

KANSAS FISH & GAME

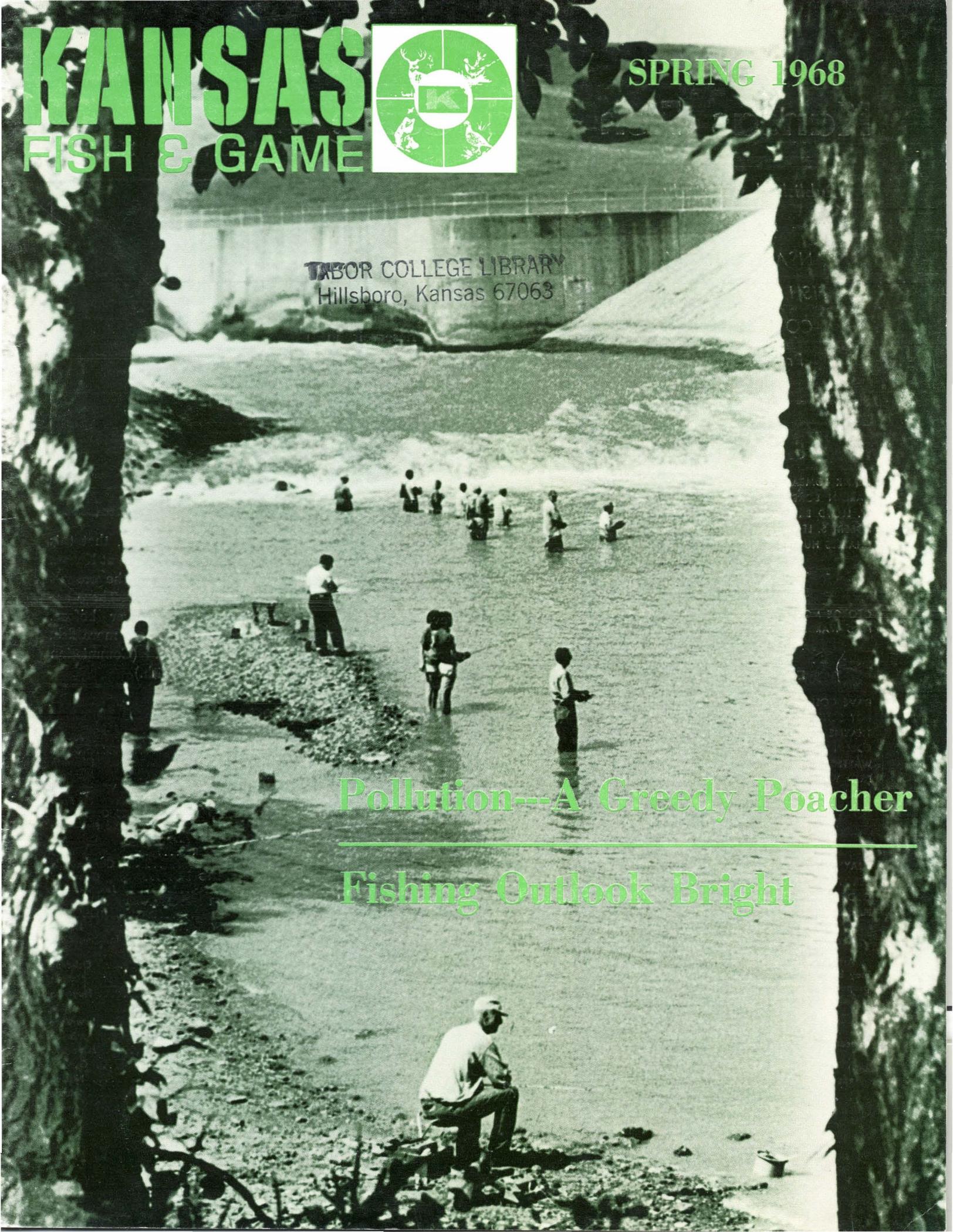


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Pollution---A Greedy Poacher

Fishing Outlook Bright



Kansas Fish and Game

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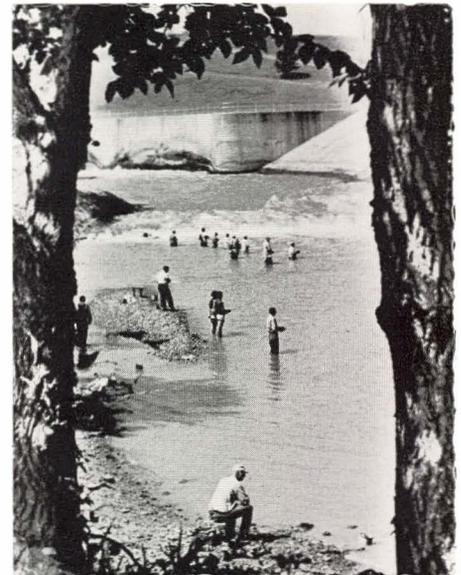
Cover Photo

Fishing in a crowd may not be your "cup of tea," but sometimes it's necessary to catch fish.

Such was the case when this issue's cover photo was taken at the outlet of popular Kanopolis Reservoir in central Kansas.

Attracting the attention of the "fishing line" were big walleye and white bass, which congregated in the pool below the outlet's swift waters, during a heavy discharge from rain-swollen Kanopolis Reservoir.

Most of the fishermen were using jigs, and most of them—happily—were catching fish. Sometimes there was a bit of crowding, or someone—when getting a strike or casting too far into the swift current—hooked a line or two, or a dozen, and pulled them in with his own. There was no flare of tempers, however, as fishermen seem to be a breed apart, and get along pretty well together—especially when the fish are biting.



There's no doubt, either, that this scene will be repeated often at Kansas lakes in the future, and the crowds may grow with the years. There are more fishermen than ever before. Thank goodness, there are more fish, and more lakes, too. (Commission Photo by Thayne Smith.)

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Fishing Outlook Bright

By THAYNE SMITH

All signs point to a great spring fishing season in Kansas!

Probably no sportsmen are as eternally optimistic as anglers, especially after a long winter's pause.

Anglers, traditionally, remember only those good days when the fish were tearing up their tackle, and they quickly forget days when they drew a blank. So, to help you draw less blanks in the "cool" days remaining this spring, here are a few tips:

When the water is cold, the reflexes of fish are slower than normal, so do as the fish do—fish slowly, *v-e-r-y s-l-o-w-l-y!* When fishing in current, like a reservoir outlet, use a deep-working lure and hold it just off the bottom—like a jig or vibrating, deep-running job. Work it in a fan-shaped pattern so that the entire area is covered. When a fish picks up your lure it might be hardly discernible, so be alert.

If you're a crappie fisherman, start now to search for them, despite the cool weather. Crappie are the most peculiar of all fish, and you've got to "stay with it" to really catch them.

When you get a halfway decent day, go looking for crappie on one of our good lakes, like John Redmond, Pomona, Kanopolis or Tuttle Creek. Try the brushy spots, or the rocks along the dam, or a deep hole. Most of all, fish deep, and slow.

Water this time of year is cold, but in most impoundments is warmer on the bottom than on the top, and crappie like the warmer water. They'll be right on the bottom, undoubtedly, for a few more weeks, but they can be taken.

Before long, the temperatures of lake waters will raise, and crappie will get nearer the surface, along with other fish, and start seeking places to spawn. That's when you want to be Johnny-on-the-spot. That's



HAPPY OUTDOORSMAN—John King, outdoor editor of WIBW-TV and radio in Topeka, smiles over nice catch of walleye and bass from Pomona Reservoir, 30 miles south of Topeka. Pomona is one of state's finest crappie, walleye and bass lakes. (Commission photos by Thayne Smith.)

when they go on their famous "runs" in Kansas, and there is nothing more thrilling to the minnow or jig angler. Often, you can get a 30-pound limit in a matter of hours, or less.

Later, other fish will come to the forefront, even while crappie will continue to hit.

In fact, this may be the biggest year in history for the Kansas angler. At least, the potential is greater than ever before, for several reasons.

First, the Northern Pike, about the finest fighting fish the state offers, is coming into its own in several Kansas lakes.

Northerns in the 15-pound class—although only three years old—should be plentiful this year at Council Grove and Norton Reservoirs. Two-year-old Northerns will be available at the new Elk City Reservoir, and some to 10 pounds should be caught there. Year old Northerns are available at Milford, and in several state lakes.

Walleye, too, have become a popular game fish in Kansas, abounding in nearly every reservoir. The more popular—where they have flourished and have attained good sizes—are Kanopolis, John Redmond, Pomona, Tuttle Creek, Webster, Kirwin, Nor-



NEAR RECORD—Gary Krehbiel, Moundridge, proudly displays ten-pound, six-ounce walleye taken from outlet at Kanopolis Reservoir, which missed state record by only two ounces. Fish was caught on Hellbender lure.



BIG STRING of white bass, taken on jigs at Kanopolis Reservoir outlet, adorn rocks along shoreline. Kanopolis is excellent white bass lake.

ton, Fall River and Cedar Bluff. Wilson Reservoir, relatively new, also offers walleye along with Northern Pike, excellent crappie and black bass, and catfish.

A third "imported" fish is gaining popularity among Kansas anglers, and is plentiful in some impoundments . . . the white bass. It can be taken in great numbers and good sizes at Kanopolis, Fall River, Wilson, Cedar Bluff, John Redmond and other lakes, and is a highly-popular "outlet" fish, often laying in great schools in the swift outlet waters.

White bass, like crappie, can be taken in various ways, and are especially vulnerable to jigs. They provide extremely fine action in swift waters of outlets, or in streams above reservoirs, like the Neosho River above John Redmond and Fall River and Otter Creeks above Fall River Lake. White bass—many to three pounds—have been taken in good numbers by casting off rocky points and trolling along ledges and dropoffs at Kanopolis, Cedar Bluff and Fall River. Deep-diving plugs, like the Hellbender, Bomber, Brooks Reefer, and other "spoon-billed" types are good for trolling for white bass, Northern and walleye.

In late Spring, when Kansas generally gets heavy rain, lakes may be high, and some waters murky. This should not stop the angler from fishing—don't give up too quickly.

Excellent fishing is often found in murky waters, especially for walleye and channel catfish, which abound in all impoundments—state lakes and federal reservoirs alike—and streams.

And speaking of state lakes, don't overlook them when the big lakes are high and muddy, and streams are bankfull and too swift to fish. Many of Kansas' state lakes are always clear, and offer excellent fishing on a year-round basis.

A small booklet, "Where to Fish in Kansas," can be obtained from the Fish and Game Commission, Box 1028, Pratt, Kansas 67124, free of charge, and lists all facilities, kinds of fish available, rules and regulations, at all public Kansas waters.

Regardless of your favorite kind of fish or fishing, it should be a good Spring for you. In fact, some of the season's biggest fish are caught early in the year. Cool waters often produce record catches, so give it a try.

And, don't forget to set the hook hard, because you may be a bit out of practice after the long winter.

