

KANSAS FISH & GAME

JANUARY/FEBRUARY 1978



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KANSAS FISH & GAME

JANUARY/FEBRUARY 1978

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Opossum and sun in ice-covered trees by Ken Stiebben.

OBSERVATIONS

on the shooting sports

THE HUNTER— WILDLIFE'S BEST FRIEND

By Grits Gresham
Shooting Editor, Sports Afield



I'm a hunter and make no apologies for being one! There are quite a few reasons why no apologies are necessary, but a very practical one is that I play an important role in the wildlife management programs that help to maintain all kinds of game animals at healthy and abundant levels.

Commune thee with nature if you will. With you, I'll tingle with pleasure at the sound of an elk bugling or a beagle barking, at the aroma of high country spruce or brackish marsh, at the sight of golden aspens in the fall or of a wedge of mallards turning in to the pattern. I'll glow with smug satisfaction each time I share a wilderness campfire with a fine companion.

But let it be known that one of my greatest pleasures is in the hunting act itself—the very moment the game is bagged. . . or missed.

That's one of your greatest pleasures, too, or I doubt that you would be reading this. Perhaps you don't think of it quite so realistically, but it's there all the same. If you have doubts about this, just think back to the last time you built a blind, rigged and set your decoys, tuned your call and were in place before daylight on a freezing morning—with-

out a gun—just to watch ducks.

I don't know any hunters who do that!

I love to watch ducks, and calling ducks is one of my favorite sports, yet without the cold comfort of a smooth-bore under my hand, I don't have the incentive to go through the considerable work and discomfort of duck "hunting." Without the prospect of shooting, even the probability of shooting, I would not be nearly as interested in whether there were any ducks or not. Or deer, or antelope or rabbits.

My interest certainly wouldn't be sufficient for me to end the season each year with hunting licenses from several states.

In all of those states, I killed a fair share of game and thoroughly enjoyed it all. Best of all, each species of game I hunted and killed is part of a regulated harvest that helps ensure that no species will overpopulate its range.

Hunting is not immoral! Hunting, per se, is not cruel! Hunting is conservation, is wise use of a natural resource; and it certainly provides a tremendous amount of wholesome outdoor recreation.

Now that we've said that, we'll leave it. You know it, and I know it, but—as is too often the case with people in the outdoor field—it's an exercise in futility for us, who are already converts, to swap this info back and forth.

But there are many in this country who do think that hunting is both immoral and cruel and who would end it by law if they could. It is for these that we must have sound answers for their arguments. Here are some:

1. Most game cannot be stockpiled, and a majority of each high-turnover species (rabbits, squirrels, pheasants, doves, quail, etc.) will not live a year whether hunted or not.

2. Hunter harvest comes largely from game which would be harvested by nature anyway.

3. Game habitat has definite, limited carrying capacity, and not shooting the animals or birds on it won't make it carry more. To the contrary, allowing a habitat to exceed its carrying capacity of big game will invariably result in decreasing the carrying

capacity through range destruction or deterioration.

4. Mortality from all causes—disease, predation, accidents and hunting—is greatest in a dense game population; and losses from all of these causes become progressively less as a portion of the population is removed by hunting.

5. Reproduction is more successful in a game population which is below the carrying capacity of the range.

Each year, hunters contribute hundreds of millions of dollars to ensure the well-being of game. They pay millions to state game departments for licenses, all of which is used for the benefit of wildlife; millions more to the states each year through the Pittman-Robertson Federal Aid to Wildlife programs, via an 11 percent excise tax on sporting arms and ammunition which the sportsmen themselves requested and which has resulted in the acquisition and development of several million acres of land for wildlife. They contributed more than a hundred million dollars for duck stamps, which has been used for waterfowl research, protection and habitat purchase; contributed millions of dollars to Ducks Unlimited for the same purposes; and sportsmen spend more than \$50 million each year on developing private lands for wildlife.

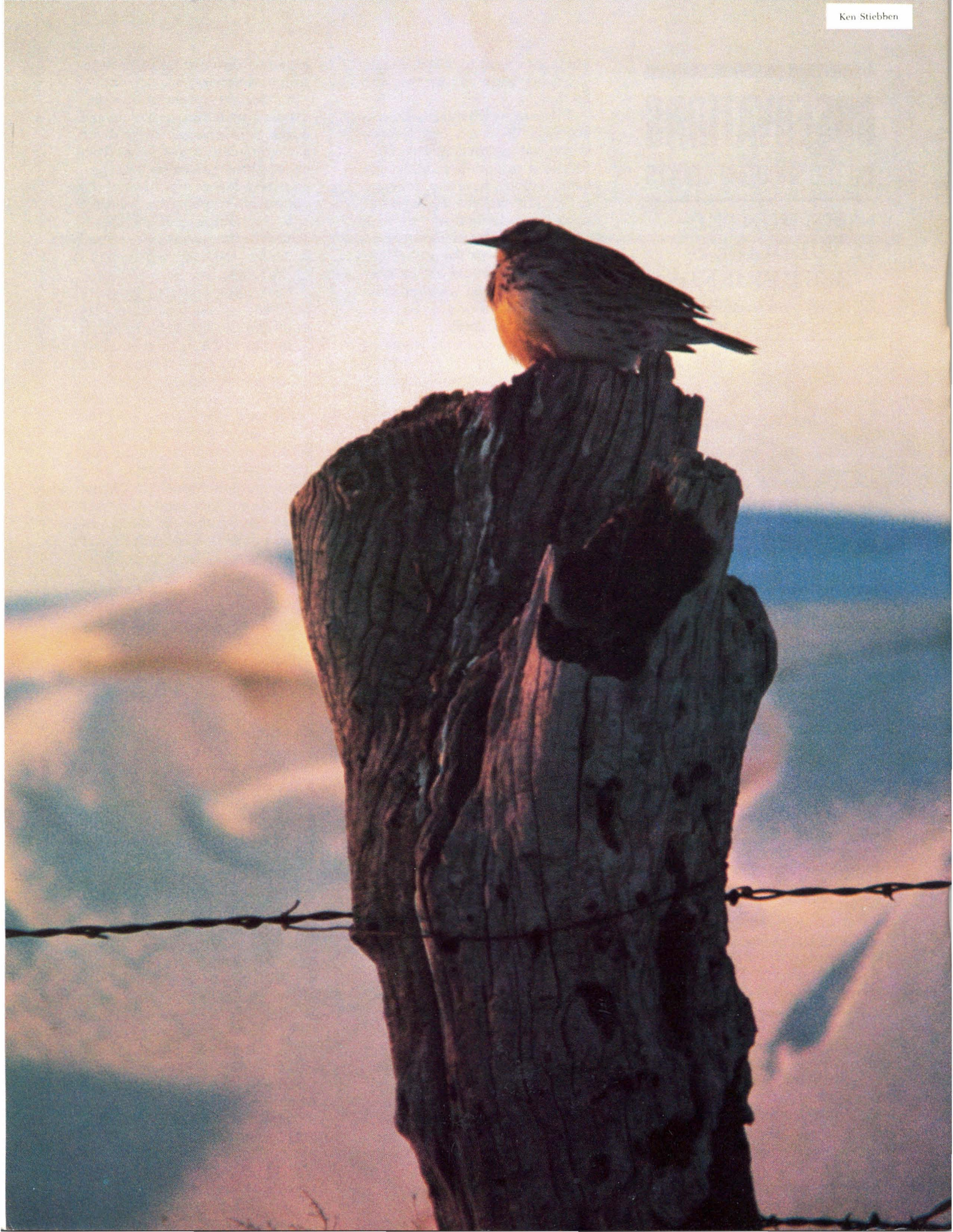
All forms of wildlife, not just the game species, benefit from the millions of dollars spent by hunters and from the millions of words of protest which they utter against the inroads of civilization upon wildlife habitat.

Hunters do their harvesting—their killing, if you please—for only a few months of each year. They do it at such time, in such manner and in such quantities as have been decreed by professional wildlife management personnel.

The results of their game preservation and management activities, however, are available for the public to enjoy year round.

I don't try to convert people who think that hunting is not for them, but I do use the above facts to prevent them from forcing their views on me.

Provided as a Public Service by The National Shooting Sports Foundation.



CURES

WE HAVE a strange way of dividing up a year. The astronomers take care of most of the job for us with a few calculations and a quick look through a telescope. They tell us when the earth will start to shift, and we mark it down on the calendar along with Lincoln's birthday and Easter. Then we forget about the seasons and head for the office. It's a boring way to navigate through time.

We didn't always do it that way. When we hunted for a living, our empty bellies told us how fast winter was passing. We anticipated the thaw with a keenness only frostbite and starvation could bring. And it wasn't much different when we turned to farming. Even today, the farmer doesn't need an almanac to tell him how far the winter's gone. He knows it's begun on the first day he has to chop ice out of his stock tank; he calls it half done with the arrival of the January thaw, and not too long after that, he can smell the end in a damp south wind.

When did we lose sight of the constant change that flows through each season? It must have been some time after we invented the thermostat when we no longer woke up cold on a winter morning because the fire had gone out. Or maybe it was when more of us got to looking at winter through windows than were squinting at it through frozen eye lashes. In any case, it seems today that boredom, not hunger or cold, is our main winter complaint.

There is a cure. Put on a coat and step out into the raw, late February evening. The wind a little colder than you expected? Never mind. The chill will take your mind off cabin fever and get you looking toward spring. Don't run for your calendar to find out when it's coming: watch for the spring bringers.

The first stirrings begin well before the real warm-up. Seventy-five thousand white-fronts, half a million blues and snows, and 45,000 Canadas come up from the old Gulf coast wintering grounds to join hundreds

for

CABIN FEVER

Chris Madson



Leonard Lee Rue

of thousands of other geese that have wintered in Oklahoma and Kansas. Their first assault on winter begins in late January or early February; the battle line is the 35 degree isotherm, the boundary of melting weather across the Midwest. By the first part of March, numbers of geese in Kansas are declining. The isotherm passes and the geese pursue it relentlessly past the arctic circle to the deltas of the MacKenzie, the McConnell, and the Anderson, the great rivers of the north-central tundra.

The ducks aren't far behind. Some, like the mallard and wigeon, spend the winter in Kansas and Oklahoma. Their numbers begin to build in early February as other puddle ducks move in from the south. Others, like the canvasback and redhead, linger a little longer in their traditional wintering grounds along the Gulf coast and reach peak numbers in Kansas in mid-March. The blue-winged teal, hurrying north from Central and South America, pass through sometime around the end of March.

