

KANSAS

# FISH & GAME

MAY/JUNE 1979

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# KANSAS FISH & GAME

MAY/JUNE 1979

Published Bimonthly

Vol. 36, No. 3

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KANSAS FISH & GAME is the official bimonthly publication of the Kansas Fish & Game Commission, Rural Route 2, Box 54A, Pratt, Kansas 67124 (316) 672-5911. Subscription rates: one year (6 issues) \$3.00, two years (12 issues) \$5.00, and three years (18 issues) \$7.00. Single copies are available at 50 cents per copy.

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Postal I.D. Number: ISSN 0022-8591

Cover Credits—Fishermen and wild bergamot by Ken Stiebben

# OBSERVATIONS

## on the shooting sports

NO, I HAVE NOT THANKED  
A GREEN PLANT TODAY—  
I'VE BEEN TOO BUSY

by  
Gene Hill  
Associate Editor  
Field & Stream



In the last year or so I have been requested to help save the Hudson, to help save the Yellowstone, to help save the tuna, the striped bass, the Atlantic salmon, Silver Creek, the Pine Barrens, ducks in general, whales, wild horses, burros, and enough other creatures and places to make me more sympathetic than ever with the Lord resting on the seventh day.

I contribute time and money to DU, TU, FFF, the Gamecoin, African Safari Clubs, the NSSA, ATA, NSSF. . . and oh yes, the NRA.

Not to mention license fees, big-game permits, and special duck, woodcock, pheasant, and trout stamps. I clean up beer cans on streams, I build wood duck nests, I teach kids gun safety and how to fish. I release almost all the fish I catch and try not to shoot my limit on waterfowl (which is easy). I plant bird cover, dig ponds, and create sanctuaries. I hunt with a trained dog to help save game. I douse my campfire and pack everything out that I packed in.

And every so often I most humbly, in my very small way, emulate the Lord by looking at what I've helped do, and say to myself, "That is good." I am delighted to have seen the antelope increase to vast numbers, to know that there are now more whitetail deer than when Columbus discovered the continent. I am pleased that the salmon fishing is getting better, that I can see Canada geese by the thousands where not too long ago there were few. It's been hard and costly work—but I can't imagine anything more worthwhile. I am anxious to do more and I will.

I am simply a man who likes to hunt and fish when I have a little free time. I am a typical, average American sportsman. I consider myself one of America's great natural resources; I have helped save, clean, reclaim, guard, and propagate as many things that I believe to be precious as I could. And my children believe as I believe; they understand what I have given them and they will work to do even more.

There seems to be only one little thing that not too many people are willing to help save: Me.

Every year there's more and more pressure to prevent me from gunning. The town close to where I live forbids the discharge of a firearm. . . even at a backyard clay target. National television shows portray me with bias and prejudice. Every major newspaper carries advertisements from various groups saying that I not only shouldn't hunt, I shouldn't even be allowed to own a gun.

These are the same gentle people who put bumper stickers on their cars asking me, "Have You Thanked a Green Plant Today?" Well, no I haven't. As a sportsman I've been too busy sowing wild celery, willows, multiflora, and rice, and asking farmers to leave a few rows for the bobwhite and pheasants.

It seems that more and more people today find it hard to be for the environment and all that it stands for without being against those of us who like to hunt and fish.

We sportsmen have done a magnificent job of educating each other. We work together and talk our problems out. We write articles about the fine job we've done in bringing back the wild turkey. We show films about the reclamation of wetlands. We count ducks and regulate ourselves on seasons and bag limits. Our good works are legion—but in a way we've kept them all to ourselves. I think we should do something a little different; we're not asking for love necessarily, but for understanding.

I know there has been some effort in this direction, but we need more and we need it soon. I'm not quite willing to put a sign on my van saying "Last

year I spent X dollars to support our wildlife," the way the big truckers advertise that "This vehicle pays X dollars a year in taxes." But I want to find a way to constantly remind the anti-hunters, bird watchers, and "I Brake for Animals" crowd that I'm one of the sportsmen who are basically the source of the abundance of birds and animals. And I didn't do it just by sending a dollar or two for a bumper sticker.

Maybe our fishing and hunting clubs ought to take ads in the local papers saying that "The pheasants and quail you enjoy seeing and hearing were made possible by the following local sportsmen," and run a list of names. Maybe someone will ask one of you about this program and you can tell them some of the facts about wildlife and its management. Not emotions—but biology; about feed, cover, propagation, and harvest.

There are many millions of well-meaning, but ingenious and unknowledgeable people who are violently against your enjoyment of hunting and fishing. They will agree, if forced, that a certain amount of culling and harvesting must take place—but they want the professional game manager to do it, not you in your blaze-orange vest. A great many of these wildlife professionals believe that underneath this sentiment is a prejudice against the sportsman—rather than a great sympathy for our wildlife.

It's frightening when we admit that this emotion might be so irrational as to be impervious to education or logic. Part is a growing fear of guns, part is an overreaction to what seems to be an increasing climate of violence. Part is a collection of emotional half-truths about what constitutes conservation.

The fact that much of what is feared is neither true nor real isn't going to make the struggle any easier. The sportsman—meaning you and me—must adopt a personal code of ethics, every one of us, that is as close to being above reproach as we can make it. We must come to our own defense "with clean hands."

I'm a great believer in the lessons of history. I have great faith in our ability to deal with the great numbers of undecided, the "I don't cares," and to change the attitudes of the violently opposed just as we have reversed the destinies of so many of our precious wildlife resources.

And it has to work, for we are the last and the most important resource of all—the totally concerned, the totally committed. The sportsmen.

Provided as a public service by  
The National Shooting  
Sports Foundation



A ten-year investigation  
of Kansas' strangest  
hawk . . .

# The Mississippi Kite

Jim Parker

**I**f she dives again, Steve, I'll give you plenty of warning!" She did dive again, and again, and again—three times hitting Steve as he climbed the thick elm trunk toward the nest. This was a real surprise to me, because in nearly ten years of studying the Mississippi kite, a small hawk, I've been pestered and harassed by hundreds of them as I dangled at their nests, but never once had I met a bird like this that had the guts to draw blood. She was defending her nestlings, and well—who could blame her? We wanted her nestling. Sure, we had a good reason, but our motive was meaningless to her. This kite, and almost any hawk, would rank Steve no better than a big, ornery raccoon hoping to eat her youngsters. Ironically, her motive for attack was more sensible than the reasons many give for killing predators.

I called Steve down without the nestling. He was one of my five student assistants from Fredonia State University College in western New York, and I didn't want him returning to the snow belt along Lake Erie with the memory or scars of a fall from a tree. This was in the city park of Englewood, Kansas, and we took longing glances at the swimmers in the pool a couple

of hundred feet away as we packed our gear for the return to the Meade County State Lake and Fish Rearing Station. My main field camp since I began this study as a graduate student at the University of Kansas in 1968 has been at the fish rearing station, where Verl Stevens and Frank Schryer of the Kansas Fish and Game Commission have greatly helped my study by providing buildings originally built by and for the Civilian Conservation Corps (CCC) about 1935. My work with the kites has taken me south through the "shin oak" country of western Oklahoma and into the mesquite near Vernon and Anson, Texas—all in the heart of the kites' nesting range—but I had a second good reason for concentrating my work in the Meade area. The large groves of cottonwood trees around the artesian well and old Lake Larrabee (now called Lake Meade) are the nesting area for what is probably the largest local population of Mississippi kites in existence. From old timers of the area like the late Dr. Claude Hibbard, a noted paleontologist from the University of Michigan and long a summer resident of Meade, I learned that in the late 30's the kites there numbered no more than a handful because only a few





Ken Stiebhen

large nesting trees stood near the well.

The first kites of the year begin to appear in the Meade Park area in mid or late April, a bit before I usually arrive on what has become almost my own annual migration. The kite flies north into the Great Plains and southeastern United States from wintering grounds in South America, probably in Argentina and Brazil, and is one of our most migratory hawks. One of the kites I banded near Beaver, Oklahoma, was found on the west coast of Guatemala about a month later, and another from Greensburg, Kansas, showed up in Honduras the next spring on its trip north. Actually, we know little of the kites when they're not in North America, and the bird found in Guatemala was only the second record for the species from that entire country.

The Mississippi kite has lots of other names. It's the blue darter, blue hawk, grasshopper hawk, locust hawk, and Texas kite, depending on where you are. It's about the same size as a crow, but that's about it for the resemblance between the two species. Adult kites are mostly gray with black tails and wings. They show some silver in the upper surface of their wings and red

beneath, and adults have blazing red eyes. Kites are sometimes mistaken for gulls, and it's well that they're away on migration during hunting season because they could be misidentified as doves. If males and females are together, it's not too hard to see that the male is a little lighter gray and smaller, but the difference isn't great.

You'll as likely see kites soaring over the trees in towns as over the prairies, and a little observation will soon show how acrobatic they can be. I've seen them fold their wings at better than 500 feet in the air and roll into a vertical dive to within a dozen feet of the ground where they abruptly twist upward. This is one way to hunt grasshoppers or cicadas, but I can think of easier ways to make a living. Once they catch a hopper they take it easy, munching away as if it were a crunchy candy bar while soaring in lazy circles.

The Mississippi kite has some outstanding characteristics that especially interested me when I first began the study. First of all, in most trees except the tall cottonwoods, kites usually nest near the ground. As a matter of fact, in the small mesquite and oak trees of Texas and Oklahoma, nests are usually below twenty feet, and I've found some I could reach into from the ground. This means I can get to lots of nests quickly, easily, and without much risk or the use of climbing gear. Secondly, as a biologist, I found it interesting that the kite rarely lays more than two eggs a year in its one clutch of eggs. Most hawks or owls this size usually lay four to six eggs. The only other hawks that have this low a level of reproduction are the larger eagles. I'm interested in why the life history of the kite lets the species get by with such a small family.

The last reason for my interest is the abundance of the species and the fact that nests are usually concentrated in colonies of various sizes in shelterbelts or woodlots. This means that I'm able to collect information on hundreds of nests in one summer, which is necessary before I can understand the population dynamics of the species. In the western grassland the Mississippi kite is unique because of its recent increase in numbers. One reason for this seems to be man and his farming practices. Since the tree-planting efforts of the CCC in the thirties and forties, we've given the kites much more nesting habitat—*islands of trees* in a vast sea of grass. These include shelterbelts, farm woodlots, and residential trees in towns of all sizes. Now, it seems kites prefer these sites to what's left of the original woodlots along rivers where they once must have nested. They aren't the only wildlife in the shelterbelts, of course. It's well to recognize that many animal species, game and non-game alike, are more abundant today because of these planted patches of trees.

The high density of kites is nowhere more obvious than in the town of Meade itself where I've often seen them on TV antennas and wires. Last summer several students and I spent a couple of days checking every



*An adult kite on her nest with young. Like most raptors, adult kites become increasingly protective of their nests as incubation progresses. They are particularly protective of their young and will make bluff passes at anything that approaches the nest, including humans. A person on the ground has no reason to be alarmed by these passes; even though the bird often comes within inches, instances of a kite actually hitting a person are nearly unheard of. Left to their nesting duties, the kites will leave the area as soon as their young can fly.*



Jim Parker

tree in or near the town for kite nests. We looked like a strange lot wandering about town staring upward with binoculars, but the results were more than worth it; they were sensational. There were more than forty pairs of kites nesting in this town of less than two square miles in total area. They were in church yards, people's front yards, and some were in busy areas within a block of the center of town. Even the historic Dalton Gang hideout had its kite nest. Judging from how infrequently the kites of these nests were seen, you would never guess the town's kite population was that large. It's more usual for a colony to number about ten kites, but the State Lake and Fish Rearing Station has been home for over a hundred kites.

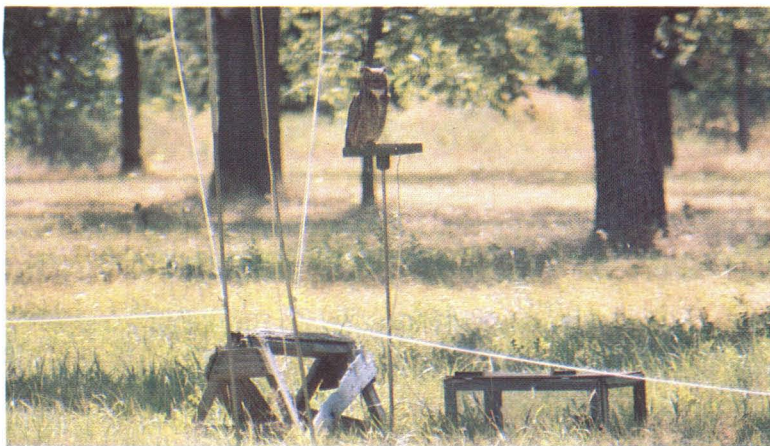
One of the past threats to the species was shooting.

It's usually easy to get close to individual kites, especially when you're near their nests, and unfortunately, this makes them gullible targets. Today, federal and state laws and ecological education have done their job, and I've rarely found anyone who didn't appreciate the kites or wasn't willing at least to leave them alone. Pesticides, a more recent threat, have not affected the kite the way they have birds like the bald eagle. A lot of research in the laboratory and in the wild has shown that the eggshells of many birds are thinner because of the biochemical effects of the pesticides they get from their food, and as a result most of the eggs break before hatching. I've investigated this with the kites and found their eggshells only slightly thinner than before pesticides were first used, so the spe-





The kite research project has taken a number of directions. Kite nestlings are being introduced to other nests to find out whether adults can raise more than the customary two young. The nestlings are lowered from the nest in Big Mac cartons, color marked for identification, then transplanted into a new nest. Nests are checked for young with a mirror on a long pole. Adult kites are decoyed into a live great horned owl, one of their most feared predators, and captured in mist nets. The birds are marked with color-coded wing bands. Photos by Jim Parker.



cies seems under only a minor threat from these chemicals.

Until recently, ornithologists believed that kites ate mostly insects, but one of the surprising results of my work has been the discovery of dozens of species of amphibians, reptiles, birds, and mammals in their diets. This includes things like small frogs, prairie lizards, horned lizards, crushed box turtles, cliff swallows, and kangaroo rats. The most interesting finds were the birds, mammals, and especially the evidence showing that kites will pick up dead animals like the

box turtles crushed by cars. Kites seem to have a wider diet than we gave them credit for, and this may be a recent development based on our agricultural and cultural activities. Whatever the reason, their broad tastes make it more likely that they can get all the food they need to raise their two nestlings.

The first duty that I accomplish every summer when I begin field work is to relocate all of the old nests that kites are reusing and to find new nests. This takes over a week of arduous work. I make things simpler by using a device I've designed to look into nests without





Jim Parker

climbing the trees. It's a long, extendable aluminum pole with a small mirror on top, and it's usually possible to use it to see what's in a nest even fifty feet above the ground. The kites seem to consider this less of a disturbance than a person climbing to the nest.