Bonus for the Angler

By BILL COLE
Fisheries Biologist

For many years, it has been a popular conception that the best way to provide better fishing in a body of water or stream, is to stock it with more fish. Modern research shows, however, that this isn't true. Managing of lakes by stocking additional hatchery fish almost always has little or no effect on improving fishing. Attempts to manage lakes for great fish yields are not new in the nation or Kansas, and research carried out in recent years—especially since 1940—reveals some interesting information.

When a lake is first formed and stocked, it usually will maintain a fairly well-balanced fish population for a few years and will then deteriorate to where very few fish will be caught.

There are several reasons for this deterioration and the resulting poor fishing. The most common one in Kansas is overpopulation and stunting by fish species that are not suited to the habitat and should never have been stocked in the lake.

Fish such as crappie and bullheads should never be stocked in any waters other than the large federal reservoirs.

These species and carp are usually the direct cause of poor fishing. Good fishing in older lakes almost invariably can only be improved by complete removal either by draining or by killing all of the fish. After all fish have been removed, the water can be restocked and will provide good fishing for a few years before the deterioration of the fish population requires draining again. Fish populations can be adjusted in lakes without a complete removal of all fish if these species are not present.

Good fishing cannot be maintained in small lakes around large cities.



Cole

Even though the fish population within the lake is good, too much fishing pressure will prevent what a fisherman considers good fishing. Fishing can be improved to a degree, but the end result will still be unsatisfactory to the angler.

Normally in older lakes it will require about four years of growth for a bass to reach a catchable size of about one pound. When this fish is taken, it will then take about four years to replace it with another of the same size. Under good fish management practices, this four year period can be reduced to less than two years, or automatically increasing the yield to the fisherman by 100 percent.

An actual increase in the numbers of fish a small lake will provide to the fisherman can be achieved by adding controlled quantities of fertilizer. Fertilizer will grow fish just as it will increase a yield of corn. Care must be taken in adding fertilizer as improper amounts will either result in large quantities of water weeds or it can result in a complete fish kill.

The large federal reservoirs pre-

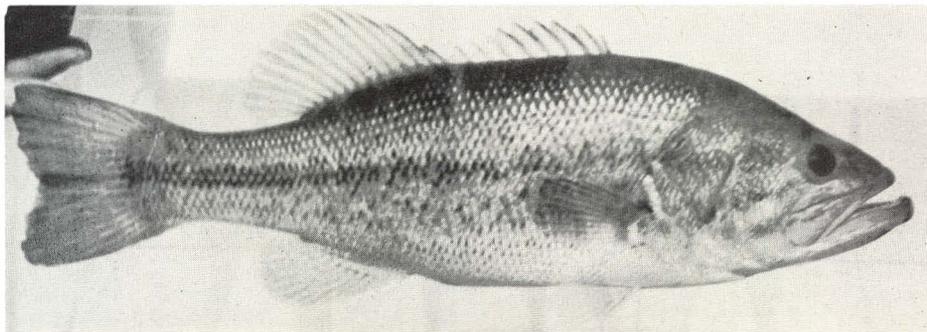


NICE NORTHERN—Wayne Evans, Wilsey, took this 11-pound three-year-old Northern Pike from Council Grove Reservoir this spring on a black homemade jig. Northerns show fantastic growth in some Kansas waters.

sent or now being built in Kansas pose another type of problem entirely. They provide a different kind of aquatic habitat that is suitable for fish species such as white bass, walleye and northern pike.

These fish are ideal for the federal reservoirs in that they are fast growing, highly desirable to fishermen, and are excellent predators. Water quality and suitable spawning habitat are the major requirements that must be met if these fish are to maintain sufficient numbers to have an overall effect on fishing.

Large federal reservoirs in Kansas have the potential of providing excellent fishing. One of the larger ones such as Tuttle Creek or Milford should provide in excess of 500,000 pounds of fish every year to the fishermen. A potential yield that is almost unbelievable, but is not unrealistic. Potential it may remain, but with proper management for water quality, spawning habitat, and fish populations, it could become a reality.



FAST GROWTH—This black bass, weighing almost a pound, is less than a year old, after raised under ideal conditions at a Fish and Game pond. Similar fish, under normal conditions, seldom get as large.

Feedlot Pollution . . .

By LEROY E. LYON

A disguised, greedy poacher has been hard at work in Kansas.

Working fearlessly and without discrimination, this villain has unrestrictedly initiated his master plan; a top priority mission of claiming the entire fisheries resources of some of Kaansas' best fishing streams. The poacher has been highly successful. Not only have thousands of fish been destroyed but certain species have been nearly eradicated—threatened by complete and final extinction.

But the damage has not stopped with mere destruction of fish life. In addition, the villain has deprived numerous fishermen of opportunities and limits, robbed the state's sportsmen, chipped away at the financial stability of certain businesses and has even trifled with the health of the state's citizens. He has also played havoc with other recreational and aesthetical benefits which only clean water can provide.

Sadly enough this poacher, better known as water pollution, is still at work destroying fish and wildlife resources with reckless abandon. For years the blackest villain on the law-abiding sportsmen's list has been the poacher—the out-of-season killer who exceeds legal bag limits. He has always been the contemptible object of sportswriters, conservation cartoonists and lecturers. But this modern poacher, disguised as polluted water, has been more disastrous in some areas than the old-time game hog.

"It's ironic that one can be fined for taking fish by unlawful means while feedlots kill many thousands of fish in a year's time and nothing conclusive has been done about it," a Hutchinson man recently wrote.



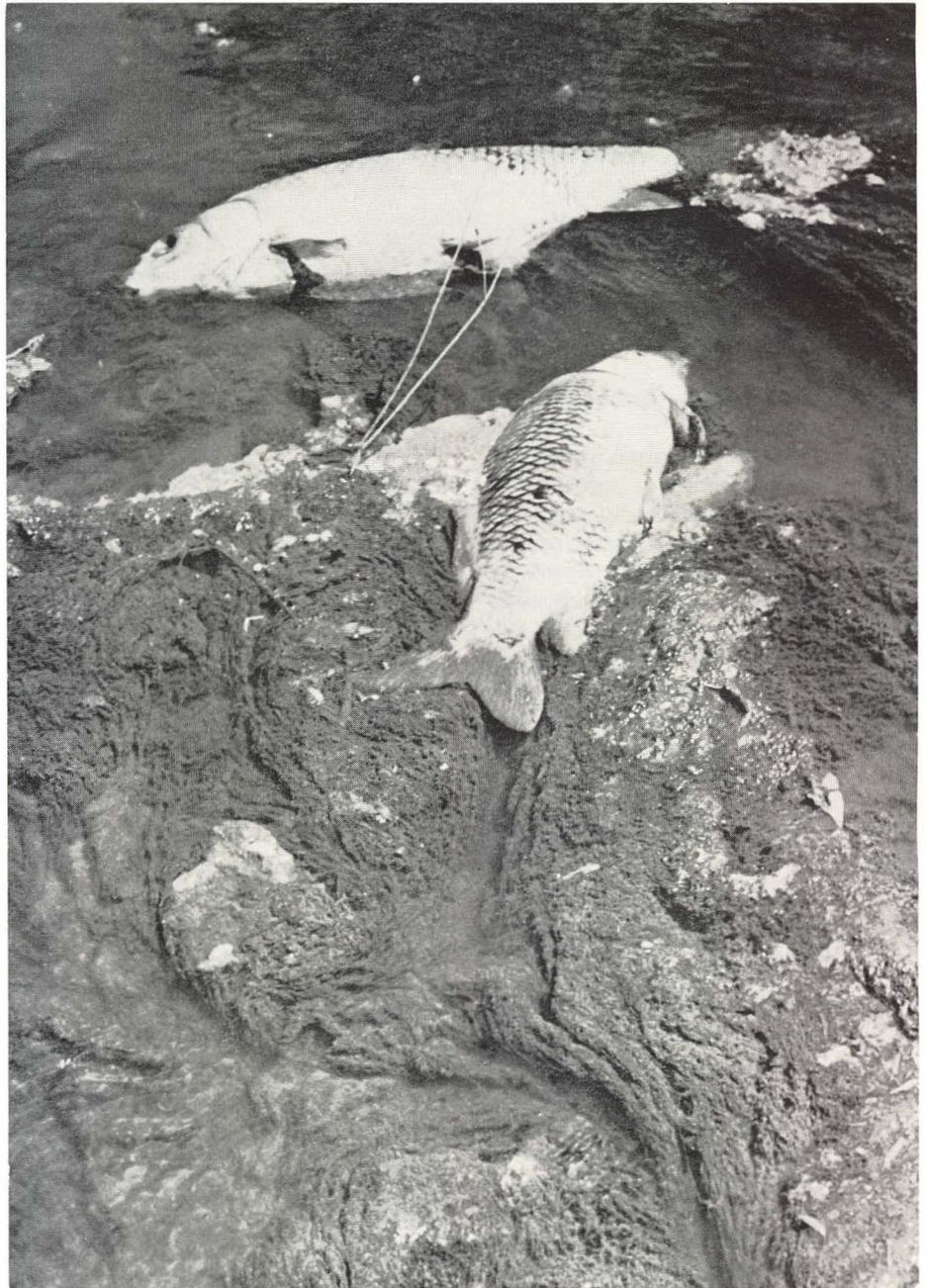
Lyon

It's anybody's guess as to the price that is being inflicted in Kansas by water pollution especially from feedlot runoff. Without question the price is astronomical.

Although the highest percentage of fish kills have occurred on the Cotton-

wood and Neosho Rivers, the entire state, not just the polluted area, has suffered and is continuing to pay a tremendously high price.

Data compiled by the State Biological Survey of Kansas shows that there has been immeasurable damage to the fisheries resources of the state.



DEAD CARP AND CRUD—Such a combination is commonplace on the Neosho River above John Redmond Reservoir, following heavy rains which wash feedlot waste into river. Unfortunately, carp and other rough fish are last to die when pollution strikes.

A Greedy Poacher

"The Cottonwood and Neosho rivers have an unusually rich native fish-fauna that has suffered much greater depletion in the last few years than at any time in the past," reports Dr. Frank B. Cross, director of the State Biological Survey of Kansas and author of the "Handbook of Fishes in Kansas."

"For example, a routine spot-check at Neosho Rapids in 1952 yielded 20 species of native fishes where a similar check at the same site in 1966 yielded only five of those species," Dr. Cross reports. "The five surviving kinds are ones known to be tolerant of organic pollution—their prevalence is often symptomatic of such pollution. Thus pollution damage to fish populations in the Neosho has been serious in ways other than those made obvious by recent fish-kills."

Of the 15 species not found in 1966, two are of special concern; the Neosho Madtom and the Blue Sucker.

The Neosho Madtom is a small catfish which is virtually confined to the mainstreams of the Cottonwood and Neosho rivers. "Because of its restricted distribution, it is unusually vulnerable to the effects of drought and pollution," Dr. Cross says in his handbook. In later correspondence, he states, "Because continued pollution of the Cottonwood and Neosho rivers poses a real threat of extinction to that species, the matter may call for federal attention under the Endangered Species Preservation Act as well as under federal pollution control legislation."