If the traveling talk of a wedge of Canada geese or the hiss of wind in a flock of passing ducks sends shivers up your spine, there's another even stranger wilder migrant you should listen for—the sandhill

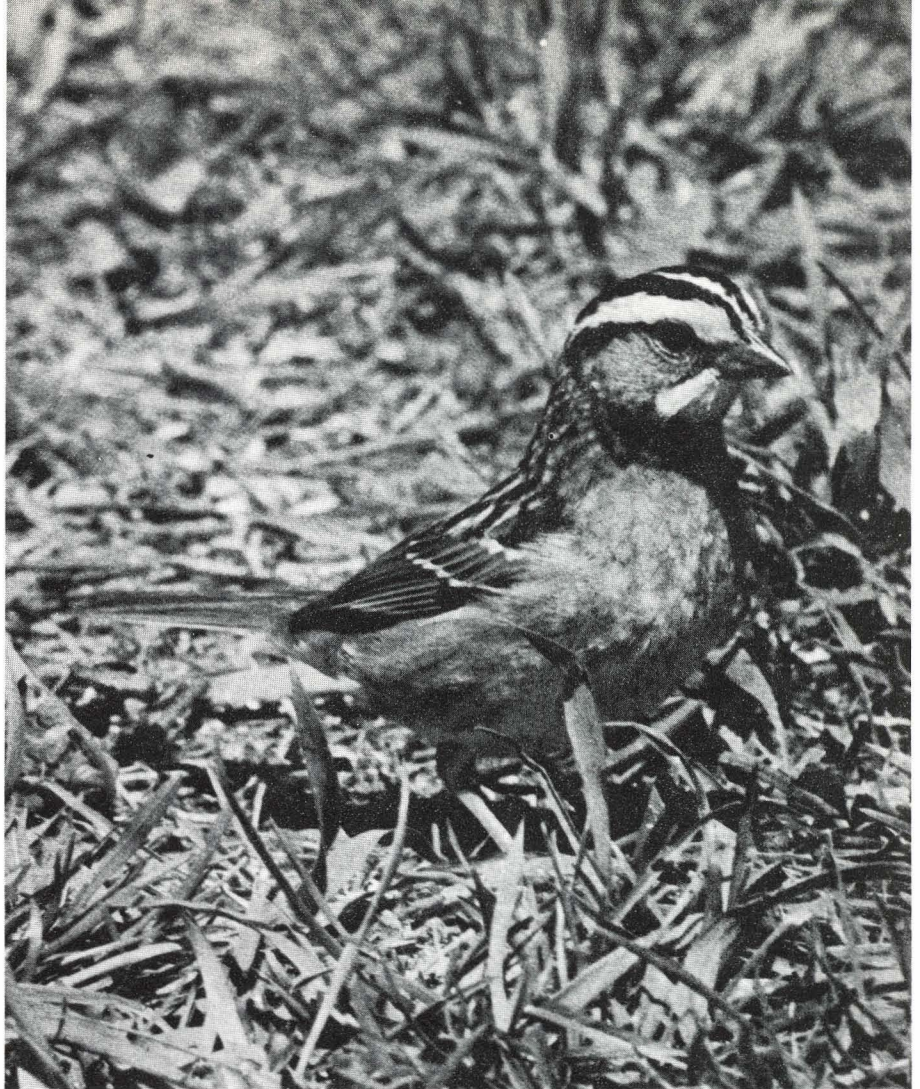
crane. If you're lucky, you'll be walking over a ridge of prairie grass in a few square miles of marsh when you first hear him. The sound is older than time itself. An observer in 1915 said this about it: . . . "it seems to suggest something prehistoric—such a call as one might expect that our far-gone ancestors heard in the days when pterodactyls and their kind flew about the marshes." Stare up at the sky for ten minutes or so, and you'll probably see the source of the sound—a diagonal line of six or eight dots, impossibly high. The bird itself is as impressive as its call, standing four feet tall with a wingspread of six and a half feet. More than a quarter of a million of them will pass over Kansas sometime in late March or early April. Some will stop; many more will continue north without a pause. It's not unusual for Quivira and Cheyenne Bottoms to have as many as 5000 sandhills feeding and resting at one time or another during the spring. They're a bird guaranteed to make you forget a long winter.

For the house-bound hunter or naturalist, the waterfowl migration is a perfect excuse for a Saturday walk or a weekend drive to a refuge or reservoir, but it doesn't do much to liven up a back yard to city park. The sound of passing wings and the yelp of geese will

Flying into the teeth of late winter, snow geese often arrive on their breeding grounds before the melt. They may be driven back south by unexpected late blizzards, but as soon as the weather moderates, they point for the arctic again.



Leonard Lee Rue



Leonard Lee Rue

blow down out of a wild February sky for a few seconds, then fade into the North. It's an exciting sound that announces the arrival of spring in wild places, but most people want a surer sign that the warm weather has come to stay.

That sign is the arrival of the dickeybirds. They come in a tide that begins sometime in early April and continues until the end of May, dwarfing the waterfowl migration. Some of the travelers come from as far away as Argentina and the Antarctic. One of the first to arrive is the companion of the nighttime catfish fisherman, the whippoorwill. In most years, you'll start hearing him down in the bottoms around the middle of April. It's just about that time when the house wren shows up in most back yards.

The mosquito-eating squad comes in through April, too. The purple martin turns up at the tail end of March, followed by the barn swallow around April 20 and the bank swallow in the first week of May. The night hawk generally makes his first appearance over some well-lit, bug-attracting place on an evening around the middle of May.

Sometime in late April or early May, another group

of spring migrants appears. One morning you'll walk out on the front stoop after the paper and get the vague feeling that something's different. Of course, it's warmer than it's been for quite a while, and suddenly it's noisy outside. The trees and bushes are loaded with wren-sized birds, accompanied by an assortment of buzzes, chips, and trills that seem to come out of thin air. The warblers have arrived.

The most efficient way to get a look at those critters is to stalk them early in the morning with a pair of field glasses. The most enjoyable way is to find yourself a creek with some brush and a little timber, lie down in a sunny place, and take a nap. When you wake up, look around carefully; you'll probably see half a dozen different kinds of warblers hopping around in low branches. The variety of their colors and patterns is hard to believe. They look like imports from the Amazon, and that isn't too far from wrong. The warblers probably started out as jungle birds in Central America. Bit by bit, they began to move north during the summer to take advantage of less crowded feeding and nesting places, moving a little farther every year until some species were commuting from Panama to

Columbine, a common spring flower in the heavy timber of eastern Kansas. It appears on rock faces and creek bluffs in early spring and is gone by the time most other plants leaf out.

Canada and back. It's a long way for small birds to fly just to bring word of spring to a Kansas back yard.

The champion Kansas rambler is probably the bobolink. He shows up in the Midwest around the middle of May after a flight from the Argentine that has carried him over a 500-mile stretch of the Gulf, through Jamaica and Cuba and on to the Central Plains. On his breeding grounds, the male defends his territory with a song and flight display a hundred feet above the grass. Nobody's ever been able to describe the song. About as close an imitation as I've seen is the bird's scientific name, *Dolychonix oryzivorous*. Say that over three times, real fast, and you'll have an idea of what the sound is like. Here is an ornithologist's interpretation: "oh geezler, geezler, gillipity, onkeler, oozeler, ooh." Another bird man warns that, although this song description is essentially accurate, it's just the beginning of the performance. The bird may continue for some time, he says, sounding like "a hysterical music box". When it comes to spring entertainment, I rate a singing bobolink at least three cuts above the May reruns.

With all the spring fanfare in the sky, it's hard to pay much attention to what's happening on the ground, but the goings-on among the plants are about as spectacular as the spring migration. The spring blossoms start sometime in the first half of April with a purple haze on the wooded hillsides of eastern Kansas—the redbud. On the prairies, the sand plum flowers at about the same time. Then April comes on with a rush. The names of the spring flowers are familiar, sweet william, lily-of-the-valley, columbine, and such, but the blossoms themselves often go unrecognized. Like most wild things they occupy unobtrusive niches on rock faces or timbered hills and only appear when you go slow and look for them. That's not to say that they're plainer than the tame varieties. It's just that they're surrounded by the infinite detail of an oak woods or prairie. They appear unexpectedly, one by one, and they're worth more for that. As any hunter knows, it's the elusive game that's most worth hunting. Keep an eye open for dutchman's breeches and white fawnlilly in early April or columbine and blue-eyed grass in the first part of May; they're the prettiest of the spring bringers.

The time between January and the end of April is generally cussed as a dead season. That just goes to show that boredom, like beauty, is pretty much what a man wants to make it. There are a dozen seasons in this "dead time", each with its own landmarks. Whether you're bored or not depends on where you stand to watch time pass. Day in and day out, things are just about the same in a living room, but out behind the house, there's always something going on.



Ken Stiebben

ICE FISHING

for

Stipeta



By Bruce Zamazla

IT'S ONE of those bright, frozen January days, too late for bird hunting and too early for spring fishing, the time of year an outdoorsman dreads. Good excuses for getting out of the house are hard to come by, but, as desperate as many sportsmen are, most draw the line at ice fishing. What is this nonsense, standing around on a frozen lake poking holes in the ice? The idea brings to mind the frost-bound lakes of the far north, dotted with shacks on runners and men bundled up in parkas tending their lines. It's a fine sport, the Kansas fisherman says, for places where it's winter six months a year, where confinement and boredom drive men to do things they wouldn't normally consider . . . like

drilling holes through twenty inches of ice to feed the fish! But in the Sunflower State?

Ice fishing isn't new to Kansas. Not too many years back, a favorite technique on Kansas rivers was to stomp downstream toward a hole in the ice where one of the gang stood with a gig, spearing catfish as they swam by. The method worked so well, it's since been declared illegal.

Legal hook-and-line ice fishing in Kansas was limited for years by the number of lakes in the state. Massive federal and state lake-building programs have changed all that, providing hundreds of places to try the sport. Still, ice fishing has been slow to catch on.



Ken Stiebber

The handful of fishermen on the ice at Webster, Cedar Bluff, and Wilson Reservoirs and on a few state lakes and ponds drew strange looks from passersby. If you were interested in fishing through the ice, you made your interest known in whispers in dark, quiet corners. If the wrong people had found out, you might have been committed.

Lennard Olson of Garfield, Kansas brought the ice fisherman out of their closets in about half an hour on February 15, 1975. He was fishing the Cedar Creek area of Wilson Reservoir, a popular spot among ice fishermen, when he hooked 18 pounds, 8 ounces of striped bass, a new state record. Suddenly, ice fishing

didn't seem like such a bad idea. People were out on the ice cutting holes with picks, axes, chisels, even chain saws, but before things could really get going, the ice melted.

Few stripers were caught through the ice during the next winter because there wasn't much ice to fish through, but in the winter of 1976-77, things really livened up. Ice formed on the upper part of Cedar Creek in the third week of November. It was thin, but ice fishermen were undaunted. Some of them approached the ice shelf in boats from the open water, pushed as far into the ice as they could, and fished from the boat. Others pushed small john boats out on

There's as much waiting as there is catching when you fish for stripers through the ice, though strikes from white bass and crappie sometimes break the monotony. The waiting's always easier with a little shelter from the wind and a catalytic heater to take the chill off.



Russell Daily News

the ice. Both approaches were successful. The open-water boats caught crappie, white bass, and a couple of four-to-six-pound stripers. The men on the ice took bluegill and crappie.

The early ice melted, but, when it reformed in December, the fishing got even better. Fishermen usually catch white bass at the mouth of Cedar Creek and in the river channel about half a mile on either side of the creek, but, in 1976, they started catching stripers. On one day in January, I saw fifteen stripers pulled through the ice. One I didn't see weighed 22½ pounds and was caught by none other than Lennard Olson.

During December and the first half of January, almost all the stripers taken were males weighing be-

tween four and twelve pounds. Eventually, the fishermen moved down the channel in search of better water, and it wasn't too long before they found it. In late January and early February, larger stripers started showing up on stringers. Several in the 25-pound class were caught, and at least two weighed over 28 pounds. Fred Strecker of Russell took a striper weighing 28 pounds 1½ ounces, the largest striper ever taken from Wilson Reservoir. And, as it will happen in any group of fishermen, a number of anglers reported that they had nearly landed even bigger fish. One even told me that a striper five feet long jumped up through one hole in the ice, ate a German shepherd that had been loafing there, then dived back into the water through another

fisherman's hole.

When all the lies had been told and the winter's fish counted, the ice anglers had caught about 300 stripers at Wilson. Most of the fish weighed from four to ten pounds and came from a 1972 stocking of 3,500 fish. Twenty-five of them were over the 20-pound mark and were the remnants of a 1969 stocking of 4,400 fingerlings. The harvest didn't dent the Wilson striper population. In the last three years, more than 270,000 stripers have been released in the reservoir.

