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Iowa
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FRONT COVER: 1985 Nongame Support Certificate, American Kestrel — Photo by Ken Formanek. (For information on how to purchase a copy see page 10.)

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Ken Formanek

By Doug Reeves

"American kestrel" is a fancy name for the bird most of us know as the sparrow hawk. But the name kestrel is more correct because the birds are really small falcons, not hawks. A subtle difference you say? Subtle but significant. You see, the American kestrel is the only member of the family Falconidae that presently nests in Iowa. At one time, three kinds of falcons nested here — the kestrel, the merlin, and the peregrine. Merlins have never been common in Iowa so it is not surprising that they do not nest here today. Peregrines, on the other hand, used to nest regularly in northeast Iowa. A number of factors, perhaps most notably use of DDT, contributed to a dramatic decline in the North American peregrine population. The peregrines that nested in Iowa were lost. That leaves us with the American kestrel, a bird that has survived radical changes in the landscape, widespread use of pesticides, and competition with starlings for nest sites. In fact, compared with many other birds of prey, kestrels are doing pretty well. For example, during the 1983 winter raptor survey, kestrels were the second most abundant

birds of prey in Iowa; exceeded only by red-tailed hawks. Furthermore, even though kestrels are migratory, we are fortunate enough to have some in Iowa throughout the year. They are especially numerous during spring when migrant birds can be seen perched atop utility poles.

Historically, kestrels nested in tree cavities that were excavated by woodpeckers or flickers. However, they appear to readily accept man-made structures including martin houses and cavity-type areas in buildings. These small falcons are adjusting to living with man. Within the last year, nests have been reported in vacant houses, church bell towers, office buildings, and even in the top of an elevator shaft at a hospital. At least five pairs nested in the metropolitan Des Moines area. Others were reported in several communities across the state. One nest in West Des Moines was located in an area where big silver maple trees lined the street. We expected the nest to be in a cavity in one of the trees, but the birds chose a place on the second story of a vacant house. People in the neighborhood appreciated hours of enjoyment watching the kestrels

American Kestrels



and were delighted when a young bird emerged from the nest. Another pair of kestrels nested in an abandoned church right next to the Wallace State Office Building in Des Moines. Their nest was located in a place where some shingles and a small board were missing from the roof.

An interesting project over the past two years involving Conservation Commission personnel, an Eagle scout, and the Iowa Department of Transportation has further demonstrated the adaptability of kestrels to man-made sites. Ron Andrews, Wildlife Research Biologist at Clear Lake, believed kestrels would use nest boxes placed along interstate highway rights-of-way. These areas are natural migration corridors and the grassland along the route provide an abundance of small mammals (mice and voles) as well as grasshoppers for the kestrel to feed on. After consulting with the Iowa Department of Transportation, Ron decided to try a three-year pilot study of box use by kestrels along the I-35 right-of-way in Cerro Gordo County near Clear Lake.

Trent Bales, an Eagle Scout candidate from Troop 30 of Clear Lake, organized

the troop and constructed 20 kestrel boxes for the pilot work. Boxes were made from a cottonwood log provided by the Big Marsh Wildlife Unit and sawed into rough cut lumber by the Hardin County Conservation Board. Bales assisted in the erection and monitoring of boxes for the first year.

The nest structures were attached with metal banding material to the back sides of large, directional I-beam sign posts. They were spaced about 0.8 mile apart and ranged in height from 10 to 19 feet. A couple of inches of shavings were placed in the bottom of each box.

Nest site selection begins in April, when kestrels can be observed flying in and out of boxes. Occasionally they

leave pellets, which may be their way of marking their domain over a particular box. Egg laying begins in late April in north Iowa.

Kestrels lay four to five brown mottled eggs, and incubation begins a few days before the last ones are laid. In about 28 or 30 days, the first pure white, downy birds emerge. It takes about 30 more days for young kestrels to reach the flight stage.

In 1983, eight kestrels attempted to nest in the boxes. Six were successful, with 26 birds fledging from the boxes. Needless to say, all parties felt this was excellent use for the first year.

In 1984, an additional five kestrel boxes were sandwiched in between the ones put up in 1983, and an unbelievable 15 kestrels established nests. Thirteen were successful and over 60 young were produced along this 20-mile stretch of interstate.

Twenty-one young were banded in 1983 and a total of 57 young and nine adults, including three males incubating eggs, were captured and banded in 1984. Starlings used all boxes not used by kestrels, even though we attempted to terminate all starling nest efforts. In some instances, kestrels invaded the boxes with starlings and evicted these tenants. We also suspect that in three of the four unsuccessful kestrel nest attempts, starlings were the cause of their demise.

All in all, the cooperative kestrel box study along I-35 has been an exciting one. The project drew upon the resources of many disciplines. The cooperative atmosphere of all parties involved has really been appreciated and we are especially grateful to the Iowa Department of Transportation for allowing us to use the I-35 rights-of-way for this study. We anticipate that the proj-

Don't Forget the Chickadee Checkoff

Iowa taxpayers, your state 1040 and 1040A forms have been redesigned this year, giving you a double shot at giving to the chickadee checkoff. Now, even if you owe taxes, you can contribute using your tax form. (For the past two years, only persons receiving a refund could give.)

Remember, 100 percent of your contribution to the checkoff goes for conser-

vation programs directed to nongame species of wildlife. Before the checkoff, it was hunters and fishermen who paid for wildlife conservation through the purchase of their sporting licenses. Now, all of us have the opportunity to help ...and it is easy. Tell your tax preparer to set some aside, and if you do your own taxes, make a point to send a "little for the birds."



Kestrel boxes placed on highway signs provide nesting sites

ect will soon be expanded to other portions of the interstate and perhaps other primary highway rights-of-way. If the expansion occurs as anticipated, there should be ample opportunity for members of the public at large to assist in nest box construction and perhaps some monitoring of their use.

Occasionally when discussing kestrels, we are asked if they are really good birds to have around. The answer is yes. Kestrels feed on insects, mice, small snakes, and occasionally small birds. So they are good pest control. Yet they are small enough that they don't bother pets or livestock. And they don't really bother the birds that come to your feeder. True, they might take a small bird once in a while, but they really don't affect the populations adversely. The kestrels that

nested in the vacant church near the Wallace State Office Building had house sparrows, starlings, and pigeons for neighbors in the same building. In fact, the starlings probably harassed the kestrels more than the kestrels bothered the other birds.

Maybe you would like to try to get kestrels to nest where you live. If so, put an 8" x 8" x 12" nest box with a three-inch diameter entry hole on a pole ten or more feet above the ground. Kestrels are territorial so do not expect them to use boxes that are spaced closer than one-half mile. Even if you don't have them nesting near you, the next time you see a "sparrow hawk" you will admire the adaptability of this little falcon.

To those people who appreciate wildlife, particularly birdlife and wildlife

photography, the Conservation Commission's 1985 nongame certificate is a multi-colored limited edition photograph of an American kestrel feeding on a deer mouse. The picture was taken by Lowell Washburn, outdoor writer and photographer and naturalist for the Hancock and Winnebago County Conservation Boards. Only 5,000 of these numbered photographs are available. They may be obtained by writing the Iowa Conservation Commission, Wallace State Office Building, Des Moines, Iowa 50319, or from some other Commission field offices. The cost is \$5 each.

Doug Reeves is the urban wildlife biologist for the commission. He holds an M.S. degree from Michigan State University. He joined the commission in January of this year.

Old Sentinel Oak stands a few feet back of the heavily wooded bluff, overlooking a straight stretch of the mostly winding Big River. More than a century and a half ago a squirrel (who knows whether he meant to do more than cache food for the long winter) had buried acorns over the slope and out into the nearby prairie.

Most of the acorns were from Old Lookout — he had stood nearby at the very edge of the bluff, leaning slightly out into the open spaces, easily climbable. When Sentinel was a little taller than Quick Bear, the Indian boy who often passed that way, his companion trees planted just a few feet farther from the bluffs edge were lost to an intense prairie fire. And another, between him and Lookout, was girded that very fall by a small buck deer, proud of his newly grown antlers. Sentinel's singed lower branches quickly healed, and in a surprisingly few years, like father and child, he was half as tall as the parent tree.

He watched Quick Bear become a man, hunt the nearby ridges and fish the river below. Sentinel watched him climb Old Lookout, shade his eyes and study the heavily loaded boats creeping up the river and the wagons winding along the scant trail below, carrying people with skin unlike his.

Later men would drive stakes a long way apart, return to cut down half grown trees to make cabins, grub out others to clear land for gardens, and finally fields.

And when Sentinel was still slim, but almost as tall as Lookout, a group of men dressed in gray approached. One climbed the old tree, and talked for a long while to the others below him. Not many days later, a great battle raged a few miles down the river; the awful sound carried up the valley and echoed in the ravines. And after it had died down, a number of men, dressed in blue, came running. One of them climbed Old Lookout, came down quickly, and then hurried on.

And that very night a great black cloud crowded into the sky. The roll of thunder was greater than the battle noise, the wild wind more devastating than bullets. Sentinel bent half way to the ground, and two of his choice limbs were torn off and thrown a distance twice his height. Above the thunder, he felt earth shaking vibrations, and when the lightning flashed, he saw nearly all the mature trees, Old Lookout among them, flattened to the ground; great broken and torn roots pointing skyward.

When morning came Sentinel could see the part of the valley Old Lookout

had hidden from him, and the added light hurried him to maturity. His wounds healed, great scars remaining. A bolt of lightning had left an open seam to within a few feet of the ground, then bounced away. He became taller and larger in girth than Old Lookout and his contemporaries had been. Squirrels buried his acorns — started new life. Would the sturdy sprouts ever approach his stature and majesty?

He stands there today, silently.

He said not a word when men bulldozed many of his own saplings, and thousands of others off the slopes to either side of him, and made tracks that would erode into deep gullies on the rougher ground below him. Perhaps he moaned in the wind, but said nothing when they cut down his neighbors to make whiskey barrels and gun stocks. Not a cry from him when they sprayed the nearby field and almost choked him to death — the field where his brothers had fallen to the fire almost a century and a half before.