The other species threatened in the Neosho river, the Blue Sucker, "is said to be one of the finest of Kansas food-fishes," Dr. Cross reports in his book. The largest reported Kansas specimen of this species was 27 inches long.

"The Blue Sucker has been so severely depleted over most of its original range that its disappearance from the Neosho would be especially unfortunate," says Dr. Cross in his letter. "Through the 1950's the Neosho River was one of its principal strongholds; the first published accounts of young Blue Suckers (dealing with their

(Editor's Note: The accompanying article is the second in a series of four on feedlot and other types of pollution in Kansas waters. The third will appear in the Summer, 1968 issue of *Kansas Fish and Game*.)

habitat, coloration and some aspects of their developmental anatomy) were based on specimens obtained at Neosho Rapids. Elsewhere the blue sucker was considered one of the very best of commercial food-fishes prior to its decline."

Studies made by the State Biological Survey in 1967 indicate that the Neosho Madtom and the Blue Sucker are just two of a score of native species that have recently declined or disappeared from streams above John Redmond Reservoir. As Ernest Swift, author of "A Conservation Saga" has written, "If man cannot control the products of his genius, the laws of diminishing returns will set in."

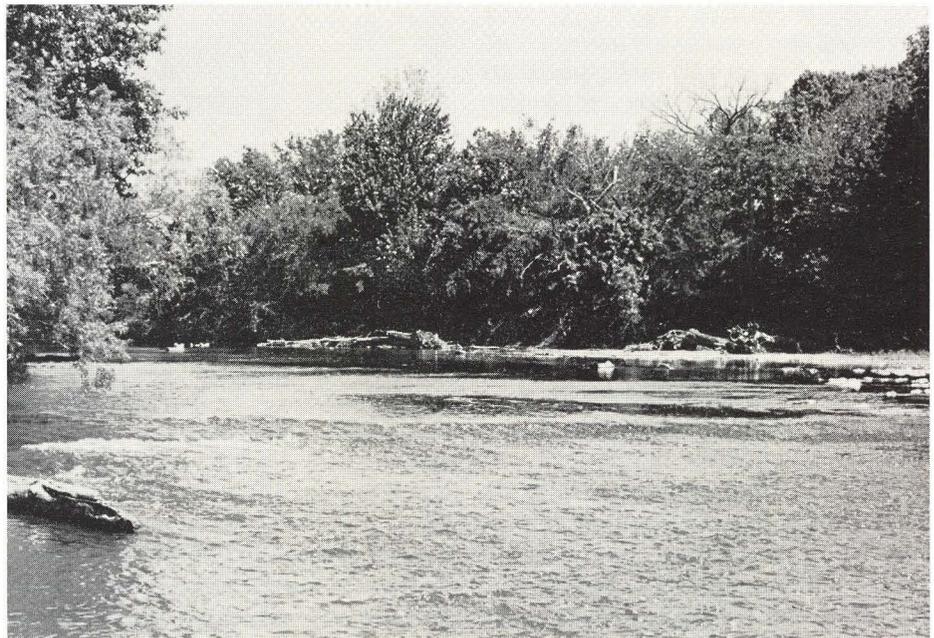
Old-time anglers from Cottonwood

Falls to the upper reaches of John Redmond Reservoir are quick to affirm that "laws of diminishing returns" have already been set in motion on the Cottonwood-Neosho River—one of the most polluted streams in the nation.

"We used to have one of the finest streams and riffles in the state," Roy Baxter, Neosho Rapids, boasts. But the bragging turns to agony when he thinks of the present, adding, "a fellow used to be able to catch lots of channels anytime he wanted to fish but now he's lucky if he catches any."

Upstream anglers express a similar viewpoint. When asked if he could detect any difference in fishing success in recent years, a Cottonwood Falls resident, James E. Jackson, was quick to reply, "Oh, my gosh yes, I can tell the difference! I've been fishing this river since 1904 and it always was a good fishing river up until about the last five years," Jackson murmured. "I'll bet I haven't caught a dozen good channels this year."

Another Cottonwood Falls fisherman, Charles Humphrey, said, "I used to seine a lot of minnows from



SCENIC—BUT ABUSED—The scenic Neosho River south of Emporia boasts beauty, but with continued use of waterway as an open sewer the stream has lost its appeal for anglers and other outdoor enthusiasts.

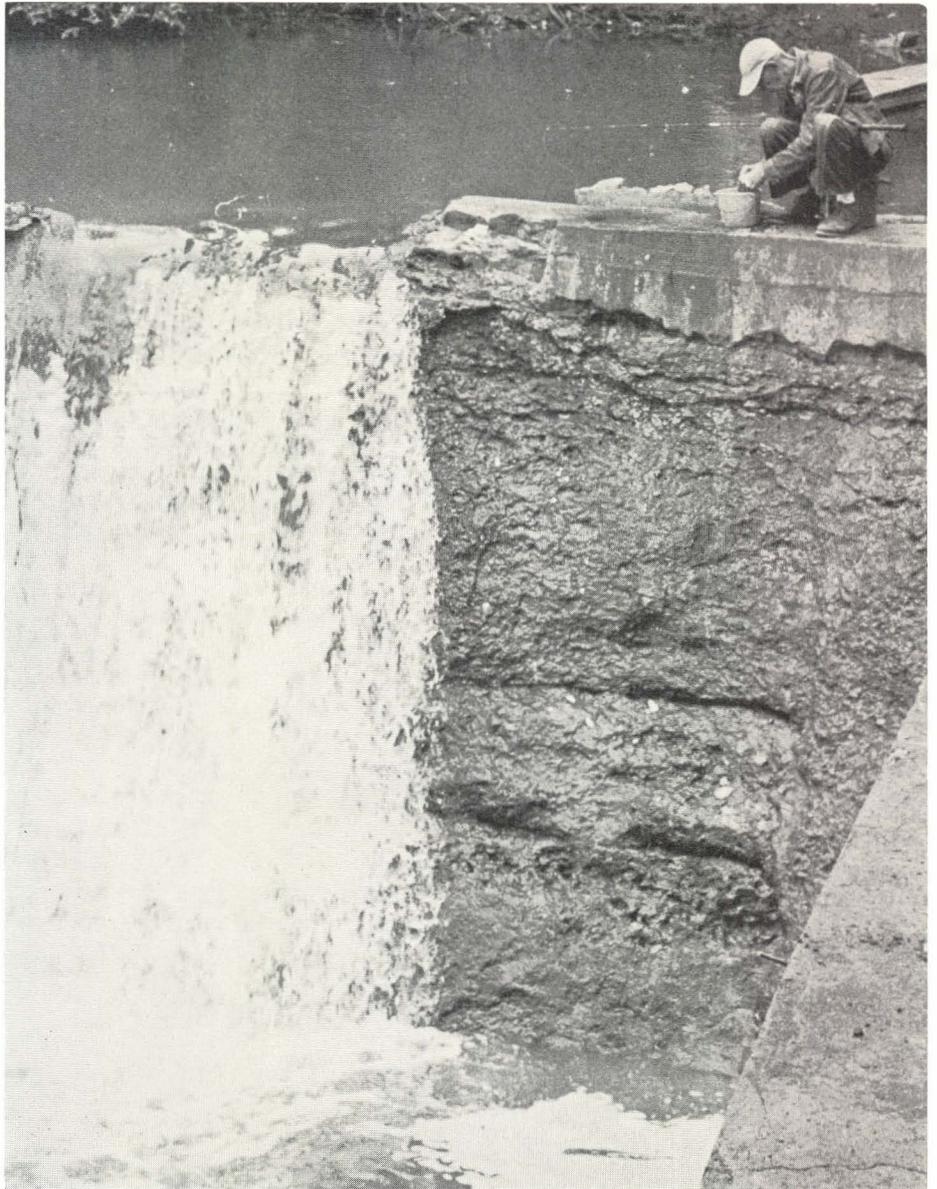
the river but during recent years about all I've been able to catch is a bunch of manure. I've always been a river fisherman and used to love to be on the river. But anymore with all the fish kills and pollution I've lost interest. I have all kinds of equipment but what are you going to use it on?"

All major fish kills along the river in 1966 and 1967 involved a larger percentage of rough fish, particularly carp and buffalo. This is what can be expected for a heavy toll of the more desirable game fish species, particularly catfish, has already been claimed by the numerous slugs of wastes which have been allowed to flow down the river for the past several years. Fishery studies have shown that when the fish population of a particular section of a stream is destroyed, rough fish species repopulate the area most quickly and as a result more of these undesirable species and fewer catfish and other game fish will be present in future years.

While fishing on the Cottonwood-Neosho river has been seriously affected, some anglers have been reporting many excellent catches of channel catfish, flatheads, crappie and other game species in John Redmond Reservoir, below the dam and in the section of river immediately above the federal impoundment. Thus it appears that fish populations in the reservoir have not been seriously affected although a few deadly pollution slugs have reached the reservoir before diluting.

Without question, fishing success on the section of river immediately above the reservoir will continue to be satisfactory as long as game fishes move out of the reservoir to fill biological voids created by the massive fish kills. Studies indicate that this section is periodically restocked with game fishes as the result of movement upstream from the impoundment.

This upstream movement, while helping to improve fishing conditions, has been detrimental to certain game fish populations for these individuals are the next victims when another slug of pollutants wash downstream. No wonder many sportsmen are asking, "How long can John Redmond



FISHING AIN'T WHAT IT USED TO BE—So says James E. Jackson, long-time Cottonwood River angler from Cottonwood Falls.

supply these fish without impairing its own fishing potential?"

While the question is highly speculative, there is reason for real concern. A majority of fish kills in the state occur in the spring following seasonal rains which wash feedlot effluents into the streams. At this time of year many species of game fish, particularly the walleye and channel catfish, are conducting their annual ritual of spawning, or egg-laying. Walleye eggs are deposited over rocky areas, then abandoned; adhesive membranes of the eggs anchoring them to the rocks during development of the embryos.

While walleye reproduction in most

Kansas lakes is confined to rock rip-rap on the surface of dams, John Redmond and the Neosho river provide a unique combination. Here stream conditions are suitable for walleye to move up the Neosho to rocky riffles to spawn. Most spawning activity, governed by water temperatures, occurs in late March or early April—a critical time when pollutants often enter the stream. Thus, if egg-laden walleyes move upstream to natural spawning beds located near Hartford, they could be caught by the polluted water in those areas.

One such kill in March, 1966 killed an estimated 300,000 fish, 40

percent in the game fish category. Of this number, 45,000 were walleye weighing from three to six pounds each while the other game fish consisted of black bass, crappie, white bass, channel cats, bullheads and flatheads. Certainly continued kills of this magnitude may eventually have quite an adverse effect on the reservoirs' fish populations although to the casual observer it may seem that little damage has been inflicted.

In the wake of such a destructive kill, many questions come to mind. How many of the 300,000 fish killed would have been caught by some lucky fisherman? If they would have lived, how many young would they have produced and how much recreation would these offspring have provided for the future? How many dollars will it take to replace them? And most important, how many face the same fate?

