IOWA CONSERVATIONIST

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Cresco Wild Life Club Does A Good Job

By ELMER DAVIS
Cresco Wild Life Club

In the summer of 1943 Cresco was confronted by the same problem that many other towns and cities face sooner or later. Their main recreational area for boating, swimming, fishing, and picnicking that was privately owned was to be disposed of.

The land and water had been occupied by three generations of the Salisbury family, and under their ownership the public had free and almost unrestricted use of the entire farm for recreational purposes. In the summer of 1943 the last of the family decided to quit farming.

All agreed that the land should be purchased and preserved as a public park. Everyone had a different idea as to procedure and consequently nothing was done. Inasmuch as the land was to be sold and there was a chance that the timber would be cut off and a possibility that public use of the area would be prohibited, it was deemed advisable to take steps for immediate acquirement of the proposed park area.

All discussions wound up like discussions about the weather—lots of talk but nothing done. In August, 1943, a few bold members of the Cresco Wild Life Club decided that their club could and would put over the project. They got a 60-day option on the land and went to work. The purchase price for the land and water area wanted was $2,000.

A list of names was made of public-spirited citizens who might give financial aid, and solicitors were appointed to see them. In less than a week financing was

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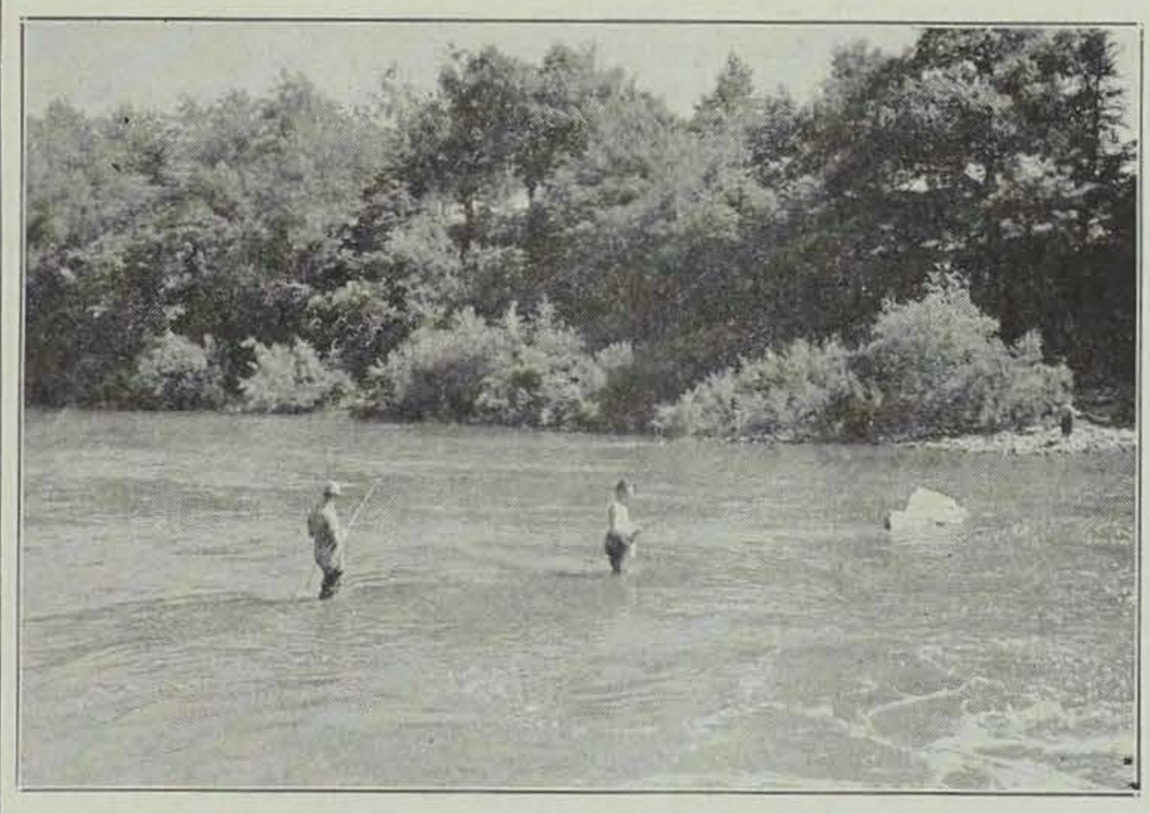
Catfishing Should Be "Tops" This Year, Say Conservation Officers



In wading and bringing the bait to the fish, instead of waiting for the fish to come to the bait, light weight tackle may be used and very little or no weight.

How Soil Conservation Aids Wildlife

By HUGH H. BENNETT
Chief of the Soil Conservation Service
(Reprinted from Audubon Magazine)

If you think that soil specialists are primarily interested in soil and how to save it, you are right, but you must go a little farther, and think of a soil man's interest in wildlife — for practically everything he does in the way of soil and water conservation pays extra dividends in birds and other animal life. If he strip crops a field, the breeding-bird populations shoot up. If he protects the woodlands that hold the soil, he saves the habitat of birds and other creatures. If he restores the vegetation on the stream bank, or heals a gully with grasses or legumes, the animal populations come back. When he makes a pond for fish, or for watering the stock, the birds immediately begin to gather. I could go through the whole list of fifty-nine land use measures which we employ in our nationwide program of soil conservation, and I believe that every one of them would show some benefit to wildlife.

If you travel at home or abroad, you cannot escape seeing on every hand the relationship between proper and improper land use and animal life. This is strikingly noticeable in Latin America where steep mountain lands have suffered severely from ero-

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Virtues of Fresh Chicken Blood Bait Extolled

"Goin' fishin'" to more than half of Iowa's quarter million fishermen means a trip to a nearby river, with a day (or night) spent in tempting channel catfish with a baited hook. This is particularly true during these days of gas and meat rationing because of the fact that within "A" distance of any place in the state there is a good catfish stream, and in each of these streams there are plenty of these whiskery, ration-free fish.

Recent stream surveys have shown bountiful supplies of channel cats in all age groups, from fry to "lunker" adults. During the past winter perfect water stages and clear ice made it possible for conservation officers to make fish population checks on long stretches of streams during their regular patrols. The officers have verified the fisheries surveys and report seeing vast numbers of legal size catfish lying almost motionless under the clear ice. Conservation Officer Paul Leaverton of Humboldt hesitates to report the number and size of catfish concentrated on the Upper Des Moines River in the vicinity of Rutland "because I am a fisherman myself and, knowing the general reputation of anglers, I am afraid to tell the truth; but they were thicker than cobs in a feed lot".

Conservation Officer Harry Rector believes "if the average fisherman could see some of the

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Catfishing "Tops"

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catfish schools numbering thousands that I saw through the ice during the last winter, he would go plumb nuts".

Many of the conservation officers themselves were frankly surprised at the numbers of fish visible in the streams of their territories.

During the last catfish season a patrolling warden on an average day would see and hear something about like this:

A mixed group on a cut bank with steel rods and a worm can against a background of lunch baskets, water bottles, and the family car. In reply to "What luck?" he would hear, "We have caught some short ones, had lots of bites, but haven't yet caught a keeper."

A half mile downstream he would see two fishermen with Calcutta poles and heavy lines fishing in a tangled drift pile. They display a stringer of two or three 12- to 15-inch catfish and to "How's fishing?" reply "Fair."

Still farther downstream and in the center of the current, a fisherman in waders is casting his bait shoreward and letting it drift downstream. The bait lies at the end of his taut line for a minute or two, is retrieved, and the fisherman moves on downstream a hundred yards, where he flips the dead chub into the head of an emergent snag. Bang! and in a few minutes a three-pound cat is added to a string of similar sized fish. "How are they biting?" "Swell!"

Here we have seen the typical novice, fisherman, and expert in action and heard their typical replies to "How's fishing?" Poor, fair, and good. Some days, of course, even the expert is "skunked", and some days the novice replies "good", but fisherman's luck is not all luck by any means.

