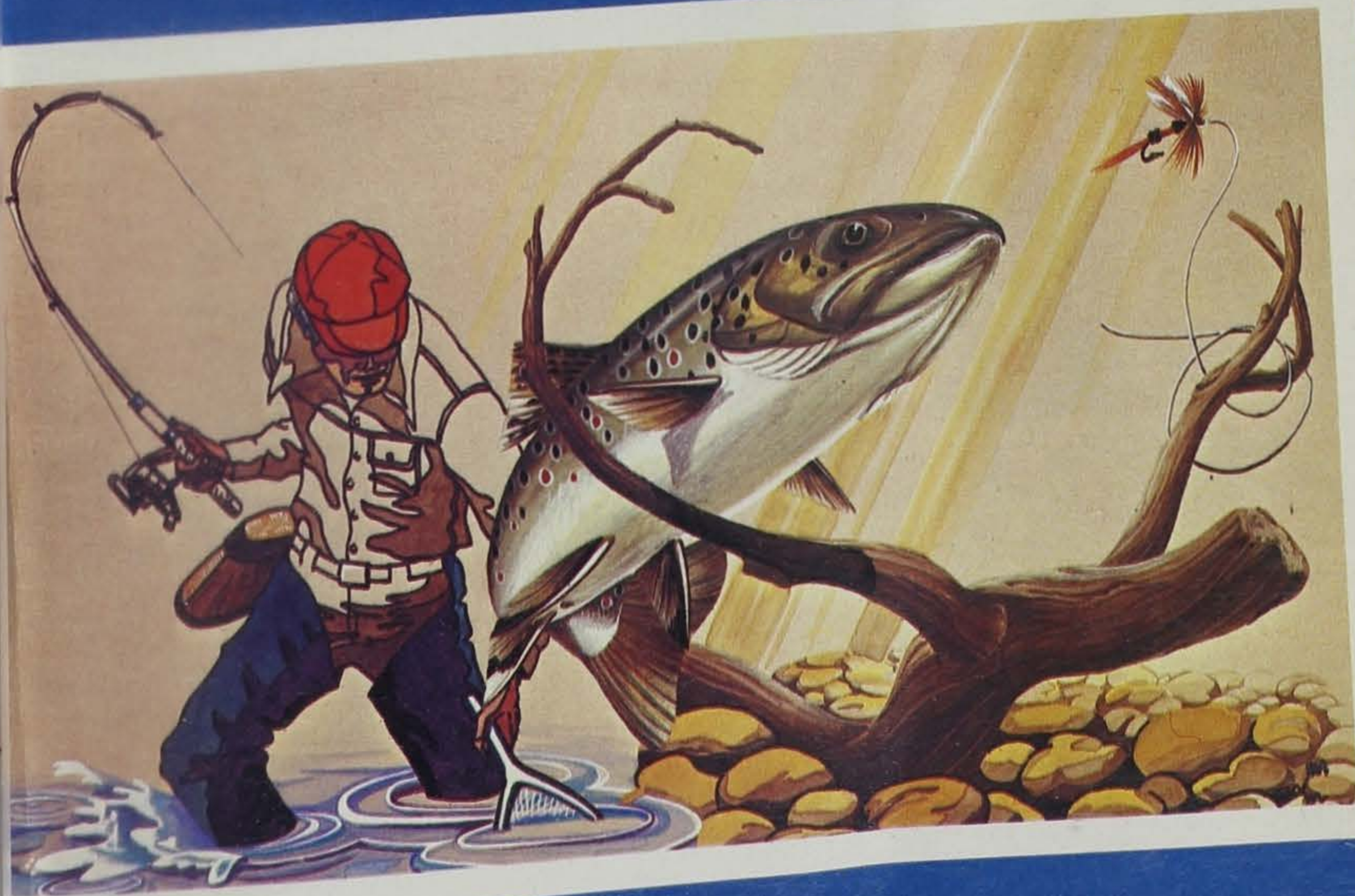


JANUARY, 1975

Iowa conservationist



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Vol. 34, No. 1

JANUARY, 1975

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COVER

Our cover features Iowa's 1975 winning design trout stamp painted by James L. Landenberger of Cedar Rapids. The new stamp is now available for \$5 at most places where fishing licenses are sold.



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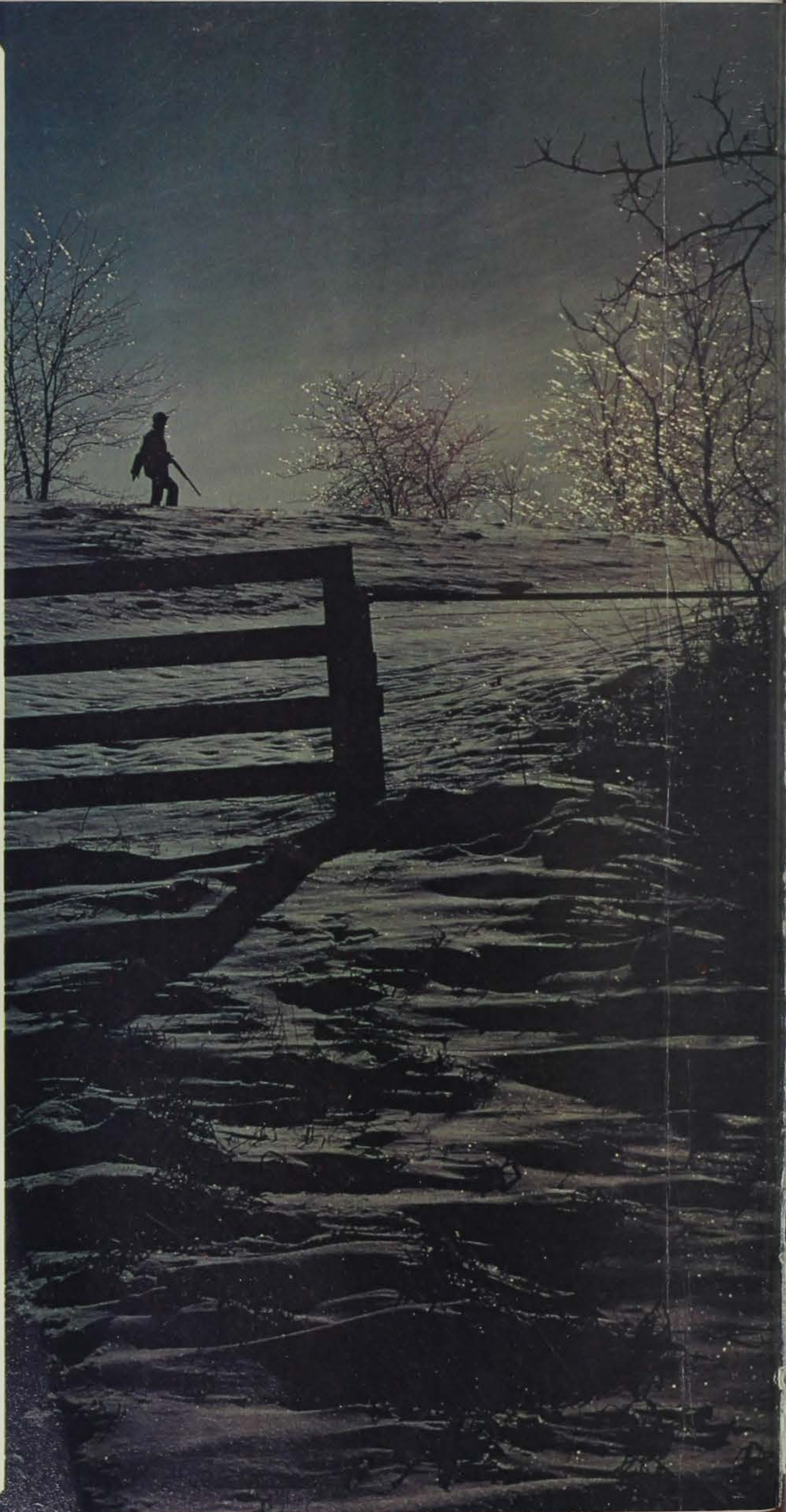
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Published monthly by the Iowa Conservation Commission, State Office Building, 300 4th Street, Des Moines, Iowa 50319. Address all mail (subscriptions, change of address, Form 3579, manuscripts, mail items) to the above address. Subscription price: one year at \$1.00; two years at \$2.00; four years at \$3.50. Second class postage paid at Des Moines, Iowa and other points. (No rights reserved).





Better Late Than Never

By Chuck Steffen, *Wildlife Biologist*

Conservation Commission Photos

NOW THAT PHEASANT SEASON is over, many Iowa hunters will be taking to the fields in pursuit of the fleet-footed and wary cottontail rabbit. The cottontail is one of Iowa's most popular game animals in terms of numbers harvested. Data from our harvest survey shows that Iowa hunters bagged nearly 1.5 million rabbits last year, second only to the ringneck pheasant.

It is somewhat of a paradox that so many rabbits are harvested even though most hunters do not begin hunting the cottontail in earnest until the season is half over. Hunters seem to prefer to hunt the cottontail later in the season when the cover is not as thick and when snow is on the ground. By this time rabbit numbers may have been reduced by disease and predation to less than half of what they were when the season opened in September.

What is it about the cottontail that permits nearly 1.5 million of its numbers to be harvested even though most of the hunting is done after his populations have already been greatly reduced? The answer to this is his tremendous reproductive capacity. Where suitable habitat exists, the cottontail is able to achieve



phenomenal population growth. Under optimal conditions a single female cottontail could produce a litter of young every month during the breeding season which extends from early March through September. The number of young per litter varies from one to nine, but most litters have four or five young. In addition to this, some juvenile females which are born early in spring are able to breed for the first time by late summer.

There are many environmental factors acting on the rabbit populations to prevent them from achieving this maximum production. Heavy rains can wash out nests located in poorly drained areas. Predators such as skunks and stray cats and dogs destroy nests which are poorly hidden. Many young are destroyed in their nests by mowing and plowing operations of farmers.

In spite of these losses, rabbit numbers steadily increase from March through the early part of summer. However, as the populations increase, so does the mortality. By midsummer, the rabbit numbers have peaked and slowly begun to decline. When fall comes, the carrying capacity of the rabbits' range begins to decrease. Crop harvesting and frosts remove much of the food and cover which the rabbits depended upon during the summer. As a result the populations drop even more rapidly.

When cold weather and winter snows arrive, the carrying capacity of the land is further reduced. The rabbits are forced to retreat into the heavy brush where they feed on bark and twigs. The populations will continue to suffer from increased predation and disease until they are within the carrying capacity of their range.

Hunting mortality affects the rabbit populations much like other types of mortality. It is effective in reducing only those rabbits which exist above the carrying capacity of the land. Biologists call this density dependent mortality, i.e. when the populations are high the mortality is high, and conversely when the populations drop so does the mortality.

So even though January rabbit populations have been reduced from what they were in September, so has the carrying capacity of the land. Hunters can still find a lot of rabbits



Photo by Jerry Leonard

available for harvest as the winter progresses.

The key to the cottontail's popularity among Iowa hunters seems to be his availability. He can be found in a wide variety of places: in weedy draws, under brushpiles, along brushy and herbaceous fencerows, in open pastures, along drainage ditches, and any number of other places. Although the cottontail can be found in good numbers in any part of the state where suitable cover exists, the best populations are in southern and southeastern Iowa where the land is not as intensively farmed as in northern Iowa.

