

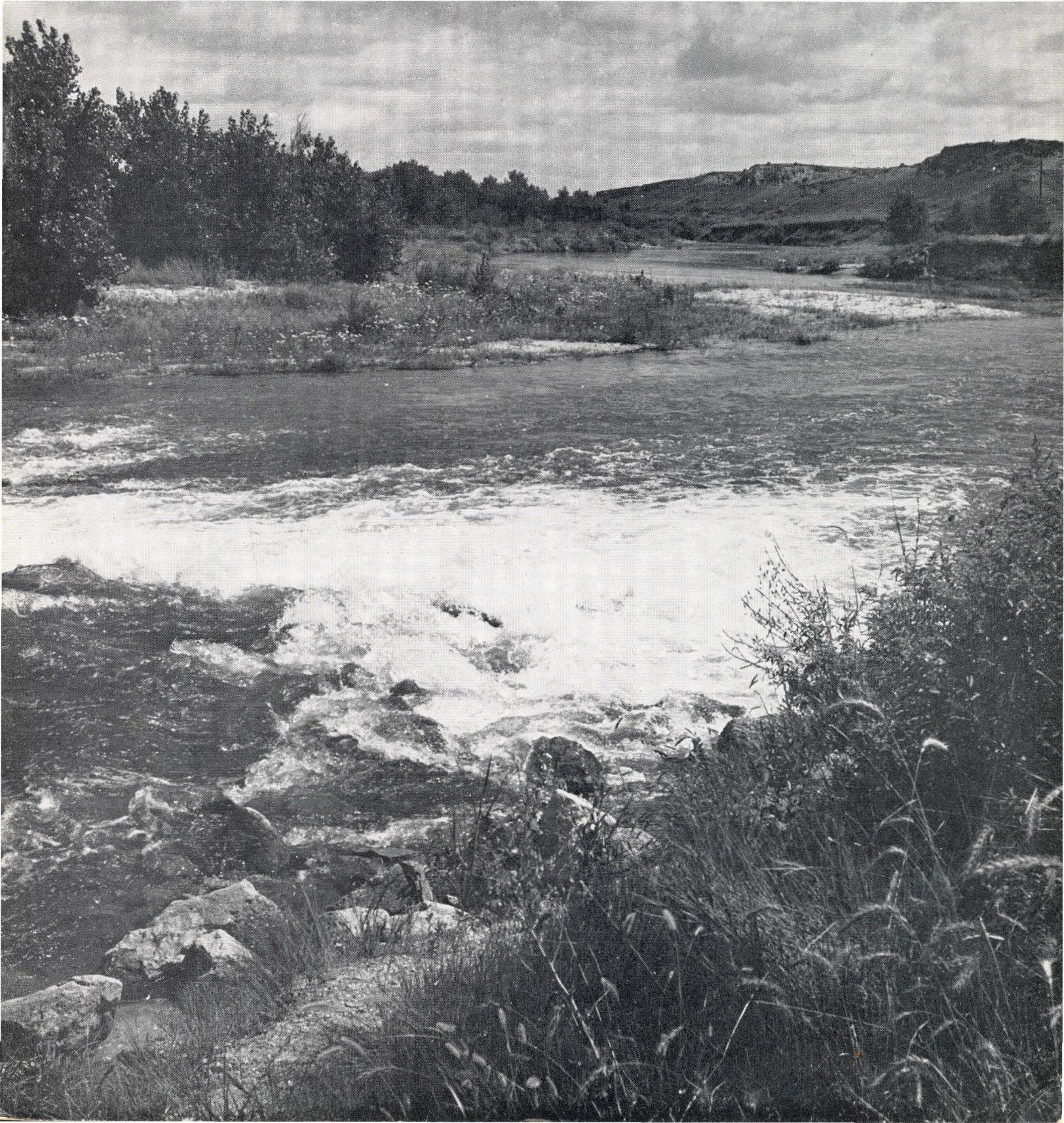


Kansas Fish and Game

VOL. XIX

SPRING, 1962

No. 4



Spring

1962

Think It Over

Not too long ago, I heard a group of four men discussing their likes and dislikes; their hobbies and sports. The first man said his hobbies were swimming, boating and golf. Another said he liked bowling, water skiing and tennis. The third man said he liked golf, water skiing and bowling.

Then the fourth man said, "I have many hobbies and sports, but I think I like hunting and fishing best of all." And as I heard him, it occurred to me that people who list hunting and fishing as their hobbies nearly always add "best of all," as if the sports were very near their hearts.

A golfer or a bowler or water skier will readily admit that he could survive if the facilities for his sport were obliterated. He could easily adapt to another sport.

A hunter or fisherman, on the other hand, might allow as how he could manage without a field to hunt in or water to fish in, but he'll tell you right fast that nothing, no other sport, can take the place of hunting and fishing.

Whatever that extra something is that makes a man feel so strongly about the sports of hunting and fishing, it is apparent that more and more people are reaching for it. The 1960 National Survey of Fishing and Hunting in the United States shows they are growing in numbers much faster than the general population. And at the same time, there are forces at work in America that could deprive us of these sports. Let's hope and pray that we win the battle for the sports we know are irreplaceable.—Bob Todd.

Published Quarterly
by the
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Magazine Editor

BOB TODD

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An Early History of— Wildlife In Kansas

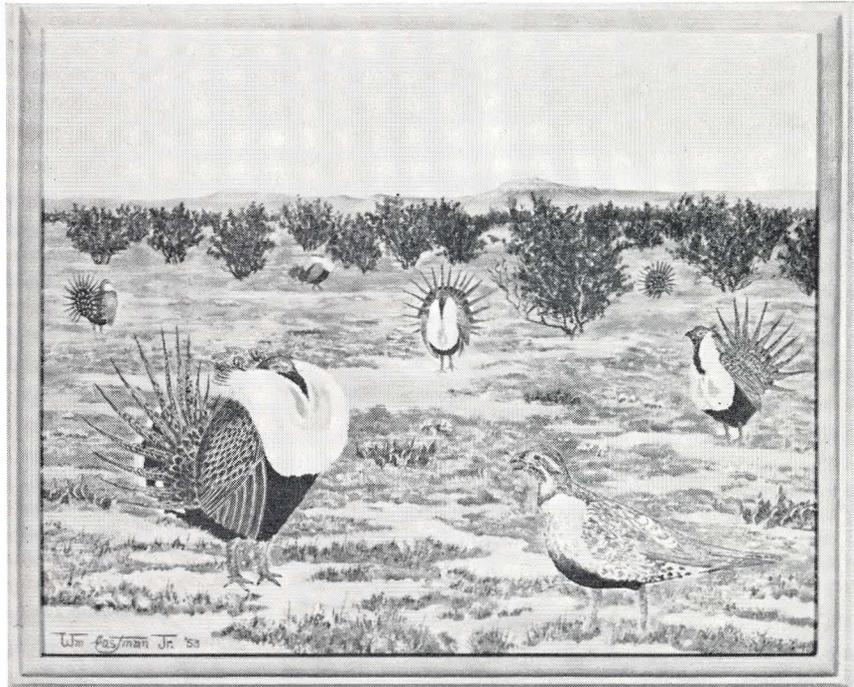
by BOB TODD

A brief study of the history of wildlife in Kansas shows that there was an abundance of game in the state before the white man settled here. In fact, the white man would have found it difficult to settle the state had it not been for the abundance of wildlife. In the early days, the pioneers often lived off of game they hunted until they could establish a farm. And it was the buffalo and beaver and other fur-bearing animals that drew the first white men into the virgin territory that was then Kansas.

There were large numbers of buffalo, elk, antelope, mule deer and white-tailed deer in Kansas. There were large numbers of prairie chickens and rabbits. Migrating waterfowl used the state's marshes and streams heavily in their fall and spring travel. Many of the streams were clear and deep and large fish were in abundance. Large numbers of beaver, muskrat and other fur-bearing animals lived in the streams and used the woody cover along their banks. Smaller animals, such as prairie dogs, and others used the prairie to build villages.

Back then there were few lakes, no reservoirs or farm fields. There were probably few bobwhite quail and few scaled quail. There were no pheasants then and there were no carp. Coyotes were no more abundant then than now and only a few bears, if any, were present in the state. There were bobcats and cougars throughout the state.

Then in the early 1800's, French



Prairie chicken, such as those shown in their courtship ritual above, were very common in the pre-settlement days of Kansas. However, the plow, overgrazing and clean farming have uprooted the prairie chicken from most of the state. Now the pheasant thrives where the prairie chicken cannot.

fur trappers began using the fertile prairie extensively. They followed the streams, trapping beaver, mink, muskrat, raccoon and other fur-bearers. There was much money to make and soon there were many trappers taking the pelts to be sold back east. When the trappers returned to sell their furs they told of the great prairie; of its beauty and untouched resources.

Later, fur traders moved to the west and brought back tales of fortunes to be made on the prairie.

Settlement began and the early pioneers lived by their skills as hunters until they could establish a farm or ranch. The buffalo soon became the target of market hunters and many thousands were slaughtered. Soon other game came into the sights of the market hunter and literally millions of birds and animals were taken. The early settlers used any method they could to take fish from the streams or animals

and birds from the land. But the abundance of wildlife in Kansas was so great that these efforts by our forefathers would have had little effect on the numbers of wildlife in the state had it not been for man's growing population and activities which destroyed the environment so essential to the production and well being of the native wildlife.

As more and more people moved into the state to stake out a new home, much of the virgin prairie was turned under by the plow. Trees along the streams were cut for lumber and to clear the fertile bottomlands. Fences were strung and domestic cattle roamed over the traditional lands of the buffalo. The swamps, marshes and potholes were drained to make more room for the plow. Dams were thrown across the rivers and streams to provide power for grinding grains.

As the settlers changed the pat-

tern of the prairie, the wildlife populations also underwent change. The plow took the grasses from a large part of the prairie, and the prairie chicken lost its home. In other areas, domestic cattle overgrazed the prairie, leaving little space for the prairie chickens.

Fences made it impossible for the buffalo to roam freely as it needs to. And domestic cattle provided more competition than the buffalo could stand. The buffalo had no course but to retreat to the few still unsettled parts of the west. Along the streams the wood was removed and the beaver had no cottonwood trees to feed on. The deer and elk all but disappeared with no stream-side cover to hide in. Plowed fields offered poor sites for prairie dog villages and the burrows were considered a menace in pasture lands. So the small rodents were exterminated wherever they were found.

On the other hand, the clearing of lands in the eastern part of the state produced a better situation for quail than there had been before the settlers came. Quail need a combination of woods, weeds and open field to produce and thrive in abundance. So quail became very abundant in the changed land. Rabbits, too, benefited from the agriculture of man. Coyotes found food more abundant, but finding a safe place to hide and rear young became a problem. The coyote probably broke even on the change.

The larger animals, bears, cougars and elk, found man's ways too complicated and moved out. The bobcat found it harder to survive with fewer trees and withdrew to the more isolated and heavily wooded areas.

With the potholes drained, waterfowl became more and more concentrated in the remaining waters and were more and more subject to the slaughter of the market hunter. Other migrating birds found it difficult to pass through Kansas with its lack of roosting trees and lack of marshy shores along which to feed.

Rains came and washed the topsoil into the streams. The silt filled

the deep holes along the streams and the mill dams sometimes made it difficult for fish to move up and down streams. As the silt filled the streams, floods increased, causing damage to both man's works and to wildlife. The remaining trees along the streams were wrenched from the banks by the rampaging waters. Carp were introduced into the waters of the Mississippi River and somehow found their way into Kansas. They competed with the native fish and soon won out in the now shallow, muddy streams.

