

# KANSAS FISH AND GAME



Vol. XIII

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No. 1



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# KANSAS FISH AND GAME

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GOOD USE OF SOIL, = GOOD FOOD AND = MORE  
WATER AND PLANTS = HOMES FOR WILDLIFE = WILDLIFE



## NOT STRICTLY FOR THE BIRDS

By RICHARD EGGEN,

Project Leader, Habitat Improvement—Cover Restoration  
Kansas Forestry, Fish and Game Commission

Wildlife plantings distributed by the Kansas Forestry, Fish and Game commission are designed primarily to provide a home, food and protection for upland game birds and, to a lesser degree, for game animals.

But they are not strictly for the birds.

They belong to the group of plants that have been proven useful in a good farming program, as well as highly satisfactory in wildlife plantings. They contribute to the best use of the land and the general well-being of the community, which in turn benefits wildlife most.

When a farmer expresses a desire to put some of his land to use in the upland game bird habitat program of the fish and game commission, he is paid a personal visit by the game management supervisor for his district. If the farmer's planting site is approved, the farmer and the Forestry, Fish and Game commission enter into a co-operative agreement in which the trees,

shrubs and seed and a planting plan are furnished free by the commission. The farmer agrees to prepare the planting site properly, to plant and subsequently to cultivate the plantings and to protect them against fire and livestock.

Naturally, the farmer is interested in what kind of plants he is to receive when he agrees to co-operate in the establishment of an upland game habitat planting project. His interest is more than passing, as a lot of work and time, as well as some possibly valuable land, will be invested in this project. It is therefore to his advantage to know something about the plants that will make up his planting, such as the habit of growth, adaptability, growth rate, fruiting and seeding habits, utilization by wildlife; and its function in the planting.

Since the plantings are primarily for wildlife, the biologist places emphasis on species which offer as

much as possible to wildlife. Fortunately, there are a goodly number of species of plants that not only are well adapted to use in wildlife plantings but which also fit well in the modern-day farming program. Among these are shrubs or trees which bear fruit that can be utilized by both the farm family and wildlife. There are other species that do yeoman work in protection against soil erosion and at the same time protect wildlife against their enemies. Others serve jointly as stock fences and wildlife travel lanes. These are but a few examples of the twofold uses to which many of the shrubs and trees growing on our land can be put. By necessity, this article will consider only a few of the many species which are suited to this use.

#### NATIVE PLUM—*Prunus americana*

This is probably the best fruit-bearing shrub that we have. Mass groupings of this shrub planted on selected areas produce some very high-quality cover for both quail and pheasant. This tree-like shrub grows about 8 to 10 feet tall, and often as wide as high. The branches are dense and armed with thorns which will discourage even the most persistent predator. Its suckering nature will maintain the plant many years after the mother plant is dead.

This plant is native to Kansas and is winter hardy. It should be planted on the more favorable moist sites, as it will suffer damage in years of severe drouth. They are prolific bearers and the fruit is used for jellies and preserves. The fruit is also used as food by wildlife.

#### WESTERN SAND CHERRY—*Prunus besseyi*

Sand cherries are found growing on the hillsides and in the draws of much of the Kansas plains. The shrub is both winter-hardy and drouth resistant, and is a remarkably fast grower. It has often been known



A field shelter belt, such as shown above, protects the land from blowing and also provides excellent wildlife habitat.



The planting of additional shrub rows to supplement an existing windbreak is an effective method of improving the windbreak for wildlife.

to bloom and bear fruit the year after it is transplanted. This shrub grows to a height of only three to five feet, but the branches spread wide and close to the ground and offer fairly good wildlife cover. When cultivated, both the fruit and shrub grow larger than in the wild.

One serious drawback to this plant is its short span of life. Normally, it lives only five or six years; however, some of this disadvantage is overcome by the fact that it grows so rapidly. It often furnishes cover while most of the other plants in the planting are just getting a start, and when it dies out, the rest of the planting is of sufficient development to take over.

#### CHOCHECHERRY—*Prunus virginiana (melanocarpa)*

This is another plant that is widely used in wildlife plantings. It is also a native of Kansas and quite widely known for its fruit. This plant reaches a height of about 10 feet and is a little more open in the branches. The crown is not as dense as plum; however, it is more drouth-resistant and can be used on sites that are too dry for plum. It bears a small, tart black cherry which is relished by both birds and little boys.

Housewives prize this fruit for its jelly-making qualities and during prohibition, it was quite widely used for other purposes. The tree is very winter-hardy; however, it is affected by a disease known as "virus X." For this reason, care should be taken not to plant it near fruit with a stone-like pit, as these fruits might also become infected.

#### RED CEDAR—*Juniperus virginiana*

The common Red Cedar is not only the only native evergreen of Kansas, but perhaps its best known and most widely used plant as far as farm plantings are concerned. It is a very winter-hardy, drouth-resistant plant particularly suited to the limestone breaks, but

POOR USE OF SOIL, — LITTLE FOOD AND FEW — LESS  
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well represented in almost all parts of the state. As a specimen plant, it grows to about 45 feet and has a spread of about 20 feet. Its most common use, however, is in windbreak plantings and here it grows usually to not more than 15-20 feet. In mass plantings or plantings of several adjoining rows, it becomes a very dense and effective barrier against wind and lends itself very well to use by wildlife. Its fruit is a dark blue berry about one-fourth inch in diameter used by many forms of bird life as winter food.

This tree fills a very important place in the farm planting program, as well as the wildlife program, and should by all means be utilized to the fullest. Although it is somewhat more difficult to start, the result is well worth the extra effort. The one drawback to its use is the fact that it is the alternate host for cedar apple rust. Although this does not harm the cedar, it can be very damaging in apple-growing regions. It therefore should not be planted within half a mile of major apple plantations.

#### RUSSIAN OLIVE—*Elaeagnus angustifolia*

This plant is a shrub-like tree native to Europe and West and Central China. It is very hardy and somewhat drought-resistant and grows to about 15-20 feet in height. It is somewhat green and shaggy in growth and sometimes bears thorns. Its long, narrow, silvery foliage lends considerable character to the windbreak in contrast to the greens of the other foliage, and particularly the cedars, as it is often planted next to them. The fruit is silvery in color, about one-fourth inch long, and elliptical in shape. The fruit of this tree is heavily used by pheasants, particularly in the winter time.

This plant is more widely used as a low to medium deciduous tree in windbreak plantings. Care should be taken to plant it far enough from cedars to prevent

it overtopping them and causing them to become stunted. After a period of years, the plant may begin to die back. Severe pruning or topping may help to rejuvenate it and thicken its growth.

#### MULTIFLORA ROSE—*Rosa Multiflora*

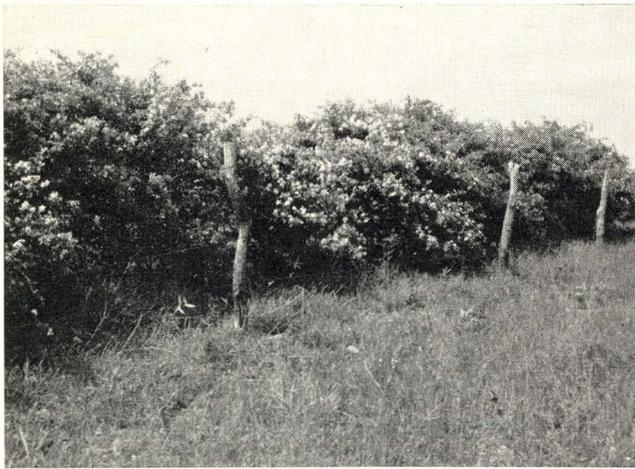
The multiflora rose is perhaps one of the most advertised plants of our day. It has been long known in this country, but only in the last 10 years has its reputation grown so rapidly. This notoriety has been a result of widespread use of the plant by the SCS for erosion control and by several Fish and Game agencies for wildlife cover.

The plant is native to Japan and was introduced from there about a century ago, and where it is adapted, is one of the best shrubs for erosion control, wildlife cover, and farm conservation use. It is a fairly hardy, vigorous grower, normally attaining some 6 to 10 feet in height, and as a result of its long arching canes may be as wide as 8 feet. The long arching branches bear masses of small white to pinkish flowers, in May and June. The flowers are followed by masses of pea-sized fruit, red in color when in ripe and persistent until spring. The fruit is utilized to some extent as winter food by many species of wildlife. It likes well-drained, good soil. It will grow slowly on clay pan soils, may fail on droughty soils, and it is not shade tolerant.

The multiflora rose is very versatile and as a result, has many uses on the farm. It is used principally as a living fence; however, it can be used as a shrub row in windbreaks, to stabilize gullies, or in any of a number of other practical farm uses.

As a fence, it can be stockproof. It reduces fence maintenance costs, can be planted on terraces where stresses make wire fences impractical, and is far the cheapest type of fence.

In any of its many uses on the farm, this plant is highly useful to wildlife. It provides a protected travel lane between crops and cover areas, if properly managed may serve as nesting sites, provides some winter food and cover, and provides escape cover. This plant should be utilized in all areas where it is adapted; however, in Kansas, it is restricted to that area receiving a minimum of 25 inches average annual precipitation.

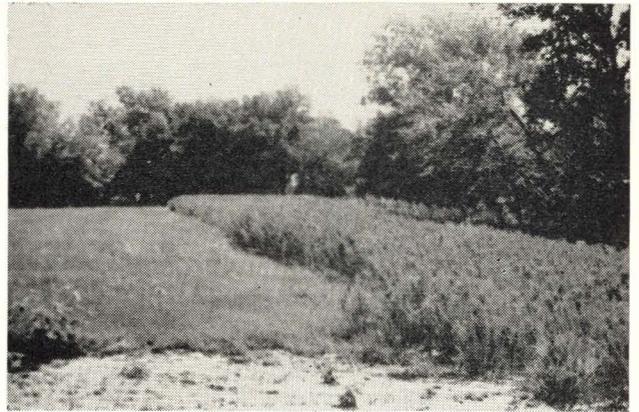


The above picture illustrates the use of Multiflora rose as a living fence and wildlife travel lanes.

Many other species of trees and shrubs have been used in the habitat program, some almost as widely and others to a lesser extent, and yet others on an experimental basis. Among them are Bicolor lespedeza, *Lespedeza bicolor*; Sericea lespedeza, *Lespedeza sericea*; common Bladdersenna, *Colutea arborescens*; Tartarian honeysuckle, *Lonicera tartarica*; common lilac, *Syringa vulgaris*; sandhill plum, *Prunus angustifolia*; four-wing saltbush, *Atriplex canescens*; bush lespedeza, *Lespedeza japonica intermedia*; honey locust, *Gleditsia tricanthos*; mulberry *Morus alba* and others.

It should be pointed out that selection of species to be used in wildlife plantings is determined by the planting site. Soil, moisture conditions, geographical location, and type of planting must be considered before selection of species is made. By proper attention to these factors the chances of success of a planting may be greatly increased.

Through the use of some of the species of plant life discussed in this article, much can be done to improve conditions on the farm. The wildlife living on the land should be recognized as an integral part of that land. The farmer stands only to gain through proper use of the wildlife residing on the farm. Through good management, he may do much to increase that wildlife and thereby increase the productivity of his farm with no additional cost and no interference to his general



This field border of sericea lespedeza serves as a turnrow and furnishes good nesting cover and food for wildlife.

farming practices. Living fences, windbreaks, field border plantings, gully plantings, odd corner plantings, and erosion control plantings should be a part of every well-managed farm and these plantings, properly made, are well suited to use by the wildlife of that farm.

Farmers and sportsmen who are interested in helping in these "Homes for Wildlife" projects should contact the Forestry, Fish and Game Commission in Pratt, their district game wardens, or the Game Management Supervisor closest to them.

## How To Hook Live Bait

Many fishermen, and especially fisherwomen, have pondered over the best way to bait a hook with live bait. Suggestions on this timely subject are offered by I. D. Stockebrand, Independence sportsman:

Hooking worms—There are numerous ways of baiting a worm on the hook, but to give the bait its attractive qualities, keep the ends free to wiggle.