Experience is the best teacher, but the written "how" is often of help, and the following suggestions on channel catfishing are not for the expert. He needs no help. But the novice may find some ideas that may add fish to his "relaxation, fresh air, and sunshine".

Most of Iowa's catfishing streams are shown on the accompanying map, and the uninitiated may be sure that there are fish in these streams. Many smaller streams also provide good fishing after a season or two of high water or during the early part of the year while there is still plenty of water from spring rains. In fishing these smaller streams worms, minnows, and other small baits usually do not produce the big ones because of the presence of multitudes of sunfish, chubs, minnows, bullheads, fiddler cats, etc., that constantly steal the bait. Larger, tougher baits such as frogs, chubs, and chicken entrails sometimes make creek catfishing an exciting adventure.

Tackle for catfishing depends on what type of angling the fisherman expects to do. A majority of Ike Walton's followers use casting rods, and this equipment is best for all-around pole and line river fishing, especially when used with a heavy line (at least 25-pound test) so that snagged hooks may be pulled loose without a loss of hook and sinker. In fishing deep holes and drift piles a long Calcutta pole with guides and reel taped on enables the fisherman to reach out and gently place his bait in the most likely locations.

In wading (this is productive but dangerous to the uninitiated) and bringing the bait to the fish, instead of waiting for the fish to come to the bait, light weight tackle may be used and very little or no weight.

Catfish are omnivorous feeders and take a wide variety of food. In Iowa waters a survey by conservation officers as to the most productive catfish bait shows fresh blood the number one favorite, followed in order of popularity by minnows, various cheese baits, chicken entrails, fresh shrimp, crawfish, angleworms and nightcrawlers, clams, and frogs. Half a hundred other baits are mentioned, including wallpaper cleaner, leeches, laundry soap, sand toads, and hellgrammites.

To many the fact that blood is the most popular catfish bait will come as a surprise. Blood is a comparatively recent innovation, and more will be told of it later.

Most experts believe that the average catfisherman uses too large a hook and for most baits and most types of fishing recommend a short-shanked hook no wider than one-half inch from barb to shank. When using a weight in catfishing, the lightest weight that will keep the bait in place is preferred. Generally the weight is placed on the end of the line and 12 or 14 inches above the weight a dropper line or leader about 12 inches long with hook attached is fastened to the line. This hook attachment gives a "quick feel" when the fish bite. In quiet water drift and deep hole fishing and in wading, many fishermen use no weight.

Catfish have a tendency to school in deep holes and under or near brush piles, drifts or snags when not feeding during the day. At such times a bait placed in or close by the school is generally picked up, possibly for the same reason that people seldom resist an open candy box or cooky jar between meals.

Dead minnows for catfishing are most often baited by running the hook point down through the mouth, out through the upper part of the belly, and back through the body, the point emerging through the back below the dorsal fin.

Chicken entrails (aged in the shade in fly-proof containers until the intestinal walls are white and tender) are baited by repeatedly hooking a small section tightly until a compact bait a half-inch wide and an inch long is firmly attached.

Fresh shrimp are peeled and an inch long section impaled on the hook with the point and barb exposed. For cats crawfish are baited by hooking from the lower end of the tail on the under side through the body and out through the chest between the legs. With the larger crawfish some fishermen prefer to remove the back shell and the heavy claws.

Angleworms are generally hooked in clusters, with the point being hooked through the worms lightly at two or three points. Nightcrawlers are generally hooked much in the same manner as chicken entrails. Clams are most securely fastened by hooking through the fleshy lip, turning the hook and re-hooking in the soft body parts. Clams are generally cut in sections one-half inch wide and an inch or two long, using the tough lip as the head.

Frogs may be hooked several ways, but probably the most com-

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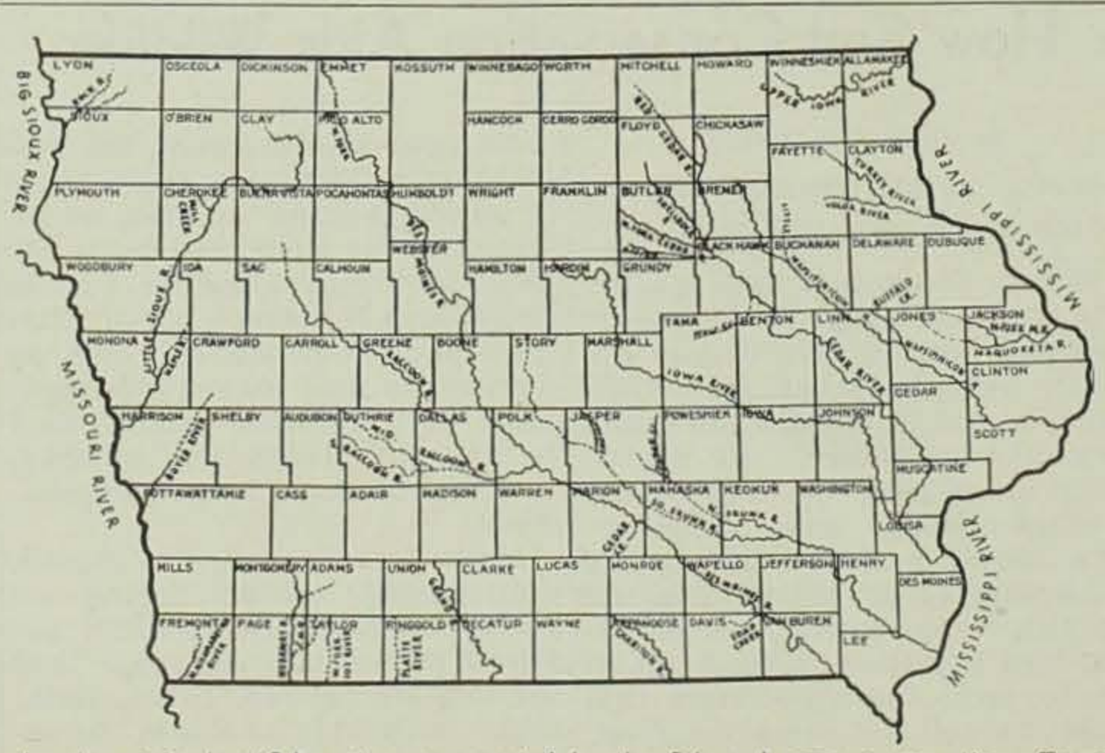
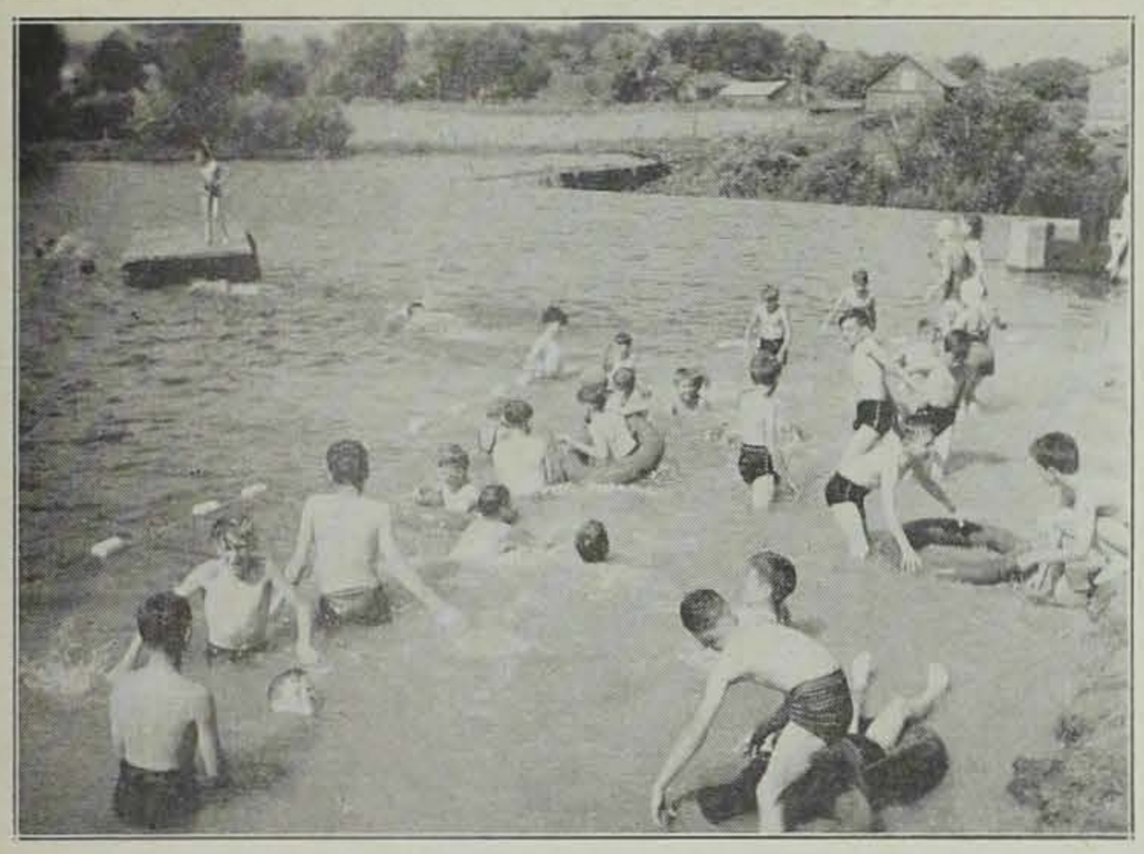