Annually the Kansas Fish and Game Commission stocks many thousands of game fish species in public waters throughout the state. Although it is difficult to place an estimated cost on this stocking program, it should be remembered that sportsmen alone are absorbing this stocking cost. Among the state agencies, the Fish and Game Commission is unusual in that it is entirely self-supporting. Its operations are supported solely by money received from the sale of hunting, fishing and trapping licenses. No general tax funds or appropriations by the state are received by the Commission. Therefore, since sportsmen are the ones paying the bill, they are also the ones who are receiving a double blow; loss of present and future recreation and loss of invested dollars.

The latter may seem insignificant until one considers the cost and time involved in the annual fish propagation programs. Each year Commission personnel artificially extract and hatch millions of walleye and northern pike eggs, then transport the delicate creatures to new homes across the state—a costly expenditure but one which provides two new excellent game fish for Kansas anglers. How much, then, does pollution, this new poacher, cost the sportsmen every year?

While the question is difficult to answer, a shocking statement has been made by the U.S. Wildlife Service which at least provides a partial answer. The federal agency warns that "it is considered that the amount of fish and wildlife habitat rendered unproductive each year by pollution is greater than that created by public agencies carrying out programs of fish and wildlife restoration."

But sportsmen are not the only ones who are paying the bill. Businessmen who depend upon outdoor recreation sports for their living and citizens in general who rely upon rivers as a source of water supply are also sharing in the cost.

In a hearing on regulations for agricultural and related wastes control held in September, 1967, a well-known cattleman and feedlot operator made the following statement: "I don't think that we (feedlot owners) are essential to the economy of the state of Kansas but I think we are contributing something; I think all of you do who are feeding cattle and I think this thing has to be weighed not only in the light of pollution, recreation, water supply, and all those things but from the economic standpoint. If we want to make this a recreation heaven let's forget about farming, let's just have our tourists and let them enjoy themselves in this pure water. But I don't think that's the answer."

A "recreation heaven" and "pure water" may not be the "answer" but neither is the perfect solution found in turning clean, bubbling, fish-filled streams into filthy, diseased, open sewers. But the cattleman has a point, there is an economic standpoint—even to people and businessmen not affiliated with the feedlot industry.

The Strawn and Burlington communities, located near John Redmond Reservoir, experienced severe economic reverses following the State Department of Health's ban on water sports at the reservoir June 17, 1967, to June 30, 1967. The Health Department, after taking careful bacteriological counts of the water, advised that people should refrain from using the reservoir for body contact recreation until further notice since it was pos-

sible for them to ingest some of the material into their systems. Tests showed 50 times too many dangerous bacteria in the upper part of the reservoir and 5 times too many in the lower reaches of the impoundment.

"The bacteriological quality of the water was such that we didn't want to take this kind of chance with the safety of people who would want to use it," said J. Lee Mayes, Chief Engineer and Director of Environmental Health Services for the Kansas Department of Health.

"We were doing pretty good until the pollution and subsequent ban hit us," Bob Wilkerson, owner and operator of Wilkerson's Bait and Tackle Shop, Strawn, said. "Then we were really tore up for the rest of the summer."

For Wilkerson the month of May was the best of the year. Then the bottom dropped out when people started avoiding the reservoir like a plague. "During the month of June our cash receipts dropped more than \$2,000 below the total May receipts," Wilkerson said. "I figure I've lost \$10,000 worth of trade during 1967 and I'm under-estimating it at that," he adds. "One more year like that will put me out of business."

Even if pollution is halted immediately, Wilkerson isn't being overly optimistic. "A lot of our customers have said they'll never be back and I haven't seen them since," he says. "It's driving a lot of our tourist trade back into Missouri and Arkansas."

K. A. (Andy) Anderson, owner of Lakeview Service Center, Strawn, has also felt the economic pinch. "It's hard to tell since the flood and high water affected our business, too," Anderson states. "But during the months following the ban, my service station's gross receipts dropped slightly more than \$4,600 per month."

Anderson, also chairman of the Coffey County Comprehensive Planning Commission, a legal body for planning in the county, stressed that the pollution problem and its widespread effects will "wipe out any future development around the reservoir, including a marina, if it is allowed to continue."

"This pollution has really been

rough on local people and hurts the town although a lot of people here don't realize it," Bob Rainbolt, owner of Rainbolt & Son Tackle, a wholesale firm, says.

George Mills, 1967 president of the Burlington Chamber of Commerce, found it a little more difficult to assess the economic damage. "You can't tell because you don't really know what the traffic would have been if conditions had remained normal. It's a new reservoir and there is nothing to relate it to; no basis of comparison. However, the merchants and chamber have spent a considerable amount of money to get sportsmen acquainted with the reservoir and it's possible that adverse publicity has caused this effort to be in vain," Mills said.

While much of the publicity surrounding the fish kills, pollution and subsequent ban was claimed to be "adverse," many of the area residents claimed it was warranted. "The adverse publicity has hurt us but it was coming," Lloyd Reisbig, Burlington boat dealer, declares. Reisbig has not only experienced a drop in business but is equally concerned about his future business and the future of the reservoir, especially since some of the county's most valuable and fertile land was inundated by the impounded water. "We've got to offset this loss of farmland and we were hoping that the recreational benefits of the reservoir would help erase this loss," Reisbig said.

That the reservoir does have tremendous recreational potential, especially fishing, is revealed in the Kansas Recreation Report, submitted by the Governor's Advisory Council on Outdoor Recreation.

In projecting attendance figures at all reservoirs in the state, the committee estimated that in 1975, 522,000 persons would visit John Redmond—340,000 for fishing purposes. The estimated number of fishermen was the highest anticipated number of anglers expected to visit any single reservoir in the state. While it is difficult to place an anticipated dollar and cent value on this projected use, it can be safely said that unless pollution is abated immediately, thousands of dollars will continue to be lost in future years.



BUSINESS HURT—Bob Wilkerson, Strawn bait dealer, has found that water pollution has a far reaching effect—extending into his business, which has been hard hit.

Equally as important, pollution of the Neosho River has affected the health of many citizens for several miles downstream since many of the cities along the stream depend upon it for their source of water supply. During the spring of 1967, when many of the pollution slugs were killing large numbers of fish and causing the bacteriological count of John Redmond Reservoir to spiral alarmingly, the city of Hartford had great difficulty in producing water that was bacteriologically safe. Even after the water was made safe, it was far from being palatable or aesthetically desirable.

It can be said that the new poacher has been very effective in carrying out his mission of destruction, not only on the Cottonwood and Neosho River system but in other areas of the state as well.

While many polluters avail themselves of opportunities to use the state's waterways as open sewers, all should be reminded of the statement made by President Lyndon B. Johnson on signing of the Water Quality Act of 1965. The President said, "No

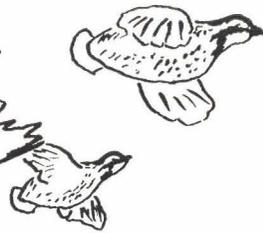
one has a right to use America's rivers and America's waterways that belong to all the people as a sewer. The banks of a river may belong to one man or one industry or one state, but the waters which flow between those banks should belong to all the people."

It has been said that water conservation is a concept which regards surface streams and lakes as arteries of life-sustaining water, of immense value to municipalities and industries and agriculture, rather than just waste disposal systems.

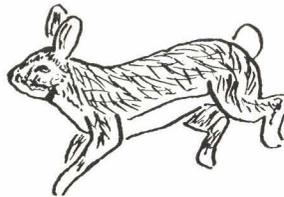
For the first time in Kansas' history, the 1967 session of the Legislature gave the State Department of Health the authority to control water pollution from feedlots, a major source of our pollution problem. The Health Department has adopted supporting regulations and is now working toward their enforcement.

Thus the battle lines have been drawn in Kansas and at long last steps are being taken to oust the modern day poacher from our midst.

(Next Issue: Regulations plus feedlot owner cooperation provides a solution.)



By MARVIN SCHWILLING



Where winter ends and spring begins can be confusing and frustrating—one day its balmy and I get the urge to hike to the spring seep down by the warm water marsh to listen to the spring songs of the cricket frogs and the redwings. Then, the next day brings cold north winds with heavy wet snow and temperatures that seem much colder than the thermometer reads.

Spring comes earlier to some areas than others and the outdoorsman knows that his favorite marsh, lagoon swamp or other shallow water area tunes up with spring wildlife talk ahead of the rest of the world. The white-throated sparrows pour out their melodious tunes, muskrats are playfully active, ring-necks battle for larger territories and pintails pour in.

A full-plumaged male cinnamon teal was in one of the banding traps with six mallards when I made my early spring rounds. We were still a little short of our 1,000 mallard goal and were banding later in the spring than we had planned.

Migrant pintails and green-wings had moved in but what this rusty-red, blue-winged, big-billed teal was doing here while the ice was still thick enough to hold a man didn't make sense. These are fair weather ducks that move south before the fall frosts and move to South America for the winter returning late in the spring after the ice is gone.



Schwilling

I removed the duck from the trap, placed a band on its right leg and after prolonged admiration of the showy plumage permitted the bird to fly from my hands.

The blue and white forms of snow geese have found the banquet laid

out for them by the Fish and Game Commission on the Marais des Cygnes Waterfowl Management Area. Thousands of them leave the big marsh daily to feed. I often follow them by car to the Garst cornfield. The warming spring temperatures has melted the snow around the corn stalks and ears to uncover food. With camera in hand I stalk along the east end of the field and slowly work my way to a low spot at the edge of the field, to a thick stand of buttonbush near the feeding geese.

Moving slowly I approach the feeding geese while more come stringing off the marsh and into the field along with seemingly never-ending flocks of pintails and mallards. Even a few widgeon are among the milling mass. To the east edge of the feeding birds is a small flock of Canada geese. I watch the noisy, quarrelsome feeders for an hour. As light conditions worsen and wanting some color slides, I step into the open and click away as fast as I can wind the film through the camera as the mass raises. They are not too alarmed, they simply move over a couple hundred yards and settle back down. It's dark when I return to the car, but the garbling of the feeders still come in loud and clear.

This morning was a frosty one with little wind, the sun was just beginning to show above the horizon. I was on my way to work a little earlier than usual as I had a busy day ahead.

Some movement drew my attention a short distance west of the road and there in full view was a cock pheasant

in the midst of his gallant spring display showing off in front of an ignoring hen. I had observed this gaudy performance only a few times previously, so I didn't wish to pass up this unusual opportunity. My binoculars were in their usual place under the seat so I stopped the car to watch.

The cock was at his color peak in a coat of copper-bronze, powder-blue, russet and vermilion-red and the white ring around his neck. He would prance up in front of the hen, drop his inside wing downward, spread his long elegant tail and tilt it in her direction. His neck was somewhat bowed, his head low and turned toward the hen, his neck feathers ruffled and extended, ear tufts erected, naked wattles inflated and a vivid scarlet-red. He seemed to be uttering a hissing sound reminiscent to the actions of a grouse or prairie chicken. He posed for only a few seconds then rose and strutted like a bully before the hen with a bobbing motion.