Hooking crawfish—This is probably the best of all live baits next to the minnow for small and large-mouth bass. The bait is easy to catch and find. Many anglers use simply the tail of the crawfish.

Hooking minnows—The minnow is the ideal bait for all fish, large or small. For still fishing, hook through back; for trolling, insert hook in mouth and out behind gill, going through from one side to the other.

Hooking insects—Grasshoppers, crickets and other land insects are ideal bait for our variety of fresh-water fish. Hellgrammite is a top-ranking bait for small or large-mouth bass and trout. Insects of the type mentioned are hooked through the bait collar.

Hooking frogs—For bass this is the deadliest of all baits. Hook outside mouth from underneath the rough top. This bait is at its best when fished among the weedbeds with a weedless hook.

## Return of the Native

**Swift Fox Again Appears on Western Kansas Prairie**

By EDWIN P. MARTIN and GEORGE F. STERNBERG  
Fort Hays Kansas State College

During the last half of the nineteenth century, travelers in Kansas, with an eye for wildlife, reported a small, fast-running fox to be one of the most common inhabitants of the prairie in the western part of the state. This swift fox has not been seen in Kansas in this century, at least by anyone who reported the animal to scientific magazines. Cockrum, in his "Mammals of Kansas" written in 1952, said definitely that the swift fox was extinct in Kansas.

However, in January, 1955, Howard Laverne Maxwell shot a swift fox in Gove County. He gave the animal to the museum of Fort Hays Kansas State College, where it is now on display. In addition to the general interest evoked by the presence of a species belonging to our native fauna and absent, or at least unnoticed, for more than 50 years, specimens of swift foxes are scientifically valuable to zoologists in Kansas. The department of zoology at any of the state colleges would welcome any others which might be shot. With the specimen, accurate information of the location of the kill is needed.

The swift fox is smaller than other foxes, and is less wary. Because it enters traps and takes poisoned baits so easily, and because, for some reason, it can't stand even the less intense varieties of civilization, it has disappeared from large parts of its original range and is no longer common anywhere. Buffy-yellow in color, with a long bushy tail, the swift fox can be identified by the black tip on its tail and the black spot on each side of its snout. These black markings distinguish it from young coyotes, with which non-zoologists sometimes confuse it.

Swift foxes prefer to live on sandy prairies. They live in burrows, which they may dig themselves; often they move into an abandoned home of a coyote or a badger. As the common name, swift fox, implies, this little predator can run very rapidly, though only for short distances. When hunting, the swift fox tries to get close to its prey by stealth, and to make a capture by a short dash at high speed. Usually the fox hunts after dark, and its ordinary diet includes insects, small rodents (especially kangaroo rats), an occasional rabbit and, rarely, a ground-nesting bird. In spite of a few reports of these foxes raiding poultry houses, its food habits place it definitely on our side in the struggle to get food from land.



This specimen of the almost extinct swift fox was shot by Howard Laverne Maxwell and given to Fort Hays Kansas State College where it is on display.

If any more swift foxes are seen in Kansas, please let them live. If, however, one is killed accidentally, remember it is a valuable scientific specimen. Please send it to a college, where its scientific value can be realized.

### Atchison Sportsman Named Member of Commission

Dr. Eugene Berney, 50, well-known sportsman of Atchison has been appointed to the Forestry, Fish and Game Commission by Governor Fred Hall.

Berney, an Atchison dentist since 1926, is an enthusiastic fisherman and hunter. He is a charter member of the Atchison County Fish and Game association, which he now serves as vice-president.

A Democrat, Berney will fill a vacancy created by the death of Hugh Miller, Olathe Democrat. His term will expire December 21, 1957.

### Cover Picture

Visitors at the Kansas Sports, Boat and Travel show in Wichita in May saw this exhibit by the fish and game commission. The exhibit contained live fish, birds and animals and mounted displays of native Kansas wildlife.

The young eel is ribbonlike and so transparent that print may be read through its body.

# How To Insure Better Farm Pond Fishing

By ROY SCHOONOVER

Fisheries Biologist,  
Kansas Forestry, Fish and Game Commission

Angling again has taken the sports spotlight. Many fishermen are haunting favorite spots along the creeks and river; others prefer fishing in the various lakes scattered over the state. Still another group, growing in number each year, is devoting a good share of its fishing time to the smaller man-made impoundments, commonly called farm ponds.

The most desirable farm ponds provide a variety of good fishing and do not become "fished-out" quickly. To promote these good qualities, several management practices can be inaugurated by the pond owner and the pond's fishing fans to create and maintain better fishing for the longest possible period of time.

If a new pond is to be built and is to serve for fishing, it is important to follow recommendations as to location of pond site, area, depth, and construction of dam, outlet structure, and overflow. Information of benefit to the pond-builder can be obtained from the bulletin "Construction and Management of Kansas Ponds," which is available from the Forestry, Fish and Game Commission.

Of the physical features of a pond for fishing, the ones of considerable importance are depth, area, and transparency of water. These factors should be considered in the initial planning for the pond; however, if they are disregarded at that time, it is often possible to correct them after the pond is completed and in production.

## *Size of Pond*

A fish pond should be of at least one-half acre in area in Kansas if it is to be considered large enough to be worthwhile for stocking with fish. Most ponds of a smaller size will not provide satisfactory fishing. In a small pond, the majority of the fish will be too small to be of desirable catching size. Under such conditions, the pond does not support a large enough number of catchable-sized fish to provide satisfactory fishing, and it is, therefore, not worth-while to expend efforts in trying to make it do so.

It is sometimes possible to correct this condition by raising the spillway or by increasing the height of the dam, so that a larger area will be under water. In most instances, however, it would be more practical to build a new pond to the specifications recommended for a good fish pond.

## *Depth of Pond*

The depth has a great deal of influence on the fish production that can be expected from a pond. If

ponds are too shallow, they will get too low or go dry during even the less serious drought periods. Such ponds are also more apt to be muddy than are ponds having a greater average depth. In the event they are clear-water ponds, extensive shallow areas are likely to become "choked up" with water plants which not only make fishing almost impossible, but favor the survival of too many young fish. The usual result of this condition is that certain species become overcrowded and fishing becomes unsatisfactory. Occasionally, there is a rapid die-off of these mats of aquatic vegetation during warm weather, causing the dissolved oxygen in the water to be reduced to the point that a serious fish-kill occurs in the pond.

The recommended depth for a fish pond will depend on the portion of the state in which it is located. Rain-fall and evaporation vary from one part of the state to another. It is recommended that a considerable portion of the pond be at least 10 feet deep in the southeastern portion of the state, and 12 feet deep in the western portion.

In some instances, this condition can be remedied in existing ponds by increasing the height of the dam and spillway, or by draining them dry so that they can be deepened. When a pond is low, it is often possible to deepen the shallow areas where water vegetation is a problem. Another recommendation where vegetation may become a problem is to deepen the edges so that the shore-line slopes off steeply to a depth of two or three feet.



The Caney River, north of Cedar Vale in Chautauqua county, was productive this spring for fishermen who took time to fish it. Shown above is a string of catfish caught one evening by the Bowman brothers, Wayne and Marion of Arkansas City. They were using pole and line.

*Transparency of Water*

Any general survey of a group of ponds will indicate that some have exceptionally clear water, others have very muddy water, while the majority will have relatively clear or slightly turbid water somewhere between these two extremes.

With the possible exception of the catfish, our desirable pond species of fish will not produce satisfactory fishing in turbid water. Although the channel catfish are better adapted to the adverse effects of turbid water, even they will make much better growth in clear-water ponds where food is more abundant. Bass and bluegills will not produce satisfactory fishing in ponds having turbid water. In addition to a deficiency of food in such ponds, feeding activities of bass and bluegill are retarded because these species depend on the sense of sight for obtaining their food. Fish of these species are found to be thin, pale, and more or less "stunted" when they are seined from muddy ponds which have been stocked for three years or more. They may die or leave the pond during periods of high water before they ever grow large enough to be of desirable catching size. Unless the water in such ponds can be cleared, there is little chance of getting good fishing.

A method has been found by which some muddy ponds can be cleared through the application of organic material such as grass, hay, weeds, and other forms of vegetation. This method has been worked out in Oklahoma and has been successful in many ponds, providing soil conservation measures can be used to prevent more silt from being carried into the pond after the water has once been cleared. Agricultural gypsum is also recommended for clearing turbid ponds, providing such measures as the establishment of vegetative cover on eroding areas in the watershed, stilling basins above the pond, and construction of diversion dikes and ditches can be put into operation to halt further siltation.

*Fencing the Pond*

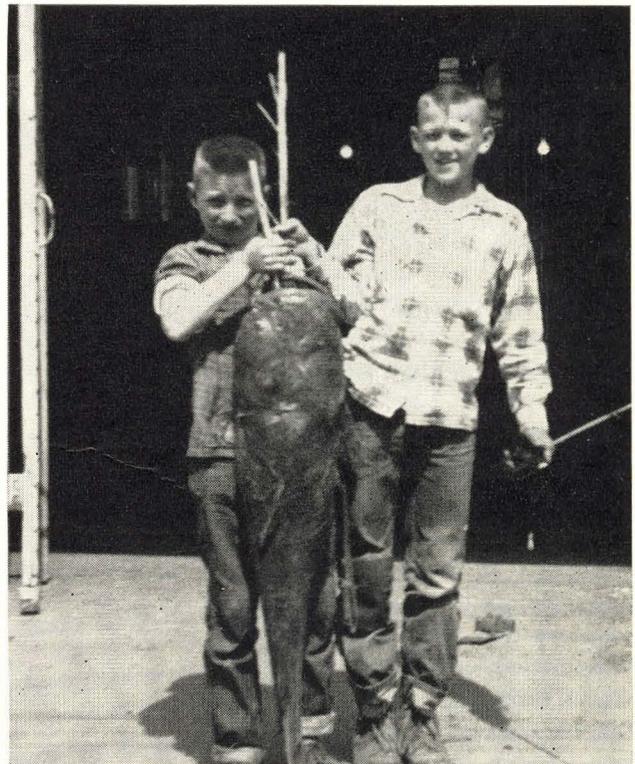
If a pond is to be of the greatest value for fishing and other forms of recreation, it should be fenced so as to keep livestock away from the water, dam and shore-line in general. If the pond is needed for stock water, provisions should be made for a pipe and watering tank below the dam. Livestock not only wade in the pond and roil the water, but trample the dam and shore-line so as to cause additional erosion. Access of livestock to an otherwise ideal fish pond has often caused the water to be muddy. If a pond is to be enjoyed as a fishing "spot," fencing to keep out livestock is of utmost importance.

*Drainage Facilities for the Pond*

If the pond is to be managed for fishing, there should be some means of draining it. Pond studies in the past have shown that eventually, most ponds have become "poor fishing" waters, regardless of how correctly they were initially stocked and how well they were subsequently managed and fished. As a general rule, certain species of fish, often bluegill, crappie, green sunfish, or bullheads will become overabundant after a period of five to eight years and poor fishing is the result. It is almost impossible to restore satisfactory fishing in such ponds unless the entire fish population can be removed, so that the water can be restocked and the cycle repeated. Although chemicals are now available for eradicating fish from such waters, removal of the fish population by drainage of the pond is much more desirable, since it makes possible the transfer of the desirable fish to other water, and the fertility of the exposed pond-bottom can be improved by "weathering" and through the establishment of a vegetative cover, before refilling.

*Stocking the Pond with Fish*

For those who have a pond that is not yet stocked, and for those who are contemplating the construction



A couple of 14-year-olds, Mike O'Malley, left, and Fred Bammas, landed this enormous yellow cat from Fisherman's dam above Council Grove on the Little Neosho river late in April. They caught it on a conventional rod and reel with fishworms for bait. The monster weighed 37 pounds.

of a new pond, some advice on stocking with fish will be of benefit.

Pond-owners are cautioned against haphazardly stocking their ponds with fish obtained from other ponds and streams. Where the stock is obtained in this manner, it is generally impossible to get enough fish of the right kind and in the correct ratio to stock the pond properly.

If ponds are suitable for fish, the pond owners are urged to obtain fish for stocking from either the Forestry, Fish and Game Commission at Pratt, or the Federal Hatchery at Farlington.