Iowa's principal catfish waters as reported by the fish and game conservation officers. Solid lines represent permanent catfish streams. Broken lines indicate excellent catfishing when water conditions are good.



In 1943 Cresco was confronted with the fact that their main recreational area for boating, swimming, fishing, and picnicking was to be disposed of by its owner.

Cresco Wild Life Club

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complete and $2,000 in cash was on the barrel-head.

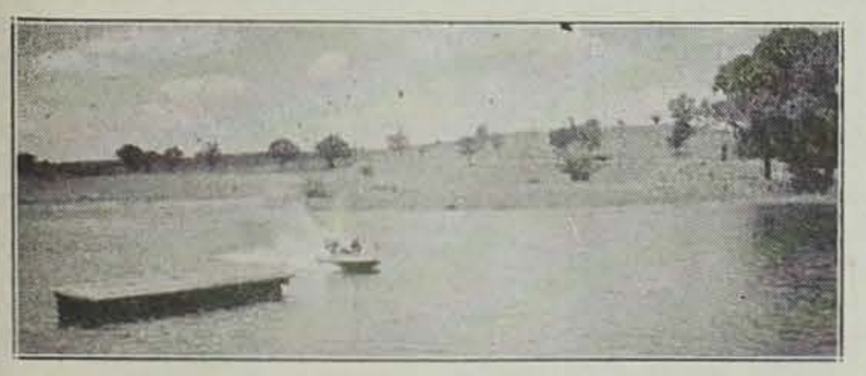
No one was asked to give over five dollars, and on January 1, 1944, the deal was closed and the club received the property. The club at once deeded the land to Howard County, to be used for park and recreational purposes only. Donations continued to come in and at the present date are still being received. Unsolicited donations came from several boys in the South Pacific, as well as from England and North Africa, and over $750 more than the original purchase price is in the club treasury, earmarked for improvements on the new park when such improvements can be made.

The land purchased is just south of the city limits of Cresco on the Turkey River and consists of about 22 acres of virgin timber, mostly oak, hard maple, and hickory, also about 15 acres of water impounded by a dam on the river. The dam itself is included in the purchase.

The Cresco Wild Life Club acknowledges the help and advice given them by the State Conservation Commission, and whenever they think of their park they will think kindly toward Commissioners Ernie Gaunitz and Fred Poyneer, Director Fred Schwob, Bill Albert, Conservation Officers George Kaufman and Glen Yates, and others.

The planning of park improvements, landscaping, etc., will be done this summer by Professor G. B. MacDonald of Ames, state forester.

What has been done in Cresco should serve as a pattern for other towns. Buy up your own beauty spots before it is too late. Don't sit on your haunches and wait for the state or Uncle Sam to give you a park. Every one of the hundreds who gave money have a deep personal interest in the park at Cresco, a personal interest that they would not have had if Uncle Sam or the state had presented the area outright.



The land purchased by the Cresco Wild Life Club is south of the city limits on the Turkey River and consists of 22 acres of virgin timber and about 15 acres of water impounded by a dam on the river, the dam itself being included in the park.

No fish in size or weight can match
The fish I hooked but failed to catch.
Loudly as any I can bray
About the fish that got away.

I'll hold my ground and never move,
Defending what I cannot prove.
And no man till the day I die
Shall lose a larger fish than I!

—Edgar A. Guest.

Catfishing "Tops"

(Continued from Page 34)

mon method used in catfishing is to hook them through both lips with a long-shanked hook, reversing the hook and hooking through the body with the point exposed near the center of the belly.

For cheese bait a small treble hook is generally used, with a small round ball of the dough from one-half to an inch in diameter formed around the points.

Catfish have a tendency to school in deep holes and under or near brush piles, drifts, or snags when not feeding during the day. Even when not feeding heavily, at such times a bait placed in or close by the school is generally picked up, possibly for the same reason people seldom resist an open candy box or cookie jar between meals. In such cases generally two or three cats may be taken in short order, followed by a long wait for more bites. Many experts avoid the long wait for the school to get over the nervousness caused by the forced exit of their neighbors and move on to greener pastures and a new group of fish.

When catfish are on a feeding spree, sometimes during midday but more often in late afternoon or night, they spread out and hunt for food. They lie along cut banks where currents constantly wash out worms or young mice, etc. They work the rocky bottoms in search of crawfish and aquatic insects. They stalk frogs under grassy banks or wait hopefully in the center of the channel for whatever edible matter Mother Nature brings their way. Often at night baits on the surface near shore, particularly along willow batts or drifts where fish are feeding, are effective. Small frogs fished at night on the surface in July are killers.

When to set the hook on a biting catfish can be learned only by experience. Sometimes a large fish will play for considerable time before taking the bait in earnest, and often a small fish will take off without warning. The rule generally followed, however, with small soft baits such as cheese, worms, and blood, is to set the hook quickly. With large, tough baits, frogs, chubs, clams, crawfish, etc., give the fish a little more time.

The late George (Mac) Coon, for 38 years a state conservation officer and a catfisherman who could and did match fish for fish with the best, modestly attributed his success to clam bait, prepared as follows:

Cut clams into bait size. Put two inches of cut clam in a half gallon fruit jar. Add a half inch of brown sugar, one teaspoon of salt, one-half teaspoon of tartaric acid. Add two more inches of clam, brown sugar, salt, and tartaric acid in the same proportions. Continue until the jar is full. Seal and put in direct sunlight, turning the jar end for end at least twice each day for two days. Then put container in a cool basement until ready to use. "This bait has an odor all its own, and while it is not as pleasant as black narcissus, it is certainly effective."

Mac's clams are good bait—one of the best—but the editor, along with hundreds of others, acclaims fresh chicken blood as **the** catfish bait. There are many different blood baits, canned, mixed with feathers, soaked in burlap, etc., and they are fished in various ways, but they are all only synthetics for **the** killer.

Here is **the** bait and the method:

Go to your nearest poultry house with one or more clean buckets. Ask your poultryman to gather the buckets full of clean chicken blood as the chickens are bled. Let the blood coagulate, pour off the watery matter, and the bait may be used successfully in four to six hours and for as long as 24. Blood in a freezer or cooler may be kept in fishing condition for much longer periods of time.

A half gallon bucket half full of blood is carried by each fisherman, suspended from a strap around his neck, the bucket hanging between waist and chin. The bait is about the consistency of Jello and must be handled carefully when baiting. The hook used is a treble hook of fairly large size, and treble hooks taken from old plugs are best. The bait is carefully placed, covering each of the barbs, and is so tender that even a slight shaking of the hook is sufficient to dislodge it.

