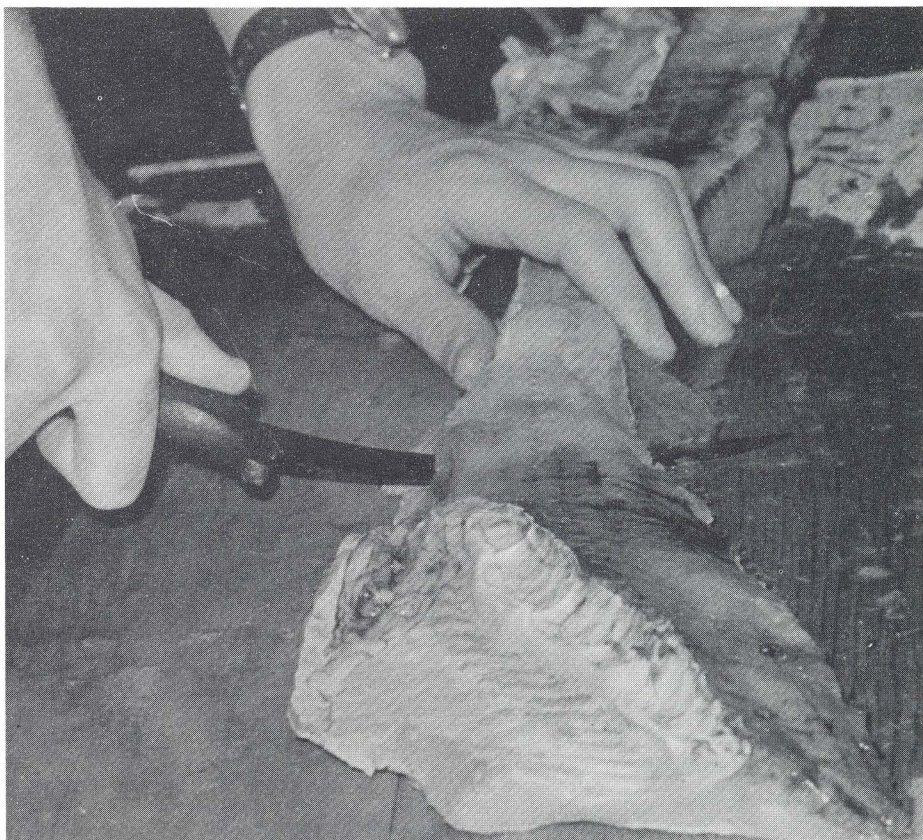
To sharpen a knife, one will first need some equipment. Here there is a wide selection from which to choose, and also there are areas of disagreement among those who select and use sharpening equipment. I have found that there are three essential pieces of equipment one must have to do a good job of sharpening any blade. These

are some type of a stone, good sharpening oil and a steel.

The dullness of the blade to be sharpened will determine which stone to choose for the task. If the blade is dull and the bevel is established, one can either progress to a finer grit carbide stone or a natural stone. I chose the Washita soft Arkansas stone to work my knives; this stone will allow one to put a fine edge on the blade and will last the average person a lifetime.

I mentioned that a coarse carbide stone may be used to reestablish a bevel, but I would be remiss in my duties if I did not point out that some experts disagree with this method. A. G. Russell of Fayetteville, Arkansas, who definitely should be classed as an expert in the knife field, recommends that a good stone should be used for sharpening, not for grinding a bevel. He states that the proper bevel should be established with a file or the proper power equipment. He also recommends that if one has a high quality knife with a badly

A keen-edged knife makes simple work of cutting jobs like fish filleting.



Farrell Brewer



abused, nicked and battered edge that is too hard to file, it should be returned to the maker to have him re-establish the bevel. I concur with this if it is an expensive, high-quality knife, but if the knife is of lesser value and it would be more expensive to return the knife to the maker than it is worth, I recommend starting it on a coarser stone and reestablishing the bevel oneself.

**A good rule of thumb** to follow in selecting a stone is choose a stone at least an inch longer than the knives to be sharpened regularly. The greater length will help save time but will not put a better edge on a knife.

A stone should never be used dry—always use a light, non-gumming oil on the surface during sharpening. Do not use any oil that contains molybdenum disulfide or graphite as this will eventually completely clog the surface and glaze the stone. There are sharpening and honing oils on the market and I strongly recommend that these be used.