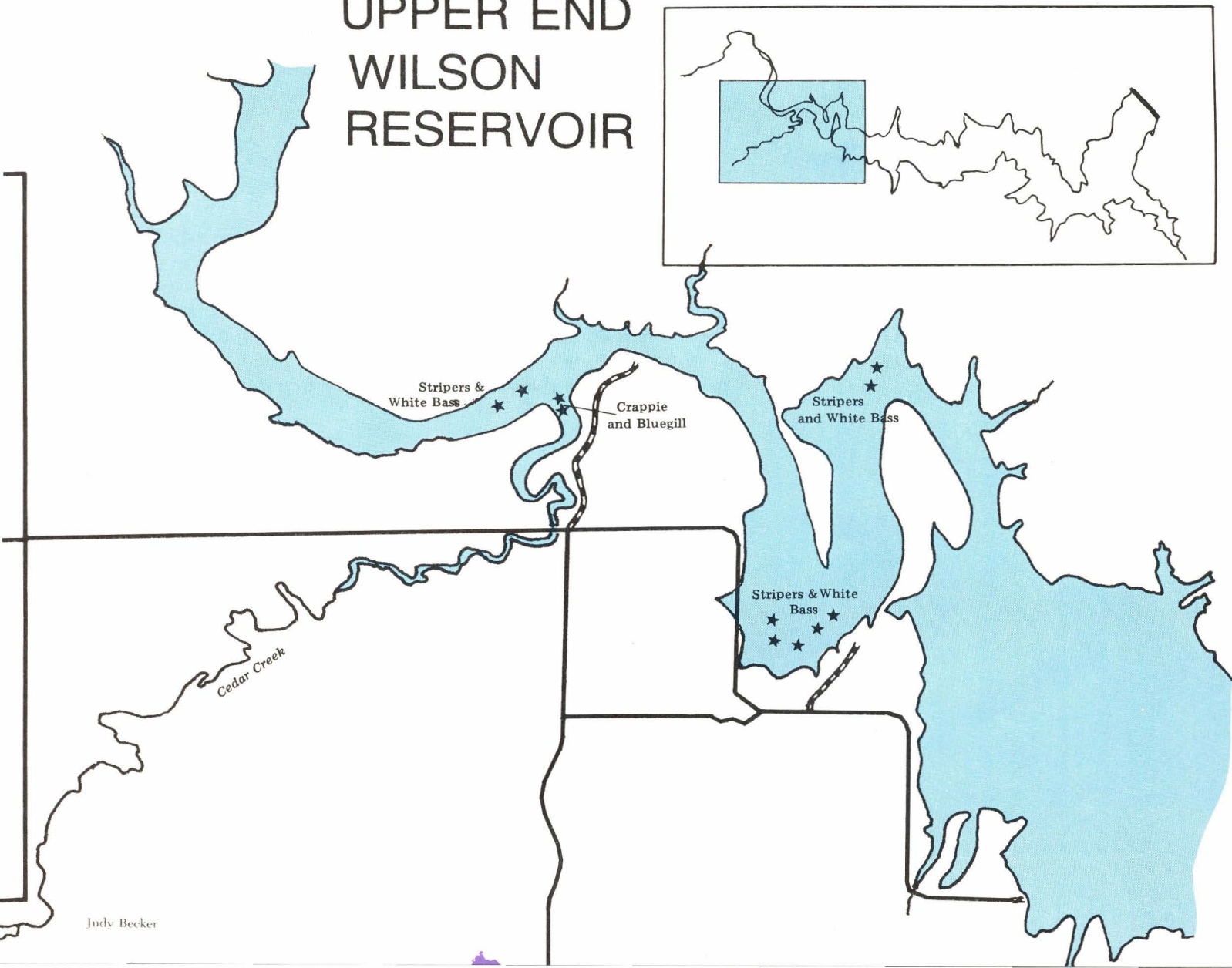
Striper action is spotty. At Wilson last year, fishermen were on the ice an average of 24 hours or three eight-hour days for every striper they caught, and it took an average of 200 hours of fishing to land one bigger than 20 pounds. On some days, there were stripers at every hole; on others, nobody caught anything.

Most of the Wilson ice fisherman use fairly simple equipment. Ordinary light spinning or spincasting tackle rigged with six to twelve pound line works fine. A few specialists use genuine ice fishing tackle—short

rods with simple spools to store line. Most winter stripers at Wilson have been caught on 1/8 or 1/4 ounce jigs. Fishermen seem to favor white and yellow, but color doesn't seem to make much difference to the stripers; they've been known to hit just about every color or combination of colors available. Most anglers seem to have the best luck working a jig slowly up and down near the bottom in ten to twenty feet of water. The stripers usually take the jig as it falls. Minnows or jig and minnow combinations are often effective, too.

With his tackle bought and rigged, the ice fisherman still has to figure out a way to cut a hole. An ax or pick works well if the man doing the chopping doesn't mind hard work and wet clothes, but an ice auger can simplify matters. There are two types of hand augers. One, the Norwegian type, looks like a wood bit with a spiral shaft. The other, the Swedish style, looks like a spoon with sharpened edges. Either kind works well if kept sharp. Most augers have two-piece handles to make storage and transportation easier. They come in sizes that will cut six, seven, or eight-inch holes and

UPPER END WILSON RESERVOIR



cost from \$13.00 to \$25.00. Local sporting goods dealers occasionally stock them, and catalog dealers like Cabela's and Herter's always have them on hand.

One day last winter while watching the action at Wilson, I saw a fisherman hook a striper that was too big to pull up through a six-inch hole in the ice. The angler held the line and offered anxious advice while his buddy enlarged the hole with an ax. Finally another fisherman came to the rescue, gaffing the fish and pulling it through the enlarged hole. After watching the confusion, I decided that a gaff and a pick or ax might be handy on a striper expedition. An even better solution might be to drill two holes side by side to make a slot. The larger hole gives a little more room for jigging as well as making it possible to get a 20-pound striper out of the water after he's been hooked.

There are a few other pieces of equipment that make ice fishing more enjoyable. A pair of warm, water proof boots is vital. I recommend thermopacs or snowmobile boots with felt liners. Ice cleats that strap to your boots may keep you from falling on your pride, and an ice skimmer, a sort of soup ladle with holes in it, is useful for cleaning slush out of freshly cut holes and removing the skin of ice that forms while they're being used. Some fishermen carry a small bottle of alcohol, not to keep their blood from freezing as you might expect, but to pour into holes a few drops at a time to keep the water from refreezing. Since ice fishing baits are usually most effective near the bottom, some sort of sounding device is useful. Some anglers use a weight on a string, but an electronic depth finder works even better—you don't even have to cut a hole as long as the surface of the ice around the transducer is wetted with a little alcohol or water.

The ice fisherman's version of a bank line is the tip-up. The tip-up has a spool for line and a trigger attached to a spring-loaded flag. After the line has been let out to the right depth, the trigger is set so that the flag flips up when a fish takes the bait. Tip-ups are

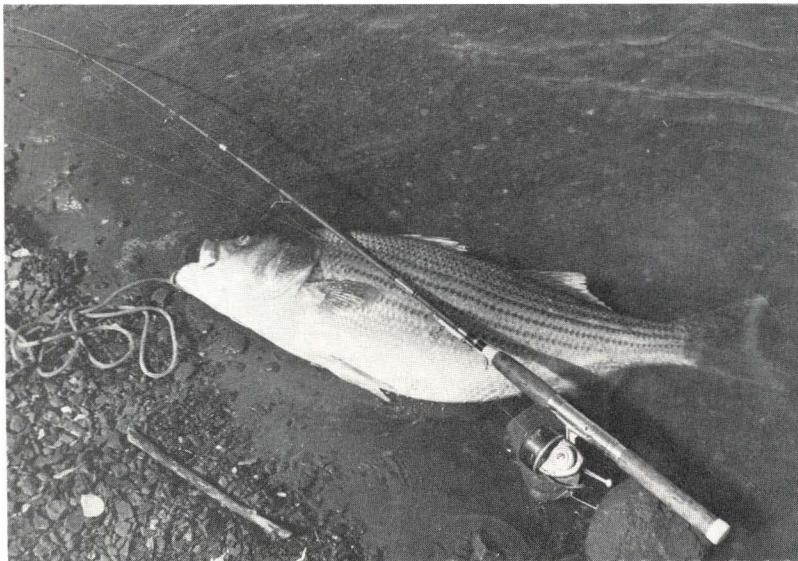
illegal on state lakes, but, on federal reservoirs, a fisherman is allowed to set as many as eight.

One last item that can save an ice fisherman a few trips to his car is a child's sled with a bucket or box to hold equipment. Pulling your kit out to your fishing spot beats carrying everything, and the sled provides a relatively warm seat while you're waiting for the big one to bite.

Probably the biggest problem facing the Kansas ice fisherman is finding safe ice. Two inches of clear ice will usually carry a lone fisherman; four inches will support a horse or several men, and eight inches will hold a car—as long as it's someone else's. However, not all ice is solid, clear ice. Snow falling on a lake as it freezes may weaken the first inch of ice, and a blanket of snow on the surface may act as an insulator, keeping the ice from getting thicker. Dark banks near the edge of the lake can cause trouble, too, absorbing heat and melting ice around the shoreline and make it tough to get to the dependable ice out in the middle. During a thaw, ice rots into a honeycombed mush as melt water percolates down through it. Because of this honeycombed structure, rotten ice remains weak even after it refreezes.

If, by accident, an ice fisherman finds himself on thin ice, he may be able to get back to the bank by lying down to keep his weight spread out and crawling for shore. Any time the ice is questionable, a boat or inner tube near at hand can be a great confidence builder. My technique for testing ice is simple; I walk out on the lake behind the biggest fisherman I can find. If he goes through, I go back.

A fair number of fishermen avoid ice fishing because of the cold. There are times on a big lake in January with a north wind blowing a skiff of snow across twenty inches of ice when most ice fishermen would have to admit that "cold" doesn't even start to describe the situation. It's amazing, though, what the first run of a 20-pound striper will do to warm you up.



Ken Stiebhen

One of Wilson's summer stripers. As big as this fish is, it doesn't measure up to the 28-pounder taken by Fred Strecker last winter—through the ice.



Ken Stiebhen

Bob Mathews

THE WHITE AMUR is a fish.

On that much we can all agree.

But trying to define the amur and his capabilities much beyond that could earn you either an agreeing nod or a loud rebuttal, depending on the point you're trying to advance and the audience at which your remarks are aimed.

Oh, yes . . . there is at least one other point of general agreement. The amur has a lot of "potential." And therein lies the source of the controversy surrounding the species.

Supporters of the amur (also known as the grass carp) cite his potential as a biological tool to combat aquatic vegetation for which he has a voracious appetite.

Those opposed to stocking the amur generally concede the fish has no equal as an aquatic weed-eater but contend not enough is known about the fish to take a chance on introducing him to their waters. To them, he's potentially dangerous.

The amur is a member of the minnow (Cyprinidae) family, of which the German carp and goldfish also are members. The original range of the fish is the Amur River in China from which it received its name. The main concentration of the species is in the rivers of Siberia, Manchuria and China which run into the Pacific Ocean from latitudes 50 degrees North to 23 degrees North. This range, if superimposed on the east coast of the U.S., would extend from Labrador to Cuba.

Until he's about eight inches long, the amur resem-

bles a shiner. At a length of about twelve inches, he looks like a chub. After that, he has his own unique appearance. The amur is long, slender, pipe-shaped, with a single fin on his back. His mouth is in the middle of his head, and his teeth are in his throat, not in his mouth. The upper part of his body is olive brown, and the lower parts are silver.

The fish has been hailed as a remedy to week-choked waters since its diet consists almost entirely of aquatic vegetation. On that diet, he grows like a teenager. His growth rate is two or three times that of a common carp; tests indicate that a ten-pound amur feeding on underwater weeds can add eight to ten pounds in six months. When he gets his growth, the amur may weigh more than 100 pounds and reach a length of four feet. Records in China say some amur have weighed as much as 400 pounds.

Why, then, aren't fisheries biologists from every state rushing out to stock the amur in waters with a profusion of aquatic vegetation?

It seems that the amur's cousin, the common or German carp, has left a bad taste in their mouths. The common carp was brought to this country in the 1870s on a wave of optimistic belief that the species would fit in well. But things didn't turn out as planned, primarily because of the common carp's ability to spawn anywhere, its habit of roiling the water, its general competition with native fishes, and its low desirability as a food fish. Ask any fisherman, and he'll fill your ear with the reasons the common carp deserves such a tacky reputation.

But, according to a growing number of fisheries specialists, the common carp and the grass carp are just not the same . . . by a wide margin.

Kansas is one state which has decided to give the new fish a chance and has begun stocking it in public waters.

Prior to the appointment of Jerry Conley as director of the Kansas Fish and Game Commission in April of 1977, the amur's introduction to Kansas waters was not pursued by the Commission. Since the fish was a relatively unknown entity, the results of naturalizing the fish were believed potentially dangerous to other species of desirable fish in the state.

But Conley was a believer in the amur, especially after seeing the results of an experiment with the fish in Iowa's Red Haw Lake. Conley was state fisheries superintendent for the Iowa Conservation Commission at that time.