The tackle used is preferably a Calcutta cane pole six or seven feet long with guides and reel attached. Not less than 75 yards of line is used. It is well to know the bottom contour of the stream, for the blood must be fished off the bottom 12 inches to two or more feet, depending on water depth, and is held up by a large float, generally painted white.

The fisherman at the head of a stretch of good fishing water wades to the center of the current, adjusts the bobber, and carefully places the blood bait on the hook. Ease the bait into the water and strip the line by hand from the reel, allowing the bait to travel with the approximate speed of the current. The line may be stripped to the end and then retrieved.

More often than not the retrieving dislodges the bait, and with each "drift" a new bait must be attached. If two or three "drifts" through the hole do not produce a strike, move to the next water body.

Strikes cannot be felt at the reel seat. Careful watch of the

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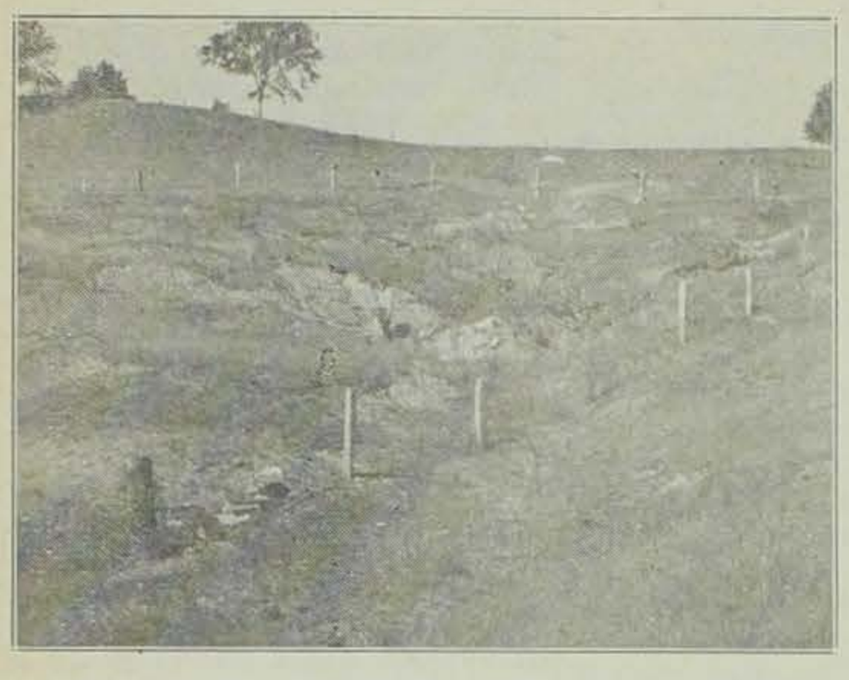

This eroded gully has been caused by stripping the slope of its protective vegetation. Without corrective measures being taken, the gully would continue to encroach upon the productive adjoining land.—S. C. S. Photo.

This is a picture of the same gully in two years after being fenced and planted to black locust, and shows clearly the benefit to wildlife of soil conservation practices.—S. C. S. Photo.

Soil Conservation Aids

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sion, and particularly where former perennial streams have dried up as the result of the erosion following careless deforestation and cultivation of mountain and hill country. In such places, wildlife—both bird and mammal—has become very scarce. For example, in the severely eroded Andean section of Ecuador, as between Loja and Quenca, and in the state of Lara in northern Venezuela, wildlife has become exceedingly scarce. A few birds and mammals are to be seen occasionally, but there is such a scarcity of food and so little cover that there is not much chance for their survival.

Any effective conservation program, such as is being given more and more attention in these regions and in other parts of South America and Mexico, would have a beneficial effect on wildlife, especially birds. Moreover, any considerable improvement with respect to numbers of bird life undoubtedly would be beneficial because of increased depredations by the birds upon insects harmful to agriculture.

When about 10 to 15 years ago, I was studying soil conditions and working on the establishment of improved varieties of cane in Cuba, following the disastrous spread of mosaic disease through fields of crystalina cane, it was everywhere evident that bird life had greatly depreciated in those areas from which practically all the forests had been removed. In passing from cleared country—as cane fields—into remaining stands of timber, the change from bird poverty to abundance was about as noticeable as the change from a treeless condition to heavy forest.

Although the chief aim of the Soil Conservation Service is to help farmers produce more and better crops and at the same time conserve the good earth as a continuing rich natural resource, we learned early in the game that some land should be treated primarily for wildlife, since it was best adapted to such a use. The Soil Conservation Service was the first agency, public or private, to recognize a distinct type of agricultural land best suited for the production of wild animals and wild plants. Our surveys of the production capabilities of farm and ranch lands show that there are more than 33,000,000 acres of marsh, swamp, stream and ditch bank, gully and canyon, rock outcrop and odd corners which are not suitable at all for tilled crops, livestock forage or timber. But these lands are admirably adapted for use by wildlife. They are truly wildlife lands and, although the simple land management measures applied on them are designed primarily to control soil erosion and to conserve rainfall, they nevertheless contribute in no small way to the increase of wildlife. For instance, in helping farmers control 350 miles of eroding stream banks through the establishment of suitable woody and herbaceous plants, these plants were specifically selected for their value as food and shelter for wildlife.

In gullies, strip-mined areas, and various odd spots, farmers have devoted a minimum of 75,000 acres—for the most part only two or three acres in a place—to specific wildlife plantings as an integral part of their soil conservation work. Even greater acreages have been allowed to revert to native vegetation through protection from fire and livestock, as part of the broad program to devote every acre of agricultural land to the purpose for which it is best adapted—and to avoid any land lying out of productive use.

We of the Soil Conservation Service are not in the business of ornithological research, but we do have enough information at hand to indicate that many land management practices actually do increase very largely the number of birds. In Ohio, C. A. Dambach and E. E. Good have studied the effect of strip cropping on birds. They found 140 per cent more breeding birds in fields strip-cropped with corn, small grain and hay than on equivalent acreages of similar land planted solidly to crops of a given kind. J. K. Terres and E. C. Murdoch, studying strip-cropped fields in New York, found that breeding birds outnumbered those of single-cropped fields by two to one.

Strip cropping creates an "edge effect", a condition that is usually accompanied by an increase in kinds and numbers of the animals living there. Farmers in soil conservation districts have established, with the assistance of technicians of the Soil Conservation Service, at least 3,500,000 acres of strip cropping. On the basis of the trends shown by the studies, this should mean about three-quarters of a million more birds on the cultivated portions of America's farmlands. Of real significance is the fact that in a strip-cropped field the habitat is relatively stable. Normally, only the position of the strips, and not the varieties of crops will change from year to year with, for example, lespedeza sandwiched in between strips of corn and cotton. In solid fields there is a major change nearly every year because field rotation puts a field in hay one year, corn the next and so on.

Trees and shrubs have been planted on more than 700,000 acres in soil conservation districts. These plants convert worn-out crop lands and steep slopes into useful, soil-conserving woodlands and brush-lands. On such a piece of land in California, A. C. Hawbecker and R. M. Bond made a study of the effect of vegetation on birds. They found that a few years after planting trees on an abandoned crop field, 14 species of birds were nesting on the plantation and 26 kinds were using it for food and shelter. An adjoining, comparable field in an eroded, essentially barren condition, not yet planted to trees, supported only seven nesting species and was used by only 18 species for food and shelter. In Ohio, Dambach, investigating the birds of ungrazed woodlands as contrasted to those found in woods exposed to livestock, reported 19 species in the former and only six in the latter.

Another practice of great benefit to wildlife is the planting of shrubby borders in the poor crop zone between woodlands and croplands. Along the shaded field margins, competing trees prevent normal crop yields and thus, with thin or no cover of vegetation, open the way for serious erosion. But the establishment of desirable, adaptable shrubs in this zone prevents tree encroachment, provides a turn row for farm equipment, and also produces admirable wildlife habitat.

In addition to planting trees, farmers in soil conservation districts are protecting nearly 2,000,000 acres of woods. This may mean more than two million additional birds in the nation's farm woodlands.