**The last item of equipment** necessary for knife-sharpening is a good steel to put the final touches on the blade. Steels, just as other equipment, come in a variety of shapes and sizes. One thing I look for in a steel is smoothness. Some are made with ribs or file-like teeth on them. One might as well use a file as to use this type.

**Now that all the necessary equipment** has been described let's move on to the sharpening process. First, make a sharpening stand for the stone. This can be accomplished by using a block of wood and quarter-round moulding, or there are commercial stands available. A stand is necessary because hands will have to be free to work the knife on the stone.

Have on hand a rag; any absorbent material such as an old T shirt works fine. The rag is needed to wipe the surface of the stone after sharpening or before turning, and to wipe the oil from the knife blade.

**Check the bevel or angle** at which the knife is sharpened. If the knife is new, read the literature that came with the knife to determine the bevel, if not, check the bevel by placing the

bevel on a flat surface and using a protractor determine the angle.

If the knife is designed with a 15° bevel, sharpen it on this bevel, but don't try to convert one with a 20° bevel to a 15° bevel. This will only make the edge weaker, not make the knife sharper. The important feature is being able to hold the same angle, stroke after stroke. Only practice gives one this ability.

**Ready to start sharpening knives?** It is wise to practice on the kitchen knives first. Not only will this save one's good knives but the lady of the house will be pleased to have a sharp set of knives for her use.

Let's try one. The stone and stand should be horizontal to the person using it. Grasp the knife handle in the right hand, place the left-hand fingers on the back of the blade. Now place knife at the right-hand end of the stone with the heel of the blade near the lower right corner. Draw the knife across the stone to the left and at the same time toward oneself. This enables one to do the entire edge in one stroke across the stone. The knife is drawn across the stone just as if taking a slice of the stone. Never draw the knife backward or away from the cutting edge.

**As the curve of the knife** comes into contact with the stone, raise the handle slightly so that the blade maintains its bevel with the stone—the stroke should finish with the point in the lower left corner of the stone. It is important that as much pressure as possible is used and that the blade is not rocked. Reverse the knife and use this same action from left to right. Alternate sides for 5 to 10 strokes to a side, then check the edge. If it is sharp for its entire length, the process is finished. It is likely, however, that the curve and tip will not be as sharp as the straight part of the blade. If this is true, then repeat the above, giving special attention to those portions of the blade that aren't satisfactory. When finished, wipe the surface of the stone clean. If many knives are being sharpened at one time, turn the stone from time to time and add oil as needed.

Now the blade should be steeled.

To do this, simply take the steel in one hand and the knife in the other and maintaining the same angle as the blade was sharpened draw the knife across the steel 5 or 6 times on each side.

**If a steel is not available** one might use the method our grandmother did; draw the knife across a crock jar or bowl. This will obtain the same effect.

After all this discussion about the equipment necessary to sharpen a knife and the steps to take to properly use this equipment, please do not become discouraged. Remember, only with practice will one become proficient at the art of knife sharpening.

**Yes, it is possible** to obtain a cutting edge on a knife without all of this trouble. Many manufacturers make electric and all other types of knife-sharpening gadgets that they claim sharpen knives. In my opinion, most are designed to ruin a blade. The electric sharpener turns at too high an rpm and will take the temper from a blade; other types will only temporarily sharpen a knife. There is one which is about the size of a silver dollar that is designed to be rolled on a flat surface, and has a preset bevel. If this type is to be used, check to be sure both bevels are the same. To use this sharpener keep the blade pressed against the bevel at all times.

When one uses a knife several times, the bevel can be straightened by returning it to the steel without going through the entire sharpening process.

**I would like to point out** that no one is a natural-born knife sharpener. But they can do just as I did. I read literature from the Gerber knife company and from A. G. Russell who manufactures some of the best Arkansas stones around, and then I tried my hand at sharpening knives. I did this with some success, but I still wasn't satisfied. Where did I go from here? Well, I went for some expert advice close at hand. I asked my friendly butcher, Hank Lewis, to teach me the art of knife-sharpening. And if I follow his advice and keep practicing, maybe—just maybe in a few years I can become as proficient as he is.

Good luck!





Coyote by Vic McLeran



