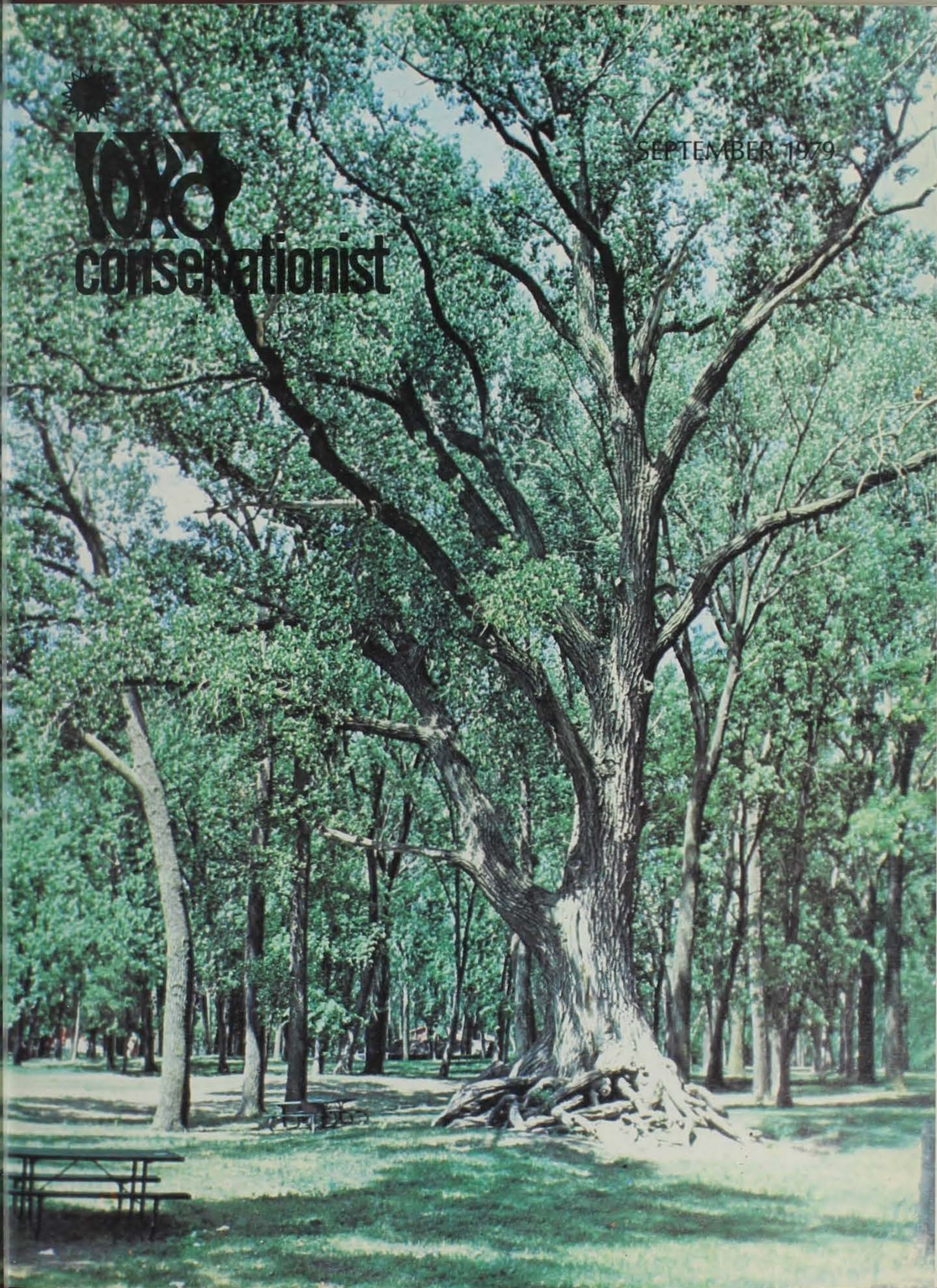




UOQ conservationist

SEPTEMBER 1979





(USPS 268-780)



conservationist MAGAZINE

Volume 38, No. 9 • September, 1979

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CONTENTS

- 2 OLD TREES IN IOWA
- 4 NATURE'S UNSOLVED MYSTERIES
- 6 FISHING THE WAPSIPINICON
- 8 HOW DEEP IS THE BEAVER POOL?
- 10 ROUGH FISH ROUND UP
- 12 RICE LAKE
- 14 LAST WINTER'S EFFECT ON IOWA WILDLIFE
- 16 CHANNEL CATFISH PRODUCTION AT RATHBUN HATCHERY
- 18 RATHBUN LAKE FISHING - 1979
- 19 CLASSROOM CORNER
- 20 SOUTHERN IOWA'S BONUS PANFISH
- 21 PAST MISTAKES REPEATED?
- 22 A BETTER UNDERSTANDING
- 23 WARDEN'S DIARY

COVER: Lewis and Clark State Park
by Ron Johnson

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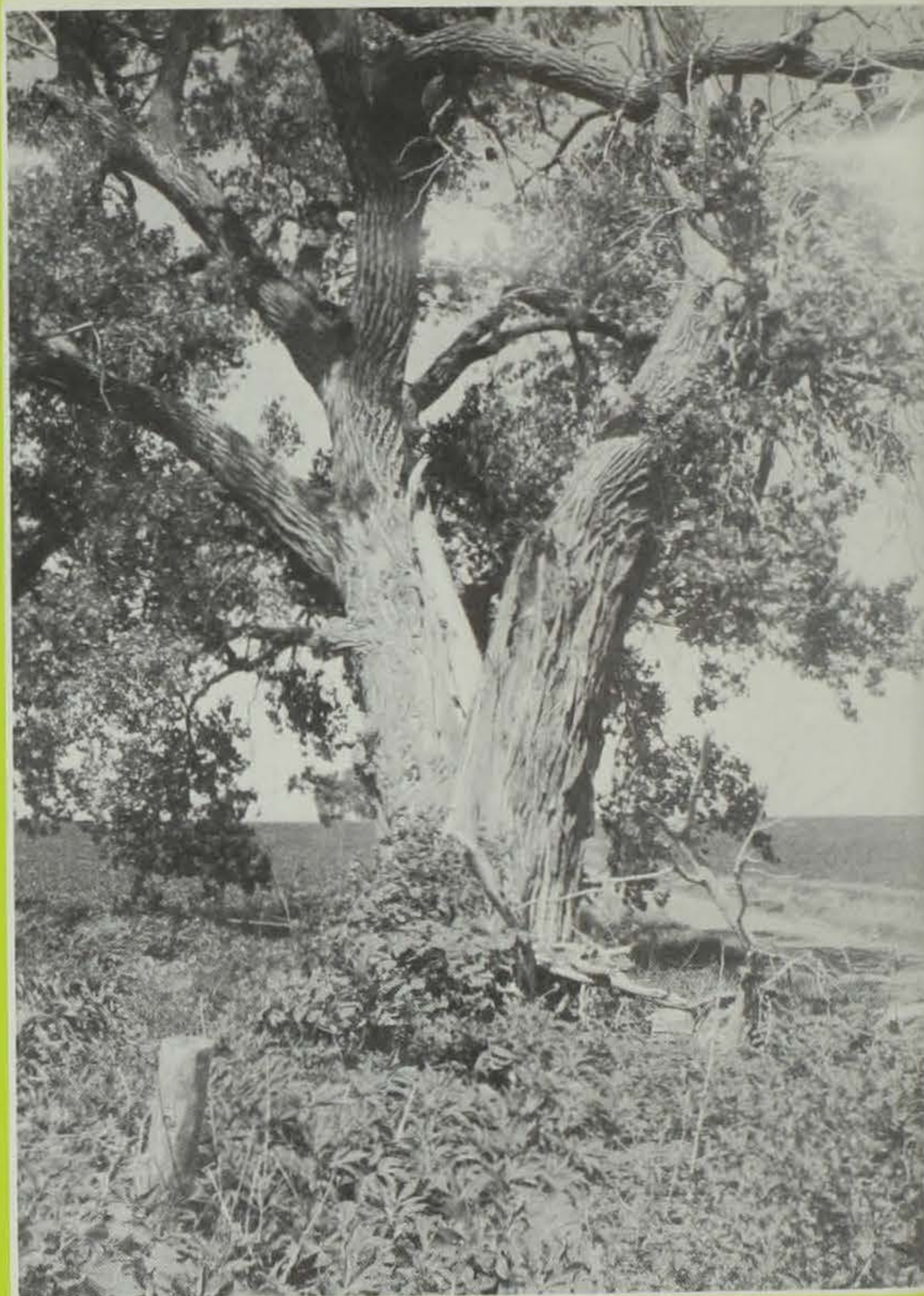
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Published monthly by the Iowa Conservation Commission, Wallace State Office Building, Des Moines, Iowa, 50319. Address all mail (subscriptions, change of address, Form 3579, manuscripts, mail items) to the above address. Subscription price: one year at \$2.00; two years at \$3.00; four years at \$5.00. Second class postage paid at Des Moines, Iowa and other points.



Jasper County Cottonwood
Trunk Circumference - 27'8"



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Old Trees in Iowa

by Roger Q. Landers

ALTHOUGH WE DON'T HAVE the ancient redwoods or bristlecone pines of the western states in Iowa, we have a few trees that are old by our standards, that is, in hundreds of years, but not thousands. White oaks along the Des Moines River and in Pammel State Park in central Iowa go back to the 17th Century. One of the oldest we have cored is in Ledges State Park, where it became a living fencepost many years ago engulfing the wire fastened to it by slow cambial bites. The tree dates back to 1688 with the increment core taken well above any chance of shattering the expensive steel bit on a rusty piece of hidden wire. It is not the largest white oak tree in the park and probably not the oldest. Some larger trees are growing on better soil and are younger, some are hollow which destroys any chance of determining their age.

The oldest bur oak we have cored is in O'Brien county where it grows on a steep, eroded slope above Waterman Creek. Storm damage reduced the crown some 30 years ago and growth at times was so slow that its age cannot be determined exactly, but it goes back well into the 17th Century also.

Oaks older than 300 years are rare, which isn't much of a surprise to anyone who realizes that prairie fires once prevailed over much of Iowa. In western and central Iowa only the ridges and narrow valleys along the larger streams and rivers gave enough protection to retain forest enclaves in the vast inland prairie sea. In eastern Iowa the forest was more extensive.

With our greater interest in the outdoors we are challenged to protectively use these remaining bits of old forest. Our research is an attempt to gain tree-ring information from ancient specimens without damaging them. The rings provide us with valuable information about

the past weather that we can obtain in no other way. Some uses of these outdoor areas may pose a severe threat to the survival of the old trees. Excessive foot traffic and motorized traffic in lesser amounts may wreck centuries of life by wearing down the ridges and slopes where these ancient trees grow. Combined effects of compaction and erosion spell disaster for many special sites in Iowa unless we shift our increasing outdoor traffic to areas that can better tolerate it. The oldest white pine is located off the well beaten-out trail along the backbone of Backbone State Park. Not as old as the oaks, its 205 narrow annual rings seem to show a constant strain for survival. Dead pines and oaks along the trail may have been older and less able to resist the heavy traffic.

The oldest trees in Iowa are the red cedars growing on the steepest bluffs and ridges where they have been protected from fire because of the lack of continuous fuel. The oldest is 450 years on a sheer bluff in Palisades-Kepler State Park, cored by a student strapped in a rock climbing harness. Its small appearance and symmetrical growth is in contrast with larger, twisted, craggy ones on better sites along the river. Although not endangered by foot traffic or motorized vehicles, it may become a victim of rope burn by thoughtless rock climbers who disregard the pleas of park officers to stay off the trees.