Another example of the wildlife benefits of conservation farming is shown by much of the work that has been done to **control and prevent gullying.** Let me tell you of one instance, on a farm in the Piedmont country. The gully plantings of shrub lespedeza and other woody plants practically halted erosion the first season. The following winter a covey of nine bobwhite quail established headquarters in one end of the gullied area. Despite heavy snows, they over-wintered without loss. A second covey of 15 birds utilized the other end of the area. In yet another nearby gully there were six birds. Cottontail rabbits quickly established themselves in the gullies once stabilizing vegetation grew there. On this farm the final score showed an addition of three coveys of quail to the three coveys originally present before the adoption of a conservation program. The number of individual birds, as well as the number of coveys, was practically doubled; the number of quail rose from 30 to 58.

In the western range country, the Service has found that sound livestock management practices such as deferred and rotation grazing, revegetation and stocking to suit the carrying capacity of the forage, are essential to the conservation of soil and rainfall. These practices not only result in more meat but produce more birds, as indicated by Gale Monson in a study of the effect of revegetation on the small bird

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The Soil Conservation Service is not in the business of ornithological research, but it has enough information on hand to indicate that land management practices do increase greatly the number of birds in the soil conservation districts. This remarkable photograph of a nesting ruffed grouse was taken in Allamakee County, Iowa.

Soil Conservation Aids

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populations in Arizona. Monson found twice as many birds on well-managed range land as on a comparable over-grazed area. Projected to the 10,000,000 acres under good grazing management in soil conservation districts, we might reasonably expect to find nearly 3,000,000 more birds on the western range as a result of the application of soil conservation practices.

Pasture improvements on land amounting to 2,500,000 acres probably have benefited such species as the meadowlark, grasshopper sparrow and field sparrow, although at the expense of certain other birds as catbirds, brown thrashers and song sparrows. A typical improved upland pasture in southwestern Ohio harbored 62 pairs of breeding birds for each 100 acres.

You can well imagine what the construction of thousands of farm ponds has meant to bird life. In New York, Terres and Murdoch report that eight more species of birds were using the pond environs than were present before the pond was built. And you need only visit the thousands of stock-watering reservoirs built in the range country of the West to realize that an area which may have supported only a pair of horned larks, or nothing, before the pond was built, is now frequented by a dozen species. Within soil conservation districts a total of 17,000 such ponds have been constructed by farmers and ranchers within the last few years as part of a soil and water conservation program; around 100,000 such ponds were built previously by the Soil Conservation Service with CCC and "relief" labor. Also, the Agricultural Adjustment Agency has paid farmers for building still others. A large number of these ponds have been fenced and are now bordered by vegetation attractive to shore birds, marsh birds and waterfowl. Wild ducks and other birds nest along the margins of many of these ponds.

In certain areas, the Soil Conservation Service is concerned particularly with administering public lands which are protected as wildlife preserves. In the Buffalo Lake Land Utilization Areas in the Texas Panhandle, you may see more than 5,000 cranes in the fall—and in some years they establish winter headquarters on this tract. At Lake Marvin and Lake Fryer, also in Texas Panhandle, many Mississippi kites nest. The rare New Mexico duck is protected on a project in the state from which it takes its name. In the spring and fall, in some areas, you may see tens of thousands of ducks and geese of at least a dozen species, white pelicans, white-faced glossy ibis, avocets, long-billed curlews, gulls, terns, egrets and other herons and many of the smaller shore birds.

Prior to the establishment of the six permanently protected areas in the Texas Panhandle (totaling 12,283 acres including 3,031 acres of water surface) there was only the 5,809-acre Muleshoe National Wildlife Refuge to serve the migratory birds of the southern Great Plains flyway.

Today, birds are protected on a dozen state refuges which have been established on federal lands administered by the Soil Conservation Service in Utah, New Mexico, Colorado, Montana, North Dakota, South Dakota, Texas, Florida, Delaware and New York.

In ten years, the Soil Conservation Service has changed the pattern of 40,000,000 acres of farmland. This is a good beginning—for soil, men and birds. When all the farms of the nation are properly treated for the conservation of soil and water, one result will be a hundred per cent increase in bird life. As a result there will be, also, an enormously greater protection of crops from the ravages of insect life.

But to give facts about the conservation of soil and its benefits for wildlife, is to tell only part of the story. This story cannot be complete without paying a tribute to the people on the land. Owners and operators of agricultural land have joined to attack the problems of erosion on a cooperative basis and with a wise land use approach. Consider what this means in terms of total conservation!

First, it means that farmers have to do "conservation thinking" before a district is organized When the majority of farmers within a given area think in these terms, the establishment of a soil conservation district provides them with a practical vehicle for translating thoughts into action. And it is important to note, at this point, that wherever a district has been organized, it has resulted from the democratic process of people banding together in a cause in which the majority of them believe.

Second, in "thinking" conservation, the farmers are thinking not only of soil and moisture conservation, but of conservation of health, of effort, of wildlife and other land products, and of the gamut of factors affecting their lives and operations. This movement augurs well for any sound conservation undertaking, for when a large segment of the population believes in a course of action, that course of action is very likely to be adopted.

To date, farmers in 45 states have organized 989 soil conservation districts, embracing 563 million acres of land. Within this area there are about two and a half million farms. It takes no stretch of the imagination to see that with this great body of farmers and ranchers behind the conservation movement, better things are in store for the wildlife of the nation. These men and women hold within their hands the means to apply sound land management measures beneficial to wildlife on half a billion acres.

Catfishing "Tops"

(Continued from Page 35)

bobber is necessary, and at its disappearance strike back immediately and take the slack out of the line. The fisherman should hook 50 per cent of his strikes, but he should be careful not to strike back too hard, for with considerable slack in the line the snap is often sufficient to break hooks or line, thus losing the fish.

It seems that the large channel catfish that are caught by this method are lying in the center of the channel and sampling drifting objects as they come to them. After one sample of a blood bait that has been lost by the upstream fisherman, catfish strike with a viciousness that is seldom attributed to this species of fish.

To the good house frau: When the "brute" begins to pace the carpet or boxes Junior's ears for spilling the soup, suggest that he go fishing. If he returns late, covered with blood from head to waist, slaps a stringerful of "tackle-busting" catfish on the clean linoleum, and you gather the words "Big Sioux" or Wapsipinicon" from his hysterical gibberings, don't faint. He hasn't been scalped. He has only met a Sioux or Wapsipinicon river fisherman who has taught him blood catfishing.

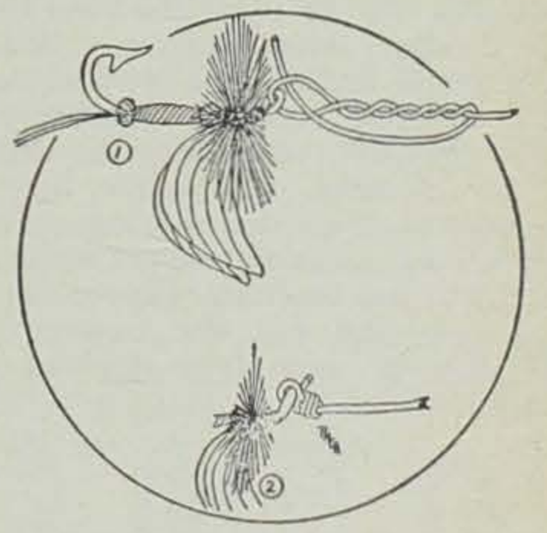
Mink Study Bulletin Free

"An Analysis of Mink Predation Upon Muskrats in North-Central United States", by Dr. Paul L. Errington, has been printed and is available free in single copies by writing to Iowa State College, Ames. The booklet is rather technical, but nevertheless should be in the library of every trapper whose special interests lie in either mink or muskrats.

Errington's studies, begun prior to 1932 and continued to the present time, while revealing mink predation on muskrats, indicate also "that little increase in revenue from muskrats would be gained by deliberate repression of minks in north-central areas where the muskrat pelts are taken in fall and winter".