The hen seemed to ignore him completely and sauntered off a short distance. The cock deflated his wattles, dropped his feathers back in place and pranced over in front of her and repeated the performance as if to force his attentions on her. The hen simply walked around the cock to see if he was as colorful on the other side and he quickly shifted his wing and fanned-out tail to again display all the possible beauty he could to the side she was watching.

I was only about 40 feet away and shifted to a more comfortable position. The movement startled the birds and they froze for a few seconds. Then both lowered their heads and ran off into taller grass. The show was over. I was only a little late for work.

Geese Galore at B

Veteran waterfowl observers in Kansas could hardly believe their eyes!

Suddenly, and without warning, the small Brown County State Lake near Hiawatha in northeast Kansas, was literally covered with geese—70,000 of them.

They came in late December and stayed for more than three weeks.

Veteran state and federal waterfowl experts theorized that the geese, perhaps for the first time, deviated somewhat from their normal flyway—and from normal habits—and came to the little lake from the big Squaw Creek Game Refuge east of St. Joseph, Mo.

It's believed that the geese—snows

and blues—are part of an estimated 200,000 which visit the Squaw Creek area each winter. Officials said the Squaw Creek number is increasing each year, and those which visited Brown county may have left the Missouri area because of competition for food.

Regardless, they found a good "home" at the Brown county impoundment, and while they were at it, received a lot of attention.

For several days, the geese found lush pickings of corn, milo and other grains in nearby Brown county fields. The field had been cut much earlier, so they were taking only the surplus grain which remained.

The attention they received was somewhat overwhelming, too. After the word spread, cars were bumper-to-bumper on roads around the county lake, with many out-of-county and out-of-state tags observed. People just wanted to get a glimpse of the big flock of colorful birds.

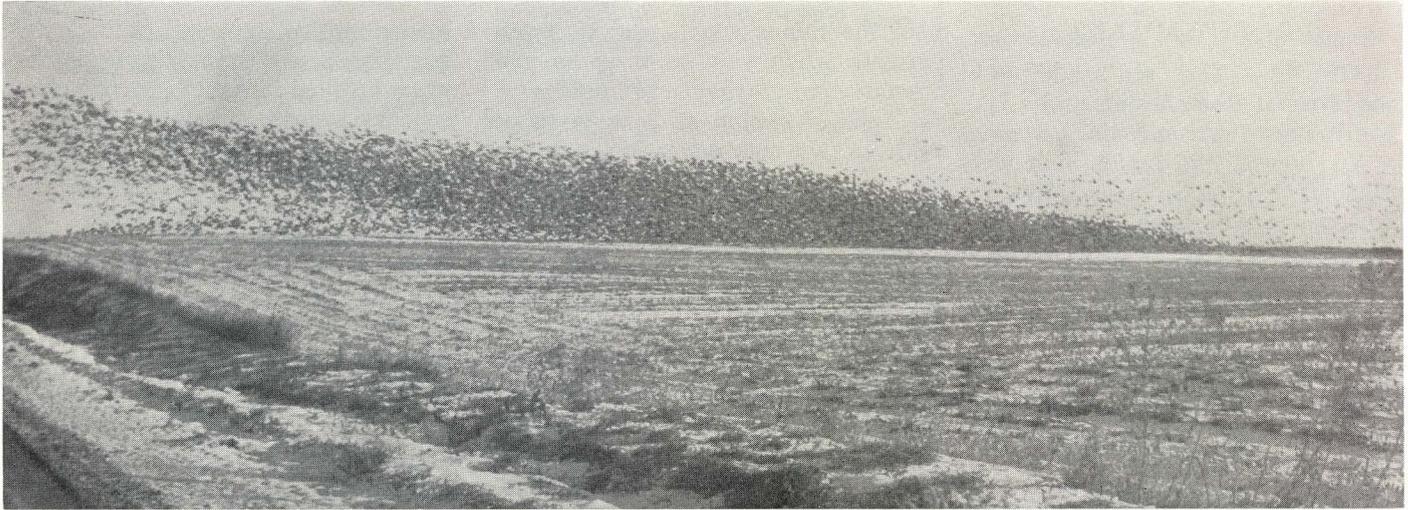
The crowds eventually became too big, however, and state and federal game protectors finally had to start controlling traffic around the lake to keep it from scaring the birds away.

Officers explained that they would like to have the birds remain unmolested as much as possible, so that they might return to the lake in future years.



SNOWS AND BLUES by the hundreds leave cut cornfield after feeding, heading back to small lake to rest.

Brown County Lake



BLACK CLOUD OF GEESE rise on horizon after feeding in cornfield near Brown County State Lake. (Photos by Steven L. Korthanke.)

"If we can get them in the habit of returning to Brown County Lake each year, it will be a big advantage to Kansas," one federal warden said. "Apparently these geese came over from the Mississippi flyway (Kansas is in the Central Flyway) looking for a new resting point on their migration route. If we can get them to come

back, they may return earlier and provide this area with some excellent hunting in years to come."

Officials speculated, too, that the big flock might eventually start spending much winter time at a larger lake in the area, perhaps one like Perry Reservoir, which is nearing completion north of Lawrence.

Anyway, the geese were welcome to Kansas. The sight of the big flock, blackening the sky when they rose to feed or alighted from a field like a swarm of blackbirds, gave a thrill to a lot of folks.

It's hoped, too, that they'll come back next year.



MASS OF WINGS descend on cornfield near Brown County Lake, where estimated 70,000 snow and blue geese spent three weeks following snowstorm in late December.

An Outdoor Classroom

By ROY MILLER

TOPEKA — The red-headed girl looked up at Buck Adams and asked, "Mr. Adams, is this a fossil?"

"No, honey," the junior high vice-principal told the 8-year-old, "it's just the jaw bone of some little animal."

In the cluster of students under a tree, Mrs. Marcia Johnson was asking, "You know when the frog season opened? Do you know how old you have to be to have a fishing license?"

"Okay," the physical education instructor said. "These are some

of the things you'll need to investigate when you grow up so you won't have to pay any fines."

Another session at Seaman school district's outdoor education camp was in full swing.



Miller

The students, who live in the rural-suburban area north of Topeka, spread out over the 120-acre site at Perry Reservoir near Ozawkie. Some practiced boating, others baited their hooks with chicken livers,

a few went up a hill with Mrs. Johnson to pitch a tent and a handful stayed behind to set up a library beneath the tree.

They were too busy trying to catch catfish in the old farm pond, but the summer school participants were pioneers—pioneers in the first ambitious outdoor education program in Kansas.

Kansas, as much as 30 years behind some other states, is beginning to realize the potential of outdoor education. Even though it operated only

in a primitive state and on a limited basis because of rain, Seaman's program instilled interest in several other school systems in the state.

"This is going over big," said William (Buck) Adams, director of the summer program.

The man who developed the program, Frank Colaw, district superintendent, agreed.

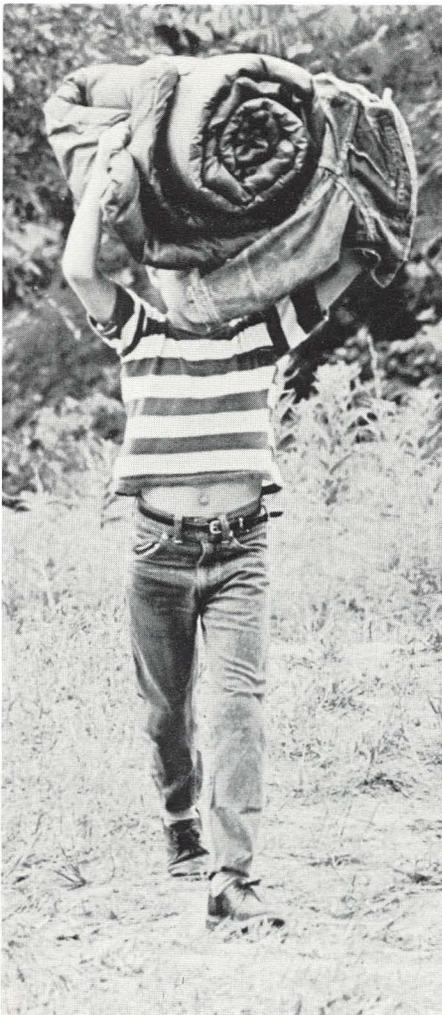
Colaw isn't much of an outdoorsman himself. He plays a little golf and likes to fish. But he hasn't camped much since he was in the infantry—"If you can call that camping."

When Colaw went to the Ozarks in August he stayed at a motel.

But Frank E. Colaw had enough vision to see tomorrow's adults need to learn how to use the outdoors as their ability to be outdoors increases. He started thinking about outdoor education three years ago when he pondered the camping boom.

"Of all the things that have happened on the American scene in recreation and sports this family camping thing seems to be the only thing to bring the family together instead of sending them off," he said.

"I just wish I had time to join them."



BIG BUNDLE—Nolte youth finds most efficient way to tote big sleeping bag up a long, rough trail is to boost it above the head so you can see where to walk.



LAZY DAY—With instructor Hayden Owens steering boat, Brad Nolte, 7, foreground, son of Mr. and Mrs. Andrew Nolte, and Floyd Holt, 8, son of Mr. and Mrs. S. H. Holt, take turns fishing from boat.

Along with other administrative duties, Colaw has been busy working on his thesis at the University of Kansas. It's entitled "Establishment of an Outdoor Education Program for Unified District 345 with Maximum Use of Private or Federal Funds."

The extent of Seaman's use of federal funds has been maximal. "There hasn't been a cent of local money go for that thing yet," Colaw said.

Planning was supported by \$4,000 in federal aid. The planning grant actually was for \$7,000 but Colaw returned \$3,000 in unused funds.

Even the money for the site leased Seaman by the Corps of Engineers came from a private source. Colaw's secretary, Mrs. Betty Brady, paid the \$1 fee for the long-term lease.

Colaw now awaits a federal grant of \$58,100 which will initiate con-

(Editor's Note: Roy Miller, sports and outdoor editor of the Pittsburg Headlight-Sun, is a former staff writer of the Topeka Capital-Journal, and a frequent contributor to the Kansas Fish and Game Magazine.)

struction of permanent structures and finance a staff for the outdoor laboratory.

The Seaman program will be developed in stages as the district's capabilities grow. Colaw hopes the program will enable the school to utilize the camp site for outdoor teaching stations in many areas of study, including wildlife, conservation, land management, meteorology, geology, map reading, water safety, fishing, shooting, and gun safety.

Plans also call for an adult program, capitalizing on the boom in family camping. Colaw even envisions checking out tents to families. And, again emphasizing the use of federal or private money, he figures several Kansas outdoor equipment manufacturers would help schools in this area.

The possibility of summer band, art and theater camps will be investigated and started as soon as possible. A summer day camp could be operated with emphasis on education for recreation.