Other tree species which may have some potential for extra old age are chinkapin oak and hard maple, but they have not been sampled. To go beyond 500 years, even for red cedar, is probably a remote possibility. And unless we protect the remaining bits of original forest in Iowa in our parks as well as in our private parcels, we may never go beyond the record dates we now have for each species.



Natures Unsolved Mysteries

by Vaughn Paragamian
FISHERY RESEARCH BIOLOGIST

I SAT DOWN ON THE EDGE of a riffle by my favorite stream. Small minnows were darting about in the clear water, nipping at minute particles that I had disturbed from the stream's bottom. As I relaxed, a fisherman, much better than I, lighted on an overhanging branch 30 yards downstream. It was a blue and white kingfisher whose crown identified it as the aerial king of the waterways. Patiently it waited for the precise moment to display its talents. To the misfortune of a foolish fish, that moment came too soon. The kingfisher plunged into the water and its retreat tallied one less fish in the pool.

One less fish, it doesn't sound like much at all, but the consistency takes an incredible toll day and night. What I had witnessed was an event called natural mortality. It comes in many forms from the kamikaze dive of a kingfisher to mass death of thousands due to a winter kill. It is a poorly understood topic because we seldom witness it or seldom can explain it.

Under most circumstances natural mortality is an accepted event and can be beneficial. It is Mother Nature's way of selecting those fish that are most fit for survival. It allows the strong survivors to reproduce progeny with proven traits.

The weak and misfit are culled out. The truth is nearly 99% of all fish that hatch the wild, fall to some form of natural mortality before they complete their first year of life. In general, Nature's intent survival of one pair of fish to replace the parents.

A good example of the need for natural mortality can be witnessed in our bass-bluegill lakes. Bluegill are very prolific spawners, one pair of bluegill produce nearly 30,000 young a season. With so many mouths to feed it is impossible for natural bodies of water produce enough food for all of them. However, bass in these lakes feed on



Photo by H

young bluegill. In turn bass and surviving bluegill grow. Problems always arise when bass are overharvested and there are insufficient numbers to control bluegill. There is an inadequate supply of food for all the bluegill and poor growth results. These populations are often referred to as "stunted". Fishery biologists have found that by imposing a catch limit on bass the result is a better "balanced" bluegill and bass population. Management of the predators under the catch limit are protected and can keep bluegill from overpopulating. Of course, bass are not the only predators swimming in our lakes and rivers. Walleye, white bass, crappie, northern pike, musky and others help control fish population numbers.

Many birds take their share of young or adult fish. Great blue herons, green herons, kingfishers, eagles, osprey, and great horned owls are just a few of the more common predators with their own methods. Some mammals like otters, muskrat, raccoon are very capable of catching fish. Even turtles, snakes, and aquatic insects feed on fish. All of these predators are accepted as part of the process of natural selection. Mother Nature has ways of creating checks and balances in her own way. Sometimes these are in combination with man's own actions. Spring rains under normal conditions that may have only raised water levels carry with it top soil that makes out the life of young fish. These rains also carry various pesticides and fertilizers from field or feedlots into rivers and lakes. Fertilizers enhance the growth of algae (microscopic plants) and other aquatic plants. This can cause several

problems. In some cases algae becomes overpopulated creating an algae bloom. The dense layers of algae at the surface soon shades out the algae in deeper water or shades out submerged plants. If this occurs during a few cloudy and windless days, the plants in deeper water are shut out from sunlight and they may die. Bacteria decomposes the dead plants and uses up most or all the oxygen in the water. Fish die when the oxygen in the water is reduced beyond a tolerable level and this results in a "summer kill". "Winter kills" occur under ice when plants are concealed from sunlight by too much snow and ice. Both of these results are nightmares to fishermen and fish managers. Often particular lakes are very prone to these calamities because of watershed characteristics and lake basin shape. They are often marginal waters for fish populations.

After "summer" or "winter kills" fish management personnel sample the surviving fish populations to determine the extent of the kill. If the remaining fish are undesirable or out of balance the lake may be treated with a fish toxicant and restocked to restore it to a balanced population. Under some circumstances prevention of "winter kills" is economically feasible and most often prevented by installation of an aeration device or a water circulator. "Summer kills" are a little more difficult to prevent and research is going into preventative methods. Both of these forms of natural mortality are nearly impossible to predict in advance because of their association with climatic factors.

Fish are also victims of diseases most of which are caused by bacteria, viruses, or funguses. In the wild, fish are usually able to seek good living conditions, and are not overcrowded. Yet under some conditions, fish diseases will infect and kill many fish in a short time. One of the more common sicknesses is catfish viral disease, it may kill thousands of bullheads or catfish. But under natural conditions there is nothing fisheries personnel can do to prevent it.

Some fish that are at the northern or southern extent of their natural range may also become victims of mass mortalities. Each fall millions of gizzard shad die in our rivers and reservoirs because temperatures fall to an extreme that is intolerable to their life processes. But a few gizzard shad survive to reproduce millions the following year.

Refreshing spring rains that are welcome to plants and man often become a source of disaster to some fish populations, as it was in 1978. Smallmouth bass had carried out a successful spawn in early June of that year. Thousands of tiny bass could be seen at stream margins usually accompanied by the father. Spring rains drenched the watersheds of northeast Iowa and filled the river banks with cold silt-laden water. Two weeks later, when the rivers finally cleared up and returned to normal flows, the young bass were gone. Few smallmouth bass hatched in 1978 would steal a fishing lure or give an acrobatic side show at the end of a fisherman's line.

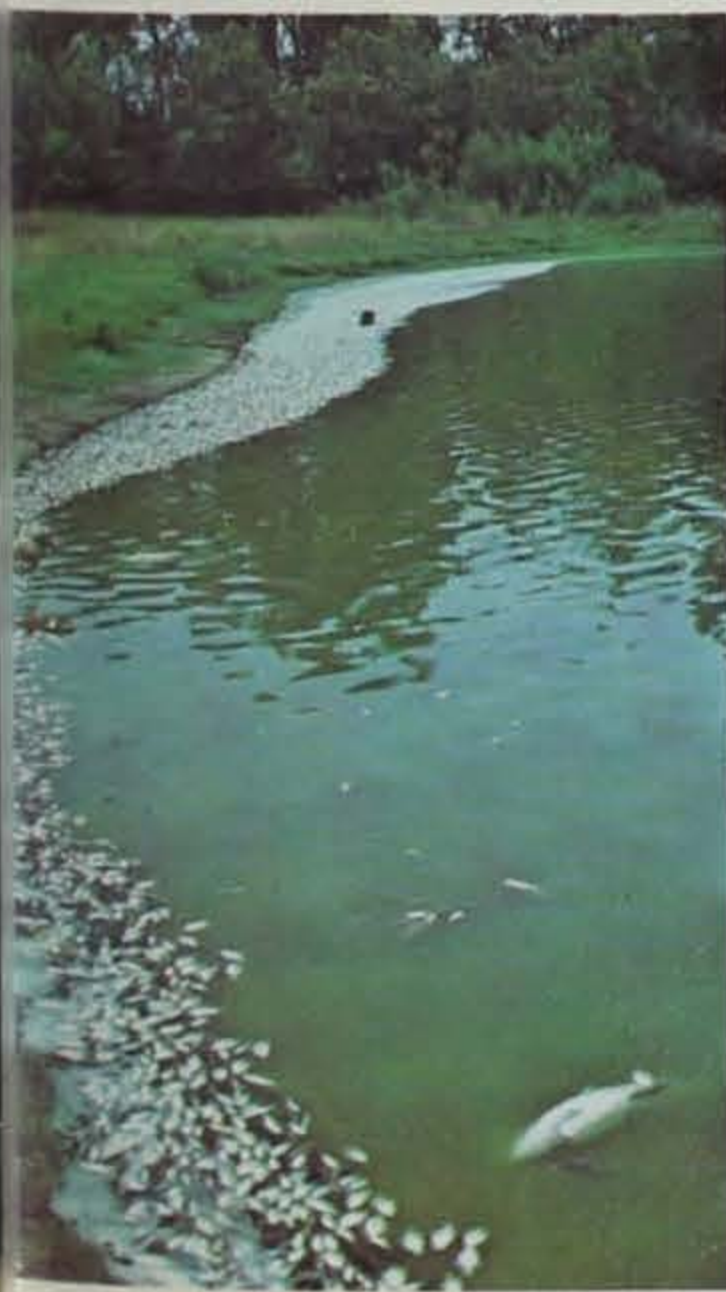
Mother Nature has an uncanny way of making amends. Inconsistent reproductive success in northeast Iowa streams is the fact rather than the exception. Periodic losses of a year class of smallmouth bass are often followed by a bumper crop. The fishery is replenished with fish if good habitat is available. Stocking is unnecessary when we have good habitat and is useless when there is no habitat. Only after extensive "winter kills" are smallmouth bass restocked.

As mentioned before, 99% of all fish do not reach their first birthday. When the Iowa Conservation Commission stocks young fish into a lake, we take this fact into consideration. We expect about 99% of the very young fish, sac fry, to perish early in their life, so we release many more than we would expect to survive. (Fewer fish are released when they are of a larger size.)

The kingfisher no sooner left the overhanging limb when a green heron landed on a rock at the stream margin. The heron's intent was the same, a fish dinner. Who knows how many fish the heron would eat or how many other sources of mortality would account for more fish today or tomorrow. Natural mortality remains as one of the more mysterious aspects of aquatic life. □

Photo by Don Degar

Photo by the Author



Opposite page and above: Green heron and soft shelled turtle are just two predators on small fish. Predation is one of many controls on fish populations. Sudden fish kills (left) can occur from both natural and man-made causes.

Fishing the Wapsipinicon

by Michael Wade
FISHERIES TECHNICIAN

PHOTOS BY THE AUTHOR

FLOWING THROUGH BOTTOM LANDS dotted with ponds and marshes in its upper reaches to rugged and heavily timbered areas in its central and lower portions, the Wapsipinicon River winds its way through Northeast Iowa providing anglers with a variety of fish species to pursue. Several access points are located along the river providing areas to fish from shore or to launch a small boat or canoe. Most stretches of the "Wapsi" can only be traversed by canoe, but this is a bonus because a float trip down the Wapsi can be a rewarding outing for both catching fish and viewing one of Iowa's scenic rivers.

The northernmost segment of the river in Mitchell, Howard, and Chickasaw counties is too small to support large populations of gamefish, but in Mitchell County a segment of the Wapsi is cool enough to stock catchable trout in the spring and fall. In the remainder of the river, channel catfish are the most abundant gamefish. Catfish are numerous in the stretch of river that flows through Buchanan and Linn counties. The best areas to fish for catfish are above the Otterville Access, the Independence impoundment, above the dam at Quasqueton and below the dam at Troy Mills. Brush piles and log jams are numerous in these areas and are havens for catfish making them excellent structures to fish around. Fishing with stink or cheese bait or dead minnows around these structures is a good bet to put catfish on your stringer. Another method of catching catfish is by the use of a trot or throw line. The Wapsi along with other streams and rivers in northern Iowa, excluding some streams and portions of streams in the nine counties stocked with trout, is open to the use of trotlines and throw lines. The Wapsi supports large catfish populations in most segments of the river and the use of trotlines should help anglers better utilize this resource without having a detrimental effect on the catfish population. Catch and possession limits are the same for trotlines as they are for rod and reel fishing.