The best weather for rabbit hunting seems to be on warm sunny days when the snow is beginning to melt. These are the times when the cottontails are out moving. Some hunters report their best success is on days when the barometer is rising - usually an indicator that more settled weather is coming.

During periods of cold weather or heavy snowfall, cottontails will often "hole up" for one or more days. It is especially during these days that a well trained beagle can greatly add to the productivity and enjoyment of the hunt.

There are probably as many opinions on how to hunt rabbits as there are rabbit hunters. Some people enjoy hunting alone while others find much better success hunting in a group. When working through a large weedy field, some hunters use a slow zigzagging pattern to better cover the field. Occasionally stopping still for a minute or two while making a drive

across a field or draw will often make rabbits nervous and cause them to run. In cold weather especially, stomping on top of brushpiles can be a productive way of providing some shooting.

Whatever hunting method you choose, now is the time to get into the field after these fleet-footed bunnies. With the seasons closed or closing on most other game species, the cottontail can still provide many hours of sporty enjoyment. Hunters can hunt the cottontail without fear of overharvest. The density dependent nature of hunting mortality coupled with the rabbit's tremendous reproductive potential will ensure that high populations will be with us again next year wherever suitable habitat exists. □



Conservation Commission Photo



Before the Iowa countryside was settled, the bobwhite lived in areas where the prairie and timber joined.

A Changing Picture for the IOWA BOBWHITE

By Charles C. Schwartz, Wildlife Biologist

Photos by the Author

If you can, sit back and dream of what Iowa must have been like before early pioneers settled the virgin countryside. To the north were vast areas of unbroken prairie with their tall grasses waving gently in the wind. Small streams and rivers lined with brush and trees lazily meandered their way to the mighty rivers. In the south there were expanses of unbroken timber with huge majestic hardwoods. And, where the prairie and timber joined there were systems of fingerlike projections of brush and timber trying to invade the endless expanse of grass. Associated with this timber-brush and prairie edge the bobwhite quail existed.

Our knowledge of early quail numbers is only speculative, but they were never abundant. Back then there were probably severe fluctuations in their numbers with distinct seasonal movements due to changing weather, wild fires, and shifts in abundance of wild seeds and mast.

Like many areas of the Midwest, Iowa was destined to become an agricultural state. Hardy settlers from the East traveling on foot or in covered wagons armed with axe and plow moved into the territory to establish family farms. The scene on the untouched countryside began to change. The unbroken timber in the south became a patchwork of small

clearings as the mighty hardwoods fell to the sound of the axe. On the prairie, small blocks of sod were converted to cropfields. Living fences of osage orange hedge were planted and extended the trees further onto the prairie.

These changes in the environment caused by the early settlers were beneficial to the bobwhite as new quail habitat was created. Timber clearing extended quail range further into the once dense forest while the hedgerows extended the range further north into the prairie. Domestic grains and their associated weeds were also a boon to quail. With increased food and cover, bobwhite populations advanced to

new areas and at the same time the population size increased in the already occupied habitat. During early agricultural development, before 1900, quail numbers reached their peak in abundance. As more land was cleared and cropped, much of the newly created habitat was destroyed and quail numbers began to decline, especially during the severe winters of 1912 and 1936.

As the early seeds of farming grew and blossomed, so did the era of intensified agriculture. Quail habitat in the north was the first to fall. Intensified clearing soon destroyed the brushy water courses that were so vital to quail survival. Along with this, miles of hedgerows were uprooted and replaced by naked wire. Quail populations in this part of their range began to decline. By the 1950's, populations were dangerously low. Because of the loss of suitable habitat in most areas of central Iowa, bobwhite numbers have remained quite low. Unless the brushy cover is

somehow replaced, their numbers will never recover.

In southern Iowa during the 50's and 60's many of the remaining timbered areas were broken up to provide more tillable land. This clearing created new quail coverts and a general increase in quail numbers in southern Iowa. Coupled with this, there were several years of mild winter weather. Quail survived in marginal areas. The winter of 1959-60 soon ended this when severe weather in February and March took its toll. Although unharvested corn was plentiful, the cool and wet season was devastating. Quail in good habitat fared well and losses were light, but quail losses in marginal habitat were as high as 80 percent.

Since that time quail numbers have been increasing. Blessed with a high reproductive potential, the bobwhite soon filled unoccupied habitat vacated by birds killed during the winter of 1960. Due to mild winters since then, this population high has continued. Most small game populations

fluctuate due to weather, reproductive success or a number of less dramatic factors. During years with mild winters, quail in poor cover can survive and the population increases. Each high population is eventually followed by a decline. Each year more ideal winter cover is destroyed. When a brushy fence row or ditch is bulldozed clear, the death toll is sounded for those coveys of bobwhites calling it home. Quail do not simply move to new cover areas and have a happy new home. Many never leave the area but perish. Those that do go looking elsewhere find competition from other quail already living in suitable habitat. This goes back to a basic fact of wildlife biology; that is, each segment of habitat can support so many quail and when this number is exceeded, Mother Nature harshly restores the balance. Each year more ideal cover is destroyed and it is just a matter of time before a severe winter again takes its toll.

Early agricultural practices and cultivated crops were a blessing to bobwhites and populations peaked before 1900.





With an increasing cattle industry, much of the quail habitat has changed to large areas of overgrazed pasture.



Intensified agriculture and land clearing has resulted in loss of much quail habitat.

In southern Iowa, a new giant is appearing on the scene and promises to accelerate habitat destruction that will be detrimental to many species of wildlife including the bobwhite. This giant is the rapidly developing cattle industry. Rough terrain and generally poorer soils of southern Iowa do not offer the benefits for intensive row crop farming as do the more gently laying fertile lands of central and northern Iowa. Soil conservationists realize that the best protector of loose soils on hilly or poor ground is a good stand of grass. Landowners are turning from small cropfields toward intensified cattle farming. This has

resulted in converting small grain fields to pasture, bulldozing brush from hillsides and ditches, and planting more areas to grass. Because of staggering production costs, farmers can no longer afford to feed tons of grain to fatten cattle and grass feeding appears to be on the increase. Coupled with this, a common winter practice is to allow cattle to clean harvested grain fields. Cattle, however, do not just eat waste grain, they also destroy the brushy and weedy coverts associated with the field that are so necessary for protection to the coveys of quail.

World economics and sound soil

conservation presents a combination hard to beat. With exploding human populations, demands for our agricultural products as a commodity of world trade are ever increasing. Few Iowa farmers can afford to leave idle areas for wildlife cover. All parcels of land must produce. It appears that there is little we as biologists or sportsmen can do to alter the inevitable or even delay it. The bobwhite quail has successfully adjusted to the changing picture of the Iowa landscape. There is a time, however, in this changing picture beyond which even the bobwhite cannot adapt. □

Today, excellent quail habitat still exists in many southern counties.



WILDLIFE RESEARCH In IOWA **PART II**

By Dr. Vern Wright
Wildlife Biometrician

Photo by Jerry Leonard



Research is being done to indicate how much wildlife habitat we have lost in north-central Iowa in the last 35 years. A student from the Wildlife Research Unit at Iowa State University is working on this project. A random sample of areas was selected and copies of all aerial photographs available from the U.S. Department of Agriculture have been obtained. These photographs are being studied in detail to obtain data. We are also compiling the data available from U.S. Department of Agriculture reports on farming practices. When compiled this data will provide a better picture of the changes that have occurred in this part of the state during the last 35 years.

A student in the Cooperative Wildlife Research Unit at Iowa State University is conducting a study to test the best design and construction of a windbreak for pheasant winter cover. The information gathered will help the management section in designing windbreaks for wildlife cover.

One of our biologists has been trying to determine what effect a better farm retirement program would have on pheasant production. He used state funds to supplement the money paid to farmers for land retirement. The farmers were required to manage the retired acres in such a way to provide the best possible pheasant nesting habitat. This study showed a doubling of the number of pheasants on this area.



Conservation Commission biologists are trying to estimate the proportion of privately owned wooded areas in northeast Iowa that are heavily grazed. Since heavily grazed areas are of little value as ruffed grouse habitat, this data will aid in understanding the population dynamics of this species.

In addition to these projects in habitat management and those to extend the range of game species, we are involved in projects designed to assist in setting hunting regulations and evaluating the surveys used to help set seasons.

We are evaluating the assumption which assigns the hen mallard as a higher point duck than the drake mallard. This study is designed to determine if the extra drakes are necessary to insure fertility of eggs from hens that have lost their nest after their original drake has abandoned them. This project is being carried out on state-owned marshes and lakes in north-central Iowa. A related project was conducted to see how closely Iowa hunters were following the law during the first few years that the point system was in effect. There were relatively few problems like re-ordering or abandoning high point ducks because of the point system.

Conservation Commission biologists are also estimating what percentage of our pheasant hens are shot by hunters during the season. We collected road-killed pheasants during the winter months and will examine these birds for lead shot. The ratio of hens to cocks carrying shot and the number of cocks harvested will allow us to calculate the number of hens killed.

Photo by G. L. Marzeck



Conservation Commission Photo

Our seasons are set after studying the data obtained on surveys of the species concerned. One type of survey used is a questionnaire sent to hunters while another type of survey involves counting the number of animals seen or heard on standardized routes. The Commission is currently conducting some experiments designed to identify and estimate biases in this data. In addition, we are analyzing much of the data collected on surveys in past years to help develop better surveys.

As the duck hunting pressure has increased on some of our better state-owned public hunting areas, we have been forced to control the number of hunters by assigning some hunters to specific blinds. A special study of this controlled waterfowl hunting has been conducted at the Lake Odessa Public Hunting Area in recent years.

The problem of estimating how many deer are being poached is a very difficult one. The Commission is currently involved in conducting a survey designed to estimate how many deer are poached each year. A statistical technique in conjunction with a personal interview will be used by the Wallace's Farmer Poll to try to answer this question.

Another type of project which does not fit any of the above classifications is the estimation of pesticide levels in several species of Iowa wildlife. A major part of this work, which is being conducted by an Iowa State University

professor and his students, is on pesticide levels in our prime game bird - the ringnecked pheasant. They have found that the pesticide levels in pheasants during the hunting season are no higher than in chickens in the supermarket. However, newly hatched chicks have levels which are high enough to affect their behavior. Commission personnel in conjunction with two Iowa State University professors are planning experiments designed to estimate how detrimental this behavioral alteration is under natural conditions. Analysis of materials from wild mink showed that pesticide levels are lower than required to kill ranch mink. However, pesticide levels found in Great Blue Herons were very high in some parts of the state.

In addition to the research work described above, the Iowa Conservation Commission is supporting or conducting projects to increase our understanding of the natural history of several species of Iowa wildlife. One of these projects is an attempt to synthesize the data available on pheasant populations, weather and farming practices during the last 30 years. Special intensive surveys are being continued on one study area in Winnebago County in north-central Iowa which was established in the late 1930's. Similar surveys are being conducted on an area in southwestern Iowa that was established during the late 1950's and on a new area in Wayne County in south-central Iowa. Another such study area for quail has been maintained for many years in Decatur and Wayne Counties.

A student from Iowa State University is studying the life history and food habits of coyotes in southern Iowa. This project will enable us to better understand the relationship of this relatively recent invader of Iowa to other species of wildlife and to domestic livestock. A similar study started in the 1960's on red fox in north-central Iowa provided much new information on its life history and movements. Another life history study which is being conducted through the Cooperative Wildlife Research Unit at Iowa State University is a detailed study of Hungarian Partridge in

northern Iowa. This resident of intensively farmed country has been able to increase its populations in parts of northern Iowa in recent years.