Several school districts have shown interest in the outdoor education camp on the banks of Perry Reservoir. Kansas, a land with plenty of wide open spaces and big lakes, is showing signs of catching on the outdoor education bandwagon.



A FEW POINTERS—Seaman outdoor school class gets pointers from Hayden Owens, an instructor, before supper of hamburgers and beans over open fire. (Photos by Bern Ketchum, Topeka Capital-Journal.)

Fishermen Can Be Hooked, Too

By THAYNE SMITH

Long ago, when someone coined the old phrase that "a fool and his money are soon parted," it's just possible they were looking in a crystal ball and gazing at today's American fisherman. This is not to imply that all fishermen are fools. Actually, surveys show, fishermen are on par in intelligence with the average American.

They do, however, have many opportunities in this fast-moving, modern world to be foolishly parted from their money.

Visit any store which sells fishing tackle—the so-called discount house or even the best and most legitimate sporting goods firm—and you'll find a lot of "cheap" items appealing to the sportsman, and especially the angler.



Smith

Fishing equipment, including rods, reels, hooks, lures of every kind, stringers, floats and bobbers, leaders, sinkers, and dozens of other items come in many sizes, shapes and colors, and in every price imaginable.

Many of them are there simply to catch fishermen, not fish.

With foreign-made objects flooding the nation's markets, it's only natural that many of the cheap and generally no-account items bear the mark of a distant land.

And, like radios, cars, motorbikes and watches, many of the low-priced "special discount" items are filled with excellent eye-appeal, designed to catch the fancy of the occasional angler.

As it is with other commodities, fishing equipment which is imported—and even some made in the U. S. A.—tends to closely resemble excellent products which can be purchased at the same discount houses and sporting goods and hardware stores for "just a little more."

A big majority of the nation's fishermen do their angling with rod and reel, and these two items offer the prospective tackle buyer his first big

opportunity to foolishly be parted from his money.

There are literally hundreds of rods and reels on the market today—both good and bad. It doesn't take a professional fisherman, or even an expert one, to select good equipment, however, or know when he is "getting his money's worth."

The first thing he should do is insist on "trying" the equipment—place the reel firmly on the rod, borrow a practice plug from the seller, and step outside the store and make a few casts. If an experienced fisherman, he'll know whether the product is worth the price from the "feel" and the workings of the outfit. If it drags, doesn't work freely, or the rod has no action, it's "cheap" in more ways than one and certainly not what the guy or gal who wants to do some serious fishing is looking for.

Next, there are lures, and lures, and lures, and more lures . . . every kind and size. Fishermen today probably peel out more dollars each year for lures in the United States than for any other single angling item.

The pitfalls are about as numerous here as the number of lures available, too. If you look closely in the sporting goods store, you'll find that about every good lure on the market—and some which are not too good—are also obtainable in "cheap" imitations.

Generally, the imitations look like the real thing—right down to the brightly-painted, eye-appealing spots on an artificial frog, or the red, thread-thin tail of a mosquito fly.

The similarity among these lures ends with the looks, in almost every case. Generally, the "cheaper" imitation—once purchased by the angler—catches nothing else. Put on the end

of a line and cast to the lake, pond or stream, it seldom catches fish.

Good artificial lures are made to create life-like action of bait fishes, insects, bugs, and in some cases small rodents, which fish like to eat. If they don't do this, they're useless, and generally the imitations don't.

Good lures wiggle, float, dive, slip, spin, and wobble in the water, each action resembling a motion of its real counterpart which it was created to pattern.

The imitations, even though they often look exactly like the real thing on the sporting counter, go "flat" in the water. Generally, they will either float or dive, and that's about all. Most times, they don't do either well.

A few weeks ago, I visited a large tackle store in a big Kansas city, where I've traded for many years. I was somewhat amazed to find two lures on one counter (several dozen of each were available) which looked exactly alike in their fancy, individually-packaged plastic boxes. One was marked at regular retail price—which I had always paid for that particular lure made by a leading tackle manufacturer—\$1.25 each. The other—on the same counter but several feet away—was 79 cents.

Close examination and actual testing later revealed two things which I thought would be evident. First, the higher-priced lure made by a good, legitimate American firm contained the maker's name and name of the lure, lightly stamped in silver ink on its underside. There was no stamp of any kind on the cheap imitation.

I purchased one of each, just to compare them. The genuine product—as it was supposed to do—floated effectively, resembling a small green frog sitting with its eyes just out of water. It "popped" like a live frog when retrieved. The cheaper lure proved a new kind of "slow diver." After striking the water, it started settling to the bottom of the lake, and

when retrieved, came through the water like a bullet, with no action of any kind. Here was definite proof that some lures are made to attract something besides fish, and that purchase of proven products, with a brand name, is generally your best buy.

There are other "bargains" in buying fishing tackle, too. Hundreds of kinds and sizes of monofilament (nylon) lines are available on the market today, and just about every one is hailed as "the strongest, toughest, finest, or best" to be found. The knowing fisherman has discovered that this is where it pays to buy the "brand name" and pay just a little more to get it.

In the midwest part of the nation, the art of "jigging" has become prominent in recent years. Many kinds of excellent game fish—crappie, bluegill, walleye, northern pike, white and black bass, and others—can be taken on jig lures. Generally, jigging is done with light tackle, using ultra-light or medium-

light action rods, small spinning or spin-casting reels, and line of small test strength, generally four to eight pounds.

The popular Midwest-type jig is nothing more than a small hook with a round or egg-shaped ball of lead fashioned around the hook just below the eye. Below this is tied several short strands of nylon, short lengths of deer or coyote or bear hair, or short, fluffy pieces of maribou feather. The feathers, hair or nylon, and the string used to tie it to the leaded hook, come in every color, and combination of colors, that exist. Many fishermen tie their own jigs, and do a good job of it. They create some weird color combinations, too, and surprisingly they sometimes catch a lot of fish on them. The jig, when dropped in the water and moved up and down or with a jerky motion, resembles a small minnow or bait fish.

Because of its widespread popularity, the jig is in great demand among Midwest fishermen. Consequently, the market is flooded with

them—again in every size, color, combination of colors and hook size available. Makers use brightly-colored and cleverly-arranged cards on which to display them, trying to attract the eye of the buying fisherman.

Because of the competition for the fisherman's dollar, jigs cover a fantastic range of prices, and offer the buyer a real test.

It's not easy to tell by looking just how good a jig might be. I've seen some which appeared to be well-made, but which lost their thread, feathers or some part of their makeup with the first cast or two. I've even seen some which lost the dye colors used in the feathers as soon as they touched water. Being a dyed-in-the-wool jig fisherman, I've learned to stick to proven brand names, and to pay a little more for a product which I know will serve me well.

Fishing tackle, like most consumer merchandise, is often just as good as the name on it, and brand names—which you know are good—are generally the best bet.

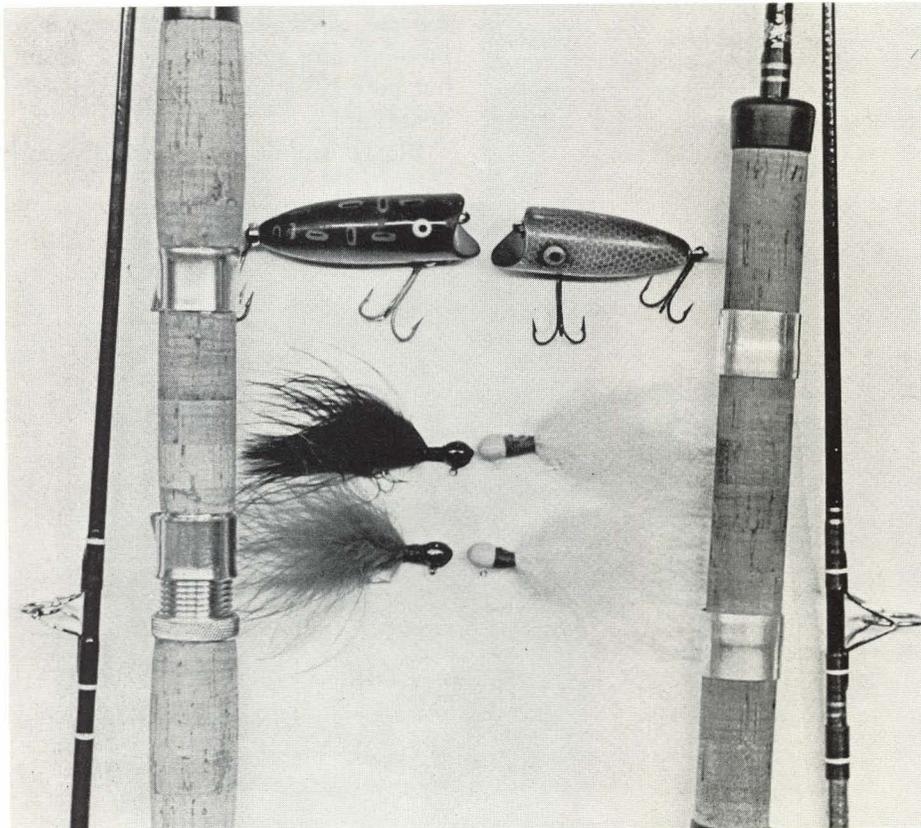
Whether it be lures, rods, reels, lines or jigs, a good brand will cost you a little more, sure. You can rest assured, however, that the proven products will catch more fish for you, and it won't be the fisherman instead of the fish which is hooked.

CARPET YOUR BOAT

More and more boatmen are taking a tip from the metal boat boys and carpeting inside with nylon pile carpets. The aluminum fraternity started the craze. Nylon's great ability to resist dirt and jazzy good looks made other boatmen copy the maneuver.

Sturgeon have no teeth. They are equipped with strange tube-like mouths for bottom feeding and are known to reach 1800 pounds in weight. An Eurasian variety reportedly weighs more than a ton.

More than half of the 40,000,000 gun owners in the United States are recreational shooters.



WHICH IS BEST?—Rod, lure and jigs on right appear to be about the same as those on the left, but looks are deceiving. All on right are cheap imitations of quality products, and generally hook only fishermen, not fish.

Wildlife Photography--

By DUANE KERR

A Second Season

Lying on my stomach at the edge of the marsh, I spread the grass to see my prey standing only 40 yards away in the shallow water. The dozen or so Canada geese stood stiffly alert, cackling softly—ready to fly at my next movement. Before they could launch themselves, I got off one shot, and as they clamored away, I followed them with two more.

Not a feather had fallen as a result of my three shots, but I had gotten what I wanted from the quarter-mile stalk and belly-crawl. In my camera I had three exposed frames of film and in my mind I had the kind of picture that can't be forgotten.

Across the marsh, 200,000 ducks and 35,000 geese dabbled and preened prior to their noisy departure to the nearby milo and wheat fields. Overhead, a bald eagle scouted the marsh as he soared on the back of a light spring breeze. The sights, sounds and smells of nature literally were all around me.

As I watched the mass of waterfowl through my telephoto lens, I thought about what other sportsmen were missing. I was at Quivera National Wildlife Refuge, near Stafford, Kansas, two months after the hunting season had closed, enjoying the wildlife that many sportsmen had forgotten when they put up their guns. In front of me were more ducks and geese than most of them had probably seen in several years. I was having a second season.

