Iowa CONSERVATIONIST

November 1986

Iowa Department of Natural Resources

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FRONT COVER: Photo by Lowell Washburn

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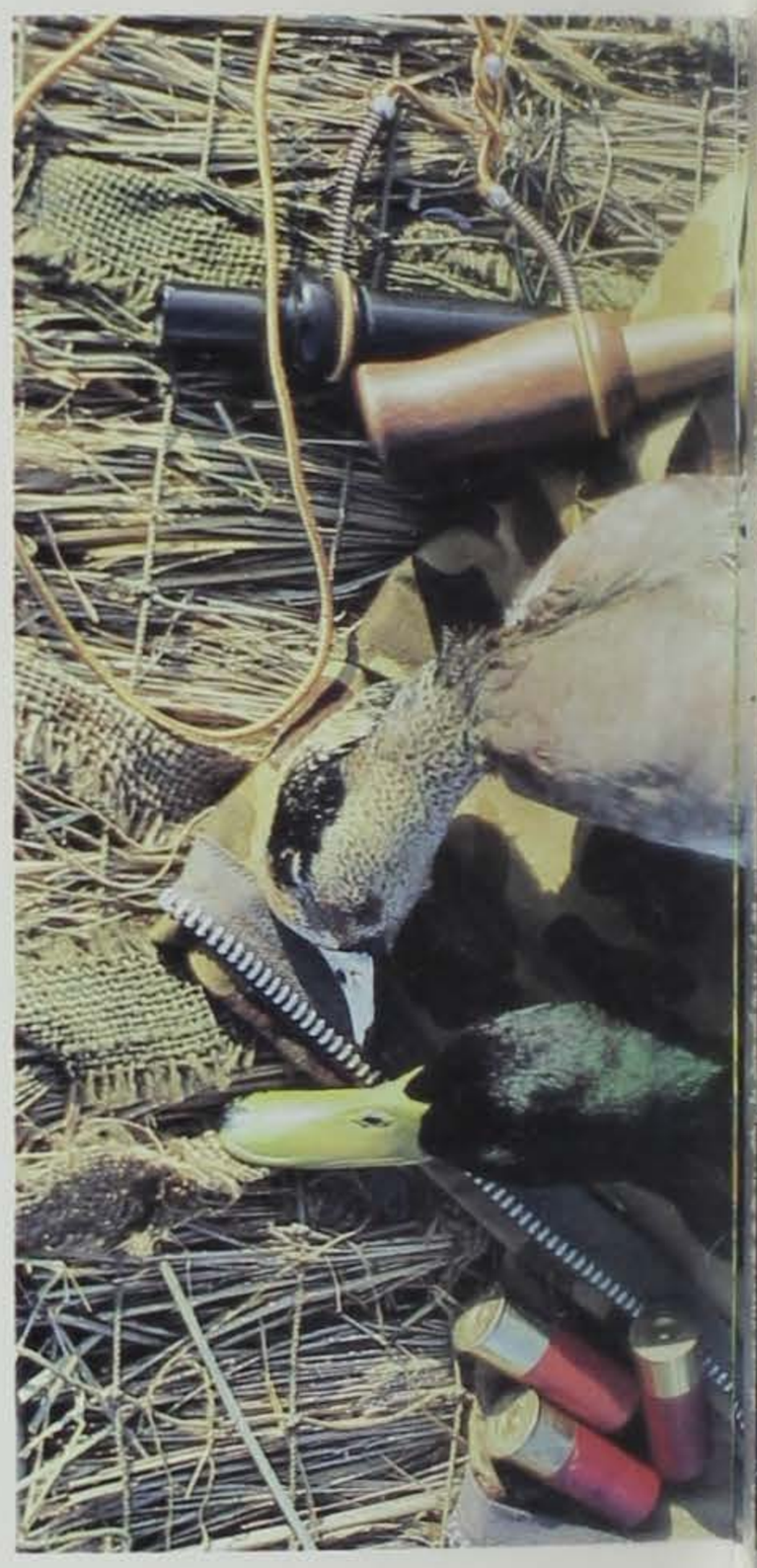
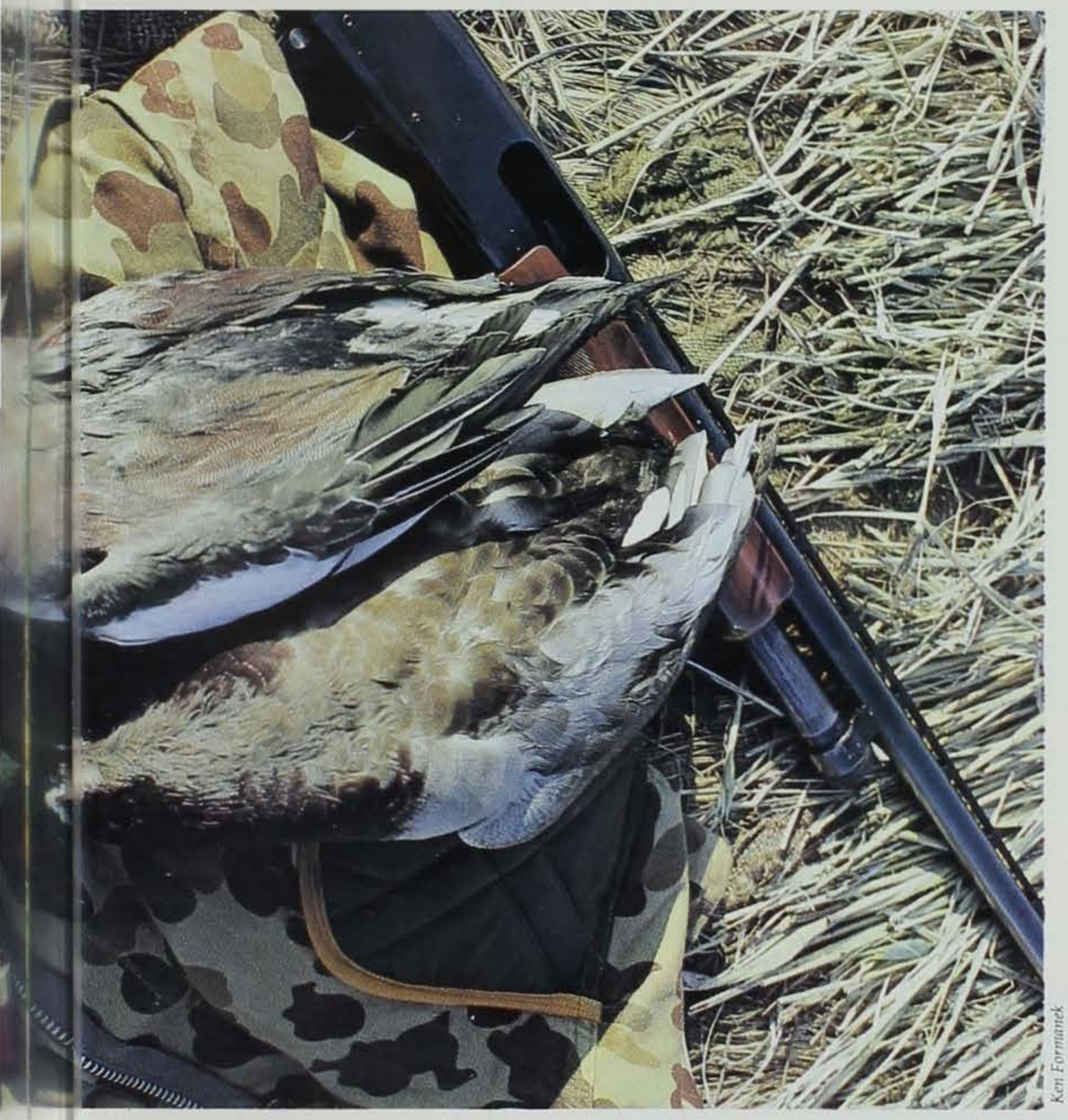


It's easy to get hooked on mallard hunting. I became addicted several years ago and don't expect to recover. Once a duck hunter has experienced one of those days when nearly every flock of mallards responds to the call and decoys, that hunter won't forget it. I especially remember both hens and drakes calling as they came funneling down to the decoys on my first mallard hunt.

Even though Iowa duck hunters, including myself, enjoy mallard hunting, we should remember that there are some other species of ducks around. Some hunters seem to feel that if it doesn't have a green head and a curly tail it isn't even a duck. They usually recognize ducks such as blue-winged teal, green-winged teal, wood ducks and pintails, but they will shoot at them only if there are no mallards around.

Some species are fairly common in Iowa, but are recognized and sought



Ken Formanek

Ron Johnson

The "Other" Ducks

By Jim Hansen

by few hunters. These neglected species include wigeon, gadwalls and shovelers among the puddle ducks, and diving ducks such as ring-necks and lesser scaup. I have talked to some dyed-in-the-wool mallard hunters who were apologetic over accidentally shooting a gadwall. There is no reason to apologize; just enjoy them along with all the other ducks.

All of those "nonmallard" ducks can provide a lot of enjoyment for Iowa duck hunters. They are fast-flying, sporty birds. A passing flock of blue-winged teal or green-winged teal will challenge any hunter. Sometimes wigeon and gadwalls will come to decoys very readily, but a flock of wigeon that has been shot at can become quite wary and difficult to decoy. The thrill of hunting scaup or ring-necks over decoys is a very different world that few hunters appreciate. I imagine I am considered a little strange by many because I use some black-and-white decoys for diver hunting. Local mallard hunters think those are something that only a few hunters in Minnesota use.

One reason the other ducks are snubbed is that they have a reputation for being unfit to eat. For the most part, that reputation is undeserved. I think there is general agreement that mallards, pintails, wood ducks and teal are good table birds. I have always found wigeon and ring-necked ducks to have a good flavor. Wigeon, for example, pluck easily and taste as good as they look — very tasty. Believe it or not, I have not had a bad-tasting gadwall or shoveler, although I have heard from others who say they have. The only fishy-tasting scaup I ever had were some I shot near salt water in Florida. Last fall, I even shot two buffleheads that tasted just fine. For some species, the flavor of the flesh may vary somewhat depending on whether their diet has been mainly plant or animal material. If you get a bird that has a strong odor, you might try a recipe that involves marinating it overnight. Or, you may wish to skin a questionable bird rather than pluck it. A heavy concentration of fat just under the skin holds the oily, sour or fishy flavor some ducks assume. The fat pulls off with the skin, leaving the palatable meat for the chef. A good way to prepare these ducks is to crock pot them in two cups of water. Add a shot or two of cooking sherry, throw in a half cup each of diced onion, diced green pepper, and chopped bacon. Season with garlic powder and lemon pepper, and serve when tender.

These other species are often most abundant in Iowa when the mallard is not. During our short September duck season, the blue-winged teal and the wood duck are the most

important species in the bag. Wigeon, gadwall and pintail numbers on most areas peak around mid-October, so early in the second season is the best time to find these birds. Unfortunately, these three species' numbers sometimes peak when the season is closed because the season dates are generally set to please late-season mallard hunters. Diving ducks such as ring-necks and scaup arrive a little later, with ring-necks peaking around October 20 to November 10, and scaup from the last few days of October through about November 15. Both may stay a few days longer in southern Iowa.

Another reason to learn to appreciate the other species is that many of them are doing better than mallards. Following a number of drought years, the 1986 mallard breeding population on surveyed areas was 24 percent below the 30- year average. Comparing the same years for other species, gadwalls were up seven percent, green-winged teal were up 22 percent, and shovelers were up 21 percent. Even though lesser scaup was down ten percent, their breeding population estimate has exceeded that of the mallard in six of the last eight years.