The species of fish available from the State Hatchery are large-mouth bass, channel catfish, bluegill, and crappie. As has already been stated, ponds of one-half acre or more are most suitable for providing satisfactory fishing. It is recommended that ponds of this size, having relatively clear water, be stocked with bass, bluegill and channel catfish. Since crappie are a very popular fish with Kansas anglers, many will want them stocked in their ponds. Crappie have been found most desirable in ponds of one acre or larger in area. In smaller ponds, they have a tendency to produce such a large number of young that they soon become overabundant and as a result, fishing is poor.

It is generally difficult to produce enough catchable-sized fish in a small pond to make the effort worthwhile. However, if ponds of less than one-half acre in area, and those in which the water is turbid are to be stocked, channel catfish alone will probably be the most likely to provide successful fishing conditions.

#### *Management of Fish Ponds*

After the pond has been stocked, efforts are made to manage it so as to maintain satisfactory fishing for the longest period of time possible. This is where the most difficult problem arises. The principal means of "management" for such a fish pond is the harvesting of the fish by hook and line methods.

Ponds are stocked with those particular species of fish and in the ratio that actual tests have indicated will most nearly create a "balance" within the fish population. Before the term "balance" can be explained, it is necessary to describe the two types of fish ordinarily used in stocking. The first of these types, the predator fish, includes those which feed primarily on fish of various species and sizes. The most important predator fish for use in our farm ponds is the large-mouth bass. To some extent, crappie and larger channel catfish eat smaller fish and can therefore be considered as predators also. The second type of fish used for stocking are the forage fish, of which the principal one is the bluegill, but also includes other members of the supporting population such as the smaller



Grant Tyson and Bud Brown of Waverly are pictured here with a 30-pound yellow cat caught on a limb line with perch for bait on the Neosho river in Coffey county April 26.

crappie and channel catfish. These forage fish feed primarily upon tiny animal life, aquatic insects and other invertebrates. This group is called "forage" fishes because the smaller individuals serve as the main food for the bass and others in the predator group.

The fish population is said to be in balance when this predator group (bass) is present in sufficient number to feed on the smaller fish of all kinds and the forage species (bluegill), to keep them reduced in number so that the over-all population of the pond will be held low enough that all individual fish will enjoy adequate food and space to permit them to grow rapidly to desirable catching size.

Once the fish of the original stocking have spawned, in order to maintain the "balance" as described above, it is necessary to catch the predator and forage groups of fish in the same ratio in which they exist in the pond. Thus, for each pound of bass removed, three to five pounds of bluegill and other forage species should be removed. In order to accomplish this, the pond would need to be fished heavily for the bluegill and other supporting species that are present. Removing the predator and forage fish in this ratio described above is difficult to attain, and unfortunately is seldom attained in the farm ponds of this region.

In those ponds where constant effort are made to

harvest several pounds of the forage fish for each pound of bass removed, an analysis of the remaining fish population should show that a majority of the weight is made up of larger, catchable-sized fish while a much smaller part of the over-all weight consists of smaller fish. This is the ideal situation and will generally indicate an excellent fishing pond.

On the other hand, if only the bass and possibly the channel catfish are caught out, while other species are allowed to multiply with only a few being removed by angling, the condition is reversed. Before long, the majority of the over-all weight of the fish in the pond will be made up of slow-growing fish which are too small to be of interest to anglers; the larger fish will be few in number and will represent only a very small part of the total weight of the fish population. When this condition exists, the pond is said to be "out of balance" and, as a rule, fishing success will be poor.

Management of ponds by the pond-owner and anglers in an effort to maintain satisfactory fishing is based on the following recommendations:

1. Anglers must continue to fish heavily for bluegills and other "supporting" species so as to remove several pounds of them for each pound of bass removed.
2. Discourage the practice of selective fishing for bass and channel catfish, while allowing other species to multiply without being adequately harvested.
3. Make attempts to control rooted aquatic plants which are often responsible for bluegill overpopulation.

### Worth Repeating

"But now the sport is marred;  
And what ye why?  
Fishes decrease—  
For fishers multiply."

The "now" in the above quotation was 1598, for the above was written in that year by an anonymous writer. It seems that even in those days, fishermen were finding that as their numbers increased, their catches decreased! Who said shortages of game and fish were modern?—*T. M. in Texas Game and Fish Magazine.*

Shrimp support the most important fishery industry on the South Atlantic and Gulf Coasts, and the third in size on the whole Atlantic Coast.

The black swallower, a small deep sea Atlantic fish, can kill and swallow whole a fish that is from eight to ten times larger than itself.

## First Year of Catfish Study Completed

The answers to some of the more puzzling questions concerning the channel catfish were closer this spring following the first year of a joint 3-year project of the Kansas Forestry, Fish and Game commission and the University of Kansas.

In the past year W. Jackson Davis, of the State Biological survey and a graduate student in zoology at the university, traveled 17,000 miles to make 209 visits to 83 ponds, lakes and streams in 27 counties, gathering information on catfish. He consulted with biologists of the fish and game commission and many interested sportsmen.

The studies revealed a startling variation in rates of growth in the ponds and lakes and later research is expected to show why this happens. Results to date indicate Wyandotte County lake and Lake Shawnee, for example, produce few channel catfish, but these grow rapidly in the presence of abundant food. Kanopolis reservoir and a few other lakes have excessive numbers of channel catfish which grow more slowly.

Channel cats have been transferred from Kanopolis to other waters by the fish and game commission for the past three years in an effort to thin the population and encourage better growth. All fish transferred last year were marked by Davis so that they can be recognized if caught. Davis hopes, in this way, to learn how much the stunted fish grow in their new surroundings and how much the fishing improves as a result of heavy stocking with adult fish.

Lakes receiving approximately 1,200 marked fish each were Holton City lake, Crawford County State lake No. 2, Wyandotte County lake and Lake Wabaunsee.

Davis' experiments have shown the most satisfactory methods of marking catfish from the standpoint of cost, expenditure of time, retention of the mark and effect on the fish. Markings on various fins and the jaw were used to indicate the age of the fish released.

Did you know? . . . The raccoon is one of the few American mammals that has no living relatives in the Old World.

The white bass is also known as silver bass, striped bass, striped lake bass, sand bass, silversides, striper, barfish and gray bass.

A single cod fish may produce as many as 9,000,000 eggs.

## Legislature Authorizes Park Authority, Bow and Arrow Fish Shooting, Hunting Preserves

Five laws passed by the Kansas legislature at its session this year concerned the fish and game affairs of the state. The three of a general nature were laws creating a state park authority, permitting bow and arrow hunting of certain fish and authorizing controlled shooting preserves.

Two local laws provided for the transfer of lake site land in Chase county to the fish and game commission by the board of county commissioners and prohibited the shipment of rabbits from Allen county.

The park authority law creates a board of nine members, five appointed by the governor and four ex officio members, the governor, director of the state highway commission, chairman of the forestry, fish and game commission and the director of the Kansas industrial development commission. A director will be employed by the board to administer its work.

The authority is authorized to acquire, control and supervise various state parks, lakes and areas of recreation, scenic or historical significance as it sees fit and construct and operate public improvements, such as cabins, hotels, lodges and restaurants, to be financed by an issue of bonds. Revenue from the operation of the park or recreation area will be pledged for the payment of the bonds and interest. At existing state lakes at least half of the area will be reserved to the public without payment of any fee.

Controlled private shooting areas are authorized and the regulations set forth in another general law. The shooting preserves must be between 320 and 1,280 acres, except for those for the propagation and shooting of hand-reared mallard ducks which may be less than 320 acres. The license fee was set at \$200. It must be obtained from the director of the forestry, fish and game commission.

Season for shooting in the controlled preserves will be from October 15 to February 15. Up to 70 percent of the total number of each specie of game bird released will constitute the game limit, but the commission may allow the taking of a greater number if it should be determined that such increased taking would be beneficial to the total game population. A limit also was placed on the amount of land such preserves may occupy in each county.

The licensee must keep a register showing the total number and kind of birds propagated each year, date of release, date taken and disposition made of the birds for a report to the commission. All birds released must be fully winged and able to take care of

themselves in a wild state. All birds killed in controlled shooting areas must be tagged and the commission may decide if tags are necessary on birds released.

Specific regulations on bow and arrow shooting of rough fish must be worked out by the fish and game commission, but the law outlines the basic concept of this new sport for Kansas.

Rough fish, defined as carp, or belonging to the carp family, including drum, buffalo and the like, of any size, and gar of any size may be shot with bow and arrow in open seasons. Each bow and arrow shooter must have in possession a state fishing license.

The minimum weight of bows is to be 25 pounds and the maximum length of arrows 30 inches. Each arrow must have a barbed head and must be shot from a bow, with a line attached from bow to arrow.

The muskrat is the most important fur animal in the United States and where it occurs it puts a high economic value on otherwise waste swamp land.

The original home of the honeybee was southern Asia, probably including the eastern shores of the Mediterranean Sea.



In spite of a chilly day, more than 50 fishermen turned out for the opening day at Anthony lake and almost all of them were successful. At left, W. M. Baker of Anthony, holds eight bass and two bullheads he caught. Mrs. Harold Brand and her son Felix of Anthony display their string of three bass at right.



# Kansas Bird Life



No. 2 in a series

By MARVIN D. SCHWILLING

Game Biologist, Kansas Forestry, Fish and Game Commission



BARN OWL  
*Tyto alba pratincola*

*Where Found in Kansas*—The barn, or monkey faced, owl is found throughout the state. It seems to be partial to old buildings, barns, towers, holes in cliffs and church steeples.

*Identifying Characteristics*—This bird is the most oddly shaped of all the owls. It has long legs for its size. Its plumage is smooth and compact and mostly the color of scorched linen, light yellow brown. Each eye is set in the center of a radiating disc of light colored feathers and the whole face is surrounded by a heart shaped ring of brown. In flight it can be told from other owls by the whitish cinnamon underparts and the rusty buff upper plumage.

*Similar Species*—Short-eared owl, but has a darker, rounder face, darker underparts and shorter legs.

*Voice*—Does not have a musical voice, but will utter an eerie rasping hiss or snort and click its bill excitedly when cornered.

*Habits*—These birds are nocturnal, night-feeding birds of prey and so are not often seen in the daytime, but more often in the late evenings or after dark.

During the day they loaf in dark concealed places. They are probably one of our most beneficial birds as they have no equal in the destruction of rats and mice. They may well be referred to as living mouse-traps as virtually all of their diet is normally made up of these despised rodents. They rarely molest other birds, probably never except when forced by hunger.

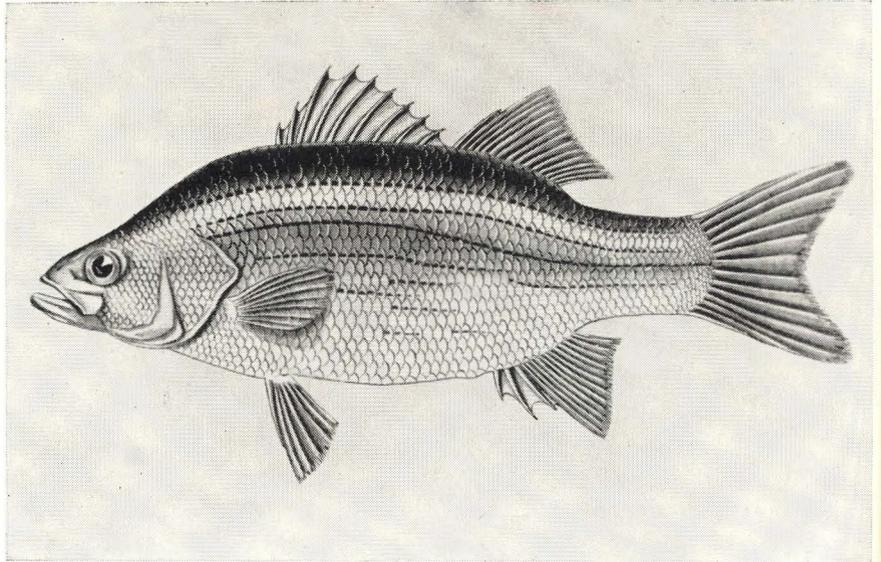
The nest, too, is placed in barns, hollow trees, holes in cliffs, deserted buildings, towers and church steeples. The eggs are white and usually number from five to seven. Unlike most birds, incubation begins when the first egg is laid; thus, one often finds both young and eggs, or young of different sizes in a single nest.