During the last few years we have been studying the movement and behavior of white-tailed deer near Ledges State Park in central Iowa. This project and a similar one centered around Pilot Knob State Park in north-central Iowa have used special radio collars to aid in following individual deer.

We have also helped to fund a project on the breeding grounds of Canada Geese migrating through Iowa. This study, which is being funded jointly with the states of Missouri and Minnesota and the province of Manitoba, involves marking many geese for individual identification and identifying the limiting factor on the breeding ground.

For many years the Iowa Conservation Commission and a number of other organizations have been banding ducks and geese. Although we are still banding ducks, we are also analyzing the data obtained from band returns. This information shows the patterns of migration of waterfowl through our area. It is also valuable in identifying management problems, and in setting seasons.

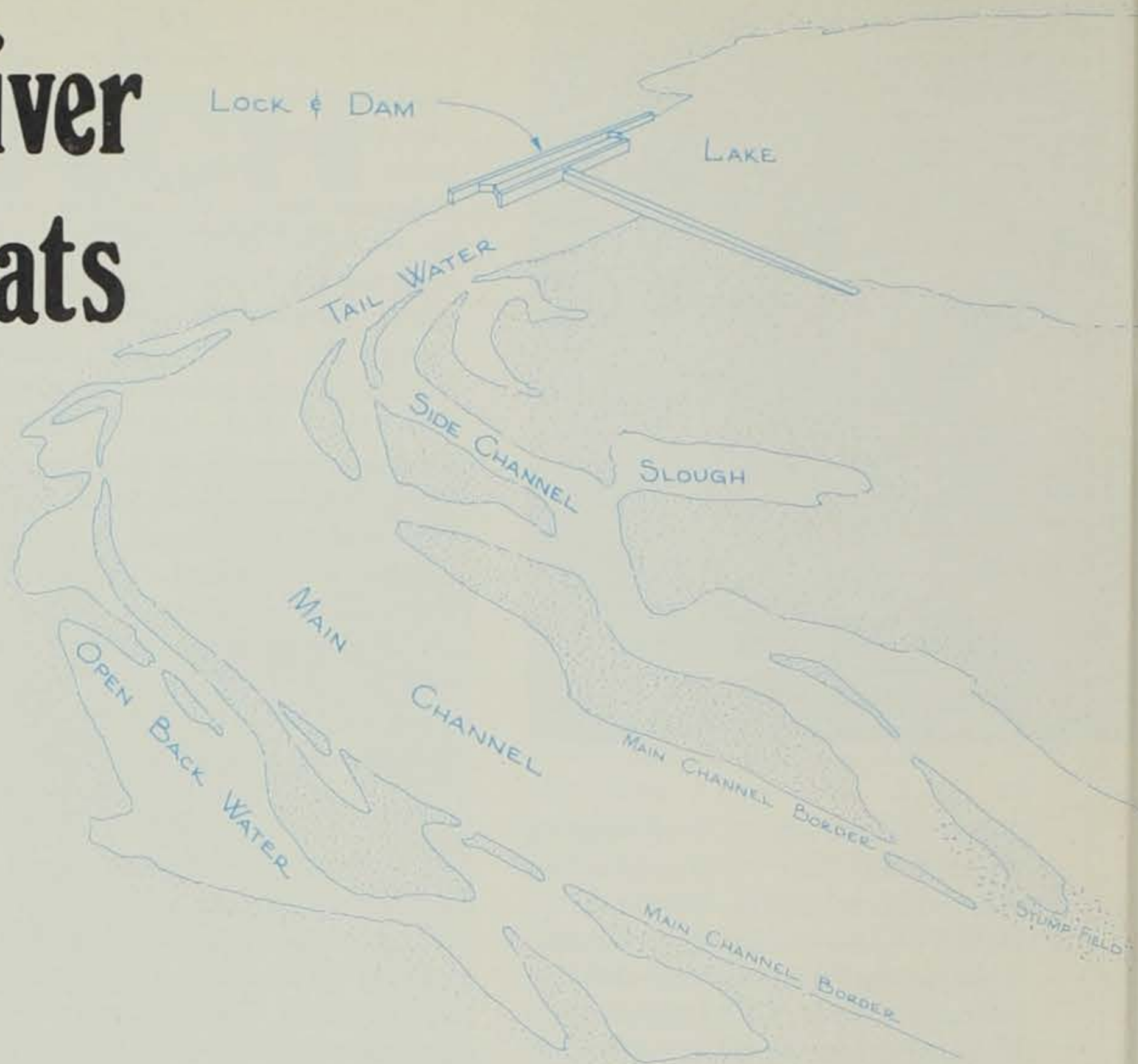
An Iowa State University professor and his students have been studying the ecology of ducks using the Keokuk Pool on the Mississippi River. This pool supports a large concentration of Canvasbacks as well as other diving ducks. Since 1960 another Iowa State professor and his students have been studying the ecological relationships in a marsh community in northern Iowa. This study has included projects on nests of waterfowl and non-game marsh-birds as related to the water level fluctuations and vegetation on the marshes. It also includes projects on the predators using the area as well as populations of the major food species of these predators.

Studies like these will continue for years to come and hopefully research procedures will improve at the same rate which our knowledge of wildlife increases. Conclusions will always be drawn and successes gained but research will be the foundation. □

Mississippi River Fishing Habitats in Southern Iowa

By Don Kline

Fisheries Biologist



The Mississippi River along Iowa's southeastern border can provide a unique and varied fishing experience. The list of fishes caught by river anglers includes more than 30 species and ranges from an occasional bowfin to the abundant bluegill. Creel surveys show that anglers in the lower one-half of the river have been most successful at catching bluegill, crappie, channel catfish, bullhead, white bass, drum (perch), sauger and largemouth bass. Anglers have taken over 100,000 fish from a single pool in one year. Indeed, the Mississippi River offers Iowa's anglers fishing opportunities that can be found nowhere else in Iowa.

The Mississippi is a vast natural resource that seems to offer almost unlimited opportunities. For instance, between Clinton and Keokuk there are 75,000 surface acres of water over a stretch of 159 miles. The present water resource is a result of the completion of a series of navigation dams in the 1930's. The dams stabilize water conditions during the summer and winter seasons, but have no effect on the high water levels that may occur in the spring and fall.

The dams created six distinct types of water habitat. These are: lake, slough, side channel, tailwater, main channel and main channel border. The impounded water flooded all land immediately upstream, creating large open water lakes at most dam sites. Further upstream only the lowest ground was flooded, resulting in an endless pattern of islands, side channels and sloughs. The pools end in the tailwaters of the next dam. The principal flow of the river follows the main channel, which varies from straight stretches to sharp bends. The border of the main channel also has a strong current, but it contains the wing dams that extend from shore.

The river lakes provide the most water area (27,272 acres) for sport fishermen, but do not contain the highest numbers of game and panfish. These lakes are difficult to fish because rough water conditions make it hazardous for small boats and it is hard to locate fishing spots. However, if the stump fields can be found they do provide good channel catfish areas. In Pool 19, a large lake extends 22 miles upstream from Keokuk almost to Ft.

Madison. Lock and Dam 18 above Burlington impounds a lake that extends for six miles to Oquawaka, Illinois. No lake type habitat exists in Pool 17. Above Lock and Dam 17 lake habitat is split by the main channel, but extends for two and one half miles on the Iowa side and four miles on the Illinois side. Most of the lower half of Pool 15 is lake habitat that passes through the Quad-Cities area. From Lock and Dam 14, lake habitat covers eight miles, passing by LeClaire almost to Princeton. Lake habitat makes up 37 percent of the total area available in the lower reach of the River.

The main channel is another area that is difficult to fish and is relatively unimportant to the sport fishery. The large towboats use this area as a water highway to transport over 22 million tons of freight annually. The main channel is generally marked by buoys and is maintained at a minimum depth of nine feet. The 15,570 acres of main channel habitat in Pools 14 through 19 account for 20 percent of the total area.

The lake and main channel areas produce less than 10 percent of the total number of fish harvested by sport

fishermen, while the main channel border, side channel, slough and tailwaters furnish the diverse habitat needed to sustain the remainder of the fishery.

The main channel border is the area found between the main channel and the shoreline. The most noticeable structures found in this area are the rock wing dams. The wing dams were placed in the river to divert part of the flow into the main channel so it could scour and deepen the bottom, therefore helping maintain the navigation channel. The wing dams provide excellent habitat for walleyes, sauger, channel catfish, drum, white bass and crappie. The structures provide riffle areas and most of them have a deep hole just downstream. The fish utilize these holes for protection from the strong current and as a feeding area. There are 12,440 acres of main channel border in the six lower pools. Each pool has about 16 percent of its area in this type of habitat.

The side channels and sloughs are the areas most suited to leisurely fishing. Small boats can easily be used in them and shoreline fishing is available at the access areas. These areas are the favorite habitat of panfish, largemouth bass and channel catfish. The habitat is a mixture between inland lakes and small streams.

The side channels have some current during most of the year and the banks are usually unprotected. The undercutting of the bank during high river stage causes many trees to fall into the water, providing excellent fishing spots for crappie. The sloughs are in close association with the side channel areas, but are characterized by not having a current during most of the year. These areas are prime habitat for bluegills. The stump fields found in both areas provide excellent bluegill and bass fishing.

The side channel and slough areas also provide excellent ice fishing, making them productive year round. This is the time of year to get some small grubs, jigs and/or minnows and head for the river to do some serious ice fishing. The fallen trees that were so good during the open water period are still producing crappies and bluegills.

The bluegill and crappie harvested from side channel and slough areas

account for over 60 percent of the total number of fish harvested from the river. These two habitat types provide 19,527 acres of water in Pools 14 through 19 comprising 26 percent of the total water area.

The tailwater areas provide habitat that attracts walleye, sauger, white bass drum and paddlefish. These fish are especially prevalent during the spring and fall periods, but fishing is productive from ice-out to ice-up each year. This habitat includes all water below the lock and gate system downstream for a distance of one-half mile. The total acreage of tailwater habitat in the six pools is 550 acres, and

only one percent of the total is this type.

The Conservation Commission has two brochures that will be helpful in locating and fishing the various water areas. **The Guide to Mississippi River Boating Facilities** (free) will help you find access areas and the **Iowa Fishing Guide** (50¢) will give you advice on fishing techniques as well as access points.

The combination of habitats found along the lower Mississippi River and the opportunity to fish for a variety of fish species can provide you with a unique experience not found elsewhere in the state. □

The Mississippi provides great fishing and large limits.

Photo by Ken Formanek





Conservation Commission Photo

Investment for the future...

BLACK WALNUT

By Sonny Satre, Contributing Editor

ATENTION LANDOWNERS, would you be interested in investing a few bucks which most likely will produce excellent financial returns for your children and future generations? I'm sure the answer is yes. This long-range investment for a relatively low cost is simply planting and caring for black walnut trees. Landowners who are interested should contact the Iowa Conservation Commission District Forester in their area for technical assistance.

At maturity (approximately 60 years) black walnut lumber will yield

top-notch profits. For additional income there are nut companies in the midwest who purchase black walnuts for food purposes. Trees begin bearing nuts in approximately 15 years.

Where can the landowner acquire walnut seedlings? Iowa Conservation Commission forestry and state park personnel collect several thousand bushels of black walnuts each fall for seed purposes. The nuts are picked up from state parks and other areas. Incidentally, this is one reason walnut gathering by the public in state parks is prohibited.