If you are a new hunter, these other species can give you a lot of enjoyment when you don't have the equipment to go after mallards. If you have been a successful greenhead hunter for many years, you might enjoy putting some variety in your life and taking on some new challenges. Learn to recognize good teal habitat and predict their flight patterns. Learn the calls of the different species such as the squeal of a wigeon or the soft "quack" of a gadwall. Try setting up to hunt diving ducks. (And then try to hit them!)

I know I am not going to give up mallard hunting, and I don't want you to. But I urge you to broaden your horizons and add some spice to your duck hunting.

Jim Hansen is a wildlife research biologist located at Clear Lake. He holds an M.A. degree in zoology from the University of Missouri. He has been in the wildlife research field since 1979.

Ken Formanek

David Menke

Although mallards are favored table fare, widgeon, scaup (previous page), ring-necks (above) shovelers (right) and others can be delicious.

It was the end of the day, and the man and his dog reached the ridgetop just as the sun began to dip below the western horizon. Stooping down, the man carefully laid his heavy burden on the grass. Then, standing erect, he paused to admire the wetland panorama that sprawled before him. From this vantage a person could view the entire marsh, and the man and his dog had stood there many times in the past.

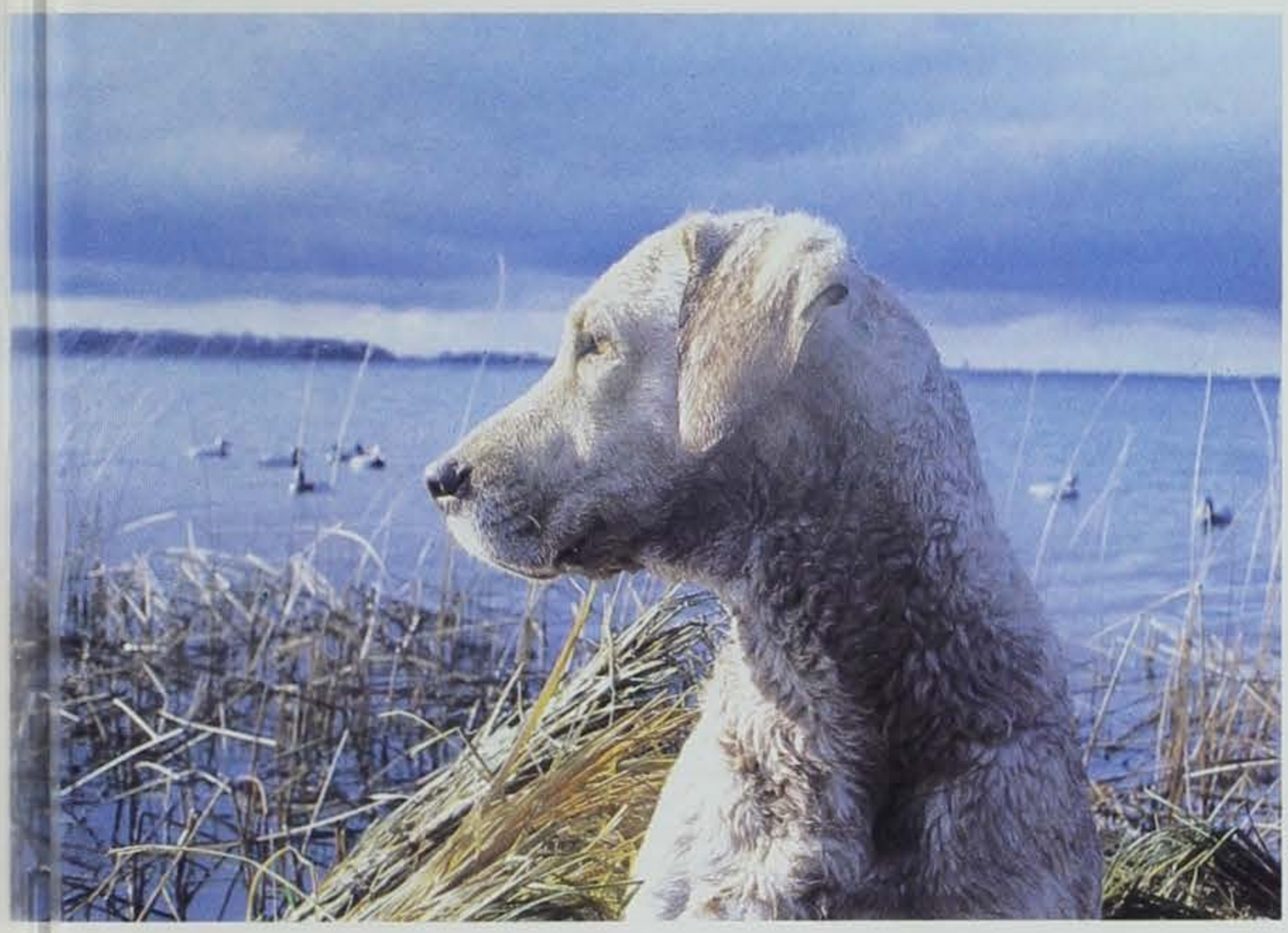
Long ago, the man had decided that one day he would dig there. Picking the shovel from atop the bundle, he went to work. The dense network of grass roots resisted the shovel, but the sharp blade finally sank deep into the soil. This was virgin prairie, much too steep for farming, and as the man dug he idly wondered if he was the first ever to disturb this place.

Eventually, the hole became large enough, and the man laid his shovel aside. Slowly, he knelt in the grass beside his dog. For a moment, he cradled the animal in his arms and then gently lowered the lifeless form into the earth. The man had had plenty of time to prepare himself for this day and had promised himself that he would be strong. But when tears came, he was not ashamed.

After some time had passed, he took up the shovel again and began to slowly refill the hole. When he had finished, he carefully replaced the pieces of sod he had saved. Once the grass had been smoothed back in place, there was scarcely a sign that the hilltop had been opened.

Darkness now engulfed the marsh, but the man remained seated beside the dog. He was not ready to leave — not just yet. From overhead came the sharp whistle of wings. Looking up, the man could not see the ducks as they passed in the night, but the sound caused him to reflect, and his mind turned back to the glorious days that he and Sandy had shared on this and other marshes. Those had been good days; days full of teal and mallards and yelping geese. Days that could be remembered but never lived again.

He thought back to the time when the dog was young, eager and, in one man's eyes at least, among the



Lowell Washburn

SANDY

By Lowell Washburn

very best on the marsh. He also remembered the scores of birds that were added to the bag because the Chesapeake was so much sharper than him at marking a fall in the thick marsh vegetation.

One of the most exciting memories was the day when he and the dog, along with a gunning friend, had crouched beside the last air hole on Clear Lake. It was in the closing days of the season and the big lake had already been covered by ice and six inches of wet snow.

A big band of mixed divers had come into the decoys, and several birds had been dropped from the flock. When Sandy had been sent for the birds, she had gone straight for a wing-tipped goldeneye that had fallen in the center of the hole. But at the approaching dog, the bird had dived and swum out under the ice. True to her instinct, the Chesapeake had followed, her head disappearing under the frigid waters.

The man had stood at the edge of the air hole, and as the seconds slowly ticked by he had become more and more apprehensive. Even though the diving and underwater swimming ability of the goldeneye duck is akin to that of a loon, the dog had somehow managed to catch the bird under the ice. Finally the dog had reappeared, like a bobbing cork in the center of the hole, holding the surprised duck softly in her mouth. At times like that it's nice to have a witness, the hunter had thought.

Of all the seasons that the man and dog shared, the fall of 1979 was the high water mark. Habitat conditions were just right and the ducks were everywhere. Even some of the old timers admitted they couldn't remember seeing more. Although the dog was slipping past her prime, she still lived for the field. The man smiled as he remembered how the dog remained as enthused and excited over the last blue finger morning of diver shooting as she had been for September's opening day bluewings.

As the years passed, the dog slowly began to lose ground. Little by little the bounce disappeared from her light- footed gait. Slowly, the bright yellow eyes grew dimmer. The man realized that her days in the marsh were drawing to a close, and perhaps the dog had sensed it too.

As a retriever, the dog had always been eager to pull her own weight. But over the years, she had become far more than just a working tool for the man. The man knew it was their constant companionship that he would miss the most — the shared sandwich, the nuzzle of a wet nose, and the tail that never stopped wagging. Things could never again be the same without the old dog, and the man felt an overwhelming sense of loss. It was the kind of emptiness that you may have known if you've ever shared the outdoors with a friend who no longer accompanies you through colorful autumn fields.

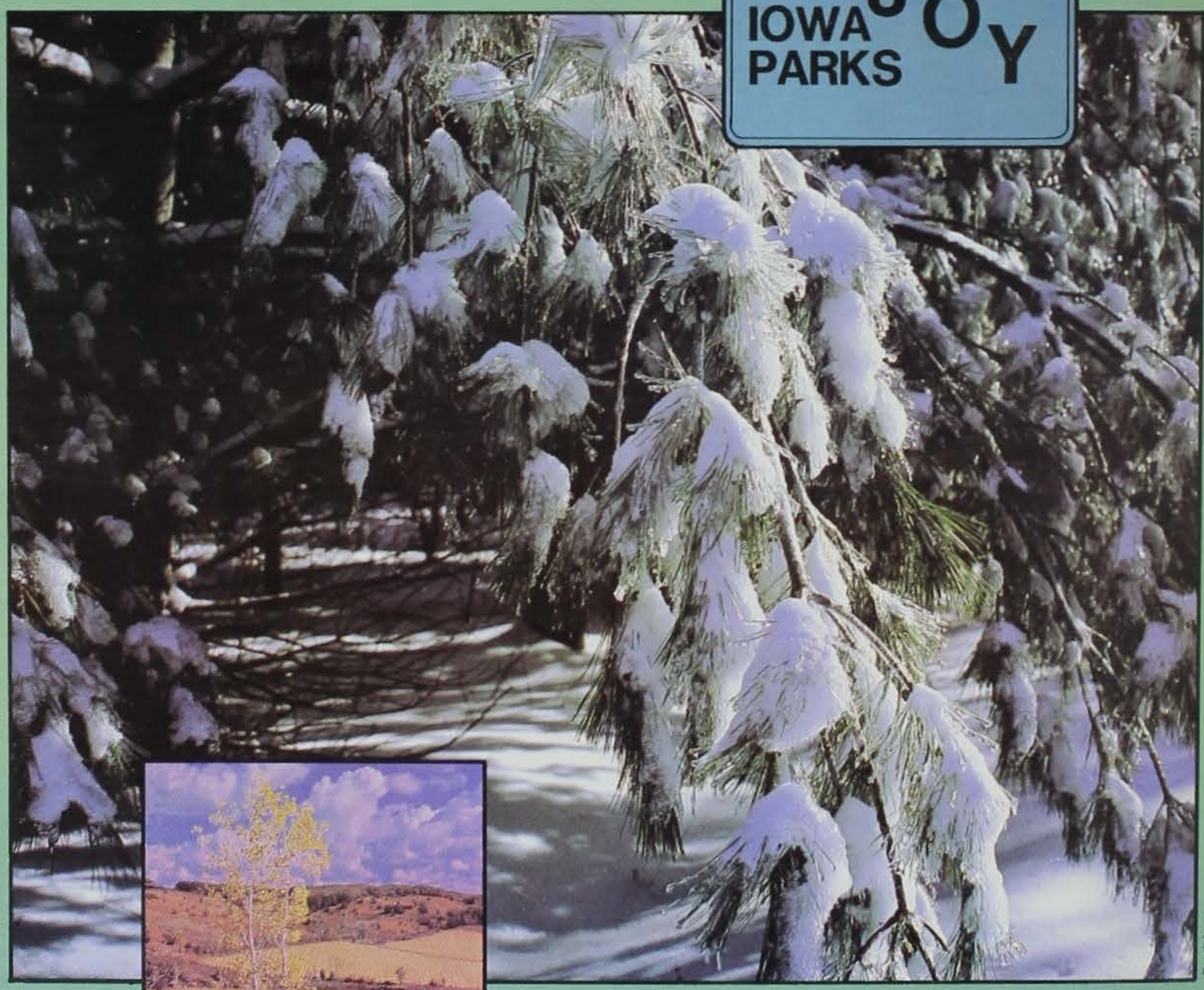
At last, the man arose and began to slowly pick his way down the dark ridge. The walk back to the road seemed long and lonely, perhaps the loneliest of my life.