The kangaroo rat never drinks a drop of liquid from the day it leaves its mother's nest until it dies. For water, it eats small, juicy tubers.

Young mallard ducks can swim a third of a mile as soon as they leave the nest.

# The White Bass

Second in a series of articles on the different species of fish found in Kansas waters.



The White Bass (*Lepibema chrysops*) can be identified by two separate dorsal fins and distinct lateral stripes on the sides.

One of the least widely known members of the popular panfish family is the white bass—and yet—it is the largest of these “little fishes.” It also claims the distinction of being the only true bass we have in fresh waters.

The foregoing will come as a distinct surprise to many fishermen who have been catching largemouth, smallmouth and spotted basses for many years. Actually, as pointed out, they have been catching not members of the bass family but those of the sunfish family, to which also belong the crappies, rock bass, warmouth, bluegills and others.

All of which makes the white bass quite a distinctive character, particularly since it is the most sought after member of its clan. In those states where it is found, the white bass is a favorite because of its heavy impact on the strike and its fine eating qualities.

## BIOLOGICAL FACTS

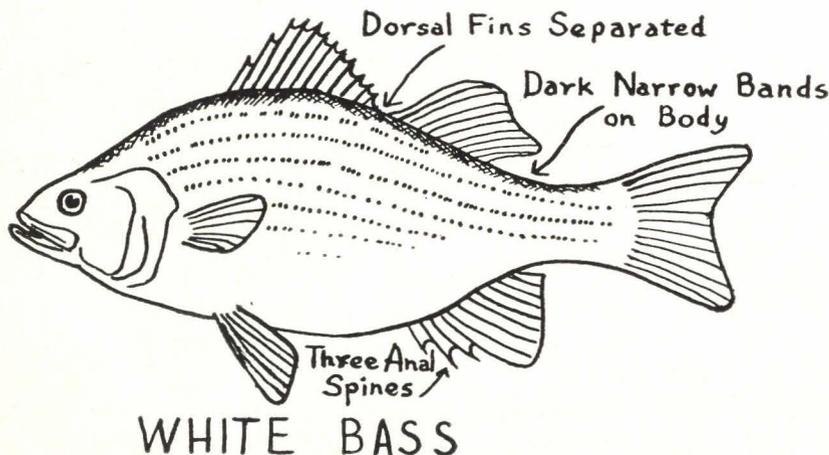
The white bass is thought to be a degenerative of the salt water striped bass which became impounded in fresh water and thus started the white bass species. This is very logical because the striped bass makes an annual jaunt into freshwater streams with no apparent harm.

This species is found from Alabama west to Texas, then north through Oklahoma and into the southern waters of Minnesota and Wisconsin. Although primarily a lake fish, the white bass makes impressive annual pilgrimages in many streams and is a favorite with spring fishermen. The Mississippi River and its tributaries yield an annual toll of white bass. Very few white bass are found in Canada.

In streams, the white bass seems to prefer the swifter, cleaner waters—particularly below dams; in lakes, it is found usually in open water, feeding in constantly moving massive schools. Occasionally, a deep hole can be located where white bass lay, but these are rare.

This species was first introduced into Kansas waters in April, 1950, when yearling white bass were stocked in Fall River and Kanopolis reservoirs. Later the species was stocked in Cedar Bluff reservoir and the Clark County State lake in the spring of 1951.

Tests made by fish and game fisheries biologists show an excellent hatch has occurred in Kanopolis and Cedar Bluff reservoirs. Studies on



Fall River reservoir have not indicated the presence of young fish as yet. However, fishermen were catching white bass at Fall River reservoir this spring that weighed as much as one and one-half pounds.

Spawning is evidently a boring affair for the white bass because eggs and milt are carelessly scattered in shallow water and then deserted. Eggs run about 1.5 million to the quart, quite small, and hatching takes two days in water temperatures around 60 degrees Fahrenheit.

#### IDENTIFICATION

The white bass can muster all the qualifications necessary to be called a beautiful fish. Not as gaudily colored as some, nevertheless, the contrasting markings make it outstanding, and the usual remark of an angler seeing it for the first time is, "There is a clean-cut looking fish."

The back is iridescent green, gradually shading into a bright silver on the sides and then into a silvery white on the belly. The older and larger the specimen, the deeper the shadings become.

The large, brightly contrasting eyes add much to this fish's appearance and the touch of gold therein probably gave this fish the last part of its name, chrysope, which means golden. Generally, five or six distinct stripes line the side of each fish and these are responsible for the nickname of striped bass.

The body shape is more compressed and has greater depth than does that of the black basses, while the mouth is distinctly bass-like with a pronounced protrusion of the lower jaw.

#### SIZE

No recognized record is available but authoritative sources have reported white bass in the 4 to 5 pound range. Weights of three-quarters to one and one-half pounds are the most common.

Evidence that white bass are doing well in Kansas waters is attested to by the taking of one this spring from Cedar Bluff reservoir that weighed four pounds, seven ounces. The catch was made by Mrs. Norman McKenzie of WaKeeney.

#### FLAVOR AND FOODS

Because of its preference for cleaner, deeper waters and its active nature, the white bass is a fish of firm flesh and delicious flavor.

The natural diet of the white bass consists of minnows, insects, small fish (especially shad), worms, crayfish, crustacea and larvae.

#### LURES

Although nearly any type of small plug or fly lure will produce when one hits a school of white bass on

the feed, there are certain types which are better on average occasions.

These are lures which closely resemble the white bass's favorite food—the shad—and in nearly every veteran fisherman's kit will be found the following stand-bys: a pearl wobbler, midget river runts, punkinseeds, an assortment of small silver spoons, spinner and bucktail or pork rind combinations like the ace.

#### FISHING METHODS

Fly casting, light bait casting, still fishing, trolling, spat fishing and spinning are the favorite mediums. Spinning, in particular, is a very effective method because the lighter ¼-ounce lures can be cast further than by any of the other methods. The farther away from the school a fisherman can keep—the better chance he has of taking fish before alarming them.

Trolling can be done with a casting, fly or spinning outfit, provided it is not too light to set the hook. One must be careful, however, not to troll too close to the school if the white bass are surfacing.

On hot days when the water is flat, small shad minnows work the surface and attract schools of hungry white bass from the deeper, cooler water. The frenzy of their feeding can be heard for some distance, they actually make the water boil. When this condition is apparent, anchor ahead of the school and cast across it when it moves by. Be cautious and you will catch a mess of fish.



A record white bass was caught by Mrs. Norman McKenzie at Cedar Bluff reservoir this spring. The bass weighed four pounds, seven ounces. This picture of Mrs. McKenzie was contributed to KANSAS FISH AND GAME, along with a sworn statement of the size of the fish, by her husband, city clerk at WaKeeney.

## First Federal Wildlife Refuge In Kansas Is Established

The first Federal wildlife refuge in Kansas was officially created on June 3 when Assistant Secretary of the Interior Fred Aandahl signed in Washington a formal "notice of establishment."

Known as the Kirwin National Wildlife Management Area, the new refuge is superimposed on lands acquired by the Bureau of Reclamation for the impoundment of waters in connection with the Kirwin Irrigation Project in Phillips county. The area is situated in a shallow valley and contains approximately 10,800 acres of land and water.

Under the provisions of a co-operative agreement signed last year, the Bureau of Reclamation has turned the area over to the Fish and Wildlife Service for the development of the recreational aspects of the area. Access roads, parking facilities, and picnic areas with tables, fireplaces, and comfort stations will be provided. Permits will be granted for boat rentals and the sale of bait to fishermen. Camping and trailer parking will be permitted. Fish and Wildlife Service representatives will co-operate with citizens of the area in developing future plans for wider recreational uses as the need arises.

For waterfowl use, the Kirwin management area is strategically located in the Central Flyway, lying between the refuge areas of western Nebraska and the famous Salt Plains National Wildlife Refuge of north-central Oklahoma. Both ducks and geese will utilize the area, although management for geese will be of primary importance because of the critical habitat situation for these birds in the Central Flyway. Given time to establish waterfowl use, especially geese, Service officials predict that the Kirwin vicinity can become one of the best waterfowl shooting sections of Kansas.

It is planned that a part of the reservoir area will be opened to public shooting, although this may not be possible for three or four years until the goose population has been built up. Public shooting will be administered by the Kansas Forestry, Fish and Game Commission.

The reservoir will also be open to public fishing in accordance with state laws and regulations.

The establishment of the Kirwin National Wildlife Management Area is in keeping with the multiple-use concept being applied to projects of the Department of the Interior. In this case, wildlife management can be co-ordinated with recreational use.

The Fish and Wildlife Service also announced approval of an additional waterfowl refuge in Kansas—

the Quivira National Wildlife Refuge, located in Barton and Rice counties.

The acquisition of 1,440 acres in what is known as the Great Salt Marsh area in those two counties was approved under purchase agreement to form the initial tract for the Quivira National Refuge.

The largest frog is the Goliath frog of West Africa. Its large thigh bones are highly prized by the natives for use in ceremonial rites.

There is nothing better than plain castor oil for weatherproofing leather footwear. Apply it warm to dry leather.

The jumping shrew of Africa is said to sometimes curl up and roll along instead of jumping like a kangaroo.



A chip off the old block! Joe Larrabee, 8-year-old grandson of Lee Larrabee, former chairman of the Kansas Forestry, Fish and Game commission, shows the three rabbits he bagged recently with his .410. Joe is the son of Mr. and Mrs. Robert Larrabee of Liberal

## Construction Moves Ahead at Marais des Cygnes Wildlife Refuge



With the advent of favorable construction weather, work at the Marais des Cygnes Wildlife Refuge moved into high gear. The refuge in beautiful Linn county will increase the fishing waters of eastern Kansas, as well as provide a tremendous increase in nesting and resting places for migratory waterfowl. In addition, the refuge will conserve river flood water, an important factor in drought-damaged Kansas.

A view of the refuge land and the river separating the initial reservoir units, A and B, is shown in the top left picture. The view is northward from the new Trading Post bridge. This is a popular camping and fishing spot.

Heavy construction work now in progress on the dikes may be seen in the left center and bottom pictures. Overflow water from the river will be diverted into the reservoirs for the benefit of wildlife. A minimum of trees is being destroyed in the construction work, but some brush must be cleared in the overflow area (bottom picture).

One of the control structures, key devices in the management of the refuge, is pictured at upper right. Recent rains have filled the canal of the inlet on Unit A.

The much-used highway roadside park in the center right picture is located at the east edge of the Trading Post bridge. The road at the back of the picture leads to the levee of Unit B, now under construction.

The lower right picture shows the potentiality of Marais des Cygnes project. This small water area, which will become a part of Unit A, is rich in vegetation highly favorable for migratory waterfowl. Even this small area provided for the wintering of between 300 and 500 mallards and pintails and nesting grounds for many small ducks this spring. The surrounding woods in this area are heavily populated with squirrels and rabbits and contain several deer. One mule deer was seen watering here during the drought last fall.

# Fish Conservation Fundamentals

By R. W. ESCHMEYER, *Sport Fishing Institute*

## Habitat Improvement

(Third of a Series)

To thrive, fish need water.

This was the extent of our thinking some decades ago insofar as habitat is concerned. Now we fully realize that there are other habitat needs. The fish must have proper water temperatures and the waters must be suitable chemically. Food must be available in suitable amounts. Spawning facilities must be present if we expect to have natural propagation. Some species do not remain in an area unless they have places where they can hide.

Each species has its own environmental needs. These must be recognized if our habitat programs are to be effective. Unfortunately, for many species, we still don't have as complete a picture of these needs as we should have.