Later, the ring-necked pheasant was introduced in this country from England. It found the prairie, in its altered condition, to be an ideal place to increase and become abundant. It found it could survive with very little open prairie and found the waste grain from agriculture to be a good staff of life. The pheasant needed little cover, compared with the quail, and did not need the expansive privacy of virgin prairie in which to breed and rear young, as did the prairie chicken.

Then, as the state was settled, more changes were made by man and nature. These changes also affected wildlife. Droughts hit. Floods became more severe. The dirty thirties. War. New farm technology. Clean farming. Concern. Wildlife protected. People with "crazy ideas." Industry. Oil. Cities. An ever growing population. All these things affected wildlife.

The droughts had the effect on wildlife that you would imagine. Wildlife died of thirst, hunger and exposure as their water, food and cover vanished before the onslaught of the drought. And the droughts were more severe now with the land plowed and bare. Water ran off the slopes before it could soak in and rushed down the streams. Then when no rain came, there was no water down deep in the soil to keep the plants alive. Springs and seeps which had been fed by water slowly sinking into the ground from miles around no

longer flowed. The country was as dry as a bone. And the wildlife became small heaps of bone.

The floods that had become more severe after silt filled the river bottom now became even worse as more land was cleared and plowed to keep up with our need in war time. And more land under the plow meant less land with cover for wildlife. The streams now rampaged killing and destroying through the valleys, further reducing wildlife.

New farm technology made it possible for one man to farm more land. And more land bowed to the plow. Clean farming became a goal of more and more farmers. Clean farming was the term for burning or cutting everything that might get in a farmer's way. Fence rows that offered game trails and some protection for wildlife were burned and cut clean. Woodlots were cleared of any underbrush. If trees were lucky enough to spring up along stream banks, they were soon cut to make the bank appear more "clean." Fortunately the goal of clean farming involves much work and puts no money in the pocket of the farmer. Kansas farmers are finding they have more important and profitable things to do. But wildlife has suffered.

Oil was discovered in Kansas. And early oilmen dumped the wastes from their labors into the streams. Cities and towns grew as the population of the state climbed. Industries sprang up. And all used the streams as natural sewers. Fish, even the hardy carp, were killed or severely affected. And many animals living in or near the waters were poisoned or driven off by pollution. But while all these things were going on, people were becoming concerned; about the soil, the water and wildlife. And some people were coming up with "crazy ideas." They were saying we ought to be more conservative in the uses of our natural resources. They were saying we ought to eval-

(Continued on page 22)

1962 Fishing Hotspots

The Kansas Forestry, Fish and Game Commission surveyed the state late this winter to determine what kind of fishing could be expected throughout Kansas for the coming season.

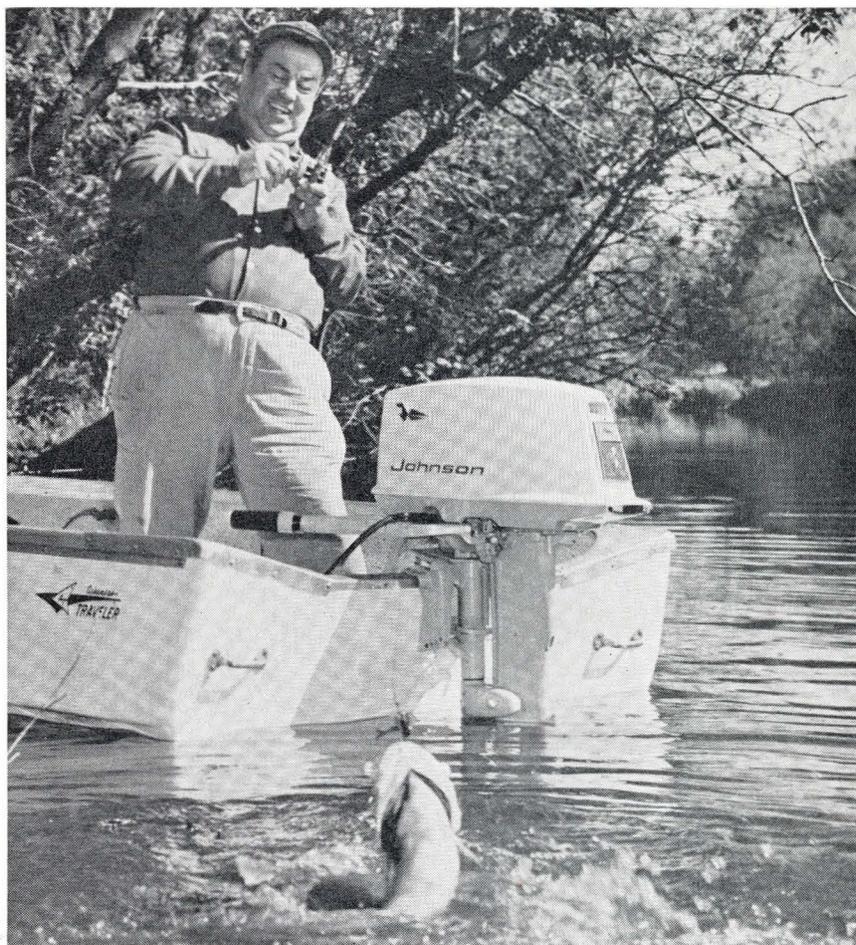
The survey was written up by regions for newspaper use. Your local newspaper will probably carry the story for your region. For the state as a whole, as might be expected, fishing will range from excellent to poor. There will be some real hot spots and some places where getting out in the fresh air and sunshine will be about the only benefit to fishermen. This story is designed to scan the state and point up the spots that should be excellent fishing this year. There are too many places in Kansas that are good or very good fishing to be covered in a single story. So this story is limited to only the places that are expected to be extremely hot this year.

An excellent hatch of bass and walleye occurred in Kirwin Reservoir in 1959. According to Frank Schryer, fishery biologist in that area, these fish have grown very fast and Kirwin should produce some of the hottest fishing in the state for these species this year.

Kanopolis Reservoir, too, should produce excellent fishing for walleye. And if water levels remain fairly constant during May and June, Kanopolis, Fall River and Toronto Reservoirs should produce some of the hottest white bass and crappie fishing in the state.

The lakes of Kansas, for the most part, will provide good fishing. However, several lakes should be producing excellent fishing this year. Cowley County State Lake will probably be the best bass producing state lake in the state. This lake is in excellent balance and catches should be near excellent on all other species as well.

Hamilton County State Lake was opened to fishing in 1959 and should be near its peak this year. Good reproduction is reported on



all species in the lake and fishing should be downright excellent this year.

Nearly all the newer state lakes should provide excellent bluegill fishing, but Rooks County State Lake will probably be the hottest lake in the state. The bluegill in this lake run a good deal larger than the average for Kansas and provide excellent sport on a flyrod. Woodson County State Lake should produce bluegill fishing nearly as good as Rooks County.

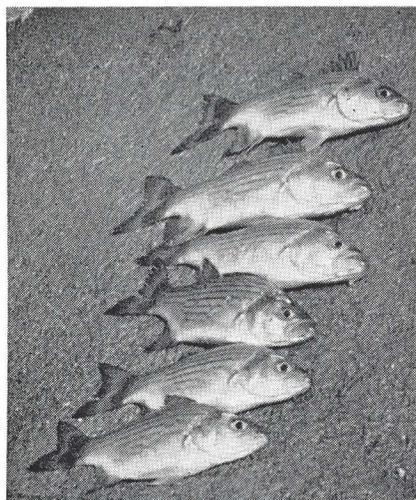
It is hard to limit the number of lakes in Kansas that will provide excellent fishing, but those listed above should be the best both in numbers of fish available and in size of fish taken.

The lakes and reservoirs of Kansas will produce very good channel fishing this year, but the hottest catfish spots will still be the streams.

The Solomon River, in Mitchell, Saline, Ottawa and Cloud Counties will probably provide some of the best channel and flathead fishing in the state. This stream was claimed to be the best catfish stream in the state at one time. It has declined, but has been on the upswing in recent years and should be downright excellent this year.

Whiterock Creek, below Lovell Reservoir, will probably produce some of the hottest stream fishing for walleye this year. And Rattlesnake Creek should produce excellent catfishing again this year.

Excellent catfishing can be expected as usual on the Neosho River near the many dams in southeast Kansas. This river is also claimed to be the best catfish river in the state. Choosing between the Neosho and Solomon would be nearly impossible.



The Delaware River should be excellent in the lower reaches this year with channels and flatheads running to good size. In Douglas and Jefferson Counties, the Kaw River should produce some excellent fishing.

Actually, very little water in the state is expected to produce poor fishing results. These waters, comprising perhaps five percent of the total water in Kansas, are largely those lakes and streams which have serious siltation or pollution problems.

It is impossible to list the ponds and smaller streams which will be producing out-of-this-world fishing this year. But many small streams and farm ponds should be in the excellent category.

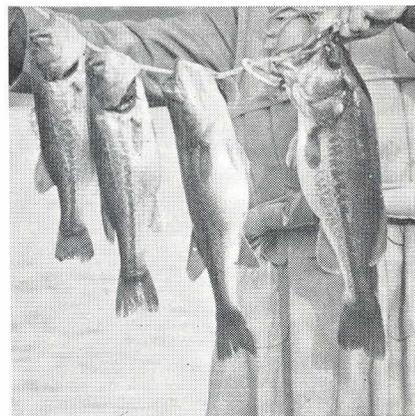
The smaller streams in most of Kansas are increasing in fish productivity as better soil conservation practices are put on the land. Pollution abatement programs, which in recent years have cut down the amount of pollution reaching the streams, is another factor in the improvement of stream fishing.

Soil conservation practices have done a lot in improving pond fishing also. And frequently, soil conservation practices involve the construction of more ponds.

Probably the two most important problems facing pond fishing today are selective fishing and underfishing.

Selective fishing consists of taking only one or two species of fish from a pond and leaving the other species unfished. In Kansas, too many fishermen fish for only bass or channels. And too few fish for bluegill, green sunfish and other species. When selective fishing of this kind is heavy, the pond is thrown out of balance and the panfish overpopulate. A rule of thumb for keeping proper balance in a pond is to take five or six pounds of bluegill for every pound of bass or channel cat. Land owners could do much to keep their ponds highly productive by allowing more bluegill fishermen to use the pond.

The other problem stems from the fact that most Kansas farm ponds are underfished. If fish are removed in the proper ratio, five or six pounds of bluegill per pound of



bass or channels, it is nearly impossible to overfish a pond.

And when a pond is underfished at all, it can easily become out of balance all by itself. The most economical and most pleasant method of managing a pond is to fish it heavily and take the proper ratio of fish from it.

Big Fish Record Keeping Moves Into Fourth Year

Record keeping for big fish taken in Kansas moves into its fourth year this spring. And from all indications, some records are going to be established and others will be topped.

If you catch a big fish this year, you can have it certified as a record if it qualifies. The rules for establishing a record catch are as follows: The fish must be taken by legal means in Kansas. Upon landing, it should be measured for length and girth and weighed on scales legal for trade, with at least two witnesses to the weighing.

The fish should be photographed with the angler. Then write the Forestry, Fish and Game Commission, Pratt, Kansas, for an entry blank. Fill in the form completely and return to the Commission along with photo. The fisherman will receive a letter of confirmation when his catch is certified as a record.

The current record holders are listed in next column:

Walleye—10 pounds, 8 ounces; Roy Laster, Hutchinson.

Largemouth Bass—9 pounds, 8 ounces; Dean Marshall, Emporia.