Stolid through the many decades. Swifter boats plied the river. Great machines cleared out and graded a wide road up the valley to the city that Lookout had obscured from his view for so many years. Cars sped hither and yon by

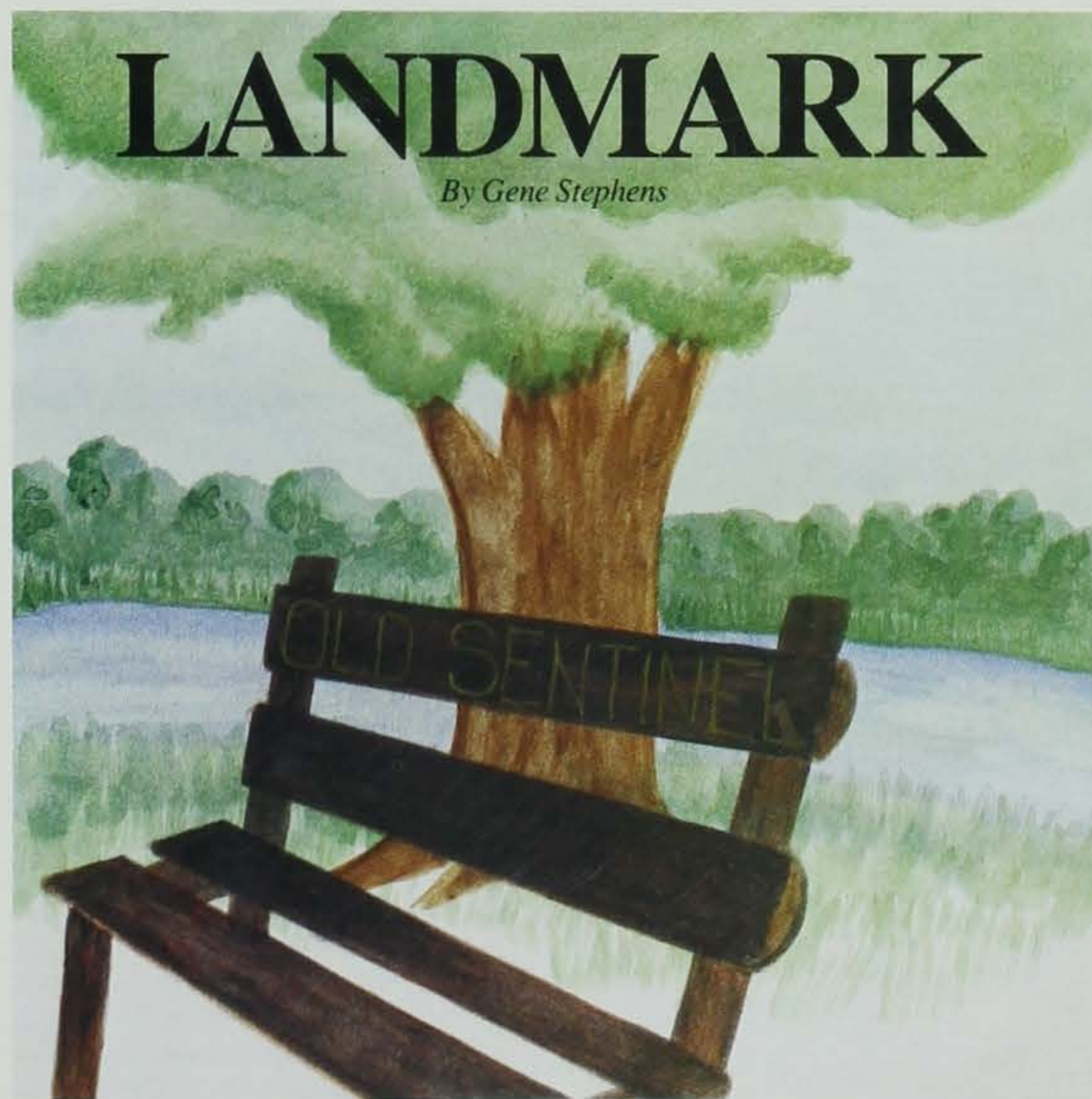
day, and little darts of light met and passed below him all night long.

And just a few years ago, late in our own time, nearly all the trees in the valley had disappeared. And the river was no longer blue.

But there were still men and women in the valley with vision as clear as Quick Bear's had been. Again stakes were driven. In a little natural amphitheatre, far below Old Sentinel, shelters were erected, tables were set up. A well was drilled. A trail was made, meandering partly out of sight of Old Sentinel up the ravine to his left, on up and behind him, on the very edge of the prairie, then down the other side and back to the little green park. Two great, rustic benches were placed in his wide shade — on their back rail these words were burned — "Old Sentinel."

Is there a tree that is special to you? In your neighbor's yard, along the road or deep in a secret place that few beside you know about? Go to it often. Work at understanding it. Permit it to offer you solace, fortitude and strength.

If no one is looking or listening, talk to it. Say something like: "Thank you, my friend, for sheltering birds and little animals — for helping clear the air — for being there when I come to you."



LANDMARK

By Gene Stephens



We Owe 'em One

By Roger Sparks

Artwork By Patrick J. Costello

Wildlife biologists have always made me a little sleepy. I generally have trouble making them understand my language, and I suppose they become frustrated trying to communicate with me. For example, when they proclaim "mortality occurred," I simply assume the critter "died." If something, according to the scientists, "had a detrimental impact on population levels," I say "lots of 'em bit the dust."

Not surprisingly, when one of those wildlife professionals met me in the marsh a few Novembers back and explained in mile-long terms why I would soon be shooting steel shot instead of lead at ducks, I allow he measured my reaction as "profoundly negative." Truth is, I burned the frost off my three-day beard, the patches off my wornout waders and the rust off my shotgun, not to mention the hair off his ears. I bridged the communication gap.

At that time, I had already shot a few boxes of early steel loads and, as a result, my initial skepticism had blossomed into full disdain. I had not only crippled more ducks with the stuff, I had been forced to chase several wounded barn pigeons half-way across the pasture, before reducing them to pie meat. I had never been concerned about additional costs, or barrel damage (I'll quit before I measure waterfowling in dollars and cents), but those early steel loads had seemed capable of crippling more ducks than could ever be lost to lead poisoning.

As I said, all this occurred several years ago. Since then, I have changed my mind. First, after having shot a case or more of today's vastly improved steel shot, I can honestly say it performs very well. Modern steel (actually soft iron) loads are indeed hot, and while I won't pretend to be a ballistics nut, the experience of watching ducks fall cleanly at 40 yards is enough for me. I intend to reload the stuff and I am satisfied it won't ruin my gun. In truth, however, these are not the most important reasons for my change of heart. After considerable soul-searching, I softened my opinion of wildlife professionals. I did so after a little research into the history of waterfowl management.

In the late 19th century, a small but growing cry could be heard from those who lamented the decline of game species due to uncontrolled hunting by a

Roger Sparks is a journalism graduate of Drake University. He has served as editor of the Iowa Conservationist for 15 years.

rapidly growing population and dramatic habitat changes. As the prairie yielded to crops, a number of favored species vanished and many others declined in Iowa. In the early part of this century, as millions of acres of prairie marshes were drained, waterfowl flocks which blackened the pioneer skies were greatly diminished. Better access to marshes, allowing uncontrolled hunting for personal and market uses, took a heavy toll of migrating ducks and geese using the remaining wetlands throughout the country. Clearly, something had to be done to save the continent's waterfowl resource; but just what and by whom was the source of hot debate.

The need to protect waterfowl and wetlands was realized before 1900, and some legislation on a state-to-state basis occurred. However, this was a patchwork approach to a continental problem. It was simply ineffective. In 1905, the concept of using trained personnel to study waterfowl became a reality under the U.S. Biological Survey, a fledgling branch of the Department of Agriculture, and forerunner of today's Fish and Wildlife Service. The early USBS biologists signified the beginning of a movement to scientifically study and manage migratory waterfowl.

In 1920, a major step was taken by the biological survey, in cooperation with private groups already using a bird migration study method which had been discovered by John James Audubon. An aggressive leg-banding program was undertaken. Over the next few decades, it provided invaluable insight into breeding and wintering locations, mortality causes and migration patterns of North America's waterfowl.

Following passage of the Migratory Bird Treaty Act of 1916, the governments of the United States and Canada were cooperating in providing for the welfare of waterfowl. By 1924, the first major acquisition, the Upper Mississippi Wildlife and Fish Refuge, was completed by the U S B S. About one dozen well-trained U.S. wardens were enforcing federal laws at that time. Indeed, the professional study, management and protection of North America's waterfowl was underway.

Game laws concerning waterfowl have always been controversial. Tremendous debate among hunters, legislators, biologists and conservation organization leaders raged during the '20's and '30's. Still at the forefront of argument was the philosophy of federal control rather than state's authority over migratory bird management. Also in

question were the scientist's claims that spring seasons must end and the practices of baiting, using live decoys, and selling waterfowl must cease. But the growing pool of scientifically collected information could not long be denied, and by 1935 baiting, live decoys and spring hunting were banned by U.S. and Canadian federal laws.

Consider the plight of the early federal wardens. Although federal law stood behind them, they were so few in number and the attitudes of states' rightists so strong, the warden's lives were often in jeopardy. A few states pretty much ignored the early conservation laws, so the "duck marshalls" or "cornfield constables" found themselves walking many miles across muddy terrain to reach a hunting club violating the spring-season ban. They faced these situations during the peak of the great depression and their armed adversaries were often hostile. The wardens were nearly always alone. Their jobs were incredibly tough, often unpopular and almost always dangerous.

Early biologists also faced difficult and harrowing experiences. As a result of migration facts learned from banding and other studies, it became apparent that seasons could more appropriately be set by region rather than nationwide. Flyways, and later flyway councils, were established (first by regions north to south, then in 1948, the current system was developed dividing the continent east to west). Flyway biologists were hired to investigate brood sizes and numbers, mortality factors, population distribution and yearly habitat conditions. Since much of the resource originated in Canada, the flyway boys found themselves heading for the north country. Early bush planes flew surveyors into the harsh and desolate subartic, where a small accident or miscalculation could be fatal. They spent weeks at a time there searching, counting, banding and just staying alive.

The 1930's saw the professional wildlifers, sportsmen and other conservationists address an even more critical waterfowl problem — diminishing wetlands. The elimination of market hunting and uncontrolled gunning did not affect the great, long-range threat of habitat loss. The drought of the late 1920's and 1930's made it easy for farmers and developers, with the help of federal programs, to drain and destroy what was left of our shrinking habitat. This loss, combined with the low populations of drought-plagued ducks and geese, did however, awaken many folks to the alarmed voices of the scientists, wardens

and sportsmen's groups such as the Association for More Gamebirds, forerunner to Ducks Unlimited. Behind the super salesmanship of Des Moines' J.N. "Ding" Darling, then chief of the USBS, an effort to provide money for habitat protection through the sale of federal duck stamps was successful. Again, those who were closest to the resource, the scientists, helped lead the drive. And once again, they were right on target.

We have spent the better part of a hundred years struggling to keep waterfowl management out of the hands of special interest groups and in the capable hands of the wildlife pros. Throughout this period, sportsmen have often argued with the professionals, but when positive action needed to be taken on critical issues, a unified voice was heard.