In laying out our streams and lakes, Mother Nature showed no particular interest in supplying all the needs of the creatures which would inhabit the waters. But the species themselves, over long periods of time, became adjusted to the situation, or disappeared. Consequently, most of our waters were suitable for desirable species of one kind or another when settlement began. Though there are instances where we can improve on the habitat which Nature provided, most of our environmental improvement work is really restoration—correcting deficiencies which we, ourselves, have created in the fish habitat.



## HABITAT DESTRUCTION

The extensive destruction of fish habitat by man's activities need hardly be mentioned—we're all aware of it.

As an example, a survey made by the Soil Conservation Service in Whitewater River Watershed in Min-

nesota indicates that originally this watershed had 150 miles of good trout stream. By 1941, as a result of erosion, the watershed had only 60 miles of trout streams and this mileage was in poor condition.

Pollution, as well as siltation, is a major destroyer of fish habitat. Many a stream or lake is no longer suitable for fishing because of the discharge of untreated or inadequately treated domestic or industrial wastes.

## RESTORATION IS POSSIBLE

We now have good examples of habitat restoration. An excellent one is in the Clark National Forest in Missouri, where the Forest Service is gradually converting the watersheds back to their original conditions insofar as siltation and in-soak are concerned. According to a report in the Forest Service files, here's what's happening in the Clark Forest:

A half of this forest area can now take heavy rains up to two inches directly into the soil, without run-off. In this area many streams and springs have returned to permanent flow, instead of being intermittent. The streams are now referred to as "milky," not "muddy," following heavy rains. During a recent dry summer the flow at one point in the Current River was 1,600 feet per second, as compared to 1,250 feet per second in the less severe droughts of 1934 and 1936. Plant and animal life in the stream is in much greater evidence now than in 1936. Fishing has improved, and on several of the waters is reported as the best in the memory of the present generation of anglers.

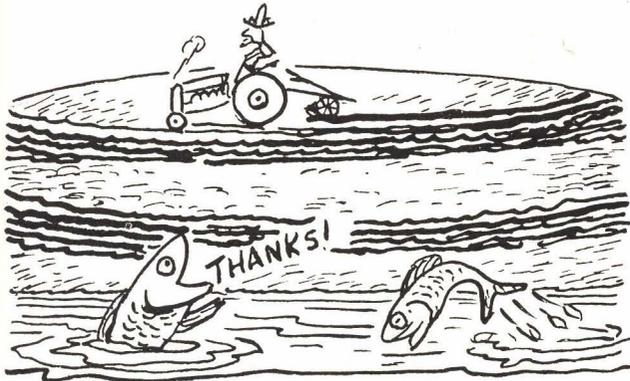
## STREAM IMPROVEMENT

In those remaining instances where man has not tinkered with the watersheds, habitat improvement usually is not needed. Here, except in arid and semi-arid regions, the stream flow tends to be relatively constant, because of permanent flow of the springs. Gravel riffles and deep pools are generally available, and there are plenty of hiding places for fish.

This observation gives us an important clue with respect to proper stream management. It's pretty much a matter of watershed use. Where the soil is kept on the land, through proper land use, and where a substantial part of the rainfall soaks into the ground to appear later as cool spring water, a stream will usually restore itself—provided livestock is fenced out.

Where we have heavy siltation because of poor farming, improper forest use, over-grazing or faulty road building, and where we have excessive run-off,

resulting in high waters at times and little or no flow at other times, the use of stream improvement structures is of little or no value.



There are numerous instances where stream improvement structures such as V-dams, covers, deflectors, etc., are helpful. There are also many instances where these artificial improvements don't justify the costs involved, either because they are not needed or because they do nothing to correct the basic problem of siltation or highly irregular stream fluctuation. Too, some amateur attempts at stream improvement may actually do more harm than good.

Before stream improvement (by installing devices) is attempted, the situation should preferably be studied carefully by someone familiar with fish needs and with water-flow and siltation problems.

We are not trying to minimize the value of stream improvement devices. We are implying that where such devices seem to be badly needed, the basic trouble usually lies in the watershed, not in the stream bed itself. We can channel silt downstream, but this is not a good substitute for preventing its entrance into the stream in the first place. We can create pools in streams which have very low water stages, but that's no substitute for the rapid and constant flow of springs resulting from having much of our rain soak into the soil. We can remove obstructions to migrations of anadromous fishes, but no amount of "improvement" will restore good habitat so long as the water is polluted by industrial or domestic wastes.

#### LAKE IMPROVEMENT

Numerous attempts have been made to improve habitats in lakes, by use of such "devices" as brush shelters, spawning beds, planting of aquatic weed beds, fertilizing, etc. Some have been helpful; some haven't.

Brush shelters do attract young fish. But, all too often, the fish which find shelter there are species such as sunfishes and perch, which tend to be over abun-

dant and stunted. The value of sheltering young fish is subject to question. But, the shelters do attract big fish of some species (such as black crappie) to the vicinity and permit a greater harvest of these fish. In big waters particularly, only a small percentage of these fish is harvested. Here, concentrating them to simplify the catching of these fish is a good conservation measure.

We once believed that weed beds in lakes and ponds were vital to fish life. This observation was erroneous. Today, farm pond specialists don't want coarse aquatic vegetation in ponds. Too, large TVA storage reservoirs have produced good supplies of fish without aquatic "weeds."

From the standpoint of fish production, weed beds in general may do more harm than good. They protect the young pan fish from their predators and thereby cause overpopulation. But, in all except small lakes, weed beds (unless too abundant) help decidedly in harvesting the adult fish. The weed beds tend to concentrate the catchable fish, so that anglers can take more of them.

Over-abundance of vegetation is a major problem in some waters. Fertilizer has been used effectively for weed control in some instances, and certain herbicides have also been used extensively. There's still no simple, universal method for control of overabundant aquatic vegetation.

Gravel spawning beds for bass have been placed in some waters. There's proof that fish use them, but we still know of no concrete evidence to prove that introduction of spawning beds has increased the bass population.

Fertilizing with commercial fertilizer has greatly increased the fish crop in ponds in some areas, especially in Alabama. Elsewhere it has been of questionable value. For example, here's a paragraph from an article (by Rod Cochran) in a recent issue of the Ohio Conservation Bulletin:

You hear a lot today about adding commercial fertilizer to farm ponds. As far as fish production is concerned in Ohio, you can forget about it at present. As already stated, the main problem with most ponds is that they are overpopulated. This is an indication that the ponds are already fertile enough to produce more fish than are harvested.

Water-level management offers a number of possibilities, such as raising the level to provide better marshy border for northern pike spawning; or lowering the level for a period to permit land vegetation to grow on the temporarily exposed shoal.

There are other lake improvement possibilities, such as adding lime to over-acid waters, or pumping nutrient materials from the deep bottom (where they are of little value) onto the unproductive shoal areas

(where they are valuable), or removing ice cover to prevent winter-kill.

Like stream improvement, lake improvement offers definite possibilities. And, like stream improvement, it has definite limitations.



IN GENERAL

Various habitat improvement devices and manipulations have a definite place in fish management, but the important fish habitat improvement problem is one of general land use. With the limited funds available for fish work, the fishery workers can't begin to restore the watersheds. The problem is far too big, and too costly.

But, watershed improvement is progressing rapidly. The improvement is needed for other reasons.

Farmers must keep their all-important topsoil on their land. It's their life-blood. Too, they must manage their land to permit a considerable amount of rain-water in-soak, so the plants will have water in the long periods between rains.

Over-grazing hurts the range—land and pasture—it reduces future carrying capacity.

Forest fires destroy future timber values—as well as harming fishing.

Pollution abatement is needed because of other water uses—recreation, drinking water, and the growing need for large amounts of clean water for certain industries.

Because of the increasing improvement in the use of our soil, water, and forest resources, we can expect a gradual improvement in our fish habitat. There's another relationship between wise use of these resources and fishing. Without our high standard of living, maintainable only by the future wise use of these resources, there wouldn't be sport fishing. Hungry people don't fish for fun. They seek food, not relaxation.

In general, the use of artificial devices in the water will benefit the fish habitat in some instances. Better

use of the watershed and its resources will benefit the fish habitat in most instances. Though it might seem far-fetched at first thought, our soil conservation programs, forest fire prevention programs, etc., are all-important to the quality of your fishing.

(Next: Population Manipulation)

## Worms Without Soil

The best way to raise worms is not in manure and compost as has been believed for a long time, but in materials rich in proteins, fats, and carbohydrates. "Worms without Soil," in the April issue of *The Fisherman* magazine, by Earl Franklin Kenamer, gives the formula and method for raising worms.

The worm beds should be located in a well-drained area, sloping slightly, if possible, near a hydrant or other water source. The pits should be dug 12 to 15 inches deep and about four feet in width—so that you can reach the center of the bed easily. The sides and ends of the pits should be lined with rot-proofed boards and a simple shed roof constructed over the pits to protect the worms.

The bedding material must serve two purposes: Food and filler. One bed formula which has given excellent results is: 75 parts cottonseed meal "fine" bran, 10 parts soybean meal, 10 parts steamed bone meal, and five parts wheat shorts. Another mixture that is similar is five pounds cottonseed meal, five pounds peanut meal, one pound cornmeal, and two pounds wheat shorts.

The bedding material should be allowed to rot by wetting it down—wet but not soggy—and turning it daily. No worms should be stocked in the bed mixture until it has ripened sufficiently and all of the heat is gone. This procedure sometimes takes five or six weeks.

The English redworm is best for stocking because it is more prolific and adaptable to artificial production methods. The beds should be stocked with 20 to 30 worms per square foot of bed surface. Within three or four months you will be growing the maximum number of worms the bed will support.

To remove fish odor, rinse hands in vinegar; to deodorize a skillet after frying fish, boil a little vinegar in it.

The pronghorn, commonly called an antelope, is not an antelope. It belongs to a separate family and has no relations. It is the most truly American mammal known.

## Your Game Protector Is a Jack of 31 Trades

Many people want to know how they can qualify as a game protector. Now, at last, we can give a specific answer.

Quoting Curtis S. Allin, regional supervisor of law enforcement at Boston for the U. S. Fish and Wildlife Service, we list all—well, nearly all—the requirements.

A game protector must be:

*Biologist*—Naturally, he's got to know about plants and animals,

*Anthropologist*—And about men,

*Entomologist*—Bugs and insects,

*Conchologist*—And oysters, clams, mussels,

*Herpetologist*—Snakes, too,

*Mammalogist*—This covers most of the animals,

*Paleontologist*—And this takes care of the fossils in the central office,

*Ornithologist*—He'll have to know about birds,

*Ichthyologist*—And, of course, fish,

*Policeman*—He's one of these, too,

*Investigator*—Lots of this involved,

*Attorney*—To handle his cases in court,

*Sprinter*—So he can run down violators,

*Mechanic*—To keep his car in shape,

*Boatman*—Plenty of work afloat,

*Pilot*—For surveys by air,

*Radio operator*—Long distance work,

*Orator*—He'll have to address many organizations,

*School teacher*—Youth groups must be taught conservation,

*Doctor*—To handle mishaps in the woods,

*Engineer*—He'll have to offer sound advice on dam and fish pond building,

*Farmer*—And on crops and cover for wildlife,

*Typist*—Hundreds of reports to write,

*Diplomat*—To keep himself and the department out of hot water,

*Moving-picture machine operator*—For visual education,

*Forester*—He must know timber and forest-fighting,

*Guide*—And find his way to remote districts—and back,

*Salesman*—He'll have to sell himself and his message,

*Furrier*—Identify and classify furs and pelts,

*Preacher*—Deliver sermons on the golden rule,

*Accountant*—And stretch his pay check to meet the expense of such a diverse and exacting job.

Lack of oxygen, caused by ice cover and water plant metabolism, is the principal cause of excessive deaths in fishes during winter.

## Dameron Retires



C. R. "Dinger" Dameron retired June 1 as superintendent of the Ottawa County State park because of ill health. During his 19 years on the job he worked tirelessly to keep the park in tip-top condition for visitors and constantly improved the facilities of the park. Mr. and Mrs. Dameron moved to California shortly after June 1. Harold Peterson replaced him as Ottawa County State park superintendent.

It is said that prairie dogs bury their dead and also any other small animals that die in their villages.

The common field mouse is short lived. Only the hardiest live longer than one year.