Lowell Washburn

Lowell Washburn is an information specialist located in Clear Lake. He has been with the department since 1984.

Two Great Gifts for Outdoor Lovers

Annual park user permits make great Christmas gifts and help upgrade state parks at the same time. The required permits sell for $10 each and are good for all state parks and recreation areas throughout Iowa for the entire year. Revenue from the sale of these permits is used to restore and upgrade facilities enjoyed by so many. A card will be sent, with the permit, acknowledging your gift.



Ron Johnson

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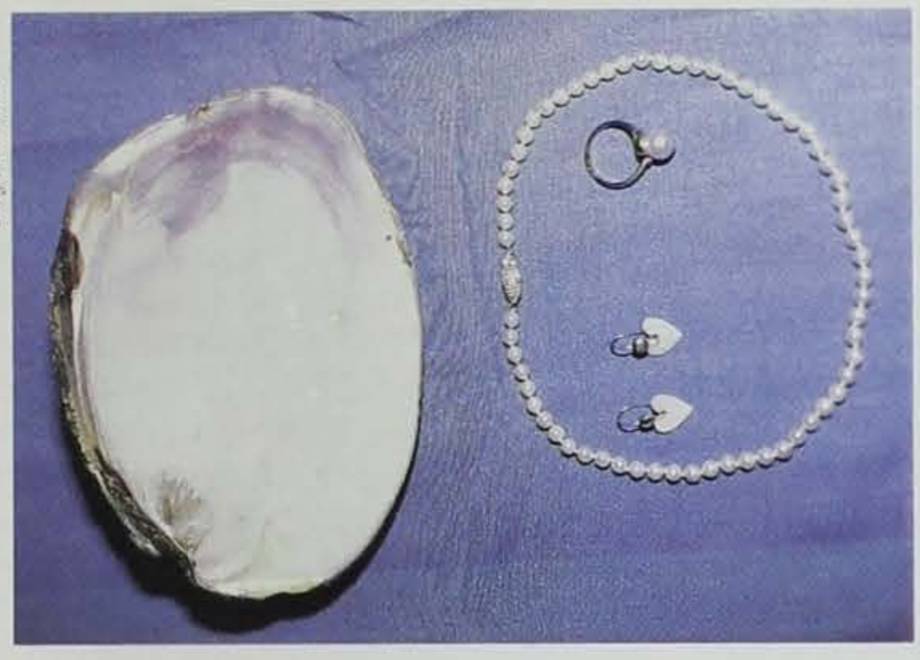


Gary Ackerman

Mississippi fresh water clams provide raw materials for cultured pearls. Washboards like the one at left comprise about 20 per cent of the commercial harvest in the Upper Mississippi River, while three-ridge comprise most of the remaining 80 percent.

Jerry Leonard

Clams in Jeopardy

By Gary L. Ackerman

Freshwater mussels, commonly called clams by river people, are in danger in the Upper Mississippi River. They are being threatened by several serious problems now confronting resource managers.

History

Long before the beginning of the clamming industry, some major chemical and physical changes to the Lower Mississippi River led to the depletion of aquatic resources. Clams were the first to go. Growing towns and cities along the river carelessly disposed domestic and industrial wastes directly into the river. Agriculture boomed in the prairie states and the plow yielded tremendous sediment loads into downstream river habitats. Pollution went unabated. Pollutors were not prosecuted. The cumulative effects of the silent killers went totally unnoticed by early scientists. The nonmobile clams soon disappeared in mass in the Lower Mississippi River, downstream from metropolitan areas, and below the outfalls of the major tributary streams. Even upstream environs were to be seriously impacted as the aquatic resources of Lake Pepin were depleted by upstream pollution. Especially hard hit were clams, then fish.

Major physical alterations to the Upper Mississippi River began when Congress authorized construction of a 4-½ foot channel in 1878. The U. S. Army Corps of Engineers later gained authorization for a six-foot channel, and now maintain a nine-foot channel.

Early efforts on the Upper Mississippi were to "train" the river by channelizing it. Current deflectors were built; wing dams, wing dikes and bank protectors were installed; concrete mats or ripraps were developed; side channels were closed; other channels were dredged, deep-water habitats were filled. By the end of a decade, 29 locks and dams "tamed" the river to create the nine-foot channel. The impoundment of the river significantly altered the natural system, initially creating many thousands of acres of wetlands. After impoundment, most biological entities boomed. Populations exploded filling newly created voids and niches. Most aquatic resources responded positively, as some early scientists expounding windy theories about the inexhaustible resources of the river. It was not to be true, as the boom is fizzling, some 50 years later.

The first boom and bust of clamming began with J. F. Boepple's launching of an infant industry in the early 1890's. This German immigrant began cutting buttons from river clams near Muscatine, Iowa. The demand for shells in making buttons rapidly increased. By 1912, there were over 200 button factories in the United States, with total sales over six million dollars a year. The sale of freshwater pearls added another $300,000 annually. The industry continued to grow through the 1920's, then it collapsed.

The shell beds were depleted from St. Louis to St. Paul by the 1930's. Gone or seriously depleted were shells with names like mucket, yellow sandshell, ebony shell, fat pocketbooks, slough sandshell, buckhorn, monkeyface, butterfly, fluted shell, white heelsplitter, spectacle-case, Higgins' eye and others. The final *coup de grace* of the button industry came shortly after World War II, with the development of plas-

tics. Buttons of mother-of-pearl could no longer compete with the cheaper and more durable plastics. It was the end of an era.

A new market developed for mussel shells in Japan in 1960 with the advent of cultured pearls. Under carefully controlled conditions, the use of mother-of-pearl pellets cut from heavy-mantled freshwater mussel shells are ground to a pure nucleus for inserting into bodies of live oysters. In two or three years, about two or three millimeters of pearl nacre overlays the nucleus to result in a perfectly spherical cultured pearl of precise luster and size. The process revolutionized the pearl industry of the world, hence, the demand for shells and values escalated. By 1966, the export value of American shell was nearly $9 million with bank-side prices for some shells rising to $500 per ton. A new generation of clammers took to the river and the second boom of clamming was underway. That boom is now seriously threatened from several fronts.

Problems

The Mississippi River clam population was over-harvested in the pearl button era of 1900's. Overharvest of clams is again occurring in the 1980's. Several things have caused it. Commercial clamming effort on the Upper Mississippi has rapidly escalated due to declining shell populations in other river systems, a price escalation doubling from 1984 to 1985, chronic unemployment and a ready work force seeking whatever profits are available, and a major shift from commercial fishing to commercial clamming. In Iowa, the market value of clams has increased from $200 to $220 per ton of live shells in 1983-84 to current prices ranging from $400 to $500 per ton, depending on shell kinds and quality. This resulted in a four-fold increase in licensed clammers in Iowa since 1983. Nonresident clammers invaded Iowa boundary waters in 1985 from Wisconsin, Tennessee, Oklahoma, Texas, Arkansas, Alabama, Missouri and Kentucky. Of 211 licensed clammers, some 97 were nonresidents in 1985 while there were only 39 the year preceding. Our data shows clammers took about 1,492 tons of shells valued at $320,000 in 1985.

Total depletion of a clam bed can be very rapid. Scuba divers discovered a bed of washboard shells near Glen Haven, Wisconsin several years ago. Two divers hand picked a reported 70 tons of shells in two months. Today, few shells exist on the Glen Haven shell bed. Last summer, we observed divers only taking a few dead shells from it.

An unexplained die-off of freshwater mussels reached alarming magnitude in 1985 and threatens to destroy the freshwater mussel resource of the Upper Mississippi River. The causes are unknown.

Apparently, the die-off has been occurring spasmodically for some time. My father, LeRoy L. Ackerman, a long-time commercial fisherman from Cassville, Wisconsin reported seeing many floating clam meats in Pool 11 below the outfall of Turkey River beginning in the early 1960's. Curiously, he reported seeing large numbers of floating meats whenever the Turkey River flooded during the warmer summer months of June and July. In the 1980's, commercial fishermen and sportsmen reported seeing increased numbers of floating clam meats. Then in 1985, die-offs became catastrophic. Earlier reports from scuba divers indicated about five to ten percent of commercial clams (three-ridge and washboard) were dead or dying in their shells in 1982, 25 to 40 percent in 1983, and 50 to 75 percent in 1985. Our surveys show the area of mortality extends over 265 river miles from LaCrosse, Wisconsin to Muscatine, Iowa. The die-off began in early June and continued through August. Iowa fishery biologists made transects from Pool 9 through Pool 13 to estimate the extent of the mortality. Our one-time estimates ranged from 15,700 on Pool 9 to a high of 38,100 in Pool 10. It was impossible to identify the kinds of clams being killed. We consider these estimates as very conservative for many meats are scavaged by fish, birds and mammals, or lodged against banks and aquatic vegetation to slowly rot away.

Commercial clammers and biologists alike seem most concerned about the die-offs. In 1983 and 1985, samples of dead, dying and healthy clams were collected and sent to laboratories around the nation, including the National Marine Fisheries Service in Oxford, Maryland; the U. S. Fish and Wildlife Service Disease Laboratory in LaCrosse, Wisconsin; the Illinois Department of Agriculture Laboratories in Springfield, Illinois; and Memphis State University. Recent findings may have eliminated diseases, parasites, bacterial infections and viral infections as potential causes. What's left? Some unknown toxin originating from some unknown source? Research continues.

Another problem that seriously

Gary Ackerman

Gary Ackerman

A typical clammer's outfit and Tennessee rock hooks.

affects many aquatic resources of the river is sedimentation. Impounding the river in the 1930's created a series of sediment-trapping pools. A study of sedimentation in Lansing Bottoms, Pool 9, found an average rate of filling of one inch per year of fine sediments in backwater habitats. An Iowa Department of Natural Resources study of Cassville Slough, Pool 11, indicated an accelerated accumulation rate of five inches of coarse and fine sands in side channel habitats. Moving and unstable sand substrate or fine clays mixed with eutrophicating muds destroy clam populations. Clam beds are suffocated by rapid sedimentation covering them following floods, or by moving sand during high flows of the river. Tiny recruiting clams, fresh off their fish hosts, find inhospitable habitat in backwaters of fine muds and clay. They perish in the unstable sand habitats found in side channels, navigation channels, main channel border and some sloughs. Their only opportunity for survival is in established clam beds or in certain niches that do provide stable habitat for their existence.

Probably less than two percent of the river habitat is conducive to clam survival. That stable habitat where clam beds are found consists of slow-moving current, protected areas with low sedimentation rates, and bottoms of mixtures of gravel, sand, muds and detritus. Recent studies indicate certain clams are most susceptible to high turbidity rates, interfering with their respiration, and causing suffocation. Clams are having a hard time existing in a river that is rapidly filling with sediments.