While fishing for catfish at a brush pile or log jam you might want to rig up another pole with a jig, small spoon or spinner between bites and make a few casts. Not only do these structures harbor catfish, but they are hangouts for northern pike up to ten pounds. In the spring and fall northerns concentrate below the dams and a limit is taken quite frequently. The best areas to try your luck for northerns are below the dams of Littleton, Independence, Quasqueton, and Troy Mills. During the early spring it would be wise to look for northerns in the many backwater areas of the river, using a live minnow or chub for bait.



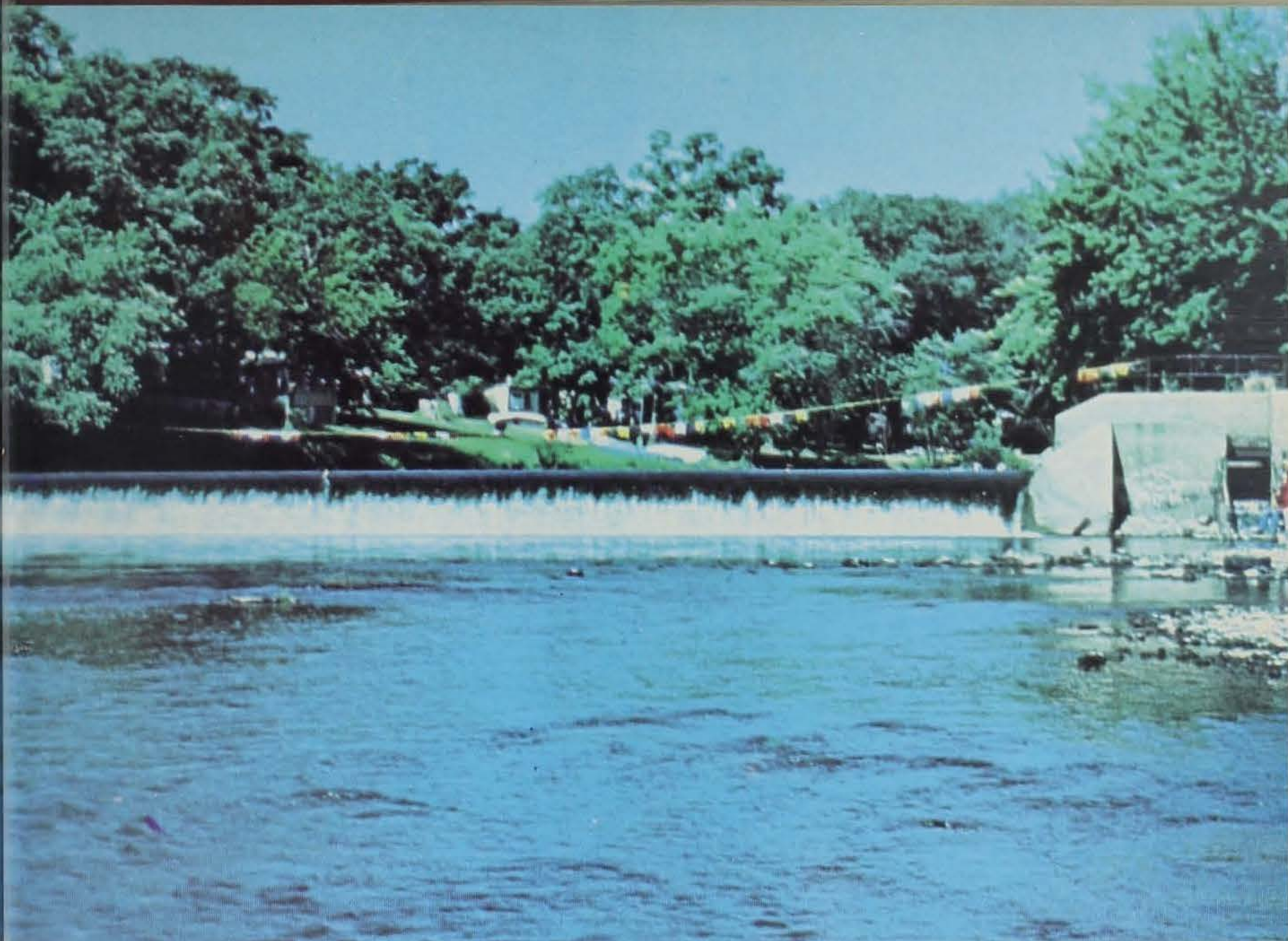
Dam at Littleton — Home of "lunker" smallmouth

If it's smallmouth bass you want, the Wapsi is a sure bet to put these "bronzebacks" in your creel. Smallmouth up to four pounds can be found below the lowhead dams and in pools below rock riffle stretches of the stream. The top areas for "lunker" bass are below the dams at Littleton and Independence. The best baits for these sporty gamefish are minnows, crayfish, spinners, and my favorite lure, the white beetle spin.

Largemouth bass, bluegill, and crappie are found in the impounded portions of the river. The Independence impoundment has the best populations of these species. Another area to try is the Central City impoundment and below the dam where a six-pound largemouth was taken last summer. Crappie can be found throughout the Wapsi, but in limited numbers.

Walleye, through stocking efforts by the Conservation Commission, also inhabit portions of the Wapsi. Limited habitat restricts the number of walleye in the river, but in the spring and fall fish up to ten pounds are taken below the dams at Independence and Central City. Occasionally walleye are caught below the dams at Littleton and Troy Mills. The best baits for walleye are jigs, minnows, and finland minnows.

If you are in Northeast Iowa and you are looking for a place to fish or take a scenic float trip don't pass up the Wapsi because it has a lot to offer in both fish and scenery.



County	Name of Area	Location	Camping	Boat Ramp	Major Game Species
Dakota	Alcock Park	Fredricka	X		LMB, CC, NP, SMB
	Sweet Marsh	2 m. N.E. Tripoli		X	NP, CC, SMB
	Snyder's Access	1 m. N.E. Tripoli		X	NP, CC, SMB
	Wapsi Access	2 m. E. Tripoli			NP, CC, SMB
	Hay Access	4 m. E. Readlyn			NP, CC
	Little Buck	1 m. E. Readlyn			NP, CC
	Seven Bridges	6 m. S.E. Readlyn	X		NP, CC, SMB, RB
Hawkeye	Siggelkov Access	5 m. N.E. Dunkerton	X		NP, CC, SMB, RB
	Bruce Child Area	4½ m. N.E. Dunkerton			NP, CC
	Bruggeman Park	3½ m. N.E. Dunkerton			NP, CC
	River Birch Bottoms	2 m. E. Dunkerton			NP, CC
	Schwartz Access	3 m. E. Dunkerton			NP, CC
	Wapsi Bluff Pak	3½ m. S.E. Dunkerton			NP, CC, SMB
	Cutshall Area	4 m. N. Jesup	X		NP, CC, SMB, LMB, RB, CR
Harrison	Oterville Bridge	5½ m. N.W. Independence			NP, CC
	Wapsi River Access	½ m. N.W. Independence		X	NP, CC, LMB, BG, CR
	Three Elms Area	1 m. S.E. Independence	X		NP, CC, SMB, CR, LMB, W
	Quasqueton Park	Quasqueton	X	X	NP, CC, SMB
	Boies Bend Area	1½ m. W. Quasqueton	X		NP, CC, SMB
	Sand Creek Area	1½ m. N.W. Quasqueton			NP, CC
	Cambell River Access	5½ m. N.W. Troy Mills			NP, CC
Iowa	Troy Mills	4 m. N.W. Troy Mills			NP, CC, CR
	Pinicon Ridge Park	1 m. N.W. Central City	X	X	CC, SMB, LMB, CR, W
	Wakpicada	1 m. S. Central City	X		CC, SMB
	Jay Sigmund Area	Waubeek	X		CC, SMB
	Matsell Bridge	2½ m. N. Viola			CC, SMB
	Mount Hope	2 m. N.E. Viola			CC, SMB



Log jam — catfish haven
Backwater area — Northern pike haunt



Channel Catfish LMB — Largemouth bass
Rock bass SMB — Smallmouth bass
Crappie NP — Northern pike
Walleye

How deep is the BEAVER POOL?

by Dave Newhouse

PHOTOS BY THE AUTHOR

THE INEVITABLE QUESTION doesn't come right away. First comes the scurrying for drinks of water and places in the group. Then tour guide, leader and visitors stroll past birds and beasts. Where did the fawns come from? (kidnapped by people who should know better, from a better life in the wild). What do owls eat? (rodents). Will the skunks spray? (no, they are carefully descended). Is that all the bigger foxes and bobcats are? (yes, and these are healthy large animals). What did the crow say? ("I'm a crow," of course). Are there many of those barn owls in Iowa? (no, sad to say, far fewer than there were). And then it rises, from several mouths at once: how deep is the beaver pool? (about waist deep to big people).

Probably not even the old man down by the river knows why that question is important to people, but it must be.

People who take the time to visit the Conservation Commission's wildlife exhibit are usually concerned about wild animals. They wonder whether the beavers have room enough to swim. Well, that pool is no free flowing trout stream, but the beavers do not remain healthy without a lot of tender loving care. Commission employees, supported by hunting and fishing license funds alone, work hard to keep the exhibit clean and the animals in good shape. Wildlife biologists and conservation officers send to the exhibit animals that are unable to fend for themselves or have been illegally taken from the wild. Veterinary researchers and students from Iowa State University donate their time to check the animals twice monthly, to prevent and treat disease or injuries. There are a lot of helping hands the visitor never sees.

Visitors apparently do like what they see in this exhibit nestled into hilltop timber above the Des Moines River. Over 1400 people registered their opinions and preferences on a questionnaire administered in the exhibit in 1977. Clean cages, native hawks and owls, game animals and rare species (in that order) were the features most important to respondents. The 2600 school children who participate in guided tours each year seem titillated by the fearsome (snakes), cute (raccoons, fawns), and bizarre (talking crow) members of Iowa wildlife. In all, some 200 individuals of 80 species are presented here in 50 enclosures and three pools.