After all nests are found, my assistants and I settle into a routine of revisiting each nest as often as possible until the nestlings are flying or the nest is lost. During this time we collect all sorts of data, pick up food remains, weigh and measure the growing nestlings, and eventually band them with federal fish and wildlife and our own colored bands. Two things are of special interest to me: evidence of why nests fail, and overall reproductive success. With almost ten years of work accomplished, it's clear that the kites have a rough time of it. Barely half the nesting kites are usually able to raise young, and the two biggest problems seem to be bad summer storms and predators that eat eggs, nestlings, and sometimes the adults. A number of other animals consider either kites or their eggs as food. Probably the two most important are great horned owls and raccoons. I remember one particular colony where all six nests were lost to owls one after the other over a two-week period. At one nest even the female was eaten. In another case, I was puzzled by finding a small, dead nestling on the ground in the midst of the remains of one of its parents. The puzzle of what happened was quickly solved when I noticed a plump raccoon sleeping off a meal in the next tree. With such a high rate of nest loss, it's surprising that the kite population is able to grow, but this seemed more understandable after I calculated the life expectancy of adults. If a kite is able to reach adulthood, it can expect to live, on the average, another seven years or a little more. So, the adults need not produce young at a rapid rate, and they can afford to lose a lot of

nestlings in the process of finally raising two to replace themselves.

In the course of the study, I've begun a number of other projects with the Mississippi kite. It always helps to be able to observe individual marked birds, so I've successfully adapted a special version of a standard type of bird net for use with kites. Using the kites' nemesis, a live great horned owl, as tethered bait, I've caught and marked about twenty adults.

Two of the most promising studies began only last summer, and both will tell me more about nesting behavior and how kites feed their young. First, to see if pairs of kites can feed more than their usual two nestlings, I've started an adoption program for nestling kites in which the broods of some nests are increased to three by the transplant of a nestling. This sort of thing doesn't bother the kite a bit and is proving a success. Secondly, I'm using time-lapse movie cameras fastened into the trees to get permanent film records of nesting events for weeks at a time. Otherwise, my students or I would have to spend hundreds of hours in bird blinds where the temperature usually reaches 105 degrees.

As the years have passed, my studies have focused more and more on the kite populations in the Meade area, and I've come to feel almost a citizen of the area. Occasionally, one of my friends or professional colleagues questions why I persist in this study that takes me so far from home. They also find it hard to understand my attraction to Kansas and the Great Plains. It seems they think of Kansas as highway 70 extending across a perfectly flat plain for about 400 miles. Of course in response I explain the biological values of my research with the Mississippi kite, but it's harder to explain the other things that attract me: the wildness of open, lightly-grazed prairie; the expectation of finding western wildlife in the isolated islands of trees, or seeing my eastern students excited by a coyote loping over a nearby ridge; the clean feeling and smell of the prairie wind on a cool, clear evening; and the thoughts that pass through my mind as I imagine the past of an abandoned and crumbling farm house now used only by a badger and prairie lizards. Not last in my mind are the people—the McKinneys and Coxes of Englewood, the Goodnights and many others in Meade, and the Carmens of Anson, Texas—all of them have helped make the study possible and they have shown my students and I the kind of open hospitality most of us aren't used to. These things make it easy for me to continue, for a couple more years at least, my summer odysseys to the plains country of the Mississippi kites.

*Jim Parker began his kite research while he was a graduate student at Kansas University. He has since earned his PhD. and moved to State University College in New York, but he still returns to kite country with graduate students of his own every summer.*



**In summer, the cool water settles to the bottom of a lake, but the oxygen is still at the surface, a situation that's tough on fish. Biologists are correcting the situation with a machine called the helixor.**

# Turning a Lake Over

Tom Mosher

**I**n the 1950's, European engineers began exploring ways to improve the quality of drinking water supplied by city reservoirs. The problem was a strange taste and bad smell in water drawn from the bottom of storage impoundments where it stagnated during the summer. During the fall, entire reservoirs took on a musty taste. The core of the problem was the chemical residue of organic decomposition along the bottom. In the absence of oxygen, the byproducts of these reactions were exceptionally foul tasting, and the chemists involved in the study struck on a simple solution—pipe air to the source of the smell to chemically change the byproducts. As experiments progressed, they found that aeration not only improved the taste of the drinking water but also caused the lake water to circulate much better than it did under the influence of surface winds alone.

In itself, circulation of water through a reservoir had little practical purpose as far as urban engineers were concerned—they were only interested in getting rid of the odor and taste. But when fisheries biologists around the world became aware of the technique, they were immediately impressed. Oxygen depletion and stratification of water in lakes had interfered with efficient fish management in lakes for years, and it was possible that controlled aeration could give the biologists what they needed to counteract the problem.

Early fisheries research in temperate lakes showed

that deeper water lost oxygen during the summer as a result of *stratification*. At certain times of year, water temperatures in a lake begin to vary widely at different depths; the water actually forms separate layers, or strata. Following the spring thaw, water temperatures and densities are nearly uniform throughout most lakes. At this time the wind creates currents which circulate the water evenly. This uniform density and circulation maintains oxygen at levels high enough to support all aquatic life.

As spring progresses, several changes take place that limit the amount of dissolved oxygen in the lake. As water warms it is unable to hold as much oxygen. Warming water also becomes less dense than colder water. Since the energy of the sun is quickly absorbed by the water, only the upper waters of a lake are warmed. During the early spring this causes no problem. Since the density difference of the upper and lower layers of the lake is slight, the wind is able to circulate the entire lake. However, as the warming process continues, the warmer surface water becomes increasingly less dense than the colder bottom waters. Eventually, the difference in density becomes so great the wind is no longer able to mix the whole lake. This results in the formation of three layers known to scientists as the *epilimnion*, *metalimnion*, and *hypolimnion*.

The epilimnion is the upper layer of water within the



lake. Water temperature within this layer is generally warm and uniform, and it contains a high level of dissolved oxygen. In Kansas lakes, this layer may range from the surface to a depth of between six and twenty feet. The depth depends on the size of the lake and its exposure to wind. Large, open lakes have a deeper epilimnion than smaller, more confined lakes. Oxygen is maintained in this layer by direct contact with the air and by the wind's ability to circulate water within the layer. Photosynthesis of aquatic plants also contributes much oxygen to this layer of the lake. During the summer months, most of the fish caught in our smaller lakes are caught within the epilimnion. This layer also provides most of the food matter for game fish in the lake. Therefore, in lakes where the epilimnion is only six feet deep, the number of fish the lake can support is severely restricted.

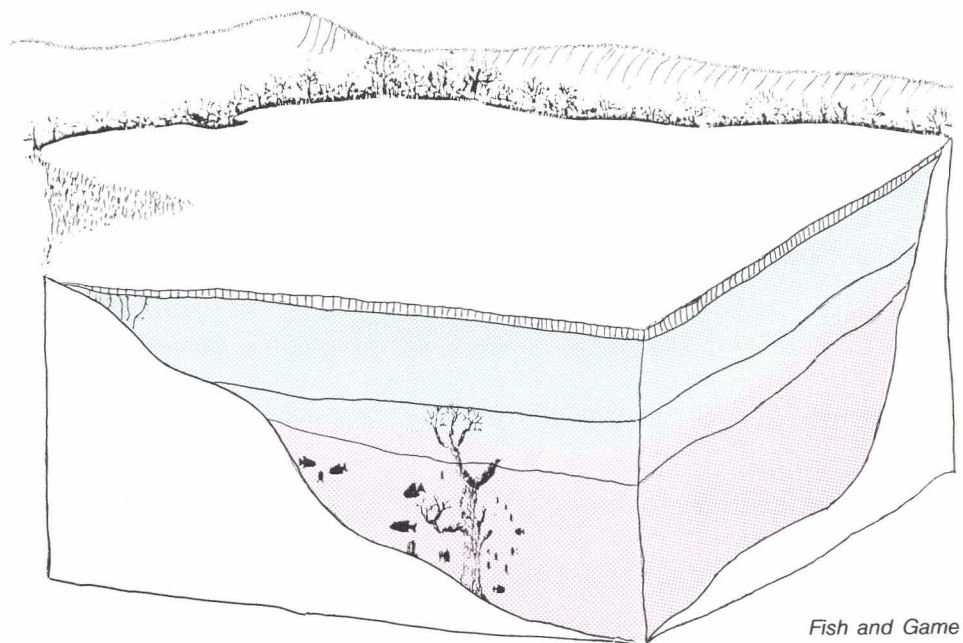
The metalimnion is the middle layer of the lake. This shallow layer is characterized by rapid temperature change, usually a decrease during the summer. Oxygen levels within this area also decrease but are high enough to support fish life. Some game fish, particularly striped bass and walleye, may even seek this level during the warmer months, preferring its lower temperatures. If they're not actually in the metalimnion, walleye and stripers will hang just above it where they can feed on prey fish, or they will move into shallower water of the epilimnion to feed at night when surface temperatures drop.

The bottom layer, or hypolimnion, can usually be distinguished from the upper layers by its colder water temperature. In lakes in many areas of the United States, this layer provides excellent fishing for trout and other coldwater fishes. Such lakes are extremely clear, allowing photosynthesis to take place within this layer. Photosynthesis provides the needed oxygen for fish survival. In general, these lakes are not as fertile as Kansas lakes. In most cases, Kansas lakes are not clear enough to allow photosynthesis within the hypolimnion. In addition, most of our lakes have high concentrations of nutrients that use oxygen as they decompose. These two conditions, coupled with the fact that, during the summer, wind can no longer mix the oxygen-rich upper layer with this lower layer, result in a lack of oxygen in the hypolimnion. Without oxygen, fish and the animals they feed on cannot survive. Although fish occasionally make short trips into this layer, they cannot maintain themselves here for long periods.

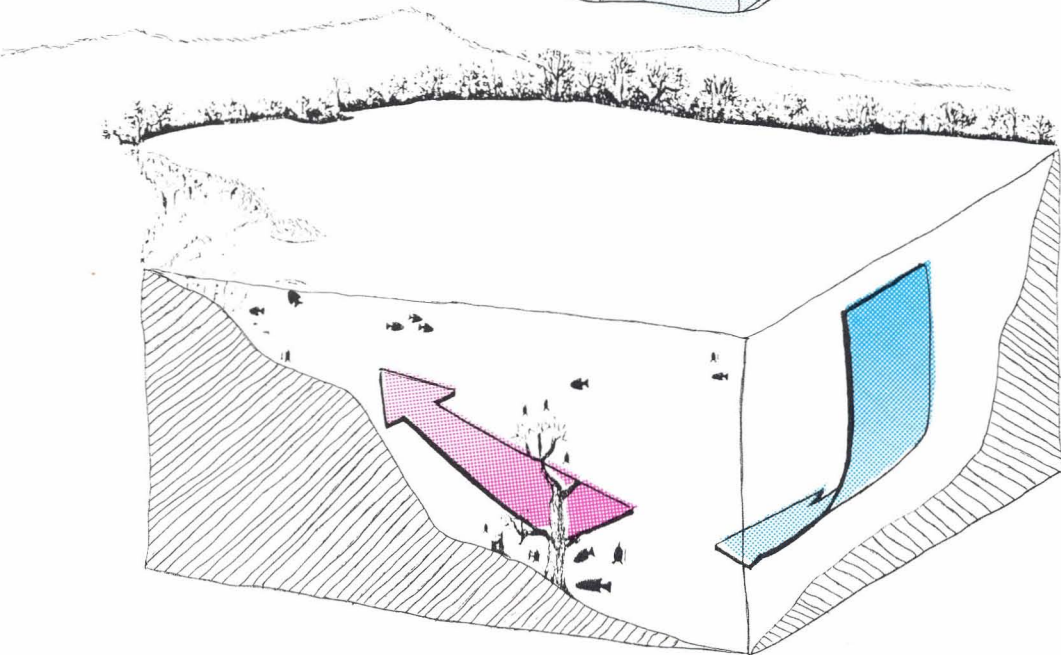
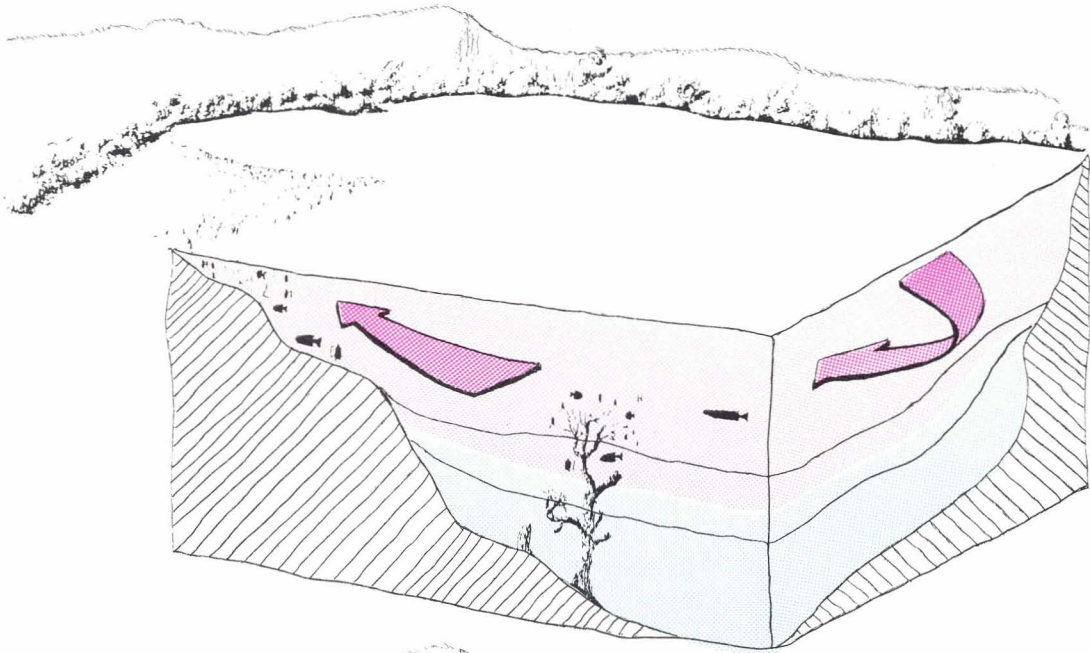
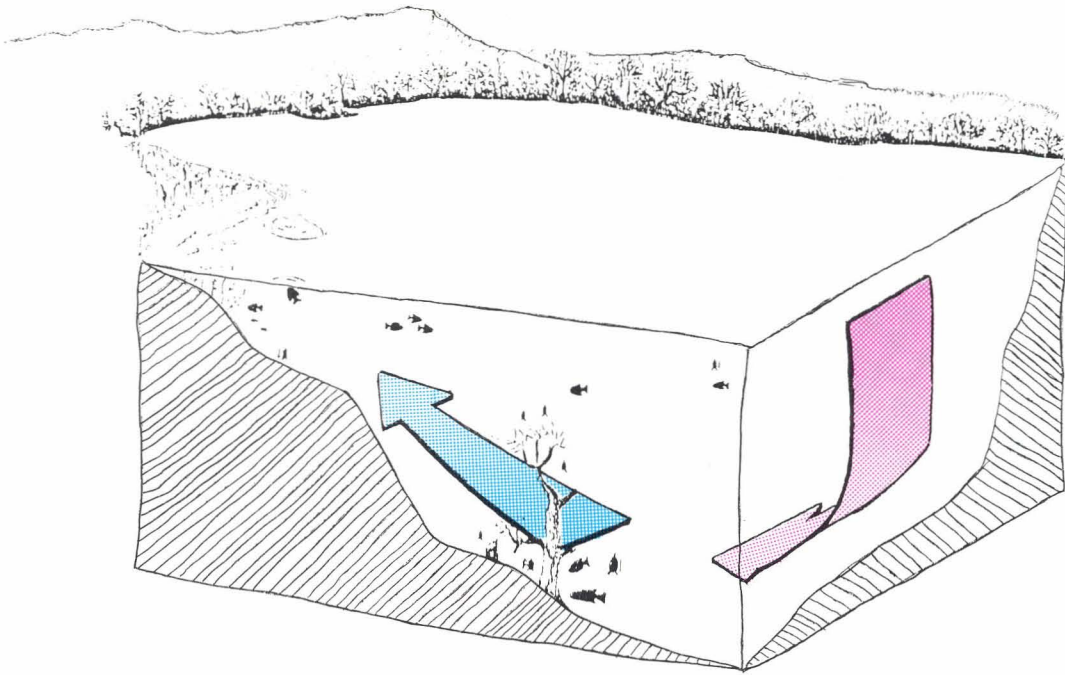
Other gases take the place of oxygen in the hypolimnion. One such gas, hydrogen sulfide, is formed as nutrients and decaying matter break down. Hydrogen sulfide has a strong, rotten-egg odor and is extremely poisonous to fish. If this bottom layer were to rapidly change places with the epilimnion, a large fish kill would ensue.