After the nut "round-up" they are transported to the State Forest Nursery in Ames. The 1974 crop of 6000 bushels of unhulled nuts were planted last fall in neatly kept beds (four rows to a bed) and mulched with ground corn cobs. The seedlings will emerge this spring. Personnel at the nursery will attend and cultivate the new seedlings throughout the growing season. By the spring of 1976 the seedlings will have attained a height of about 12 inches and then will be offered for sale to landowners for a nominal fee.

Walnut seedlings will not be available from the state nursery for planting this spring, but black walnut stratified seed will be. You may ask what stratified seed is. According to Webster, to stratify is to preserve seed by placing them between layers (approximately 2 inches) of soil or sand. The sand retains needed moisture plus the combination of time and cold temperatures deteriorates mother nature's dormant seed coating allowing the seed to germinate.



Conservation Commission Photo



Photos by Roger Sparks

Top Right: A walnut plantation. Above: Walnuts are gathered from state parks.



Seed is planted at state Forest Nursery, Ames.

Photo by Roger Sparks

Over 400 bushels or 120,000 seeds are stratified in wood-frame bins annually. Prior to placing the nuts in the bins, they are run through a hulling machine. By late winter or early spring the stratification process is completed and the nuts are ready to germinate. The ICC 1975 rates for purchasing stratified seed are: \$1 for 100 seeds, \$5 for 500 seeds and \$10 for 1000 seeds.

If you are interested, place your orders now as the supply will not last. To obtain further information contact the district forester or wildlife management biologist in your area. Other species of trees and wildlife shrubs are also available at reasonable rates.

Waterfowl Carving

by Jim Scheffler, *Resource Planner*

Photos by the Author

Waterfowl carving is becoming an increasingly popular hobby. With the outlay of a modest sum of money and a considerable amount of patience, one can produce carvings that can be both decorative and useful. This article, by word and photo, briefly outlines the steps involved in carving a waterfowl "half-head" - probably the most basic type of waterfowl art. The principles learned in this process remain applicable throughout the more advanced stages of the hobby, up to the carving of ornamental waterfowl or functional decoys themselves. The "Field Glances" section of this issue includes patterns for both the head and body of a Canvasback, a good species to start into the carving game itself.



Decoy carver Larry Pool at work in his shop.

THE BASICS

First of all, you need a good wood such as basswood. Basswood has easy carving properties and high resistance to splintering. It can be obtained at the larger lumberyards. For a half-head, a "four-quarter" (one full inch) thick piece of wood, six inches square, is sufficient. Of course, other types of wood can be used - sugar pine, for example. Keep in mind that common woods such as walnut, are for the beginner to work with.

A basic set of woodcarving tools can be bought at the hobby departments of many large discount stores or at hobby and craft shops. These typically consist of an assortment of wood chisels (remember - these are **sharp**). A basic set can usually be purchased for under \$10. Of course, it's possible to do a creditable job with a good quality pocketknife. It just requires some good whittling experience.

THE CARVING

The first step in the carving process is tracing the outline of the half-head onto the board using the pattern contained in the "Field Glances" section of this magazine. Next, the rough outline is cut using either a coping or power saw. Be sure to leave a slight margin around the outline.

Now, the first step in the actual carving process begins - the rough shaping or rounding off of the head. Start at the back of the neck and work toward the bill. The "cheek" portion of the head and the bill deserve special attention since they are quite distinctive features of the bird.

As seen on the accompanying photo, a duck's head has no flat spots. Everything is rounded to some degree. Remember this as you carve. Work slowly and remove small amounts of wood at a time. Try not to concentrate too much on one area at a time.

After the rough shaping is done, the finishing detail work is next. This primarily involves the beak and the eye socket. The entire head is sanded at first with coarse paper, and then with medium grade. If a more true to life appearance is desired, a feathered effect can be achieved through the use of an engraver or woodburner, working from the base of the beak to the base of the neck.

The final step in the carving process is the making of the eye socket. Use the pattern for the correct location. If a glass eye is to be used, a 1/16" depression should suffice. Waterfowl eyes are available at taxidermy supply houses or by mail order. As a somewhat less realistic alternative, the eyes can be painted on.

THE FINISHING

The head should first be shellacked. Then, acrylic paints of the appropriate colors should be applied. This type of paint, unlike the oil-based variety, dries very quickly. As a word of caution, acrylic paints are water soluble and thus inappropriate for use on actual decoys. For those, oil-based paints are best.

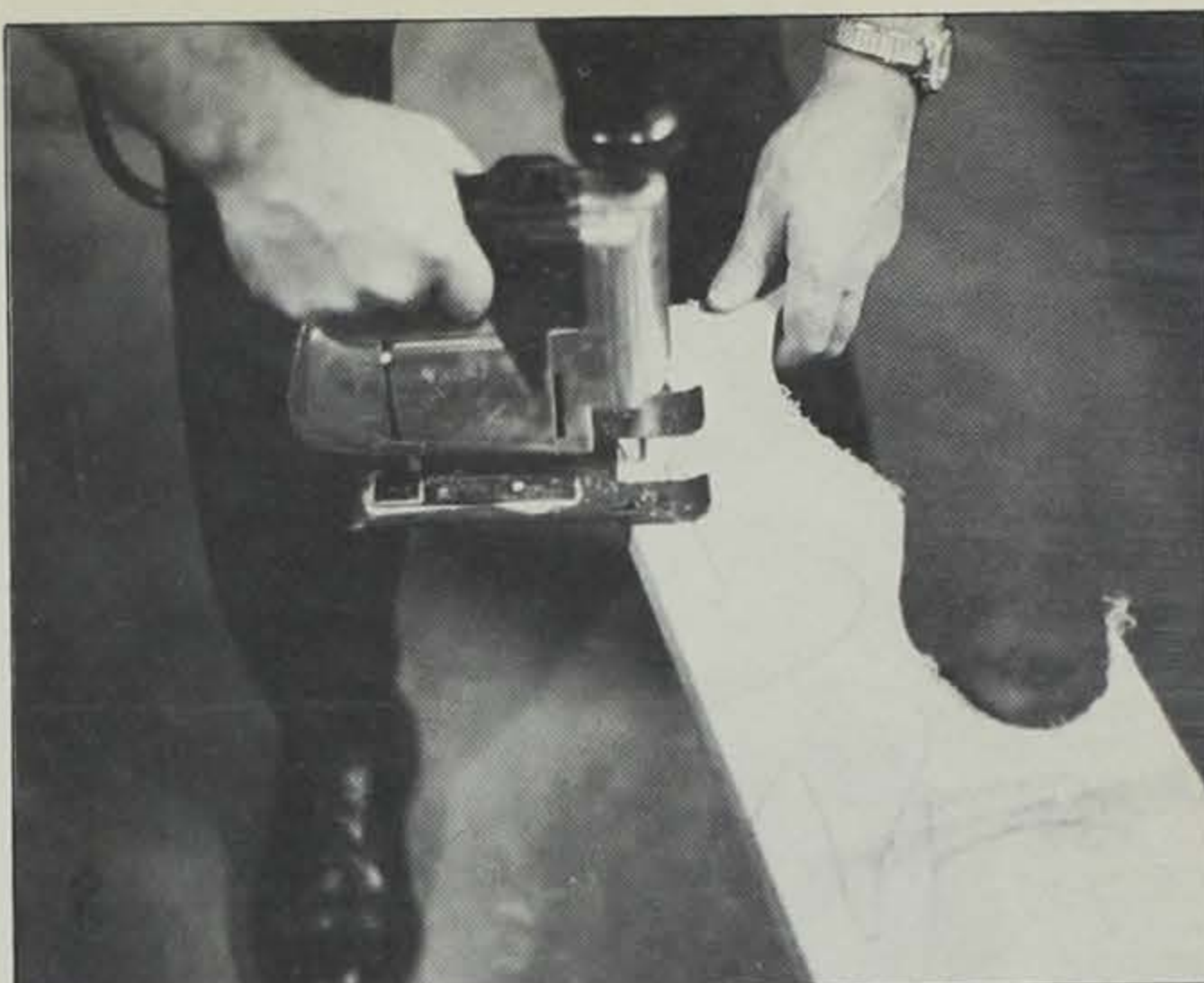
THE MOUNTING

The finished head can be displayed in a variety of ways. A number of fabrics can be used. Velvet and hopsack are quite attractive. A simple wooden frame of a natural color is probably most appropriate.

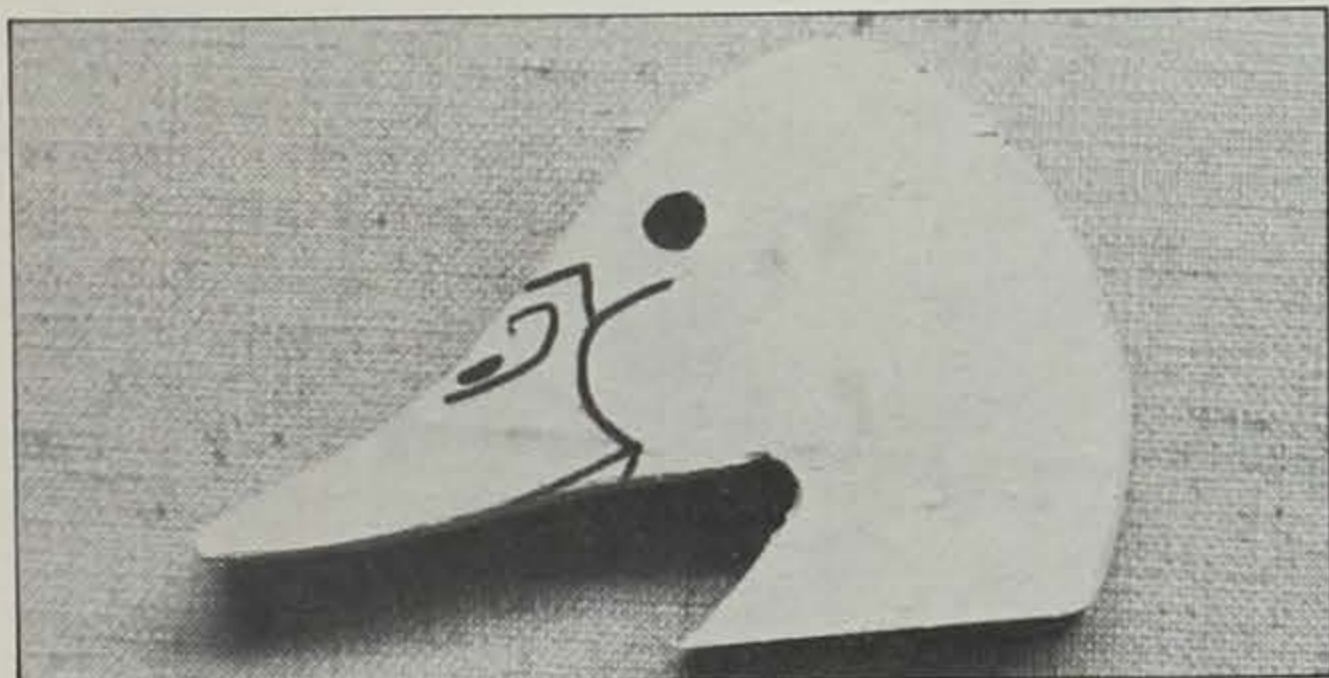
Remember that the results you get are proportional to the time and patience which you put into the project. Research is invaluable. A wealth of information on waterfowl is available in outdoor publications and at the library. A number of books on woodcarving are also available, some dealing specifically with waterfowl carving. Waterfowl photography can serve a dual purpose in this regard.