Flathead—64 pounds, 8 ounces; Wesley Whitworth and Ira White, Erie.

Channel—26 pounds, 8 ounces; Frank Matyak, Topeka.

Black Crappie—4 pounds, 10 ounces; Mrs. Hazel Fey, Woodson County State Lake.

White Crappie—3 pounds, 4 ounces; Ronald Plover, Frontenac.

Drum—27 pounds; Louis Hebb, Howard.

Carp—20 pounds, 8 ounces; D. H. Forinash, McFarland.

Black Bullhead—4 pounds 3½ ounces; Frank Miller, Eureka.

Green Sunfish—2 pounds, 2 ounces; Louis Ferlo, Scammon.

Bluegill—1 pound, 4 ounces; Jack H. Douglass, Wichita.

Other fish for which no entry has been made include: white bass, spotted bass, sturgeon, blue catfish, warmouth bass, eel, spoonbill and gar.

Jewell County State Lake

Fifteenth of
A Series on

The State Lakes Of Kansas



"It was the kind of morning I like for bass fishing. A half mist, half drizzle, was falling as I arrived at Jewell County State Lake. An old-timer told me at least six fishermen left with their limit of bass the day before."

by BOB TODD

"They were biting yesterday. And they'll probably be biting again tomorrow. But they ain't a'bitin' today."

That's the answer I get all the time, seems like. The last time I got that answer was at Jewell County State Lake, near Mankato. I was asking about largemouth bass.

The old man fishing there when I arrived gave me the answer slowly as he struck a match and put it to his pipe. He elaborated. He said the lake was stocked in '58 and the bass were now really coming into their own. He said the day

before he'd seen at least six fishermen leave with their limit.

The old timer looked like a stump on the lake shore. He was squatting on the bank with his two cane fishing poles out over the water in front of him. A half mist, half drizzle was falling that morning and the water gathered in little drops on his hat.

It was the kind of morning I like for bass fishing. I wished the old timer luck and started up the bank with my spinning tackle.

The old timer was right, the bass weren't hitting. That is the big bass weren't hitting. I caught many small ones, some not much larger than the plug I was using. From

time to time something nipped at the plug, but I figured it was just moss. Like any clear lake, Jewell County State Lake has its share of moss.

★

After an hour's fishing, my stringer was still in my pocket. I had caught a whole slug of small bass, up to maybe a half pound or so, but no stringin' size bass struck the plug. I started back down toward the dam.

When I got to the old timer I asked him if he had caught any.

"A few," he said. "Catch any bass?"



"After an hour's fishing, my stringer was still in my pocket." . . . "I put on a spinner lure and began working along the dam. On the third cast something bumped the lure, and at first felt like moss. But this time whatever it was didn't pull loose, but instead began to put up a fight." . . . The old man placed the crappie in the swirling hot oil. They sizzled and popped and their tails began to curl. . . . "This here lake's got somethin' bitin' all the time," said the old man.

"Lot's of little ones," I said.

"Told ya they wasn't hittin'," he said. "Have ya got one of them spinner kind of lures? I 'spect you might pick up a few crappie if you do."

"Thanks," I said. I felt like saying, how would you know? The mist and drizzle had stopped now and the old man's cane poles were wet, but not dripping. He was still squatting in the same spot with his minnow bucket and tackle box by his side.

Figuring I had nothing to lose, I

put on a spinner lure and began working the water along the dam. On the third cast something bumped the lure, and at first felt like more moss. But this time whatever it was didn't pull lose, but instead began to put up a fight.

The crappie's struggle was short and it was soon on the stringer. A few casts later another crappie struck and I fought him in. This one flipped out of my hands as I tried to open the stringer snap.

I caught two more before the

old man hollered at me that he thought it was about time for lunch. He yelled that if I had enough fish for my lunch he'd be glad to cook them up with his.

He already had a blaze going in one of the fireplaces. I walked back down to where he was fishing and told him I'd take him up on the offer. He put me right to work.

★

He took three large crappie from a burlap bag laying in the water and handed them to me to clean along with my three.

The old man took a big cast iron skillet from the back of his battered pick-up. Then he took a one-gallon can of liquid shortening out and filled the skillet about half full.

"Ya know," he said as he poured salt and flour into a paper sack, "I used to think fish had to be cooked in lard to be good. But that corn oil sure is handy and I can't tell the difference anyway."

I said I couldn't tell the difference either and added that I'd never tasted fish cooked with flour instead of corn meal.

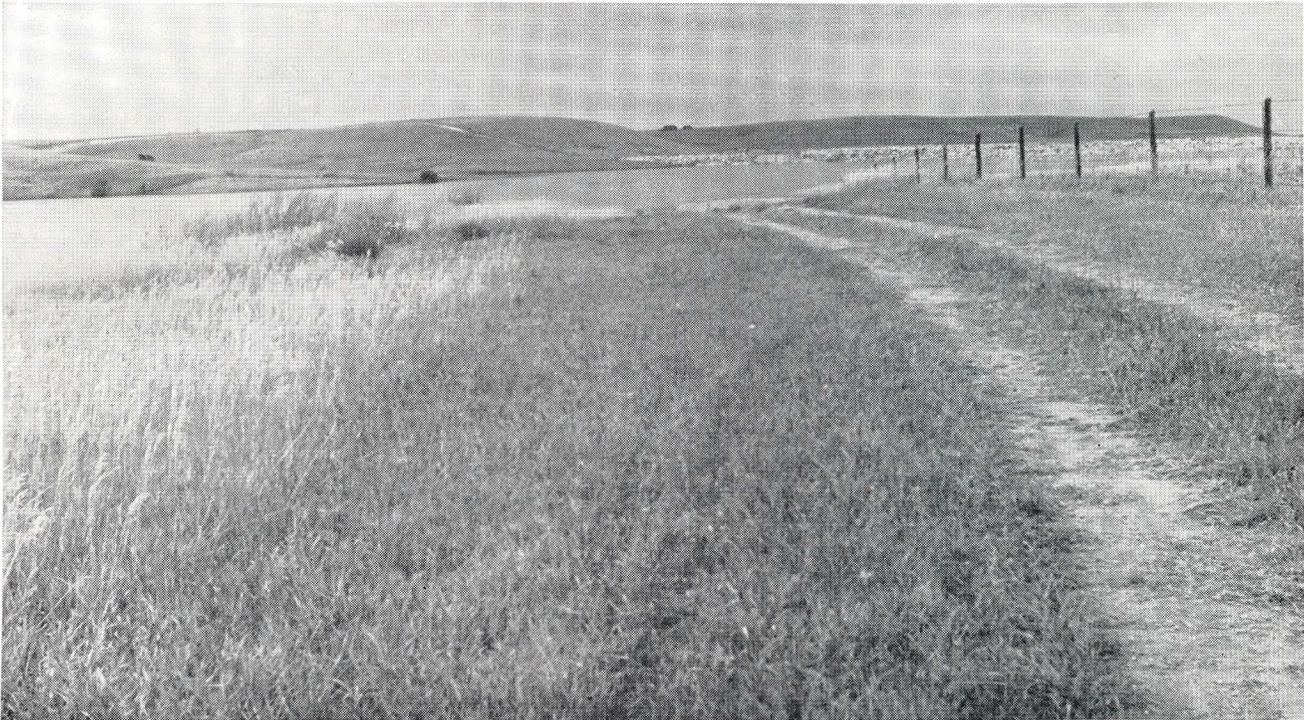
"I like 'um rolled in corn meal if my wife is gonna cook 'um," he said, "But seems like they taste a lot better in flour when they're cooked out in the open like this."

"Catchin' fish out of this lake makes ya hungry to eat 'em. There ain't just too many places as pretty as this." He lit his pipe and placed the skillet on the grate.

★

I finally finished cleaning the fish and he put them all in the paper bag. As he shook the bag, little white puffs of flour came out at the seams. Then he placed the fish in the swirling hot oil. They sizzled and popped and their tails began to curl.

The old man went to the truck and brought back another paper sack. He took out some paper plates, cups and a variety of old silverware. Then he took out some potatoes and onions from the bottom of the sack and handed them to me.



“Catchin’ fish out of this lake makes ya hungry to eat ‘em,” said the old man. “There ain’t just too many places as pretty as this.” He lit his pipe and placed the heavy skillet on the grate.

“You can be pealin’ them while the fish are cookin’,” he said. “Looks like we got enough fish for lunch, but I always cook some taters too. Taters purify the grease.”

The clouds were breaking up as we started eating the fish and fried potatoes.

“Guess I should have tried a spinner on them earlier,” I said.

“Naw,” he said, “the crappie weren’t bitin’ when you started up the lake. The bluegill was bitin’ then. I got a whole sack full of them on ice up in the truck. My wife likes them better than anything so I save them for her and eat crappie and bass when I’m out fishin’.”

“I was just waitin’ for a school of bluegill to swim by when you come along. After you left a school came in to feed. When they quit the crappie started in at bitin’. They were almost done when you came back by. They’ve stopped bitin’ now.”

I kept on eating—and the old man kept on talking slowly between bites.

“The channel cats’ll be bitin’ a little this afternoon and the bluegill will start again later on. There might be a few bass hit late this evening, but they won’t hit good again ‘til tomorrow mornin’.”

“You must fish this lake a lot,” I said.

The old man shook some more salt on his potatoes and said he fished Jewell County State Lake at least once or twice a week. He said he was retired now and fished quite a bit.

“Lovewell Reservoir ain’t far from here and I do some fishing up there. But this little lake, about 60 acres I’d say, is my favorite. I’m not the kind of fisherman who gets along very well with big water and big boats. I like a quiet place where I can squat down behind a cane pole and wait for the fish to bite.”

“When I was younger I used to traipse all over creation and back just like you was doing this mornin’. I caught a lot of fish back then too. But I found out that at some lakes you can always catch something if

you just git a good spot and sit and wait.

“This here lake’s got somethin’ bitin’ all the time,” he swallowed the last bite and laid his plate aside. “All you gotta do is know what’s bitin’ and what they’re bitin’ on. If you fished this lake as much as I do, you’d begin to catch on too.”

★

We cleaned up our lunch debris and stuffed the waste in the trash barrels. I thanked him for the advice and the lunch and said I had to be moving on.

The old man was putting a large piece of chicken liver on his hook as I turned to leave.

“If I was you,” he said, “I’d try to get back here early tomorrow morning to catch some bass. They’ll be hittin’ real good then.”

I couldn’t make it back to the lake the next morning, but word reached me later that a couple fishermen from Mankato had given it a try and both brought out their limit before 8 a. m.

A Kansas Outdoor Writer Looks at— *The Clean Waters of Kansas*

by CLELLAND COLE

How lucky you are to live in Kansas!

Thus far the appalling spectacle of population growth out of all control and beyond all bounds of imagination has not actually cramped the style of Kansans too greatly.

We still have sweet, fresh (emphasis on FRESH) water in most of Kansas.

That isn't true in much of the nation.

Our streams—generally—are not filled with sewage and industrial corruption so as to make them unfit for aquatic and animal life. Some of them have stretches which stink from the foul load of sewage they carry—not many, however.

There still are generous supplies of palatable water for human use, for lakes and streams.

That happy, wonderful situation is not true over much of the United States today. Consider almost any major river of the east you can name—any river or smaller stream which is near a city.

You know, almost as surely as you name that stream, that it is used as a sewer as much or more than for any other use, and that long, long ago, any silly, fantastic idea that a stream should be preserved as a clean-water flowage, so that its water would be clean, fish and wildlife would have first consideration—such foggy notions as that were flushed down the industrial toilet.