Wildlife photography is the perfect answer for those sportsmen who aren't satisfied with being in the field only in the hunting season. It gives an excellent opportunity to practice the fundamentals of actual hunting such as stalking and blind building and it affords a chance for the sportsman to observe and learn more about the wildlife that he encounters each fall. Such practice and observation is not only fun, but it also enhances the chances of success in the hunting season.

To me, waterfowl are the most interesting of the wildlife to be found in Kansas. Their wariness and diversity present a true challenge to the wildlife photographer. Ever since I began wildlife photography over six years ago, I have specialized in waterfowl. I have enjoyed photographing ducks and geese to the extent that I seldom hunt them any more.

Since most of my experience is in photographing waterfowl, the techniques I have learned are from this venture. I feel, however, that most any of the many other species of wildlife found in Kansas can be successfully photographed using the same methods.

The two basic methods that are used in waterfowl photography are the use of blinds and stalking. Both methods are good and very useful, but both have limitations and specific adaptations.

Blinds can be used basically only



KINGS OF WATERFOWL—Flight of Canada geese fly along wooded lake in eastern Kansas. They are among most difficult of waterfowl to approach for photos. (Photos by Duane L. Kerr.)

when it is known that wildlife will congregate at or pass a specific place. Waterfowl congregate in different places according to the species, the weather and the season of the year. It is the variation in feeding habits and available food that accounts for these differences. A knowledge of the habits of the different species is essential in locating them at given time.

The construction of blinds for photography varies greatly—from ones made of the natural surroundings, to pit blinds to portable ones. I have made some use of a portable one constructed of a folding aluminum frame and a camouflage net covering. I have also used old hunting blinds at hunting leases on several occasions.

The main function of a blind is to conceal the photographer, and this should be the primary objective in building one. Since several hours may be spent in a blind to get a particular picture, creature-comfort should be remembered, too.

At least 90 percent of my wildlife photographs have been taken without the use of a blind. I have found stalking to be more fun and more successful than sitting in a blind. Stalking is also the best way to keep in shape for the next hunting season.

Since waterfowl and most other wildlife species have very keen eyes, the first essential rule of stalking is keeping concealed. Too often, especially around the marshes that ducks inhabit, the only cover for concealment is grass. If so, a belly-crawling approach is the only resort. A

camouflage suit is always an aid in stalking any wildlife.

The second rule of stalking is keeping quiet. A loud splash or the noise of a snapping twig will usually flush even the boldest of waterfowl. To avoid making such a noise, it is helpful to make a rather slow and deliberate approach.

Before any stalk is attempted, all possible routes should be mentally checked. Look for lines of trees, tall grass, hills or ditches that lead to a point near the objective. Such ob-

structions will aid greatly in easing the work of a stalk. Remember to stalk to a point where the sun will be at your back, or the resulting photographs might be lacking in detail due to silhouetting. With a little careful observation and some practice, stalking can be relatively easy and successful.

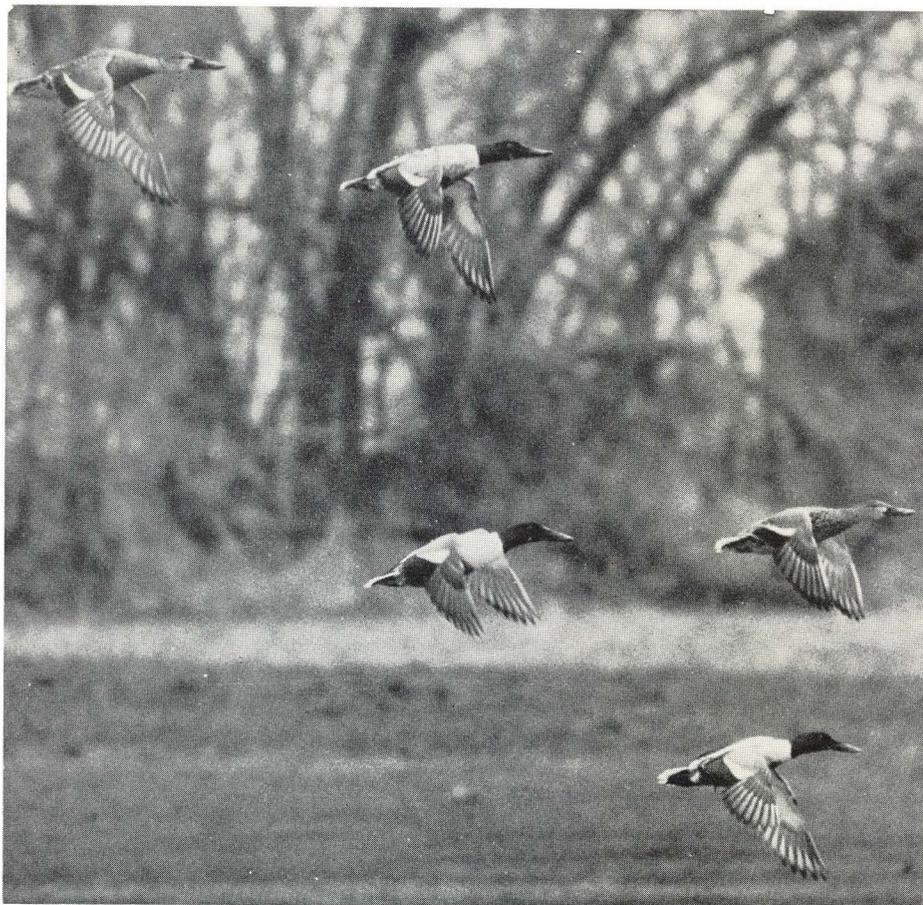
Getting close to the subject is about half of wildlife photography. The other half is the technically difficult part—the actual photography. Equipment and technique are the two important factors of good photography.



FOUR SHOVELERS flash across surface of Cheyenne Bottoms near Great Bend. Male in upper right hasn't yet developed spring plumage, therefore resembles single female (second from top).



MOST POPULAR and well-known of all waterfowl is the Mallard duck. This pair takes off from a creek in Barton County.



GRACEFUL GLIDE—A group of Shoveler ducks drift in for landing on temporary lake in wheat field near Hutchinson.

As far as equipment is concerned, I feel that by far the best camera for wildlife photography is the 35mm single lens reflex (SLR). What this camera lacks in negative size, it more than makes up in versatility. Most SLR's accept lenses of 500mm (10 power) and more, and they have fast shutter speeds, through-the-lens focusing and an easy-to-use size and shape.

An almost essential addition to the basic camera is a telephoto lens. I have personally used lenses of 200-500mm, but I prefer one of about 350mm in most instances. Whatever length lens is selected, it should be lightweight and have a fairly large aperture to allow fast shutter speeds. A basic SLR and telephoto lens outfit will cost \$150 at a minimum.

It is advisable, especially for the beginner, to use an accurate light meter in all photography. Proper exposures will vary greatly depending on the position and texture of the subject, the intensity of the light and

many other variables. It will take some practice and experience to get consistently good exposures. If your camera doesn't have a built-in light meter, a good one can be purchased for as little as \$15.

Nearly every article on photography prescribes the use of a tripod for sharp telephoto pictures. I feel, however, that tripods are usually more of a burden than an aid to the wildlife photographer. It is simply impossible to follow a flying goose, for example, with the camera bolted to a tripod. With steady nerves and a fast shutter speed, tripods are not needed. It doesn't hurt, though, to brace yourself against a tree or fencepost to minimize camera vibration.

For the person without darkroom facilities, it is probably best to use color transparency film rather than black and white or color negatives. A fairly fast (light-sensitive) color film must be used to allow the fast shutter speeds required to stop the action encountered in wildlife pho-

tography. On bright, sunny days, Ektachrome-X is a good film, while on cloudy days, Hi-Speed Ektachrome is better.

As far as black and white film is concerned, I feel that Kodak Plus-x is the best outdoor film. To get good results with black and white photography, it is best to have a darkroom available.

Before you attempt wildlife photography, become acquainted with your camera and with the fundamentals of photography. Learn how to follow a rapidly moving object while keeping it in focus. Practice squeezing the shutter release just as you squeeze the trigger of your gun. Learn to "read" the lighting conditions and subject matter to determine when a good picture is possible. Practice composing pictures in the viewfinder of your camera.

Once you have mastered the basic techniques of photography, you are ready to go afield and try it for real. Go out with an idea of what you want to get on film, but be ready for anything unexpected that might make a good picture. It is often the unexpected or the unconventional that makes the best photographs.

If this sounds challenging to you, and if you want to enjoy the outdoors and wildlife for more than just three or four months each fall, try wildlife photography. Do it, and you, too, can enjoy the second season.

The country's commercial fishing industry reached a record high \$440 million in 1965, a 13 percent increase over the previous year. The shrimp harvest topped all other species with a catch valued at \$82.6 million.

Pilot whales have built-in sonar systems that function only in deep water. When the huge beasts enter shallow water, the sonar ceases functioning and the whales beach themselves as if to commit suicide.

Two out of three waterfowl hatched on the North American continent come from the prime "duck factory" areas of Canada.

'67 License Sales Hit All-Time High

For the first time in the history of the Kansas Forestry, Fish and Game Commission, total revenue derived from the sale of licenses in a single year climbed past the 2-million-dollar mark in 1967.

Bob Ward, Pratt, chief of the fiscal division for the Commission, reported today that \$2,026,734.50 was collected from the sale of licenses during the year. "This represents an increase of \$139,835.50 over our 1966 total of \$1,866,899.00," Ward said.

"Our license tabulation also indicates we had the highest number of licensed fishermen in the state's history," Ward said. Resident, non-resident and combination hunting-fishing license sales totaled 311,446—a sharp increase over the previous angler record of 304,322 established in 1960.