A variety of tools can be used in decoy carving.



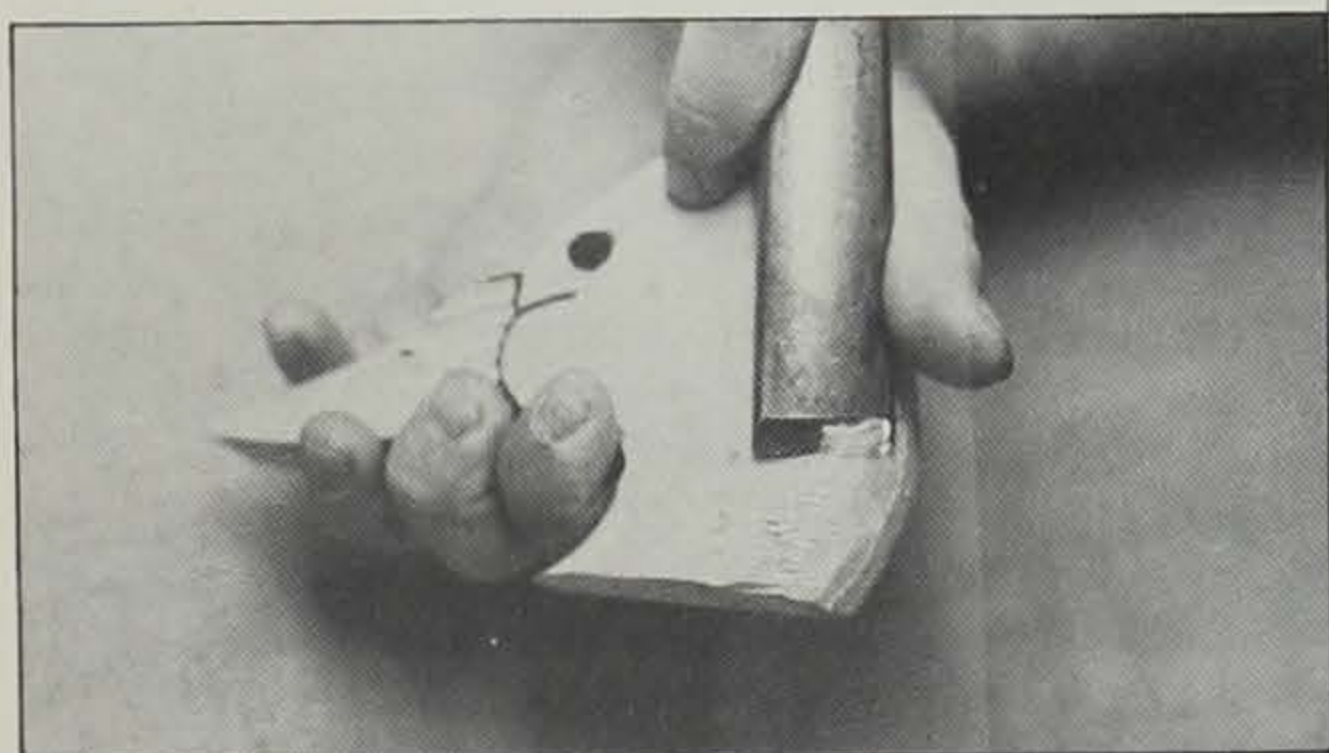
Patterns are traced onto boards and cut.



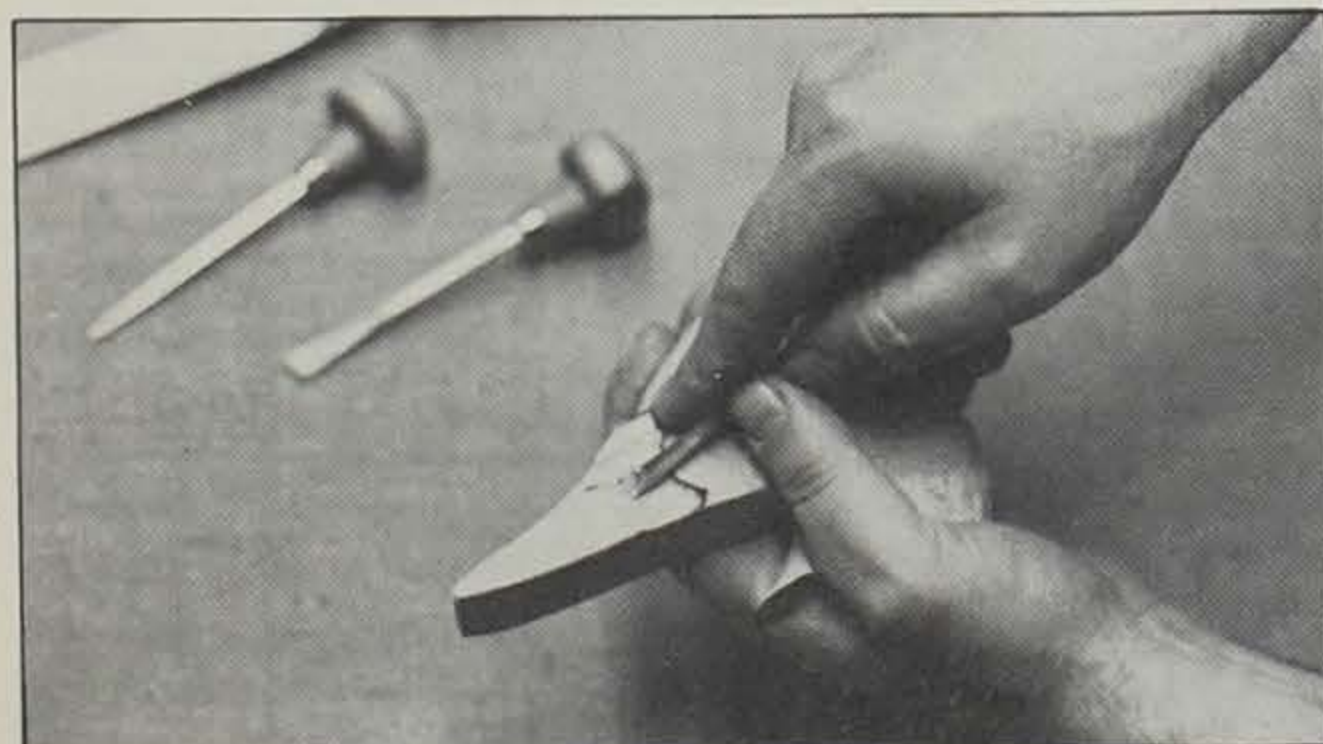
Features then are outlined



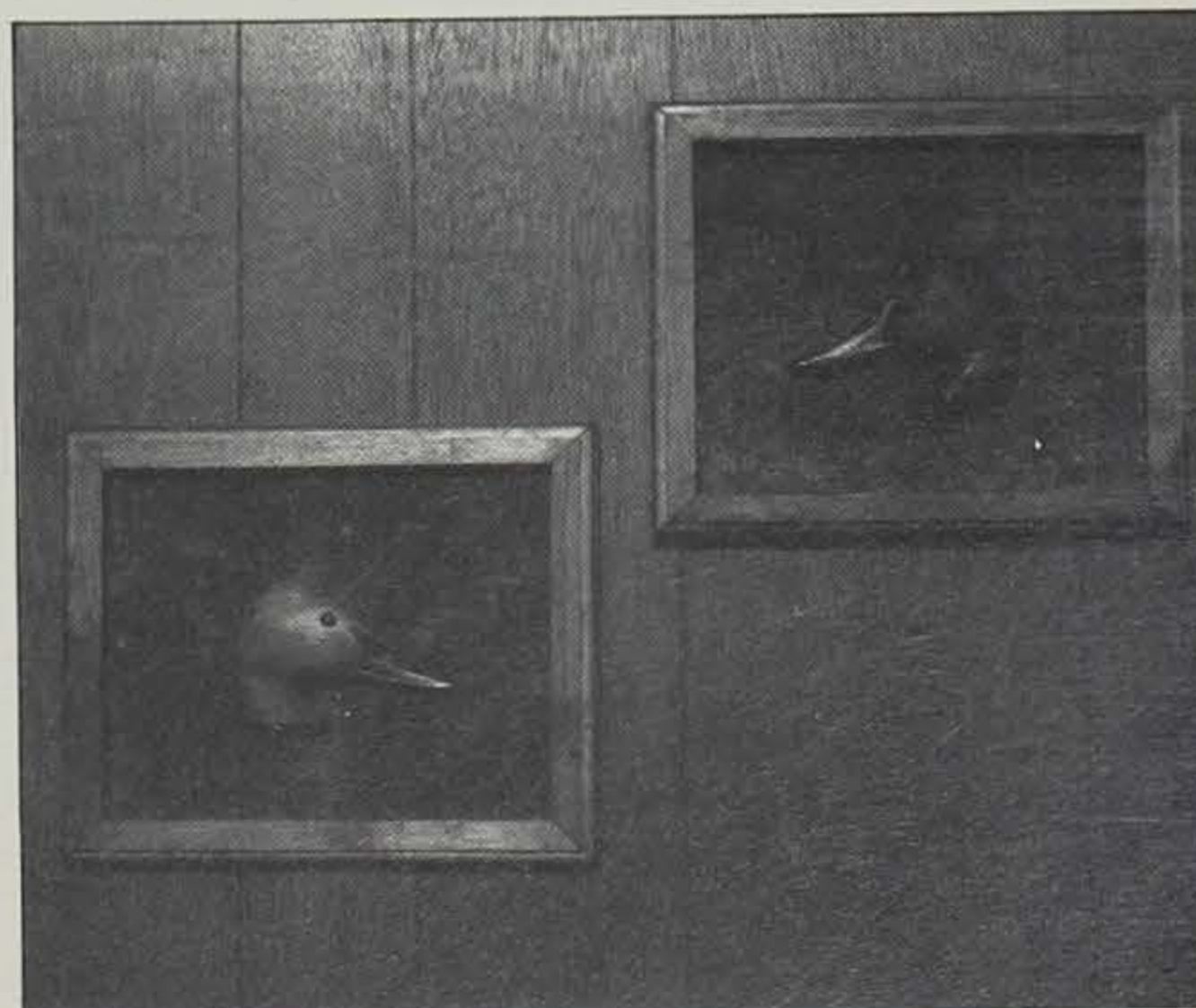
Glass eyes may be purchased in many sizes and colors.



Rough edges are rounded.



A definite touch is soon developed for rounding areas on the head and bill.