Sagebrush, often considered an evil weed by many, is a good indicator that the soil on which it grows is fertile and good for agriculture when water is applied.

It has been said that there is only a six-inch layer of topsoil between man and starvation. Once the precious topsoil is lost through abuse, man's tenancy on this earth is finished.

The last passenger pigeon died in the Cincinnati Zoological Garden in September, 1914.

## Outdoor Notes

By JOE AUSTELL SMALL

### Quiet, Please!

Fish hear by feeling the vibrations of sounds. Any noise on or in the water will frighten them. Few fishermen realize just to what extent this particular type of quietness plays in the difference between a full and an empty stringer. Talk as much as you like, but hold noise that might have any contact with the water to an absolute minimum. When fishing from a boat use an old piece of carpet under you feet to muffle the noise of scraping shoes. Keep oarlocks from creaking by "greasing" them with a piece of paraffine. It is more effective and lasts longer than oil or grease. Fish towards the sun. The moving shadows of a fisherman, a boat swinging at anchor, an anchor rope, a rod or even your line puts a wary bass on guard. Quiet, please—and watch the old stringer fill faster!

### Keeping Frogs Alive

The secret of keeping frogs alive is NOT to keep them wet or damp as is usually done. Place them in a wooden box or a basket and keep the container where it is dark and cool. On very hot days, and in the boat, wrap a damp burlap sack around the container. Evaporation will keep your frogs cool and lively.

### Fishing Tip

Nylon leaders are sometimes hard to straighten out. This can be easily accomplished by drawing them through a piece of rubber. A boot strap will serve the purpose well.

### Keeping Minnows Alive

A little known secret of transporting minnows for long distances is to carry in airtight containers. A milk can with a tight cover is ideal for carrying large numbers. One or two gallon, wide-mouthed glass jars are ideal for carrying smaller amounts. Place fresh water in the container, put in minnows and screw lid on tightly. When jar is opened, change water and replace tight cover. Minnows may be carried safely and generally will remain lively for 24 hours by using this method.

## Humid Machines

Trees and flowers are nature's humidifiers. Waters taken in by roots that aren't needed are given off through the leaves. Through this process, called transpiration, millions of gallons of water are continually given off into the atmosphere.

## Don't Get Hooked!

If you have in mind a mess o' hooks for early fishing, remember—something NEW has been added. Don't let some salesman "hook" you by selling you the old kind.

The distance from barb to shank in this new hook, which is called "Big Bend," is twice what is found normally. The barb design is in the horizontal plane rather than the vertical. The manufacturer explains: "The shank length of the common Carlisle hook and ours is the same, but we have moved the bend and hooking area twice as far away from the shank and have placed the point in a direct line with the eye. This makes it possible to catch twice as many fish for obvious reasons—Big Bend has twice the hooking area, will catch fish from either side or in front, will eliminate lipping, is twice as effective at preventing shanking, makes it impossible for the fish to spit out the hook, and catches nibblers. This development is the first improvement of the regular Carlisle pattern in over 50 years!

They are offering a special \$2 Combination Assortment of both standard and the new Carlisle pattern for \$1. This is an advertising stunt and really is a bargain, half-price offer. If you want this field testing kit, send a buck to the Big Bend Hook Co., P. O. Box 1265, Sioux City, Iowa, and ask for their special Combination Assortment.

## Dirty Skunks on Increase

A group of gangsters entered a country tavern where several fishermen were telling stories and enjoying their beer. "We want privacy!" the leader divulged. He drew a pistol and fired twice. "All you dirty skunks get out of here!" The customers rushed out—all except a Texas cowboy who stood calmly watching the scene.

"Well?" snapped the gangster, waving his smoking gun.

"Shore were a lot of 'um, wasn't there, Podner?" the cowboy drawled.

## KNOW YOUR FRIEND--THE GAME PROTECTOR



A. W. Benander

These two game protectors, A. W. Benander, left, and Eddie Gebhard, have served with the Kansas Forestry, Fish and Game commission for the past 16 years.

Benander works in Shawnee, Wabaunsee and Jackson counties and lives in Topeka. He is in a field that he enjoys thoroughly since his main hobbies are hunting and fishing. He is a veteran of World War I.

His family includes his wife, Alberta; two sons, Duane and Dean; and one grandson, Kent Duane.



Edwin Gebhard

Edwin Emil "Eddie" Gebhard is assigned to Ford, Gray, Seward and Meade counties. Although a native of Wisconsin, he lived in Liberal many years and was in the automotive business there before becoming a game protector. He was on leave from the fish and game department for three years during World War II to serve in the military police corps. Gebhard and his wife, Helen, live at Meade.

Like another well-known Kansan, the one in the White House, Eddie lists his favorite hobby as cooking.

### Two Don'ts

A swivel snap that is too large is a good way to let Mr. Fish know there is something wrong with the bait; and a gut leader is the best way to convince him you have nothing up your sleeve.

### All-around Repair Kit

Place a small bottle of clear nail polish in your tackle box. It's ideal for quick repairs on chipped plugs, loose rod windings, damaged windings of bass plugs, flies, etc. A drop of this polish on a mosquito bite will stop the itching almost instantly.

An Iowa conservation officer was writing an arrest report on a man caught fishing without a license. He asked the man what his name was.

"James," the man answered, "from Fort Scott, Kansas."

"And your first name?" the agent asked.

The man resignedly took out his wallet for his social security card.

"You aren't going to believe this, but here it is," he said.

And there it was indeed. The agent had arrested Jesse James.

## KANSAS WILDLIFE

### The Badger

Prepared by MARVIN SCHWILLING,  
Game Biologist, Fish and Game Commission



—A Jim Sherman Photo.

#### *Taxidea taxus*

The badger, a large member of the weasel family, is an animal of unusual form. It has a broad flattened body set on short, stubby legs with a sharp pointed nose and a short, stubby tail. In size it would be near that of a coon, about 29 inches long. It is ill-tempered, sullen and a vicious fighter, as are most, if not all, of the members of the weasel family. His thick fur and low center of gravity makes the badger more than a match for dogs and other animals much larger than he. Dogs soon learn to have much respect for this savage fighter.

The general color of the upper parts of the badger is a grizzled steel gray with a predominant white stripe arising on the forehead and continuing to or slightly beyond the shoulder. The face, predominantly marked with dull black, has a whitish patch on each side before the eye and ear.

As a pet, the badger usually is the worst imaginable. However, I know of a farm boy who obtained a baby badger at a very early age and raised it to be a playful companion. This is unusual, however.

Badgers feed principally upon small rodents. Studies made in the state of Michigan show rodents such as field mice, rabbits, ground squirrels and deer mice made up 96.8 percent of their diet. Squirrels, insects, bird and turtle eggs made up the remaining 3.2 percent. Studies in the lake and marsh country of Iowa show ground squirrels and mice to be their

principal food. In Texas, they have been found to feed mainly upon rodents such as pocket gophers, kangaroo rats, wood rats, and mice with grasshoppers, beetles, scorpions, and lizards being taken occasionally.

Since badgers feed primarily on rodents that live underground in burrows, they must dig for their food. Their short, powerful legs, with inch-long claws on the forefeet, are apparently ample equipment, as we often see many holes dug in a small area where this animal has been feeding on man's worst pest, the rodents. Scouting that the burrow is occupied the badger's sharp claws dig down with lightning speed and seize the frightened pest.

If we would consider that at the bottom of each of these badger-dug holes, a rat, mouse, gopher, ground squirrel or other pest was destroyed, we would probably think twice about condemning this animal as a nuisance because of its diggings. True, these large mounds of dirt as well as the large hole is a constant hazard to the fast-moving farm equipment of today. When a tractor or other piece of fast-moving equipment accidentally hits one of these holes its operator may be nearly thrown from the machine, or a breakdown of the equipment may even result. Thus a beneficial animal becomes a much-disliked pest in much of our farming country. Even in ranch country occupied by badgers, a man on horseback must be constantly on the lookout for these holes lest his horse step in the hole and break a leg.

A man on foot can easily overtake this slow runner, whose long hair drags the ground as he runs. But no badger is easily caught. It will fight viciously when overtaken.

Badgers seem to mate for life, or until separated by the death of one. Their young, numbering from one to five, are born in May or early June in Kansas and may be found in grass-lined nests of their underground burrow. Although these animals are to be found over much of Kansas they are much more abundant on the open plains of the West than in the more heavily-timbered areas of the East. They may rarely or never be seen in the extreme eastern sector.

The badger is considered a fur-bearing animal. As recently as 1933-'34 the pelts were worth an average of \$10.81. Thus, many were taken by trappers for their fur and this helped keep their numbers in check. Today, the pelt or fur is of little value, probably no more than 50 to 75 cents. As a result few are taken by trappers and they are becoming overly abundant.

The name badger is said to be derived from its peculiar white head stripe, or badge.

## 24,655 Kansas Scouts Work in Conservation

The year 1954 was designated "Conservation Good Turn" for the Boy Scouts of America. Here is a report of the conservation work of the scouts in Kansas:

- 930 units participated in "Conservation Good Turn."  
24,655 boys and leaders participated.  
358 projects in soil and water conservation were carried out, including:
- 112 eroding gullies worked on
  - 44 eroding stream banks worked on
  - 93 acres of land planted in grass
  - 98 soil conservation talks given
  - 73 exhibits built.
- 409 projects in forestry were carried out, including:
- 37,245 trees planted
  - 192 acres of woodlot improved
  - 2 forest fires fought
  - 12,931 fire prevention posters distributed
  - 39 exhibits built
  - 43 forest conservation talks given.
- 575 projects in fish and wildlife conservation, including:
- 2 rat control projects carried out
  - 6,375 feet of hedgerows planted for wildlife
  - 24 fish conservation projects carried out
  - 10 fish derbies held
  - 2,125 feet of stream or lakeshore improved
  - 5,576 food shrubs for wildlife planted
  - 1,029 nesting boxes built and set out
  - 154 brush piles built
  - 77 exhibits built
  - 67 wildlife conservation talks given.
  - 225 projects in outdoor manners, including:
  - 5,141 outdoor code posters distributed
  - 27 exhibits built
  - 77 talks given
  - 24,056 hours spent helping conservation officials
  - 115 gun safety demonstrations given
  - 171 boat and fishing safety demonstrations given.

## Organize Sportsman's Club at Walnut

A new sportsman's club has been organized at Walnut, known as the Community Sportsman's Association.

Officers elected were: Charles Goodinson, president; Milton McClintick, vice-president; Raymond Coester, secretary, and Richard Mein, treasurer.

Considerable enthusiasm in the new club is reported.

## Snake Bite

It is not a pretty thought, but snake weather is upon us and this may be your year to be listed among those bitten. If you know what to do instantly, serious difficulty may be prevented.

The important part of snakebite treatment, of course, is removing the venom. The quickest way to die after a poisonous bite is to take a drink of alcoholic beverage. First, tie a ligature, tourniquet style, above the bite. A short piece of rope, shoestring, or necktie is usually available. Take out your knife and make a plus across each fang mark. Then connect the two holes. Apply suction in some manner. A rubber ball with a hole to fit over the mound will do. If you don't have a ball, or suction cup, use your mouth if you have no cuts or sores in it. After you have removed all venom possible, bandage and see a doctor quickly. BE SURE and loosen the tourniquet every ten minutes for about three seconds duration.

### "PETE"

A knock sounded softly at God's garden gate

At the kennels of purest gold,

O' please kind Master to let me in

I am weary, I'm weak and old.

My name is Pete! I am Hank's old dog,

I have done my master kind.

For never was there, in the world below,

A dog with a friend so fine.

Now may I dream the hunter's dream

With the ones that have gone on before?

There was Mack and Phil; there was good old Don,

There was Jake—the best I'm sure.

We have roamed the fields,

We have stood at point,

We have done our friend, Hank, proud;

And now we stand at the judgment seat;

Please, Master, are dogs allowed?—*Blanche Mann.*

(NOTE—The above poem was written for Hank Palmer, well-known sportsman at Atwood, by his daughter, in memory of Mr. Palmer's last pointer. Mr. Palmer is 88 years old and had hunted until he reached the age of 85, when his eyesight began to fail.)