To secure this 125-page booklet write directly to Iowa State College, Ames, for Research Bulletin 320.

"Clinch Knot" for Nylon Fishing Leaders



All you have to do is to stick the end of the tippet through the eye of the fly, double it back against itself for four or five inches, give the fly several complete twists to wind the leader spirally around itself four or five times as shown in Figure I.

Thrust the end between the eye and the coils, hold on to it, and pull up tightly and securely as shown in Figure II. This completes the knot and it is one of the best known for nylon leaders.

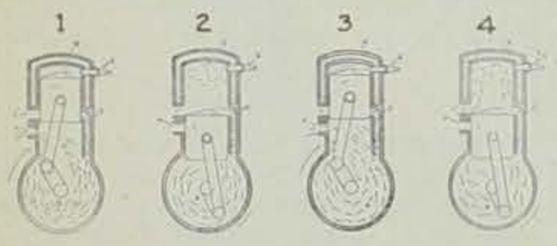
Know Your Outboard Motor

WHAT IS AN OUTBOARD MOTOR?

In the course of development of many mechanical products, a standardization of form has evolved. One sewing machine mechanism looks about like another on the outside—because over a period of years it has been found that is the best way to make a sewing machine. In general and fundamentally all automobiles made today are alike, with four wheels, a left-hand steering wheel, an engine in front, drive on the rear wheels. Yet, there have been three-wheel cars and cars with engines mounted under the front seat.

Outboard motors are built "that way" because it seems to be the best way. There have been outboard motors built with horizontal crankshafts but all of them now have vertical cranks. There have been motors with battery ignition, yet nearly all of them today have magnetos. All outboards now have a powerhead or engine mounted at the top and carried above the transom (stern) of the boat by a clamp bracket attached to the transom; a shaft that extends downward into the water; and a gear case enclosing right-angle bevel gears which drive the horizontal propeller shaft, to the outside end of which is the "pusher" type of propeller. An outboard motor is a boat propulsion power plant which is complete in itself with self-contained engine, gasoline supply, ignition and starting apparatus. It is detachable from the boat (one of its most important features).

The engine or powerhead is an internal combustion engine; it burns its fuel in the working cylinder. Most outboard motor engines are of the two-stroke-cycle type (two cycle) differing in principle of operation from the common automobile, truck, tractor or inboard marine engine of the four-stroke-cycle type which has mechanically operated valves and but one power impulse for each four strokes (or two revolutions of the crankshaft) in any one cylinder.



Most outboard motor engines are of the two-stroke-cycle type, differing in principle of operation from the automobile or inboard marine engine. These drawings show the principle by which your outboard motor operates.

Perhaps it would be well to take a look at this two-cycle principle, to see just how the engine operates, because most outboard motors are built that way and this has been found the type which in the long run gives the most dependable operation combined with low cost and long life.

On the first upward stroke of the piston (1), a partial vacuum or low pressure is created in the crankcase. As the piston progresses in its upward movement and nears the end of the stroke, intake port "A" is uncovered causing fuel vapor from the carburetor to flow into the crankcase—"B". The crankcase is now fully charged. (Three-port type.)

The piston on reaching the end of the stroke reverses its direction and begins a downward movement — covering or closing (2) intake port "A". On its continued downward movement, the vapor charge in the crankcase is compressed until the piston nears the end of the stroke, when the by-pass port "C" is uncovered. This instantly releases the compressed crankcase charge, which flows through the by-pass into cylinder "D"—being directed upward by the piston deflector provided for this purpose.

On the following upward stroke (3), the vapor now having been transferred to the cylinder is compressed and prepared for ignition. However, during this period a second charge has been drawn into the crankcase through intake port "A". There are now two charges—one compressed in cylinder "D" and the charge in the crankcase.

At the end of the compression stroke, a spark, created by the magneto, jumps the gap between the points of spark plug "G"—igniting the compressed fuel vapor in cylinder "D". The vapor in burning expands rapidly, forces piston "F" downward (4) to deliver power required to turn the propeller. Power, however, is not delivered throughout the entire length of the stroke; some time is required to rid the cylinder of burned gases and to receive a fresh charge from the crankcase for the succeeding power impulse.

As the piston travels downward on its power stroke, the fresh charge previously drawn into the crankcase is being compressed.

Notice width of exhaust port "E" and by-pass port "C"—"E" is considerably wider than "C"; therefore, piston "F" on nearing the end of its stroke uncovers the exhaust port somewhat earlier than it uncovers the by-pass port.

A comparatively high pressure exists within the cylinder at this time; consequently, at partial uncovering of exhaust port "E", the burned gases commence to flow out through the exhaust port. Further travel of the piston uncovers by-pass port "C". The compressed vapor charge now in the crankcase is instantly released, flowing through the by-pass port into the cylinder and directed upward by the deflector. The incoming fresh charge continues to force the burned gases out of the cylinder through the exhaust port and into the atmosphere to complete the cycle.

One may well ask why it is that outboard motors are two-cycle while most other commonly used engines are four-cycle. There are several reasons.

Since the two-cycle engine, in each cylinder, has one power impulse per revolution and since there is no camshaft, no valves with their operating parts, the two-cycle engine in small sizes may be built with considerably less weight per unit of power output. And light weight in an outboard motor is of prime importance for ease in carrying, attaching and operating. Compactness is also important.

For the same power output the two-cycle engine is lower in cost, too. It lends itself to low-cost manufacturing processes such as die-casting; it is simple in design and has few parts.

As a general rule two-cycle engines burn a little more gasoline, require a little more oil, than four-cycle engines. But outboard motors are small and at the most, even in larger sizes, require only a few cents worth of fuel per hour or per day so fuel economy is of little consequence. The four-cycle type of engine as used in automobiles, for example, must be economical and besides must operate at partial loads and at low-to-high speeds smoothly. Two-cycle engines have not been used in automobiles because it is more difficult to get such performance from a two-cycle engine of comparable size.

Great strides have been made in recent years in improving the flexibility of outboard motors. New methods of controlling fuel mixtures now permit consistent low operating speeds as well as high power output at high speeds. An ease of starting, one of the bugaboos in early years, has really ceased to be a problem in view of modern magnetos, improved carburetors, better mixture control, and new precision in the production of parts. It is probable that the two-cycle engine has made more progress in the outboard motor field than in any other except in very large Diesel power units where the principle is extensively used.—Johnson Motors.

STATE PARK CUSTODIANS

Backbone State Park	L. J. Schmidt, Strawberry Point, Iowa
Dolliver Memorial	H. G. Lathrop, Lehigh, Iowa
Geode State Park	R. E. Sloan, Danville, Iowa
Lacey Keosauqua State Park	H. J. Schlotfeldt, Keosauqua, Iowa
Lake Macbride State Park	L. F. Reed, Solon, Iowa
Lake Wapello	J. A. Babcock, Drakesville, Iowa
Ledges State Park	M. L. Jones, Boone, Iowa
McGregor Areas	M. J. Peterson, McGregor, Iowa
Palisades-Kepler State Park	C. F. Meyer, Mt. Vernon, Iowa
Pilot Knob State Park	Harold D. Cole, Forest City, Iowa
Springbrook State Park	W. K. Garrard, Guthrie Center, Iowa
Stone Park	H. N. Anderson, Route 3, Sioux City, Iowa
Waubonsie State Park	Vacant
Wild Cat Den State Park	E. O. Richman, Muscatine, Iowa
Bellevue State Park	L. C. Ernest, Bellevue, Iowa
Black Hawk State Park	L. D. Wright, Lake View, Iowa
Ambrose A. Call State Park	Paul Wille, Algona, Iowa
Echo Valley State Park	E. R. Ballard, West Union, Iowa
Fort Defiance State Park	E. G. Harrison, Estherville, Iowa
Lake Ahquabi State Park	W. E. Myers, Indianola, Iowa
Lake Keomah State Park	E. V. Sullivan, Oskaloosa, Iowa
Mill Creek State Park	Henry Imwiehe, Paullina, Iowa
Oak Grove State Park	Raymond Hughes, Hawarden, Iowa
Oakland Mills State Park	F. C. Cory, Mt. Pleasant, Iowa
Pammel State Park	Vacant
Pine Lake State Park	W. R. Chastain, Eldora, Iowa
Red Haw Hill State Park	L. A. Strohman, Chariton, Iowa
Sharon Bluffs State Park	Lowell Houser, Moulton, Iowa
Walnut Woods State Park	W. A. Tallan, Commerce, Iowa
Wapsipinicon State Park	J. E. Rhody, Anamosa, Iowa
Gull Point State Park	O. L. Fulton, Milford, Iowa
Lost Island State Park	Fred McMillin, Ruthven, Iowa
Swan Lake State Park	Ben Hulsing, Carroll, Iowa
Wanata State Park	Ezra Rohrbaugh, Peterson, Iowa
Maquoketa Caves State Park	Harold Morgan, Maquoketa, Iowa
Josh Higgins Area	Wm. Leggett, Cedar Falls, Iowa
Lake of Three Fires State Park	Harry Krug, Bedford, Iowa
Farmington State Park	H. H. LaFollette, Farmington, Iowa
Beeds Lake State Park	E. A. Saxton, Hampton, Iowa
Clear Lake State Park	J. Z. Stevens, Clear Lake, Iowa