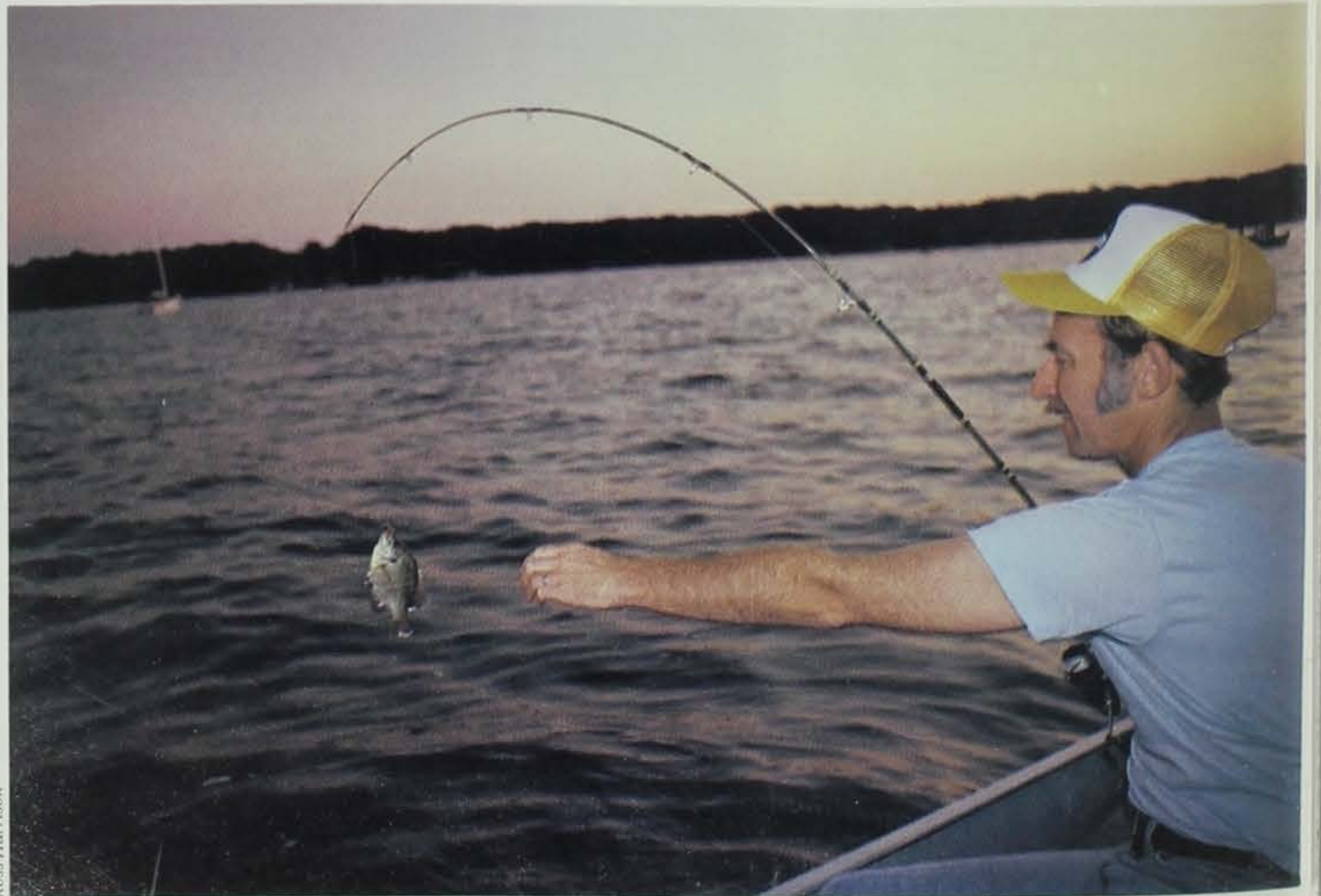
I still have some trouble communicating with wildlife experts (too much college I suppose, but then they can't help that once the damage is done). I do, however, recognize the tremendous value of the scientific approach to wildlife management. And, I know that throughout history, decent salaries, family time and more are sacrificed for the benefit of the resource we all love.

How much of a sacrifice will it be for us to stop shooting lead at waterfowl? The wildlife professionals may be calling the wrong side of the steel coin, but in historical context, it's pretty small change. Even if they are making a mistake, I say it is about time we sportsmen honestly and humbly admit we owe 'em one.





Ron Johnson



Ross Harrison

I Use Those Small Bluegills

By Rich Patterson

Late last spring a friend and I were quietly working the shoreline of Pleasant Creek Lake near Palo from a canoe. Although the lake is normally one of Iowa's most productive bass waters, on that warm day we were unable to coax a largemouth to even nudge our lures.

After a few frustrating hours we drastically shifted our tactics. On nearly every cast that morning small bluegills had charged out of the shallows to aggressively attack plastic worms that were larger than they were. Bluegills became our quarry!

We had both brought along an ultralight rod, small hooks, and a can of worms just in case the bass weren't cooperating. Fishing near some submerged trees, we caught over 100 bluegills in about an hour. The smallest were about three and a half inches long. None were longer than six inches.

Despite their tiny size, when we left the lake we had over ten pounds of delicious fish in our coolers, and we occasionally enjoyed a meal of fried fish for many months.

Pleasant Creek is like thousands of lakes and ponds spread across North America. In addition to some nice game fish, it has an abundance of fish so small that no one fishes for them.

Bluegills and other panfish can reproduce at a rate much faster than can be controlled by bass, pike, turtles, herons and other natural predators. They often outstrip food supplies and stop growing at a size most anglers consider too small to keep, too hard to clean and too bony to eat.

Fortunately, most fishermen are wrong. Small bluegills are easy to

clean and are simply delicious. No one who loves a fish fry should overlook a pond or lake full of aggressive five-inch bluegills.

Bluegills cooperate. During the dog days of August, when nothing is stirring, bluegills bite with gusto. When the ice lies two feet thick on northern lakes, they can be hauled up by the bucketfull. With light tackle it is easy to catch them at the rate of two or three per minute and faster catches are possible.

The most important step in transforming a live bluegill into a delicious meal takes place immediately after the fish is taken off the hook. It must be chilled. Most fishermen believe that winter caught fish taste better than their summer counterparts. I am convinced that the only reason for this is that the winter fish are automatically chilled as soon as they are caught. Summer fish are often allowed to stiffen in plastic bags, on sunny boat decks, or on a stringer trailed in warm water.

No matter what the season is it is convenient to drop each freshly caught fish on a layer of ice cubes in a cooler. Even on a hot day the fish stay fresh for hours, and it is much faster than threading them on a stringer.

Although a few of my fishing friends skin and fillet even small bluegills, I find this too tedious and tricky. It is much easier to let the heat of the frying pan do the filleting for me.

Fish should be cleaned as soon as possible after catching. Cleaning little fish is easy, and with a little practice they can be processed at the rate of two or three per minute.

Scaling is the first step. I grasp them with a tight grip on the head. One or two backward scrapes with a knife on each side removes the scales.

Beheading the fish also removes most of the entrails. I make a diagonal cut from behind the gill flap to the vent. Both ribs and entrails are discarded with the head, and there is no body cavity left to scrape. Small bluegills have little meat over their ribs, so waste isn't a problem.

Cooking and eating small fish requires practice. The tiny bluegills can be dipped into batter and fried like a larger fish, but it is easy to overcook them. Because they are so small it only takes one or two minutes of frying on each side. When the meat is done the anal and dorsal fins will easily come out with a backward pull. Many bones come out with them.

By placing a fork in the groove created by removing the dorsal fin, a twist of the wrist separates the fish into two halves. One is boneless. The other has the backbone still attached. It is easily pulled off, and the only thing left to do is enjoy eating the boneless "fillets".

If enough of us realize that little bluegills are good to eat and easy to clean, we can do a real service to ourselves and our favorite bass lake by taking home a cooler full of them once in a while.

Rich Patterson is director of the Indian Creek Nature Center in Cedar Rapids. He has been an avid angler throughout his life.

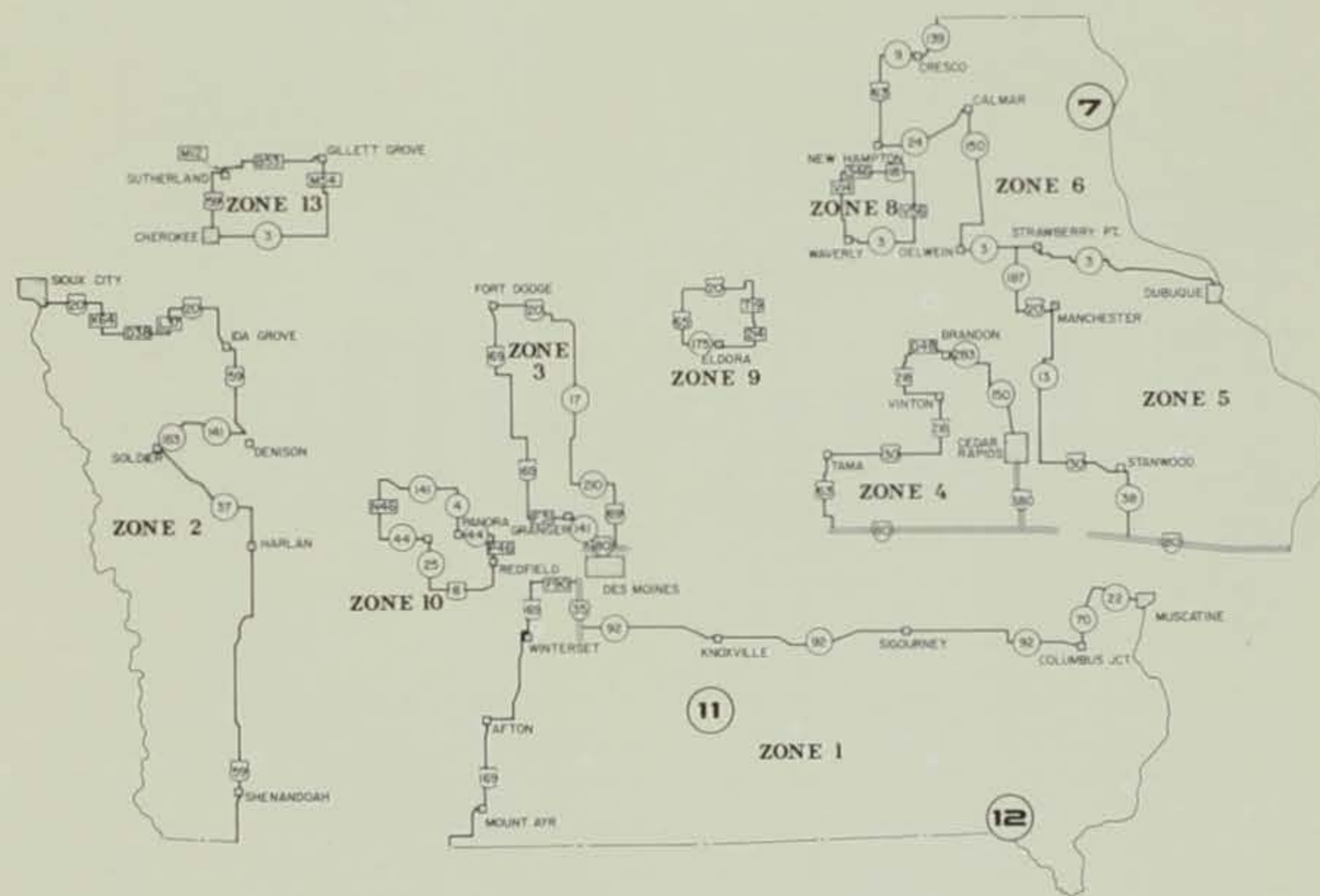


SPRING TURKEY APPLICATIONS AVAILABLE

Spring turkey license applications are now available at most county recorders' offices and hunting license outlets. Spring turkey hunters must use these special applications.

Each application must be filled out completely and correctly, and have the \$20 fee enclosed. Detailed instructions for completing the application are printed on each envelope. Landowners and hunters born after January 1, 1967, should pay special attention to the instructions. Only applications bearing a legible U.S. Postal Service postmark dated from January 1 through February 14 will be accepted. No one may apply for more than one license during the initial application period.

Hunters must select one first choice of four seasons in 13 zones (see map). Season dates are April 15-18; April 19-23; April 24-30 and May 1-12.