Most aquatic resources of the Upper Mississippi initially benefited by impoundment. Certain clams adapted to immense changes that occurred and their populations rapidly expanded while others did not and soon declined in abundance. Those adaptable ones were those "lake-loving species" like washboard, three-ridge, floaters, pigtoe, hickorynut, pimpleback, deertoe and others. Those unadaptable ones were "river-loving species" like ebony shell, Higgins' eye, buckhorn, spectacle case, fat pocketbook, muckets, yellow sandshell, white heelsplitter and others. Some fish species responded similarly as bigmouth buffalo, carp, carpsuckers, sheephead, channel catfish, redhorse and others expanded their populations while noted declines occurred for shipjack herring, blue catfish, paddlefish, lake sturgeon, blue sucker, smallmouth bass and others. Certain declines continue as the impounded river shows its age. And probably there is little that can be done to restore the aquatic resources to their former abundances. We will experience slow and continuous decline in most aquatic resources of the river. Clams are among the first to be affected.

Solutions

There is little that can be done about sedimentation, massive die-offs and physical alterations of the past. The one remaining option open is to manage freshwater mussels by implementing rules and regulations to protect the resource and to regulate commercial clamming. Regulatory agencies, unfortunately, are not blessed with much detailed information about freshwater mussels; so they have had to piece together information from many sources to develop a plan of action. The states of Iowa, Wisconsin, Minnesota, Illinois and Missouri are attempting to act in concert to develop uniform regulations to manage this resource. These states are acting as rapidly as possible under existing authorities to implement changes. Here are some things in the forefront today:

— Licensing is statutory. License fees passed by Iowa legislature in 1986 are: resident mussel license, $30; nonresident mussel license, $400.
— Freshwater mussel catch statistics for the UMR are unavailable for recent years. A uniform reporting system is developing.
— Methods of harvest of clams are being restricted to use of crowfoot bars, by scuba or by hand methods. All other damaging methods have been eliminated.
— Iowa promulgated size rules in 1986 to restrict the harvest of small clams. Overharvest of clams is an inherent problem for resource managers as clams grow very slowly and they sexually mature at large sizes and old ages at this latitude. When smaller clams are haphazardly harvested without any restrictions, their reproductive cycle is interrupted so very few clams spawn successfully.
— Establishing seasons is another means to protect species or populations from overharvest, or to protect breeding stocks from easy exploitation. A season from May 1 through September 15 was established in Iowa in 1986 for controlling commercial exploitation of clams. It has substance. It will protect breeding populations of washboard from harvest during their fall spawn, and will reduce exploitation by cutting into optimum times for harvest.
— Iowa established a closed season on all but six common species of clams. Harvest of rare or uncommon species is prohibited.

It is probable that resource management agencies will be criticized in the future for taking too little action too late to affect adequate management measures. But management is now just beginning — and nothing is going to be effective unless the causes for the die-offs are determined and corrective action taken to stop them.

It's going to take a concerted effort by state agencies, the commercial clamming industry and political forces to prevent the collapse of the freshwater mussel fishery of the Mississippi River in the 1980's. Commercial clammers must be regulated to protect the resource from overfishing. It is one of very few remaining freshwater mussel resources of our world. It is most valuable now, and will increase in value in the future.

Yesterday bumper stickers along the river proclaimed: "To hell with Higgins' eye." Today one expounds, "Let's give a dam for a clam." The informed public attitude is changing. With it, proper management and lots of luck, clams at least have a chance for survival.

Gary Ackerman is a fisheries management biologist from Guttenberg. He holds a B.S. degree from the University of Wisconsin - Madison. He has worked in the fisheries field since 1964.

Nature Tale

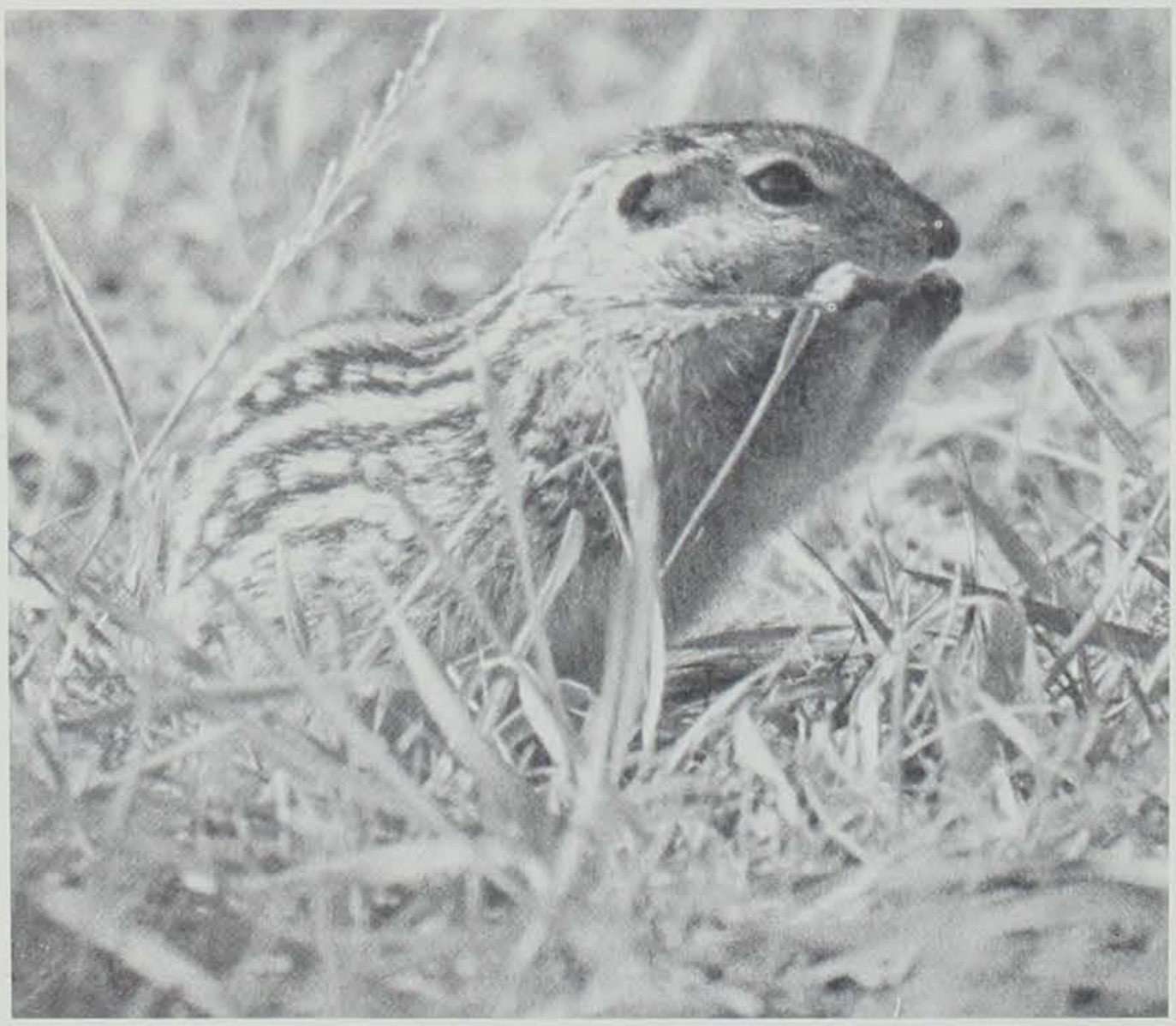
Phil, the Ground Squirrel Extraordinaire

By Dean M. Roosa

The thirteen-lined ground squirrel, *Spermophilis tridecemlineatus,* is one of the most common members of the mammalian fauna of Iowa. Its Latin name, which means "thirteen- lined seed lover," is one of the most descriptive scientific names in existence. This ground squirrel hibernates throughout the winter below the frost line, but the traveler along Iowa's roads and highways may see this rodent standing stiffly upright at the edge of the road, starting in late April.

******

It was late April in north-central Iowa. The long, cold winter was finally over, the chorus frogs were serenading from the marsh, the last nostalgic call of the wild goose had floated to earth, and the college teacher had slipped out of his office to lie in the sun on a grassy patch by his home near the edge of the campus. He was sleeping in the warm sun, glad to be away from the telephone, advisees, classes, and the harried life he led. Feeling something out of the ordinary, his eyes popped open, only to confront a thirteen-lined ground squirrel sitting on his chest. The two gazed at one another momentarily, then with two startled shrieks, the two raced away in opposite directions. This ground squirrel was Phil, a truly extraordinary animal — curious, apparently high in animal intelligence, energetic, and nearly unafraid of humans.



DNR Photo

The next morning the college teacher, sitting at his breakfast table, noted a movement on the outside window ledge — there was Phil, looking in through the window, seemingly unafraid. There happened to be in the teacher's house, a tiny human, just learning to walk. Coincidentally, his name was Phillip.

In the following weeks of warm spring days, the parents noticed that Phil would take nuts and scraps of food from the hand of Phillip. Phil would scamper around the yard when the little human was playing, but was more cautious when either parent came out. Occasionally the door was left open during this nice warm weather; imagine the mother's surprise when she came into the living room to find Phil perched on the coffee table, begging for food from Phillip! Her high-pitched protest, often associated with protective new mothers, was well understood by Phil, who beat a hasty retreat to his den. But, as I said, Phil was an extraordinary animal and he was only temporarily exiled.

In the upcoming weeks, Phil was a common sight on the lawn, in the street, in the neighbor's bird feeder, in the garage, on the steps, on the window sill — a general, but harmless, nuisance. Phillip thought Phil was the neatest thing he had ever seen — Phillip's mother was somewhat less enthusiastic. And so the warm Iowa spring was spent by Phil and Phillip and a dozen or so amused neighbors.

In early May, a second ground squirrel was seen on the lawn. This was Phil's mate, who had absolutely no time for humans. With a whistle and flick of the tail, she would disappear into the den entrance upon the slightest sound from the house, the slightest movement, or even when Phillip toddled onto the lawn. Phil could not understand this odd behavior and urged her to accompany him on raids into the garage. Try as he might, he was never successful; his mate stayed on the edge of the lawn, prepared to dive into the den at a moment's notice. She disappeared rather suddenly a couple of weeks later and the family wondered and worried. Even Phil acted differ-

ently — he would whistle indignantly if someone approached the den entrance. The family wondered if a dog had found the little ground squirrel family, or if a car had hit the female. Phillip searched in vain for his little friend.

In early June, the college teacher, drinking his last cup of coffee before leaving for work, noticed a movement on the lawn. There sitting upright beside the den entrance was Phil; soon another movement in the grass, then another, and another, and finally another. Here was the complete family — Phil, his mate, and three youngsters. The tiny youngsters, not yet half the size of either parent, were wobbling through the grass, much the way Phillip toddled around the lawn. The new parents, especially Phil's mate, were very cautious. At the slightest movement, all would dive into the den. Soon, though, Phil was his old self — sneaking into the garage, onto the window ledge — back to his old tricks. The family noticed Phil was often accompanied by one of the youngsters.