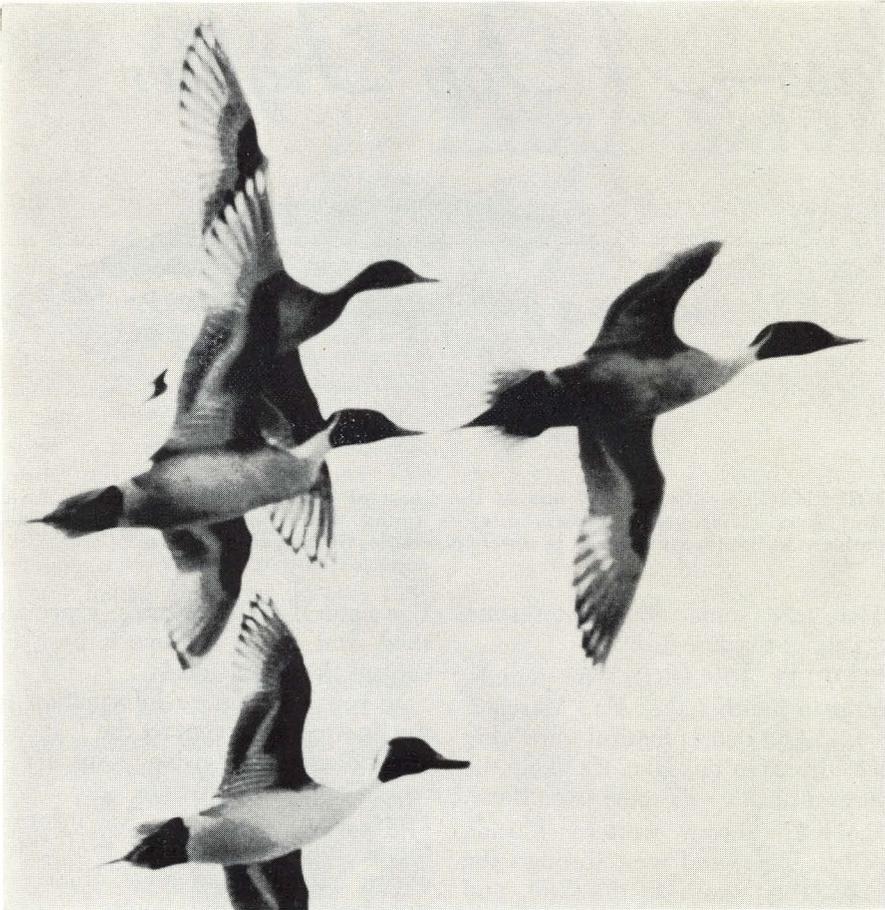
The largest increase in fishing licenses was reflected in the sale of resident permits with 256,146 sold in 1967 compared to 246,653 in 1966. Non-residents, lured to Kansas' ever-expanding water areas, purchased 13,066 annual fishing permits and 8,466 10-day fishing licenses—both records.

While fishermen were setting records in the Sunflower State, hunters were also setting new marks. "There were more hunters taking to the field in search for upland game birds and we recorded the second highest total in non-resident hunting license sales in our history," Ward stated.

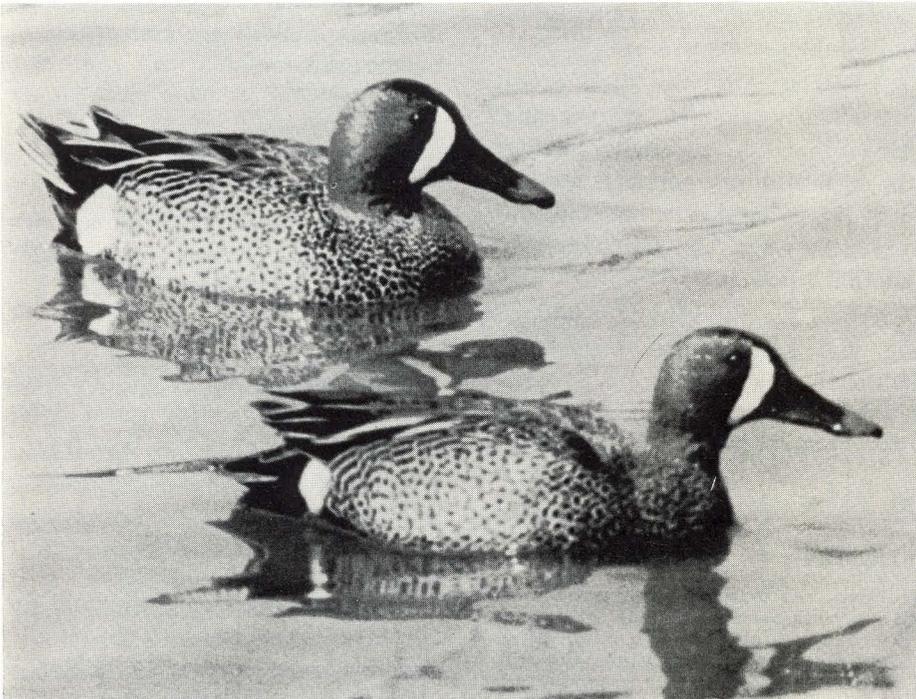
Upland game bird stamps, required of license holders who hunt quail, pheasants and prairie chicken, were purchased by 193,950 hunters, an increase of more than 13,000 over the previous year.

Hunters residing out-of-state purchased 17,018 licenses, the total exceeded only by the 1962 record when 18,472 licenses were issued. Resident hunting licenses also increased from 166,747 in 1966 to 170,669.

Combination resident hunting-fishing licenses totaled 33,768, up 5,290 over the previous year. Controlled shooting area licenses accounted for 269 sales, a gain of 61.



COURTING FLIGHT of pintails twists and turns above Quivira National Wildlife Refuge near Stafford. Such flights are common in February and March, and sometimes a dozen males will chase a single female.



TANTALIZING TEAL—Two male blue-winged teal, first ducks to migrate through Kansas in fall, and last to leave in spring, swim in pond near Sterling.

Spotted Bass—A Top Fighter

More than three years ago, while fishing at pretty Marion County Lake on a warm April afternoon, John Waner of Newton pulled a nice bass from the clear waters.

Keen eyesight told him immediately that it was not an "ordinary" bass—at least, not of the largemouth variety which is common to Marion Lake and most of the waters of Kansas.

This one, he knew, was a little different. It had the line on its side, like a largemouth, but that the line was somewhat irregular and wavy. In addition, it's mouth was small, and it had a row of spots or blotches and small spots on its side.

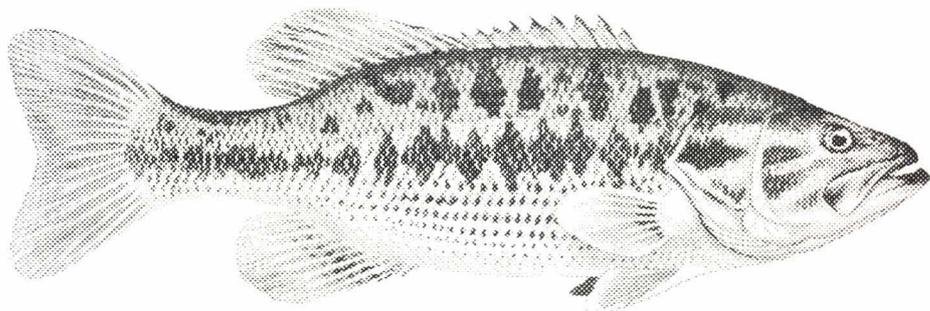
He immediately contacted personnel in the Fisheries Division of the Kansas Fish and Game Commission, after wisely weighing and measuring the fish before several witnesses at Marion.

Waner soon learned that he had a new state record Spotted (or Kentucky) bass—a 3-pound, 12½-ounce beauty. The record still holds. He was using a Shyster spinner for bait when he landed the whopper on rod and reel.

The Spotted bass is found in many Kansas waters, but isn't often caught except in the clear running streams of the southeast, and in the Flint Hills lakes and ponds.

Due to its similarity to the largemouth, many fishermen often do not realize what they have caught.

Veteran bass fishermen agree, however, and especially those who have experienced many Kentucky catches, that the spotted bass is one of the best of all fighting fish.



GOOD FIGHTER—Considered one of the finest of fighting fish, the Spotted (Kentucky) Bass (*Micropterus Punctulatus*) is found throughout Kansas, but is most prominent in Southeast waters. It closely resembles the largemouth bass.

Here are some other interesting facts about this fine fish:

WORLD RECORD: 8 pounds, caught in Smith Lake, Ala., March 7, 1966. And so plentiful are big Spotted bass in this lake, it's likely the next record fish will come from there.

RANGE: From western Florida north to Ohio, and west through the Ozarks, then south to the Gulf, and in all the states within this area.

HABITAT: Cold, fast-flowing, rocky streams; especially in the deep, dark holes below riffles. In lakes, look for it around rocky outcroppings, and boulder-strewn shores.

LURES: All types of live bait, particularly minnows, worms, small frogs, crawfish, and hellgrammites. In artificial lures, best bets are fast-wiggling deep divers, bucktail spinner types, jigs, and topwater commotion types.

TACKLE: Fly, spinning, spin casting, and bait casting, kept on the lighter side for sport.

FISHING TIP: Spotted bass usually are found in very clear water.

Use natural scale patterns, especially shad, and a fast retrieve is best, except at dawn and dusk.

If you'd like more information on the Spotted bass, contact the Information-Education Division, Kansas Fish and Game Commission, Box 1028, Pratt, Kansas 67124. An informational bulletin explains the differences, habitats, and gives other pertinent data on the Spotted, Smallmouth and Largemouth basses, and an attractive booklet, entitled "What Have I Caught" will give you identifying characteristics of all game fish in Kansas. Both are free of charge for the asking.

The bounty system, said to have originated on European game preserves, has failed as a management tool in the control of predators throughout the United States.

Less than half the weight of a largemouth bass is usable meat while nearly 80 percent of the lake trout is edible. In the walleye, 60 percent is waste.

The disappearance of the wild turkey in many sections of the country was due more to the decimation of oak and chestnut forests than to hunting.

NOTICE TO READERS

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For More Game Think Small

Whether for "home consumption" or as a means of supplementing farm income, wildlife is a valued part of the Kansas rural scene.

But many species have not fared well in the face of big farming with big fields, big equipment and big cleanup. Many landowners would like to improve the lot of pheasants, rabbits and quail, but they are stymied by the same bigness in thinking. Many farmers look upon game management as involving a major redesign of their fields, and they despair that big farming and game can go together.

It's generally true that the best conditions for upland game are found on lands that duplicate patch farming conditions of fifty years ago. But that doesn't mean that improvements are out of reach on modern-day farms that feature bigness and uniformity. Game management can be a lot of little things as well as a major overhaul of land use and practices.

Line fences, access roads, drainage-ways and field borders are part of the farm landscape—large or small. How these are handled can make a notable difference in conditions for wildlife. If you're a big-field farmer looking for low-cost, even no-cost, ways of jazzing up the game supply, take a fresh look at those peripheral sites.

If it has been your practice to mow such idle areas, consider this: Mowing costs time and money and in most cases serves no good purpose. Very few weeds are controlled by regular cutting, but the removal of such linear strips of cover can mean the difference between having a covey of quail on the site and not having one.

A brushy fenceline is of no liability to farming and cutting it out won't add a nickel to farm revenue. But letting it stand can make a field habitable to pheasants and rabbits where otherwise they couldn't survive.

If you have firebug tendencies, remember that scorched earth and game crops don't go together. Brush piled in a fence corner will afford good game cover for years. And a grown-up ditch bank can serve mul-

tipled need of nesting and protective cover for a variety of farm game.

All in all, good game management can be thinking small and acting shiftless. Improving the farm for wildlife involves a lot of little things and mostly they are things better left undone.

The largest fish is the Whale Shark; the smallest is a goby, less than an inch long.



"Any particular kind of rope?"



SPRINGTIME SERENITY—Fishermen in Kansas-made fiberglass canoe slowly work their way up the lazy Ninescah River, above Pratt County Lake at Pratt. Canoe fishing is increasing in popularity throughout Kansas each year.

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