7 - YELLOW RIVER FOREST IN ALLAMAKEE COUNTY ONLY

11 - LUCAS AND WHITEBREAST UNITS STEPHENS STATE FOREST IN CLARKE AND LUCAS COUNTIES ONLY

12 - SHIMEX STATE FOREST IN LEE AND VAN BUREN COUNTIES ONLY

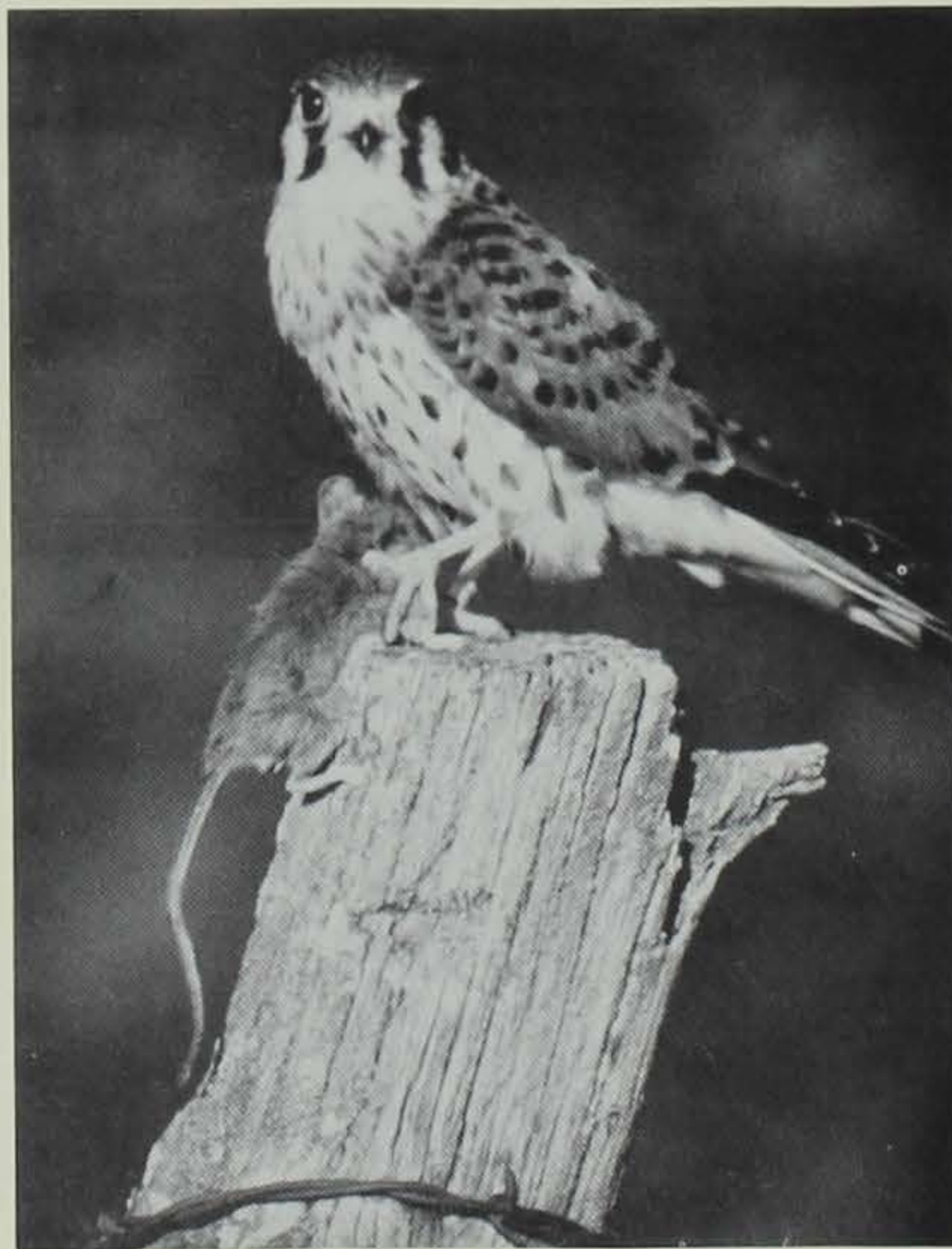
ATTENTION STAMP COLLECTORS

The Iowa Conservation Commission announced that all 1984 stamps and certificates such as wildlife habitat, waterfowl, trout and nongame support certificates are still available for collectors from the commission until March 31, 1985. After that date, unsold items will be destroyed.

The 1984 stamps/certificates available and their fees are as follows:

Migratory Waterfowl	
Stamp	@ \$5.00
Trout Stamp	@ \$5.00
Wildlife Habitat	
Stamp	@ \$3.00
Nongame Support	
Certificates	@ \$5.00

Copies may be obtained by sending the proper remittance to the Iowa Conservation Commission, License Section, Wallace State Office Building, Des Moines, Iowa 50319.



1985 NONGAME CERTIFICATES AVAILABLE

The 1985 Iowa Nongame Support Certificate is now available for purchase from the Iowa Conservation Commission, Wallace Building, Des Moines, Iowa 50319. The cost of each is \$5.

The certificate, featured on this month's front cover, is an American kestrel photographed by commission photographer Ken Formanek. Each of the 5,000 prints are individually numbered. Revenue from the sale of these collector's items will be used specifically to enhance Iowa's nongame species.



NEW ICE FISHING SHELTER LAWS

Ice fishermen should take note of two changes in the laws regarding ice shelters.

Ice fishing shelters will no longer need a permit number. However, any shelters placed on or over state-owned land overnight shall have full name, address and city of the building owner painted in four-inch or larger block letters on all sides of the shelter. This owner information will act as a permit.

Also, all fishing shelters left on the ice after sunset shall have amber reflectors attached to all sides of the structure.

Donations

The following are contributions to Maquoketa Caves State Park:

Jo Ann Caven 7 mounted fish Taxidermy, Maquoketa

Jackson County Historical Society, Maquoketa 14 plate glass shelves valued at \$70

United Telephone Company, DeWitt 36 telephone poles for parking post construction, value — \$180

United Telephone Company of Iowa 18 telephone poles valued at \$180

The following are contributions for construction of a multipurpose pathway at Clear Lake State Park:

Clear Lake Development Foundation \$2,500

Clear Lake Evening Lions Club \$1,350

Clear Lake Noon Lions Club \$1,350

Fredricksen Welding Shop, Clear Lake \$100

Woodford-Wheeler Lumber Company, Clear Lake \$146

Basic Materials, Fertile \$180

Yohn Ready-Mix, Garner \$481

Irwin Masonry, Inc., Sac City \$536

Beasley Construction, Inc., Clear Lake \$50

1984 Conservation Education Award Winners

The life of every citizen in Iowa is tied to the soil whether we are in agriculture related careers or simply a consumer of farm products. Teachers throughout the state recognize this need to teach soil conservation within the classroom. Mrs. Cleo Giltner, 1984 soil conservation award winner, states, "Pupils must develop new attitudes towards how we use our natural resources ... Pupils must see how our lives now and in the future will be affected by the existence or nonexistence of our renewable or nonrenewable natural resources." Students do not suddenly develop a conservation ethic in high school but must continually build upon a conservation foundation which should be established at a very young age.

Each year the Iowa Department of Soil Conservation in conjunction with the Iowa Conservation Education Council and the Des Moines Register recognize two teachers for their outstanding work in conservation education. Mrs. Cleo Giltner of Ottumwa and Mr. Lewis Lauterbach of Osage were presented awards at the 38th annual Soil Conservation District Commissioners Conference in Des Moines in November.

Mrs. Giltner is a 5th grade teacher at James Elementary School in Ottumwa. She teaches environmental awareness through learning experiences in the out-of-doors and follows up by having her students become actively involved in conservation issues in the city. Her dedication to conservation has also been demonstrated by her participation on the Wapello County Environmental Education Committee and by attending



various ecology workshops. She has also been instrumental in implementing new conservation material throughout her school. Due to increased interest by other teachers, the school district has made financial commitments in the furthering of the conservation effort in their county.

Lewis Lauterbach, a retired vocational agriculture teacher from Osage, says that he developed his interest in conservation while growing up on a farm near Alden, Iowa. He witnessed the changes in crop production when his father went to strip-cropping and contour farming. These methods held the soil and water in place and their crops increased by 25-30 bushels per acre.

Mr. Lauterbach's interest in new innovative ideas prompted his students to implement no-till farm practices which was then used as a teaching tool as well as a demonstra-

tion plot. They were one of the earliest participants in the no-till program in Mitchell County. They have continued to participate in the program since 1979.

The Osage High School was also the highest scoring Iowa team which participated at the National Soil's Contest in Oklahoma City this year. They placed 13th out of 98 teams from all over the nation.

These school activities have helped to stimulate student interest in conservation projects around their family's farm. Many windbreaks and other reforestation projects have resulted.

Dedicated teachers such as these 1984 award winners are needed to help promote student awareness and understanding of conservation principles because one day the fate of our natural resources will be left in the hands of these young people.

LICENSE RECEIPTS UP, SPORTSMEN'S NUMBERS DOWN

The number of licensed hunters and anglers in the U.S. dropped last year, but the receipts from hunting and fishing license sales rose dramatically, according to the Wildlife Management Institute.

There were 16,372,904 licensed hunters afield in 1983. That is 375,637 fewer than the year before. There were 29,130,543 fishermen licensed last year, 450,783 less than in 1982.

Iowa had 239,111 licensed hunters in 1983, 11,149 fewer than in 1982. There were 419,993 fishermen licensed in Iowa last year, 9,946 less than the previous year.

These figures only approximate the actual number of hunters and anglers in the

U.S. and Iowa. They do not include people who were exempt from license fees. In many states, including Iowa, special provisions are made for senior citizens, people under 16 years old, the handicapped and certain military personnel. Also, many coastal states do not require licenses for saltwater fishing. In addition, some people purchase licenses in more than one state and are counted more than once.

Expenditures for state hunting licenses rose to \$276,605,843 in 1983, an increase of \$18,001,136 over 1982. Anglers paid \$243,629,652 for fishing licenses last year, \$16,682,253 more than the year before.

Iowa's licensing fees did not rise between 1982 and 1983, however licenses will increase this year.

Since 1923, hunters have paid \$3.9 billion in license fees to state wildlife agencies. They also have contributed \$1.4 billion since 1937 in special excise taxes on sporting arms and ammunition. Those receipts also are allocated to states for wildlife conservation programs.

Fishermen, since 1933, have paid \$3.7 billion to state agencies for license fees. They also have provided \$462 million in excise taxes on fishing tackle since the early 1950s. That money was used for fisheries management.

SYLVAN RUNKEL

"Natural communities have been solving their problems of over-population, waste disposal and disease for centuries. Perhaps we should take a lesson from them" he told a group of teachers at a Luther Camp, as he stood with a twinkle in his eyes and wearing a hat he acquired in 1933. This was the first time I saw Sylvan "Sy" Runkel and he was doing what he does best — interpreting a woodland to a group of teachers. That was a long time ago and I have seen him many times since and each time he has been dealing in some way with natural communities — interpreting them, trying to save them, planning for management of them, looking for rare plants on them or just enjoying them. He is the closest thing Iowa has to a 'living legend' in the natural history field.

Born in 1906, he moved at age six from Jacksonville, Illinois to Moline, where he became well acquainted with the 'Ole Miss', which he says is a far cry now from what it was then. After graduating from high school in Moline, he became infected with wanderlust, a condition which afflicts him yet. Yearning to see the west, he and a friend rode the rails and thumbed their way to Duluth, west along the Roosevelt Highway, through Glacier National Park and south to California. Here he worked on a fire crew fighting Chaparral fires in a national forest near Santa Barbara. After the fire season, he worked on an intercoastal ship which ran from California to New York. In late 1925 he returned to Iowa where he entered Iowa State for four years of forestry.