Before the amur were stocked at Red Haw, a dense band of aquatic vegetation covered the entire shallow water perimeter, making shoreline fishing impossible after mid-summer when the vegetation was thickest.

Three years after that initial stocking, fisheries specialists reviewed the changes the amur had affected on the lake. They found that aquatic vegetation had been reduced by eighty percent during those three years. They also noted that, although the amur preferred the

softer, lacier species of weeds, it readily switched to other weeds after it had consumed its preferred food. The fish were found to be almost totally herbivorous with less than one-tenth of one percent of their stomach contents consisting of insect larvae.

The grass carp stocking not only solved the vegetation problem but had a positive impact on other fish species in the lake. The other species began to grow faster because of the improved feeding opportunities created by the reduction in vegetative cover.

As a result, fishermen at Red Haw Lake began enjoying greatly improved fishing success.

Jim Mayhew, fisheries research supervisor for the Iowa Conservation Commission, reported in *Iowa Conservationist* magazine that ". . . not a single detrimental effect has been documented in three years of intensive research."

Iowa officials were so buoyed by the results of the experiment that they expanded their amur stocking program to include eleven other Iowa lakes.

"In some circles, we were criticized for this approach," Mayhew wrote, "But to ignore the obvious benefits from the Red Haw stocking would be worse."

So, for the first time last year, Kansas fisheries biologists were encouraged to consider stocking amur in lakes hampered by too much vegetation. In October of 1977, the fish were stocked in Meade, Barber, Cowley, and Ottawa state fishing lakes. They were also stocked in Madison and Gridley city lakes, in the southeast Kansas strip pits, and in Cimarron National Grassland waters. These introductions marked the first time that the Fish and Game Commission had stocked the amur in Kansas.

Conley estimates that the results of the stockings won't be significantly noticeable until 1979. He points to the results of the Red Haw Lake stocking in Iowa where the reduction of vegetation was ten percent the first year, forty percent the second year, and eighty percent the third year.

Although the 1977 stockings were the Fish and Game Commission's first, the amur has been a resident of Kansas for some time.

Garnett City Lake in eastcentral Kansas is one of the impoundments which harbored grass carp prior to the Fish and Game Commission's importation of the fish. Garnett city manager Mike McDowell said they stocked their south lake, a small, ten-acre impoundment, with grass carp in the fall of 1976.

"We feel that our only mistake was that we didn't stock enough of them," McDowell said. He said they have had extensive problems with vegetation in that lake for years.

"We stocked the lake with grass carp because our chemical costs were doubling and redoubling every four years," McDowell added. "We figured that we could save several thousand dollars by using grass carp for weed control. Also, we're a little uneasy about using chemicals because widespread application of

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CAPITAL IDEAS

The Kansas Fish and Game Commission is asking the 1978 Legislature to adopt eight specific pieces of legislation. Since more than 40 percent of the state's population hunt and fish, efficient management of the wildlife resources in Kansas is vital. Following is a brief summary of the proposals and the benefits they will provide.

FINE MONEY FOR IMPROVED INFORMATION & EDUCATION

Fines paid by violators of fish and game laws now become part of the Kansas General Fund, of which no part goes to the Fish and Game Commission. This proposal would earmark this money for Commission use to improve public information and education efforts in the areas of clarifying regulations and the reasons for them, wildlife conservation, and landowner/sportsman relations.

BENEFITS:

1. Money from negative act (wildlife law violation) turned to positive benefit (better wildlife information and education) — (This proposal would double the effectiveness of fines. Not only would they continue to act as deterrents, their revenue would be used to reduce violations through better information and education.)
2. Begin a Kansas wildlife education program for Kansas youth — (This would include training high school biology and vocational agriculture teachers and providing them with materials and some Commission personnel to teach their students. Efforts could also be directed to the Boy and Girl Scouts, 4-H, FFA, and church youth groups.)
3. Better landowner/sportsman relations — (Emphasis will be placed in this area through television, radio and other media to reduce trespass-related problems and encourage hunter respect for private property.)
4. Estimated \$100,000 in new, non-tax funds to Commission, based on fines in past five years.

MONEY TO FISH & GAME FOR WILDLIFE TAKEN ILLEGALLY — LIQUIDATED DAMAGES

Fines currently imposed on those who illegally take fish and game are designed to deter such illegal action. The loss of the animal itself, however, has been ignored, even though it is a damage suffered by the people of the state. This act proposes the following damage assessments for the loss of wildlife: deer, antelope, wild turkey, \$300 each; any other game animal or furbearer, \$50 each; any non-game wild animal, or bird, or fish, or bullfrog, \$10 each. These damages will be assessed against anyone who is convicted of a fish and game violation involving illegal taking of wildlife. Damage money will go for general fish and wildlife management.

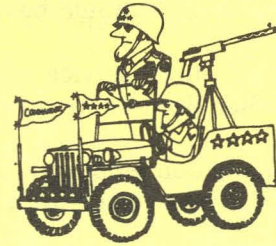
BENEFITS:

1. Further deterrent to law violations — (For some violators, it may be an economically sound practice to harvest fish and game in any way they can. This proposal would make violations more noticeable in the financial affairs of modern poachers.)
2. More game, particularly deer, should become available to legal sportsmen — (Illegal loss of deer may be as much as the legal kill, or about 5,000 a year. If the \$300 deterrent reduces illegal kill by half, for example, the number of legal hunters could possibly be increased by 5,000 or more.)

3. More income from new, non-tax source and from more deer permits — (Liquidated damages could amount to as much as \$75,000 a year. Also, deer permits made available because of decreased poaching would be additional income.)

REMOVE MILITARY EXEMPTIONS

The two types of exemptions from license buying requirements for the military would be removed by this proposal. Presently a person inducted into the military from Kansas may return to Kansas on leave (vacation) to hunt and fish without a license. This proposal would require such an individual to have a license — either a resident license if he maintained his residency in Kansas, or a non-resident license if he changed residency to another state. Non-resident military personnel assigned to Kansas do not now have to wait 60 days to be eligible for a resident license. This proposal would require that they do, just like any other individual.



BENEFITS:

1. Bring fairness to license requirements for more sportsmen — (Today's military is a professional and totally volunteer operation. Considering their wages and other benefits, special exemptions are no longer justifiable.)

2. Reenforces "user pays" concept — (It is the Commission's desire to reduce the many types of other license exemptions, after future study, believing in earnest that the "user pays" concept is the most responsible policy. Figures show, for example, that for every fishing license buyer — 340,000 in 1976 — there is at least one additional fisherman who does not have to buy a license because of the numerous exemptions.)

NON-DRILLING MINERAL LEASES

This proposal would give clear authority to the Commission to enter into non-drilling mineral leases on lands where the Commission owns the mineral rights.

BENEFITS:

1. Allows mineral production without damage to habitat or esthetics on public wildlife areas.

2. Provides income to Commission for improved wildlife production — (Upwards of \$10,000 per section could be gained from a non-drilling gas lease, for example.)

3. Give flexibility to Commission authority for most cost-effective and responsible use of lands and mineral rights in possession.

FISH & GAME TO SELL LICENSES

At present, only county clerks or their appointed vendors can sell licenses. The good job and cooperation of these individuals shown in the past has been meritorious. This proposal would not interfere with this successful arrangement. It would, however, allow Commission personnel to sell licenses without placing them under authority of county clerks. The Commission would not advertise or otherwise seek to lure potential license buyers away from existing vendors.

BENEFITS:

1. Avoids poor image of Commission and state government in general — (Since Commission requires the license, it should be able to help sell it.)
2. Better public service — (It would allow emergency provision of licenses, either to vendors or sportsmen, when licenses are otherwise not available.)
3. Commission employee responsible to one boss — (Removes possible problems of a Commission employee being responsible to the county clerk and to the Commission.)

RABBIT & HARE AUTHORITY TO COMMISSION

This proposal would give rabbits and hares the same status afforded other game animals by the statutes of Kansas. At present, the Commission's authority over rabbits and hares is restricted to bag limit, and an impractical season length consideration. Commercial rabbit shippers, however, have little restriction on the amount they can ship out of Kansas.

BENEFITS:

1. Consistent treatment of game by Kansas statutes.
2. Would allow adoption of sound regulation — (Although there is no evidence that rabbits and hares, or hunters for that matter, are suffering because of lack of existing Commission authority, much the same could be said about the buffalo in the late 1800's, and about many other game species around the turn of the century when habitat took a nose dive and commercial hunters laid waste! There will likely come a time when rabbits and hares need more regulation than current statutes provide.)
3. Will eliminate scapegoat for poachers — (Existing statutes provide excellent camouflage for violating night spotlight laws that apply to other game and furbearers.)

FULL AUTHORITY TO GAME PROTECTORS

This proposal would give full peace officer authority to state game protectors. Existing statutes now limit the game protector's authority to violations only on fish and game regulations and laws.

BENEFITS:

1. Public already assumes game protectors have full authority, but they do not.
2. Irresponsible to ignore serious violations of other laws — Guilty subjects may go free on technicality — (Although game protectors are deputized by sheriffs in counties where they are stationed, it appears this is not sufficient authority for them to carry out cases on laws other than for those on fish and game business. Just within last year a DWI and an illegal drug user escaped prosecution because of this.)
3. Game protectors qualified by same training as other fully authorized officers.
4. First priority still fish and game regulations, except in emergency — (Only when game protectors would discover flagrant violation in the routine line of duty, or upon an emergency assistance request, would they be sidelined from fish and game enforcement. Kansas park rangers have full authority, as do wardens in most other states, and it has not hampered their first priority.)

5. Death in line of duty insurance — (A \$50,000 life insurance policy, for death in line of duty, is granted to all fully authorized enforcement officials by the federal government.)

6. Commission may qualify for federal funds from Law Enforcement Assistance Act.

LICENSE FEES TO BE SET BY COMMISSION REGULATION

This proposal would give authority to the Fish and Game Commission to set the price, within prescribed limits, of approximately 30 different licenses and permits related to wildlife use. It would not subtract from the Legislature's responsibility of controlling Commission income or expenditure. To determine the necessary charge for licenses, the Commission would continue intense long-range planning with significant public input, and would conduct specific public meetings on proposed license fee changes for consideration of the grassroots license buyer. A legislative committee would retain the right to approve, deny, or alter a change in fees. Also contained in the proposal is the newly requested "junior sportsman license" and a price break for landowner big game permits, compared to those for general residents.

There is no intention to seek an immediate increase in license prices until the Plan for Kansas Wildlife is completed and meets approval of the Governor and Legislature (1980).

BENEFITS:

1. More efficient action by state government — More direct responsibility of Commission to those who finance its operation — Controversy that may erupt over a proposed change can become far out of proportion to the economic impact of the bill, considering that such changes typically amount to a minor fraction of one percent of the total state budget. Allowing the Commission to initiate a license price change by adopting a regulation (just like setting a game season, or determining legal fishing methods), while giving a legislative committee review and approval authority over the change, helps to avoid political pressures on a large scale and would save valuable legislative time for matters that affect more of the general public and have larger economic impacts. The proposal would take more pressure off the Legislature and place it on the Fish and Game Commission. The Commission is directly responsible to those who buy the licenses and who stand to benefit by a change in license cost.)

2. Avoids "boom and bust" economy of Commission — (The Kansas Fish and Game Commission, and similar agencies in most other states, historically have sought large increases in fees from the Legislature every five to 10 years. If all the increased income to the agency is not spent immediately, other outside agency interests may be encouraged to ask for some of the funds that are not being spent. Or, a chunk of the idle funds might be diverted to an expenditure that does not have the full support of the agency. The "bust" cycle begins after the lusty spending is over. Programs and personnel, not fully equipped because of reduced spending, suffer, but not as much as the resource and the public. The flexibility that would accompany setting license prices by Commission regulation will eliminate this.)

3. Moderate price increase avoids big drop in sales.

4. Allows more selective changes — (Under this proposal, Commission regulations could be designed to be flexible. For example, deer permits could be adjusted to deal with new poaching problems in some years, trapping license costs could reflect more intense study and management of furbearers, while another license price may not change for some time because its specific programs did not require it. License prices in general would be made to fit the need of funds for programs which the license affects — the "user pays.")