A bird's two eyes often weigh more than its brain.  
The ostrich's eyes often weigh more than twice the weight of its brain.

It takes 3,000 cocoons to make a pound of raw silk.  
The worm which spins each cocoon eats fifty times its own weight in mulberry leaves.

## News of Sportsmen's Clubs

### Louisville Club Elects New Officers

Guy Rowdybush was named new president of the Louisville Rod and Gun club at a recent meeting.

Other officers are Elmer Younge, vice-president, and Keith Blankley, secretary-treasurer.

The Louisville club sponsored a sport show May 24. It included a professional casting and spinning demonstration and sporting goods displays, with door prizes and special drawings for children. The proceeds were used for park improvement.

### New Officers Elected By Cheyenne Bottoms Club

The Cheyenne Bottoms Sportsmen's club elected several new officers at a recent meeting of the directors conducted by Phil Hohl, president. Roy Cornelius of Hoisington was elected vice-president. Clelland Cole of St. John was named a director from Stafford county. Bob Williams of Larned was re-elected secretary.

It was reported the association has approximately 500 members. October 13 was set as the tentative date for the annual meeting.

### Karl Hugos Re-elected By Riley Association

Karl Hugos has been re-elected president of the Riley County Fish and Game association. Bob Boles was elected vice-president to succeed H. T. Gier and Henry Bonawitz and Paul Moore were named to the board of directors. Outgoing members of the board are Clifford Simpson and L. E. Evans.

Club members named L. E. Erwin and Hugos delegates to the Kansas Association for Wildlife convention in McPherson.

Recent projects have included clean-up work at the new Pottawatomie County State lake and sponsoring the dredging of Sand Lake, on the outskirts of Manhattan. The lake is a kid's fishing pond, sponsored by the Riley County association.

The club membership voted to increase annual dues from \$1.50 to \$2.00 per year to help take care of some of the club's activities.

### Douglas County Sportsmen Reorganize

A reorganization meeting of the Douglas County Sportsman's Club was held this spring at Lawrence.

Officers elected were Warren Price, president; George Francis, vice-president; Tom Gerhart, Sr., secretary; George Dunkley, treasurer, and Paul Coker, membership chairman.

Named to the board of directors were Bud Shields, Harold Preston, Gilbert Francis, Ernest Pontius and Rollin Baker.

### New Sportsman's Club Organized at Waverly

Sportsmen in and around Waverly got together this spring and organized a new sportsman's club, known as the Waverly Sportsman and Wildlife Association.

The club started off with an initial membership of 107 members composed of farmers and businessmen.

Officers elected to head the organization were Charles Perry, president; Clyde Rickman, vice-president; Glen Baumgardner, secretary and Martin Williamson, treasurer.

Elected to the board of directors were Bob Koppenhaver, Elmer Williams, Jr., Olen Dawson, Walter Krause, Johnny Bump, Kenneth Nutt and Howard Durow.

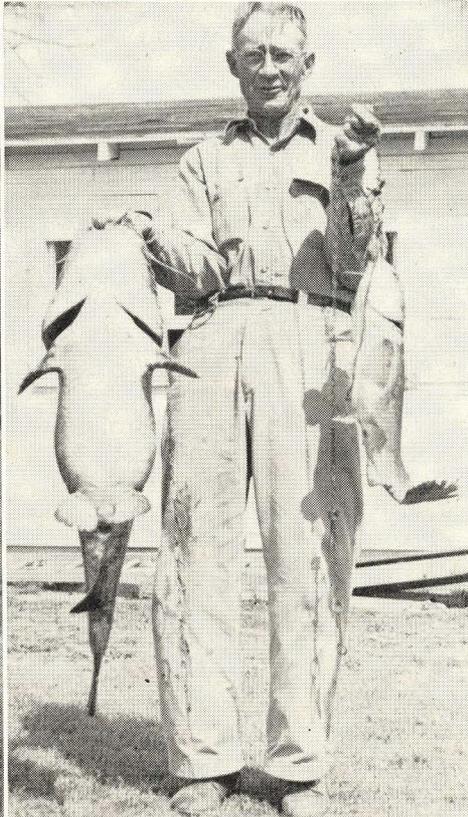
Main purpose of the club, according to the constitution and bylaws, is to conserve, restore and manage the game, fish and other wildlife in the community around Waverly.

### Hiawatha Rod and Gun Club Elects New Officers

At the regular meeting of the Hiawatha Rod and Gun Club in March, new officers were elected as follows: Don Kay, president; Harry Tyrer, vice-president, and Vail Case, secretary-treasurer.

The Hiawatha Club is one of the most active clubs in the state and together with the Robinson and Leona clubs have done much constructive work at the new Brown County State lake.

Granville Bowen, who retired as president of the club and who has been very active in the club's activities, writes that he has been rather proud of the Hiawatha Club and its accomplishments. He has every right to be proud, we would add.



(Columbus Daily Advocate Pictures)

  
*Bragging-  
Size  
Catches*  


Fishing was phenomenal on the Neosho and Spring rivers this spring, as these pictures illustrate. The five beauties in the upper left picture, caught on a trotline by Wayne Allen, left, and Roy Hurst in Spring river, weighed a total of 52 pounds. Individually they weighed 15, 12, 10, nine and six pounds each. In addition, Hurst caught four more, making a total of 84 pounds of flatheads taken in one week.

Five more, upper right, held by Mr. and Mrs. Charles Roper of south of Columbus weighed a total of 44 pounds and ranged in weight from 4½ to 11½ pounds each. Roper caught the four flatheads and one channel cat in Spring river near the Lowell bypass bridge. He used perch and crawfish for bait.

Three fishermen, lower left, caught 45 pounds of catfish on a trotline baited with black perch a half mile south of the Oswego bridge. The largest flathead weighed 34 pounds and the next in size was an 8¾-pounder. The fishermen are, left to right, Leon Ballenger, Marvin McKee and the Rev. Neal Morris, all of Columbus.

J. N. Pauley of Columbus, lower right, with his son Eugene Pauley caught the 30-pound and 4½-pound flatheads pictured one Saturday night this spring. The big one put up a 20-minute battle. Pauley was using a perch weighing about a pound as bait.

# A LAKE GETS A NEW LEASE ON LIFE



(Photos by Jean McLean, Dighton)

First steps in the rehabilitation of Scott County State lake by the fish and game commission are shown in these pictures. The water level of the lake was lowered to concentrate the fish in a comparatively small body of water. In the top left picture the crew launches a boat to encircle an area with a 300-foot net of 2-inch mesh. Below, the crew is ready to pull the seine in by hand.

Rough fish, mostly carp and carpsuckers, are tossed on the bank (upper right) to be taken by spectators who want them. The game fish already have been removed with dip nets and transferred to the fish truck for delivery to other lakes and ponds.

Lower right, the "fishermen" carry home sacks-full of carp.

Sometime during mid-summer, after all rough fish have spawned, the remainder of the fish in the stream channel through the lake will be killed and plant growth started on the lake bottom. The lake will be refilled and restocked in early fall.

One female mouse has been known to have produced 78 young before her first birthday. Were it not that virtually all of these rodents are killed before they reproduce, in a large measure by hawks and owls, then teeming millions would soon cover the earth.

Swans and geese usually mate for life, while ducks re-mate each year.

Bats are not attracted to lights because of the illumination. They catch the insects which are thus attracted.

The national forests of the United States returned to the Treasury last year \$1,194,000 more than the government paid out for their protection and management.

The difference between a deer and an antelope is in the horns. Deer have solid horns while antelope have hollow ones.

Often the following simple, old-fashioned remedy will relieve a headache. Simply burn a piece of cotton string and inhale the fumes.

**ARRESTS—FEBRUARY, 1955**

<i>Name and address</i>	<i>Offense</i>	<i>Date of offense</i>	<i>Fine</i>
Travis Buoy; Houston, Texas	No hunting license	2- 4-55	\$10.00
Lyle L. Casper; Ellinwood	No hunting license	2- 5-55	10.00
Robert Dale Craig; Wichita	No hunting license	2-19-55	10.00
Robert Long; Horton	No hunting license	1-29-55	5.00
L. H. McDaniel; Maize	No hunting license	2- 4-55	5.00
Glen May; Salina	No hunting license	2-11-55	5.00
Loyd Parkinson, Salina	No hunting license	2-13-55	5.00
Junior Pease; Atchison	No hunting license	1-29-55	5.00
Orville Pratt; Augusta	No hunting license	2- 4-55	15.00
Wayne Rathbun; Stafford	No hunting license	2-20-55	10.00
V. E. Richardson; Salina	No hunting license	2-10-55	5.00
Jerry Robertson; Greensburg	No hunting license	2-24-55	5.00
Floyd Savage; Centralia	No hunting license	1-29-55	5.00
Robert Winzer; Augusta	No hunting license	2- 4-55	15.00
Alfred Jackie Cooper; Arlington	No hunting license; hunt and kill migratory waterfowl during closed season	2-12-55	25.00
Billy Joe Fox; Wichita	No hunting license; hunt and kill migratory waterfowl during closed season	2-19-55	25.00
James Hodges; Wichita	No hunting license; hunt and kill migratory waterfowl during closed season	2-22-55	25.00
Guy Mick; Wichita	No hunting license; hunt and kill migratory waterfowl during closed season	2-22-55	25.00
Verle Moores; Wichita	No hunting license; hunt and kill migratory waterfowl during closed season	2-22-55	25.00
A. E. Searles; Hutchinson	No hunting license; taking pheasants during closed season	2- 5-55	25.00
Charles E. Case; Great Bend	No hunting license; shooting rabbits after sunset	2- 4-55	20.00
Fredrick F. Dreiling; Great Bend	No hunting license; shooting rabbits after sunset	2- 4-55	20.00
Mack Magie; Great Bend	No hunting license; shooting rabbits after sunset	2- 6-55	20.00
Jack Miller; Great Bend	No hunting license; shooting rabbits after sunset	2- 6-55	20.00
Howard D. Clark; Great Bend	No hunting license; shooting rabbits from car	2-13-55	25.00
Jack Moulder; Great Bend	No hunting license; shooting rabbits from car; under the influence of liquor	2-13-55	45.00
William E. Frenzl; Claffin	No hunting license; hunting rabbits on a state game refuge	2-13-55	20.00
Herman J. Zecha; Hoisington	No hunting license; hunting rabbits on a state game refuge	2-13-55	20.00
Charles L. Focht; Wichita	Hunt and kill migratory waterfowl during closed season	2-22-55	15.00
Earl Schultz; Chetopa	Hunt and kill migratory waterfowl during closed season	2- 1-55	50.00
Gerald Spaur; Wichita	Hunt and kill migratory waterfowl during closed season	2-20-55	20.00
W. R. (Bill) Mullin; Great Bend	Hunt, kill, possess pheasant out of season	2- 5-55	100.00
James C. Wolf; Bennington	Hunt, kill, possess pheasant out of season	2-10-55	20.00
Donald K. Pound; Great Bend	Shoot and kill pheasant while not on wing from motor car; shoot and kill hen pheasant after sundown	2- 5-55	125.00
Ed Cobeen; Leon	Trespassing on private property	1-14-55	15.00
James Armstrong; Arkansas City	Hunting from roadway without permission of owner	1-23-55	5.00
Jack Cole; Arkansas City	Hunting from roadway without permission of owner	1-23-55	5.00
Clarence Sparks; Wichita	Hunting from roadway without permission of owner	1-23-55	5.00
Robert Hadley; Leon	Trespassing and destroying private property; shooting up a boat	1-14-55	85.00
Virgil Burhenn; Great Bend	Shooting rabbit from car	2- 6-55	10.00
Herman Darnell; Kansas City	Trap, take, sell pelts of fur bearing animals without a valid trapping license	2- 6-55	10.00
Arnold Mark; Spivey	Trap, take, and possess cottontail rabbits in excess of legal daily bag limit	2- 5-55	15.00
Milton Mark; Spivey	Trap, take, and possess cottontail rabbits in excess of legal daily bag limit	2- 5-55	15.00
Donald Steele; Rago	Trap, take, and possess cottontail rabbits in excess of legal daily bag limit	2- 5-55	15.00
Dale Fritts; Wichita	Possession of firearms and hunting in Butler County State Park	2- 6-55	20.00
Charles Armstrong; Topeka	No fishing license	2-23-55	5.00
Richard Woulfe, Jr.; Kansas City, Mo.	Misrepresentation	2- 4-55	25.00