During this period, the beginning of the Great Depres-

Wildlife Art Exhibit in Cedar Falls

An "Iowa Wildlife Art Exhibit" will be displayed at the Metropolitan Galleries Cedar Falls Recreation and Arts Center, Jan. 13 through Feb. 7. The Center is located at 1200 Main St., Cedar Falls.

The exhibit is expected to have between 50 and 60 major works including paintings, drawings, prints, wood carvings, sculptures and decoys by noted Iowa artists.

The exhibit will be available for viewing Monday — Friday, 8:00 am — 4:45 pm, Monday — Thursday, 7:00 — 8:30 pm and Saturday mornings (hours to be announced). In addition to these scheduled hours there will be a reception Sunday, Jan. 13, 2:00 — 4:00 pm.

For further information contact Steve Wikert at the Cedar Falls Recreation Department, (319) 268-0483.



Wood sculpture by Bruce Chidester of Cedar Falls.

Leaders in Conservation



sion he got married, graduated from college and went north to work on the Economic Land Survey in Wisconsin. Returning again to Iowa, Sy became Assistant Extension Forester under G. B. McDonald, then became State Extension Forester, a position which he held until 1933, when he became the first Superintendent of the Civilian Conservation Corps. In 1935, the Soil Conservation Service took over the responsibility of the C.C.C. erosion camps and Sy then began his career with the S.C.S. as a forester. He held this position until the outbreak of World War II, when he enlisted as a glider pilot. During "D" Day, Sy landed his glider behind Utah Beach in the Normandy, France invasion; forced to land in rugged terrain he, along with his passengers, were thrown from the plane. He sustained injuries which resulted in the characteristic gait he now possesses. His injured knee, however, has not kept him from flying planes, driving cars and taking scouts on wilderness backpacks in some of the most rugged terrain in North America.

Upon his return to Iowa in 1947, he became District

Conservationist in Ottumwa, and in 1956 took over as biologist for the state, a position he held until his retirement in 1972. It was during this period he began his work in interpretive science with schools, long before it was a popular field. He continues this activity today. For example, he was one of the first teachers at the Springbrook Teachers Camp and continued until the camp was moved; he is nearly 'booked up' for the spring season of outdoor classrooms and teacher training seminars.

During his dedicated career, many awards have come his way including Iowa Conservation Hall of Fame, Conservationist of the Year, Frudden Award from the Iowa Chapter of American Foresters, Federal Civil Servant of the Year for 1965, Certificate of Merit from the Soil Conservation Service, Honorary Member of the Iowa Association of District Commissioners and Fellow of the Soil Conservation Society.

He has served capably in various organizations as evidenced by his election to Presidency or chairmanship of the Iowa Chapter of the Soil Conservation Society, the Iowa Chapter of the Wildlife

Society, the Iowa Chapter of the Society of American Foresters, the Des Moines Audubon Society and State Preserves Board.

Sy 'retired' in 1972; however, it would be more accurate to say his career simply took a new direction as he seems to be busier now than when he was a full-time employee. He is presently on the State Preserves Board, the

Nature Conservancy Board, the State Tree Farm Committee, a member of the Iowa Academy of Science and the advisor to an Explorer Scout Post whose main activity is an annual wilderness backpack.

His book on *Iowa Woodland Wildflowers* is a major contribution, among many, from this distinguished leader in Iowa's conservation history.

Iowa Trappers Association

The Iowa Trappers Association was founded in the late 1950's to organize and provide a united voice for trapping. Beginning with a small group of dedicated individuals, the association has grown to a current membership of over 1,100 members.

The ITA and its members are dedicated to the continued wise use and harvest of Iowa's renewable resource of furbearing animals. Cooperating with all recognized conservation agencies, law enforcement agencies, and legislative committees, the ITA provides input on the benefits and necessity of trapping.

The goals of the ITA are many, but education is placed at the top. Beginning trappers are shown improved methods of harvest, ethics and furbearing. The ITA has endorsed mandatory fur harvester education legislation and will be working with the ICC and various legislative committees to make it a reality.

Education is also aimed at the non-trapping public, particularly those who oppose trapping because they are unaware of its benefits and necessity as a management tool. ITA display booths with various sizes and types of traps, fur displays and free educational pamphlets are used at the state fair, county fairs and various sporting shows.

The ITA provides financial support, free hand-outs and instructors for the Furbearer Resource School held each fall at the Conservation Education Center near Guthrie Center.

The past two years a \$150 stipend has been provided to sponsor an Iowa school teacher to project Outlook. A yearly \$250 scholarship is awarded to a student majoring in fisheries and wildlife biology at a college or university within the state.

The ITA is organized statewide in 24 districts. A non-profit corporation, the ITA is governed by a board of directors. The current elected officers are: president - Gene Purdy, Fontanelle; vice-president - Jamie Beyer, Ames; secretary - Chris Grillo, Wheatland; and treasurer - Anna Marie Scalf, Ottumwa. Membership entitles the member to one vote at the ITA general meeting, membership card, patch and one year's subscription to the official ITA publication, *The Trapper* magazine.

Trappers concerned with the future of the furbearer resource and of their sport should become members. They can do so by sending \$10 for yearly dues to Chris Grillo, R.R. 1, Wheatland, Iowa 52777.



Nature Tale for Kids

Vi – The Enthusiastic Mink

By Dean M. Roosa



It was raining. Pouring might be a more accurate description of the weather conditions that prevailed at Eilweiler Slough in central Iowa this late April afternoon. This was no ordinary slough, but a marsh caused by the retreat of a glacier some 14,000 years ago. This was no ordinary afternoon, but one of the worst days on record — or one of the finest days on record, depending on whether you were an ordinary animal or a young female mink named Vi. You see, Vi simply loved rain. Most furbearers, except possibly otters and muskrats, dislike rain. This was no ordinary rain either, but one of the heaviest downpours the natives had ever seen. In a small town on the edge of the marsh, the locals sat in the cafe, looked out onto the street, shook their heads and assured each other that they had never seen anything that equaled this.

Vi was an enthusiastic mink; there she was, out on the marsh edge, poking into every nook and cranny, just plain enjoying the rain. She couldn't possibly stay inside on a day like this. She was alone — even the muskrats didn't like this much rain! Vi's mother was in the nearby den; she didn't think it was such a good idea for her youngster to be out in this awful rain, but she had three other young to look after. But soon a great crash of thunder, the first such sound Vi had ever heard, sent the young mink scurrying to the safety of her den and her

warm mother. The storm passed, as storms always do, and the following day Eilweiler Slough returned to normal — it abounded with ducks, muskrats, six mink, many blackbirds, and other ordinary animals who enjoyed the bright sunlight. Vi thought it was o.k., but a little boring.

Vi's father had left long ago. It would not be safe to run into him because he simply didn't like young mink — or much else for that matter. In fact, for most of the year he didn't like any other mink. Because he might still be on the marsh, Vi's mother didn't let her stray from the den.

A week later, Vi's family left the marsh on the southern edge of the glacial plain and headed, for some unknown reason, for Keg Creek far to the south. Along the way, they stopped at a farm where Vi got a lesson on how to make a supper of a young chicken. They continued south along a dredge ditch, went through a small Iowa town, and eventually found the trickling stream that signified the beginning of Keg Hollow. They caught some frogs for supper, located an abandoned den and slept. It had been a long journey for a young mink.

Keg Creek must have been made with mink in mind. It meandered, had oxbows, side marshes, plenty of crayfish, darters, and wasn't too far from a small farm that raised chickens. Life was

good, except for that big raccoon that she hated, and that big owl that she had to keep an eye on each evening just at dusk. Vi snooped in every nook along the creek, and was so irrepressible that her mother and her three siblings left for the big river at the end of Keg Hollow.

Vi, lonesome for a few days, was too busy enjoying life to be depressed for long. She learned the upper valley by heart, all the way from the farm tile to the blacktop road. This was her valley — all the crayfish, the fish, the marshes, even the chickens. All except for that huge raccoon whom she still hated. He loved crayfish also, and was simply too big for a small female mink to drive away.

Other mink passed through the valley on their way to the big river but didn't stop long enough to disturb Vi and her easy way of life. She liked it here. Oh, the raccoon upset her, but basically life was good. One night in early autumn, the unfamiliar sound of baying hounds shattered the still of Keg Valley. This scared Vi and she crouched in her den, listening to the hounds who stayed at the base of a big tree for what seemed like forever. Then a bright light came, and a loud "crack" echoed throughout the peaceful valley. Now she had the upper valley all to herself.

Vi lived in peace here in Keg Hollow, a beautiful valley with miles of stream, plenty of small fish, lots of crayfish and no big raccoons. Early the next spring,

Vi succumbed to a feeling she didn't understand. She began to wander and left her beloved Keg Hollow, the delicious crayfish, the delectable fish and the chickens. She wandered up Sleepy Hollow, where she got in a fight with another mink. Both were scratched up, but neither were hurt. She became acquainted with a huge male mink on the upper end of Sleepy Hollow, but their romance ended shortly and both went on their ways. Her coat was becoming more beautiful each day and she took good care of it. Trappers prized her coat, furriers paid a fortune for it and fancy ladies coveted it. But all this was unknown to the four new little pelts that snuggled up to her later that spring. Her life changed drastically now. Oh, she still liked to snoop in every nook, but she just did not have the time anymore. One of her young caused her to be especially upset. The little one just loved to wander and snoop, sometimes in the middle of the day and in the rain! Vi did not remember that this exact behavior was hers not long ago.

Early that fall, with her four young following, she returned to Keg Hollow where life had been so good. But now, things were different. A big male mink with the most vile temper in mink history now claimed the upper keg as his own. A coyote had a den on the terrace and there was no room for Vi and her family. One of her young lost a battle with an evil-tempered mink, and the next dawn Vi and her remaining youngsters left Keg Valley forever. Vi retraced her earlier sojourn, stopped at a chicken house to teach her kits how to convert a chicken into a supper, passed back through the small Iowa town and eventually found Eilweiler Slough, where she had started life in the dim recesses of her memory. The marsh was just full of crayfish, muskrats, little fish, and clams. It was a mink's paradise. It was home!

Two of Vi's young fell prey to the old trapper that lived in the small town on the edge of the marsh. Vi's remaining daughter soon took off to make a life of her own, leaving Vi alone once again.

Vi, the enthusiastic mink, still lives in Eilweiler Slough on the southern edge of the glacial plain in central Iowa — dodging muskrat traps, feeding on crayfish, fish and occasionally muskrats. She still snoops in every nook at the marsh edge, is still enthusiastic about life and still simply loves rain.

CLASSROOM CORNER

Most of us aren't thinking of insects at this time of year, but in the warmer months they aren't easy to forget. You can find them everywhere — in your yard, the forest, streams, buildings, and the air. Insects are a very diverse group which has adapted to all kinds of habitats. Try to identify a few that are commonly found in Iowa.