Many visitors want to see more exhibits and more animals in larger enclosures. In fact, 80 percent of the surveyed visitors favored expanding the

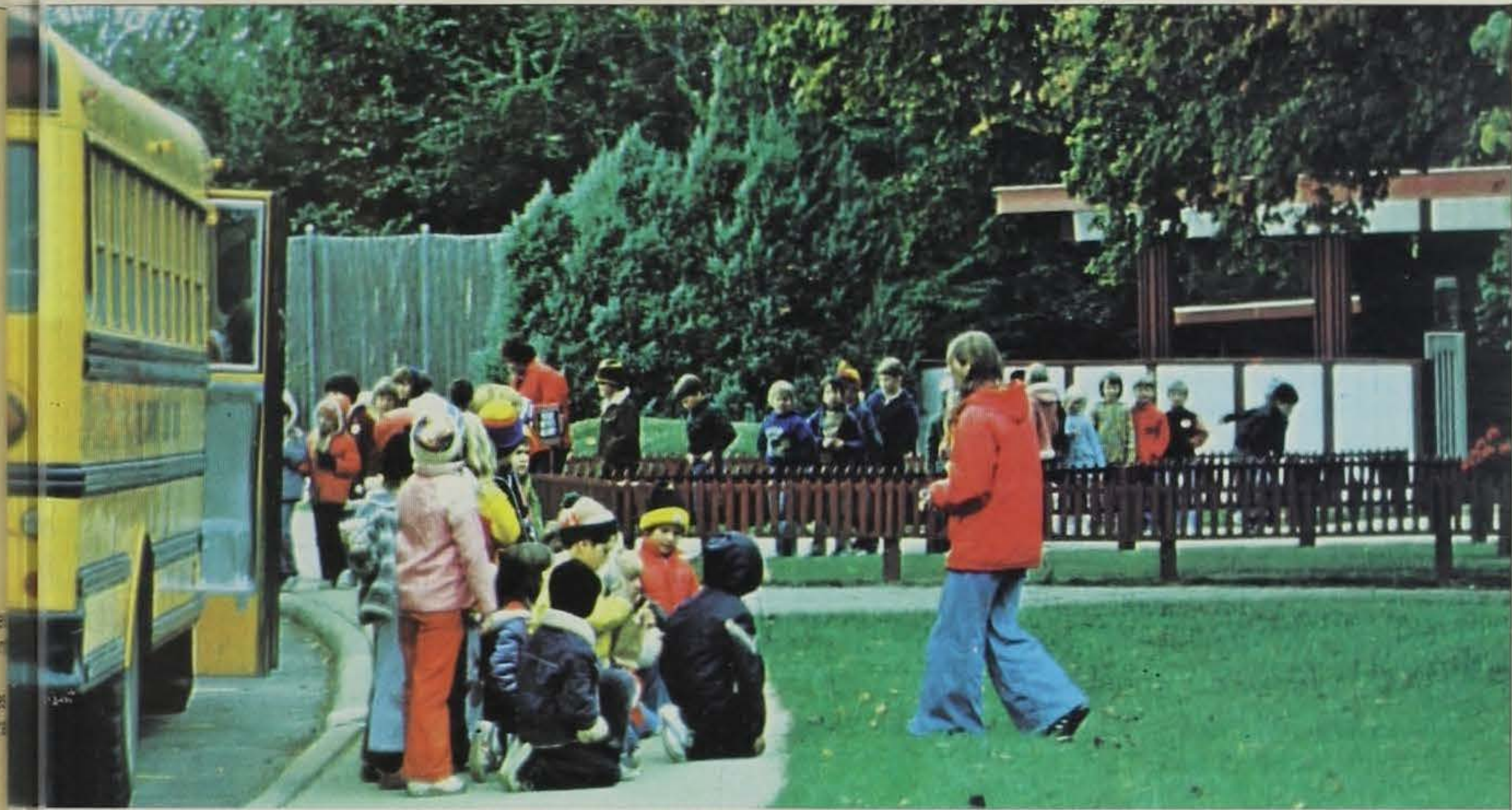
wildlife exhibit and its informational displays. Those desires should be met as wildlife viewing areas are incorporated into the redevelopment for Rediscovery of Ledges State Park. Tentative ideas for these displays include larger enclosures in natural habitat, free of distracting wire. A planned natural sciences center in the park will interpret and guide the visitor to these new exhibits.

Sightseeing, picnicking and hiking were the major activities that drew exhibit visitors to the Ledges State Park area in 1977, and that probably has not changed. For many years about 70 percent of wildlife exhibit visitors have arrived on weekends and holidays. Since about 5 of every 8 visitors walk through during mid-afternoon, you can imagine how hectic a summer weekend afternoon can be, with over 600 people filing by in a few hours. Families, which comprise 70 percent of all visiting groups, find they can take the time to read the life histories of animals, enjoy the waterfowl and take pictures without losing Johnny or Susie in the crowd, by planning their arrival before or after these peak use periods. Mornings are cooler, quieter times to view the animals, and more student guides trained in wildlife science are available to answer questions then.

Guided tours for groups up to 15 or 20 persons are available by reservation on non-holiday weekdays. A 45 minute stroll through the exhibit will acquaint tourers with Iowa wildlife of fields, forests, and wetlands. You can arrange a tour by contacting: *Wildlife Research & Exhibit Station, Route 1, Ledges Road, Boone, Iowa 50036. (515) 432-2823.*

Visitors are always welcome during open hours. The wildlife exhibit will open May 1, 1979 and close October 14, 1979, barring unforeseen calamities (which frequent visitors know have befallen us in the past). During May, September and October visiting hours are 10 a.m. to 5 p.m. daily. Summer hours, from June through August, are 9 a.m. to 6:45 p.m.

The hunters and anglers of Iowa have paid to provide you this wildlife experience. Conservation Commission employees are constantly working to care for wildlife, both in the exhibit and (more importantly) in what little habitat can be found, created or managed in Iowa. To do your part for wildlife, pick up your own Wildlife Habitat Stamp and/or Nongame Support Certificate today. And visit the wildlife exhibit — you can see what you've been missing! □



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SEPTEMBER

Rough Fish Round Up

CATCH ROUGH FISH . . . what for? Answers range from commercial resale to sport angling but one thing's for sure, Iowa's so called "rough fish resource" represents a considerable source of valuable protein that is very much underutilized.

Rough fish, a collective term used for carp, buffalo fish, quillback, gar, dogfish and freshwater drum (sheepshead), have been scorned for a variety of reasons. The ability often times related to the competitiveness of the species. The ability to propagate and sustain themselves in a variety of habitats has led to abundant populations competing for food and space with more popular game fishes.

Abundance of rough fish in Iowa waters was marked in 1909 with the advent of commercial fishing in inland waters. These commercial operations were conducted by private interests who paid the State of Iowa a percentage of the gross income derived from the catch. This type of activity ceased about 1931. The State Conservation Commission conducted a rough fish removal program until the late 1960's.

From the 1940's until the present time the code of Iowa prohibited use of commercial fishing gear in inland waters; therefore, utilization of a commercially valuable rough fish resource was extremely low or non-existent in many areas.

Based upon research efforts of the Fisheries Section on Coralville Reservoir, the Conservation Commission went before the 1971 64th General Assembly with suggested changes in the Iowa Code. Section 109.17 of the code was modified to allow the Conservation Commission to issue permits, set seasons and methods of catch for removal of undesirable fish from inland waters. The resumption of an inland commercial fishery commenced on October 1st, 1972 at Coralville Reservoir, Lake Odessa, and Sabula Lakes.

Commercial catch statistics have been fairly stable during recent years. In 1978, 449,000 pounds of rough fish, valued at \$92,500 were marketed. Buffalo fish were the primary species (400,000 lbs.) and were valued at \$88,000. Carp, carpsucker, and freshwater drum comprised the remaining catch. This harvest may increase due to recent Commission action to expand commercial operations on several natural lakes in northwest Iowa. Fishing operations have already commenced in Lost Island Lake (1200 surface acres). Under ice seining in this lake resulted in the removal of 280,000 pounds of rough fish, 98% of which were carp.

Commercial harvest of rough



by Jim Christianson

Photos by the author

Commercial exploitation of rough fish populations adds another dimension to fish management in Iowa. An additional benefit will be the acquisition of another source of high quality protein for a protein deficient world.

Rough fish marketed by commercial operations are processed in a variety of ways. Carp flesh is often utilized in fisher delicacies, non-consumable materials are processed to fish meal and liquid fertilizers, fish oil is extracted, and trails are marketed as fish attractants. Carp may also be transported live to larger cities for retail sales. Buffalo are usually filleted and transported to marketing outlets for direct sales.

Utilization of rough fish through sport fishing has been limited. Again, negative programming has taken its toll. Species most sought after are carp, buffalo, and freshwater drum. These fish grow quite large (Iowa creel records are carp-50 pounds, buffalo-43.5 pounds, and drum-46 pounds) and may test one's fishing ability of landing a "hawg". Carp fishing is becoming more popular. Around metropolitan areas promotions by both private and governmental groups have met with success. Iowa's streams have produced their share of carp. Fish congregate below collection points such as low head dams and/or instream

obstructions. Most activity is in the spring and early summer in both lakes and streams. Some favorite baits include home concocted and commercially prepared doughball, worms, kernel corn, and moistened bread balled and impacted on a treble hook.

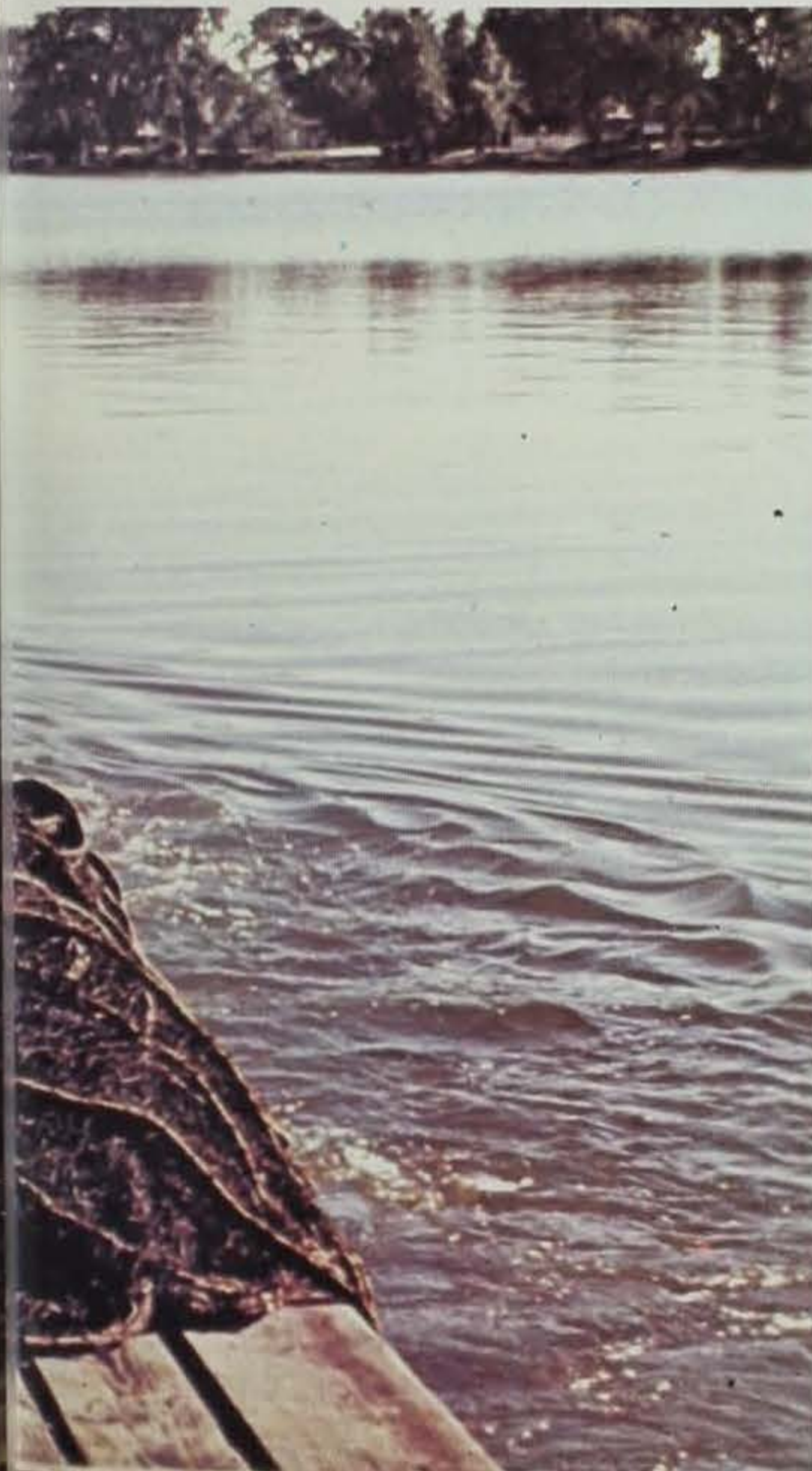
Bow and arrow fishermen also have a hey day when the carp are in the shallows spawning. This sport seems to be gaining momentum, and several carp shoot tournaments are held annually attracting many participants.