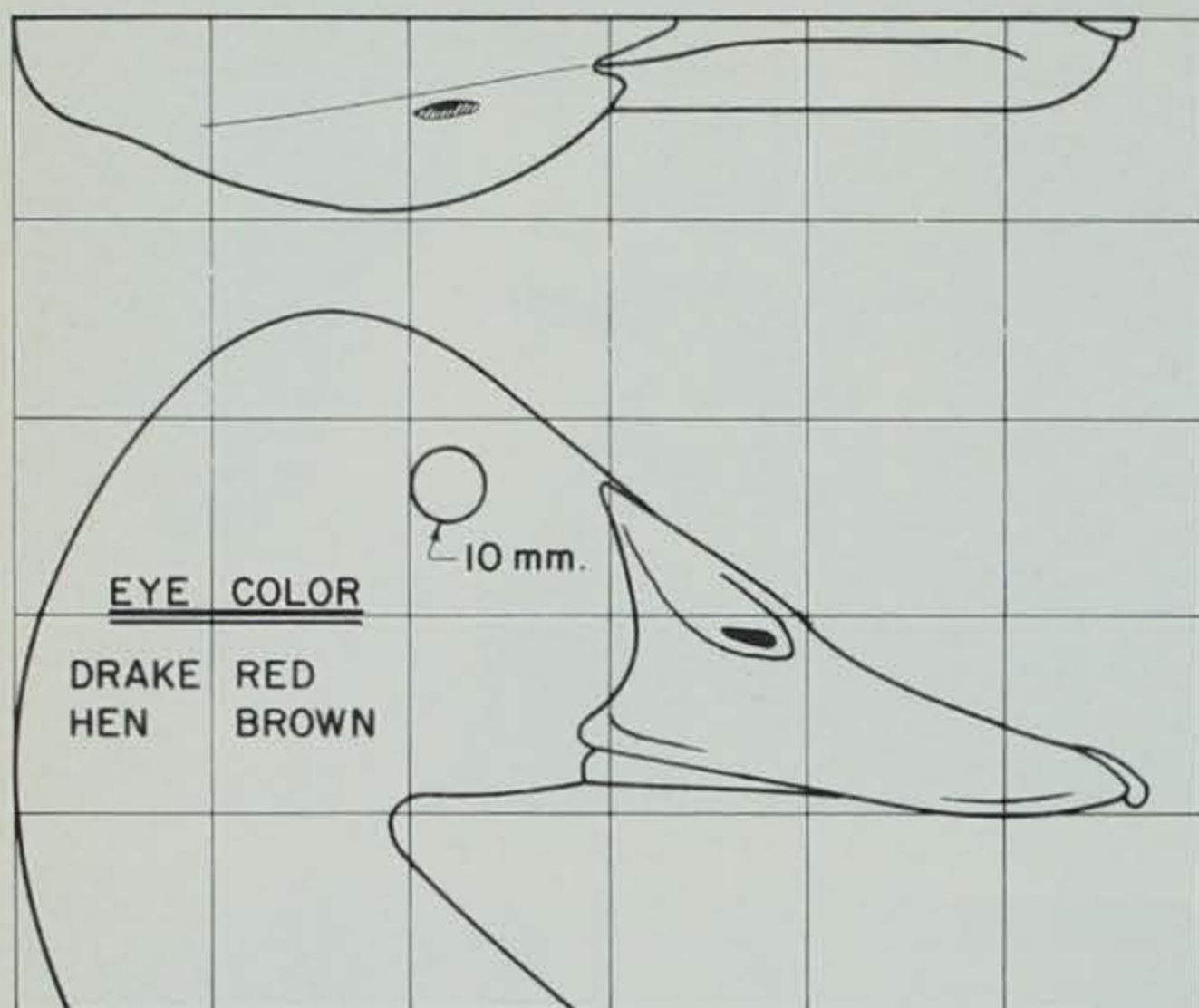


Painted half-heads can be mounted for decorative display.

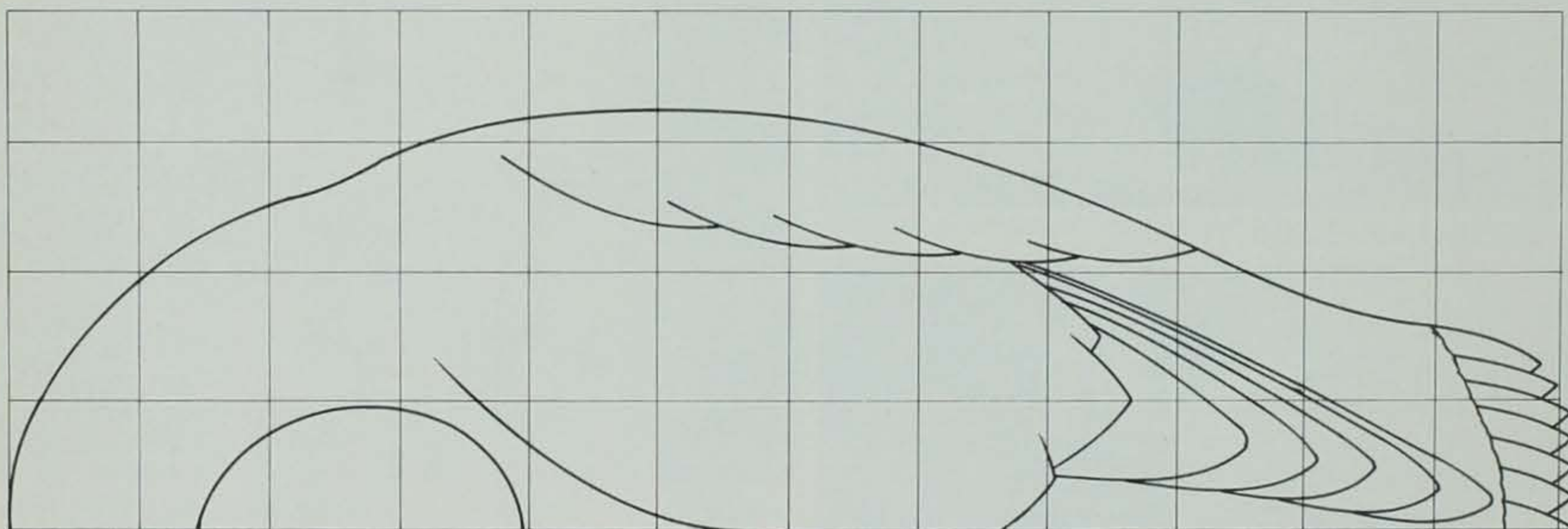
Photo by Ken Formanek

FIELD GLANCES

by LARRY POOL

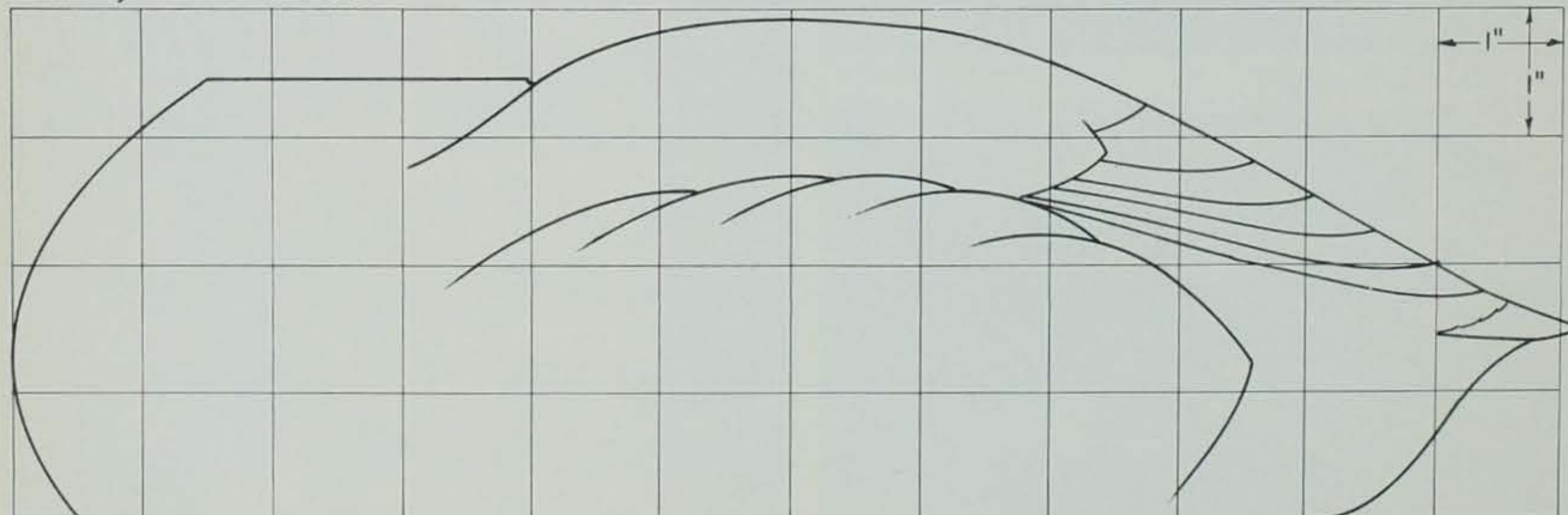


CANVASBACK Pattern



PLAN - Right hand side

Pattern by. LARRY L. POOL



PROFILE

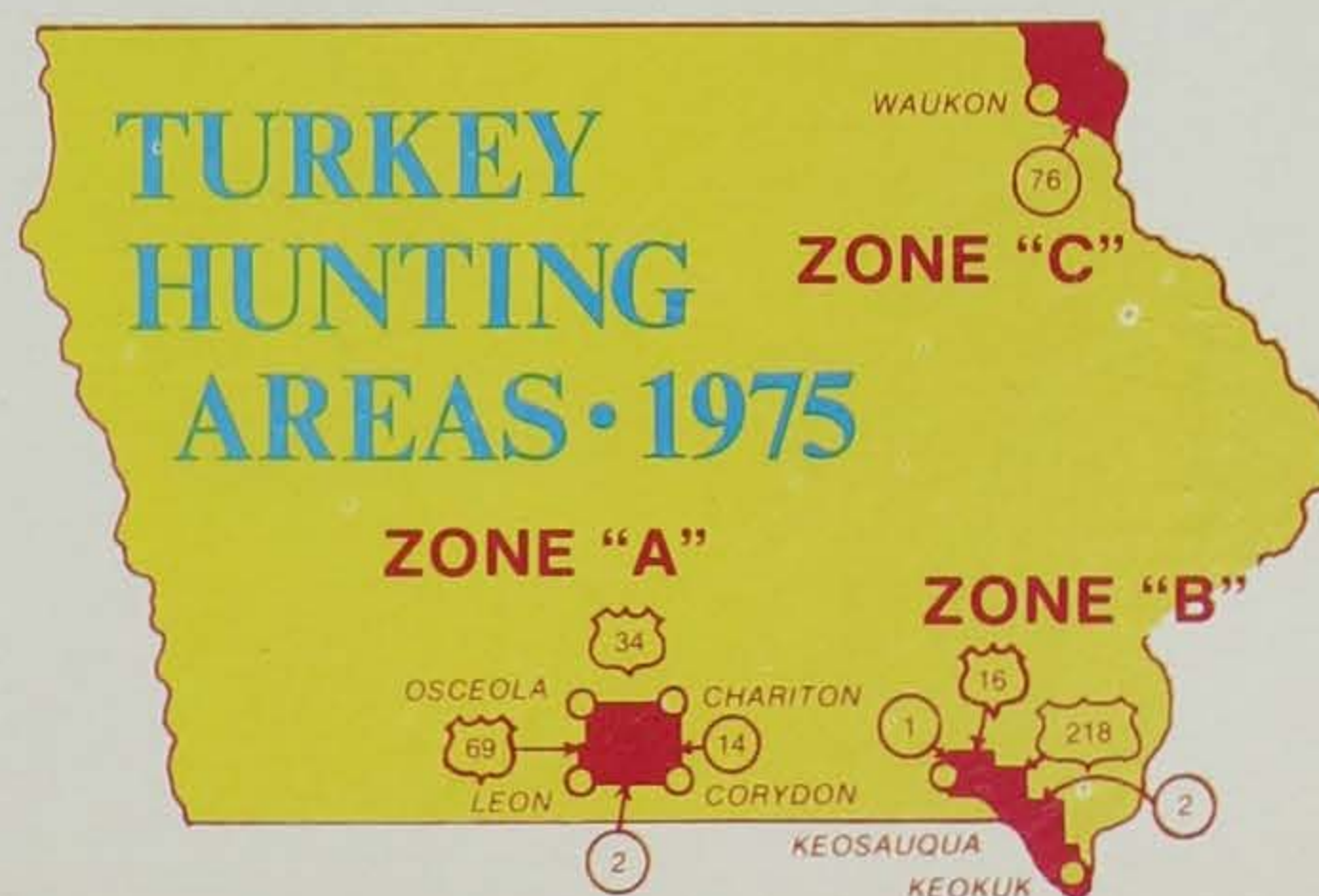
The Education Of A TURKEY HUNTER

By Bob Sheets
Wildlife Research Biologist
Photos by the Author

LAST YEAR USHERED IN Iowa's first wild turkey hunting season (since 1902) in modern times. Many interesting events took place and the story needs telling. Iowa will be hosting a spring gobbler hunt in 1975 so if you are considering a hunt, the following includes what may happen to you.