The luxury of a stream—as a stream—and not as a sewer or a canal to lead water to some far off city or factory which doesn't have enough water of its own—is in its absolute final stages in this nation, and the end is rushing in far more swiftly than you can imagine.

Probably you read this same sort of forecast six or seven years ago

under the pen of this writer. Probably you, like a few badly informed critics, poo-pooed the assertion. You can't poo-poo it today.

When you go to a large city, do you have any notion that the water you drink has not already been run through a sewer, through some industrial plant, maybe through a slaughter house, down somebody's toilet, through a kitchen sink, on into a sewer processing plant, or directly into a river, from which it is then pumped, re-processed, cleaned, treated chemically to kill the worst of the little bugs which wiggle around in it—so thoroughly saturated with chemicals that the germs are killed—but that the water itself reeks of laboratory odors? Had it occurred to you that millions in this nation can never go to a faucet, draw therefrom water which came directly from rains into the soil, filtering then through gravel beds, into underground reservoirs, perhaps to emerge as springs, to be pumped into the city's system—with the surplus being run into some disposal system?

When you fish most Kansas streams, you are moderately sure that no big industrial plant upstream is pouring a river of waste and corruption and sewage into the stream so that the minnows, and the crawdads, and the leeches, and the water bugs—then the fish, have a battle for survival or, if they survive, they bring to you an odor that makes the breath of a canned-heat bum smell like lilies of the valley?

Lest all this picture leave you without appetite, let's turn again to the thoughts of our rare good fortune in living in Kansas where we still have a good supply of fresh, sweet water—and then, here and now, resolve to stay in the battle to keep our water sources—our streams, springs, gravel beds, lakes, out of reach of those interests

which, believe me, will be determined that they shall be used as disposals for sewage, one day.

The time is not far distant when the choice will be made—either we quit squandering water like mad men or streams—as such—will be gone. Once gone, that will be it.

★

Clelland Cole's observation of the water pollution situation in Kansas is a pretty fair estimate. By and large, Kansas has not and does not have the extensive problems of many eastern states.

It is true that there is extensive pollution on a few streams, and some pollution on many streams. And there are people in Kansas who would, for selfish reasons, like to see our water resources turned into sewage ditches.

At present, however, Kansas is moving toward less pollution instead of more pollution. The Kansas State Board of Health reports that expenditures for 1962 will be up to an estimated \$10,100,000 for sewage treatment plants alone. In 1961, \$4,244,000 was spent for sewage treatment plants. Increases are expected also in structures to reduce and eliminate pollution from other sources.

The Board of Health reports, however, that there are 57 cities that do not now have sewer systems or sewage treatment plants. Another 25 cities need additional treatment facilities; the present plants being inadequate. And 24 communities, reports the board of health, should be thinking now about additional facilities that will be needed in the future.

The state Board of Health points out a relatively new and growing danger to Kansas waters. During the past year, there was a marked increase in the number of fish kills from weedicides and insecticides.

Testing Our Lakes

by JOHN ROY
Fishery Biologist

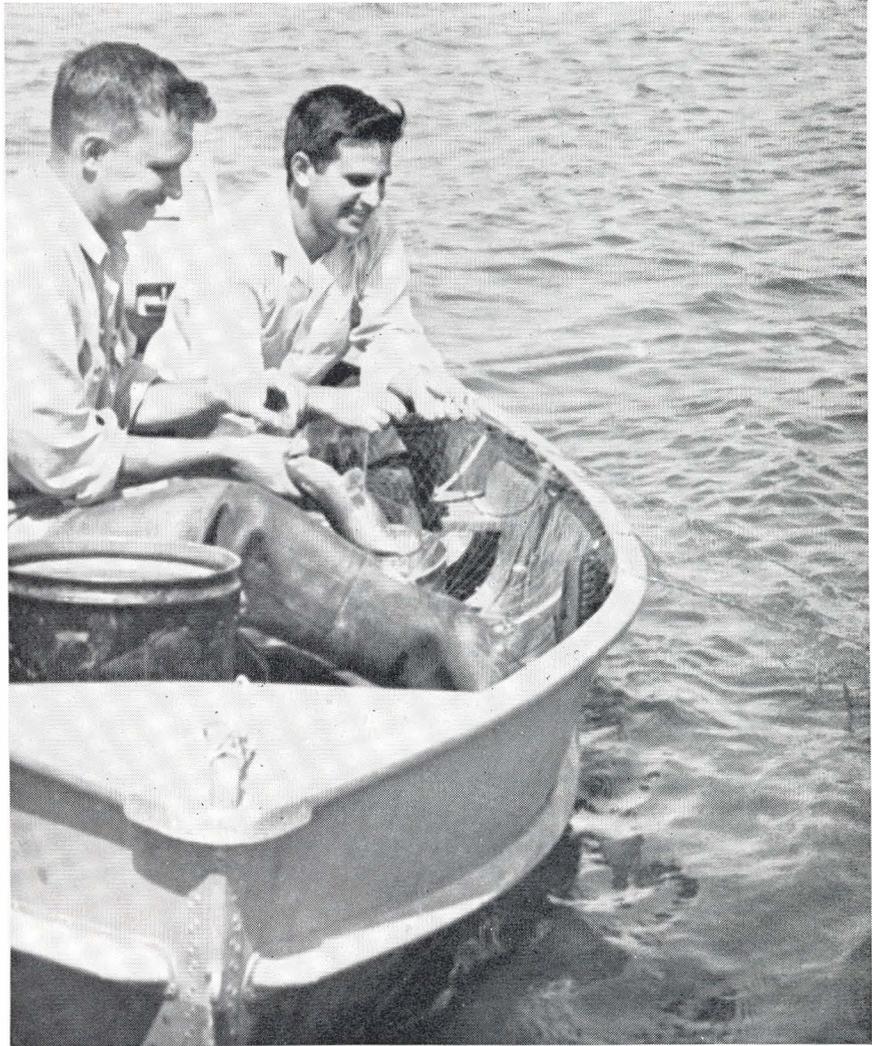
An essential step in providing consistently good sport fishing in any body of water is good management of the existing fish population. Since not all bodies of water are of the same chemical, physical and biological composition and balance, it is necessary for the fishery biologist to conduct periodic examinations of these bodies of water. As a result of the examinations, the fishery biologist can determine the suitability of these lakes for the existing species of fish and other species of fish which could be stocked successfully.

The frequency of tests conducted on state lakes depends upon the need for such examinations and time available. A creel census type of examination, for instance, requires a great deal of time and undivided attention. As a result, this type of examination is not conducted as frequently as others.

The weather plays its part in determining the frequency of examinations too. During the winter, tests cannot be conducted and therefore, testing must take place from late spring until early fall. During this period most of the state lakes are examined twice, once in late spring or summer and again in the fall. If the lake is new, however, or if the lake is expected to need rehabilitation in the near future, examinations of various kinds may be conducted throughout the year.

Examinations conducted on the state lakes consist of a fishery examination and a limnological examination. In conducting a fishery examination, three methods of sampling are employed.

The first method of sampling is by use of gill nets. These nets are



Bob Hartmann, fishery biologist, and John Goddard, his assistant through the summer of 1961, take fish from a gill net; one of the first steps in sampling the fish population of a lake.

set at good locations in the lake so an adequate sample of the existing fish population can be taken. Fish taken in these nets are weighed, measured as to length and scales or spines are taken for age and growth studies. The scales or spines of each fish are put in an envelope and the weight and length data is written on the outside of the envelope. These are stored for study during the winter.

The second method of sampling is done by the use of seines. Since seining is restricted to shallow, uncluttered water, this method is often used only in shallow lakes. In deep lakes, the seine is used for shoreline seining to collect young-of-the-year fish.

The third method of sampling the

fish populations of a lake is by use of a creel census. A creel census consists of interviewing fishermen over a specific period of time and determining the total number of fish harvested from the lake. From this method, in combination with gill netting and seining, a biologist may determine the productivity of the water.

The limnological examination is composed of different types of analyses, one chemical, one biological and the other physical. The physical analysis consists of measuring the water's turbidity, water temperature at various levels and measuring the depth of the lake.

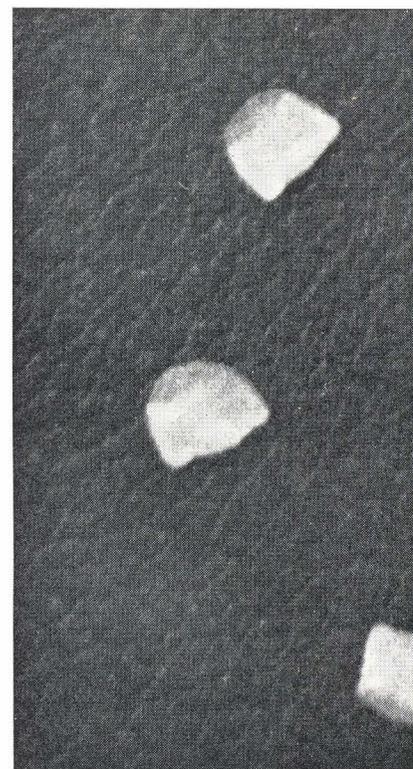
The biological examination consists of netting samples of plankton

(Continued on page 12)



ABOVE—Fishery biologist of the Kansas Forestry, Fish and Game Commission collect scales from fish taken in gill nets and other lake testing operations during the summer. They place the scales in a small envelope and record the fish's length and weight on the envelope. In the winter, the scales are taken out of the envelopes for age and growth studies.

RIGHT—The scales are placed on glass slides for projection. In the case of catfish, the pectoral spine is taken and during the winter it is sawed into a thin slice for microscopic examination. Age of fish and their growth rates can be determined from the number and distance between "annuli," their growth rings.



and studies of aquatic vegetation. The chemical analysis consists of the taking of water samples to determine the acidity and the amounts and concentrations of dissolved gases and other chemicals, such as oxygen, carbon dioxide and carbonate.

The evaluation of data taken by the examination consists of two different parts. The first step is an age and growth study. The scales and spines of fish taken earlier are cleaned for microscopic examinations.