QUIZ

Name an insect that:

1. Races about on water without breaking the surface. _____
2. Has but one pair of wings. _____
3. Has a life cycle of 17 years. _____
4. Had fossil ancestors with wingspreads of 30 inches. _____
5. Attracts a mate with flashing lights. _____
6. Is most important economically. _____
7. Common beetle around lights in June. _____
8. Known for singing by rubbing wings. _____
9. Small, dome-shaped, with polka-dotted wings. _____
10. An aquatic larva that builds a case for itself of sand, bits of sticks, etc. _____
11. Gaudy day time insects with large scaled wings that are often held together above the body at rest. _____
12. Front wing thickened at base and membranous at tip — the tips overlapping at rest — mouth parts to form a sucking beak. _____

ANSWERS:

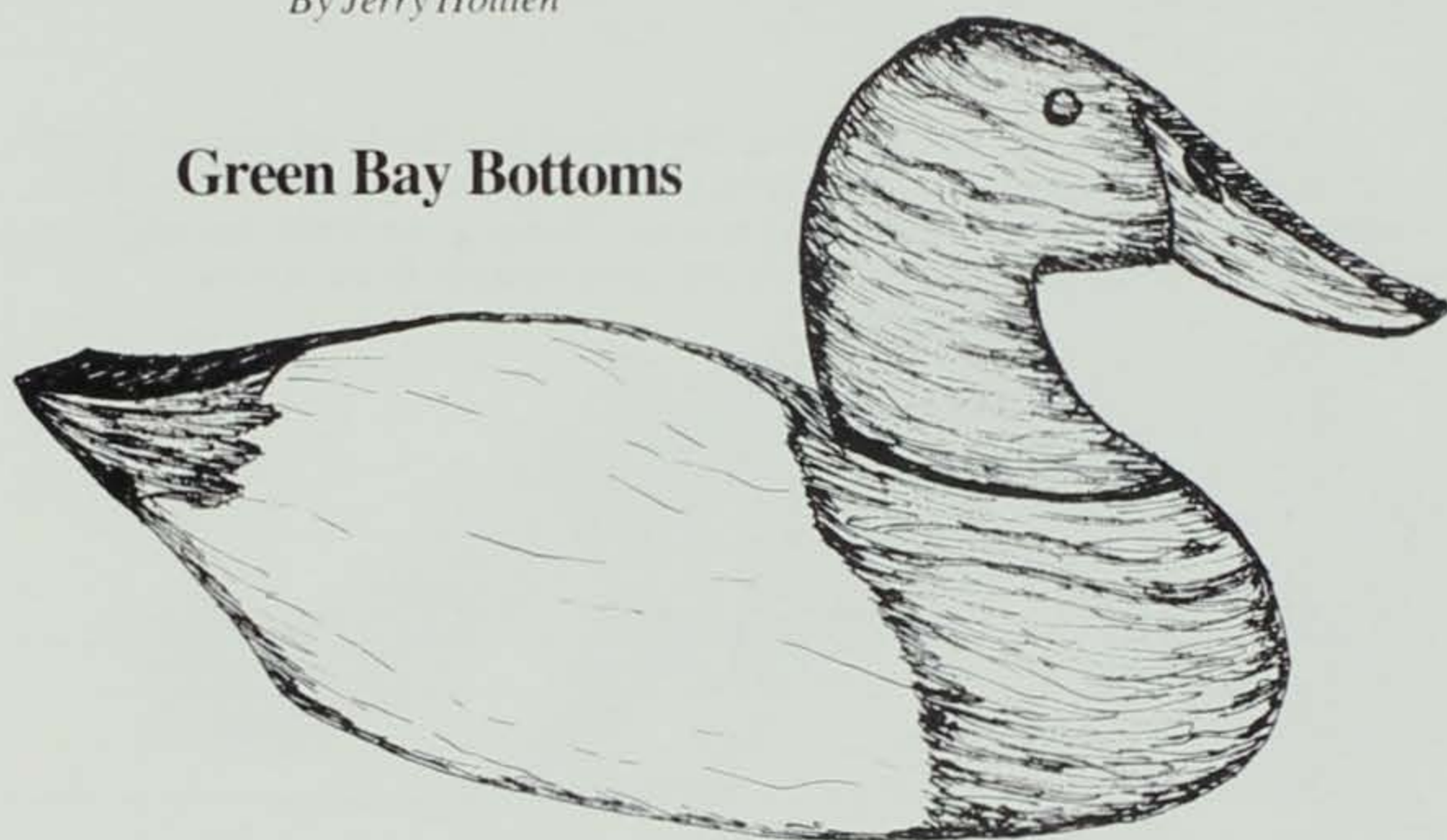
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|---------------------|--------------------------------------|
| 12. True bugs | 6. Honey bee |
| 11. Butterfly | 5. Fire fly |
| 10. Caddis-fly | 4. Dragon flies |
| 9. Lady bird beetle | 3. 17 year locust or periodic cicada |
| 8. Cricket | 2. Any true fly |
| 7. June bug | 1. Water strider |



WARDEN'S DIARY

By Jerry Hoilien

Green Bay Bottoms



I hadn't been back to the Green Bay bottoms in years and I just couldn't resist turning off at Wever and driving down across those flat bottomlands toward the Mississippi River. My mind wandered back to my first assignment in Lee County years ago. The State of Lee, I used to call it. It was unusual country and we had some unusual regulations back then. One of them was the "higher limits." The laws were set one way for the majority of the state and then read, "the Mississippi and Missouri Rivers and inland waters of Lee County," giving higher fishing limits in those areas. The county is almost surrounded by water with the Skunk River on the north, the Des Moines River on the south and the Mississippi River on the east. I used to threaten the central office in Des Moines, "we'll dig a ditch across the remaining northwest corner and cede it from the state." I was only kidding, of course.

They've always had a rather special way of doing things down there, like the two court houses and the Sullivan Line. That's right, the county was divided in half and that's the way it was! One court house in Fort Madison and the other in Keokuk. They use to even divide the car licenses plates back then. They all started with 56- but if the next number after that started even (2, 4 or 6) you were from north Lee County, and if they started odd (1, 3 or 5) you were from south Lee County.

The natives from Keokuk even have a particular way of pronouncing Keokuk — "KA-KUK" with a back in the throat roll that's very recognizable. Matter of fact, I made a good case at a road check

in northern Iowa where I was assigned for the pheasant opening one year. When I heard the guy say he was from K-E-O-K-U-K, I asked him if he knew the local game warden, Jerry Hoilien? "Know him well, see him all the time," he replied, trying to sound relaxed. After some conversation and checking his "resident" hunting license, I introduced myself. He looked rather sheepish and admitted he was from Illinois, trying to save some money on his hunting license. He didn't!

I drove across the Green Bay bottoms to the old pumping station on the bank of the Mississippi River and looked back trying to locate the old Green Bay Lake. Not much left. I remembered the story about the time they posted the lake as state property only to find all the markers piled on the wardens front porch the next morning.

There's lots of history to the old Green Bay bottoms. The first year I was there we had high water that threatened to top the levees. A lot of us, including Ken Kakac, conservation officer from Burlington, worked straight through, night and day, helping to keep the area from flooding. We did it and a year later got in an awful argument over getting an easement for a fishing access across that same levee. Strange how quickly those efforts were forgotten; but we got it worked out. Then there was the battle over the straightening of the Skunk River, but that's a whole different story.

Driving down the gravel road, I remembered an old man who lived near the levee. I drove up on him one spring morning, walking down the road towards a big flock of Canada Geese. He

had an old single-barrel shotgun tucked under his arm, just shuffling along by himself. "Just where do you think you're going?" I asked him, glancing towards the geese. "To jail — I reckon!" he said, looking rather sadly at the shield on my car door. "Get in, I'll take you home." I gave him my best stern lecture and dropped him off at his cabin. The very next morning I found him again, going down that same road in the same way. "Don't you ever quit?" I asked. "Don't you ever stay home?" he inquired. "Now don't let me catch you trying this again!" I told him. The young warden trying to lecture the old fella made even me smile. I wasn't sure if he could get any of those geese or not, but I was doing my best to keep him out of trouble.

I left Lee County shortly after that and moved to Allamakee County. Several years later I came down to a meeting and drove out to the old man's cabin to see if he was still alive. He answered the door saying, "Warden, where the hell have you been? I've got something I've been saving, come on in!" We talked and chuckled about the old days and then he presented me with two old wooden decoys. "I found these in a brush pile on the river and I've been saving 'em for you, I knew you'd be back! They're yours with my thanks."

Sitting on my mantle now, as I write, are two of my most prized possessions, handmade and handpainted, reliques of a by-gone era and a lost art. I've had several collectors try to buy them from me for years now (and they've come up with some pretty good offers) but I always tell them some things just can't be bought or sold, they're just too precious. Like an old man's word, "Thanks."

Venison Patties in Milk Gravy

1½ lbs. ground venison
½ lb. ground pork
1 T poultry seasoning
¼ tsp. ground nutmeg
Salt and pepper to taste

Mix well and form into patties. Flour outside and brown well in fat, remove to plate. Reserve three tablespoons fat in skillet, and three tablespoons flour and mix well, scraping up all the browned bits from bottom of skillet. Slowly add 1½ cups cold water and 1½ cups cold milk, stirring with wire whisk or fork. Bring slowly to boil, stir until it thickens. Salt and pepper to taste. Place patties in gravy, turn heat down and simmer covered for about 25 minutes. Serve with mashed potatoes.

Plant Tale of the Month

Reading Winter's Signs

As we all know, the winter season induces dormancy in most of Iowa's native plant species. It is a time when moisture is bound up in the form of ice and snow and is unavailable to plants for normal biological functions. Thus, for plants, a winter climate is much like a desert habitat.

In order to survive such a hostile change in the environment, plants have evolved a mechanism to conserve and reduce water loss and consumption during the winter. This process is known as dormancy and is most evident in our native woody species.

The process starts in late fall with leaf drop. The point at which the leaf is attached to the twig produces a protective layer to seal the wound which occurs. This layer is called a leafscar and serves to insulate the twig from the harsh dry affect of severe winter winds. Likewise, the embryonic flower and leaf tissues are protected by specialized leaves called bud scales and protective

leaves. Botanists, who can't afford to go dormant during the winter, have learned to read the variability that occurs in shape, size and color of leafscars and buds. By knowing the "signs," they can easily identify species of woody plants in the winter conditions.

This accompanying photo is of a winter twig which is found fairly commonly in Iowa and can be identified very easily by its mustard yellow colored bud. It is better known as bitternut hickory but some regional folks call it yellow bud hickory (*Carya cordiformis*).

In the spring the yellow buds will unfurl into a dense cluster of compound leaves and pendant flowers characteristic of the black walnut family to which it belongs. But you do not have to wait for spring to enjoy these outdoor wonders — why not take a hike in the woods this winter and have some fun learning winter trees by their twig and bark characteristics?



Bill Pusateri

Profile of an Endangered Species **Arrow Arum** (*Peltandra virginica*)

By Dean M. Roosa and Bill Pusateri



Dean Roosa

The arum family, Araceae, is well represented in Iowa, with such common members as Jack-in-the-pulpit and green-dragon. It also contains more unusual species such as calamus and skunk cabbage. The rarest member, one that is termed 'endangered', is Arrow Arum (*Peltandra virginica*). Across the country, it is fairly common in the eastern United States, being found from southern Maine to Florida and Texas, west to Michigan, southern Missouri and Louisiana.