Approximately 1,500 Iowa residents applied for a turkey license in 1974. Many folks were unaware that Iowa had a wild turkey population let alone enough birds to open a season. Well, 450 licenses were issued and the season began one half hour before sunrise May 4, 1974. That day and the following 15 days may well be remembered by many of the hunters as one of the greatest hunts in their lives. When the season ended, 117 hunters had bagged wild gobblers that were averaging 20 pounds. Weights ranged from 14 pounds to 25.7 pounds. Mr. Kenneth Speake of Keokuk lugged in his top trophy bird while Calvin Kurth of Luana brought down a gobbler with a winning beard length of 12.2 inches. Many birds brought through check stations in each hunting zone revealed surprising weights of 22 to 24 pounds with beard lengths often reaching 10 and 11 inches.

I wish all the stories at the check stations could have been recorded. Nearly every thing that could happen, did happen.





We crawled out of our sleeping bags at 5:45 a.m. and headed for the counter at the hunter check station. Both of us knew we had time to set things up before a hunter arrived. As we approached the check station a blue car slid up to the front door of the building. A young gentleman by the name of Garvin Roth jumped out and presented us the first bird of the season. From that moment on it was history in the making. One man came unable to tell the story. The response of the bird and excitement of the shot had him completely tongue-tied. A father arrived with his son. The boy had called a gobbler within 15 yards and had not seen it. The bird made a ghost like retreat when the boy squirmed a bit at the base of a tree. The father sat nearby and watched the entire event. He appeared sick at the check station but was ready to try the next morning.

One gentleman relayed his story by saying he hid himself on a ridge where he had heard a gobbler earlier. He began to call with a cedar box call and had four hens walk directly to him. He said he questioned himself several times as to whether they were gobblers but knew that the beard was missing. Then there was the man that was situated carefully at the base of a tree and began calling. As the minutes clicked by, his curiosity grew over a warm sensation in the seat of his pants. He went home, saw that several insect



bites had developed into a swelling situation. A visit to the hospital resulted in his staying there for several days while six bites from a brown recluse spider shrank back into a comfortable condition. A man came wheeling in amazed that a bird he shot at twice from 30 yards flew away. He had tried for a body shot instead of that all important head or neck shot. Several hunters reported birds circling entirely around them from the time they gobbled last to the moment they

appeared. Another man came to the station with his coveralls ripped to shreds. He claimed only that he had a good hunt. Only he knows what happened.

Most hunters reported putting in three days effort with each man seeing between four and five gobblers during their stay. Eight per cent of the hunters reported crippling birds. Only 15 definite "Jakes" or juveniles were recorded at check stations. Body organs were collected and later examined at the Veterinary Diagnostic Center at Ames, Iowa. The news was good. All but one bird were abundantly healthy.

Only one out of every three hunters took time to find a hunting area outside of the state forests. Most of those that did take time to line up their own area had a good hunt that was not interrupted by other hunters. At times the state forests resembled a turkey callers convention. This is unfortunate because there is much good turkey range within each hunting zone outside the state forest areas.

THE 1975 PROSPECTS for a wild gobbler hunting season appear good. Brood production was similar to other years. In addition there were many reports of juvenile males being seen last spring. Those birds will be sporting a fine beard in April of 1975 ready to distinguish the difference between a wooden call and a hen.



Licensing will again be handled on a random drawing basis after all applications are received. Zone C has been restricted in size this year due to recent turkey releases just outside the indicated boundary lines. As these birds establish, the zone will be increased. The two southern zones remain the same. The dates have been advanced slightly to allow hunters to work birds while they are closer to their peak gobbling activity. A note of caution is in order. More hens will be responding to calls due to the earlier date so take time to look for that beard! Eight hundred and twenty-five permits will be issued. More hunters will be trying their luck this year so take time to find an area away from the "yelping crowd". Turkey hunting is a rewarding sport if another hunter does not interfere with the game you and that gobbler are playing.

The Commission has selected 22 prime release sites for future expansion of the wild turkey range in Iowa. Existing hunting zones include the most stable turkey populations in the state. Newly established wild turkeys do exist in several other forested areas

outside these zones and hopefully, if their numbers increase, the hunting zones can be enlarged.

The recently adopted regulations for the 1975 wild gobbler season are as follows: There will be three separate seasons—April 26 to May 2, May 3 to May 9, and May 10 to May 18, 1975. Only bearded gobblers can legally be bagged by licensed hunters.

Hunting again will be permitted in three zones—A, B, and C (see map). Zone A, in south-central Iowa, is portions of Lucas, Decatur, Wayne, and Clarke Counties and includes part of Stephens State Forest; Zone B in southeast Iowa, is portions of Lee and Van Buren Counties which also includes Shimek State Forest; and Zone C is the area east of Iowa State Highway 76 in Allamakee County which also includes Yellow River State Forest.

A total of 825 licenses will be issued. There will be 100 license permits per season for Zones A and B and 75 permits per season for Zone C. A special turkey hunting license will be valid for only one of these periods. The license fee is \$10.

License applications will be available in January from county recorders, most hunting license outlets, or by writing to the ICC, 300 Fourth Street, Des Moines, Iowa 50319. Applications will be accepted only from January 31 through February 14, both dates inclusive. Applications received prior to or after this period will not be considered a valid application. Unsuccessful applicants will receive their fees and applications back after the random computer drawing. Anyone submitting more than one application will be disqualified for a license. Licenses will be issued to Iowa residents only.

Shooting hours will be one-half hour before sunrise to noon each day. Only 10, 12, 16, and 20 gauge shotguns shooting shotshells, or long bows with broadhead arrows will be permitted in taking turkeys. The use of decoys, electronic calls, dogs, horses, motorized vehicles, aircraft, and bait is prohibited.

The daily bag, possession, and season limit is one bearded "Tom" turkey. ☐

STATE LIBRARY COMMISSION OF IOWA
Historical Building
DES MOINES, IOWA 50319

Photos included with this article show some of the successful hunting season, 1974.



Proper clothing is the most important factor in the enjoyment of any outdoor winter recreation and snowmobiling is no exception. Hiking and fishing may be done on a calm day when the wind chill effects would be negligible, but riding a snowmobile at 20 to 40 miles per hour for long periods of time can present serious wind chill problems. The wind chill should be the most important consideration when selecting clothing for snowmobiling. This means that outer garments should be windproof and water repellent. Clothing of tightly woven nylon has proven to be the most effective windproofing material available. The amount and type of clothing to be worn underneath depends on the outside temperature and weather conditions. Clothing should be put on in layers, starting with a good suit of thermal underwear next to the skin to provide a layer of dead air necessary for good insulation. A good pair of wool pants and wool shirt covered by an insulated and hooded windbreaker provides adequate protection for riding on average winter days.

A good snowmobile suit can usually be worn over your normal clothing and will keep you warm and comfortable in all but the most extreme cold. If you plan to snowmobile in Iowa's northern lakes region, where temperatures of -25° are commonplace, then a well insulated snowmobile suit is a necessity. One good example of the convenience and comfort provided by a snowmobile suit occurred last February when several Waters Officers were sent to Clear Lake to supervise a week of snowmobile events being held on the lake. The officers with snowmobile suits were able to operate comfortably in the -25° degree temperatures wearing only a snowmobile suit over their regular uniform, while the rest of us needed 4 to 5 layers of heavy bulky clothes in order to withstand the extreme chill factors encountered when operating at average snowmobile speeds.

Most snowmobilers prefer the one-piece coverall type suit as it is the warmest, however there are many good two-piece suits available. A quality adult suit will cost from \$50 to \$100. The fabric should be water-proof coated nylon. A quality suit will also have extra layers of fabric on the inside

of the knees and seat. All zippers should be heavy-duty type and have draft flaps to seal them at the back. Finally try to select a suit with a pile lining rather than quilted as the pile is more absorbent and contains more air pockets, thereby producing more warmth.

Warm Up Your Sport With Proper **SNOWMOBILE CLOTHES**

By **ROD PARKER,**
Water Safety Officer



Photos By The Author

One word of caution concerning these suits is that they are so effective that you can easily become overheated, which in extreme cold can lead to chilling and rapid loss of body heat. At the first sign of overheating, loosen your suit at the throat to allow excess heat to escape.

The chill factors caused by operation during periods of extreme cold demand that special attention be given to protection of hands, face and feet.

Your hands are exposed to the airstream and should be protected by leather or nylon mittens with wool or polyfoam liners. Mittens will protect your hands from the cold much better than gloves and for snowmobiling you do not need the extra dexterity provided by gloves. Your mittens should extend 2 to 4 inches past your wrist to prevent the entry of snow and cold air into your coat sleeves. This type of hand covering provides adequate protection from snapping twigs and branches when riding in wooded areas.

Head and facial protection varies somewhat according to the weather conditions. Regardless of the temperature a motorcycle-type helmet provides warmth and safety from head injuries in the event of collisions or falls. Make sure that any helmet you purchase meets the Federal safety standards Z-90.1 covering impact resistance. When the temperature falls below zero your face and head must be completely covered to prevent frostbite to exposed skin. The best facial covering consists of the multi-layered knitted face masks, which hold warm insulating layers of air next to your face.

Your eyes also need protection from the glare and flying ice and snow. This can be in the form of goggles with grey or green lenses or a tinted face shield on your helmet. Amber or yellow lenses should never be worn in bright sunshine as this can result in serious eye damage. A face shield or goggles will protect your eyes from tree branches and keep your eyes from watering and blurring your vision. Some face shields have a tendency to fog up under certain conditions and this can be quite dangerous if you are operating in blowing snow or at night.

Your feet are particularly subject to cold and possible frostbite since they are inactive when snowmobiling. The inexpensive rubber insulated boots are fairly warm and will be satisfactory for mild winter days. The rubber bottom-nylon top boots with heavy felt liners are the best suited for snowmobiling for several reasons. They are extremely warm and relatively light in weight and the felt liners can be removed on mild days. They provide good traction and most have provisions for tying the tops to keep out the snow.