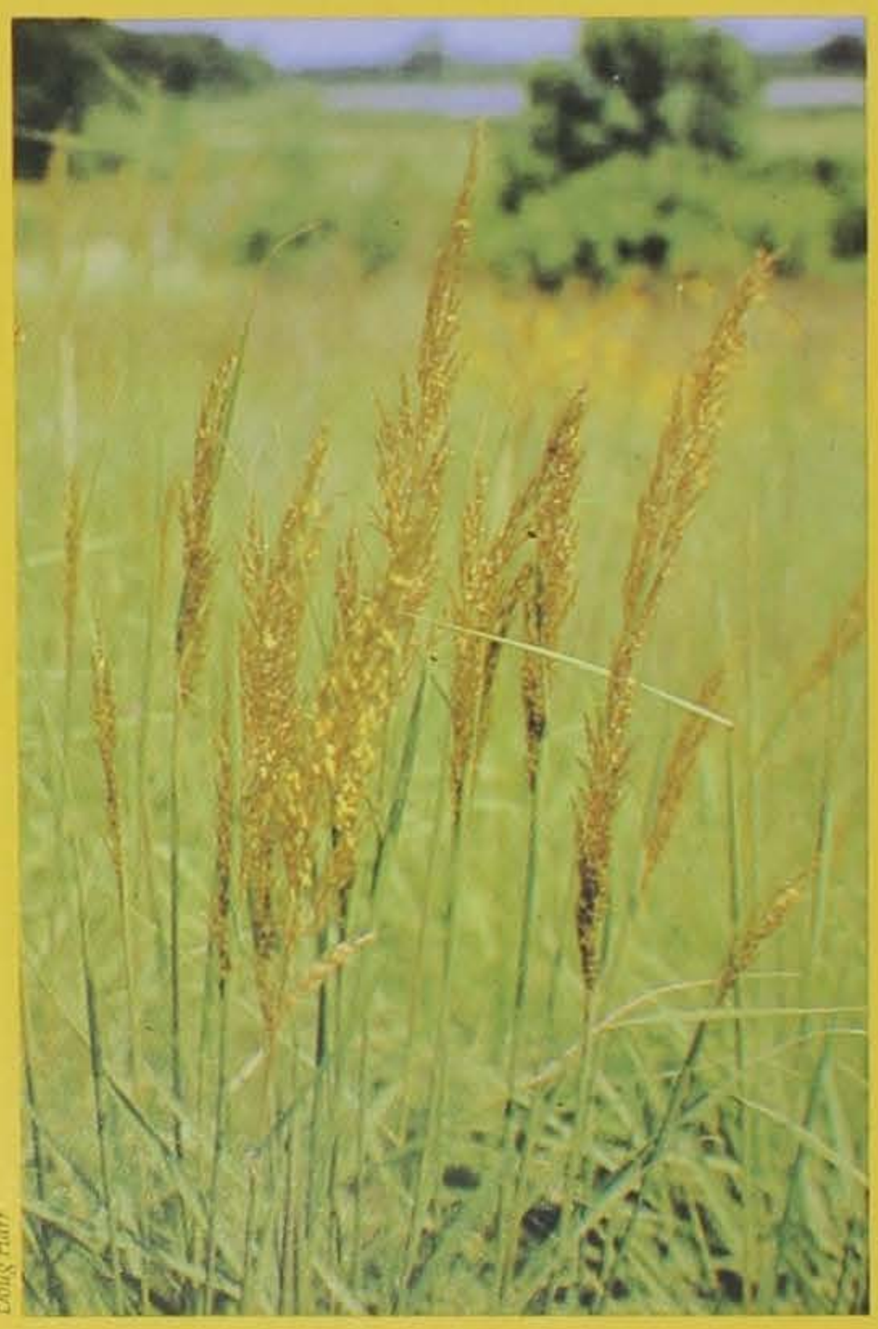
The street in front of the house was a busy one — and one day in June the teacher saw a small furry object lying in the street. It was Phil, whose friendliness and trusting nature had led to his encounter with a car. Sadly the family buried their little friend near their garden. The lawn was empty, apparently Phil's mate and their family had left. The family, especially Phillip, felt sad. Fall came and no sign of ground squirrels could be seen. Slowly the long Iowa winter passed and warm days were slowly returning. The teacher and neighbors often spoke of the antics of the ground squirrel.

On April 30th, Phillip, now talking, came running excitedly to his mother. "Phil!" "Phil!" he shouted and pointed. There, on the window ledge was an exact replica of Phil. The ground squirrel, slightly smaller and a little lighter in coloration, was leaning against the window with his front feet and pressing his nose against the glass. One of the litter born in the den on the front lawn had returned. Phillip was happy and the neighbors were again amused. A second generation of friendship had begun.

Plant Tale of the Month

THE LATE SEASON PRAIRIE VISITOR

Dean Roosa



Doug Harr

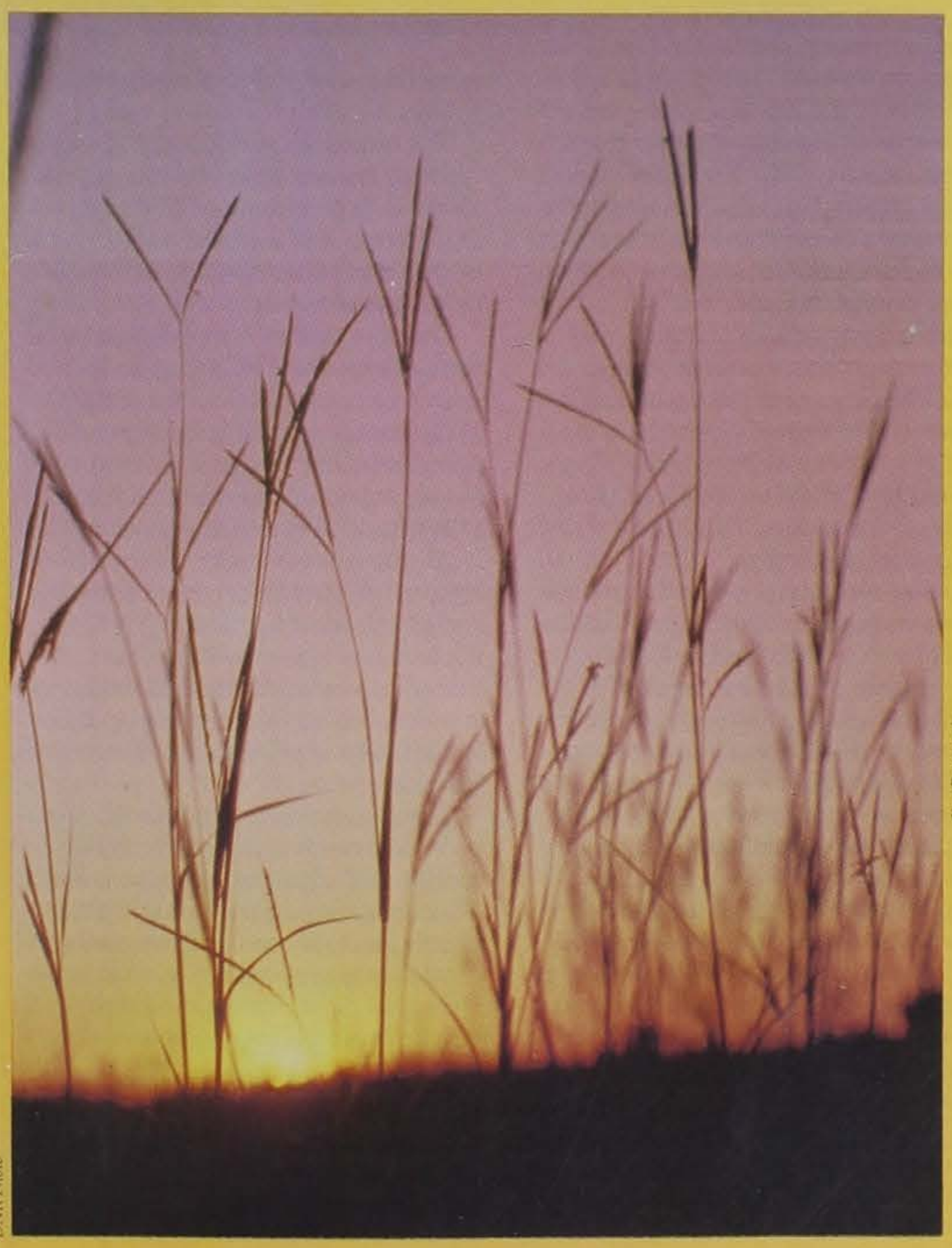
Doug Harr

The prairie sun was setting
low
The cool night air came
acreeping
The last prairie visitor
stood
In nostalgia.

King bluestem was glow-
ing faintly red
The gentians, white with
frost,
Announced the end of the
prairie year
With sadness.

The first snowflake stung
the visitor's face
As he turned to take his
leave
He waved at his silent
friend
In promise to return.

Dean M. Roosa



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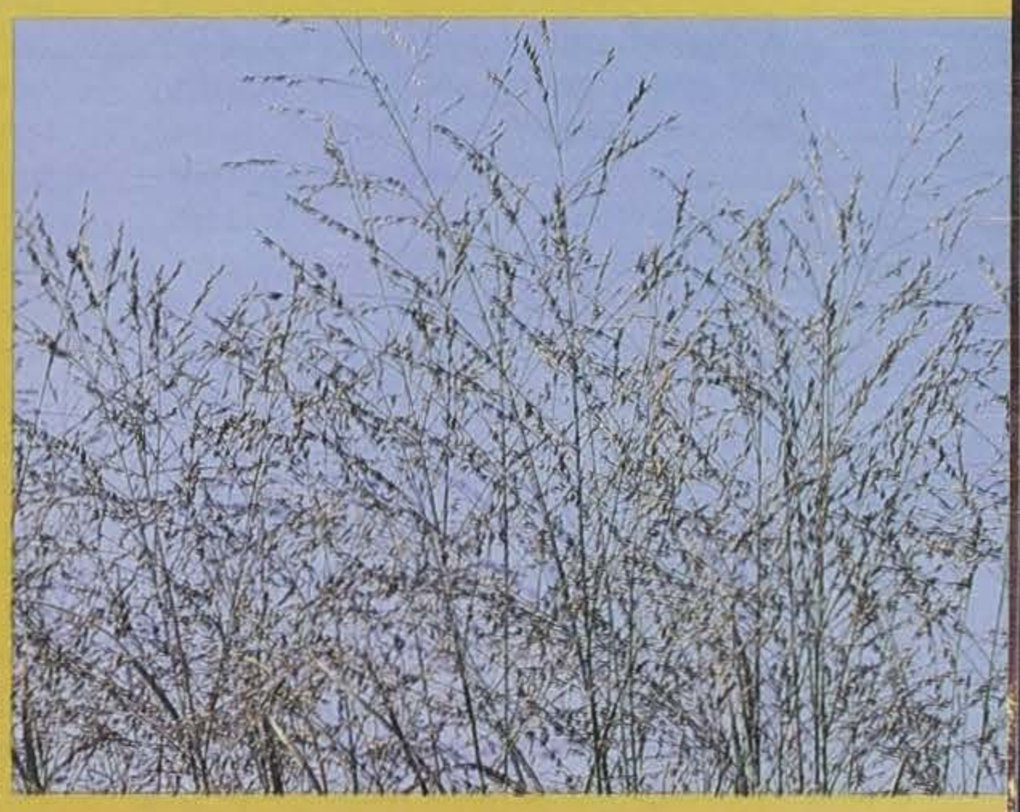

Ken Formanek

Wardens on Track

By Chuck Humeston

Ron Johnson

It is another cold, windy day on West Okoboji Lake. Fishing shacks are scattered over the lake in clusters resembling small towns.

A conservation officer spies a group of fishermen in one of these temporary fishing villages and decides to check licenses and fish. The officer steers directly toward the fishermen; but instead of getting out of a well-heated patrol car, he slides off the seat of his routine winter vehicle — a snowmobile.