The process of stratification reverses in the fall, as shorter days and lower air temperatures cause the sur-

*Water is at its heaviest at 39 degrees F. In a lake that is warmer than 39 degrees, the warmest water stays at the surface; coldest water stays on the bottom. In a lake colder than 39 degrees, the reverse is true. Very cold water (including ice) tends to float on water closer to the 39-degree level. This property of water drastically affects circulation of lake water through the year. Right after spring thaw (upper right), surface water warms up from 32 degrees and sinks, pushing the colder water at the bottom to the surface. The lake "turns over." In summer (middle right), the warmest, lightest water forms a layer at the surface. Only this top layer is circulated by the wind; lower, colder layers stay at the bottom. In the fall (lower right), the surface water cools and sinks. The lake turns over again. In winter (below), the lake's water cools below 39 degrees. Below this temperature, colder water layers near the surface; water closer to 39 degrees stays at the bottom.*







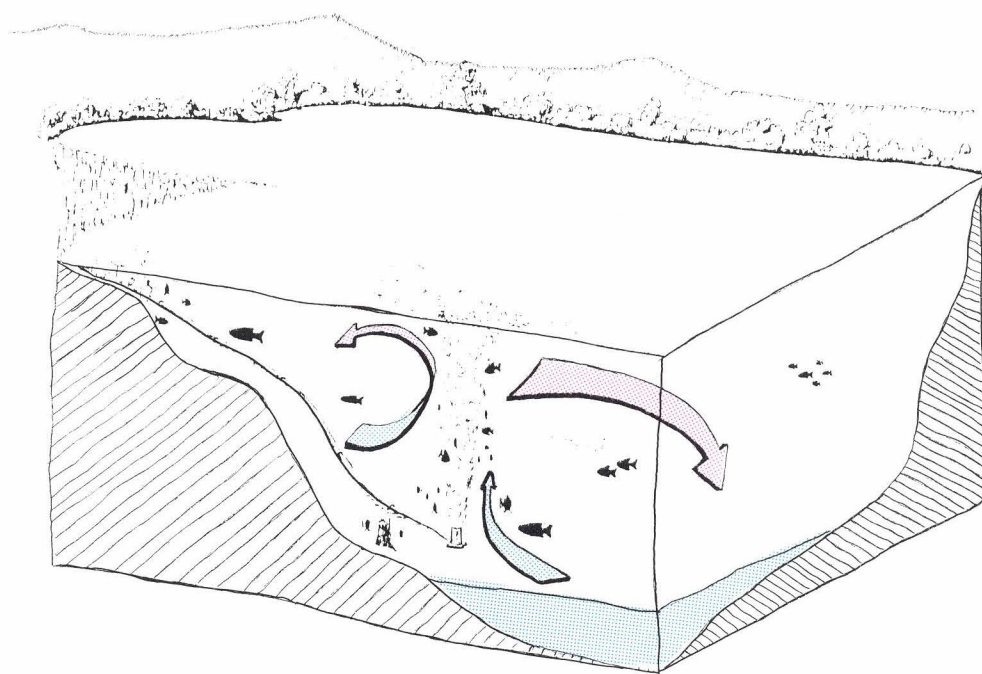


face water of the lake to cool. The cooled water becomes denser and sinks, forcing the warmer waters to the surface. The process continues until water temperatures are uniform. During this season the wind is able to generate currents capable of circulating most of the lake. This circulation mixes the lake so that temperature and oxygen levels are more uniform. This period is known as *fall turnover*, and is often accompanied by a change of water color and a slight odor of hydrogen sulfide. Most fish are able to tolerate the low concentrations of the gas brought to the surface by a gradual turnover of layers.

During the fall, fish are able to use most of the lake. They feed more heavily and more frequently at this time to prepare for winter. Because of fall turnover, nutrients that were trapped in the hypolimnion during the summer are spread throughout the lake. These

on top of the thirty-nine degree water. After ice forms, wind action is unable to aerate the lake, and dissolved oxygen is slowly consumed by aquatic animals and plants and processes of decomposition. During severe winters when water levels are low, large fish kills may result from this lack of oxygen—kills like those in Kansas in the winter of 1976-77.

These changes in stratification greatly affect the movements of fish. During the spring and fall periods of uniformity, fish can generally be found in many parts of the lake. They congregate in spawning areas and around good food sources. But during the summer and winter periods of stratification, fish live only in areas where there are comfortable amounts of oxygen. Temperature further limits their range in winter. Fish stay in warmer water where daily temperature changes are slight. They school around brushpiles in deep



*Bubbles from the helixor pull water with them as they rise to the surface. Water near the bottom of the lake is circulated even if it is cooler (heavier) than surface water. Temperature layers are broken up, the entire lake circulates, bringing bottom nutrients to the top and taking oxygen to the bottom. Plankton and fish find the necessities of life throughout the lake, and larger populations result.*

nutrients stimulate growth of plankton, microscopic plants and animals that provide additional food for small fishes.

During the winter, the lake may undergo another period of stratification. As water temperatures decrease, the surface water becomes colder and thus heavier. This colder water sinks, forcing warmer bottom waters to the surface. The circulation continues until water temperatures reach thirty-nine degrees. At that temperature, water is at its densest. As water cools below this temperature, it becomes lighter and remains

water or along the drop-offs of old creek channels.

The advantages of breaking up summer and winter stratification are obvious, and the European aeration technique which had been applied to fisheries problems in other states seemed to be a sensible way to get the job done. So in 1976, the Kansas Commission began an aeration program.

The operation began at Pottawatomie State fishing Lake Number One in 1976 and continued there through the summer of 1977. Last spring, the project was moved to Neosho State Fishing Lake near Parsons.



Both of these lakes stratify strongly during summer months, and each has a problem with excessive aquatic plant growth.

The aeration system Fish and Game uses is known as a *helixor unit*. The name comes from the three spiraled plastic tubes through which air is pumped. These tubes are placed on the bottom in the hypolimnion. Each is connected by plastic pipe to a fifteen-horsepower blower, which forces air through the pipes and out the tubes in a spiraling motion. As the bubbles rise toward the surface they draw water with them, creating a circulating current. This current mixes the water layers in much the same fashion as the spring winds. As bottom water is circulated to the surface, it picks up oxygen and is warmed by contact with the air as well as by blending with warmer water. The result: a greater uniformity of oxygen and temperature levels throughout the lake.

At both Pottawatomie and Neosho State Fishing Lakes, the helixor's performance exceeded expectations. Before the unit was set up, fish were confined to the upper six feet at Pottawatomie Number One. After running the blower, Commission biologists found fish in depths as great as fifteen feet. The unit produced similar results this past summer at Neosho State Fishing Lake. In tests done the two previous years, fish were restricted by stratification to the upper fifteen feet of the lake. After installation of the helixor, fish began to appear down to twenty-five feet below the surface.

How does this affect the fishing? At Pottawatomie Number One, the channel catfish catch better than tripled in 1976, and the 1977 catch outstripped 1975 figures by over 500 percent.

Fish and Game is also using the helixor to lengthen the growing season for fish. Operating the unit during the warmest part of the day in early spring speeds up seasonal warming of the lake. Similar operating procedures in the fall maintain warm water conditions later than normal. During the summer, lake managers run the helixor unit during the coolest part of the day to prevent overheating of the water. Four hours of daily running time has been found adequate to prevent the lake from stratifying.

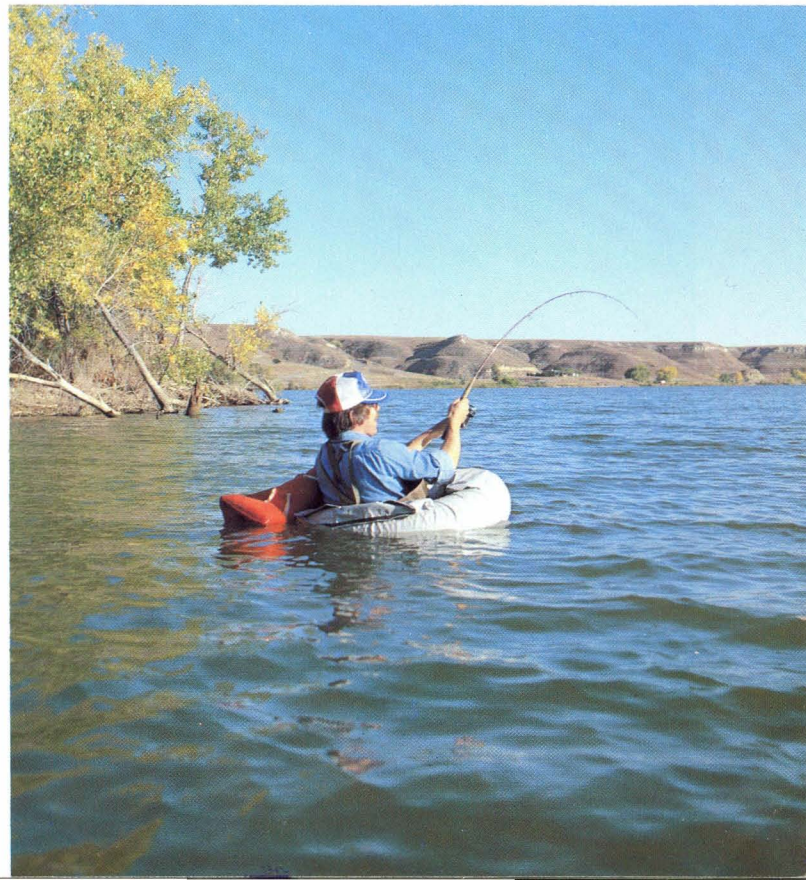
This system has improved living conditions not only for the fish, but also for the food they eat. Bloodworms increased dramatically at Pottawatomie Number One in 1976 and 1977. Actually immature flies, these animals are important food for channel catfish, bluegill, and crappie. Stomachs of the channel catfish caught at Neosho State Fishing Lake last July bulged with bloodworms.

Aeration and circulation of Pottawatomie Number One yielded yet another benefit. Before installation of the helixor, biologists at Pottawatomie had to fertilize the lake to prevent excessive plant growth. While farmers fertilize to grow more crops, lake biologists fertilize to grow more plankton. These microscopic

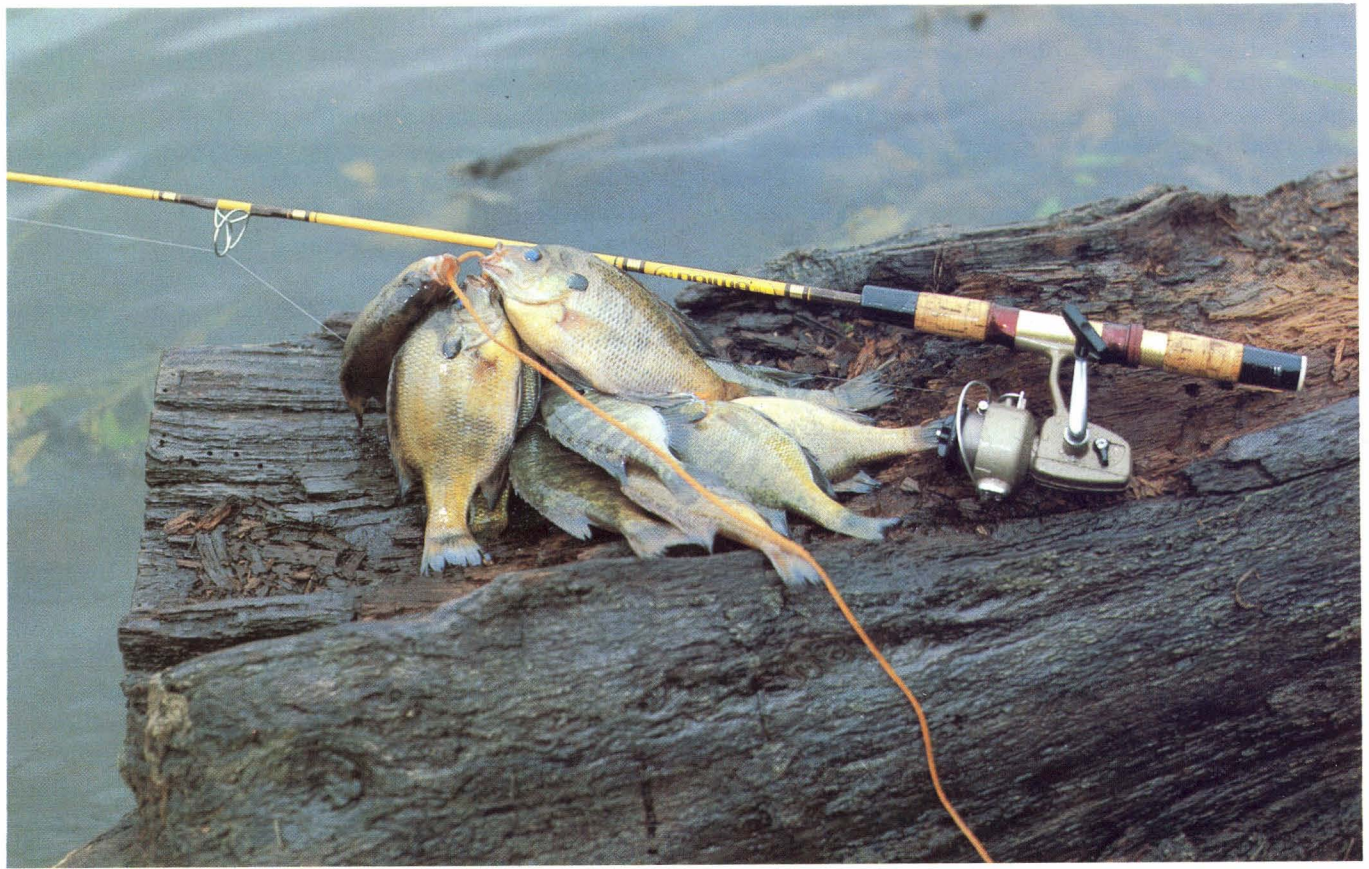
plants and animals cut down nuisance plant growth algae (moss) by decreasing the amount of light that penetrates the lake. However, fertilization promotes stratification, and although it initially increases the number of fish a lake can produce, continued addition of fertilizer will eventually destroy a lake. By stimulating plankton growth, fertilizer increases oxygen consumption, thus rendering a larger area unusable to fish. Because the helixor circulates nutrients from the bottom waters throughout the lake, it, too, maintains high numbers of plankton. Plankton numbers are not as great as when the lake is fertilized, but the concentration is sufficient to prevent plants from becoming a problem. At Pottawatomie Number One, there was no increase in aquatic plants when fertilization stopped and aeration began. Thus it appears the aerator can maintain quality, weed-free fishing water without adding excess nutrients that will destroy the lake.