(Continued Page 22)



State Park Ranger Addresses

A. A. Call State Park
Route 1, Box 220
Algona, Iowa 50511
515-295-3669

Backbone State Park
Dundee, Iowa 52038
319-924-2527

Upper Backbone State Park
Dundee, Iowa 52038
319-924-2930

Beeds Lake State Park
Hampton, Iowa 50441
515-456-2047

Bellevue State Park
Route 3, Box 83A
Bellevue, Iowa 52031
319-872-3243

Big Creek State Park
Route 1
Polk City, Iowa 50226
515-685-3093

Black Hawk State Park
P.O. Box 7
Lake View, Iowa 51450
712-657-8712

Bob White State Park
Box 145
Chariton, Iowa 50049
515-873-4670

Brushy Creek State Park
Route 1, Box 162
Lehigh, Iowa 50557
515-359-2501

Clear Lake State Park
Route 1
Clear Lake, Iowa 50428
515-357-4212

Dolliver State Park
Route 1
Lehigh, Iowa 50557
515-359-2539

Elk Rock State Park
(Red Rock Reservoir)
Otley, Iowa 50214
515-627-5434

Fort Defiance State Park
Route 2
Estherville, Iowa 51334
712-362-2078

Geode State Park
Route 2
Danville, Iowa 52623
319-392-4601

George Wyth State Park
Route 2
Waterloo, Iowa 50701
515-232-5505

Green Valley State Park
Route 1
Creston, Iowa 50801
515-782-5131

Gull Point State Park
Route 2
Milford, Iowa 51351
712-337-3631

Honey Creek State Park
(Rathbun Reservoir)
Moravia, Iowa 52571
515-724-3739

Lacey-Keosauqua State Park
Box 398
Keosauqua, Iowa 52565
319-293-3502

Lake Ahquabi State Park
Route 1
Indianola, Iowa 50125
515-961-7101

Lake Anita State Park
Route 1
Anita, Iowa 50020
712-762-3564

Lake Darling State Park
Route 1
Brighton, Iowa 52540
319-694-2323

Lake Keomah State Park
Route 1
Oskaloosa, Iowa 52577
515-673-6975

Lake Macbride State Park
Route 3
Solon, Iowa 52333
319-644-2200

Lake Manawa State Park
Council Bluffs, Iowa 51502
712-366-0220

Lake of Three Fires State Park
Route 1
Bedford, Iowa 50833
712-523-2700

Lake Wapello State Park
Route 1
Drakesville, Iowa 52552
515-722-3371

Ledges State Park
Route 1
Madrid, Iowa 50156
515-432-2730

Lewis and Clark State Park
Onawa, Iowa 51040
712-423-2829

Maquoketa Caves State Park
Route 2
Maquoketa, Iowa 52060
319-676-3251

McIntosh Woods State Park
Ventura, Iowa 50482
515-829-3847

Nine Eagles State Park
Route 1
Davis City, Iowa 50065
515-442-3333

Palisades-Kepler State Park
Route 2
Mt. Vernon, Iowa 52314
319-895-6039

Pammel State Park
Route 3
Winterset, Iowa 50273
515-462-2188

Pikes Peak State Park
McGregor, Iowa 52157
319-873-2341

Pilot Knob State Park
Route 1, Box 108
Forest City, Iowa 50436
515-582-4835

Pine Lake State Park
Route 2, Box 179
Eldora, Iowa 50627
515-858-5832

Prairie Rose State Park
Route 4
Harlan, Iowa 51537
712-773-2701

Red Haw State Park
Route 1
Chariton, Iowa 50049
515-774-5632

Rock Creek State Park
Kellogg, Iowa 50135
515-236-3722

Springbrook State Park
Box 142, Route 1
Guthrie Center, Iowa 50115
515-747-3591

Stone State Park
Route 3
Sioux City, Iowa 51103
712-255-4698

Union Grove State Park
Gladbrook, Iowa 50635
515-473-2556

Viking Lake State Park
Route 1, Box 191
Stanton, Iowa 51573
712-829-2235

Volga River
Route 1
Fayette, Iowa 52142
319-425-4161

Walnut Woods State Park
Route 3, Box 133
Des Moines, Iowa 50321
515-285-4502

Wapsipinicon State Park
Route 2
Anamosa, Iowa 52205
319-462-2761

Waubensie State Park
Route 2, Box 42
Hamburg, Iowa 51640
712-382-2786

Wild Cat Den State Park
Route 3
Muscatine, Iowa 52761
319-263-4337

FROM THE

Warden's diary



By REX EMERSON,
Law Enforcement Supervisor

"You get a chance to learn a lot about wildlife while waiting for something to happen."

THIS DAY WAS A LONG ONE but most interesting and shows quite a contrast in the duties of a conservation officer. The afternoon was spent at a school giving a program three different times about the fur bearing animals of Iowa. We have a large case of tanned furs that we take along as visual aids. As each animal is discussed the students have a little better idea what the animal looks like as we discuss its interesting habits.

There are usually some skeptical looks when the class is told that we don't have timber wolves in Iowa. That look quickly disappears when a timber wolf pelt (from Canada) displayed, showing the difference between a coyote and the wolf which is a much larger animal, often weighing 150 pounds. The pelt is over six feet long and thus is very convincing.

There was a beautiful winter sunset and the type of work was soon to change. We had been getting some complaints about jacklighters in several areas. As soon as darkness fell six officers quietly moved into a river bottom in a two county area. We have worked together on these night projects many times. Each officer is equipped with county road maps marked in code for different areas, and it shows the location of each officer. After backing my car into the driveway of a vacant farmyard on a hill I looked at my watch. We hadn't used the radios yet due to the probability of monitors in the area. In ten minutes the Conservation Commission airplane would be high overhead. An officer would be riding as observer in the plane. He too has maps of the area and

a two-way radio that he will use when a spotlight starts cutting the darkness along the timber lined fields. On his lap is a clipboard to record notes to be used later in court.

I poured a cup of coffee and leaned back to relax. There was a silver of moon shining in the sky. Two inches of snow covered the ground and the temperature was about 20° above zero. It was a perfect night for deer to be moving and the violators would also know this.

For about three-quarters of an hour everything was quiet, and then the radio broke the silence with "58-8 to 51-7. We have one working in zone X in Section 10". This meant there was a spotlight shining from a car and a quick check on the map showed exactly where it was. It was too far from me but I knew the two closest cars would be responding to the call. In five minutes one of the cars called the plane and reported everything was under control. It had been a farmer getting his hogs in off the road.

More time passed and another cup of coffee was poured. Most of the time spent on enforcement work is just waiting. A red fox came within thirty feet of my car. He was searching the weeds for something to eat, like a mouse or maybe a rabbit, and didn't pay any attention to me. You get a chance to learn a lot about wildlife while you're waiting for something to happen.

Soon the radio call came that I was waiting for. "58-8 to 92-11." (That was me). "We have one in Zone K, Section 2". A check of the map showed it to be about three miles away. The officer

east of me would be heading that way too, but he would have seven miles to travel. As I neared the area the officer in the plane reported that I was coming in behind the car running the light. The road ran through the timber with a few open fields cut out of the woods. Topping a little hill I got a glimpse of their spotlight just before they shut it off. They had seen my headlights and had decided to run. I turned on my red lights and the race was on.

The officer in the plane was calling their direction of travel. He told the officer coming in from the other direction that the vehicle was just under their left wing. Then he reported he could see the other officer coming toward the vehicle that I was chasing, and there were no side roads for them to turn on. In seconds I saw their brake lights come on. The other officer had parked crossways in the road with his red lights flashing. The race was over. I slid to a stop and we had two men with a high powered rifle who were placed under arrest for hunting at night with artificial light, and failure to stop for my red lights. Their constitutional rights were read to them and the rifle, ammunition and hand spotlight were taken for evidence. When asked what they were hunting the reply was "Squirrels" It is illegal to hunt any game with a spotlight, so if they wanted to claim that squirrels were what they were hunting that was all right with me. The shells for that gun are almost as big as a corn cob. I think the squirrels they were hunting would have had antlers on them!

We called the officer in the plane and told him we were taking the violators into town to post bond, or spend the night in jail. By the time we got the paper work finished at the police station, the violators had made their one phone call and a very angry wife came in to post their bond. She was saying something about "I told you so" and something about "a new dress tomorrow".

While we were in town the officer in the plane has spotted another jacklighter for the officers in the other county. The airplane is surely an effective tool in putting a stop to this kind of violating. We can't catch them all, but there were some hunters tonight who can tell you we get part of them. □

ATTENTION TEACHERS:

The last session of the Iowa General Assembly, included in the school standards bill (Senate File 126), a section which will be of great benefit to all concerned with conservation and the environment. S.F. 126 states that *"the following shall be taught in grades one through eight as a minimum program. . . . conservation of natural resources and environmental awareness...."* The Act goes on to state the various other requirements for schools.

The Iowa Conservation Commission's staff and the Conservation Education Center are willing and able to assist you in your conservation education needs. For more information write to CONSERVATION EDUCATION CENTER, Route 1, Box 138C, Guthrie Center, Iowa, 50115.

SNOWMOBILE CLOTHING

(Continued from Page 20)

When considering the purchase of snowmobile clothing remember that most of the items are usable for other outdoor wintertime activities, whether it be shoveling your sidewalk or a late December pheasant hunt. Also a good set of snowmobile clothes and boots make an excellent survival item to carry in the trunk of your car when traveling during the winter months. You never know when a sudden winter blizzard will leave you stranded and having these items could save your life.

WIND CHILL CHART

EST WIND SPEED IN MPH	Actual Thermometer Reading (°F)										
	50	40	30	20	10	0	-10	-20	-30	-40	-50
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132
(Wind speeds greater than 40 mph have little additional effect)	<div> <div>LITTLE DANGER (for properly clothed person)</div> <div>INCREASING DANGER Danger from freezing of exposed flesh.</div> <div>GREAT DANGER</div> </div>										

In addition to the pictures illustrating the various articles of clothing, I have added a wind chill chart to aid you in selecting the proper clothing for the weather conditions you expect to encounter. □



Classroom Corner

by Curtis Powell and Carl Priebe

DOES ANYONE KNOW who Oscar is? Can you imagine where he is? If you have ever visited the Conservation Education Center, you would be able to answer both questions. The picture accompanying this article shows Oscar as he exists today. Ordinarily he hangs over the fireplace in the dining hall lounge at the Education Center.

Oscar is a lake sturgeon or rock sturgeon (*Acipenser fulvescens*). Lake sturgeon are confined mainly to the Mississippi River. They are bottom feeders (their mouth is located at the bottom side of the head.) The food they eat consists of insect larvae, snails, aquatic plants and other small morsels. Oscar is a primitive fish looking almost like a prehistoric fish with bony plates on its sides which serve as scales. The largest in Iowa weighs about 100 pounds. They grow very slowly and few are caught on hook and line.

For many years Oscar was a star attraction at the Conservation Building at the Iowa State Fair. Oscar died the last day of the 1953 State Fair at an estimated age of 51 years. He weighed 100 pounds. After that he was mounted as shown in the photograph and now resides at the Education Center.

Although it is winter, there are many things to be discovered about the fishes of Iowa and the many lakes and rivers found on our soil. Creatures like Oscar exist and offer fantastic opportunities to study. You don't need to seek the larger fish, you may wish to study the millions of smaller creatures in the lakes.

This can be done by drilling a hole through the ice and using either a water sampling bottle or a bottom dredge to bring to surface the creatures there. Remember some are very, very small so it may take a hand lens or a microscope to see them. It will open up a fantastic world of study for you. A good reference book is handy to have, so check with your librarian for a book on aquatic animals and fish. Don't let winter discourage you from learning more about outdoor Iowa.