Poison ivy occurs in two forms—as a vine that climbs over fences, up telephone poles and tree trunks, and as a small plant or shrub. The easiest and surest method by which poison ivy can be told is by its foliage.

Lamzy Divey, Too, But You Beware of The Poison Variety

Every person who frequents woods and fields should familiarize himself with poison ivy and be able to recognize it positively and instantly. It is doubtful if any picnicker, fisherman, or other outdoor enthusiast is immune to ivy poisoning, and it is doubtful if anyone is affected by merely walking or even brushing against the plant. In most cases where poisoning is thought to have occurred without actual contact, it will be found that sap of the plant has gotten onto one's skin by indirect means, as from the hair of a dog, horse, or other animal that has crushed the plant, or from the handles of tools or from one's own shoes after walking over and crushing the ivy.

Poison ivy occurs in two forms, as a vine that climbs over fences, up telephone poles and tree trunks, or as a small plant or shrub.

Perhaps the easiest and surest method by which poison ivy can be told is by its foliage. Its leaves are ordinarily divided into three leaflets; they are ordinarily taken by the average person as separate leaves, although actually the three leaflets and the stalk on which they rise make one leaf. These leaflets have no teeth at all, or a few coarse teeth. The young shoots and young leaves in the spring are a beautiful red in color, turning to a lusterless green as the season progresses. In the fall the foliage again turns to a brilliant red. Truly a beautiful plant, for all of its vicious character. Red ordinarily means danger, which should be sufficent warning not to touch this plant.

The plant is very poisonous to touch and causes serious inflammation of the skin. The irritation is caused by an olio resin oil found in all parts of the plant and secreted by the leaves and bark. The poisonous oil is more abundant in the spring and early summer, but at any time of the year a susceptible person may be poisoned. All parts of the plant are poisonous to the touch.

Infection is by contact with the plant only. Ivy poisoning cannot be "caught" by touching the affected portions of another person's body. If leaves or foliage are burned, the oil is volatized, and anyone inhaling the smoke or getting the smoke into his eyes may be severely poisoned.

The seriousness of contact with this plant and the after effect cannot be overstressed. A serious case of ivy poisoning can result in hospital confinement ranging from days to weeks.

If proper measures are taken immediately after contact, the danger of poison may be avoided. A person who believes that he has handled this plant, or that his clothing or tools may have been in contact with it, should wash all exposed parts with a very strong solution of laundry soap, high in alkali content, rinsing it off and washing again. If this is done immediately, the poison will be removed. Avoid using soaps containing oil; they may spread the poison. Water alone may also cause the poison to spread.

If you have contacted poison ivy and have not been aware of it, and have not washed with laundry soap, you may, within a period of from one to 14 days, experience a rash, blisters, itching, etc. It is best to seek medical aid, and to follow the directions of your doctor in the treatment.

Despite its unpleasant features, poison ivy fills an important place as a wildlife food. The berries are eaten throughout the fall and winter by many varieties of birds, and the leaves and twigs are eaten by deer, domestic livestock, and rodents.

Thinkest Thou This An Unusual Story? Yea, Verily

It came to pass, as the winter snows slowly melted away and fly time drew nigh, that the Sage of the Sand Hills became psychic and there was given to him power to see through brick walls and to view that which lay behind them. He gazed in the direction of the fading northern lights and saw a stately edifice, and therein was a luxurious apartment known as a sanctum. And he beheld seated therein at a desk his ancient friend, the editor, who appeared sore distressed and sad. Herein are related the visions of the Sage.

The editor was musing at his desk, and he didst gaze at the sunshine and say in his heart, "Lo, the winter is over and gone. The time of the singing birds is come and the season will start May 15." And the days went by even so, and the Sage looked again, and the editor was joyous and didst exclaim in his soul, "Stone walls do not a prison make. Neither do perpendicular iron bars inserted in window casings and door frames constitute a birdhouse. Why shouldst I serve the God of Mammon? Are not the fish biting?"

Then didst the formulator of public opinion stride from the loathsome precincts of the sanctum. He didst array himself in all the glory of the sport shop, and his wife did pack for him a goodly hamper of gastronomic delights. And he didst add thereunto the snakebite antidote, and the flea eradicator, and he didst rub his goodly person with oil outwardly and didst properly lubricate his interior. Thereon his lovely spouse did convey him by car to the forks of the road which leadeth unto the brook of Cheron and gave him gracious parting with the words, "Enjoy thyself to the fullest, and I will call for thee when the shadows dwindle."

And he didst depart to the brook rejoicing and cast muchly and long in vain. And after he hadst walked 10 miles, the weariness in him did make bare to him the emasculation which the modern automobile hath wrought.

He then did seat himself to ponder and permit the red ant to meander up his trouser leg and invade his comestibles. Then only didst he remember the sins of his youth, when he camest in with strings of fish a yard long and didst exceed the bag limit. And now when he lookest for their descendants, he bewailst greatly because dead ones cannot reproduce.

Yea, he didst exclaim loudly and in despair, didst cast again, and suddenly he hadst a strike! And as the line cut curlicues among the waters and dashed blinding spray along the shore, he did cast leviathan out upon the bank, and behold! he hadst a dogfish!

And then he didst vehemently berate the game commission for allowing such fish to usurp the wimpling waters, which should enshroud only the festive trout. And he didst cast upon the waters the anathema of the barren fig tree and did bewail loudly the paucity of the finny tribe and decrees of fate.

Then did he add unto his other sins the sin of presumption in that when he was appointed a torch-bearer of intelligence to a benighted world he thoughtest to renig, and he said unto himself, "Lo, I will be a fisherman."

Behold, and he did hie him to the fishmonger and tendered him the shekels of his weekly toils, and the fishmonger did abstract from his fish boxes sufficient therewith to regale the stomachs of the entire neighborhood. And he did thereby prove his Waltonian prowess and did regale the minds of the assembled multitudes with new ones concerning the big one that didst get away.

And the record of the Sage of Sand Hills can be established officially by the scales of the fishmonger who received the shekels. And life was ever so and it is even thus to us.—Ed. C. Volkert in Dubuque Telegraph-Herald.

Merit Badge For Rabbit Raising

As a step to encourage production of domestic rabbits to swell the nation's meat supply, the Boy Scouts of America have offered a merit badge for rearing these animals. The requirements, set up through the cooperation of the U. S. Fish and Wildlife Service, are as follows:

1. Properly house and raise a litter of rabbits, from mating of doe until marketing time for the litter.

2. Explain the use of breed and know about one breed used for meat, one for fur, and one for wool.

3. Keeping a breeding record, a feeding schedule, and a financial record.

Many 4-H Club members are also engaged in rabbit production work projects, the Fish and Wildlife Service announces.