In northwest Iowa, ice fishing is an annual way of life, and getting right out on the natural lakes of that region with a snowmobile is the most effective way for officers to make their checks. A conservation officer in the snow belt must be as well versed in the operation of a snowmobile as in the operation of a car or boat.

Ice fishing is not the only popular form of winter recreation in the area. Many people enjoy snowmobiling on the many lakes by themselves, in small groups, and in large caravans following the groomed roadside trails from town to town.

Again, on a snowmobile the conservation officer can check to make sure other snowmobiles are properly equipped and registered. If necessary, officers can render assistance to anyone having difficulty on the snow.

From time to time, officers are called on to investigate accidents. A snowmobile accident must be reported to the Department of Natural Resources when the accident involves personal injury, death or property damage totaling two hundred dollars or more.

Officers attempt to find the cause of the accident. Many times, it turns out to be the snowmobile operator's lack of familiarity with the machine or with the regulations governing its operation. Other contributing factors have been found to include the operator's lack of knowledge of the terrain, excessive speed, striking fixed objects or other vehicles, defective equipment and intoxication. Investigations into these accidents hopefully yields suggestions for regulation or equipment changes that can improve snowmobile safety.

Officers receive training in techniques for detecting the intoxicated snowmobiler. Consideration has also been given to legislation for implied consent and blood alcohol level laws similar to those regulating the operation of motor vehicles.

But the real key to safe snowmobiling is safety education. Conservation officers are involved in the DNR's snowmobile safety program by instructing or by assisting volunteer instructors in teaching Iowa's snowmobile safety certification course. This course is required of all persons born after July 1, 1965 in order to operate a snowmobile in this state. The course includes instruction on snowmobile laws, operation, maintenance, ethics and winter survival.

Usually, we think of the snowmobile as a vehicle with skis and the endless belt tread which propels the snowmobile over the snow or ice. This is not always the case. Off-road vehicles such as three- and four-wheelers are also defined by law as snowmobiles, and in most cases must be registered and equipped as such.

The increasing popularity of these types of snowmobiles has prompted the law enforcement section of the DNR to issue three- and four-wheeled vehicles to some of its officers for evaluation.

One use the snowmobile has been proven especially effective for is search or rescue jobs where snow makes roads unusable by conventional vehicles. On such occasions, conservation officers have assisted other law enforcement agencies.

At one time, winter was considered a time for the conservation officer to rest after the hectic activity of the hunting seasons. This slack period has been eliminated since the snowmobile has become a popular winter vehicle providing easier access to the outdoors.

The conservation officer's job is to go where the activity is. The snowmobile with flashing red light is likely a conservation officer trying to insure Iowa's outdoor resources are being used wisely and safely.

Chuck Humeston is a conservation officer for Palo Alto County. He holds a B.A. degree from the University of Iowa and has been an officer since 1981.

DO YOU KNOW YOUR ATV?

By Craig Jackson

The latest wave to hit the country is the rise in sales of ATV's. Many of you have either seen or ridden an all-terrain vehicle at some time or another. They come in all sizes and shapes. There are three, four and six wheelers, and even some that can operate on both land and water.

If you have purchased an ATV or plan to, there are some things to consider. The very first consideration should be where to ride and what requirements are necessary for registration. This is where it gets complicated.

There are basically four ways to legally run your ATV. First, an ATV may be registered as a snowmobile, but may only be operated on public land when there is at least one- tenth of an inch of snow on the ground. The operator, if born after July 1, 1965, must obtain a valid snowmobile safety certificate. All other regulations that apply to snowmobiles would apply to ATV's.

The second option enables an ATV to be operated on a highway only between sunrise and sunset and only when the operation on the highway is incidental to the vehicle's use for agricultural purposes without any type of registration. However, a person operating on the highway must have a valid driver's license and the vehicle shall be operated at speeds of less than 30 mph. When operated on a highway, an ATV must also display a bicycle safety flag which extends not less than five feet above the ground attached to the rear of the vehicle. The bicycle safety flag shall be triangular in shape with an area of not less than 30 square inches, be day-glow in color and be in lieu of the reflective equipment required by section 321.383.

The third way to register are for those ATV's capable of operating on both land and water of the state. These ATV's must be registered as a boat and a snowmobile. The law permits these machines to be identified by the boat number at all times on both land and water, providing they bear the validating decals for a boat registration and a snowmobile registration. The fourth and last option available to the operator is to use the ATV solely on private property, therefore a registration is not required. This only pertains to private property and not using road ditches to travel from place to place.

Recently the Department of Transportation revoked the restricted licenses that had previously enabled ATVs to be legally operated on highways by licensed drivers. The ATV manufacturers suggested the revocation of restricted licenses because the machines are built and designed for off-road use only. The DOT agreed and this option is no longer available to the ATV operator.

Hopefully, dealers are introducing these aspects to the new customers of ATV's and letting the consumer decide which type of use is appropriate. It is indeed confusing.

Between 1982 and 1985, 415 ATV-related deaths occurred in the United States. During 1985, an estimated 85,900 ATV-related injuries were treated in hospital emergency rooms nationwide. This number exceeded the 1984 injuries by 34 percent.

In 1984, the state of Iowa had 11 reported accidents with 15 injuries and one fatality for ATV's. In 1985, we had 19 reported accidents with 23 injuries and one fatality. Naturally, the numbers of accidents are rising with the number of sales. Most accidents are occurring because of lack of experience with the ATV, lack of training, and the lack of understanding of the stability of the machine. If you and your family own an ATV or are planning a purchase, take a safety course either from an ATV dealer or from the Department of Natural Resources as part of the snowmobile safety program. Young children are often the victims of ATV accidents nationwide. If youngsters are to use this machinery, it is essential to train them in the operation of it.

The environment is a fragile place. If each of us take full responsibility for our actions while out in nature's areas, we would help current and future generation enjoy what we now have. Vegetation is nature's method of lessening erosion by increasing the stability of the soil. Vegetation is very susceptible when covered with frost. You should avoid causing damage to vegetation because of the serious environmental problems that can result. Staying on established trails is the best way to protect the environment.

Remember safety, courtesy and protection of the environment are important to all the people who use the outdoors. ATV safety is dependent on judgment, technical knowledge and acquired skill.

A Code For ATV Operators

- Know Your Operator's Manual
- Check the ATV Before You Ride
- Wear Your Helmet
- Protect Your Eyes and Body
- Get Qualified Training
- Ride With Others — Never Alone
- Ride Within Your Skill Level
- Do Not Carry Passengers
- Respect Riding Area Rules
- Keep Noise Levels Low
- Ride Straight — No Alcohol or Drugs
- Preserve the Environment
- Be Courteous to All You Meet
- Lend Your ATV to Skilled Riders Only
- Always Supervise Youngsters

Craig Jackson is a recreation safety officer for Southeastern Iowa. He has been with the department since 1975.

Conservation Update

BOATING, WATER SAFETY POSTER CONTEST ANNOUNCED

School children in grades four through six are encouraged to participate in the Iowa Department of Natural Resources seventh annual poster contest aimed at promoting water safety. The contest, cosponsored by the American Red Cross, Des Moines Power Squadron, Coast Guard Auxiliary, U. S. Army Corps of Engineers and the Des Moines IMT Insurance Company, will feature cash prizes and an opportunity to be a guest of the Governor during the signing of the Safe Boating Week Proclamation.

Fourth, fifth and sixth graders throughout Iowa will be competing for the following prizes:

First prize — $200 savings bond; second prize — $100 savings bond; third prize — $75 savings bond. The winners will also receive a certificate of achievement. Prize money is being donated by the IMT Insurance Company in Des Moines. In addition to the above-mentioned awards, other deserving participants will receive honorable mention.

The theme for this year's contest is "Take a Boating Course." Deadline for entries is Feb. 1, 1987. For further information and official entry form, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034; phone 515/281-6824.

1987 Iowa Wildlife Art Exhibit

Jan. 11, 1987 will mark the opening for the Iowa Wildlife Art Exhibit in the Metropolitan Gallery, Cedar Falls Recreation and Arts Center, 1200 Main Street, Cedar Falls, Iowa. Cedar Falls Arts Alive, a local arts council will host the reception, which will be held from 1-6 p.m. The exhibit will remain on display in the Metropolitan Gallery through February 18.

The exhibit will feature close to 30 different wildlife artists from throughout Iowa and will include such well-known artists as Bruce Chidester, John Heidersbach, John Bald, Jim Landenberger, Randy Hansen, and Paul Bridgford.

The special featured artist for this years exhibit will be Cedar Falls' John Heidersbach, who was the winner of both the 1987 Iowa Duck Stamp and the 1987 Iowa Habitat Stamp (see page 25). The exhibit is expected to include over 70 items, including sculptures, woodcarvings, paintings, drawings, and bronzes. The art exhibit will be comprised entirely of original art works. Many artists are expected to be present at the opening reception to meet patrons and sell limited-edition prints and other items.

Other hours the exhibit will be open are: Monday-Friday, 8:00 a.m.-4:30 p.m., Monday-Thursday, 7:00 p.m.-8:30 p.m., Saturday, 9:00 a.m.-12:00 a.m. and one other Sunday during the exhibit, February 15, 2:00-4:00 p.m. For more information people should contact Steve Wikert, cultural supervisor, at (319) 268-0483.

Wood carving by Bruce Chidester.

FEEDING FEATHERED FRIENDS

Want to know what kind of food birds like best? Are squirrels eating all of your bird seed? Attend one of two workshops to help answer your questions on feeding birds, feeders you can make, and types of birds you are likely to attract. Laura Jackson, urban biologist, will present a slide show, answer questions plus have various feeders and feed available for demonstration Dec. 6 at the Des Moines Science Center, 1:30-3:30 p.m.

For further information, contact Laura Jackson, Dept. of Natural Resources, Wallace Building, Des Moines, Iowa 50319-0034; 515/281-4815.

The publication, "Residential Fuelwood Use in the United States: 1980-81" (Resource Bulletin WO-3), is available for distribution. Single copies may be obtained, free of charge, by writing: Forest Service — USDA, P.O. Box 2417, Washington, DC 20013.

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This fall, the same trapping rules as last year will apply. The 1986 furbearer seasons are as follows:

Opening	Closing
8:00 a.m., Nov. 1	Jan. 25, 1987
8:00 a.m., Nov. 1	April 12, 1987
8:00 a.m., Nov. 8	Jan. 25, 1987
Continuous Closed Season	
Continuous Open Season	

River Wildlife and Fish Refuge. In this area, the open season is , 1987.

d Arrow Typical

	Year	County Taken	Total Score
:	1962	Monroe	197⅝
:	1977	Jones	194⅜
ıes	1981	Warren	190⅝
	1985	Wapello	183⅜
rt	1985		176
	1974	Cherokee	175⅛
:	1973	Marion	175⅛
e	1980	Muscatine	174⅞
	1984	Jones	174⅛
	1974	Union	173⅜

Arrow Nontypical

Name	Address	Year	County Taken	Total Score
Larry Raveling	Emmetsburg	1973	Clay	282
Carroll Johnson	Moorhead	1968	Monona	256⅜
David Mandersheid	Welton	1977	Jackson	253⅜
Duane Fick	Des Moines	1972	Madison	228⅜
LeRoy Everhart	Sumner	1969	Van Buren	224⅛
Todd Hawley	Panora	1982	Guthrie	224⅛
Donald Crossley	Hardy	1971	Humboldt	221⅛
Mike Pies	Ackley	1977	Hardin	221⅛
George Foster	Creston	1968	Union	220
John Meyers	Council Bluffs	1969	Pottawattamie	218⅜

Name	Address	Year	County Taken	Total Score
*Bob Harding	Pleasantville	1985	Wapello	229⅛
Jerry Monson	Clear Lake	1977	Cerro Gordo	220⅞
Blaine Salzkorn	Sutherland	1970	Clay	218⅛
Chris Hackney	Alberton	1983	Wayne	211⅝
Phillip M. Collier	Burlington	1978	Des Moines	203⅜
Bill Erwin	Sioux City	1966	Woodbury	202⅛
Dorrance Arnold	Oelwein	1977	Clayton	200⅝
Dennis Ballard	Iowa City	1971	Johnson	197⅛
Marsha Fairbanks	Martelle	1974	Jones	197⅛
*Jim Dougherty	Epworth	1985	Dubuque	195⅝

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First prize — $200 savings bond; second prize — $100 savings bond; third prize — $75 savings bond. The winners will also receive a certificate of achievement. Prize money is being donated by the IMT Insurance Company in Des Moines. In addition to the above-mentioned awards, other deserving participants will receive honorable mention.