Buffalo are a bit harder to hook because of their feeding habits; however, they may be enticed to take a lead head jig or minnow. The best time is usually during May when spawners are found in shallow water.

Sheepshead are found principally in Iowa's border rivers and larger natural lakes. This species is usually creeled by fishermen while angling for walleye and smallmouth bass. They strike readily on minnows, night crawlers, and crayfish but will also take artificial baits such as lead heads and plugs.

Snagging for rough fish was legalized in Iowa in 1976. This has added another dimension to the utilization of these species. This sport usually starts fairly early in the spring when the fish begin to move and congregate and may be a great cure for a winter's case of "cabin fever". □

year-round industry.



RICE LAKE

by Rock Bridges
WILDLIFE MANAGEMENT BIOLOGIST

Photos by the author



RICE LAKE is located in extreme north-central Iowa near the town of Lake Mills and about eight miles south of the Iowa-Minnesota border. The western half of the lake is in Winnebago County, the eastern half in Worth County and it lies entirely within the cash grain region of the state.

The history of Rice Lake prior to 1900 is rather sketchy. However, records tell us that the lake was several miles long and one and one-fourth miles wide at its western end although very irregular in shape. The area of the lake itself, together with the marshy lands surrounding it, was 1,200 acres — 500 acres of which were open water. Almost 200 acres was covered with wild rice from which the area received its name. At this period of time the lake had a maximum depth of 15 feet and was well known for providing good fishing for pickerel, perch, sunfish and bullheads.



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During this period of time the lake was best known for its attractiveness to large numbers of waterfowl providing a top notch production and harvest area. Early records indicate large populations of nesting waterfowl including trumpeter swans and Canada geese. Along with the species of waterfowl and shorebirds which nested, an additional 70 species of other birds were recorded as nesting on lands around the lake.

Then in 1905 with stiff drainage laws and modern technology, Rice Lake, like many other wetlands, was drained. Although never completely successful, the majority of the area was either drained or farmed. The only water remaining was 60 acres of 4-foot deep water in front of the present day 55 acre state park.

In the late 1920's there was a general wish by local people and others from around the state to restore Rice Lake to original condition. The following note is an example of correspondence from that era: "In view of the draining of many lakes in the state of Iowa and elsewhere that have been the breeding grounds for waterfowl, it is exceedingly desirable that this particular lake be restored, as we know of no lakes in the entire region that would be likely to repay so abundantly the money and effort spent in restoration as would Rice Lake." Harry Oberhouser, on assignment from Chief of Biological Survey, Washington, D. C., October 20, 1928.

In July of 1937, the Pittman-Robertson law was passed placing a 11 percent tax

on guns and ammunition. This money would be reimbursed to the states for acquisition, development, management and maintenance for wildlife areas.

From 1937 to 1940, utilizing P-R monies, 90 percent of the Iowa Conservation Commissions holdings of 1,831 acres at Rice Lake were acquired. This was the first purchase of public lands in Iowa using the new P-R monies. At this same time a dam and water control structure was added, which would allow the area to be managed as a marsh. Prior to this time the state had purchased 33 acres on the south shore and had been given 22 acres by the Rice Lake Outing Club resulting in a state park of 55 acres which remains today.

In the late 1940's a real show-down occurred again in the stormy life of Rice Lake. One group was not satisfied with the marsh water level, they wanted a lake. Another group was happy with the existing marsh development and the large amount of wildlife it provided. As the lines were drawn the debate that followed between the opposing groups had its share of arguments for both sides of the issue.

However, during that period, the strength was with those desiring a lake. As a result, a dike was built to protect private land and the marsh water level was raised four feet to the present level.

Today, Rice Lake is a picturesque open body of 800 acres of water ranging in depth from 1-8 feet. The water surface is dotted with nine islands which are covered with native oak and basswood.

The lake is many things to many people. It is definitely a multi-use area which is used by people desiring all types of outdoor and water related activities. Because of the shallow depth, 8 feet or less, the lake is plagued with a history of fish winter kills. As a result, the hardy bullhead is the primary fishery present.

Every spring and fall Rice Lake is again revitalized with the arrival and departure of thousands of waterfowl which are attracted to the area. When the air is crisp in the fall, Rice Lake is in all her glory with oak trees turning brilliant colors and the calls and sounds of the returning waterfowl whose ancestors depended on her for food and cover. Unlike their ancestors who used Rice Lake as their home, the area now is attractive primarily as a migratory waterfowl resting area. However a good population of wood ducks still produce young in the adjoining timbers.

Rice Lake today is probably best known for her 1,000 acres of uplands which support a large number of forest and upland wildlife. White-tail deer and squirrels are very numerous at Rice Lake. The ring-neck pheasant, once very prevalent in north-central Iowa, now finds the uplands around Rice Lake to be much like the cover his ancestors preferred in the 40's and 50's.

Approximately 40 acres of uplands are cropped for the purpose of providing food and cover for the wildlife of the area. To attract and hold waterfowl and deer, the western one-third of Rice Lake totaling 600 acres, is in an inviolate (no trespassing) refuge from September 15 to December 15 each year. Waterfowl numbers usually reach several thousand during the peak of migration each fall. The wintering deer population averages around 75 animals.

The brightest spot in Rice Lake's future appears to be the giant Canada goose. In the spring of 1972, 16 Canadas were brought to the lake to establish a nesting population. To date, over 320 young have been raised on the area. This production, plus other geese that are attracted, has the present summer population at around 400 Canada geese. The geese are expanding their range from Rice Lake to many wetland areas and streams within 100 miles. The future should see a very noticeable increase in Canada goose numbers utilizing the wetlands and streams of north-central Iowa.

Seeing Canada geese, old timers with a glimmer in their eye, can still recall when Rice Lake was "once the best waterfowl area in north-central Iowa." □



Last Winter's Effect on Iowa Wildlife

by Richard A. Bishop
WILDLIFE RESEARCH SUPERVISOR

THE THOUGHT of deep snow and biting cold is as much a concern for what lies ahead this coming winter as it is a memory of last year. However, last winter was cruel and tough, especially in the southeastern one quarter of the state. For many of us, we thought it would never end and even when it did, we remained concerned about its aftermath on wildlife populations. It was obvious that conditions were right for serious wildlife losses.

In late November, snow draped winter's veil over most of northern Iowa, and this formidable covering remained until late March, with some snow lingering until mid-April. Deep snow and cold temperatures for such an extended period made life functions difficult for northern Iowa's wildlife. Southern Iowa experienced snow in December but it did not remain. Initiation to prolonged snow began the last few days of December and snow melt did not free the landscape until March. A coating of ice on top of approximately two feet of snow in east-central, southeast and south-central Iowa caused serious food problems for all wildlife.

A concerted effort by farmers, sportsmen and other interested people to feed stressed wildlife eased the realities of life for some flocks of game birds and a few deer herds. But, what about the many birds and animals that were not the recipients of free handouts? The effects of winter on this fall's wildlife populations will be foremost in people's minds as their thoughts venture afield.

To correctly address the actual losses to wildlife from last year's extended snow fest, wildlife biologists and conservation officers from the Iowa Conservation Commission collected considerable field data for biological evaluation. This article was not written immediately following the diminish of winter chills but was delayed to gather as much information as possible on the probable effects on Iowa's wild creatures.

Pheasant:

Prolonged heavy snow cover coupled with extensive fall plowing, set the stage for possible starvation. While winter feeding helped some pheasants many others survived without the help of concerned people. To check the physical condition of wintering pheasants, a sample (40 birds from northern Iowa and 32 from southern and eastern Iowa) of birds killed by cars were picked up by Commission personnel and examined. Ninety percent of the birds had some food items in their crops at the time of death. Eighty one percent had some body fat and 91 percent showed no reduction of breast or leg muscle. In the four cases that resembled starvation, one bird had sustained a previous injury and two showed evidence of some disease. The majority of the birds examined weighed slightly less than pheasants checked in previous reasonable winters.

Each year pheasant populations experience some degree of winter mortality and 1978-79 was no exception. While slightly higher than normal losses were believed to have occurred in northern and east-central Iowa, no data is available to suggest that mortality was exceptional. No reports of serious starvation losses were received from the public or Conservation Commission field personnel. Blizzard conditions normally account for most of Iowa's winter pheasant deaths, but snow storms with strong winds or ground blizzards were not prevalent and consequently we did not receive the usual accounts of pheasants dying from exposure or suffocation.

Spring observations and counts indicate good spring breeding populations in spite of the tough winter. If production is average or above, fall populations are expected to equal or exceed those of 1978 in most areas of the state.

Photo by Ron Johnson



Pheasants, deer and turkeys survived the winter remarkably well. Quail, particularly in marginal areas, were hit the hardest.

Photo by Rock Bridges



Quail

Of Iowa's game species, the bobwhite quail was hit the hardest by the severe winter weather. Heavy snow with an ice crust covered most available food and prevented some quail from locating necessary resources. Areas with excellent winter cover or standing crop fields sustained only moderate winter mortality; however, marginal areas suffered extreme winter kill. The hardest hit portions of the state were south-east and south-central with slight moderation as you progress from east to west. Southwest Iowa experienced only slightly heavier than normal losses.

Even in areas with deep snow, some quail had adequate food from standing crops or feeding programs. In some areas, wildlife and livestock broke through the crust and uncovered enough food to pull the quail through. These spots are reported to be normal and will produce an abundance of quail this fall.

Research on a long-term study area in south-central Iowa, documented a 70 percent decline in spring quail numbers compared to the previous year. This low spring count matched that of 1975. Quail rebounded from 1975 on the research area to high numbers in 1978, and with good reproduction, quail will soon be numerous in areas where good habitat exists. Mortality in portions of southeastern Iowa probably exceeded that found on the research area, but areas with good cover did not lose all their birds.

Field personnel report hearing quail calling throughout the good habitat in southeast and south-central Iowa, but the number of breeders is down significantly. This fall's population will depend on reproduction. If the nesting season was good, some habitats will contain as many coveys as were observed a year ago, but as a rule we expect lower quail numbers. The point worth noting is that habitat is the KEY and

where good food and cover are available, quail populations will bounce back rapidly. Hunting will not effect these bird populations. During previous years with long seasons, quail populations increased. They will again.

Deer

Reports of big game populations faced with possible starvation came from many western states which alerted Iowans to pending problems at home. Iowa, because of its abundance of agricultural crops, has not been faced with deer starvation. Increased fall plowing and more efficient harvesting equipment have recently reduced food resources available to deer and this aspect coupled with heavy snows and concentrated deer, set the stage for problems last winter. A few reports of weakened or dead deer were received from individuals where deer were concentrated but in most cases the dead animals had injuries caused by cars or the past hunting season. Starvation was believed to be the cause of several deer fawns found dead in northeast Iowa.

Mortality due to starvation is considered light and of little consequence to Iowa's deer herd. Our biggest concern is the condition of bred does. If these animals were weakened by winter's force, we may see a reduced fawning rate due to abortion, reabsorption or loss at birth. Field personnel reported that deer appeared in good shape shortly after spring forced its way on the scene. Most road-killed adult does examined by conservation officers carried healthy twin fawns. A reproduction study currently underway will shed light on this question. We hope that reproduction will approach the normal rate of 155 fawns per 100 does.

Turkey

Since Iowa released wild trapped eastern turkeys from Missouri in 1965, we have not experienced weather conditions



Photo by Lloyd Crim



(continued)

that endangered survival of wild turkeys. Deep snow in 1978-79 crusted with ice prevented some turkeys from obtaining adequate food. Reports of starving turkeys were received from northeast and southeast Iowa. No reports of starvation were received from south-central Iowa in the vicinity of Stephens State Forest.