Fishermen should be aware that use of this aeration system may change some of their favorite summer fishing spots. However, once accustomed to the bubbles, fish (particularly bluegill) may gather in the bubble areas to feed on bloodworms and other food matter brought to the surface by the spiraling air. Considering the helixor's success in its first Kansas trials, it won't be too long before those lines of spiraling bubbles begin to attract fishermen as well as fish. On a lake that's been destratified, the angling dog days of July may never be the same.

*Tom Mosher, a fisheries biologist with the Fish and Game Commission, has worked with the helixor since the Commission obtained it. He and other fisheries personnel have studied the complex effect of destratification on aquatic life forms—fish, plankton, and other invertebrates—commonly found in Kansas lakes.*







Ken Stueben

# Bluegill: the meat fisherman's delight

Don Gabelhouse

**I** lumbered impatiently toward the kitchen. Anticipation was getting the best of me because the meal my wife, Diane, was preparing was something special. A quick inspection seemed to be an appropriate way to pass the time, so I took the lid off the fried potatoes. Just the right amount of salt, pepper, and onion had been added, and the unskinned slices were all nearly a perfect ¼-inch thick. The cream style corn (white—not yellow) was just starting to bubble, and Diane had just popped the last of the corn meal coated fish fillets into the frying pan.

I am not a particularly finicky eater. In fact, I'll eat damn near anything. It is important, however, that all components of this particular meal be prepared just so. To me, fried fish, potatoes, and corn in February is in

the same league as turkey and fixings at Thanksgiving. To stray from the traditional would be unthinkable, even though a dietician might differ with the menu.

Above all, the main feature of the meal, fried fish, cannot be just any fish. The preferred species is bluegill (preferred over catfish, crappie, and, yes, even walleye). Several types of fish are fine if you "fix 'em right and if you get 'em from good water." Bluegill, however, *always* taste superb. Even my wife does an outstanding job of preparing fish when the fish is bluegill. It would be hard to fix them wrong because you don't have to make a special effort to disguise or change their flavor or worry about what kind of water they came from.

I realize that the bluegill is not the most popular fish,



especially in Kansas. In fact, most people feel you have to be either a kid or a sissy without a full deck to enjoy fishing for bluegill. Think about it! How many TV fishing celebrities have you seen fishing for bluegill without a kid along? Granted, this is probably due at least in part to the fact that you don't need big boats and sonar rigs to fish for bluegill (I doubt that too many worm farmers or cane-pole manufacturers would sponsor a syndicated TV program). But more importantly, bluegill are just plain too small to be considered fish of status. Most anglers want to be able to catch one fish and still have something that is worth showing off or will feed a small army.

Authors of pro-bluegill articles typically justify fishing for bluegill by stating how sporty they are

when taken on light tackle. The old "pound for pound, ounce for ounce" adage is frequently included. I really enjoy catching eight-inch-plus bluegill. This is especially true since when you catch one good bluegill, you are apt to catch several more. You don't have to be an expert fisherman to catch them. Even anglers with average skill like myself can be successful when bluegill are the quarry.

Just as important as the catching, however, is the eating. Even though it takes a mess of even good-size bluegill to make a meal, I am convinced that year in and year out, fishing for bluegill is among the most efficient ways of gathering fish for the table. I have seen too many catfish fishermen get skunked consistently to think that this is the most effective way to fish

## How to catch them—

*There's only one real commandment in bluegill fishing—keep the tackle light. Bluegill will bump at nearly any fishing rig known to man at one time or another, but the best part of bluegill fishing—catching a boatload of bluegill—requires delicate approach. In most situations, that means two-to six-pound line, a number eight hook, a single split shot for weight, and a thumbnail-sized bobber in situations that require flotation.*

*It isn't necessary to cast to a bluegill; many top notch anglers just reach out and drop the bait on him. The cane pole most fishermen learned on is an excellent tool for this sort of fishing. Its length lets an angler present the bait quietly from a distance, and the spring in the pole is more than any bluegill can handle. Status-conscious fishermen use flyrods for the same purpose, dangling a baited hook under heavy cover along the bank or in flooded brush. Modern fishing technologists have yet to discover a more efficient year-round method for filling a fish basket with bluegill.*

*Some fishermen who find this sort of meat fishing distasteful*

*prefer to unlimber their ultralight rods, weight-forward lines, and hand-tied mealworm imitations and prospect for bluegill with more classic flyrod technique. Bluegill are particularly vulnerable to a fly fisherman when they're on their nests or "beds" in shallow water. The biggest fish take the preferred locations on the beds usually next to the bank under an arch of brush. A flyrod expert who can lay a popper, fly, or rubber spider into these tight spots will take slab bluegill until his arm gets tired.*

*Before the bed fishing gets hot, bluegill can be taken with ultralight spinning tackle. The fish are sluggish until the water warms up; they react slowly to bait and take it delicately when they decide to bite. A small (16th ounce or less) jig suspended under a small bobber is a good rig for this early fishing. It casts surprisingly well, and lets the fisherman work the bait slowly, vibrating the bobber a few inches across the water, then letting it sit for half a minute. This technique gives the jig a subtle action and lets the fish make up his mind and move in.*

*Ultralight spinning tackle with*

*small jigs or spinners also work well in midsummer after the fish have come off their beds. Bluegill and most other fish move into deep water during the heat of the day and come into the shallows to feed at dusk and especially at dawn when water temperature is at its lowest. Dipping for bluegill with a cricket or small worm works well through the summer, too.*

*Bluegill are the staple for ice fishermen who work small ponds. In small bodies of water, bluegill tend to congregate in the deepest holes around cover. A red wiggler angle worm fished a foot or so off the bottom works well, especially when it's attached to really delicate tackle—two-pound line, one split shot, and a tiny bobber. When the bluegill decide to feed, a man can bring home a bucket full of them which is generally what he'll eat after a January day on the ice. Somewhere, a fisherman has caught more bluegill than he could eat at a sitting, I suppose, but I'm sure he ate the remainder for breakfast the next morning. It's just not possible to catch too many bluegill.*



for meat. When I go bluegill fishing, I am almost certain that I will catch a meal or two's worth of eating. And what eating!

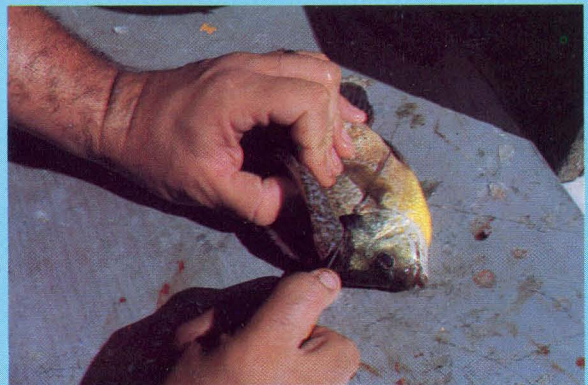
Even if you buy the statements that bluegill are sporty, fine eating, and a good source of large quanti-

ties of food, you may still be skeptical of fishing for bluegill for yet another reason. How would you clean them once you caught a basketfull? You may think that it would take forever and a day to clean enough bluegill to make a meal. Take heart—when the right tech-

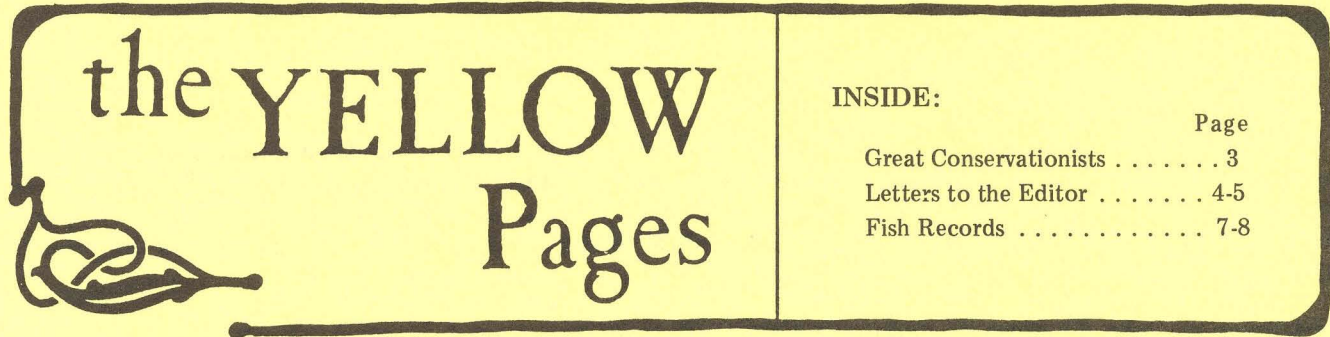
## How to clean them—



*Gabelhouse's technique for filleting bluegill differs slightly from other methods. He scales the fish first. He makes his first cut down the back to one side of the dorsal fin, poking the knife through the belly after he gets past the ribs. He then cuts down to the tail and out. His second cut is just behind the gill slit. He cuts over the ribs, not through them, and separates the fillet from the fish. Photos by Gary Gabelhouse.*







# the YELLOW Pages

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## 'HERP' LOVERS UNITED

It's a sunny Friday afternoon in May. Carloads of people from all parts of the state begin to arrive at an isolated campground somewhere in Kansas. They are not armed with guns or fishing gear, yet they are more than casual campers. They carry cameras, cloth bags, strange-looking sticks, books, and scientific collecting permits. With that equipment they hope to observe, photograph, and, in some cases, collect some of the most interesting wildlife in the state. They are herpetologists — students of the world of amphibians and reptiles.

Many herpetologists in Kansas are members of the Kansas Herpetological Society (KHS). The group includes men and women of all ages and backgrounds who meet six times each year to study and discuss amphibians and reptiles in Kansas and other parts of the world. KHS members keep track of each other with bi-monthly newsletters, which also are used by working biologists involved in their own herpetological pursuits.

A few KHS members are professional herpetologists, but most are not. The non-professionals are simply interested in learning more about the critters and helping to educate the public about the often misunderstood amphibians and reptiles of our state.

KHS members may find one or more of the nearly 100 species of "herps" found in Kansas, depending on the region of the state they visit and the season. The odds are that whatever they find will be harmless. Only five species found in Kansas are poisonous to man and all of these are snakes. The truth is that most Kansans have never seen a poisonous snake in the wild and probably never will. Poisonous snakes simply are not easy to find in most of the state.

Since almost all amphibians and reptiles are harmless and since most are even beneficial to man they should not be needlessly killed. They are part of the Kansas wildlife scene just like the coyote, meadowlark, buffalo, catfish, and hundreds of other species of wild animals and fish. KHS members are committed to spreading the message that snakes, lizards, turtles, frogs, toads, and salamanders are all part of a complex ecosystem and are here for a reason.

The KHS was formed in early 1974 when several interested people got together at that time and started what quickly became one of the fastest growing and most active state societies in the country. It's membership has grown from about thirty to nearly 200 and is still growing.

Anyone interested in learning more about "herps" in Kansas is invited to join KHS. Dues are \$4 per year and all members are entitled to participate in Society functions. Members also receive six newsletters per year. Interested persons should contact Marjorie Perry, 812 Murrow Court, Lawrence, KS 66044 for a membership and/or for more information. - - by Larry Miller, Caldwell

† † † †

## TIDBITS FOR TWO BITS

Waterfowlers and fishermen may be especially interested in a couple of new publications available through the Fish and Game Commission.

(more)



A comprehensive guide to the Mined Land Wildlife Area (Strip Pits) of southeast Kansas is available from the agency's regional office in Chanute or the headquarters in Pratt. The brochure is the first detailed guide to the fishing and hunting opportunities available in the pits. It includes maps of each of the 26 units comprising the area, fishing and hunting tips, and fish and wildlife management practices the agency has undertaken in this unique region.

The agency also has available a pocket-sized, water-resistant guide to waterfowl identification. The brochure, published by the U.S. Fish and Wildlife Service and titled "Ducks At a Distance", serves as a ready reference to help duck hunters and bird watchers identify waterfowl species. The color publication exhibits differences in size, shape, plumage patterns and colors, wing beat, flocking behavior, voice, and habitat preferences.

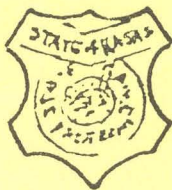
The cost of each publication is twenty-five cents.

† † † †

## BIRD OBSERVING

Bird watchers can find interesting reading in a new publication entitled, appropriately, "Bird Watcher's Digest." The new bi-monthly magazine is published by William and Elsa Thompson of Marietta, Ohio. Each issue contains about 25 separate articles by bird enthusiasts from all parts of the country, as well as accounts of birds and bird watchers in other parts of the world.

Issues are \$1.50 per copy or \$7.50 per year (six issues). Inquiries should be addressed to: Bird Watcher's Digest, P.O. Box 110, Marietta, Ohio 45750.



## It's The Law.

Everybody pays when fish or game animals are taken illegally. The resource itself is diminished. The landowner on whose property the infraction occurs is victimized by the violator. As a result, the landowner's opinion of hunters is often tarnished by the acts of a few selfish individuals . . . and more land may be closed to hunters and fishermen

who honestly seek access. The fines courts impose on violators punish those individuals but, in many cases, irreversible damage has already occurred. Maybe that's why conscientious sportsmen and concerned landowners are becoming more involved in helping game protectors do their jobs, as was the case in some of the following incidents:

— Lonnie W. Comstock, Route 1, Kincaid, paid \$415 in Allen County District Court for trespass and taking a deer during closed season. A 30-day jail sentence was suspended. Game Protector Dick McCullough made the arrest.