In Iowa, a single small colony was known in Greene County, but was apparently destroyed and we feared the plant was gone from Iowa. But Tom Lammer, during his Master's degree research in Des Moines County, found a large colony.

It grows in shallow water and swamps. At first glance it looks much like Arrowhead, so perhaps we have overlooked other colonies.

It is a rare Iowa plant, worthy of your attention. Let us know if you should find other colonies.

IT ALL DEPENDS ON YOUR

OUTLOOK



Ron Johnson

When a third grader sits in class, little fingers diligently removing the chocolate chips from a cookie during supposed learning time, you've got to be wondering, "Are we getting our money's worth out of today's education?"

But watch a little longer, and listen to the teacher while the 25, intensely interested eight-year-olds fumble with crumbs on a desk normally disarrayed with books, papers, and pencils.

"Okay, you have the chips separated from the cookies," says the teacher. "Now, put them back, just the way you found them!" Unfettered cries of "That's impossible... We can't do that ... Can't we just eat the chips?" ... fill the classroom.

In a classroom that has experienced the *chocolate chip mining* activity, you can bet a weekend in Las Vegas that you are getting your money's worth. You can be thankful, too, that third graders are learning, through experience, the complex lessons of environmental impacts from the mining of minerals. No, they cannot put the chips back exactly the

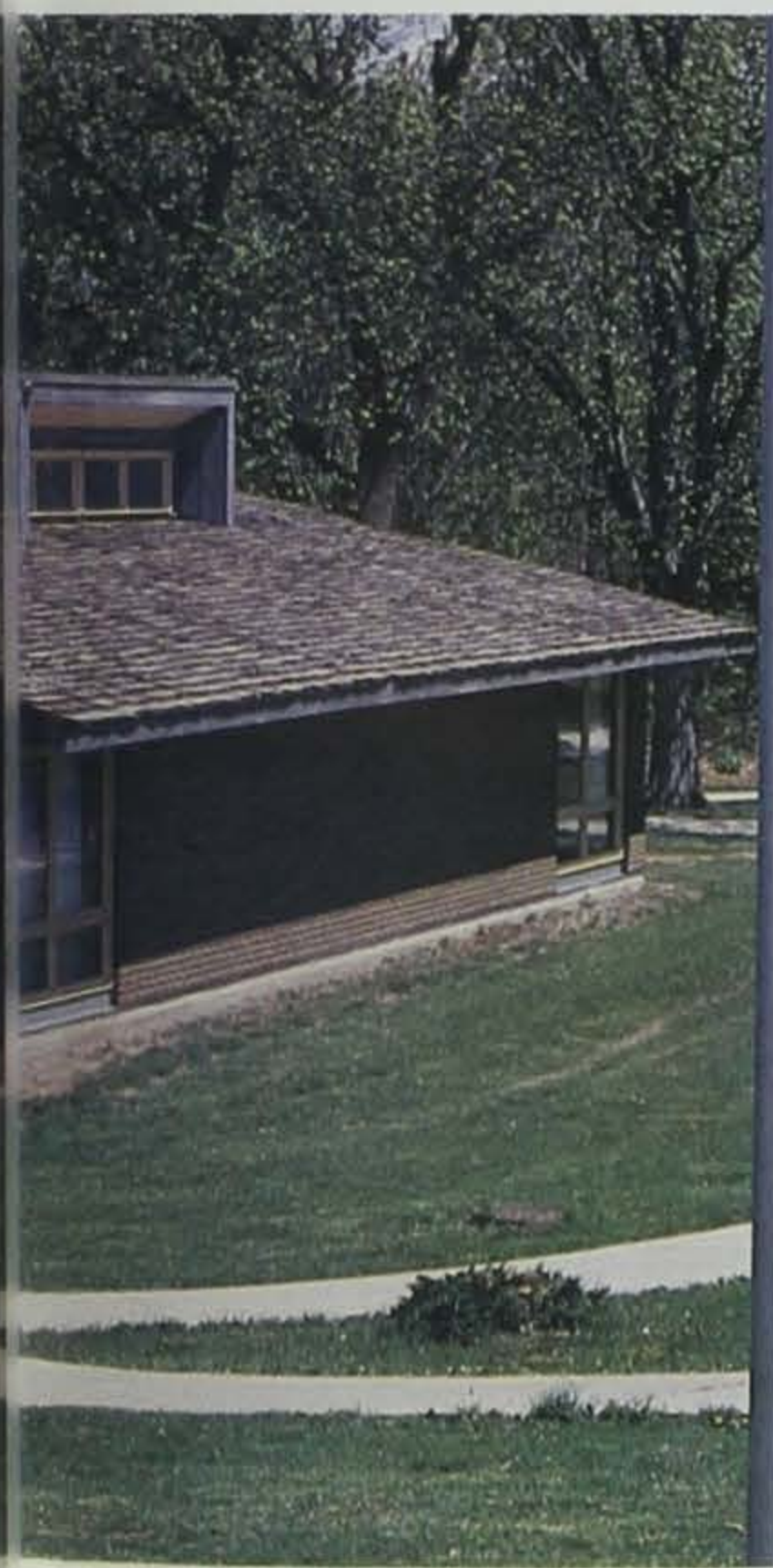
way they were. But, maybe, if they would have planned a little in the beginning, the chips might have fit back together better. Perhaps, by using a sharp knife to cut them out neatly, then handling them gently, and putting them aside in order, they could be brought back together. That is not unlike what modern stripminers must do when following government ordered regulations in reclaiming the land that they devastate in their mineral extractions.

The chocolate chip mining activity is one of about 170 lessons in probably the most modern, effective, and valuable packaged programs available to school teachers today. The program is OUTLOOK. It was developed in Iowa — a state among the national leaders in educational excellence — and has been in at least 600 Iowa classrooms over the past two years. OUTLOOK is an environmental education enrichment program. That is, from kindergarten through the twelfth grade, OUTLOOK lessons on environmental learning are meant to be infused into existing courses of study. It

is not a curriculum in itself. OUTLOOK fits neatly into reading, writing, and arithmetic, even into social studies, art, and economics. But that just doesn't happen. A teacher cannot just pick up the OUTLOOK packet and make it work. Like any lesson of substance, effective use of OUTLOOK requires training teachers in its use. More than 600 educators have received that training, and some of their remarks can be seen scattered throughout this article.

There is some "magic" in OUTLOOK, which is the combined effort of the University of Northern Iowa, the Iowa Department of Public Instruction, the Iowa Natural Heritage Foundation, and the Conservation Commission. Associate Professor David McCalley, UNI, who has had a wealth of experience in teaching teachers how to teach, claims, "I have never seen a teacher in-service training program received so positively by teachers, then used in the classroom by such a high percentage of those teachers as OUTLOOK." McCalley specifies the magic:

By Ross Harrison



All aspects of the environment are addressed by OUTLOOK. The four grade levels of the activity packets — K-2, 3-5, 6-8, and 9-12 — each center around 11 topic spheres:

Air	Land use
Community responsibility	Population dynamics
Natural habitats	Mineral resources
Heritage	Soil
Production and distribution	Human habitats
	Water

Each of those topic spheres are integrated with six underlying themes:

Aesthetics	Life style
Energy flow	Stewardship
Interdependency	Cultural evolution

While complex in structure, OUTLOOK is easily taught to teachers, and they to their students, leaving almost no stone unturned in making the environment an important, but fun to study, part of education.

To be eligible to obtain and use OUTLOOK materials, teachers must enroll in the special in-servicing classes conducted in the summer by professors of UNI with assistance of the Department of Public Instruction and the Conservation Commission. The week-long classes for teachers are run at the commission's Springbrook Conservation Education Center, just north of Guthrie Center. Costs for each teacher is \$225, but through a lot of effort by persons who feel OUTLOOK should be in every classroom, most teachers have to pay only \$75 each. For that \$75, educators receive two college credits at UNI (transferable to any university in the country), food and lodging, the OUTLOOK packets, and five days jam packed with learning.

The \$75 each teacher pays leaves \$150 short of the actual costs to train in OUTLOOK. The story of where the rest comes from is almost inspirational. Last spring, when the field employees of the commission, and numerous county conservation boards, explained OUTLOOK to their local community sportsman clubs, civic organizations, Soil Conservation District Boards, and other individuals and groups, 140 of those who heard of the program donated almost \$28,000! In amounts from \$10 to \$4,000 local community support, during these tough times, has been phenomenal to get their local teachers trained in environmental education.

Another novel source of funds has been the Iowa Wildlife in Art Sale and Exhibition, sponsored by the commis-

sion and Natural Heritage Foundation. The first show, last April, resulted in 75, \$150 scholarships to teachers. Artists who sold works at the show contributed 20 percent of their sale prices to OUTLOOK. After deducting all the costs to put on the art show \$11,250 in immediate profits were realized, all for the teachers. Much credit for the success of the show must go to nationally prominent artist Maynard Reece of Des Moines who painted, and totally donated for the Governor's auction, a special piece just for the occasion. It sold for \$20,000, and prints of that work (a few are still available at \$145 each — quite a bargain for a 500 limited edition of Reece's) are bringing in additional revenue every day.

We are all hopeful that next year's art show — April 20-21 in Des Moines — is even more profitable. We are anxious to tell those individuals and organizations who gave last year of the need for continued generosity. And, we expect 300 to 400 more teachers to sign up for the week's training at Springbrook this coming June.

When conservationists say, "It all depends on your outlook," you may now assume that response is not a whimsical way of getting out of an argument. It is quite a serious way of hoping for a better future by educating our children, today.

If you are an educator, whether in a formal classroom of K-12, or a Scout counselor, or a teaching naturalist, consider signing up for the 1985 OUTLOOK sessions now. Contact any employee of the Conservation Commission, or write: Duane Toomsen, Department of Public Instruction, Grimes Building, Des Moines, IA 50319. By acting now, you have a good chance for selecting your most preferred dates, plus, you give us a chance to help raise your \$150 scholarship from supporting interests in your own community.

A native Iowan, Ross Harrison came back to Iowa about 3½ years ago to head up the Information-Education Section of the commission. He has a B.S. in fish and wildlife biology and journalism from Iowa State University. He spent about 10 years with the Kansas Fish & Game Commission and 1½ years on a newspaper in Moline, IL.