5. Opportunity for more input by license buyers — (The Commission would conduct public meetings to seek opinions of those who would be buying the licenses, before adopting a regulation to change any costs. This gives license buyers an additional chance to participate in the governmental process, besides attending any legislative committee hearings on the subject.)

6. Junior license adds measure of respect — (The junior sportsman license would be significantly less expensive than the regular resident and nonresident licenses. Currently, youths younger than 16 do not need to buy a license to hunt or fish. Charging a nominal fee for youths between 12 and 16 would impress young hunters and fishermen at an earlier age that little in life is free — including the maintenance or improvement of fish and wildlife resources. Having to save a few week's allowance to buy a license will add a measure of respect for the programs and efforts it takes to manage wildlife.)

7. Landowner price break on big game permits constitutes a "thank-you" for hunting use of their lands. (Although wildlife on any land is the property of all people in the state, it is by the good graces of the landowner that other people can enjoy hunting and fishing as his guest. This concept would be strengthened by relying more heavily on the general resident permit for big game funding than on the landowner.)

8. Again, license price changes will not be immediate, but will be delayed until A Plan for Kansas Wildlife is completed and approved (no sooner than January 1980).

† † † †

IT'S THE LAW

Violating hunting laws can be a costly venture.

The proof is in the disciplinary action accorded violators.

Take, for example, the final court disposition of a case involving two Garden City men arrested for possessing migratory birds during closed season recently. Rodney L. Cott and Don E. Sanford were each fined \$625 plus court costs after pleading guilty to the charges. The same two men had each been assessed \$300 fines about two months earlier for taking pheasants out of season.

In Harvey County, a call from a landowner resulted in the arrest of two Wichita men. The two men, Gregory C. Ban and John T. Coakley, were fined a total of \$175 for hunting a red-tail hawk (a protected bird) and failure to possess hunting licenses.

Clyde E. Reiner, Colorado Springs, Colo., was fined \$100 plus court costs and placed on six months probation for taking a deer during closed season. That incident occurred in Sheridan County.

A district judge in Scott County fined Franklin J. Horacek, Scott City, \$375 plus court costs for killing a deer out of season. Horacek's hunting license was revoked and he was placed on six months probation.

Leonard A. Barnett, Humboldt, and Dale R. Bradford, Chanute, were each assessed \$100 fines for hunting with the aid of an artificial light. In addition, Barnett was fined \$50 for operating a motor boat without proper running lights.

† † † †

NATIVE RANGELAND'S ADVANTAGES ABOUND

Tom Pozarnsky is a believer in the value of native rangeland.

Pozarnsky, who retired this year after 33 years with the Soil Conservation Service in South Dakota, says that native plant cover, properly used, provides many useful benefits not provided by any other type of cover. Specifically, Pozarnsky has singled out at least 22 advantages of high condition range:

- **Flexibility.** Can graze any season of the year. Native range plants cure far better on the stem than tame pasture plants. Only snow cover need prevent grazing.
- **Never needs reseeding.** The stand is perpetuated by rootstocks, stolons and natural seeding.
- **Fossil fuels not needed** in periodic cultivation and fertilizers as in tame pastures. Solar energy alone maintains production.
- **Survives droughts, fire and severe winter** as it has for centuries.
- **Controls weeds.** Healthy range plants and good ground cover leave very little room for "intruders".
- **Needs no fertilizer.**
- **Most effective in controlling soil and water loss,** aided by its understory of plants and mulch.
- **Most beneficial for the greatest variety of wildlife species.**
- **Aids in storing underground water supplies** and is unexcelled in its value in watershed protection.
- **Periodic windfalls from sale of native grass seed harvest.** Seed maintains viability for long periods of time.
- **Enhances environmental quality** (purification of air, area for natural recycling of wastes).
- **Recreational values** including fishing, hunting, camping, rock hunting, hiking, trail riding, etc.
- **Blends species** that are best suited for each range site (precipitation zone and range soil group).
- **Controlled grazing** is all that is needed to perpetuate the species.
- **Long growing season** (about eight months). Made possible because of the variety of species present.
- **Aesthetic value.** Variety of grasses and many flowering plants add attractiveness to the landscape.
- **Deferred grazing** can provide grass reserves for later use and during droughts. It also allows for natural reseeding.

- **Less rodents, insects and diseases** than on any other type of vegetal cover.
- **Less fluctuations in total forage production.** The mixture of species have peak production at different times of the growing season.
- **Most efficient use of rainfall.** Because of a variety of species, some plants take advantage of rainfall in any part of the growing season.
- **Protects endangered species** and the natural germ plasm for future domestication and breeding.
- **A full stand of native grasses** can produce more through decades than any other type of cover without cultivation. If not overused, stands last indefinitely.

† † † †

BOWFISHERMEN AIM FOR SHOOT-OUT BOOTY

It pays to be a straight shooter.

Ben Pearson Archery and the Las Vegas Hacienda Hotel are co-sponsors of a two-day international bowfishing shoot-out for bugle-mouth carp. The event is planned for May 6 and 7 at Lake Mead, Nevada.

The tournament is labeled the "1978 International Bowfishing Championships" and it's expected to draw more than 400 bowfishing enthusiasts from the U.S., Mexico and Canada.

It's a two-person team event and the straightest shooters will be earning \$5,000 for their efforts with second place finishers gathering in \$2,500. Even though a total two-day catch will determine the money winners, biggest isn't always best in this tournament because the shooter capturing the smallest carp will walk off with a new outboard motor.

Other prizes include \$1,500 for the third place team and \$1,000 for the fourth place finishers. Fifth through tenth place teams will receive "Limited Edition" Ben Pearson bowfishing compounds.

† † † †

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chemicals will kill all the fish habitat.”

Several farm ponds in the state have also reportedly been stocked with grass carp for at least a year or more.

Jess Crocker who manages Plum Thicket Farm northeast of Sharon, stocked one of his farm ponds about three years ago.

“Before that,” he said, “it wasn’t even fishable, but now it’s all cleaned out.”

Although the grass carp were first stocked in public waters in October, the three state-operated fish hatcheries received a shipment of them in July of 1977. Stephen Mense, manager of the Fish and Game Commission’s Farlington Fish Hatchery, noted the difference grass carp made last fall when he and other workers at Farlington were draining hatchery ponds. He said the ponds in which grass carp resided were relatively free of aquatic vegetation. As a result, the Farlington crew could devote its time to other duties since a man did not have to be constantly on hand to clean aquatic vegetation off the screen at the pond’s outlet.

Despite the good opinion held by fisheries officials in Kansas and several other states, however, the grass carp has its detractors. Since the species is comparatively little known among U.S. biologists, there are skeptics who warn against naturalizing the fish.

Missouri, for example, has been conservative in their

approach to the introduction of grass carp. In 1972, the state passed a law prohibiting the introduction of the fish into Missouri waters. The “potential environmental dangers” presented by the species caused Missouri biologists to vociferously oppose amur stocking. One Missouri fisheries specialist writing in *Missouri Conservationist* magazine, wondered about the wisdom of naturalizing the amur.

“The very attribute which recommends the grass carp so highly is also its greatest drawback,” wrote Jon L. Hawker. “By feeding exclusively on vegetation, the grass carp will directly compete with all other native aquatic plant eaters, not necessarily fish species, but more importantly, invertebrates, waterfowl, and mammals.” The writer also warned of the potential danger of habitat destruction resulting from the loss of vegetative cover. He contended that the loss of that cover would hamper the spawning success of other species of desirable game fish.

“The dangers they present are simply too great to justify any moderate benefits they might provide,” he added. “This is one fruit that perhaps ought to wither on the vine.”

Much of the criticism aimed at amur proponents has been directed at Arkansas fisheries officials. The amur was first introduced in the U.S. in 1963 at the Fish and Wildlife Service’s Fish Farmer Experiment Station at

Stuttgart, Arkansas. In the late 1960s, the Arkansas Game and Fish Commission started using the white amur in an operational aquatic weed control program. The fish has since become the primary method of aquatic plant control there. Virtually all public lakes in Arkansas with aquatic weed problems have received a supply of amur.

The initial controversy arose from the fact that many of those lakes are in the Mississippi River watershed which drains about three-quarters of the U.S. Some specialists feel that the amur escaped from the Arkansas impoundments, found its way into the Mississippi, and is now in forty of the fifty states.

"The grass carp is here, so it's a moot point to argue about whether to introduce it," Conley says.

Bill Bailey, an Arkansas fisheries biologist who has studied the amur extensively, doesn't have any regrets about releasing the amur in spite of the criticism heaped on Arkansas officials for introducing the fish. According to published accounts, Bailey and other Arkansas fisheries specialists remain strongly entrenched in favor of putting the amur to work in this country.

In one report, Bailey noted that the stocking of white amur has produced definite, long-range, detrimental effects on only one species—the white amur itself. He contends that the amur tends to lose weight and even starves when submerged weeds are eliminated.

Conley agrees with that summary.

"I've seen grass carp starve to death in ponds without vegetation," Conley says, noting that the other species of fish present in the same impoundment showed no ill effects. In fact, they were doing quite well while the grass carp starved.

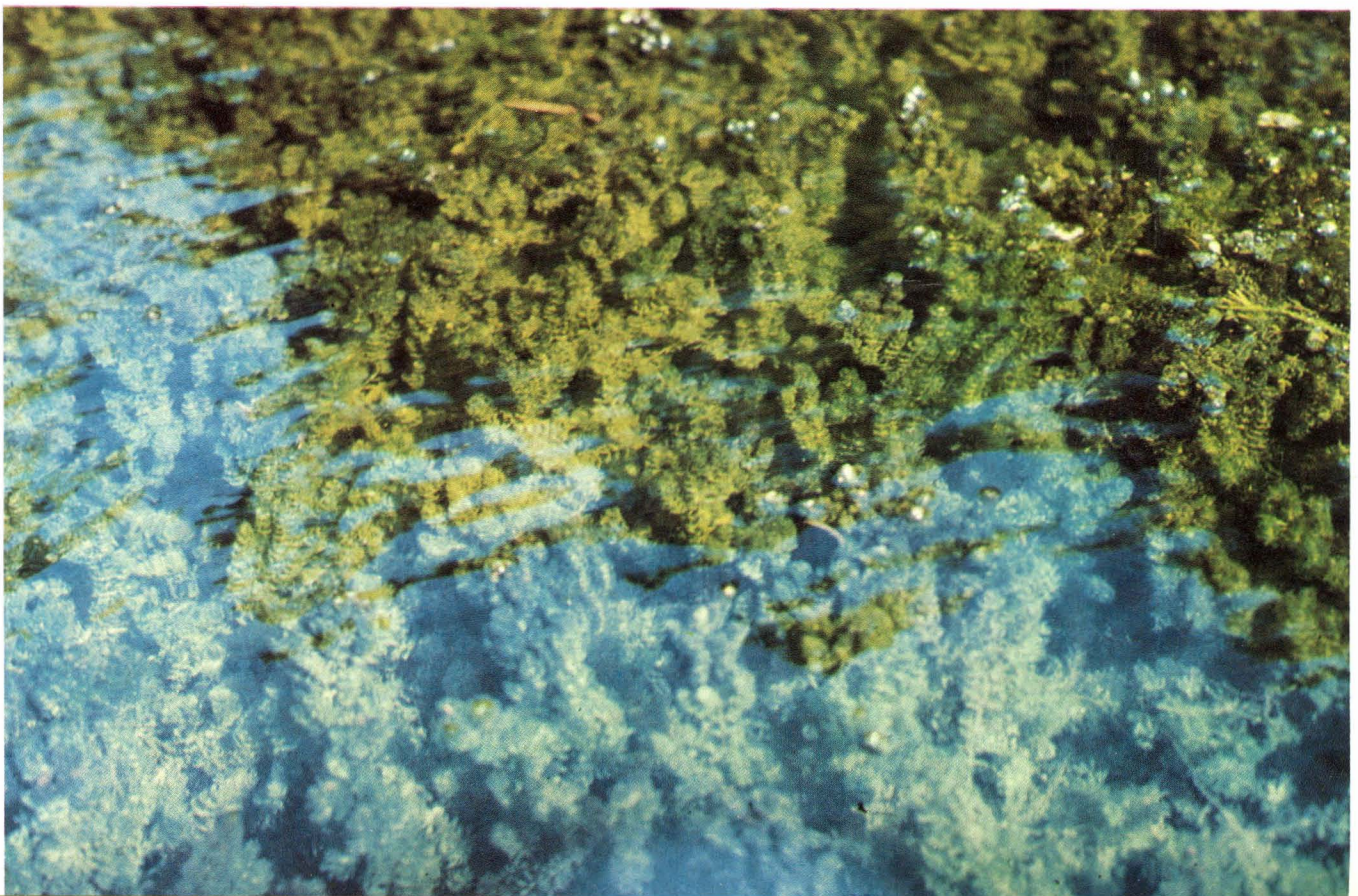
The amount of vegetation consumed by the grass carp can be controlled by precise stocking rates. An effective balance of grass carp to vegetation ensures control of aquatic weeds without overgrazing. Some vegetation is needed to control wave action as well as to provide spawning and feeding cover for other fish. But too much vegetation hampers fishing, fish management, boating, swimming, and other recreational water use.