— Carl E. Ventle, Labette, paid \$865 in fines and costs and was sentenced to three days in jail. Ventle was charged by GP Dudley Foster with illegal possession of 31 raccoon pelts, two opossum pelts, and meat from two deer.

— Greg A. Skibbe, Scott City, paid \$215 in Wichita County District Court for illegal possession of a deer. GP Claude Blair brought the charges.

— Randy Bomberry, Parsons, paid \$515 in court fines and costs for taking a deer during closed season. His license was revoked for one year, he was sentenced to 30 days in jail, and was placed on probation for two years.



## THE GREAT CONSERVATIONIST ROUNDUP

The Kansas Wildlife Federation is now accepting nominations for its 1979 Conservation Achievement Program.

Any organization in the state of Kansas is eligible to submit the name of someone who has done a job worthy of state recognition. Winners proceed to national competition. A nominee must be a Kansas resident, have accomplished his work in Kansas, and may be either a professional or layman club, individual, or business. Nominees need not be a member of any club or of the Federation. Current Federation officers and 1978 award winners are not eligible for nomination.

Among the categories to be judged are these:

**Conservationist of the Year (Governor's Award)** — For the achievement considered to have made the most significant contribution to the cause of conservation of Kansas' natural resources.

**Wildlife Conservationist** — Achievement contributing to effective management, control, restoration, or replenishment of wildlife resources.

**Land & Soil Conservationist** — Outstanding achievement in land use, watershed and wetlands development or protection, erosion control, recreational development, habitat improvement, or other management practices which maintain or improve environmental aspects of land and related resources.

**Forest Conservationist** — Outstanding achievement in forest and woodlands development, management, or use.

**Water Conservationist** — Commendable work in pollution control, conservation and protection of wetlands and rivers, or other efforts aimed at maintaining or improving water standards.

**Air Conservationist** — Deserving commendation for obtaining quality air standards, reducing pollution, effecting control of pollution sources, or other action contributing to improving air standards.

**Youth Conservationist** — For outstanding conservation effort by a person who has not attained the age of 21 during the contest year. Youth groups acting together in a conservation program are also eligible.

**Conservation Educator** — For achievement in educating others, either formally or informally, in the field of conservation.

(more)

### NOMINATION FORM

To make a nomination, send four (4) copies of this form and ALL ATTACHMENTS to:

Lewis Baker  
1204 West 11th St.  
Junction City, Kansas 66441

Name of Nominee \_\_\_\_\_

\_\_\_\_\_ street . . number

\_\_\_\_\_ city & state zip A.C. Telephone

Award Category \_\_\_\_\_

Please specify ONE of the categories for which nomination is made. Use a separate form for each nomination and category.

Recommended by \_\_\_\_\_

\_\_\_\_\_ Name and title

\_\_\_\_\_ club name

\_\_\_\_\_ street & number

\_\_\_\_\_ city & state zip A.C. Telephone

Date \_\_\_\_\_

#### PREPARATION INSTRUCTIONS

Attach a typewritten description, NOT TO EXCEED THREE PAGES, detailing specific acts for which award is recommended. Include such other information as to past recognition, organization memberships, affiliation, past achievements, etc., as nominator feels is pertinent. If additional space is needed use supplementary sheets (8½x11) and attach to this form. When a company, organization, publication, etc., is involved, include the name of the president, chief executive officer, sponsor, editor or so forth.

Nominations will be closed July 31, 1979

**NOTE TO NOMINATOR:** The following information is needed to assist the chairman with invitations, award engraving, etc.

#### INFORMATION ABOUT NOMINEE:

AGE: Over 21 ( ) Under 21 ( ) Specify Age If under 21 include name and address of parent or guardian.

\_\_\_\_\_ name

\_\_\_\_\_ street

\_\_\_\_\_ city and state

\_\_\_\_\_ zip A.C. Telephone

Sex: male ( ) female ( ) married ( ) single ( )

#### LOCAL NEWSPAPER OF NOMINEE

Name \_\_\_\_\_

Address City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

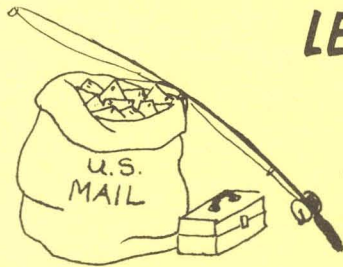


**Conservation Communicator** — For effectively conveying the conservation message and creating public awareness of conservation issues in the news media.

**Conservation Legislator** — For a legislator, either state or federal, who has been actively involved in conservation legislation. Also includes staff members employed by state or federal legislators.

**Conservation Organization** — For work done by a civic club; conservation group; garden club; women's club; business, trade or professional organization; corporation; or similar group. May be any organization of the state either local, county, or statewide in scope.

† † † †



## LETTERS to the EDITOR

### MISTER NATURAL

I was born on or close to the Smoky Hill River south of WaKeeney in Trego County 49 years ago.

The day I was born I came with a .22 Winchester pump in one hand, a cane fishing pole in the other, and I was dragging a couple of traps. I could hardly wait from one trapping season to the next. My whole family of uncles on my Dad's side and all my brothers were hunters and trappers, so it was the natural thing to do.

I married a girl from Colorado and moved out here in 1952. We still have land in Kansas. My mother lives in Ransom and we come back about two times a year. I learned to call varmints some 15 years ago and since have called in over 500 coyotes, some in western Kansas.

So you can see why I like getting your magazine and enclosed is a check. My older brother and I used to trap on the Smoky for mink and beaver right where they built the Cedar Bluff dam. I roll up my magazines when I'm through and send them to Virgil. Keep it coming.

Dale Rauch  
Colorado Springs, Colo.

\* \* \*

### COMPLIMENTS

Enclosed is our check for three more years of Kansas Fish & Game magazine. This publication is surely the finest of its kind and a real source of pride for all Kansans.

The David Maas cover is beautiful and only serves to make the January-February issue better than ever.

Katherine R. Rizza  
Halstead, Ks.

\* \* \*

### INFORMATION, PLEASE

Please renew our subscription to your excellent magazine. We think you do a wonderful job. Just one suggestion: Would it be possible to put cutlines on all pictures? When we see a beautiful scene, we always wonder where it is. Sometimes we cannot identify the bird although we are bird watchers. We have seen the fish and game magazines from other states and think Kansas has the best. The color photos really set it off. Also, we liked the television series the department produced last fall. So, thanks to all your helpers.

Norma Souders  
Cheney, Ks.

*Thanks for the thanks. Could it be that we have been subconsciously hoarding all the most scenic spots for ourselves? Your point is well taken. We plan to use more complete cutline information in future issues.*

\* \* \*



## VENISON AND CHARITY

I am enclosing my renewal for Kansas Fish & Game magazine.

I am also enclosing a picture which accompanied an article in the local newspaper. This article (about an arrest that resulted in confiscation of raccoon pelts and deer meat) stated that the impounded furs were sold and the meat destroyed. It did not say the meat was unfit for consumption. Is it possible at a time like this, when people are hard put to provide for their families, that your policy would call for destruction of edible venison? Many of us would find that hard to believe or to condone. Surely there are ways that several hundred pounds of confiscated meat could be delegated to worthy charitable organizations.

Donald E. Rood  
Parsons, Ks.

*We sympathize with your concerns and thank you for your subscription. Because of liabilities incurred by giving away or selling meat not inspected by the U.S. Department of Agriculture, however, we cannot normally dispose of confiscated venison in the manner you propose. Where possible game protectors attempt to find suitable public uses for confiscated meat but, because the meat doesn't wear the "USDA-Approved" stamp, the alternatives are limited. In the particular case to which you refer, game protectors found much of the meat unwrapped and covered by the pelts.*

\* \* \*

## PARTING COMPANY

We enjoy your magazine but we are not renewing our subscription at this time. As farmers we are cutting out non-essentials. At a future time when farm prices are compatible with wages of non-farmers, we will then be able to buy your magazines.

Mrs. H. A. Miller  
Sylvia, Ks.

\* \* \*

## PLEASANT MEMORIES

My hat is off to Ken Brunson. He gave a fine presentation of Kansas rivers in the March-April issue. One is uppermost: Shoal Creek in south-east Kansas. My parents moved to Joplin in 1912. I was seven years of age. From then until 1928, when we moved to Fort Scott, Shoal Creek was our picnic and camping mecca. Bass? The creek invented them. I get nostalgic when I think of the coffee brewing, bacon sizzling, and wood smoke permeating our camp site at sunrise.

My check is enclosed for a two-year subscription.

M. Perkins  
Yates Center, Ks.

\* \* \*

## SHORT AND SWEET

I sure do enjoy your magazine. I wouldn't be without it. Keep up the good work.

Austin Olson  
Leonardville, Ks.

\* \* \*

## EX-COMMISSIONER'S MESSAGE

To Commissioners, past and present; the Director; staff; and sportsmen:

I would like to thank the sportsmen, the property owners, and the people of Kansas for my tenure with the Commission. I enjoyed it very much and am sorry that it is necessary for me to resign due to physical problems.

I leave you with the Commission in good hands and hope to see and visit with you in the future.

Lew Moon  
Independence, Ks.

\* \* \*



KIND WORDS

I subscribe to several magazines (Natural History, National Geographic, National Wildlife, International Wildlife, Audubon) and I feel I receive more pertinent, useful information from Kansas Fish & Game than all the others combined. Keep up the good work.

M.J. Matthews  
Enterprise, Ks.

\* \* \*

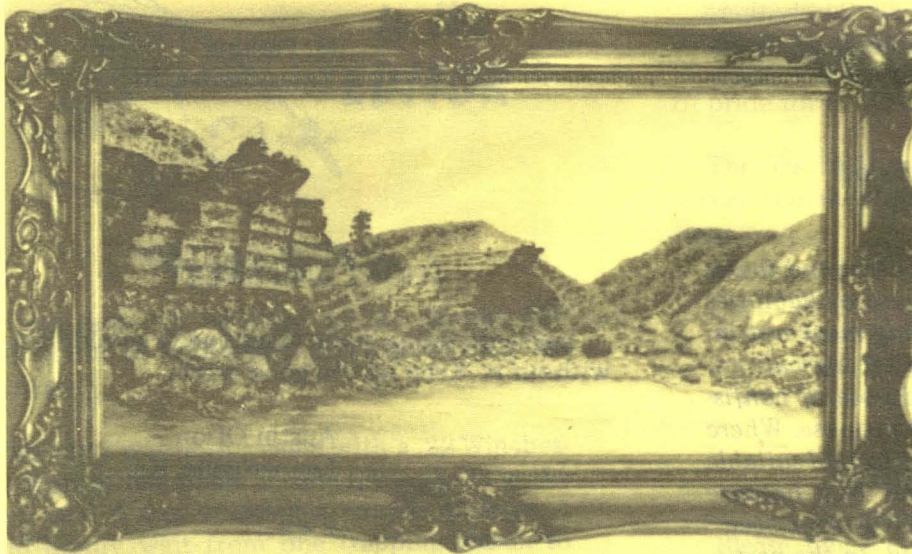
WANDERING WEBSTER

Enclosed find a check for a three-year subscription. In your January-February issue, a map accompanying an article about wild turkeys in Kansas showed Webster Reservoir in Graham County. It's in Rooks County.

P.M. Peolfs  
Stockton, Ks.

*You're exactly right. Thanks for not holding it against us.*

\* \* \*

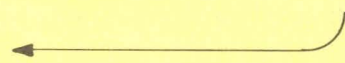


THEN AND NOW

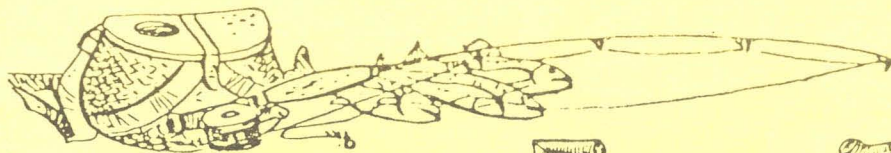
My grandson is quite a sportsman. He will enjoy the pictures of different types of fish in the January-February issue. We would like to give him a one-year subscription to the magazine, starting with that issue. Also, renew our subscription for three more years.

I am sending a snapshot of a picture of Cedar Bluff Reservoir that was in your magazine several years ago . . . when the reservoir had water in it. I've just started doing oil paint pictures and I chose this scene as my project. The oil painting is 12-inches by 24-inches and I'm very proud of it. Also enclosed is a snapshot of the same area of Cedar Bluff as it looks now. It is really a depressing sight. The water is all gone and just cracked soil in its place.

Mrs. George Prose  
Ness City, Ks.