Spines removed from channel catfish, flatheads and bullheads, are sawed into small sections for microscopic examination. As a catfish grows, small year marks called "annuli" are laid down in the pec-

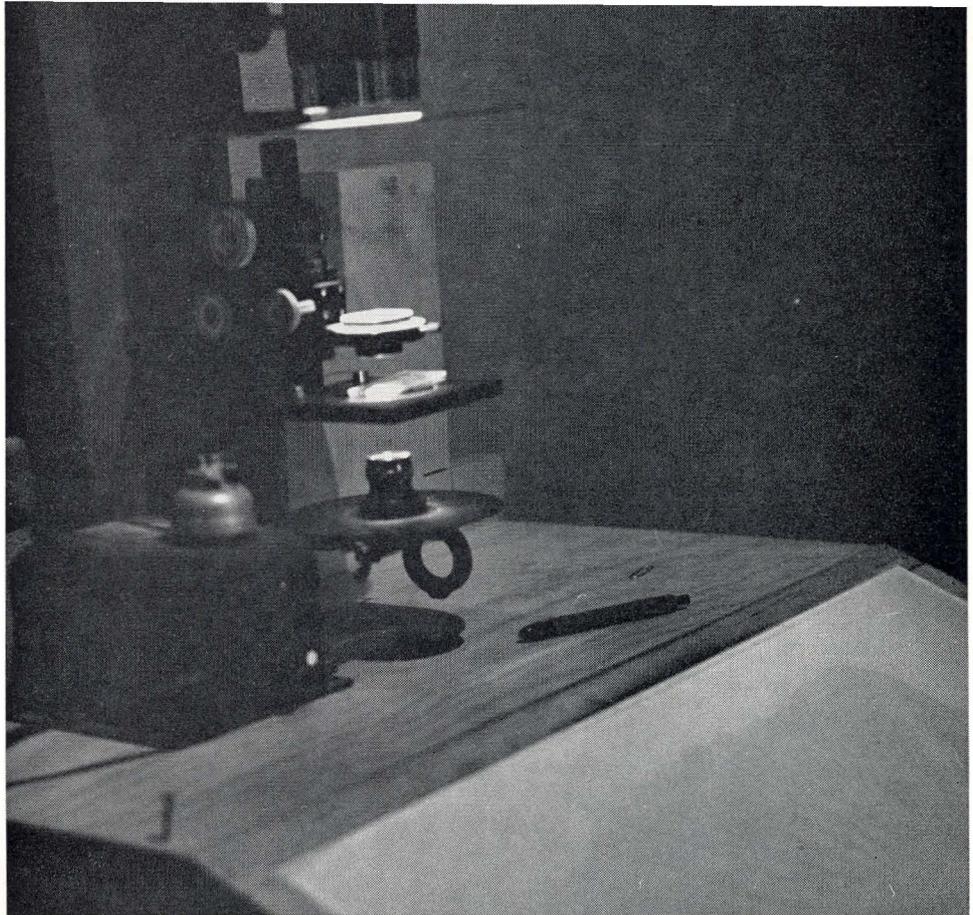
toral spine, much as a tree grows annual rings. From sections of these spines, when placed under a microscope, the "annuli" may be counted and measured.

On scaled fish, year marks are laid down upon the scales which, like the spines, are part of the bony skeleton of the fish. These scales are mounted on a slide and placed under a microprojector, so the year marks can be counted and measured.

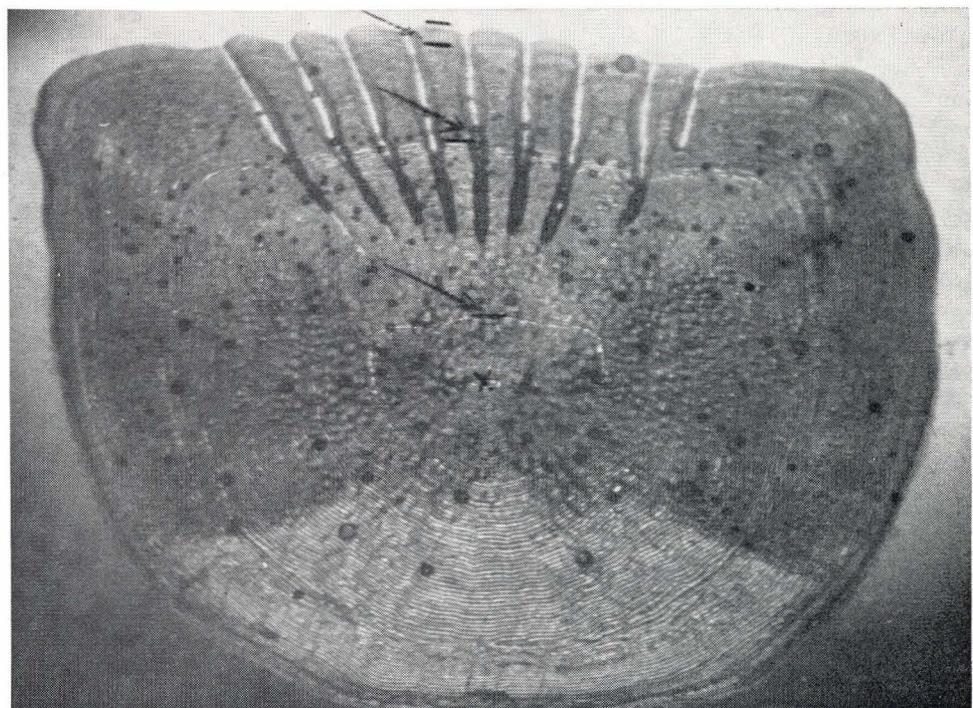
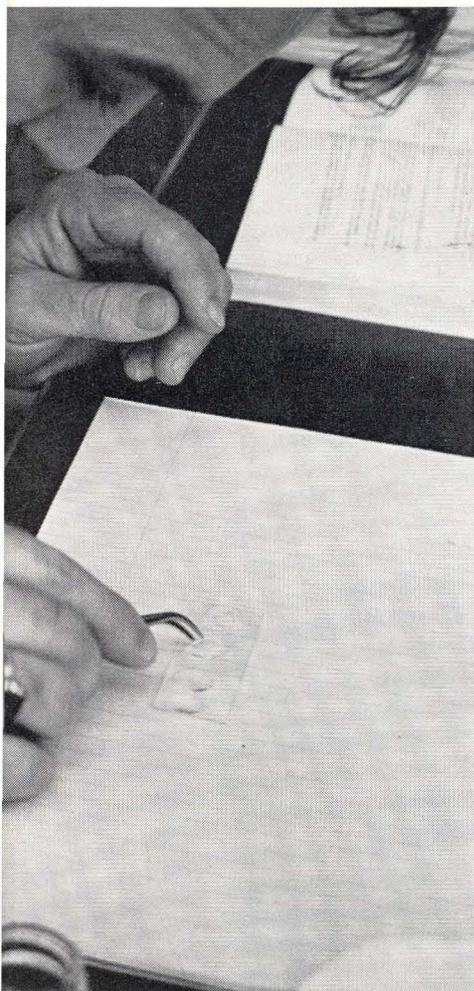
The second step is the evaluation of age and total growth rate of fish from the measured "annuli" on the scales and spines. After age and growth data is complete, these studies and the other data are evaluated and submitted in a report to the chief of the fishery division for his evaluation.



a Fish's Age



A microprojector is used to study scales. The slide is placed on the projector above and is enlarged greatly on the screen below.



This is the scale of a three-year-old crappie, as seen on the microprojector. The arrows point to the "annuli," and the "X" indicates the center of the scale. From the distance between the annuli, it is apparent that this crappie grew faster in its second year than in the others. Studying fish in this manner tells the biologist if fish are making satisfactory growth in a lake.

Largemouth **BLACK** *Bass*

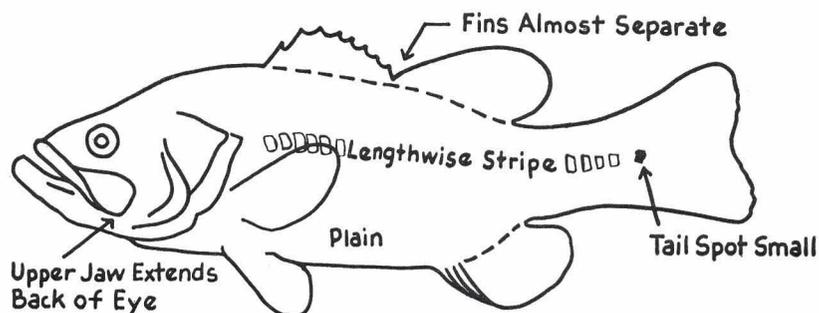
The largemouth black bass is frequently and affectionately called "Old Linesides." And the term is an apt description. The largemouth can often be distinguished from Kansas' other two black bass by the dark stripe extending from behind its gill to its tail.

"Old linesides" is the undisputed top prize sought after by fishermen more than any other freshwater fish. Only the channel catfish is fished for enough to provide stiff competition in Kansas.

The largemouth is a rugged fighter and worthy of any fisherman's time. Frequently he is an aerialist as he jumps out of the water in an attempt to free himself from the fisherman's hook. The black bass is also popular for his fast and vicious strike. He attacks the lure or bait with a sudden lunge and immediately the fight is on.

The largemouth is the hardiest of the three black bass found in Kansas. He can survive warmer and/or more turbid water than his cousins, the smallmouth and spotted bass. For this reason, he is the most widespread and most commonly caught of the three. He is the common bass taken from the state lakes of the Forestry, Fish and Game Commission and the federal reservoirs. Nearly all the clear-water ponds of the state have been stocked with the largemouth. In the eastern half of the state, he is common in the clearer streams.

Generally, the clearer the water, the darker the fish. This holds true for the largemouth bass. When he lives in clear water, his color is a dark green or olive and his stripe stands out black. In murky water, he is apt to be light green or almost silver in color and frequently it is impossible to distinguish his stripe.



LARGE-MOUTH BLACK BASS

For positive identification consult the illustration on this page.

The largemouth normally produces about 5,000 eggs per pound of fish. Nesting time is in the spring when the water reaches 60-65 degrees. The male fans out a nest about six inches deep in gravel or sand and seeks out a female to lay eggs in it. The male then guards the nest until the eggs are hatched and for a short time thereafter. When the small bass, called "fry," are about an inch long, they leave the nest and are on their own. They become fair prey for other fish and may even be eaten by the father or a fast growing brother or sister.

The diet of largemouths includes almost anything. However, their principle food is smaller fish, insects, and aquatic animals such as frogs and crayfish.

Conservation and management for the largemouth bass involves first of all, providing suitable habitat. While the largemouth can sur-

vive for a time in turbid water, he feeds by sight and has difficulty finding food. Furthermore, suitable nesting sites are seldom to be found in turbid water. Good soil conservation practices on the land are the most vital need for retaining a largemouth population in most any body of water. Proper use of the land produces clearer water in streams, ponds, and lakes and reduces the possibility of fluctuating water levels during nesting time.

While the largemouth is a hardy fish, he will not tolerate very much pollution. Here in Kansas, the pollution problem is not so acute as in many other sections of the country, but a problem does exist and should be solved.

At the present time, the largemouth is fair game in all seasons of the year. However, a limit of 10 is imposed to protect the population from over-harvest and to distribute the catch among a greater number of people.

Smallmouth, Spotted Bass

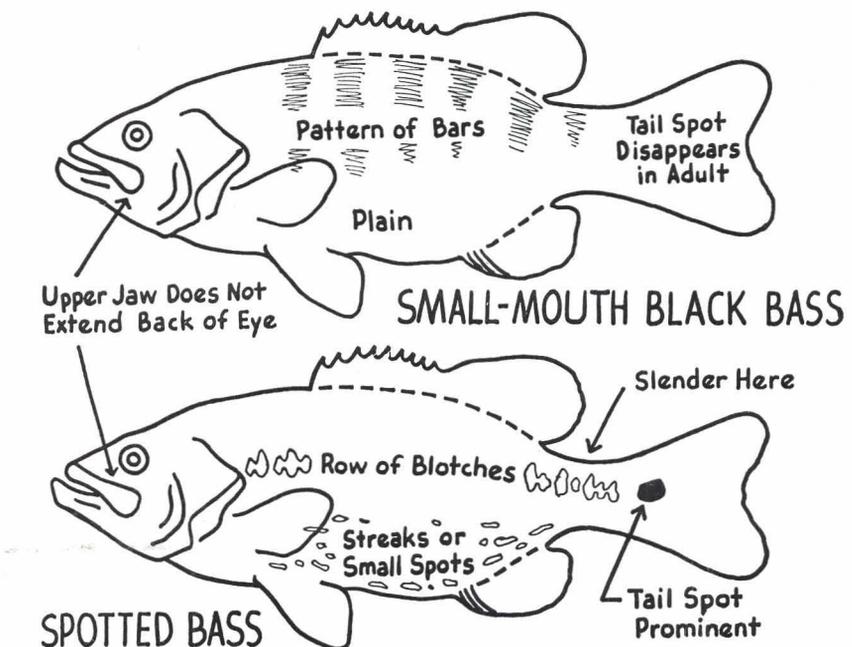
The smallmouth bass differs from the largemouth mainly in appearance, and requirements. His appearance is not marked by the lined side, but rather by a row of vertical stripes. He is more streamlined in appearance and is frequently a brown or bronze color.