Several dead turkeys were found and examined and most of these were young of the year birds. The fear of extensive mortality was relieved when spring triggered the annual mating urge. Gobbling by dominant toms shook the length and breadth of the turkey woods and the 1979 spring gobbler season was a record breaker. Permits were increased to 3,200 with four zones being added. Hunter success was 24 percent which is higher than most traditional hunting states and accounted for 688 turkeys bagged. Numerous jakes or immature males were harvested indicating that losses of young turkeys were not great.

We weathered a difficult winter with a limited number of birds which points out the importance of corn to Iowa turkeys. This experience gives us faith that our newly established populations can survive in the face of severe winter conditions.

Furbearing Animals

Little information is available on our furry friends. Foxes and coyotes appeared to have weathered the adversities and raccoons may have benefited from deep snows which provided insulation and required less energy to maintain body temperature. Muskrats, mink, beaver and other species probably survived the winter in good shape.

To summarize what we recall as being one of the worst winters in 20 years, we emerged into spring with vitality, considering the circumstances. No wildlife populations with the exception of quail, suffered severe winter mortality. Quail have the ability to come back rapidly where good habitat is available.

People showed much concern for the welfare of wildlife. Farmers, sportsmen and other interested groups cooperated to feed hungry birds and animals, and surely some good came of this mutual concern and interaction. The end result will be a better informed public and a more experienced Conservation Commission personnel.

We wish to thank the wildlife biologists, conservation officers and private citizens that spent their time in the field to collect information and pass along their observations on the 1978-79 winter effect on wildlife. We have braved a tough one and survived, with a lesson learned that good wildlife habitat is needed if we desire to keep this most valuable resource. □



Photo by Ron George

Emaciated quail (at right) was unable to find enough food to survive. Bird on the left came from the same section of land but was able to find food.

Channel Catfish Production at Rathbun Hatchery

by Vern Spykerman
FISHERIES BIOLOGIST

One of the most important game fish in Iowa is the channel catfish. The reason for "old mister whisker's" importance is really twofold. First of all, channel catfish are very adaptable critters. They possess an inherent ability to tolerate and even prosper in many different types of water. Good populations of catfish are found in almost every type of water in the state. This includes small ponds and lakes, large flood control reservoirs, natural lakes, and of course, our nearly 15,000 miles of interior fishing streams, as well as the large border rivers Mississippi and Missouri.

Secondly, catfish provide recreation to almost every type of fisherman. The highly specialized equipment often used to catch other fish species is unnecessary to bring in a catfish. Many good catches of catfish are taken with such simple gear as some string, hooks, sinkers and saplings cut along the riverbank. Young children as well as older citizens are able to fish productively since many good catfish holes are as easy to reach as the local stream or pond bank.

Because channel catfish are an important game fish, they receive a considerable amount of attention from Iowa Conservation Commission Fish Hatcheries. In fact, our newest and largest fish hatchery, Rathbun Hatchery, is devoted to channel catfish production. Over one million catfish weighing a total of 27,451 pounds were produced at this facility in 1978. As large as these figures may seem, the production is expected to nearly double within the next two years. Additional emphasis is going to be placed on improving the fisherman's catfish catch through increased stocking, particularly in small ponds and lakes.

The culture of channel catfish is not far removed from other types of livestock production. The accompanying photos summarize the methods involved. In addition to standard culture methods, some new culture techniques have been implemented at Rathbun Hatchery. One of these is unusually early spawning of the catfish. The catfish brood stock are exposed to heated water and induced to spawn two months earlier than normal. In Iowa, the catfish growing season is only about five months long since catfish require water temperatures in excess of 60° F to actively feed and grow. Early spawning extends the growing season and allows larger catfish to be produced during the first year of growth.

Another new technique being used is what is termed intensive culture. Quite simply this means a large number of fish are being raised in relatively small tanks. The benefits of intensive culture include higher production per unit of area and greater control over factors affecting production.

The future of catfishing in Iowa looks very good. Waters available for catfishing are numerous and increasing with the construction of new lakes. Fisheries biologists possess the expertise necessary to manage these waters for good fishing and Rathbun Hatchery has the capability to produce the catfish needed for stocking.



Channel catfish are maintained at the hatchery from year to year. These catfish make up the brood stock from which each year's stocking fish are produced.



When spawning time approaches, males and females are paired in tanks inside the hatchery building. Before a female is paired with a male, she is given an injection of hormones to induce spawning.



From cans are placed in the tanks and in them is where the fish and eggs are deposited. Catfish eggs are deposited in a large mass. Each female will yield from 3,000 to 4,000 eggs each pound of her body weight.



Ron Johnson

The eggs are removed from the cream can and placed in a jar-type incubator. After hatching, the fry are moved from the incubator to start tanks where feeding begins.

The main production units at Rathbun Hatchery are the outside growing ponds. Each pond is stocked with 40,000 two-inch catfish. The fish are then fed and cared for all summer and harvested in the fall. At harvest, each pond will yield from 3,000 to 5,000 pounds

of fish. It is possible to raise large numbers of fish in each pond because the oxygen in the water is replenished by a continuous flow of fresh water. This type of fish production is called intensive fish culture.



Rathbun Lake Fishing 1979

by Jim Bruce

RATHBUN LAKE is a U.S. Army Corps of Engineers flood control impoundment. The gates were first closed in October of 1969 and the water reached the multi-purpose pool level of 904 mean sea level in October of 1970. At this level the lake contains 11,000 surface acres of water and has a shoreline of about 160 miles.

During this period a few hundred adult crappie were placed in the rising water. From this rather modest beginning the crappie became the mainstay of Rathbun Lake angling. The crappie became the dominant fish in the catch in 1973 and peaked numberwise in 1975 when over one-third million were taken by anglers during the April through September period. During 1972, the first year from which data is available, bullhead, largemouth bass and walleye all surpassed crappie in number harvested by the angler. Since 1972 crappie have contributed 80-90% to the total harvest each year.

While 1975 was the year in which the peak number of crappie was taken, 1978 was a better year in respect to the rate of harvest. In 1975 the average angler caught 1.04 fish (89% crappie) per hour, in 1978 the catch rate was 1.10 fish (87% crappie) per hour.

As for the future, we can anticipate that crappie will remain the bread-and-butter fish at Rathbun. This spring the Buck Creek and Honey Creek arms and along the dam face were hot spots. Anglers used small (1/16 oz.), white leadheads or minnows near brush and rock. Fishing close to shore and in water less than ten feet deep produced many crappie weighing $\frac{1}{2}$ - $2\frac{1}{2}$ pounds each.

As summer approached, anglers located deep drop-offs along the north shore and along the dam face. Minnows fished from ten to twenty feet in depth took baskets of big crappie.

During this fall try fishing the Island View area near the old rock quarry in five to twenty-five feet of water. Again, minnows are a top bait.

Walleye were first stocked in Rathbun in 1970 and have been stocked annually since. The survival of the initial plants appeared good and walleye were an important part of the angling picture through 1975. However during this time it was becoming apparent that the fishery was relying on the early plants and few fish had survived from those plants made after 1972. In the fall of 1975 and every fall since, fingerling (5-inch fish) have been stocked to supplement the fry (newly hatched fish) which had been stocked in previous years. The plants of larger fish will increase the take of walleye; approximately 100% more walleye were taken in 1978 than in 1976 and 1977. Walleye can be taken throughout the year and some of the more productive spots are around Island View, off the islands near South Fork, Bridgeview, the outlet area and the deep water off Honey Creek State Park. Early this summer many good catches were taken in these areas.

The initial plants of largemouth bass in Rathbun in 1970 and 71 did quite well and bass fishing in 1972 and 73 was rewarding. Natural reproduction and survival has failed

to take up the slack, and largemouth bass numbers and fishing has declined since that time. In the fall 1977 and 78 experimental plants of fingerling (5") largemouth bass were made in an attempt to bolster the bass population. While the evaluation of these plants is not complete, preliminary indications are that the stocking of fingerling largemouth bass in this situation may not be economically advantageous. Although largemouth bass fishing at Rathbun is not fast, some largemouth are taken with fish running up to eight pounds being reported.



Photo by Sonny Satre

Above: An anglers limit of Rathbun walleye.

Below: Pleased anglers with some jumbo crappie.



Photo by Ron Johnson

Classroom Corner

by Bob Rye

ADMINISTRATOR, CONSERVATION EDUCATION CENTER

In 1969 27,000 adult channel catfish were stocked, followed by 175,000 3" catfish in 1970. Since that time the population has maintained itself well with natural reproduction. Peak years for angler harvest were 1975 and 1978. It is generally felt that this species is underharvested in Rathbun. Knowledgeable catfishermen should have no trouble making some nice catches in the future. Fishing the upper end and points will consistently produce large fish.

Another fish which provides considerable recreation at Rathbun is the black bullhead. This fish has provided 3 to 5% to the harvest during the past five years. The bullhead were in the river at the time of impoundment; none were stocked. A juicy worm fished on the lake bottom is the most popular angling method.

Other game fish which contribute to the catch at Rathbun Lake are white bass, bluegill, drum, musky and striped bass. 2,800 adult white bass were stocked in 1971, these fish reproduced, and in 1976 seven percent of the fish harvested were white bass; in no other year have they contributed more than 3% to the catch. However when a school of white bass is located the action is fast and furious. Bluegill and drum (sheephead) were present in the Chariton River at the time of impoundment; neither fish has contributed more than 1% to the harvest since 1974, however drum are present in good numbers and could be utilized to a much greater extent by anglers. Most of the drum harvested run in the 12-14 inch size group. An old reliable drum bait is peeled crawdad tail.

During the 1971 through 1977 period striped (ocean) bass were stocked every year, except 1973. The only confirmed return from these fish occurred in 1978 when a number of 15" striped bass, from the 1976 plant, were taken by anglers on the main body of the lake. Fisheries personnel have been taking special notice of ocean strippers caught during 1979 in order to evaluate the program. The 1979 fishing regulations place a 1 fish bag and possession limit on the ocean striped bass.

Small numbers of musky and tiger musky have been stocked in 1970, 71, 74 and 78. The tiger musky is a hybrid cross between the musky and northern pike. These fish have not been stocked with the idea of a large numerical harvest, but rather that a great deal of excitement will be provided by a few large fish. A few Rathbun anglers have already received the angling thrill of a lifetime by catching a musky; the largest taken to date is a 29 pounder caught in 1979. There is a 1 fish bag and possession limit on musky and tiger musky and a 30" minimum legal length.

A new species of fish has been introduced into Rathbun Lake this year. It is the spottail shiner. It is hoped that this fish will become an important forage fish. The species provides acceptable forage throughout its life cycle and should increase the available forage for the predators during the fall and spring periods when the gizzard shad are in short supply. Hopefully the spottail shiner will add greatly to the angler harvest in the form of larger crappie, bass and walleye.

Facilities for the angler are well developed at Rathbun with eight campgrounds, twelve boat ramps and two marinas waiting to serve the recreationist's needs.

For detailed fishing information contact Fisheries Biologist, Rathbun Fish Hatchery, Moravia, Iowa (phone number 515-647-2406).

There are "fingerprints" to be found in nature. Clues abound to tell you, the nature detective, what, when, where, why and how a "nature" event occurred.

There is a great deal of interest in detective work. For instance, these types of shows are popular on television. Further, how many movies or books are designed to lead you through a series of discoveries to a conclusion of what went on when no one was present?