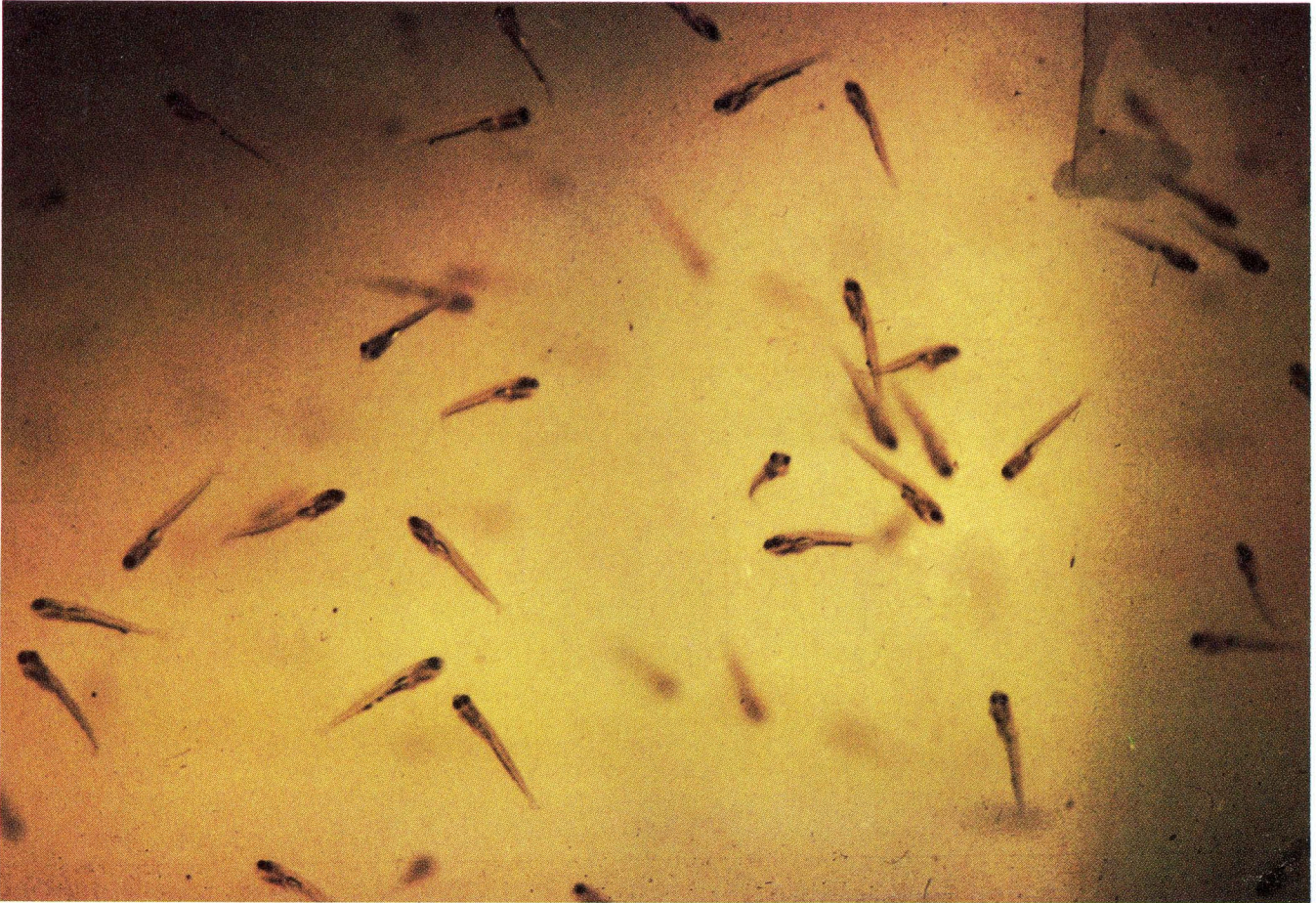
Also, with increasing pressure being applied by the Environmental Protection Agency to limit use of chemicals in impoundments, the amur seems to be the fish manager's most promising ally in the war on underwater vegetation.

One of the main concerns voiced by skeptics has been that the grass carp would quickly reproduce and compete with other fish species in the U.S. However, there have been no documented cases of the amur reproducing under natural conditions in this country, even though the species is probably well established in many types of habitat throughout the Mississippi River watershed.

Reproduction requirements for the amur are fairly restrictive, unlike the requirements for the common

The disease—uncontrolled aquatic vegetation.





Arkansas Game and Fish Commission

The cure—the white amur. These fry have been artificially propagated since the white amur has never bred in North American waters.

carp. The amur spawns in clear, swift-flowing rivers, usually after a sudden rise in water level caused by seasonal flooding. These conditions are required because amur eggs must be carried by the current for several hours in order to develop properly. The fry then need the current to hold them off the bottom so they can escape silt and predators. Somewhere in the amur's complex set of breeding requirements, there is a condition, possibly water clarity, proper spawning temperature, or the right pattern of water fluctuation, that few, if any American streams provide.

One of the amur's advantages often overlooked in the U.S. is its value as a food fish. Its flesh is white and flaky, unlike the coarse, oily fillet of the common carp.

Commercial fishermen in Arkansas have discovered a rapidly expanding demand for the amur as a food fish. They market the fish under the name "white buffalo."

An informal taste panel consisting of various fisheries workers was once conducted at the Federal research station in Warm Springs, Georgia. The panel rated the amur second only to red snapper and better

than catfish, bass, and trout. The amur has been an important food fish in China for hundreds of years. It has also been introduced in many other countries in Europe as well as the Orient. In all but a few of those countries, it was introduced as a food source, not a weed control agent.

So, for those whose primary concern is that the white amur is kin to the common carp, the differences between the two fish are substantial enough to assure that the white amur represent no similar threat.

"I don't like the scare tactics used in some states," Conley says. "They keep reminding us of the German carp problem, but they forget about the pheasant and the German brown trout, two exotic species successfully transplanted in this country.

"There's no chance the white amur will have the negative impact of the German carp because they're not the same fish," Conley says.

"Our whole concept of fisheries management has changed with the grass carp," Conley adds. "It's not a magic cure-all. It's simply an excellent management tool."

RARE

THREATENED and

Whooping cranes

ENDANGERED



by Bill D. Hlavachick

SINCE 1973, the words "threatened and endangered" have taken on a new significance to all Americans. That year, President Nixon signed bill 93-205 into law. That act, The Threatened and Endangered Species Act, superseded and amended all prior acts to form a truly impressive law. All the ramifications are not yet addressed; however, it is the most comprehensive law dealing with decreasing resource yet drawn up by Congress. In it, the fifty states were mandated to begin working to reverse the trend of impending extinction of several species of wildlife. It provided for direct cooperation between state and federal agencies as well as setting up a funding base for the necessary work.

In order for Kansas to comply with the Federal law a state endangered species act was needed. In 1975, the Kansas Legislature enacted the Nongame, Threatened and Endangered Species Act and set in motion the first of several steps that will eventually result in a program designed for the recovery of endangered species.

The first order of business was to prepare a state list of threatened and endangered species. Species so listed have one thing in common; they are all quite rare. The

term "threatened" refers to a species that is declining and may become endangered in the future while "endangered" refers to an animal about to become extinct.

Not surprisingly, Kansas has its share of animals that are having a hard time of it in our modern world. These critters are usually specialized in their habitat requirements and food habits, do not compete well with other animals, and cannot tolerate changes in their environments. Some, like the dinosaur, may have become so specialized that they cannot be saved. However, until this is shown, we are legally and morally obligated to do all we can to ensure the survival of these species for future generations of Kansans to enjoy.

In deciding which Kansas animals should be on our state list, the Commission contacted knowledgeable authorities and asked for their suggestions. As it turned out, a total of 137 species were submitted as candidates for inclusion on the list. A list of this magnitude was overwhelming, so by a process of review and priority selection, 26 species were ultimately chosen for the list.

Under the federal law, a state list must include those species that are on the national endangered list if the



Ken Stiebber

species occur in the state. Of the 26 species, seven fall into this category. All but two of the seven nationally listed animals are migratory and occur in Kansas only during the winter months or periods of migration.

Several bald eagles and peregrine falcons spend the winter in Kansas, usually around the larger lakes and reservoirs. In a fairly open winter when many ducks over-winter in the state, bald eagles can be observed around Cedar Bluff, Webster, Kirwin, Cheney, the Arkansas River and other areas. Since there are only about thirty nesting pairs of the western race of peregrines remaining, sightings of this beautiful bird are rare and are prime subjects for conversation in serious bird watching circles.

The whooping crane and Eskimo curlew usually come through Kansas in the fall and spring and do not tarry long. In fact, if anyone sees an Eskimo curlew, he should report the sighting. It hasn't been seen in the state since 1891. The last sighting of this bird in Nebraska was in 1924. It may very well be that this creature is now extinct.

One nationally endangered mussel has been found in Kansas, the fat pocketbook pearly mussel, found by Don Huggins of the State Biological Survey who says, "There is a small breeding colony in the Neosho River." The only other states recording this species are Missouri and Arkansas.

Black-footed ferret



Bob Henderson

Bald eagle



Ken Stiebben

One mammal on the national list is a year-round resident of Kansas. The black-footed ferret, if still in Kansas, resides in and around prairie dog towns in the western one-half of the state. This critter, with the possible exception of the red wolf, may be the most endangered animal in North America. A recent three-summer study conducted by the Fish and Game Commission turned up only one short sighting of the ferret. As the conclusion of this study, the investigator, Pat Latas of Ft. Hays University feels that the ferret still existed in the state some five to eight years ago but is probably not here now. Even under the best of conditions, ferrets are extremely difficult to observe. They are largely nocturnal and spend most of their time underground in prairie dog tunnels. There is a possibility that Kansas still has a few of these critters, but the chances are between slim and none. Habitat destruction and prairie dog poisoning programs have caused the ferret's decline.

The remaining mammal occurring in Kansas and listed as nationally endangered is the gray bat. A small gray bat colony is known to exist in extreme southeast Kansas. About fifty bats are year-round residents there, but the majority migrate to more pleasant surroundings in southern Missouri for the winter.

Of the remaining nineteen species on the list, two are part-time residents while seventeen are full-time inhabitants of various ecosystems in the state.

The two migratory species are the prairie falcon and the least tern. Prairie falcons come into Kansas in the fall and remain until the following spring. There is some indication that these birds may nest here, but this has not been verified. The prairie falcon is considered threatened in Kansas. The least tern, a rather small white and black bird, nests in Kansas on river sand bars, salt flats and exposed sandy areas. Nesting has been recorded in Hamilton, Rooks, Barton, Meade and Stafford counties as well as on a prepared sandy area at Cheyenne Bottoms. Least terns leave the state in late August and early September. The least tern is threatened in Kansas and is much reduced in numbers.



Immature prairie falcons on typical nesting ledge.

Leonard Lee Rue

There are six species of fish on the Kansas list, three threatened and three endangered. The endangered species are the Neosho madtom, pallid sturgeon, and sicklefin chub. Threatened species include the blue sucker, Arkansas darter, and Topeka shiner.