His requirements are more critical than the largemouth. He **MUST** have cool, clear water in which to live and reproduce. His breeding and feeding habits are much the same as the largemouth, but his need for cool, clear water restricts his possible range to the eastern one-third of the state. Only occasionally is he found in the clear, cool streams of the flint hills region and southeast Kansas.

In recent years, the smallmouth was thought to be extinct in Kansas but stocking in some streams and a more diligent search proved the fish to be present in very limited numbers. Efforts to stock more waters with smallmouth bass have been held up due to poor soil conservation practices in the stream watershed.

However, with the coming of good soil conservation practices and an increasing awareness and action on the part of the public in regard to pollution, the day may come when the smallmouth bass will become a common fish in some of the eastern Kansas streams.

The spotted or Kentucky bass is somewhat of an intermediate step between the smallmouth and the largemouth. He is recognized most easily by a line of dark blotches along his side. His underside is frequently spotted or streaked, which differs from the largemouth and smallmouth whose bellies are plain. The largemouth and spotted bass are most frequently confused be-



cause the row of blotches on the spotted bass sometime appear to be nearly the same as the line down the side of the largemouth.

The spotted bass is hardier than the smallmouth and will tolerate higher temperatures and more adverse water conditions. His food habits and nesting are about the same as the largemouth and smallmouth.

The spotted bass may be found in most of Kansas, but generally is found only in the flint hills and southeastern Kansas. He is occasionally taken from ponds or lakes,

but due to his similarity to the largemouth, fishermen often do not realize what they have caught.

As in the case of the smallmouth and largemouth, better soil conservation practices and pollution abatement are the two things that will do more to increase the number of spotted bass in Kansas.

Both the smallmouth and the spotted bass are protected from overharvest by a creel limit of 10. This limit also helps distribute the catch among more fishermen. There is no closed season for either species in Kansas at this time.

Public Hunting at *Fall River*

Fall River Reservoir is located in southeast Kansas, about 10 miles east of Severy and nearly 20 miles from Eureka. Access to the reservoir is very good from highways K-96, US-54, and K-99. Numerous gravel roads provide access to most areas of the reservoir.

About 8,500 acres of the reservoir is open to free public hunting and fishing. Good populations of quail, squirrel and rabbits inhabit the area and prairie chicken are common north and east of the reservoir. Waterfowl hunting is also good during normal years. Fishing on Fall River Reservoir is very good for most species.

The reservoir was completed in 1949 by the Corps of Engineers and was one of the first large impoundments built in Kansas. The total land acreage exceeds 9,500 acres, and the water area is nearly 2,600 surface acres.

Subject to the expiration of existing agricultural leases, the Kansas Forestry, Fish and Game Commission will assume management of the 8,500 acres of public hunting lands. About 2,000 acres of this land is presently being managed for the purposes of increasing food and cover for wildlife. Some land has been taken out of cultivation and allowed to return to cover. Share-cropping leases with farmers are being used to increase available wildlife food. The Commission's share of the crop, one-third, is generally left standing in the field for wildlife. Similar management practices will be applied to the rest of the land as it becomes available to the Commission.

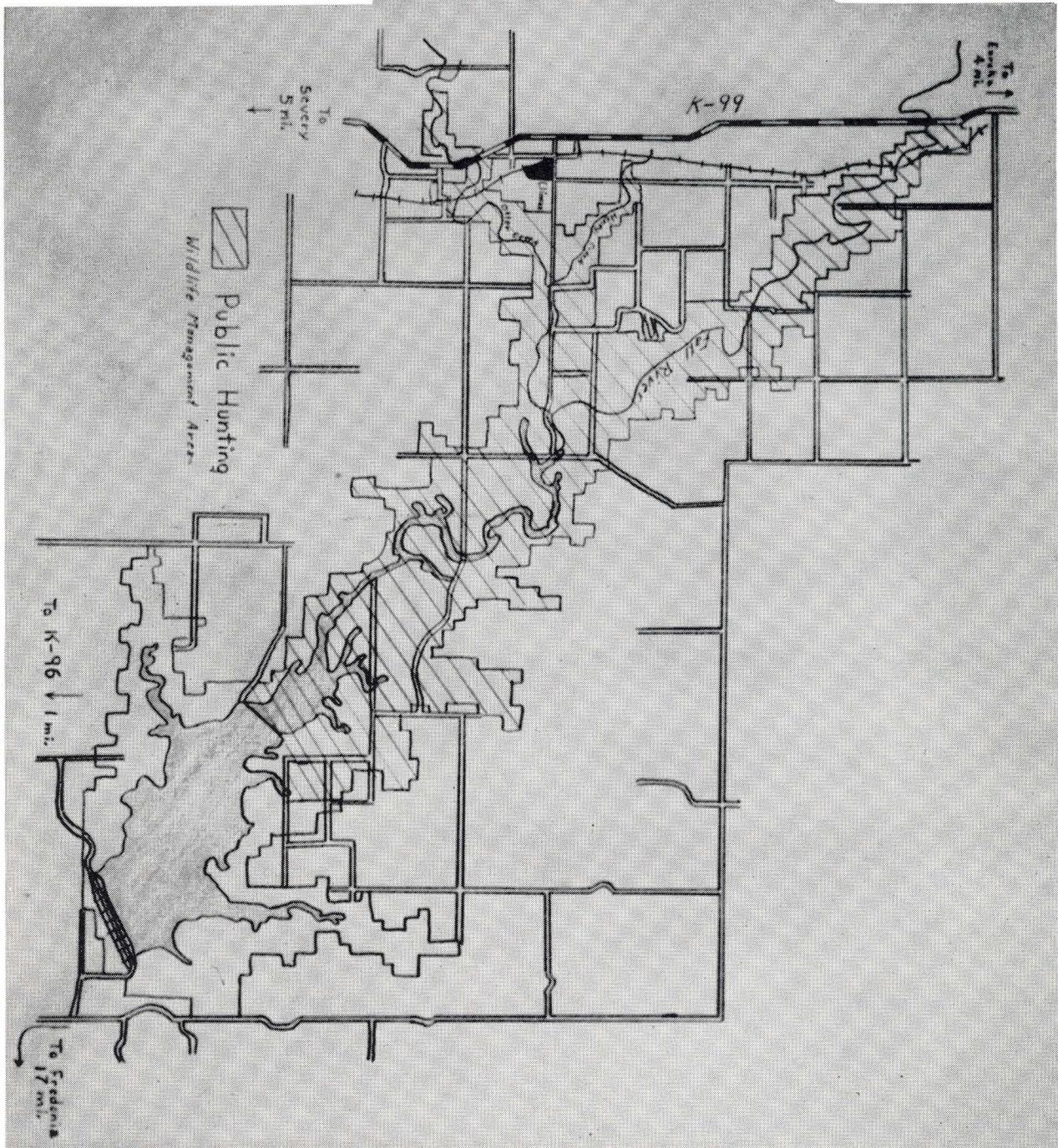
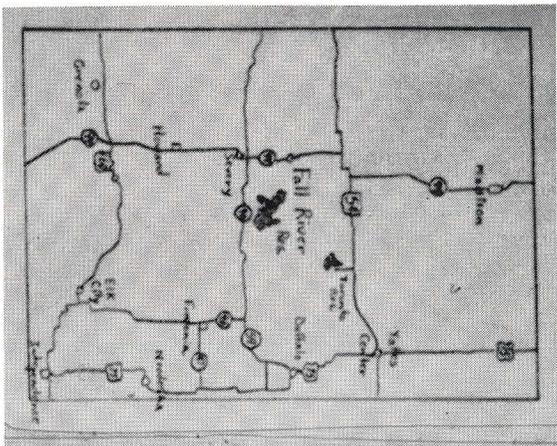
At present, the boundaries of the public hunting areas are not marked. Hunters should refer to a map such as the one included

here, or inquire locally to be sure they are on public land. Much of the public land is in cultivation and hunters should treat these crops with the same respect they would crops on private land.

Besides the state-wide fish and game laws, there are a few special rules for hunting and fishing on reservoir lands under the control of the Forestry, Fish and Game Commission. Most of these regulations are basic rules of good sportsmanship, safety, and common sense. However, in regard to waterfowl hunting, there are two regulations that need to be mentioned here. You should inquire annually as to open areas for waterfowl hunting since these areas are subject to change. If you plan to build a blind, it must be made from natural materials found at the site of the blind. The digging of holes or pits is prohibited.



Squirrel Hunting at Fall River Reservoir



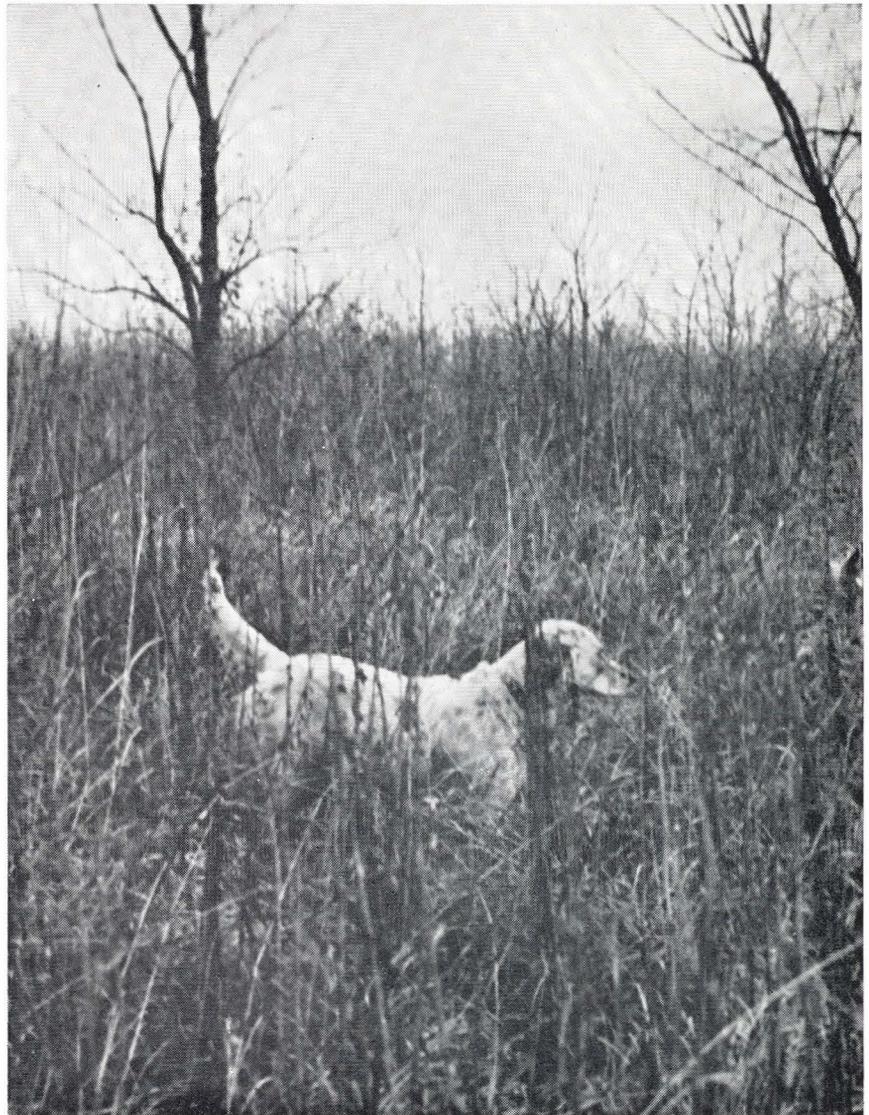
Public Hunting at *Toronto*

Toronto Reservoir is located in southeast Kansas, about 15 miles southwest of Yates Center and about 15 miles northwest of Fredonia. The town of Toronto lies on the east of the impoundment. The reservoir is located on the Verdigris River and impounds approximately 2,800 surface acres of water.