Nature has many of these same "fingerprints" indicating where things have happened or unseen animal's activities have occurred.

Some of the everyday "fingerprints" we encounter are: dead animals along a road, limbs of trees laying on the ground, tracks found in snow or mud, or a bird nest in a tree or shrub.

Detective questions can easily be solved as we try to figure out what was going on. The dead animals, if found near another kind of dead animal, were feeding on it when hit by a car. The limbs fell during the wind storm the night before. The animal left tracks while getting a drink in a snow bound stream. The nest was the nursery of a bird no longer using it.

There are other nature clues around which we, being daytime animals, have a difficult time figuring out. Have you ever tried to determine what a racoon does or where he travels? Have you ever found a marking, a rubbing on a tree or animal hair caught in a wire, and found yourself baffled as to the cause?

At the Educational Center we run a program after dark called "Who goes there - blacklight tracking". This program is set up to present the participants with a series of clues or "fingerprints". They then have to identify the "whos" and "what" was going on.

As you can guess from the title we make use of black lights. We also use a fluorescent powder and bird feed. The mixture of powder and seed is placed out in advance so animals can track through it. We pick several different sites since a single site isn't always visited by a large variety of animals.

These variable sites provide the participants with clues as to where different animals live or may sojourn. Some are found only in grassy, or brushy, or timbered areas. Some can be found in all three. The participants are asked "Where are the favorite trails of the animals in this area?" The variance in sites provides clues to only one of several conclusions they may come up with.

In "Who Goes There", participants are also given another problem. "How many kinds of animals come to the bait stations?" The evidence here is where the tracks occur, the size of the tracks and how the tracks are spaced. A jumping animal will provide different patterns than a walking one; a large animal will have greater distance between tracks as well as larger tracks than a smaller one. Clues are not only found by looking down. A bird may hop on the ends of branches or a squirrel may leave fluorescent powder where its tail came in contact with an object.

Participants are also challenged to determine whether the animals are day or night-time animals. Many times an unexplainable piece of evidence is blamed on the night creatures we "day-timers" normally don't see.

Next time you find evidence and "fingerprints" are found everywhere, try to determine who was there and what were they doing. Also try to determine if it was an animal which was active during the day or night.

Southern Iowa's Bonus Panfish

by Bruce Adair
FISHERIES BIOLOGIST

"Biggest bluegill I ever caught," cheered the happy fisherman as he hoisted the saucer sized fish into the boat. "Wait, this is no bluegill," he exclaimed plucking the tiny hook from its lip, "it's a redear." "Sure would like to catch a stringer full of these babies."

The redear is a surprise addition to the creel of many southern Iowa anglers. It is a member of the Sunfish Family and closely resembles its cousin the bluegill in general appearance. As its name implies, however, the redear is easily recognized by the conspicuous red margin on the gill cover flap or "ear flap." The only other sunfish in Iowa which might cause some confusion in appearance is the pumpkinseed, which also has a red spot on the ear flap, but is colored quite differently. The pumpkinseed is primarily a resident of the natural lakes of northern Iowa, plus some northern Iowa streams.

Although the redear's natural range was in the Southeastern U.S., ranging only as far north as southern Indiana, they have been (experimentally) stocked in many other parts of the U.S. as well. Redear were first stocked in southern Iowa impoundments during the 1960's.

The redear goes by a variety of common names depending on the locality. He may be called a shell cracker, a stump knocker, a strawberry bass, or even a redeared perch. Probably the most common of these is the shell cracker, due to the redear's fondness for snails in its diet. The redear is equipped with rounded molarlike teeth within its gill arches suitable for crushing the shells of these small mollusks. He then expels the shell fragments from his mouth.

In addition to snails, insect larvae and water fleas make up a large percentage of the redear's diet. The redear spends much of its time in deep water and seldom feeds on surface insects like the bluegill.

The reproductive characteristics of the redear are typically sunfish. They nest in colonies in shallow water similar to bluegill and if submerged plants are available, will make a nest in the midst of or near this vegetation. Spawning takes place when water temperatures reach 68 to 70 degrees F. This closely coincides with the beginning of the bluegill spawning season and usually follows the spawning of largemouth bass.

As is typical with the more common sunfish in Iowa, the male forms a nest, searches out females for his mates, and guards the eggs and newly hatched fry after spawning.

The reproductive capabilities of the redear are less than that of the bluegill, possibly because the spawning season is shorter than that of bluegill. Redear work well in ponds and lakes in combination with largemouth bass and bluegill. A simple combination of bass with redear typically does not prove satisfactory, however, because redear do not reproduce in large enough numbers to provide sufficient food for the bass.

Average yearly growth of redear typically exceeds that of bluegill. Redear approaching 1 pound in weight are common. Keep in mind if you catch a redear weighing over 1 pound, you are eligible for a Big Fish Certificate and patch from the Iowa Conservation Commission.

Fishing for redear can be frustrating. Although lakes containing good populations of redear are scattered throughout southern Iowa, seldom are fishermen observed with stringers full of these elusive panfish. In most instances the redear is more of a bonus fish for the bluegill or crappie angler.

Probably the easiest time to catch redear is in the spring while they are in shallow water over their spawning beds. Search for their "elephant track" depressions along the shorelines of lakes. Approach cautiously and cast directly over them.

The rest of the year the redear are lovers of deeper water, so fish

accordingly. Concentrate your efforts around submerged brush or along edges of weed beds and keep your bait close to the bottom.

Keep your tackle light and your bait small. Line from 2 to 6 pound test is adequate and is needed to cast the tiny lures or baits required by these fish. Jigs in the 1/32 to 1/64 ounce range are ideal or try a variety of live baits — worms, crickets, cockroaches, grasshoppers, etc. Small hooks (#8 or 10) are a necessity with just enough weight added to get the bait down where it is effective.

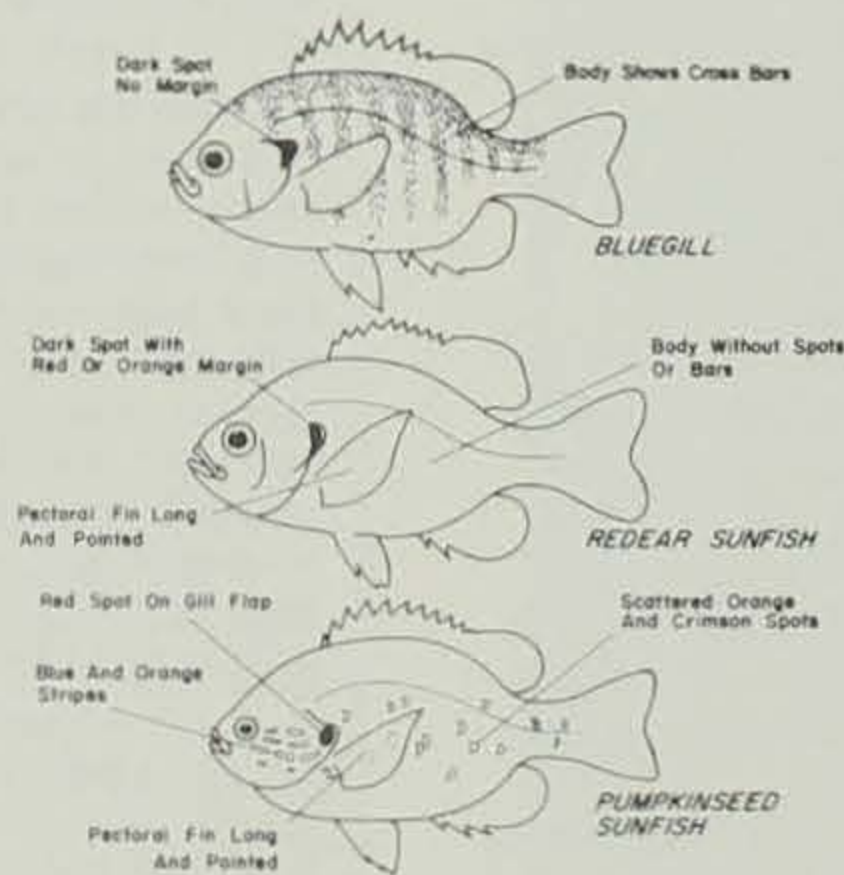
Redear become very inactive and virtually cease feeding at temperatures below 44 degrees. This is unfortunate with the growing popularity of ice fishing in southern Iowa. Redear caught through the ice are quite rare.

Regulations concerning redear fishing in Iowa are the same as those on bluegill and crappie. There are no size limits, daily limits, or possession limits to worry about. Catch all you want (or are able to).

It has been said that ounce for ounce, the bluegill is the scrappiest fish that swims. The redear sunfish is cut from the same mold and since they grow larger, can provide some real thrills on ultra-lite tackle.

Is your favorite fishing lake listed below? Each of these lakes contains healthy populations of redear. Give one of them a try for some of those "bonus babies" next spring and summer. □

Above: Bluegill.
Below: Redear.



Drawing by Larry Pool



Photo by Ken Forrester



IOWA CONSERVATIONIST/SEPTEMBER, 1979

PAST MISTAKES REPEATED?



by Bruce Plum, DISTRICT FORESTER

Land clearing: is this progress?

THE COURSE of past civilizations can actually be related to the productivity of their soil. As the soil resources diminish through improper use the civilization will generally decline in proportion to the soil loss.

Agriculture had its beginnings about 7,000 years ago in the Near East. In Mesopotamia the people depended upon irrigation from the Tigris and Euphrates Rivers. The watershed of these rivers was misused first by the cutting of the forests and then by the grazing of steep lands. This led to siltation of the rivers and canals feeding from them. The siltation eventually increased so rapidly that the waterways could no longer be kept open. Without water the land could no longer support the population.

The area Moses called the "land of milk and honey" is now a region of desolation as the soil has eroded off of the hillsides down to bedrock. This was brought about through improper use of the land.

The famous Cedars of Lebanon which shrouded the mountains of ancient Phoenicia have been decimated. These trees were used to build Phoenician ships of commerce. Logs from these trees were exported to Egypt as early as 2,900 B. C. and about 3,000 years ago King Solomon used these cedars to construct the famous temple in Jerusalem. As the forest was cut, it was not allowed to regenerate. The land was instead used for grazing and agriculture. The steep slopes could not support these activities and soon the soil washed and blew away. Of 2,000 square miles of stately forests only four small oaks remain. Where protected from grazing these trees show a capacity to regenerate under today's conditions.

Most of the Mediterranean lands once supported strong civilizations which went into decline in direct proportion to the loss of soil. Even today the story continues. The Western world has by no means a monopoly on the mistreatment of land. The forests in the upper watershed of the Yellow River in China were denuded for agriculture purposes and the soil was eroded into the river. As the silt from the uplands filled the riverbed, the Chinese built dikes to contain the river in the flat lands below. As the river channel built up higher from siltation the dikes were raised. Eventually the river bed was forty to fifty feet above the valley floor. In 1852 the river

finally broke its confines, flooded the valley and killed millions of people. The few temple forests in this watershed provided a chance for researchers to compare rates of erosion in these forests and on similar slopes being cultivated. The results proved why the Yellow River became known as "China's Sorrow".

The denuded steep land in each case caused soil loss which destroyed agriculture directly or indirectly. Soil was lost, rivers were clogged and surface winds no longer tempered by trees carried away the soil.

The value of forest land in Central and Northern Europe has long been understood. Forestry has been practiced there for about 400 years. These governments do not intend to follow the footsteps of the ancients.