# KANSAS FISH RECORDS

## BASS, LARGEMOUTH BLACK

Weight: 11 pounds, 12 ounces  
Length: 25 inches  
Date: March 20, 1977  
Place: Farm Pond, Jefferson Co.  
By: Kenneth M. Bingham, Topeka, Ks  
Tackle: Spinning rod & reel with minnow

## BASS, SMALLMOUTH

Weight: 4 pounds, 1 ounce  
Length: 20½ inches  
Girth: 14 inches  
Date: September 10, 1978  
Place: Milford Reservoir  
By: Blaine E. White, Downs, Ks  
Tackle: Rod & Reel with lunker lure

## BASS, SPOTTED (Kentucky)

Weight: 4 pounds, 7 ounces  
Length: 18½ inches  
Date: April 16, 1977  
Place: Marion County Lake  
By: Clarence E. McCarter, Wichita,  
Tackle: Fly rod with medium popper

## BASS, STRIPED

Weight: 33 pounds, 12 ounces  
Length: 37½ inches  
Girth: 27 inches  
Date: June 1, 1975  
Place: Cheney Reservoir  
By: Carl G. Hooker, Wichita, Ks  
Tackle: Rod & reel with yellow "hellbender" with black stripes

## BASS, WHITE

Weight: 5 pounds, 4 ounces  
Length: 17 inches  
Date: May 4, 1966  
Place: Spillway area below Toronto Reservoir  
By: Henry A. Baker, Wichita, Ks  
Tackle: Rod & reel (spincasting) with "Tiny Tot"

## BLUEGILL

Weight: 2 pounds, 5 ounces  
Length: 11 inches  
Date: May 26, 1962  
Place: Scott Co. farm pond  
By: Robert Jefferies, Modoc, Ks  
Tackle: Rod & reel with worms

## BUFFALO

Weight: 54 pounds, 4 ounces  
Length: 45 inches  
Date: May 24, 1971  
Place: Farm pond north of Tescott, Ks  
By: Randy Lee, Minneapolis, Ks  
Tackle: Bankline with worms

## CARP

Weight: 35 pounds, 4 ounces  
Length: 42½ inches  
Girth: 27½ inches  
Date: May 2, 1970  
Place: Sandpit near Lyons, Ks  
By: W. Amos Henry, Lyons, Ks  
Tackle: Rod & reel with corn

## CATFISH, BLUE

Weight: 45 pounds, 2 ounces  
Length: 47½ inches  
Girth: 28½ inches  
Date: July 18, 1977  
Place: Marais des Cygnes River  
By: Tony Fornelli, LaCygne, Ks  
Tackle: Bankline with goldfish

## CATFISH, BULLHEAD

Weight: 5 pounds  
Length: 18½ inches  
Date: June 2, 1974  
Place: Fish & Game Strip Pit (Unit 15)  
By: Mary Louise Sachetta, Scammon  
Tackle: Rod & reel with worm

## CATFISH, CHANNEL

Weight: 32 pounds  
Length: 40½ inches  
Date: August 14, 1962  
Place: Gardner City Lake  
By: Edward S. Daily, Gardner, Ks  
Tackle: Throwline with small sunfish

## CATFISH, FLATHEAD

Weight: 86 pounds, 3 ounces  
Length: 55½ inches  
Date: August 24, 1966  
Place: Neosho River near St. Paul, Ks  
By: Ray Wiechert, Brazilton, Ks  
Tackle: Trotline with sunfish



**CRAPPIE, BLACK**

Weight: 4 pounds, 10 ounces  
 Length: 22 inches  
 Date: October 21, 1957  
 Place: Woodson County State Lake  
 By: Hazel Fey, Toronto, Ks  
 Tackle: Rod & reel with live minnow

**CRAPPIE, WHITE**

Weight: 4 pounds, ¼ ounce  
 Length: 17½ inches  
 Date: March 30, 1964  
 Place: Farm pond in Greenwood Co.  
 By: Frank Miller, Eureka, Ks  
 Tackle: Rod & reel with live minnow

**DRUM**

Weight: 28 pounds, 2 ounces  
 Length: 32 inches  
 Date: August 12, 1974  
 Place: KOP Dam near Parsons on  
 Neosho River  
 By: Tony J. Fornelli, Arma, Ks  
 Tackle: Trotline with crawfish

**GAR**

Weight: 31 pounds, 8 ounces  
 Length: (not known)  
 Date: May 21, 1974  
 Place: Outlet at Perry Reservoir  
 By: Ray Schroeder, Topeka, Ks  
 Tackle: Rod & reel with yellow 1/8  
 oz. beetle

**GOLDEYE**

Weight: 1 pound, 14½ ounces  
 Length: 17½ inches  
 Date: May 20, 1973  
 Place: Milford Lake  
 By: Kris Eenhuis, Wakefield, Ks  
 Tackle: Rod & reel with white  
 spinner

**PADDLEFISH**

Weight: 74 pounds, 8 ounces  
 Length: 67½ inches  
 Girth: 33½ inches  
 Date: May 15, 1973  
 Place: Dam below Chetopa, Ks  
 By: Joseph D. Plummer, Chetopa,  
 Ks  
 Tackle: Rod & reel (snagged) during  
 2nd open snagging season

**PERCH, YELLOW (Ring)**

Weight: 12 ounces  
 Length: 11½ inches  
 Date: July 12, 1970  
 Place: Lake Elbo, Pottawatomie Co  
 By: Merlin Sprecher, Manhattan, K  
 Tackle: Rod & reel with "Gold  
 Nugget"

**PIKE, NORTHERN**

Weight: 24 pounds, 12 ounces  
 Length: 44 inches  
 Girth: 20 inches  
 Date: August 28, 1971  
 Place: Council Grove Reservoir  
 By: Mr. & Mrs. H. A. Bowman,  
 Manhattan, Ks  
 Tackle: Rod & reel with silver spoon  
 & skirt

**STURGEON**

Weight: 4 pounds  
 Length: 30½ inches  
 Date: November 17, 1962  
 Place: Kaw River near Topeka  
 By: J. W. Keeton, Topeka, Ks  
 Tackle: Rod & reel with worms

**SUNFISH, GREEN**

Weight: 2 pounds, 2 ounces  
 Length: 12 inches  
 Date: May 28, 1961  
 Place: Strip Pit in Cherokee Co.  
 By: Louis Ferlo, Scammon, Ks  
 Tackle: Rod & reel with "Abu"  
 spinner

**WALLEYE**

Weight: 13 pounds, 1 ounce  
 Length: 31½ inches  
 Date: March 29, 1972  
 Place: Rocky Ford fishing area  
 By: David Watson, Manhattan, Ks  
 Tackle: Rod & reel with jig

**EEL, AMERICAN**

Weight: 3 pounds, 6 ounces  
 Length: 35 inches  
 Date: May 28, 1977  
 Place: Kansas River near Topeka  
 By: James F. Strunk, Topeka, Ks  
 Tackle: Bankline with worms

**BASS, WARMOUTH**

Weight: 14¼ ounces  
 Length: 10¼ inches  
 Girth: 9 inches  
 Date: April 5, 1977  
 Place: Farm pond, Labette Co.  
 By: Craig Sonka, Parsons, Ks  
 Tackle: Rod & Reel with minnow





*The author—  
Doing what he does best.*

nique is employed, you can clean about two bluegill per minute, with the end product a batch of nearly bone-free fillets. I say “nearly bone-free” because the fillets do contain very small accessory bones that fry up almost completely. They are next to unnoticeable with no bone picking necessary.

Most people fillet bluegill as they would any other fish. A flexible fillet knife or electric knife is used to remove each of the fish’s sides. First, a vertical incision is made just behind the gill cover from the nape of the neck to the belly. The knife is then run down the back just to one side of the backbone, cutting through the ribs and continuing on to the tail. Then, the fillet, still attached to the carcass by the skin at the tail, is folded back onto a flat surface, and a cut is made just down to the skin, then between the skin and the fillet, separating the two. The ribs are then cut from the fillet. This technique is fine for walleye, white bass, and maybe crappie, but I think there is a better way to clean bluegill.

The major differences between my method and the one described above are that: 1) I scale the fish; 2) I cut through the skin when the tail is reached and do not skin fillet; 3) I cut along the outside of the ribs rather than through them; 4) I don’t have to unroll a 50-foot extension cord to plug in an electric knife.

I feel that my method is easier and perhaps faster than the more conventional approach. By leaving the

skin intact, the fillet also holds together better, fries up better, and has more flavor (pleasing of course). In addition, cutting along the outside of the ribs and then out at the bottom of the fish salvages a bit more meat along the belly. This area is sacrificed when the ribs are cut out in the conventional method. My method also saves some meat near the tail. In both areas, there isn’t much wasted using the conventional method, but every little bit counts, especially when you are cleaning fish as small as bluegill.

Changing angler attitudes is a difficult thing to accomplish. People who have fished for catfish all their lives won’t wake up one day and be dyed-in-the-wool bluegill fishermen. Bass fishermen are probably even less likely to get hooked on bluegill. Bass fishing now borders on a religious cult. There are, however, a few less tunnel-visioned Kansans who fish for whatever is biting. If you are one of them, why not give bluegill a try? You won’t be sorry you did, once you have a platter of fillets sitting in front of you. And if you are a bass fisherman, why not slip out to a secluded pond on the sly and try for a few of the little saucers? Your fishing buddies won’t even have to know you went. Just make sure they aren’t around when you fry up the catch. You won’t go alone the next time if they are.

*Don Gabelhouse, pond fisheries biologist for the Commission, has had a long and intimate relationship with the bluegill.*



**I**n the beginning God created the heavens and the earth. And God said, 'Let the waters bring forth abundantly the moving creature that hath life, and fowl that fly above the earth in the open firmament of heaven.' " Sometime later, man decided that God didn't do everything exactly right the first time. Man was sure that many species of wildlife would prosper in locations outside their native ranges. Most of the introductions of fish, beast, and fowl that man made proved little except that God was right all along. In a few cases, however, introduced wildlife has prospered in new areas. Most of the success stories have been due to the fact that man has altered the environment, making the land or water capable of supporting the new animals

where they previously wouldn't have been able to survive.

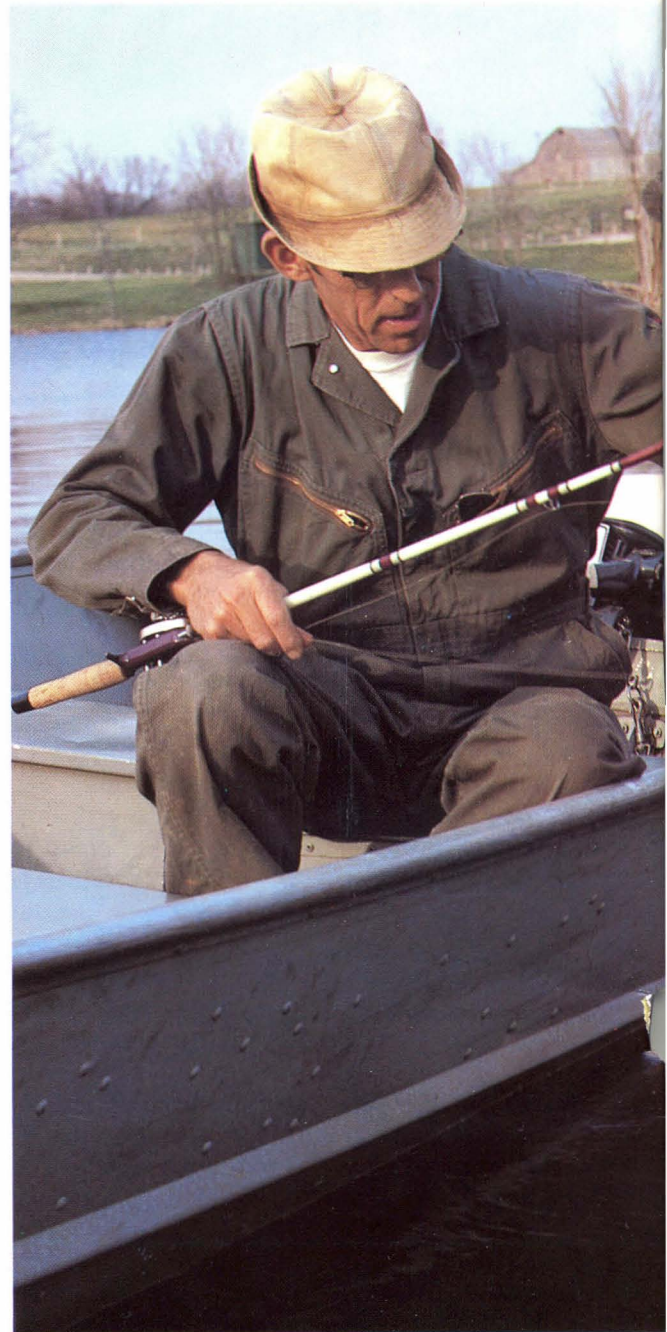
It isn't surprising that a number of fish species have in the last fifty years found Kansas to be a suitable new home. Where once only streams and rivers flowed, reservoirs, lakes, and ponds now abound. Many fish species once present only in eastern Kansas streams in low numbers have become widespread through stocking programs. Among these are the walleye, white bass, and northern pike. Still others have been brought in from areas far outside the state. Included in this group of exotics are the carp, rainbow trout, and Kansas' latest sensation, the striped bass.

During the years immediately after a successful in-

Unlike most exotics, the redear sunfish came to Kansas with a minimum of fanfare. Here's how to recognize him *and* catch him.

## The Redear

Don Gabelhouse





roduction takes hold, anglers generally respond to the opportunity to catch a new fish with a great deal of enthusiasm. Bait and tackle dealers increase their stock to include lures and gear suitable to catch the new fish, and a whole new series of fish stories develops. There are exceptions, however! One fish species not native to Kansas still remains a mystery to most of the state's anglers even though it has existed in our waters for decades. It is an understatement to say that the redear sunfish hasn't caused excitement among anglers because most Kansans don't even know the fish exists.

Even though an angler may catch an occasional redear, he probably passes it off as a fluke bluegill that is bigger than the usual run. A close examination will

reveal that, while the redear's general body shape is similar to the bluegill's, the two species are quite a bit different. The redear got its name because its black opercular flaps are bordered by bright crescent-shaped spots. These "ears" range from an orange on females to a brilliant red on males. Small redear have vertical bluegill-like markings on their sides which disappear with age. Adult redear females usually have olive backs with faint brownish mottling and dark olive-colored spots on their sides and yellowish bellies. Adult males are typically olive dorsally, silver laterally, with brassy bellies.

The redear, a native of the southeastern United States, was introduced into Kansas and several other states for three main reasons. First, redear have a greater growth potential than other sunfish. Redear measuring over nine inches long and weighing between three-quarters and one pound are not uncommon in Kansas. Fish measuring up to fourteen inches long and weighing over two pounds have been reported in the state. The world record redear weighed a whopping four and a half pounds.

The second reason for the redear's importation is because of its relatively low reproductive potential. Unlike bluegill, redear do not normally overpopulate and exist in worm stealing hordes. In fact, redear usually have just the opposite problem—their populations don't grow fast enough. While it may appear that redear would be an ideal substitute for bluegill in combination with largemouth bass, the two species have not worked out well together. Redear do not provide adequate prey for largemouth bass, and bass populations with only redear as prey are characterized by poor growth rates. Redear populations are also often so low that most angler catches of the fish are incidental unless the angler employs techniques aimed specifically at catching redear.

The redear's lack of reproductive success is largely due to the fact that it is a southern species. As such, it is susceptible to cold midwestern winters. Young-of-the-year redear are especially intolerant of cold snaps. In addition, the redear has a more restricted spawning season than the bluegill. Redear spawn when water temperatures reach about seventy degrees but, unlike bluegill, spawn little during the summer. A second light spawning period may occur in late summer or early fall. Redear reproductive success also depends on water quality and available habitat. For redear to thrive, water should be clear—visibility underwater should be at least four feet. These habitat factors touch on the third reason redear have been introduced into Kansas waters.

Redear occupy a different niche than native sunfishes. Both redear and bluegill can thus inhabit the same water without interfering much at all with each other. Competition for food is minimal between redear and bluegill except when they are very small. Redear





A comparison of the bluegill and the redear show the sunfish similarity. The redear has an orange to red crescent on the end of its "ear" or gill cover flap. The two species differ in their foods, preferred habitats, and size.