The theme for this year's contest is "Take a Boating Course." Deadline for entries is Feb. 1, 1987. For further information and official entry form, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034; phone 515/281-6824.

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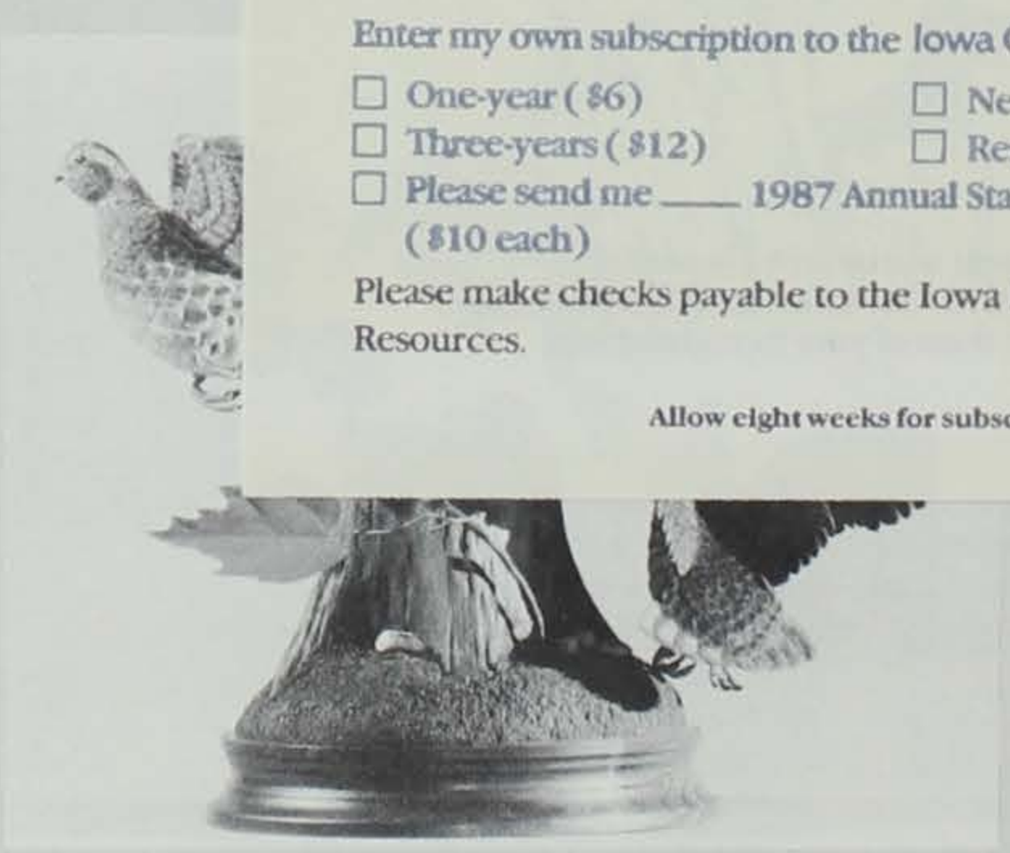
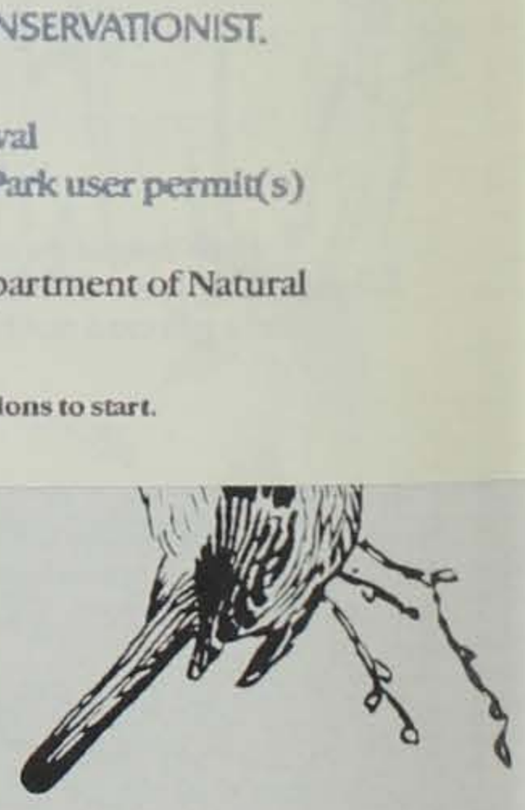


Wood carving by Bruce Chidester.



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Please include payment with order.

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☐ Three-year subscription ($12)
_____ 1987 Annual State Park user permit(s) ($10 each)

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Address _____
City & State _____ Zip Code _____
☐ One-year subscription ($6)
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_____ 1987 Annual State Park user permit(s) ($10 each)

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Please be sure to fill in this portion.

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My address _____
City & State _____ Zip Code _____

Enter my own subscription to the Iowa CONSERVATIONIST.
☐ One-year ($6) ☐ New
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☐ Please send me ____ 1987 Annual State Park user permit(s) ($10 each)

Please make checks payable to the Iowa Department of Natural Resources.

Allow eight weeks for subscriptions to start.

Before sealing envelope, be sure to enclose holiday gift order form along with your remittance.

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David Mandersheid	Welton	1977	Jackson	253⅜
Duane Fick	Des Moines	1972	Madison	228⅜
LeRoy Everhart	Sumner	1969	Van Buren	224⅛
Todd Hawley	Panora	1982	Guthrie	224⅛
Donald Crossley	Hardy	1971	Humboldt	221⅛
Mike Pies	Ackley	1977	Hardin	221⅛
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The theme for this year's contest is "Take a Boating Course." Deadline for entries is Feb. 1, 1987. For further information and official entry form, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034; phone 515/281-6824.

Wood carving by Bruce Chidester.

COPPER-COATED STEEL SHOT ILLEGAL FOR WATERFOWL

Iowa Department of Natural Resources law enforcement officials are warning waterfowl hunters that the use of copper-coated steel shot may not be substituted for conventional steel shot.

Officials say that until the copper coating is proven to be nontoxic, regular steel loads must be used to hunt waterfowl.

It is illegal for waterfowl hunters to have lead shotshells in possession while hunting waterfowl in Iowa, except for a few circumstances. The steel shot rule applies to all migratory game birds other than woodcock, with some private land exceptions.

Steel shot is not required on private lands when hunting migratory game birds over temporary sheet water, farm ponds less than two acres, and streams less than 25 feet in average width where the hunting is taking place. But, if those private water areas are within 150 yards of larger water areas on private land, or any water area on public land, steel shot is required. Steel shot is not required on dry land areas of private grounds if such areas are farther than 150 yards from larger water areas on private land or any water area on public land.

In a special area of southwest Iowa, bounded by I-680 on the south, the Missouri River on the west, I-29 on the east, and the Soldier River on the north, there are no exceptions to the steel shot rule other than it does not apply to woodcock hunting.

Biologists estimate that some two million waterfowl die each year from ingested lead pellets. Iowa is among the national leaders in attempting to remove this source of toxic material.

TRAPPING RULE ON HOLD

Several rules pertaining to roadside trapping and the use of snares will not be in effect this fall.

After being passed by the Iowa Department of Natural Resources, the Legislative Rules Review Committee delayed the effective date of Chapter 114, trapping limitations rule, until the end of the next legislative session.

On hold this trapping season are new rules limiting snare size, the use of conibear traps and snares on roadsides near inhabited buildings, and snares near fences.

A fur harvester license or a fur, fish and game license is required to hunt all furbearers, except coyote and groundhog and to trap any furbearing animal. A hunting license is not required when hunting furbearers. Coyote and groundhog may be hunted with a hunting license, fur harvester license or a fur, fish and game license.

This fall, the same trapping rules as last year will apply. The 1986 furbearer seasons are as follows:

Species	Opening	Closing
MINK, MUSKRAT, RACCOON, STRIPED SKUNK, BADGER, OPOSSUM	8:00 a.m., Nov. 1	Jan. 25, 1987
BEAVER*	8:00 a.m., Nov. 1	April 12, 1987
FOX (Red & Gray)	8:00 a.m., Nov. 8	Jan. 25, 1987
CIVET CAT (Spotted Skunk), BOBCAT, WEASEL AND OTTER:	Continuous Closed Season	
COYOTE:	Continuous Open Season	

**Except for the Federal Upper Mississippi River Wildlife and Fish Refuge. In this area, the open season is from 12:00 noon Dec. 13, 1986 — Feb. 28, 1987.*

ALL-TIME TOP TEN RACKS

*new top ten entry

Shotgun Typical

Name	Address	Year	County Taken	Total Score
Wayne A. Bills	Des Moines	1974	Hamilton	199⅝
*Kenneth Tilford	Lamoni	1985	Decatur	198⅛
George L. Ross	Ottumwa	1969	Wapello	195⅛
Bob Jackson	Des Moines	1983	Madison	191
Gregg Redlin	Iowa City	1983	Johnson	187⅝
Dennis Vaudt	Storm Lake	1974	Cherokee	187⅝
*Roy Metzger	Bloomfield	1985	Davis	186⅞
Randall Forney	Glenwood	1971	Fremont	186⅜
Jack W. Chidester, Jr.	Albia	1976	Monroe	186⅛
Franklin Taylor	Blencoe	1976	Monona	185⅝

Shotgun Nontypical

Name	Address	Year	County Taken	Total Score
Larry Raveling	Emmetsburg	1973	Clay	282
Carroll Johnson	Moorhead	1968	Monona	256⅛
David Mandersheid	Welton	1977	Jackson	253⅛
Duane Fick	Des Moines	1972	Madison	228⅛
LeRoy Everhart	Sumner	1969	Van Buren	224⅛
Todd Hawley	Panora	1982	Guthrie	224⅛
Donald Crossley	Hardy	1971	Humboldt	221⅛
Mike Pies	Ackley	1977	Hardin	221⅛
George Foster	Creston	1968	Union	220
John Meyers	Council Bluffs	1969	Pottawattamie	218⅜

Bow and Arrow Typical

Name	Address	Year	County Taken	Total Score
Lloyd Goad	Knoxville	1962	Monroe	197⅝
Robert Miller	Wyoming	1977	Jones	194⅜
Richard Swim	Des Moines	1981	Warren	190⅝
*Robert McDowell	Ottumwa	1985	Wapello	183⅛
*Ernie Aronson	Davenport	1985		176
Gary Wilson	Cherokee	1974	Cherokee	175⅛
Gordon Hayes	Knoxville	1973	Marion	175⅛
Don McCullough	Conesville	1980	Muscatine	174⅞
Ken Dausener	Dubuque	1984	Jones	174⅛
Jack Douglas	Creston	1974	Union	173⅜