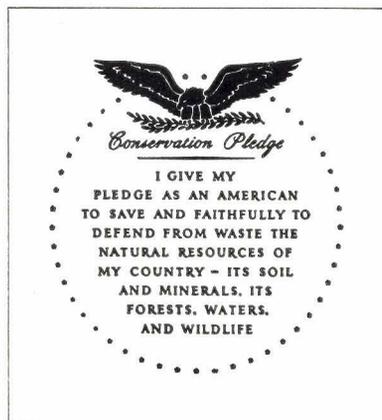
**ARRESTS—MARCH, 1955**

<i>Name and address</i>	<i>Offense</i>	<i>Date of offense</i>	<i>Fine</i>
Abraham Bentley; Troy	No fishing license	3-30-55	\$5.00
Elmer Cobb; Kansas City, Mo.	No fishing license	3-20-55	10.00
S. B. Cobb; Kansas City, Mo.	No fishing license	3-20-55	10.00
Joe Cravens; Kansas City	No fishing license	3-15-55	5.00
Ben F. Gaw; Kansas City	No fishing license	3-18-55	10.00
Charles LaBranch; Topeka	No fishing license	3-11-55	10.00
Carlton E. Mason; Coffeyville	No fishing license	3-12-55	5.00
John L. Miller; Topeka	No fishing license	3-11-55	10.00
Hadley Nation; Pittsburg	No fishing license	3-13-55	5.00
Louis Newhouse; Kansas City	No fishing license	3-15-55	5.00
J. Ozols; Wichita	No fishing license	3- 6-55	5.00
Gene Shoemaker; Pittsburg	No fishing license	3-13-55	5.00
George E. Thomas; Kansas City, Mo.	No valid commercial fishing license and misrepresentation	3-30-55	15.00

Name and address	Offense	Date of offense	Fine
Billy Horn; Madison	Illegal possession of trammel net	3-18-55	10.00
Sherlock Gustin; Highland	Taking catfish (channel) with trammel net	3-24-55	10.00
Oscar Simpson; Sparks	Taking catfish (channel) with trammel net	3-24-55	10.00
Donald Whitesell; Holton	Dynamiting fish	3-13-55	50.00
D. J. Beach; Burlington	Operate more than the allotted number of rods and reels, to wit, four,	3- 2-55	10.00
Clyde Covey; Kansas City	No hunting license	3-17-55	25.00
George Gilbert; Benkelman, Neb.	No hunting license	2-27-55	5.00
James Aggers; Iola	Shooting game birds and animals in closed season: quail and squirrel	3-27-55	10.00
Duane Dolecek; Iola	Shooting game birds and animals in closed season: quail and squirrel	3-27-55	10.00
Paul Hendrix; Perry	Shooting game birds and animals in closed season: 2 pintails and 1 mallard	3- 1-55	50.00
E. A. McKay; Bentley	Shooting game birds and animals in closed season: migratory waterfowl	3- 6-55	10.00
Robert Niswander; Arlington	Shooting game birds and animals in closed season: pintail	2-28-55	20.00
Wayne Turner; Wichita	Shooting game birds and animals in closed season: migratory waterfowl	3- 6-55	10.00
George W. Rampt, Jr.; Kansas City, Mo.	Shoot, kill, and have in possession one pheasant out of season without a hunting license	2-17-55	125.00
C. M. Stafford; Hoisington	Possess loaded firearms in state park and game refuge at Cheyenne Bottoms	3- 6-55	10.00
Urban Hasenkamp; Axtell	Selling furs without a license	12- -54	15.00
James Kidd; Milford	Selling furs without a license	12-17-54	5.00
Charles Luthi; Milford	Selling furs without a trapping license	1- -55	5.00

## ARRESTS—APRIL, 1955

Name and address	Offense	Date of offense	Fine
Jack Keefe; St. Joe, Mo.	No fishing license	4- 2-55	\$5.00
Thomas A. Nelson; Kansas City	No fishing license	4- 2-55	5.00
D. E. Graffham; Coffeyville	No fishing license	4- 6-55	5.00
Gene Martin, Bartlesville, Okla.	No fishing license	4- 9-55	5.00
Robert Spangler; Belleville	No fishing license	4-10-55	5.00
Ralph Carpenter; Troy	No fishing license	4-10-55	5.00
W. E. Vering; Salina	No fishing license	4-10-55	5.00
Vivian Stewart; Bethel	No fishing license	4- 3-55	5.00
Jay Stewart; Bethel	No fishing license	4- 3-55	5.00
Monte McRae; Concordia	No fishing license	4-15-55	10.00
Carl Smith; Atchison	No fishing license	4-20-55	5.00
J. T. Humphrey; Hoisington	No fishing license	4-24-55	10.00
Richard D. Book; Sylvia	No fishing license	4-20-55	5.00
Cecil M. Luttrell; Great Bend	No fishing license	4-21-55	10.00
Harry Randolph; Topeka	No fishing license	4-17-55	5.00
Charles R. McDaniel; Kansas City, Mo.	No fishing license	4-22-55	10.00
Donald Wilson; Salina	No fishing license	4-23-55	10.00
Duane Brese; Abilene	No fishing license	4-23-55	5.00
Ted Lee; Herington	No fishing license	4-23-55	5.00
Raymond Carey; Ottawa	No fishing license	4-23-55	5.00
G. W. Williar; Paola	No fishing license	4-24-55	5.00
Alvin Deemer; Great Bend	No fishing license	4-24-55	10.00
Virgil C. Donovan; Junction City	No fishing license	4-23-55	10.00
Richard A. White; Hutchinson	No fishing license	4-24-55	5.00
Robert Mac Bride Wright; Hutchinson	No fishing license	4-24-55	5.00
John Hyman; Atchison	No fishing license	4-25-55	5.00
Timothy Barnes; Atchison	No fishing license	4-23-55	5.00
Robert J. Fondy; Wichita	No fishing license	4-27-55	5.00
Jon Allred, Jr.; Miami, Florida	No fishing license	4-29-55	5.00
Earl H. Simmers; Kansas City, Mo.	No fishing license	4-20-55	10.00
Horace F. Bass; Great Bend	No fishing license	4-24-55	10.00
Frank Outt; Wichita	No fishing license	4-30-55	5.00
Thomas Biglin; Kansas City, Mo.	No fishing license	4-29-55	5.00
Ralph Campbell; Cedar Vale	No fishing license	4-30-55	5.00
James C. Finuf; Winfield	No fishing license	4-30-55	10.00
John R. Banres; Wichita	No fishing license	4-30-55	10.00
Patrick Franklin Greenlee; Oswego	Dynamite in the waters of the state of Kansas, killing, stunning and wounding fish	4- 7-55	100.00
Harold Edward Pruitt; Oswego	Dynamite in the waters of the state of Kansas, killing, stunning and wounding fish	4- 7-55	100.00
Arch Lambeth; Kansas City	Have set and operate more than one trot line (4 trot lines in Kansas River)	4-16-55	10.00
Emil Schonherr; Leavenworth	Operating as commercial fisherman's helper without proper valid license	4-11-55	12.50
Rob Swain; Dodge City	Swimming in restricted area in Leavenworth County State Lake	4-15-55	25.00
Richard Harrison; Great Bend	Hunting rabbits without a license	4-16-55	10.00
Douglas V. Whiteside; Great Bend	Hunting rabbits without a license	4-16-55	10.00
Robert Hiscon; Kingsdown	Hunting without a license; altering the date on a hunting license	4-17-55 4-18-55	10.00



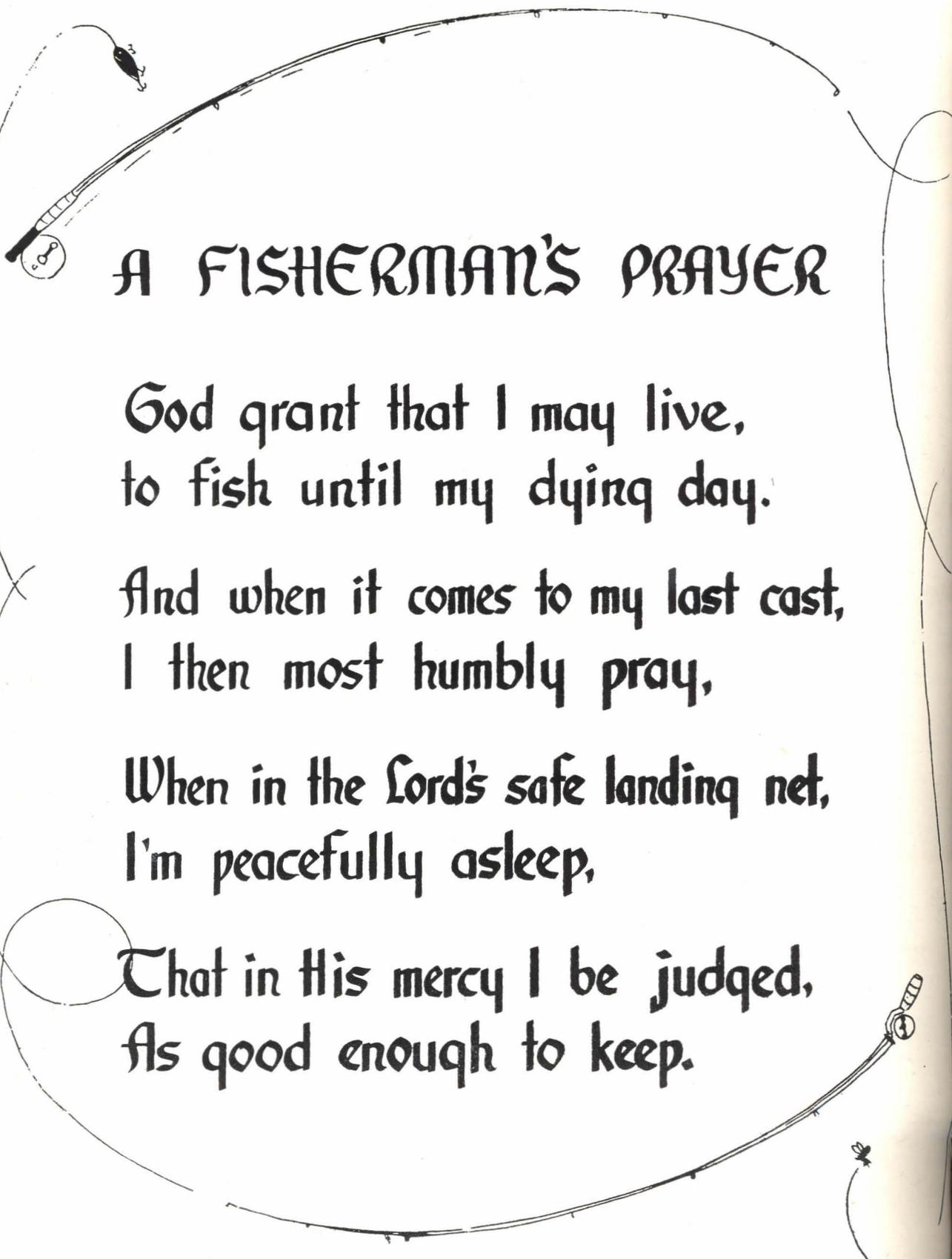
I GIVE MY  
PLEDGE AS AN AMERICAN  
TO SAVE AND FAITHFULLY TO  
DEFEND FROM WASTE THE  
NATURAL RESOURCES OF  
MY COUNTRY - ITS SOIL  
AND MINERALS, ITS  
FORESTS, WATERS,  
AND WILDLIFE

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1955



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## A FISHERMAN'S PRAYER

God grant that I may live,  
to fish until my dying day.

And when it comes to my last cast,  
I then most humbly pray,

When in the Lord's safe landing net,  
I'm peacefully asleep,

That in His mercy I be judged,  
As good enough to keep.