The reservoir is readily accessible from US-54 and K-96, and gravel roads provide access to nearly all parts of the reservoir lands. The Forestry, Fish and Game Commission currently manages 4,366 acres of the land and water included in Toronto Reservoir. These lands are open for public hunting and provide good hunting for quail, squirrel, rabbit and waterfowl. Good prairie chicken populations are to be found adjacent to the reservoir. Reservoir fishing is normally good for all game species.

Management practices to improve wildlife populations on Toronto Reservoir include share-cropping agreements with local farmers whereby the Commission's share of such crops as corn and grain sorghums is left standing in the fields as food and cover for upland game and waterfowl. Restrictions to prevent over-grazing and elimination of burning on native grasslands throughout the reservoir area aids in providing additional nesting and protective cover.

Hunting on Toronto Reservoir is governed by current fish and game regulations. Waterfowl hunters must build blinds with natural ma-



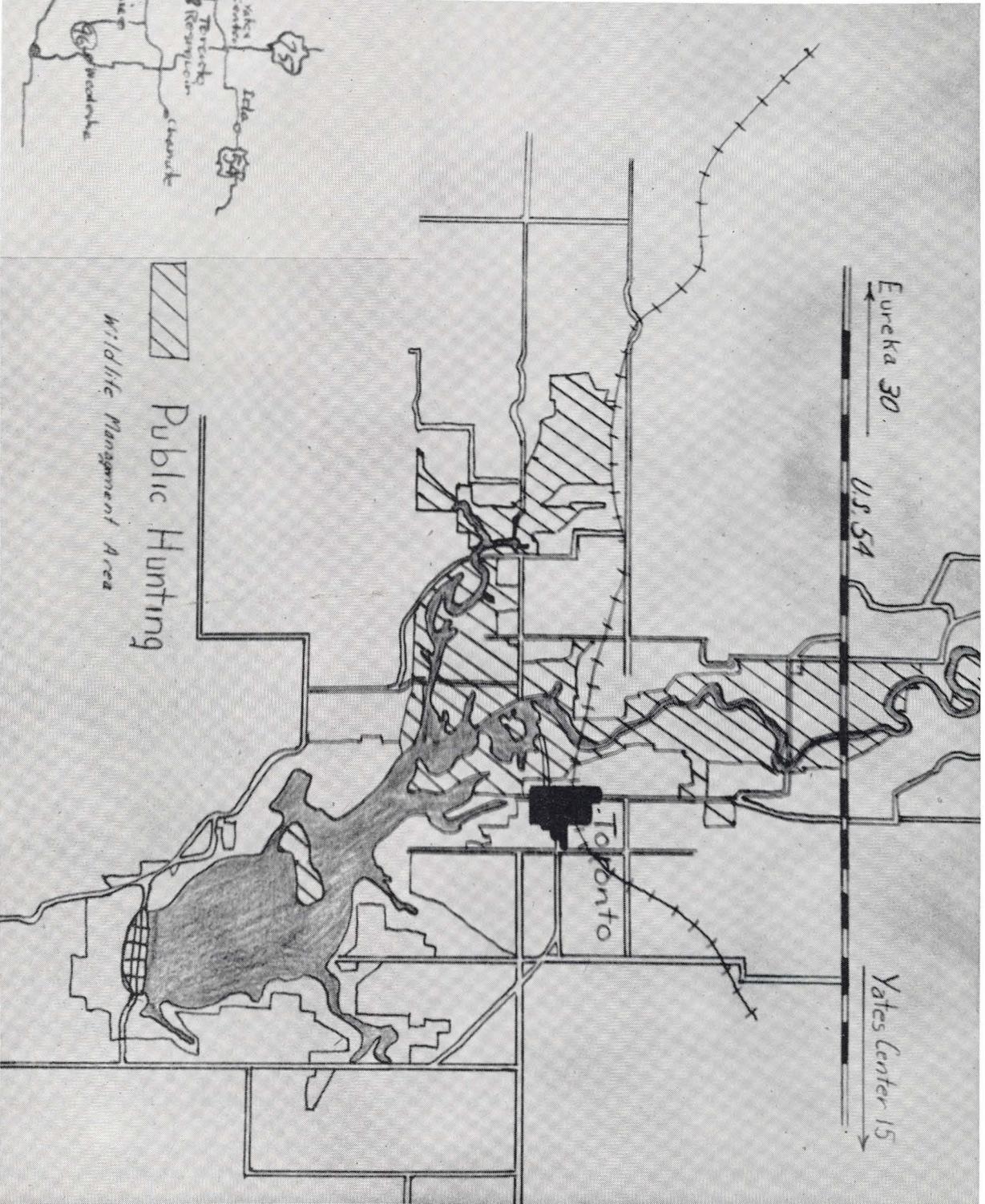
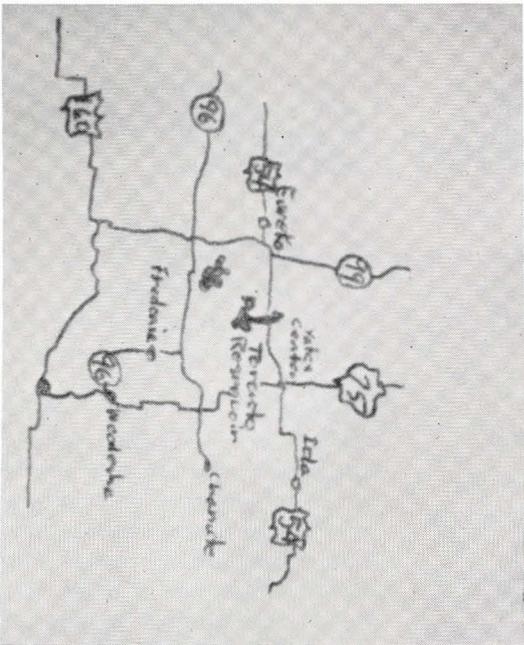
Quail Hunting at Toronto Reservoir

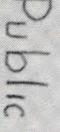
terials found at the site of the blind. Digging holes or pits for blinds is prohibited.

Much of the public hunting land is now under cultivation and hunters should exercise care so as not to damage crops. The hunting lands are not presently fenced or otherwise marked, so a map, such as the

one included here, should be used to avoid trespass. If a hunter is unsure of his location, he should inquire locally for directions.

Toronto Reservoir was completed in 1959 by the U. S. Army Corps of Engineers. It is a flood control reservoir and part of the greater Arkansas River watershed.



 Public Hunting
 Wildlife Management Area

News From Other States

THE LOUISIANA CONSERVATIONIST—The wildlife biologist is an amateur sportsman with a college degree. There are two types of biologists. One type believes in keeping abreast of those dynamic movements of the present day that challenge the best efforts of the nation's thinkers. The other type bands ducks, checks fishermen, and wears old clothes.

Some biologists have offices, some live in cities, and some work in the woods. Lots of biologists spend practically their entire lives in God's great out-of-doors. They love to hunt and fish. They would too, if they only had the time.

It used to be that a biologist's best friends were his horse and his traps. Today a biologist has no need for a horse, and he might catch himself with a trap. Years ago a biologist wore a big Stetson hat and carried a gun on his hip. Nowadays, big Stetson hats are worn only in the movies, and you hardly ever see a biologist carrying a gun.

An interesting thing about a biologist's life is that he meets all kinds of people; from hobos to millionaires. It is not uncommon for a biologist to have the privilege of personally doing a millionaire sportsman a favor. However, there is no record of a millionaire ever doing favors for a biologist. But even if a biologist doesn't make much money, it's nice steady work.

Another satisfactory thing about a biologist's career is that he is his own master, absolutely independent and answerable to no one for his professional conduct. That is, except to his wife, ladies' garden clubs, sportsmen's organizations, nature lovers, newspaper editors, and local politicians.

Wildlife biology is a pleasant profession because it is so easy to get ahead. Many biologists grad-

uate from college with only a few debts, and immediately get a job and a wife. In about ten year's time, in addition to the same job and the same wife, they have lots more debts and five kids. That's why biologists are so happy.

WASHINGTON—The Secretaries of Agriculture, Defense, Interior, and Health, Education, and Welfare have established a Federal Pest Control Review Board. The Board has been established in response to President Kennedy's Special Message on Natural Resources. President Kennedy directed the Federal agencies engaged in pesticide control programs to coordinate their efforts in order to minimize harmful effects on public health and wildlife.

The new Federal Pest Control Review Board will review pest control programs and advise the various Departments and agencies of Government concerning problems in the use of pesticides and other chemicals, especially in cases involving interdepartmental interests and responsibilities. This procedure will insure that the framework of the objectives of the programs are sound and that the most effective, economical, and safest procedures are followed. In particular, the Board will consider problems arising from pesticide uses that involve possible hazards

to human health, livestock and crops and fish or wildlife.

Advances in technology have led to increased use of chemicals in all aspects of present-day living. Chemicals are now employed widely and effectively to control or eradicate a variety of pests found to be objectionable, economically wasteful or destructive, and hazardous. The use of many of these chemicals is essential to human health and comfort, to the maintenance of a safe and adequate food supply, to the preservation of our natural resources, and to the economic well-being of the Nation. At the same time, the national interest demands that all such chemicals be used intelligently and with full consideration of any possible adverse side effects.

RABBIT PIE—Hunting surveys indicate that rabbits are the most popular game animals in the United States, according to the Remington Research Bureau. Their favor with hunters is due to the fact that they are notably prolific critters—found in almost every section of the country—and they are a barrel of fun to hunt. On top of all this, they also make mighty good eating almost any way they are prepared for the table. Here, for example, is one good recipe for rabbit pie:

Cut rabbit into serving pieces. Soak in equal parts vinegar and water for 12

With the Cover

After a long, extra cold winter, spring comes to Kansas. Plants turn green again, quail and other wildlife fill the air with their calls, and fishing is almost as good as when we were children. The fish bite more often than not, but in spring, even on days when they don't bite well, a fisherman considers the trip well worth the effort. Why is it, that in spring of all times, fish seem to bite least in the best looking and prettiest spots? Take the place shown on the cover. It is about a mile below Cedar Bluff Reservoir on the Smoky Hill River. The beautiful, clear white water entices many a fisherman to wet a line here. Few fish are taken, but no one seems to care. I guess being outdoors in a beautiful place is reward enough. Anything more is a bonus.

to 24 hours. Drain and wipe dry. Sprinkle with salt and pepper and dredge with flour. Sear quickly in frying pan. Add water to cover and simmer slowly in covered pot for 1½ hours. Add two onions, two medium sized carrots and two or three potatoes, all cut into pieces. Cook until vegetables are done. Thicken the stew with flour. Put in a greased baking dish and cover top with pie crust. Return to oven and bake until dough is done—15 to 20 minutes.

Next time you come home from a day's hunt with a full bag of cottontails, try this one out. It should produce pleased reactions from all who taste the result.