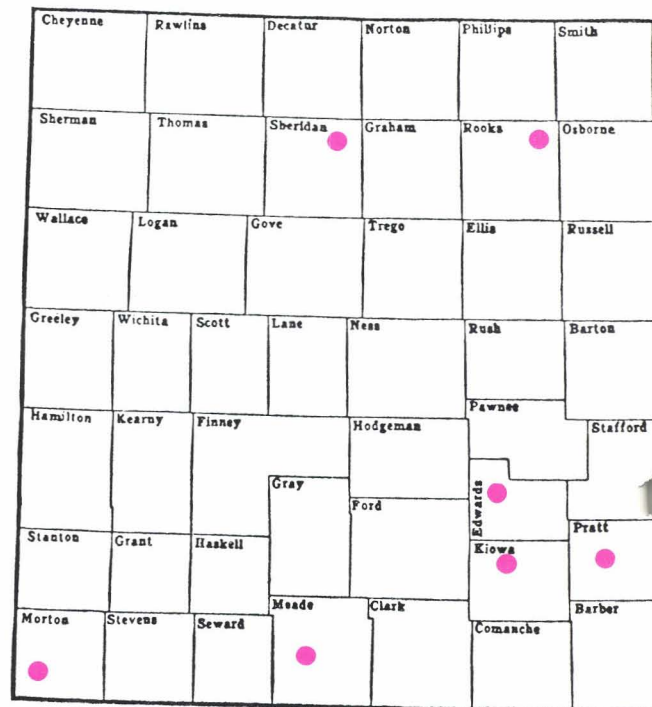
seldom eat surface insects like bluegill but prefer to congregate around sunken trees, logs, or submerged vegetation where they prey on bottom organisms such as mollusks, crayfish, and aquatic insect nymphs.

Upon finding a snail, one of the redear's favorite food items, the fish will assume a vertical position to "eye" the prey. The redear will then dive headfirst into the bottom, grabbing the snail in the process. The fish will right himself, "chew" the snail, and expel the shell fragments from his mouth. Redear are equipped with an extremely heavy set of gill arches which bear rounded, molar-like teeth used for crushing the shells of snails and clams. The redear has obtained the common name "shellcracker" because of this adaptation.

Anglers seeking to catch the fine-tasting redear should pay particular attention to the fish's habits. Many people feel that redear are difficult to catch. While they are more wary than bluegill, they can be caught with consistency once the angler understands their lifestyle. Like all sunfish, the redear is most vulnerable to angling during the spring spawning season when it can be caught close to shore on "beds". During other times of the year, redear are likely to be found in deeper water than bluegill inhabit.

Although redear can sometimes be taken on artificial lures, live baits are usually far more effective. The most common method used to catch redear is to bait a number six, long-shanked hook with worms. Two small split shot should be placed four inches above the hook and the rig should be jigged *slowly* just off the

## The Redear in Kansas







bottom. The bait should be allowed to remain motionless for about a minute between jigs because redear usually “eye” the bait while it is on the move, waiting for it to stop before biting. Redear do not tap the bait and make rapid “runs” like bluegill. Rather, they bite cautiously and remain in place where they “mouth” the bait. A bobber will thus move only slightly on the water’s surface until the redear decides to swallow the bait and swim away. When the bobber begins to move off, the hook should be set. It is important that the line be slack before the hook is set because redear are sensitive to resistance. Large bobbers and heavy weights should thus not be used.

Good redear populations are not widespread across Kansas. The fish has been most successful in the clear, weedy lakes of the southeastern part of the state. Winters are typically less severe in this region, so redear have established several self-sustaining populations. A good redear population can be found in Miami State Fishing Lake. Fair populations exist at Crawford and Wilson State Fishing Lakes; Neosho Wildlife Area, Pool Three; and Strip Pit, Area Six. Woodson and Bourbon state fishing lakes have been recently stocked with redear. Garnett, Osawatomie, and Gridley City lakes also contain some good redear populations, with many of the redear in Garnett City Lake weighing up to one pound.

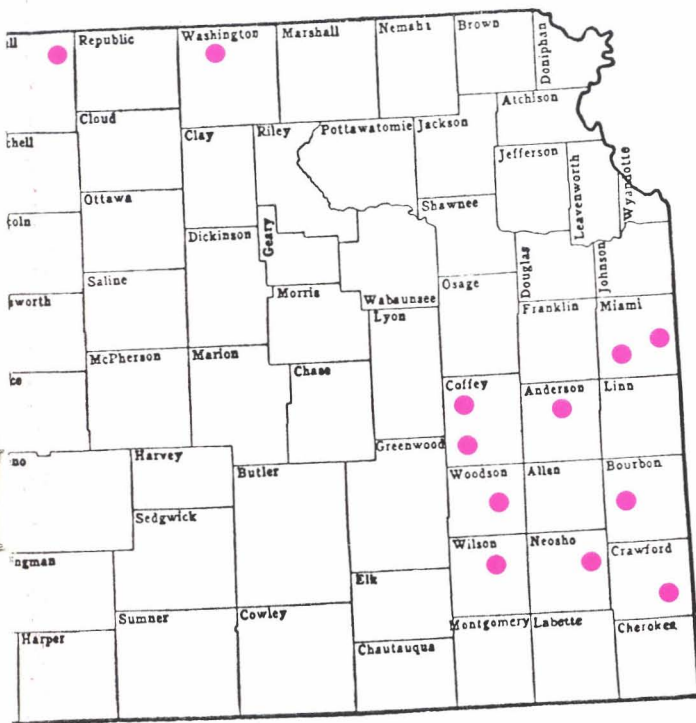
Establishing redear populations outside the southeast are few and far between. Butler State Fishing Lake in the southcentral contains a small population of redear, with some caught exceeding one pound. Polk Daniels State Fishing Lake was stocked with redear in 1978.

In the northcentral region, Washington State Fishing Lake contains a small redear population. These fish were stocked in 1975, and some have already grown over nine inches in length. Geary State Fishing Lake was stocked with redear in 1978.

In the west, several lakes have been recently stocked with redear. Included are Sheridan, Meade, and Kiowa State Fishing Lakes, Texas Lake, and six Cimarron National Grasslands sandpits.

In addition to the public lakes listed, many private ponds contain redear. Prior to the Fish and Game Commission’s takeover of the Farlington fish hatchery, the federal government stocked many ponds across the state with redear in lieu of and in combination with bluegill.

Seeking and catching a redear may not give an angler the sense of gratification that exists when one of the “status” imports is landed. Most of us do, however, get enjoyment from catching a new species of fish. Fisheries biologists realize that the redear will not take the state by storm. With population sizes typically small, we see the redear as primarily a bonus fish—something that makes an angler’s trip enjoyable because he has caught the biggest, most wary, and scarcest sunfish that the state has to offer.







# Building Better Fishing at Clinton

Mike Bronoski

**F**ood, water and cover are essential to all forms of wildlife in varying degrees. The fact that fish obviously require water to exist and food to grow often overshadows their need for cover.

In the aquatic environment, cover is essential for several reasons. Certain types of cover are needed for spawning and the subsequent survival of the newly hatched fry for some species. Northern pike fry, for example, must cling to something other than the lake or reservoir bottom until they become large enough to be free swimming. At the same time, they instinctively protect themselves from the ever present threat of other fish and even predaceous insects in search of an easy meal.

As they grow older and join other fish, they find the





tables turned as they become hunters for food in the same areas of cover where they themselves might have been consumed earlier. And when not feeding, fish “rest” in cover.

From the fisherman’s standpoint, cover means a concentration of fish and maybe, just maybe, more fish in the creel at the end of the day. In the long run, a lack of cover might mean the loss of a favorite game species.

“If cover is so important,” you may be asking yourself, “What has the Kansas Fish and Game Commission done in the way of cover in our lakes and reservoirs?”. The answer is as much as possible subject to manpower restraints. As far back as the early 1960’s, lakes constructed by the Commission were cleared of timber only to the extent necessary for the construction

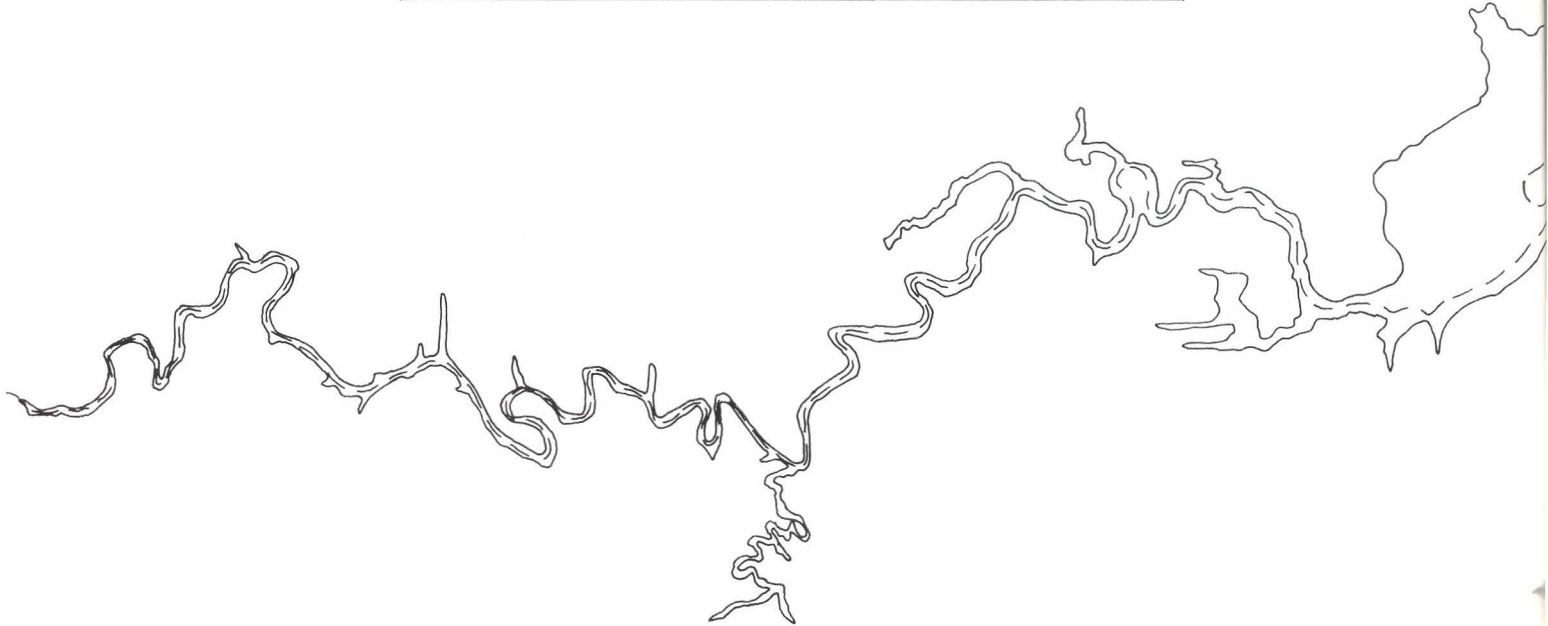
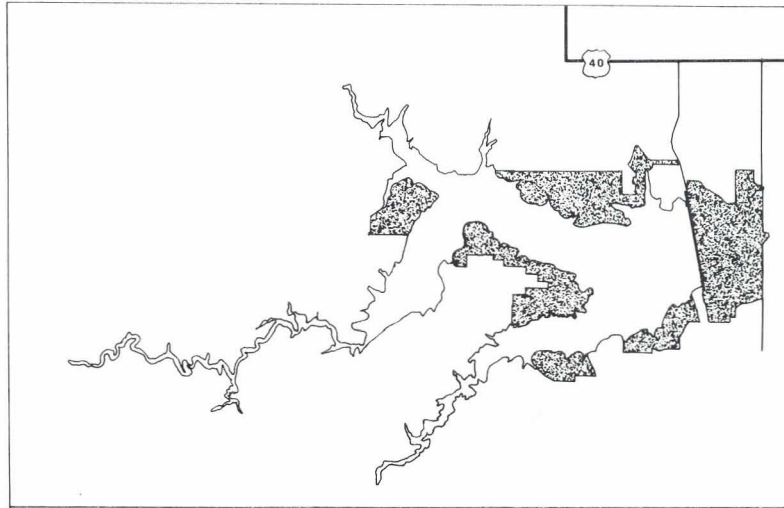
of the dam. Timber and brush that was removed was then tied into brush piles or “fish attractors.” Most of these early brush piles still exist and provide some of the best fishing in our state lakes.

At the present time, building and maintaining brush piles and structure is a large part of the work during lake drawdowns for fish population eradication or population control. And since the increase in personnel with SASNAK in 1973, Commission biologists have been continuously constructing tire reefs, brush piles, and stake beds in all Commission managed lakes.

The only area where the development and maintenance of cover has suffered over the years is an area where cover is needed most—federal reservoirs. Be-



# Clinton Reservoir



cause of the hazards caused to boaters by standing and floating timber and other debris, the US Army Corps of Engineers has traditionally removed most standing timber and brush during construction in what will eventually be the lake. This type of clearing reached a peak during the construction of Melvern Reservoir in the early 1970's.

As a result of the severe losses of cover during the

construction of Melvern Reservoir, the Fish and Game Commission began negotiating in earnest with the Corps and other agencies to curb this loss. The results have been overwhelming.

Clinton Reservoir near Lawrence is Kansas' newest fishable reservoir. It is also the first reservoir completed since the extensive clearing was undertaken at Melvern, and as such, reflects the changes in the Corps'





way of thinking. Where Melvern was cleared of timber and brush almost entirely, approximately 3,500 acres of the 7,000 acre multipurpose pool was left untouched at Clinton. This area encompasses some 1,500 acres of actual timber and brush.

In addition, the cleared timber was bulldozed into brush piles and cabled down by Corps subcontractors using construction funds. The brush piles ranged from

300 to 1,200 feet in length and four to eight feet in height. There are roughly two miles of them in the reservoir, mostly within the basin in ten to twenty feet of water adjacent to the old river and creek channels. These locations were selected because experience has shown that fish tend to move along bottom features like old stream beds.

The Corps also allowed eight brush piles to be



constructed at right angles to the shoreline along what will be Clinton State Park. The piles are experimental but are expected to be good for two reasons; first, fish tend to move along the shoreline so they will be forced to move to these attractors; second, assuming fish have a preference for different temperatures, light and oxygen conditions, a brush pile placed at right angles to the shoreline will allow a variety of these conditions as the water becomes deeper toward the end of the pile.

The cooperation between agencies did not end here, however. In two areas that were to be cleared adjacent to the river bluffs, a thirty-foot band of timber along the shoreline was left standing—over a mile of timber in each case. These areas are also experimental but are expected to offer fish populations the same variety of light, temperature, and oxygen concentration that will exist along the right-angle brush piles.

The most outstanding result of the negotiations between the Commission and the Corps was the protection of two old river oxbows in the main body of the lake, leaving them virtually untouched. For those unfamiliar with the term, an oxbow is a bend in a river or stream which has become separated from the current channel. These areas should act like “an oasis in the desert.” Most of the area surrounding the oxbows was previously agricultural so that little if any other cover is present. Bordering each oxbow, however, is the river channel. Since fish travel river channels as they do the shoreline, these areas should be as good as or even better than the brush piles.