The **Neosho madtom**, a small riffle fish, no longer occurs in much of its former range which included all of the Neosho River basin, certain eastern tributaries of the Arkansas River, and the Illinois River. According to Dr. Frank Cross of the K.U. Museum of Natural History, this fish "has disappeared from the Illinois River and all parts of its range in Oklahoma except for a few miles of flowing water upstream from Grand Lake." A very small population exists in Spring River and upstream from John Redmond Reservoir; however, the only major population remaining is in the Neosho River mainstream between John Redmond and the upper reaches of Grand Lake. Habitat alteration and pollution have probably caused the precarious status of this fish.

Pallid sturgeon are known inhabitants of only the Missouri and Mississippi rivers. The only specimens taken elsewhere come from the Kansas River near Lawrence after the 1951 flood. Commercial river fishermen along the Missouri River rarely see this species anymore. These sturgeon can reach a very large size; one taken from the upper reaches of the Missouri weighed 60 pounds and was five feet long. Populations are depressed, probably as a result of the drastic channel modifications and damming that have occurred on the rivers.

The **sicklefin chub** is also a Fish of the Missouri-Mississippi mainstems with the exception of the Kansas River, especially after floods. Its overall range is not as extensive as that of the pallid sturgeon. It's found mainly in the Missouri River from the Dakotas southward. Missouri and Kansas both list this species as endangered. Very little is known about its habitat, food requirements, or life history.

The **blue sucker** is found in the Neosho River below John Redmond Reservoir. With the construction of Redmond, this species is vulnerable and depends on reservoir discharges. Kansas' population of blue sucker is felt to be particularly important as it may be among the largest that remain. Kansas lists this fish as threatened, and in Missouri, it is also rare.

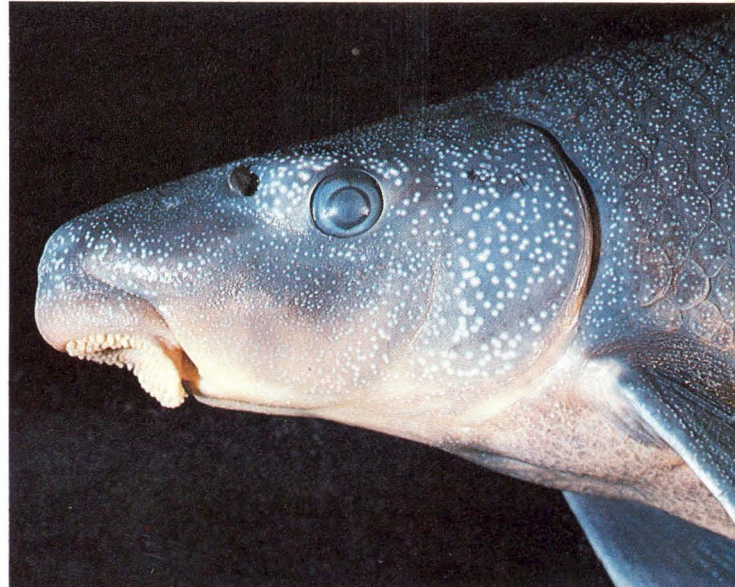
The **colorful Arkansas darter** historically occupied the Arkansas River system in Colorado, Kansas, Oklahoma and Missouri. It is declining throughout its range. Oklahoma, Missouri and Colorado all list this little darter as threatened. In Colorado, it has not been seen in over 70 years. Its major habitat is small, springfed streams of the Arkansas River. The character of the springs and streams in Kansas have been altered by the proliferation of agricultural irrigation systems. Pat Blair of Tulsa University says of this fish, "No other fish of northeastern Oklahoma is limited to such a precarious existence." Dr. Cross writes that "there are

Neosho madtom



J. T. Collins

J. T. Collins



Blue sucker

other fishes in Kansas that are more rare than this one, but no species other than the Neosho madtom is so confined to our state."

Topeka shiner



J. T. Collins



Cave salamander

The situation regarding the Topeka shiner is like that of the Arkansas darter. Its range is limited to Kansas, Nebraska, Iowa and Missouri. It is gone from Shunganunga Creek near Topeka from whence came its name, from nearly all of its range in the Arkansas River basin, and from nearly all the area that it once occupied west of the Flint Hills in the Kansas River system. Dr. Cross indicates that "the only place in the entire Arkansas River system where we have found the Topeka shiner recently is the very headwaters of the South Fork of the Cottonwood River."

With the passage of the Kansas endangered species law, the Fish and Game Commission was given authority over all forms of wildlife including mammals, birds, fish, amphibians, reptiles, mollusks, arthropods, crustaceans and other invertebrates. Now that just about covers everything from A to Z. It's not surprising, then, that some members of the animal kingdom that are less than well-known have found their way onto the endangered species list.

There are four endangered salamanders, the central newt, grotto salamander, gray-bellied salamander and cave salamander; one turtle, the alligator snapping turtle, and one frog, the northern crawfish frog, both are listed as threatened.

Of the four salamanders, only the central newt is not associated with limestone caves in southeast Kansas. According to J. T. Collins, K.U. Museum of Natural History, the central newt "is known from only 14 specimens from eastern Kansas and only two known breeding ponds are still active; other breeding ponds have been drained or badly disturbed or altered." As with the other endangered salamanders, the newt is restricted to a very small area in extreme southeast Kansas.

The cave salamander is the largest of the endangered salamanders, reaching an adult length of 6 inches. It is also the most colorful, having a bright orange-yellow body, head, legs and tail, and covered with scattered black dots. This species is known from ten specimens at four localities in southeast Kansas. The only known population that exists today is in a cave and stream in Cherokee County. Decline in numbers appears to be associated with lowered water tables, pollution, and stream alteration.

Gray-bellied salamanders are the smallest of all the Kansas salamanders, rarely exceeding three inches in length. An extremely shy and secretive critter, it is represented in Kansas by only four collected specimens from near a limestone cave in Cherokee County.

Again, stream pollution and lowering of the water table are contributing to its decline.

The grotto salamander is blind in the adult stage and lives in the interior of dark limestone caves. It is represented in Kansas by one adult and 45 larvae taken from a cave in Cherokee County. Three and one half inches long as an adult, it has a body color from brownish purple to pinkish white. The larval form has functional eyes and is found near cave entrances in small streams and surface springs. Pollution, stream and cave alterations, and lowered water tables have caused the continuing decline of the very small known population.

The one threatened turtle on the Kansas list is the alligator snapping turtle. This species has been recovered in Kansas at only two sites. It is the largest freshwater turtle in the world and prefers the deep areas of large permanent rivers and backwaters. Its distribution may be wider than is now known in southeast Kansas. The small population may be the result of backwater drainage and water pollution, according to J. T. Collins. The alligator snapper is "rare in Florida and Tennessee, threatened in Mississippi, endangered in Illinois and has been extirpated in Indiana."

A secretive frog rounds out the amphibian/reptile group. The northern crawfish frog was formerly abundant in about a dozen counties in eastern Kansas. Specimens collected along the Wakarusa floodplain represent 55 of over 100 specimens collected twenty years ago, "however, the species has not been seen there for the last two decades", according to Collins. There are only two known active breeding ponds remaining in all of southeastern Kansas. Lowered water tables brought on by the increased water demands of the city of Lawrence may be responsible for the decline of this frog.

There are six invertebrates represented on the Kansas list. A small amphibious snail, the warty-backed mussel, the heel-splitter mussel and the aforementioned fat pocketbook pearly mussel are endangered, and two riffle beetles are threatened.

The small snail has no common name and is known only from one forty-acre marsh in Atchison County. There it is found living on moist or wet ground and low on the stems and leaves of sedges, reeds, and cattails.

The warty-backed mussel has been reported from the Neosho and Verdigris River and according to Dr. Don Distler, Wichita State University, "Specimens in the Neosho River are represented by only a few shells". A collection taken during low flow on the Neosho in 1971 yielded no specimens of this species.

Heel-splitter mussels were found across the eastern quarter of the state in the early part of this century and were later reported as probably extirpated. Today, according to Distler, there is "an extremely small population in a pond adjacent to the Neosho River." He classifies the mussel as "extremely rare."

The remaining two species on the list are small aquatic beetles. They are riffle beetles and are known from only one area in Scott County. They are found in a clear, cool spring that flows into a small creek. The beetles are found both in the spring and the creek. What makes these beetles so unique is that they are new species never before described by taxonomists and, as such, are in need of protection.

That rounds out the Kansas list of threatened and endangered species, 26 critters whose existence is in jeopardy right now and whose situation will continue to worsen unless recovery actions are taken soon.

When sensitive species like the ones listed here begin to disappear due to changes in their habitats, it means their environment is in trouble. In a much larger sense it means that man's environment is also threatened.

With the interest in nonconsumptive uses of wildlife increasing, our generation is going to be held accountable if we fail to maintain as much of Kansas' diverse wildlife as is humanly possible.

There is no reason that we cannot co-exist with other creatures. If we can't, it will be to our detriment as much as theirs.

Northern
crawfish
frog



J. T. Collins



BACKYARDS =

BIRDS, BUNNIES, BUTTERFLIES

By Bob Wood

EVERYONE strives to improve his quality of life. One proven way to do that is to associate with things which possess a high esthetic value, and we have found that, for most people, wildlife is one of those esthetically pleasing aspects of life. Contrary to popular belief, it isn't necessary to trek to the ends of the earth to enjoy wild animals. With a little planning and effort, the urban homeowner can attract wildlife to his backyard.

Have you ever stopped to think about the pattern of behavior man follows when there is a decision to "Develop" a new subdivision of homes? Or for that matter, when a person builds a new home for individual use? The ideal building site seems to be one that is as level as possible with no trees, shrubs, or rocks to create obstacles for construction. If the ground is not already "properly shaped", a bulldozer can solve the problem in short order. Once a house is built, often the only thought given to landscaping is to seed the lawn to fescue or bluegrass and plant one or two evergreens at each front corner of the building. If time permits, a single shade tree might be placed in the front yard.

Time seldom remedies the situation as is evidenced in many housing areas where practically no additional landscaping is done even many years after the houses have been built.

If you are building a new home, before ordering in the bulldozer, give some thought to using whatever natural features your property offers. There may be some native grasses, trees and shrubs that can be saved and incorporated in your backyard layout. Also, give some consideration to how your house will be facing in relation to its floor plan. After all, one of the main purposes of attracting wildlife to your yard is to be able to watch the animals. Just because every other house on the block has its main activity centers overlooking traffic-carrying pavement, there is no reason for yours to do the same. If at all possible, have a kitchen window, a den, or sewing room window placed so you can see the happenings of nature in the yard.

If you are moving into a house with a yard already established, incorporate the existing landscaping into the overall habitat development. Nearly every house site can be enhanced to yield more benefit for wildlife.

When beginning to plan your backyard habitat, remember there are four basic wildlife needs which should be considered. Any wild animal must have (1) cover for protection from weather and predators, (2) a safe place to reproduce, (3) food, and (4) water. As you add each of these components to a backyard habitat, wildlife visitors will respond in both numbers and kinds.

In a truly urban setting, small birds are the animals most commonly seen. Because of their mobility and willingness to use small islands of habitat, small birds can be readily attracted to an urban backyard where they add sparks of wild activity to an otherwise man-made world. Kansas is blessed with a wide variety of bird life. Over 400 species have been recorded in the state. Of those, there are 231 species of terrestrial nongame birds which commonly occur here. If your yard has a minimum of landscaping with one or two shade trees, manicured lawn grass, and foundation plantings of a few shrubs and some flowers, you can reasonably expect to see 20-25 species of birds during the year. By undertaking a program of habitat improvement, you should eventually be able to record 75-120 species. However, you shouldn't expect such an increase the year after planting trees and shrubs. It will take 5-10 years before a significant increase in numbers will become apparent. We suggest you begin recording bird visitors immediately, however, since much of the satisfaction of developing bird habitat will come by watching your list grow as the plantings mature. Once your count reaches 75 species, greater diligence in watching will be required to add to it. Before you know it, you will be buying binoculars and bird identification guides to add to your enjoyment.