WILDLIFE MANAGEMENT INSTITUTE—Saving waterfowl nesting habitat and finding ways of raising more ducks on available areas are the keys to maintaining or increasing the duck population, ac-

cording to Laurence R. Jahn, north-central field representative of the Wildlife Management Institute.

Jahn told a recent meeting of the Southeastern Association of Game and Fish Commissioners that the future of waterfowl depends on "(1) the extent to which the prairie potholes are preserved, largely in Canada, and (2) whether or not ways can be found to produce two ducks where only one is produced now." Increased production, he said, will require better understanding of the "habitat requirements, preferences, and tolerances of individual species . . . and of the effects of farming practices on pothole breeding habitat and the ability of the habitat to meet the food and cover preferences of various waterfowl."

Treating Snake Bite

Statistics show that snake bites occur around the home as well as in the fields. This is attributed to the debris and trash piles which so easily accumulate on property and serve as nesting places for rats and mice, one principal food of snakes. While a bite from a poisonous snake leaves fang marks which are easily recognizable, one would do well to treat all bites carefully. First aid kits, available in most sporting goods stores, usually contain a sharp cutting instrument, a constricting band for use as a tourniquet, iodine or alcohol for sterilization purposes, and a suction device to help extract the poison.

RULES FOR TREATING SNAKE BITE:

- Keep the victim quiet to slow spread of the venom. Do not give him alcoholic beverages.
- Quickly apply a constricting band (shoe lace, belt or strip of clothing) about 2 inches from the bite and between the wound and the heart.
- Bind the tourniquet tightly but loose enough so that your small finger can pass under it. The tourniquet must be released

for about 30 seconds every 15 minutes.

- Sterilize the cutting instrument, using iodine, alcohol or a match-flame. Use iodine, alcohol or soap and water to sterilize the wound.
- Over each fang puncture, cut a cross ¼-inch deep and about ¼-inch long. Be careful to avoid large veins and arteries near the surface.
- Apply suction over the cuts, either by mouth or with a suction cup. Suction should be applied for at least 30 minutes and again for about 20 minutes each following hour. Mouth-suction presents no danger as long as there are no open cuts on the lips or in the mouth. If venom is swallowed accidentally, it is destroyed by the stomach's digestive system with no harmful effects to the individual.
- Continue suction treatment and maintain the band until victim is hospitalized. All snake bites should receive medical attention as promptly as possible.

BOOK REVIEWS

A Coloured Key to the Wildfowl of the World by Peter Scott—91 pages. Illustrated with many color plates. Published by Charles Scribner's Sons, 597 Fifth Avenue, New York 17, New York; 1961. Price \$3.50.

This is a handy, compact field-book that will serve everyone interested in the ducks, geese, swans and other wildfowl of the world. It provides accurate, keyed four-color illustrations of every species of duck, goose, and swan—247 in all—on the 23 plates. The birds are grouped for easier identification, and the male and female are depicted where there is any difference in plumage. Breeding habitats and other pertinent information are listed opposite each plate.

Several keys are provided prior to the illustrations to assist users in determining the species of bird that has been observed. These keys are arranged in sections on the basis of size of bird, shape, bill shape, color, brightly colored bills, voice and behavior.

Wilderness cookery by Bradford Angier—256 pages. Illustrated with black and white photographs and sketches. Published by The Stackpole Company, Telegraph Press Building, Harrisburg, Pennsylvania; 1961. Price \$3.95.

Wilderness cookery, the publisher declares, combines, for the first time in decades, "all the good qualities of previous works on the subject with the up-to-date knowledge and experience of one of America's foremost outdoor enthusiasts."

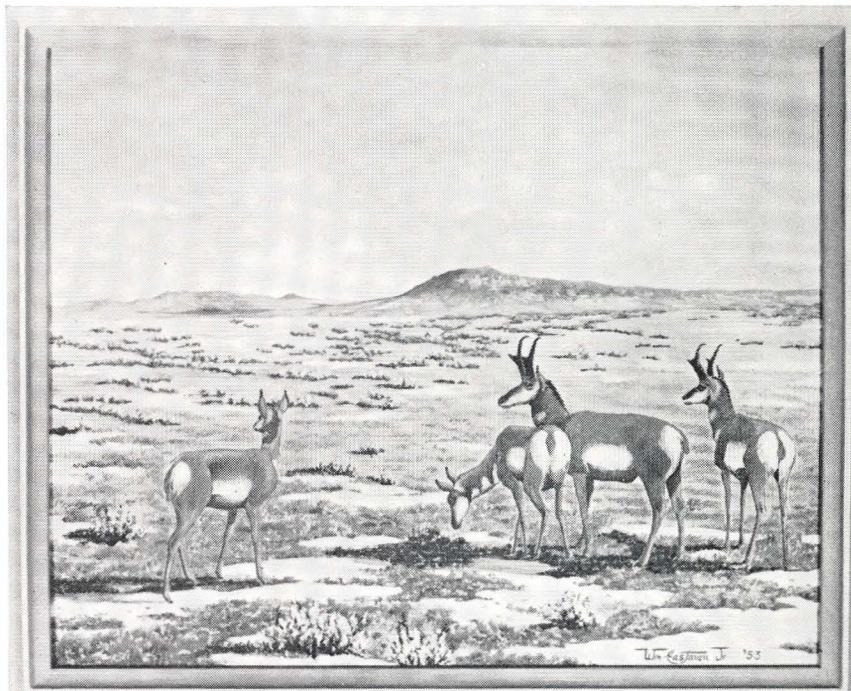
All outdoor cooks, from the patio to the wilderness, should find this book of practical value.

The Fern Guide by Edgar T. Wherry—317 pages. Illustrated with many thumbnail sketches. Published by Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York; 1961. Price \$3.95.

A new addition to the Doubleday Nature Guide Series, *The Fern Guide* offers authoritative information on ferns of the northeastern and midland United States and adjacent Canada. This convenient reference guide has 135 line drawings of both common and rare ferns on pages facing the descriptive text.

The Red Fox: Fact, Fancy

The Sioux Indians called the red fox *Songkee-na*, the French-Canadians named him Renard, and today's scientists speak of the *volpes fulva*. There are about two dozen varieties, each greatly prized for its luxurious, colorful fur. Those that come from a habitat of dense underbrush sport a fur that tends to be coarse, since the animal's body is in constant contact with the brush as it seeks out prey. Those from northern regions possess thick, rich pelts. Red fox breed until about May. They produce one litter a year of four to six young, which because of their brownish, short fur, are often mistaken for coyotes. The red fox can easily adapt to either hot or cold climates. Some say that it is a descendant of a breed imported from England during the colonial period, and this theory is suggested by the continuing failure of archaeologists to turn up fossils which could tie one red fox to the pre-colonial period. Through legends and sportsmen's tales, the red fox has become a symbol of sly genius and unpredictability. There are those who stoutly maintain that a red fox will not go near the water voluntarily; some present-day sportsmen, however, relate instances where the red fox raided traps surrounded by water. A favorite story along this line is the one we call "The Fox and the Fleas." Desiring to rid himself of fleas, the fox decided to submerge in water and "drown" them off. So holding a forked branch in his mouth he slowly sank beneath the surface of a lake. As the water lapped over his fur, the fleas abandoned their poaching areas and made for the forked branch, the only dry spot around. At this point the sly old *Songkee-na* released the branch, and away floated the fleas. —Winchester Proof.



Antelope, such as those pictured above, were abundant in western Kansas before the coming of white settlers. They too were forced out by the plow, domestic cattle and fences. There are still occasional reports of antelope in Kansas, but they are generally in the northwestern tip of the state, near Colorado and Nebraska.

WILDLIFE IN KANSAS

(Continued from page 4)

uate the situation before it was too late. Conservation became a word with meaning in Kansas.

In the early days of conservation efforts, Kansans tried to conserve wildlife by the simple method of stopping or severely restricting hunting and fishing. It seemed the logical thing to do. After all, they had witnessed a major decline in wildlife and they could also recall the great numbers of wildlife and fish that had been taken by market hunters and others in the recent past. What they could not count, however, were the countless numbers of wildlife and fish that never came into existence because there was no longer enough room for them nor suitable habitat in the

lands which remained. The young could no longer hide from the predators or find shelter from the elements. The adults could no longer find adequate nesting sites.

Fortunately for Kansas and for its resources, including wildlife, the early conservationists found out soon that simply bringing things to a standstill did not improve the situation. Limiting the taking of our game and fish was not sufficient. Instead of trying to put our resources aside to conserve them, they found that many resources could be conserved just as well while making wise use of them. Wildlife is such a renewable resource. And beginning at this point, we have the story of modern wildlife and fish conservation.

Taking Stock of— **Our Responsibilities**

by GEORGE MOORE

Director, Forestry, Fish and Game
Commission

The duties and obligations of the Forestry, Fish and Game Commission are well defined in the laws of Kansas. Sometimes it is necessary for all of us to take stock of our duties and to determine if we are fulfilling these obligations. The Commission members should be fully aware of their policy making duties and at all times to fulfill those duties for the best interest of all the citizens of the State. Sometimes it is difficult to appreciate the needs and interest of those in a far corner of the State. We must always be vigilant of pressure groups and selfish interest.

The Director and the staff must guide the policy making group along the best scientific procedures and should never let bias or personal interest blind him in carrying out his duties. We must adhere to facts insofar as we have developed them and at all times strive to improve our administrative procedures. We must be cognizant of our legal duties and the purpose for which the sportsmen purchase licenses. We must keep the public informed of the manner in which his money is being spent. We also have the responsibility of informing him, in many instances, what is to his best interest. We must spend his money wisely for the purpose for which he purchases his license, that is, for improving hunting and fishing. In no case can we use his money for other uses.

The employees of the Kansas Forestry,

Fish and Game Commission should always remember who he is working for and at no time let his personal desire take precedent over his duties. We must treat each hunter and fisherman with full respect and explain to him the reason why we use his money as we do even though he may feel that it is not being spent for projects he thinks are necessary. Remember he is the man who pays the bills and his ideas must be heard regardless of whether or not he is correct.

The sportsman also has a responsibility to the Forestry, Fish and Game Commission and to his fellow sportsmen. He should add up his benefits and compare them with the values he receives. At no time should he request special favors because he paid a small fee for the privilege to hunt or fish. Generally when he insists that he has not received his full value for his fee he has put very little into the program.

The sportsman must be fully aware of the reason why he buys a license and realize the limits for which it can be used. He should not insist upon extra benefits, regardless of how useful or enjoyable, they may be. He must realize that the sportsman's fees are earmarked by law for the maintaining, improving and harvesting the largest number of game and fish over as long a period by as large number of Kansans as possible.

If all of us keep in mind the above conditions and always follow them unselfishly and without prejudice, a sound and worthwhile program can be carried to completion.

Do We Really Improve Things?

A deserted farmhouse in a gullied field was pictured in a farm journal which offered a prize for the best 100-word description. An Indian took the prize with this:

“Picture show white man crazy. Cut down trees. Make big tipi. Plow hill. Water wash. Wind blow soil. Grass gone. Door gone. Window gone. Whole place gone. Buck gone, squaw gone. Papoose too. No chuck-away. No pigs. No corn. No plow. No hay. No pony. Indian no plow land. Great Spirit make grass. Keep grass. Buffalo eat grass. Indian eat buffalo. Hide make tipi; make moccasin. Indian no make terrace. All time eat. No hunt job. No hitch hike. No ask relief. No shoot pig. No build dam. No give dam. Indian waste nothing, Indian no work. White man crazy.”—(*Outdoor America.*)

PRINTED BY
JEAN M. NEIBARGER, STATE PRINTER
TOPEKA, KANSAS

1962



29-2941