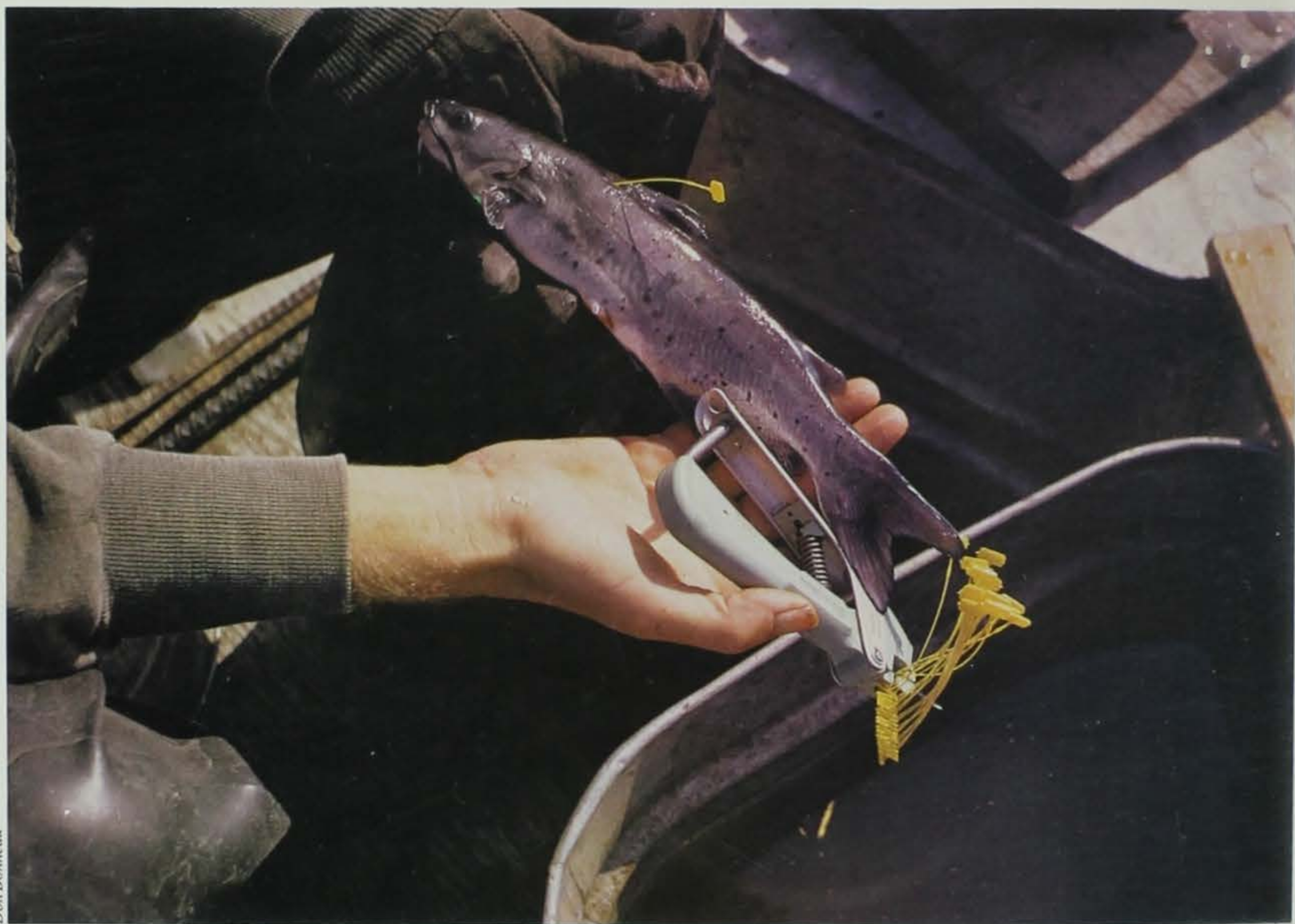
Outlook
Environmental Education Enrichment

"First, all of the OUTLOOK activities were written by teachers and tested in classrooms before they were approved. So, we know they are practical.

"Second, part of the training teachers receive in using OUTLOOK is to show how the OUTLOOK activities will be incorporated into their classroom. So, the teachers work out all the bugs in how to use the materials before they go back to school.

"Third, OUTLOOK training is fun for the teacher, fun for the students, yet it is obvious that its lessons are critically important if we are to have sound natural resource conservation."

McCalley also believes part of the magic involves revival of a teaching method — the Learning Cycle as proposed by Dr. Robert Karplus. After gaining experience with an environmental situation in the first phase of the cycle, students are led next to a problem resolution phase. Then, students must apply the resolution technique to a similar type of problem, thereby completing the cycle.



Don Bonneau

Marking and Tagging Fish

By Tom Boland

Do you ever wonder how many fish are in a body of water? Where do they tend to be during a certain season, month or day? What percentage of a fish population is caught by anglers? These and other questions can be answered, in part, by fisheries biologists using the old techniques of marking and tagging.

The marking and tagging of aquatic animals, particularly fish, had its origin in 1873 when Atlantic salmon were tagged on the Penobscot River in Maine. The purpose was to determine salmon migration patterns. Since that time fisheries biologists have tagged many thousands of fish in many different locations for many different reasons.

Much can be learned by marking and tagging fish. Knowledge gained includes *rate of recruitment*, or the number of young fish entering a population due to birth; *mortality rate*, or the number of fish leaving a population due to death;

rate of exploitation, or that part of mortality which is due to fishermen catches; and, *population estimates*, or the number of fish in a particular lake or stream section. Also, other important population parameters that can be determined by tagging include *growth and age*, *movement*, *migration patterns*, and *fish behavior*. Knowing these is important when making management decisions such as fish stocking rates, angling regulations, and habitat improvements that are designed to protect or improve the populations of various fish species.

Marking is defined as any procedure which makes fish identifiable, either as an individual or member of a group. The ideal marking method would include a mark which is permanent, easily recognized, inexpensive, and has no effect on growth, mortality, or behavior. Such a mark probably does not exist; however, biologists try to select a method which

best meets these qualities and also fits the needs and objectives of their study.

Group marking techniques are methods which do not involve tagging. They are used when identification of individual fish is not necessary and large groups of fish need to be studied. A good example would be fin clipping a number of fish in order to estimate a population size. Netting and surveying anglers' catches and comparing unmarked to marked individuals then sheds light on the total number of fish in the lake. Marking includes fin clipping, punching or branding. Chemical marking includes the use of stains, tattoos, or radioactive material. Of all the marking methods, fin clipping is by far the most popular. It is inexpensive, requiring only the cost of labor and a good pair of scissors.

However, if the movement of individual fish needs to be determined, fish are usually tagged. Tagging is the attach-



Kenneth Formanek

ment of a foreign object, usually with a serial number, which allows identification of individual fish. This method is expensive with typical tags costing between 10 to 25 cents each. A popular tag consists of a small piece of plastic partially inserted by a needle into the fish flesh and anchored.

The newest method of tagging fish is called biotelemetry. This method can be the most expensive per fish tagged and involves the use of radio or ultrasonic equipment. Biotelemetry is gaining rapid popularity due to its ability to continuously monitor fish movement. A typical unit for small fish (2-3 pounds) measures $\frac{3}{4}$ inch by 2 inches and weighs approximately 1 ounce. It might commonly last six months. The cost of an individual transmitter is approximately \$125 and a good scanning receiver around \$1,500. The small transmitters are either placed externally on the fish or surgically implanted in the body cavity. Radio or sound pulses are then picked up by a sensitive receiver with a large TV-like antenna mounted in a boat. Tracking range varies considerably due to equipment design and environmental conditions; however, distances in excess of a mile have been reported.

The information from biotelemetry studies are providing biologists with insights to individual fish behavior patterns. It tells biologists where the fish spends most of its time, how often and far it moves and the types of habitats it prefers for spawning, feeding and other activities. This type of information is well worth the higher cost of the equipment.

Many fishing clubs and individual fishermen ask how they can mark fish. Some have a desire to conduct their own research project on fish movement. Most are discouraged from doing so. It is easy to imagine the confusion that would occur if all fishermen decided to start their own tagging project. However, anglers should contact their area fisheries biologist if they initiate a tagging study. He or she can help determine if tagging is really needed.

Fish marking and tagging provides biologists with a variety of information. It is important to both fish and anglers that good data is collected. Fishermen catching a tagged fish should report it to their local Conservation Officer or the Iowa Conservation Commission, Wallace State Office Building, Des Moines, Iowa 50319.

Tagging fish with numbered tags (left) is an inexpensive method of monitoring fish movement population numbers and angler success. By keeping track of fish, biologists can help fishermen, like those on Spirit Lake above, find their quarry on even large bodies of water.

Tom Boland is a fisheries management biologist at Bellevue. He received a B.A. degree from the University of Northern Iowa and an M.S. in Aquatic Biology from the University of Wisconsin at LaCrosse.



Jerry Leonard

Snowmobiling Across

Iowa's population seems to be comprised of three primary groups of people. There are those individuals who have the time and can afford to move to warmer climates in the wintertime and escape the freezing cold and snow of Iowa's winters. There are also those people who attempt a practice typically characteristic of coldblooded animals — hibernation. These people prefer to stay indoors through the winter months rather than go out in the inclement weather. Most Iowans have learned to survive the cold winter climate by finding activities that keep their blood pumping and relieve what could be the boredom of winter.

There are many activities available to Iowans in the winter months including hunting, ice fishing, cross-country and

downhill skiing, ice skating, and snowmobiling. The media has done a good job of documenting the participation in most of these sports, but many people would be surprised to find out that Iowa ranks fifth of 50 states in the number of registered snowmobiles. This large interest has led to one of the larger snowmobile trail programs in the United States.

Owners of snowmobiles must register their machines with the county recorder biennially (every two years). This registration costs \$12 for each two-year period and a \$1 writing fee is charged. The registration fee is placed in a state snowmobile fund which is administered by the Iowa Conservation Commission. On an annual basis, this provides

\$360,000 to develop and maintain snowmobile trails. One-half of this money is used entirely on state-owned land for the development of trails. The other one-half, approximately \$180,000 per year, is provided to county conservation boards and municipalities for the same purposes.

Approximately 80 percent of the trail system in Iowa is found in the ditches adjoining state and county roadways. Development includes the construction of bridges to cross ravines and wet areas, gates to allow passage through private fences to gain access to the 20 percent of the trails that are on private lands through lease agreements, and the clearing of dangerous obstacles found in trail paths. These development costs make up ap-



Quality, scenic trails, like the one shown at left, can be enjoyed throughout the state, particularly in northern counties. A major cost is trail maintenance in the form of numerous groomers like the one below. These machines are expensive, but well worth the investment.



James Horan

Iowa

By Bob Walker, Administrator of County Conservation Board Programs

proximately 5 percent of program costs.

The major investment in Iowa's snowmobile trail program is for snowmobile trail groomers. Someday as you are driving down a state or county roadway you may see one of these large caterpillar-type machines operating in the road ditch. The machine pulls a device called a groomer drag that scarifies the existing surface and then smooths and packs that surface. This provides a flat solid surface for snowmobiles to be operated upon safely. This also creates a much more enjoyable and safe ride than an un-groomed ditch where drifts, and hidden obstacles may be found beneath the snow's surface. Twenty-six of these machines are located strategically in the northern one-half of Iowa and each can

groom approximately 150 miles of trail on a regular basis. During the 1984-85 winter, approximately 3,850 miles of snowmobile trails will be groomed for winter enthusiasts in Iowa. If you happen to see one of these large groomers operating in a ditch in your area, you can be happy to know that your local county conservation board in cooperation with the State Conservation Commission and local snowmobile clubs are providing safe, quality trails for the snowmobilers of your area. You should also be aware that 95 percent of the cost of this program is provided by snowmobile registration fees and the remainder comes from donations of money by local snowmobile clubs and a limited quantity from local county conservation boards.

As with most programs, the success of Iowa's snowmobile trails is a result of a cooperative effort, in this case between the Iowa Conservation Commission, the county conservation boards, and local snowmobile clubs. In addition, a great deal of leadership and valuable ideas have been provided by the Iowa State Snowmobile Association which represents the organized snowmobilers of Iowa. If you ever have suggestions for improvements, you should either contact the Iowa Conservation Commission or the Iowa State Snowmobile Association.

The next time you anticipate a boring winter day, contact one of your friends who owns a snowmobile and experience the excitement of riding a safe, groomed trail in your vicinity.