Perhaps people of older civilizations knew no better. Lack of mechanization made destruction of the land take place at an imperceptible rate. Today we can see what is happening. What took centuries to destroy with hand labor we are destroying in a short span of time. For example: Iowa lost 44% of its timber cover in a recent 20 year period. The rate of loss is apparently accelerating.

The earth rewards the people who use it wisely and punishes the uninformed and the greedy. Let us hope Iowans do not fall in the latter category. □

Overgrazing, a sad picture.



A Better Understanding

by Bob Mullen
STATE CONSERVATION OFFICER

Photos by S. Franklin

THERE ARE SOME THINGS that just can't be adequately taught from a book in a classroom. Environmental awareness and education is one of these things. Books can tell a person some things about the environment, but getting out into the field and seeing, being part of, and experiencing it is a type of education not found in pages.

The Tama county environmental education committee felt an outdoor classroom was essential for a student to be able to really understand and appreciate the environment. Persons from the Soil Conservation Service, ISU Extension Service, Iowa Geological Survey, fisheries, wildlife, forestry and law enforcement sections of the Iowa Conservation Commission are used annually as educational instructors for an outdoor classroom.

Approximately 400 5th grade students from Tama county participate in the yearly outdoor classroom which is held in the late spring. The students are divided into groups and rotate from one field station to the next. Each field station touches upon such things as recreational opportunities, nature appreciation, the interaction and interrelationship of the environment, and management of our natural resources. Subjects taught deal with soil and land use, the plant and forest world, Iowa wildlife, geology, insect world, forestry, fish management, fishing methods, boating safety and ecology.

The majority of our youth are born and reared in cities and urban areas. The parent's backgrounds are probably from these areas also. Many people have lost the appreciation and proper usage of our natural resources. Parent to

offspring education, concerning the value of our land and natural resources, is almost absent in today's society. Much of what was common knowledge concerning nature and its practices has been forgotten. This lack of knowledge concerning conservation and the environment makes such outdoor classrooms doubly important. If we fail to adequately expose and educate today's youth on such matters as conservation and appreciation of our natural resources, we are depriving them of a part of life to which they are entitled. Through such outdoor classrooms as the one held in Tama county, students are able to be in the outdoors and appreciate nature and see conservation practices at work. Reading about nature from a book keeps one on the outside looking in, but being a part of nature and having first hand experience and knowledge are things that a youngster will not easily forget.

It's just possible that many of our environmental problems, which have become widespread in the last few decades, are the result of a lack of understanding and appreciation of our natural resources and the environment. Unfortunately in the past, we have unwisely misused our environment and its natural resources. One of the benefits that students will hopefully receive from such outdoor classrooms, is the concept that we are a part of our environment, and that we must wisely use and enjoy this heritage.

Outdoor classrooms are held in many areas throughout Iowa, but many more are needed. Let's hope that none of our youth are deprived of such an educational experience.



LOOKIN' BACK

in the files of
the CONSERVATIONIST

Ten years ago

the *Iowa conservationist* featured a preview of the upcoming deer season. It was estimated that 49,000 licenses would be issued and that hunters would spend over 700,000 man hours in the field.

The waters section was gearing up for the new responsibility it would be handling in 1970 — 25,000 new acres of water at Red Rock and Rathbun.



Twenty years ago

the magazine was also looking at the upcoming deer season. In this case it would be only the seventh modern day season and it was expected that the total harvest would be around 3000 deer. In the census of 1958 deer were reported in every Iowa county except Grundy.

The pheasant season was changed to open hunting at 9:00 A.M. instead of 10:00 A.M.



Thirty years ago

the *Conservationist* announced the upcoming squirrel season which would run for two months and was expected to be a good one for hunters. In other seasons: pheasant shooting began at 12 noon, limits were 4 each on ducks and geese, and there were no seasons on jack snipe, rails or doves. Scientific game management has allowed the Commission to adjust seasons such as these, with the notable exception of doves.



Warden's Diary

By Rex Emerson

SEPTEMBER — the month when many of us stop thinking about hunting and start doing it. It's the time of the year when the squirrel season opens. With visions of a nice young squirrel to eat, I stopped in at a local sport shop to buy some .22 cal. rifle shells. A little old lady was in there. I think maybe she was buying a shower curtain for her bird bath. When she heard me ask for rifle shells she said, "So, you are one of those people! Why do you want to shoot those poor defenseless little creatures of the woods? What did they ever do to you?"

With everyone in the store wanting to hear my answer, and with so many anti-hunters in the world today I thought I had better come up with a good answer. I could have told her about the number of animals out there, and how some should be harvested, and I was just doing my good deed by hunting them. Maybe she would like to hear about the cattle rancher who doesn't keep all of his calves year after year, or he would soon run out of pasture. So he sells some of them for other people to eat (after they have been killed, of course). Or, maybe I could have told her about the chicken farmer who wouldn't want half roosters and half hens in his chicken house if he wanted the eggs to be fertile, and also how he wouldn't get eggs from the roosters. That is similar to the reasons for having an open season on rooster pheasants.

All of those statements are some of the reasons for having an open season on some species of wildlife, but still not really an answer as to why I want to go hunting. The anti-hunters have heard all of this before, and still don't accept it as a reason to go hunting. The lady had not let up for a minute on lecturing me about killing.

I had to do some soul searching about this question, and I came up with this answer.

I said, "Lady, I like the challenge of the hunt. I enjoy killing the animal that I have stalked, and I like to eat the animal that I shoot. If I shoot a coyote or a fox I don't eat them, but would sell the fur for a little extra cash. Some lady would probably benefit more than I by wearing a fur coat. The seasons and limits are set so we who like to go hunting will not overharvest the supply. We, too, enjoy seeing wildlife alive and wouldn't want to kill all of it. That may not be every hunter's reason for going hunting, but it is mine. If the **habitat** isn't destroyed, you will still have wildlife to watch, and I will have wildlife to hunt."

She stormed out of the store and will probably write a letter to the editor of the paper. I didn't get a chance to tell her about all the fish that I slaughtered last summer while on vacation.

While I was still in the store the phone rang and it was for me. My wife usually knows where she can locate me if it is important.

A farmer had called her about some people hunting without permission. Even though it was my day off, this was an important call, so it was back to work. On the way out to answer this call I wondered, "When will people ever learn to ask permission to go hunting on private property? Every time they hunt without permission we see more 'No Hunting' signs go up."

When I arrived on the scene the farmer and the hunters were standing on the road having some heated words. The hunters were telling him that they didn't know they had gotten onto his property. Nothing new about that excuse.

Then the farmer, who was as nice a person as you would ever want to meet, said, "If they would only ask permission, so I know who is out there, I wouldn't care if they went hunting."

I said, "Do you mean even now, if they asked permission, you would let them hunt on your place?"

When he replied affirmatively, I turned to the three hunters and said, "There you go, gentlemen. He's willing to let you off the hook. It's a lot better than you deserve."

Several moments of silence went by as they rolled the road rock around under their feet and stared at the ground with only a fleeting glance at each other. Each one was waiting for the other to do the asking. It was really hurting them, and it was obvious that they had never asked anyone for permission to hunt before in their lives. The farmer and I kept quiet, and I think we were both enjoying their predicament.

Finally one of them, still looking down, mumbled, "Can we hunt?"

I said, "We can't hear you. What did you say?"

Then it came out loud and clear. "May we hunt on your place, sir?"

The farmer replied, "Yes." After a lecture from me about what would happen the next time, they went into the woods to continue with their hunt.

I was glad it turned out like that, because I didn't have a case which I could take to court. The trespass law that we have now is so poorly worded it is usually difficult to get just the right circumstances to be sure of a conviction.

If every hunter would just take time to get permission we wouldn't need to worry about the trespass law. If the landowners are not happy with our enforcement of the trespass law they should contact their friendly legislator and not blame the officer. We do the best we can with what we have to work with.

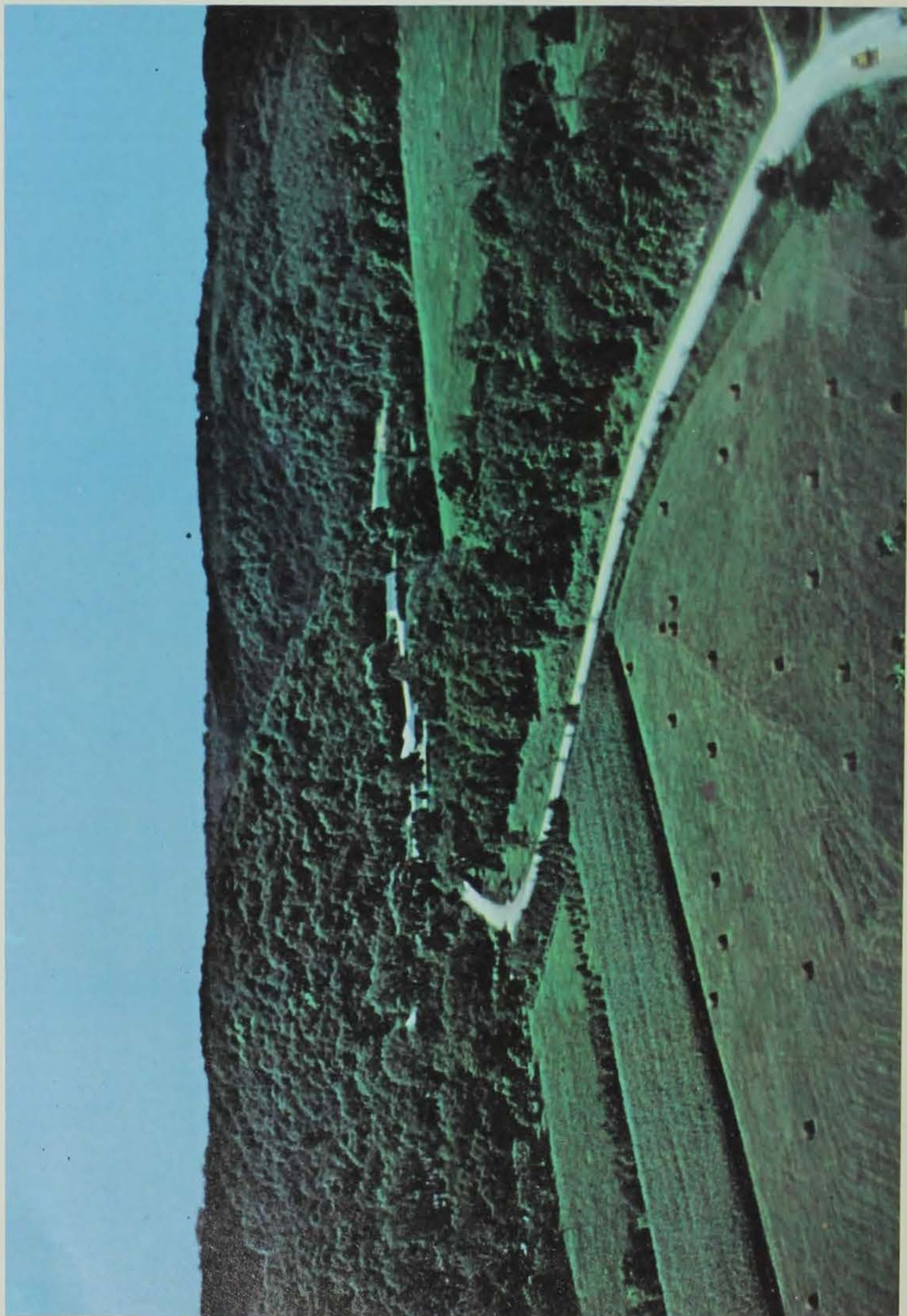


Photo by Ron Johnson

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