The final stages of clearing at Clinton involved the removal of the old homesteads and bridges. Where possible, foundations were left intact and silos toppled to create “rock piles.” These areas are particularly attractive to walleye, especially when located in open water areas devoid of other types of vegetation. Unfortunately, the “rock piles” which could have been created by leaving old bridge foundations were destroyed and buried in the old river channel. The Corps felt that these structures were just too hazardous to boaters.

Once the timber and structure clearing was for the most part complete, Commission personnel in cooperation with volunteers began to build additional fish habitats of a non-natural type. Some 5,000 defective steel belted radial tires donated by Goodyear Tire and Rubber Company in Topeka were fashioned into a giant fan just west of the state park. Over 150 giant earth scraper tires were also used to create a large fish attractor several acres in size just west of the dam and adjacent to the state park boat ramp. These projects and those still underway could not have been undertaken without the cooperation of the Kansas Rod and Gun Club, Lawrence Boy Scout Troop 55, the 137th Transportation Company of the Kansas Army National Guard, and particularly, the Corps of Engineers.

The dense, soft-stemmed type of cover necessary for

the reproduction of such species as northern pike is being provided at Clinton Reservoir by stage filling, and at older reservoirs, by water level management. The state filling plan at Clinton calls for filling to extend over a period of four and a half years. The plan is about to begin its second year, or third level, of filling. Such staging will insure an abundance of cover by allowing existing vegetation to get a strong foothold along the shoreline before it is flooded.

A similar situation is being created on other reservoirs across the state where water level management is feasible. The basic plan calls for a late spring or early summer drawdown followed by aerial seeding and revegetation in time for the following spring's spawning season. Where waterfowl are expected to be present, a slight rise in the fall is also usually written into the plan.

The main rise in the spring creates a vast new area of cover if sufficient revegetation has occurred. The new cover is never as good as the original, but it is a great improvement over a mudflat.

Since construction began at Clinton, work has begun on three additional Corps of Engineers reservoirs in Kansas—Big Hill Reservoir near Cherryvale, El Dorado Reservoir at El Dorado, and Hillsdale Reservoir northwest of Paola. Programs for fish cover similar to Clinton's are being pursued on all three of these planned impoundments.

At Big Hill, even less clearing is planned on a percentage basis than occurred at Clinton. Aside from the clearing that normally occurs immediately in front of the dam, the only other major clearing will occur in the vicinity of recreation areas. Some minor clearing is also planned for boating lanes and sedimentation ranges.

At El Dorado and Hillsdale, the clearing plans have yet to be approved by the Corps of Engineers. In general, however, they follow the plans at Clinton and Big Hill.

The advantages of cover to the fisherman have yet to be realized at Clinton. With the boat ramps probably becoming useable during 1979, however, fishing pressure is expected to be high. At that time and for a long time to come, fishing should benefit from the efforts of all involved.

The advantages of cover to the fish have already been realized in part. Of some thirteen million northern pike, walleye, largemouth and smallmouth bass, stripers, bluegills, and channel catfish stocked during the spring of 1978, preliminary sampling indicated that at least some of all species stocked were recovered as of late fall.

All it takes is cooperation. Let's hope it continues.

*Commission fisheries biologist Mike Bronoski is stationed in Lawrence about five miles from Clinton Reservoir. He has been closely involved in achieving the cooperative agreements for cover development between the Commission and the Army Corps of Engineers.*





# Whitewater Fishing in Kansas

Leo Dowlin

One of the hottest fishing holes in any reservoir isn't behind the dam—it's downstream. The stilling basins below reservoir dams are specially designed concrete sluiceways and baffles that slow down escaping water, but they also combine the best of two fishing worlds. Walleye, crappie, channel cat, white bass and other game fish wash out of the reservoir with water releases, and native stream fish congregate at the foot of the dam as they find their upstream migration paths blocked. The resulting concentrations of fish fill a lot of stringers in the course of a year.

The quality of stilling basin fishing varies with the amount of water released from the reservoir. In western Kansas where long-term drought and the increasing demands of agriculture have tied up most impounded water, stilling basins may be dry part of the year. However, enterprising west Kansas anglers have had good luck fishing irrigation channels when water is being released. Rainbow trout stockings in some stilling basins in the western half of the state have introduced an element of the exotic to meat-and-potatoes angling. Fishermen below the dam at Webster have had excellent luck on rainbows in the eight- to ten-inch range.

Most central and eastern Kansas reservoirs are blessed with more water than those in western Kansas and release water more often as a result. The timing and magnitude of these releases have a profound effect on fish in the reservoir and in stilling basins. Too much or too little water causes problems for the fisherman, too.

In most situations, moderate to high release rates stimulate downstream fishing for crappie, channel cat-

fish, flatheads, and white bass. During releases, fishing is generally best where there is shelter from the main current—eddies behind wing walls, jetties, and in backed-up creek channels. Game fish concentrate in these areas to avoid the power of the main discharge and to feed on bait fish drawn to the slack water.

Officials at most Kansas reservoirs restrict boating in stilling basins because of the strength of the main current during peak discharge. The no-boating area is usually marked with signs or a line of buoys. Downstream from the closed zone, a boat can be a distinct advantage for a fisherman. Most anglers with boats drift with the current, trolling a jig and nightcrawler on the bottom for walleye and channel cat.

On most reservoirs, fishermen without boats are left to scramble through the rip-rap down to the water. Clinton Reservoir, the first of a new breed of Corps lakes, has been designed a little differently. A concrete stairway leads down to the stilling basin, and there is a concrete walkway along the bank for fishermen. Although these structures and the rip-rap around them can be treacherous when wet, they should make stilling basin fishing at Clinton a lot easier.

Stilling basin fishing blows hot and cold, depending on the season and the reservoir. The table that accompanies this article is a summary of reports from Fish and Game biologists around the state. Armed with this information and a few minnows or nightcrawlers, a fisherman should have a leg up on some good fishing in Kansas white water.

*Leo Dowlin, fisheries biologist in northeast Kansas, has had first-hand experience with the stilling basin fishing in nearly all Kansas reservoirs. He assembled specific comments of biologists across the state for this article.*



# Prospects for Kansas Stilling

## FISHING FORECASTS

SPECIES	FAIR	GOOD	VERY GOOD
<i>Crappie</i>	<i>Webster</i>	<i>Kanopolis Tuttle Creek' Council Grove Milford Toronto Fall River Pomona Melvern</i>	<i>Perry Elk City</i>
<i>Walleye</i>	<i>Wilson Tuttle Creek Clinton<sup>2</sup> Fall River</i>	<i>Cheney Council Grove Marion John Redmond Perry</i>	<i>Kanopolis Milford Pomona Melvern Lovewell</i>
<i>Channel Catfish</i>	<i>Clinton Cheney Wilson Webster Norton</i>	<i>Pomona Melvern Kanopolis Marion</i>	<i>Tuttle Creek Council Grove Milford Toronto Fall River Elk City John Redmond</i>
<i>Flathead Catfish</i>	<i>Pomona Melvern</i>	<i>Kanopolis Council Grove Marion Toronto Fall River</i>	<i>Tuttle Creek' Milford Elk City John Redmond</i>
<i>White Bass</i>	<i>Perry Melvern Pomona Wilson Council Grove Marion</i>	<i>Kanopolis Tuttle Creek<sup>3</sup> Milford Toronto Fall River John Redmond Elk City</i>	
<i>Carp</i>	<i>Melvorn Pomona Elk City Lovewell</i>	<i>Kanopolis Tuttle Creek Milford Toronto Fall River</i>	
<i>Drum</i>	<i>Perry Kanopolis Melvern Pomona</i>	<i>Clinton Council Grove Marion Toronto Fall River Elk City John Redmond</i>	<i>Tuttle Creek<sup>3</sup> Milford</i>
<i>Rainbow Trout</i>		<i>Tuttle Creek (wells and streams in river pond and Rocky Ford)</i>	<i>Webster Cedar Bluff</i>

1. Good in one tube when releases are being made from the other tube.
2. New lake.
3. Best at Rocky Ford Lake.



# Basin Fishing

BEST ANGLING METHODS	BEST BAIT OR LURE	TIME OF YEAR	COMMENTS
<i>Casting and still fishing with a bobber and a small hook.</i>	<i>1/16 or 1/8 oz. yellow or white jig, minnows.</i>	<i>Spring best, some fall.</i>	<i>During and following moderate to high releases, sometimes best at night.</i>
<i>Casting and still fishing.</i>	<i>1/16 or 1/8 oz. jigs or jigs and worms, minnows.</i>	<i>Spring.</i>	<i>During and following moderate to high releases.</i>
<i>Still fishing on the bottom.</i>	<i>Prepared cheese or blood baits, shad baits, worms or green worms, live baits, liver, and sponge bait.</i>	<i>Year-round, best in spring and summer.</i>	<i>During and following moderate to high releases.</i>
<i>Still fishing.</i>	<i>Live bait, sunfish or worms.</i>	<i>Spring or summer.</i>	<i>During and following moderate to high releases. Sometimes best at night.</i>
<i>Casting and still fishing.</i>	<i>1/8 or 1/4 oz. jigs and spoons, minnows.</i>	<i>Spring or summer.</i>	<i>During and following moderate to high releases.</i>
<i>Still fishing on the bottom.</i>	<i>Worms, corn, dough balls.</i>	<i>Year around, best in summer.</i>	<i>following moderate to high releases.</i>
<i>Still fishing with live bait.</i>	<i>Worms and minnows.</i>	<i>Spring, summer, fall.</i>	<i>Often caught while fishing for channel cat or crappie.</i>
<i>Still fishing with bobber or on bottom, casting with light line and small hooks.</i>	<i>Cheese balls, worms, corn, spinners, jigs, flies, minnows.</i>	<i>Spring, winter, fall.</i>	<i>New put-and-take stocking program.</i>



**P**eople who love wild things and green places are immersed in a tremendous, global struggle to instill ecologic common sense and environmental ethics in the fiber of human thought and action, before it is too late. At a time when we are desperate for the strength of unity, we pick bitter fights with each other over what kind of wild things and what shades of green should get priority.

One of the most widespread, divisive and irrational of these squabbles centers around the notion of consumptive vs. nonconsumptive uses of wildlife. In the popular mind, the test is simple: if you hunt, trap or fish, you are a consumptive user; if you photograph, watch, paint or study wildlife, you are a nonconsumptive user. How a group of people, whose very banner is ecologic sanity, can believe and perpetrate such nonsense is beyond ken.

From the phrasings of their articles, the mood of their films, and the smugness, paternalism or vituperation of their dealings with hunters, it is obvious that many of wildlife's human constituency who do not hunt or fish, have a holier-than-thou attitude towards those who do. "Your hands are bloody; mine are clean. Your heart is crass and vile; mine is pure and Olympian." Can this attitude stand the light of day?

Item: I visited Ano Nuevo Point, north of Santa Cruz, California, in the spring of 1973 to watch the elephant seals. To my family's delight there were not only many of these fantastic creatures on the island refuge a quarter of a mile offshore, but there were a half-dozen loafing on the mainland beach as well. (To understand the full essence of the nonaction verb "to loaf," watch a beached elephant seal!) Looking closer,

we saw that several seals had been spray-painted with good old American graffiti. As we watched, a troop of youngsters jumped off the sandy bank onto the broad, blubbery backs of the seals, shouting with glee as the seals jerked their huge bodies ineffectively. Something, I maintained, was being consumed: respect for animals, my enjoyment, and the seal's sleep, at least.

Item: the newest issue of *Audubon* magazine briefly tells of a new problem birds face: birdwatchers armed with tape recorders. Want to add a rare bird to your life list? Get a recording of the bird's territorial call, march out into the springtime and play the tape loudly. An answer comes; you check off another bird on your list. Oops! Better check: it might have been another tape recorder. One pair of rare black hawks was disturbed so often by such nonconsumptive shenanigans that they failed to nest successfully in three consecutive years.

Item: in 1975, scientists in Alaska "collected" over 80 species of birds, fish of over 20 kinds, and 20 kinds of mammals. (Nobody kills wildlife: hunters "harvest"

**An Alaskan biologist considers the similarities between the effects hunters and non-hunters have on wildlife.**

Robert Weeden

## Nonconsumptive Users: A Myth





it and scientists "collect" it.) Among the birds killed were 79 black-footed kittiwakes, 110 tufted puffins, 224 redpolls, 23 savannah sparrows and 32 black-capped chickadees. Fish collections included 179,697 three-spined sticklebacks and 2,988 arctic char. Scientists reported taking and killing 1,046 tundra red-backed voles, 5 wolverines, 34 arctic ground squirrels and 6 arctic fox, among numerous other mammals. All very well-justified collections, I'm sure, and undoubtedly within sustained yield limits. But where is the distinction between scientist and hunter, in terms of consumption? The only difference is that scientists kill animals of more species, and more of them in breeding seasons, than hunters.

Item: Christopher Robin likes sand between his toes, and so do millions of other Englishmen. The international journal *Biological Conservation* reported in 1974 that human use of British beaches had eliminated the Kentish plover as a breeding species on the British Isles. The little tern is suffering the same stresses in Sweden. At Chatham on Cape Cod, Massachusetts, a



colony of arctic terns plummeted from 40,000 birds to 24 survivors after intensive disturbances over a decade's time by wildlife photographers and beachgoers.

Item: nonconsumptive users enjoying national parks and forests all over the world have trampled, eroded, and burned thousands of acres of green places and wildlife habitat.

Item: elementary and high school classes have all but stripped many California beaches bare of the bigger, easily found and colorful species of tidepool and beach animals.

No fingers are being pointed. My intent, in fact, is to make anyone who has a scornful or accusing finger pointed at anyone else, to realize that we are all consumers of wildlife.

We share the burden and responsibility of being consumers in much more fundamental ways than the leisure-time goofs I sampled just now. Consider, for instance, the consumption involved in hunting moose, versus the consumption involved in eating the same amount of beef. The hunter eats no more meat than the average nonhunter, but he gets it from a different source. Nature produces moose without plowing ground, spreading fertilizers or spraying pesticides. The energy consumed in transporting a moose home is less than the energy cost of shipping a beef from Colorado to Chicago and up to Anchorage. Who is the consumptive user? When you think about it, the conservationists who ate prime rib at last year's Earthcare Conference undoubtedly consumed more quail and quail habitat than if they had each gone out and shot a brace of bobwhites for dinner. And the money spent in hunting would have lobbied for quail habitat preservation, whereas the money paid for prime rib paid "the enemy."

We are all consumers of wildlife. I consume energy in flying to distant meetings and in heating my home, and that energy comes from strip-mined lands or oil-fields and pipelines. I wear clothes made from wool (which commits wildlife forage to domestic sheep), cotton (which replaces oak-pine woodlands of the South) or polyester (which comes from coal or oil). In short, every human, by existing, consumes or displaces wild things.

To continue to make false distinctions between consumptive and nonconsumptive users is to play into the hands of those who don't give a damn about wildlife.

There is no such thing as a nonconsumptive user of wildlife. There are only consumers who care, and consumers who don't care.

*Reprinted from Alaska Conservation Review, Fall, 1976.*

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