Several of the smallest mammals and birds possess a relatively larger and heavier brain than man. For instance, while the human brain averages 1.9 per cent of the weight of the body, the brain of a rat constitutes 3.6 per cent, that of the marmoset 4.5 per cent and that of the hummingbird 8.3 per cent.

Fishing Tackle Shortage Looms for '44 Season

Iowa anglers in 1944 will be faced with a shortage or complete absence of most tackle heretofore considered essential to sport fishing. A survey of tackle stores discloses that many shelves that formerly had held a wide assortment are now empty or at least partly barren.

Prior to the war most Iowa tackle stores were well stocked, and these large stocks were added to when it became apparent that raw materials would of necessity go into war production. At the present time, however, most tackle supplies have been depleted, and there is small prospect that there will be any replenishment until after the close of the war.

There are very few steel rods available, these of the lighter or "stamped" variety. Practically all solid steel rods are gone. Bamboo rods of good Tonkin cane are extremely rare, and the small stocks of second and third grade rods have been well picked over.

Manufacturers of first grade bamboo rods are out of business until metal ferrules and imported cane are available. Automatic fly reels are a thing of the past. There are, however, a few of the cheaper single action reels available — not enough, however, to begin to supply the normal demand.

The persistent angler may uncover a few fly lines, mostly level rather than tapered, and in the more unpopular sizes. Nylon and spun silk bait-casting lines are on some dealers' shelves and are being augmented by limited supplies of lines braided of newer and untried plastics.

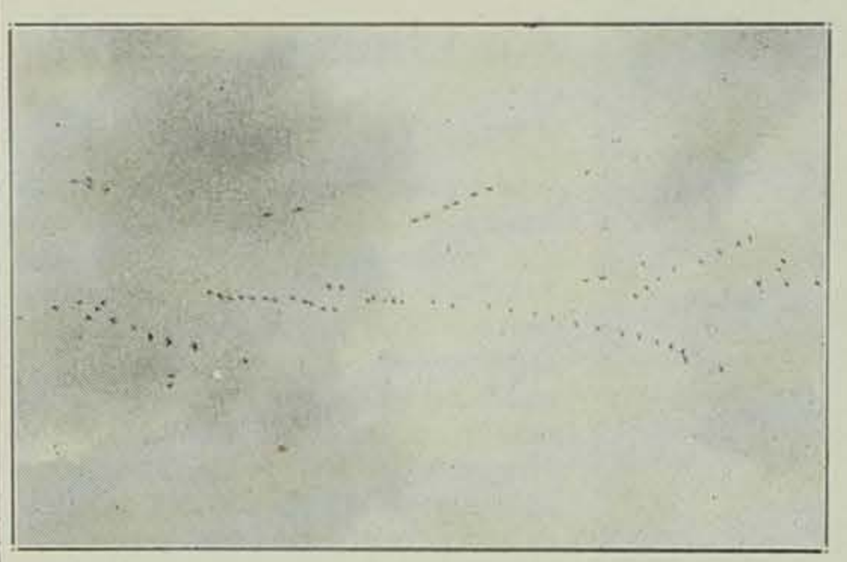
Silkworm leader and Japanese gut are both off the market; however, there is a limited supply of nylon leader material.

Trout flies and casting plugs appear to be plentiful, although good hooks are scarce. Good treble hooks and the hollow pointed and hand-honed hooks are as scarce as dodo birds. The cheaper, spear pointed hooks appear to be available in most stocks, as are sinkers, cotton lines, floats, stringers, and other inexpensive bits of tackle.

Breast waders are out for civilian users, barring some unforeseen development in the field of synthetics. There is some chance that hip boots made of fabric treated with plastic material will become available.

It behooves all anglers to use extreme care with the equipment they have on hand, paying particular attention to thoroughly drying their good lines and treating reels and rods with the respect due fine equipment.

Song of the Earthbound . . .



The spell of spring is in the wind tonight

And strange, exultant longings seek release,

As down from out a stormy, rain-washed sky.

There comes again the cry of wild geese.

—Polly Madden.

SCHEDULE OF STATE PARK LODGE RENTALS*

Park	Summer Rate Per Reservation	Sundays & Holidays
Stone Park	$5.00	By Reservation
Walnut Woods	5.00	By Reservation
Lake Ahquabi	4.00	By Reservation
Mill Creek	4.00	By Reservation
Clear Lake	5.00	By Reservation
Dolliver Memorial		
South Lodge	4.00	By Reservation
North Lodge	2.00	By Reservation
Central Lodge	Open to Public at No Charge	
Fort Defiance	4.00	Open to Public
Lewis & Clark	4.00	By Reservation
Pine Lake	4.00	By Reservation
Pammel	2.00	Open to Public
A. A. Call	3.00	Open to Public
Heery Woods	3.00	By Reservation
Gull Point	5.00	Open to Public
Bellevue	3.00	Open to Public
Palisades Kepler	5.00	Open to Public

* All reservations to be made with park custodians.

BE PATIENT, FISH

The fishing bug has got me,
It's 'bout that time of year,
So I'm getting things together
And fixing up my gear.

My rod needs some repairing,
My reel has lost a screw,
My lures are kind of shaggy,
But still they ought to do.

My slicker needs some patching,
My boots leak just a bit,
But my good old pipe is still all right,
And I guess my hat will fit.

I've checked my outfit over,
It's good for quite a spell,
For just what year I'll get to go
Is something I can't tell!

—Sabula Gazette.

WILD DUCKS IN SPRING

Music of whirring wings aloft—
Sweep of the starlit sky:
Flitting shapes in the eerie gloom
Where the lakelet's waters lie.

Back from the sunny southern bays,
To the icy northland drear,
Cleaving their way through fog and snow,
And the freezing atmosphere,

From the wide reaches where seagulls dip
Their wings in the ocean foam,
Back to the land where the swaying reeds
Sing their whispered "Welcome home!"

—Ed. C. Volkert in "Skylines", New York.

State Park Cabins For Overnight Family Use

Many of Iowa's state parks have cabins for overnight use at very moderate rates. On Monday through Friday inclusive, rates are $2.50 per day per cabin. Saturdays and Sundays cabins are $3.00 per day per cabin. The weekly rate per cabin is $12.50. Cabins accommodate four persons. Cots are supplied for additional persons, and a charge of 25 cents per day per person is made for all over four persons. The state park overnight family cabins are completely equipped except for linens, pillows, and food. Reservations may be made with the resident park custodian in charge of the area.

Ledges—Boone, Ia.	2 cabins
Backbone—Lamont, Ia.	18 "
Pine Lake—Eldora, Ia.	5 "
Lake Wapello—Drakesville, Ia.	12 "
Lake Ahquabi—Indianola, Ia.	9 "
Springbrook—Guthrie Center, Ia.	6 "
Lake of Three Fires—Bedford, Ia.	6 "
Lacey-Keosauqua—Keosauqua, Ia.	6 "
Dolliver Memorial—Lehigh, Ia.	2 "

Manufacturers Will Mend Your Fishing Tackle

No need to despair if your favorite fishing rod has been broken. You might be able to get it fixed. Word coming to us from several of the largest tackle makers is that they are doing their best to keep all fishing tackle serviceable. Most rods can be repaired if all the parts have been preserved. The difficulty is in setting ferrules where these have been lost. Steel rods present a difficult problem, and until after the war it will be impossible to properly repair or replace them.

Reels are not only impossible to obtain, but it is equally difficult to get repairs. If you own a good reel, guard it well. It is worth its weight in gold. However, if your reel does need some repair, send it in now to the original maker. If he has any order parts on the shelf it will be fixed. Otherwise you will have to wait for the end of the war.—Davenport Democrat.

Common Toad Friend Of the Victory Gardener

Victory gardeners should not overlook the importance of toads during the growing season, it is pointed out by Mr. G. W. Bradt of the Michigan Department of Conservation. The diet of the common toad consists of approximately 88 percent of garden pests.

A single toad may be worth several dollars in insect control in the course of a year, Mr. Bradt states. Contrary to popular superstition, toads do not rain from the sky, cause warts to handlers, or live for centuries in solid rock.