Before worrying about what kinds of plants to use, let's consider what major plant forms should be used. When developing any wildlife habitat, remember that animal diversity is directly related to habitat diversity. In choosing plants, it is very important to end up with a variety of plant sizes and species. There should be tall or upper level trees (over 25' tall), medium height or mid-level trees and shrubs (10'-25') and short or lower level shrubs (3'-10') available. When possible, consider including both deciduous and evergreen plants to provide year-round protective cover. Your selection can then be further enhanced at all levels by choosing varieties of plants that bear fruit, nuts or seeds which are attractive to wild birds. In most urban yards, actual location of the various plants will not be critical from the birds' standpoint. Location will depend on how you want your property landscaped. The important thing is to have all, or as many as possible, of the various sizes of plants present.

Improvement in bird habitat should not be limited to trees and shrubs. Incorporating flowering herbaceous plants into your yard will make a valuable and often overlooked addition. Many flowering plants produce seeds and vegetative parts which both birds and

insects eat or are attracted to. During the brood rearing period of summer, nearly all birds depend on insects as high protein food for their young. Even after young birds have left their nests, they still feed heavily on insects to complete their body growth before winter. Although we are concentrating on birds, the many butterflies and other colorful insects drawn by flowers will add pleasant variety to backyard wildlife observations.

There are several woody vines which are also very beneficial to small birds. Not only do vines provide some good nesting cover, there are varieties which produce attractive fruits that many birds cannot resist. A fence is an excellent support for vines and helps to blend the structure into the landscape.

Some suggested plants known for their attractiveness to Kansas wildlife are listed elsewhere on these pages.

Once you have decided to dedicate your yard to wildlife, discard the idea everything must be kept mowed, trimmed and manicured. Wild things like wild places. By letting trees, shrubs and grasses grow free-form and untrimmed, you will not only save energy normally used for mowing but the plant growth will be much more attractive to wildlife.

Although planting a variety of trees, shrubs, flowers and seed producing grasses will attract many birds, there are some other amenities a person can add to further enhance his chances to view feathered visitors.



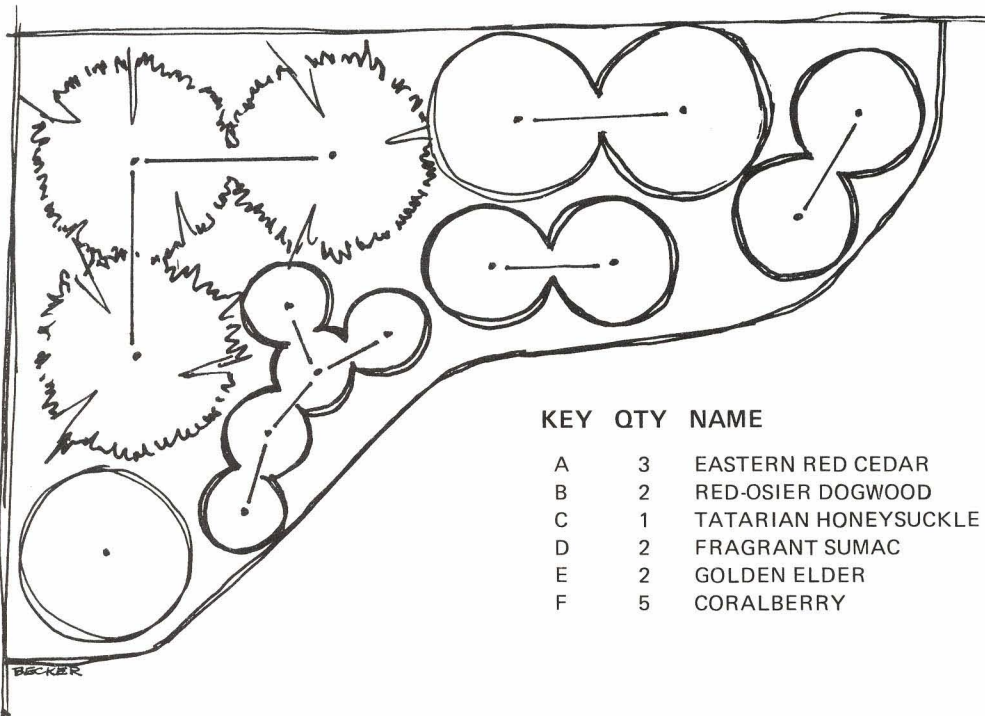
Leonard Lee Rue

A Basic Starter Planting for Songbird Winter Food and Cover

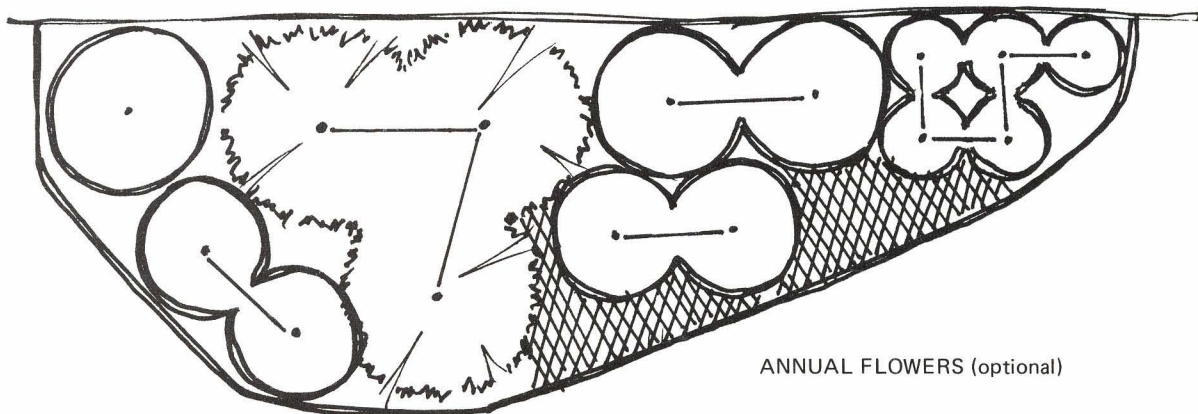
The diagrams shown below are only two of many useful alternatives for planting a backyard habitat for small birds. These plantings are designed to fit lots of the size most common to Kansas cities and towns.

The ground should be thoroughly spaded ahead of planting. For at least three years after planting, the area should be kept cultivated or mulched to promote plant growth. Mulches may be washed gravel, compost, wood chips, or redwood bark. If bark or chips are used, a light application of ammonium nitrate fertilizer should be spread on the soil surface before the mulch is put on (put about ½ cup of granules per square yard.)

Use your imagination to fit these plants to your own backyard. Annual flowers can be incorporated where desired. This small planting is designed to provide you with some attractive songbird habitat. It will not, however, provide for all the needs of all small birds that may visit your yard. To assist in selecting additional plants of value to small birds, contact your local Wildlife Biologist or the headquarters of the Kansas Fish & Game Commission, Route 2 Box 54A, Pratt, 67124.



KEY	QTY	NAME	SPACING
A	3	EASTERN RED CEDAR	12'
B	2	RED-OSIER DOGWOOD	8'
C	1	TATARIAN HONEYSUCKLE	—
D	2	FRAGRANT SUMAC	4'
E	2	GOLDEN ELDER	5'
F	5	CORALBERRY	3'



ANNUAL FLOWERS (optional)



Leonard Lee Rue

One of the most obvious extras you may want to consider is some sort of nesting structure. Birds like the house wren and purple martin readily occupy artificial houses. On the other hand, robins and barn swallows prefer open shelves or ledges under the eaves of buildings. Each bird does, however, have fairly specific requirements for nest structure dimensions. Some consideration of nesting needs must be taken before putting up a structure (some nest structure dimensions are provided herein). The only maintenance required will be an annual cleaning and repair during January or February.

Other habitat components to add which are sure to bring in birds are feeders and water. Winter feeders and bird baths are undoubtedly two of the most popular methods of attracting birds, however, without trees and shrubs nearby, the number of different kinds of birds you attract will be limited.

Many commercial bird feeds and feeders are available, and all are suitable. The feeder doesn't have to be fancy, though. A flat board on which small grains, sunflower seeds or bread crumbs are spread will not go ignored for long. Most references to bird feeding are limited to winter feeding, but having feeds such as sunflower seeds available year round will often keep birds like cardinals and blue jays coming both summer and winter.

Bird baths, like feeders, come in many different

shapes and sizes. The key is to keep water available and not too deep (1-2 inches). As with feeders, the bath itself need not be fancy. An inverted garbage can lid will do just as well as an ornate cement basin.

Out of necessity, our remarks have emphasized principles for developing habitat for small birds, but as your habitat ages, many other animals will take advantage of it. Cottontails and squirrels are undoubtedly the most frequent mammal visitors to urban backyards, although the striped skunk and raccoon are not strangers to the city. The latter two are night lovers however, so you may not be aware of their presence.

Other critters that add spice to our yards, but are often under-appreciated until they are gone, include lizards, butterflies, bees, toads and box turtles. If you are interested in more specific recommendations for your own yards, there is help available through both the spoken and written word. Your local Fish and Game Commission wildlife biologist can offer suggestions applicable to your locale. Also, feel free to contact the Commission's headquarters in Pratt to request assistance for nongame habitat development. Organizations such as the National Audubon Society and National Wildlife Federation have many excellent publications which will further your knowledge of our fine feathered friends and what it takes to make them happy.

The next step is up to you!

Some Plants Attractive to Kansas' Urban Wildlife

When it comes to recommending what a person should plant to attract wildlife in an urban setting, there are literally hundreds of possible choices. As stated in the accompanying article, the prime criteria to keep in mind is to be sure the plants used will eventually develop several strata or levels of protective cover. There are many possible plants to use to establish each level. With some kinds it will depend on where you live. Growing conditions vary considerably between Topeka and Elkhart. Local climate and the amount of care you can give the plants will determine which kinds will survive in your yard. Your district Wildlife Biologist can help select plants adapted to your locale.

The following plant list is offered only as a starting point in planning urban habitat development. These plants are listed because they can be grown over much of the state and are known to be attractive to wildlife.

Upper Level Trees (over 25 ft.)

Black Walnut	Honey Locust
Bur Oak	Mulberry
Cottonwood	Pin Oak
Hackberry	Silver Maple

Vines

American Bittersweet	Trumpet Vine
Honeysuckle (vining)	Virginia Creeper
Greenbrier	Grape (wild and tame)

Mid-level Trees and Large Shrubs (10-25 ft.)

Cardinal Autumn Olive	Pear
Cherry (wild and tame)	Pines
Eastern Red Cedar	Redbud
Osageorange	Russian Olive

Grasses and Flowering Plants

Asters	Little Bluestem
Butterfly Milkweed	Marigolds
Big Bluestem	Perennial Daisies
Columbine	Salvia
Cosmos	Sunflowers
Impatiens	Gayfeather
Indiangrass	

Lower Level Shrubs (3-10 ft.)

Coralberry	Multiflora Rose
Dogwoods	Silver Buffaloberry
Elderberry	Tatarian Honeysuckle
Fragrant Sumac	Wild Plums

A POPULAR OFFER for the past several years will again be available in 1978. Called the "Backyard Bird Bundle," the package contains a selection of woody plants suitable for urban songbird habitat development. The bundle is sold at a nominal cost as an effort to encourage homeowners to improve wildlife habitat in their backyards.

The bundle contains a selection of plants known to be attractive to small birds. When mature, the trees and shrubs will provide year-round shelter plus supplemental food during late summer, fall and winter.

As principal sponsor of the Backyard Bird Bundle, the Kansas Wildlife Federation has called upon the Kansas Fish and Game Commission and State Extension Service for professional help in selecting plants. In addition to being attractive to small birds, the selection of plants has been made keeping in mind the varied climatic conditions that occur across Kansas. With proper preparation of the planting site and reasonable care after planting, the plants should do well over most of the state. Each bundle will contain 3 eastern redcedar, 2 each fragrant sumac, red-osier dogwood and golden elder, 1 Tatarian honeysuckle and 5 coralberry. The bundles are priced at \$7.00 each and will be shipped postage paid at the proper planting time.

Since the orders are to be processed by a commercial outlet, a standard order form has been prepared. Persons interested in obtaining an order form may contact the Executive Director, Kansas Wildlife Federation, Wamego, KS 66547; the Forestry, Fish and Game Commission, R.R. 2, Box 54A, Pratt, KS 67124 or any Commission field office; or their local county extension office. Orders for spring, 1978 planting must be placed by no later than March 1.