Bow and Arrow Nontypical

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Chris Hackney	Alberton	1983	Wayne	211⅝
Phillip M. Collier	Burlington	1978	Des Moines	203⅝
Bill Erwin	Sioux City	1966	Woodbury	202⅝
Dorrance Arnold	Oelwein	1977	Clayton	200⅝
Dennis Ballard	Iowa City	1971	Johnson	197⅜
Marsha Fairbanks	Martelle	1974	Jones	197⅛
*Jim Dougherty	Epworth	1985	Dubuque	195⅝

1986 Record Racks

SHOTGUN TYPICAL

(Minimum Qualifying Score — 150 Points)

Name	Address	Year	County Taken	Total Score
	DEER AWARDS			
*Kenneth Tilford	Lamoni	1985	Decatur	198⅛
*Roy Metzger	Bloomfield	1985	Davis	186⅞
Bill Waugh	Libertyville	1985	Jefferson	184⅝
*Robert Imsland	Radcliffe	1985	Hardin	181⅞
*Paul Vaughn	Leon	1984		177⅞
Mark Patzner	Boone	1985	Adair	177⅜
Robert Kessel	Fairfield	1985	Jefferson	174⅜
Allen Lex	Dubuque	1985	Jackson	174
Bob Self	Moravia	1968	Appanoose	174
Kenny Becker	Hawkeye	1985	Clayton	169⅜
Dan Christophsen	Mapleton	1985	Monona	168⅞
James Nevins	Bloomfield	1985	Davis	167⅞
*Tom Yochum	Eldon	1985	Wapello	167⅞
Harley Hecker	Blakesburg	1983	Wapello	166¼
Paul Magnusen	Sioux Rapids	1964	Buena Vista	165⅝
LeRoy Urbsky	Shenandoah	1958		164⅞
Howard Tull	Diagonal	1985	Ringgold	163⅞
Carroll Steeve	Clarinda	1985	Page	163⅜
Merlin Erickson	Pomeroy	1985		162⅞
Steven Houg	Booneville	1985	Madison	162⅝
Tom Kelderman	Oskaloosa	1982	Mahaska	162
Rod Bentzwger	Keosauqua	1985	VanBuren	160⅞
Stuart Taylor	Batavia	1985	Jefferson	160⅝
Mark DeVore	Prescott	1985	Adams	160⅜
August Patzner	Boone	1985	Adair	160⅜
Bill Wohlers	Logan	1979	Harrison	160
Riley Jolley	Drakesville	1982	Davis	159⅞
David Dykhuizen	Farmersburg	1985	Clayton	159⅝
Curt Winterfeld	Hawarden	1985	Plymouth	159
*Ralph Stanek	Marion	1985	Linn	158⅛
Bill LaBahn	Hinton	1973	Plymouth	158⅛
Doug Queen	Council Bluffs	1985		158⅛
*Dwain Kilburg	Bellevue	1985	Jackson	158
*Danny Massick	Tracy	1985	Marion	158
John Nelson	Blanchard	1983	Page	158
John Milligan	Jefferson	1984	Greene	157⅝
Ronnie Hoover	Drakesville	1977	Davis	157⅜
*John Story	Bonaparte	1976	Van Buren	156⅝
*Paul Jensen	Hale	1985	Jones	156⅔
Dale Sand	Crawfordsville	1985	Washington	156⅔
Dean Olson, Jr.	Ames	1981	Story	156⅛
*Al Thompson	Boone	1985	Boone	156
Leroy Corbin	Des Moines	1985	Page	155⅞
Gus Krager	Peterson	1964	Clay	154⅜
Dave Woods	Derby	1985	Clark	154⅜
Mike Everts	Gilman	1985	VanBuren	154⅛
Dennis Pettyjohn	Lovilla	1973	Monroe	154
Dave Trumper	Allerton	1985	Wayne	153⅝
David Steeve	Clarinda	1983	Page	153⅝
Ed Kunkel	Bronson	1985	Woodbury	153⅜
Clyde Hull	Boone	1967	Boone	153⅛
*Stuart Stickfort	Garnavillo	1983	Allamakee	152⅝
Joe Kurinski	Oskaloosa	1985	Monroe	151⅜
Luther Hensley	Sidney	1985	Fremont	151⅛
Larry Horbach	Toledo	1979	Tama	150⅞
Gale Oliver	Mondamin	1981	Harrison	150⅞
*LeRoy Everhart	Grundy Center	1976	VanBuren	150⅝
Joe Kurinski	Lovilla	1964	Monroe	150⅝
Norb Bakewell	Dubuque	1985	Allamakee	150⅜
*Lester Lee, Jr.	Des Moines	1985	Dallas	150⅜
Wesley Edwards, Jr.	Fairfield	1985	VanBuren	150⅛
Matt Orton	Shenandoah	1984	Fremont	150⅛
James Trumm	Hopkinton	1985	Dubuque	150⅛
Jim Yates	Humeston	1984	Decatur	150⅛
Bruce Friesth	Badger	1985	Humboldt	150

SHOTGUN NONTYPICAL

(Minimum Qualifying Score - 170 Points)

Name	Address	Year	County Taken	Total Score
	DEER AWARDS			
Chris Vierow	Marathon	1982	Buena Vista	199
Marshall Ruble	Kelley	1985	Wayne	194
Mark King	Villisca	1985	Montgomery	191⅛
Steve Ward	Council Bluffs	1984	Pottawattamie	189⅝
Byran McDowell	Grimes	1985	Union	187⅞
Derwin Allman	Council Bluffs	1985	Pottawattamie	186⅝
Jerry Sickels	Albia	1985	Ringgold	182⅝
Jack Lasley	Red Oak	1983	Montgomery	174⅝
Kendall Kipp	Yale	1985	Guthrie	173⅝
Leo Smith	Red Oak	1978	Montgomery	172⅝
Randy Vanderhoof	Red Oak	1983	Montgomery	172⅛
Randall Miller	Dubuque	1985	Dubuque	170⅝
Daniel Hall	Mt. Pleasant	1984	Henry	170⅛

BOW AND ARROW NONTYPICAL

(Minimum Qualifying Score - 155 Points)

Name	Address	Year	County Taken	Total Score
	DEER AWARDS			
*Bob Harding	Pleasantville	1985	Wapello	229⅛
*Jim Dougherty	Epworth	1985	Dubuque	195⅛
Paul Hughson	Cedar Falls	1985	Black Hawk	184⅞
Gene Sacco	Centerville	1985	Appanoose	183⅜
Jay Schmelzer	Muscatine	1985	Louisa	168
Roy Rath, Jr.	Thayer	1985	Union	164⅛

BOW AND ARROW TYPICAL

(Minimum Qualifying Score - 135 Points)

Name	Address	Year	County Taken	Total Score
	DEER AWARDS			
*Robert McDowell	Ottumwa	1985	Wapello	183⅜
*Ernie Aronson	Davenport	1985		176
Jim Barlow	Fort Dodge	1985	Lucas	172⅛
Robert Stankee	Wheatland	1985	Clinton	172⅛
Richard Cronk	Council Bluffs	1985	Harrison	171⅛
Doug Bonine	Onawa	1985	Monona	167⅞
David Wunnenberg	Burlington	1985	Des Moines	163⅛
Larry Whitson	Albia	1985	Van Buren	162⅛
David Leuchs	Dubuque	1984	Jones	161⅛
Albert Perreault	Long Grove	1985	Scott	159⅛
Larry Sparks	Dunlap	1985	Crawford	158⅛
Jeff Ernst	Dubuque	1984	Jackson	158⅛
Doug Roll	Pacific Junction	1985	Mills	158⅛
Lawrence Hummel	Hamburg	1985	Fremont	157⅛
Ron Burton	Waterloo	1985	Kossuth	156⅞
Ralph Zaehringer	Muscatine	1985	Lee	155
David Forst	Williamson	1985		154⅝
Gary Schoeberl	Waterloo	1986	Black Hawk	153⅞
Rick Ransom	Van Horn	1985	Iowa	152⅛
Charles Kleinschmidt	Kalona	1985	Johnson	150⅛
Jim Matlick	Cedar Rapids	1985	Lee	149⅝
Bob Almendinger	Dexter	1985	Guthrie	147⅝
Glenn Wagner	Donnellson	1985	Lee	147⅜
Scott Bailey	Des Moines	1984	Warren	147⅜
Tom Weigand	Bonaparte	1985	VanBuren	146⅜
Doug Dabroski	Earlville	1985	Delaware	145⅜
John Derifield	Waterloo	1985	Black Hawk	145⅛
Jim Dougherty	Epworth	1979	Jones	145
Ritch Stolpe	Sioux City	1985	Woodbury	144⅛
Ray Waschkat	Waterloo	1985	Des Moines	144⅛
Roger DeKok	Fairbank	1985	Fayette	143⅜
Dale Eeling	Pella	1985	Marion	142
David Schrody	Clinton	1985	Jackson	141⅛
John Mitchell	Council Bluffs	1985	Pottawattamie	141⅛
Ralph Livingston	Guttenberg	1985	Clayton	139⅜
Larry Pace	Griswold	1985		139⅜
Tony Pitzen	Hamburg	1985	Fremont	139⅜
Kenneth Brady	Lost Nation	1985	Clinton	139⅛
Robert Benn	Cedar Rapids	1985	Benton	139⅛
Rodney Kutzler	Sloan	1984	Monona	138⅜
Dan Rhoades	Council Bluffs	1984		138⅛
Mike Adams	Prairie City	1985	Jasper	138
Jim Ash	Ottumwa	1984	Wapello	138
Dennis Loukota	Council Bluffs	1985	Mills	137⅛
Dennis Cooper	Red Oak	1984	Montgomery	136⅞
Ed Albee	Marshalltown	1985	Marshall	136⅛
Richard Milner	Council Bluffs	1972		136⅛
Marc Phelps	Vinton	1985	Washington	136⅛
Mark Walleser	Lansing	1985	Allamakee	135⅝

*new top ten entry

TOXIC WASTE CLEAN-UP DAYS

By Wendy J. Zohrer, Field Information Specialist

What hazardous things are lurking below your sink or in your basement? No, I'm not talking about black widow spiders or other creepy, crawlly things. I'm referring to furniture polish, nail polish remover, paint thinner and much more. Many people do not realize the potential hazards of home chemicals.

The state legislature has become concerned with the amount of toxic waste which is building up as well as the improper disposal of this material in our homes and on our farms. They passed legislation requiring the environmental protection bureau of the Iowa Department of Natural Resources to conduct toxic waste clean-up days in two Iowa counties. Dubuque and Linn Counties were selected for the two pilot sites in Iowa.

According to Pete Hamlin, air quality and solid waste protection bureau chief, the two events cost approximately $80,000. They were partially funded with a $38,000 Environmental Protection Agency grant, and the rest was provided by the Iowa Department of Natural Resources. Various agencies and organizations assisted in the coordination and publicity of the events, but the two days would not have taken place if it hadn't been for local support.

A hazardous waste contractor, A/C Industrial Cleaning from Chico, California, handled some 17 tons of waste material. It was then transported to the Casmalia Resource Area in Santa Barbara, California. Due to this overwhelming response to the clean-up at both sites, all 60 specialized drums in Dubuque and 120 drums in Cedar Rapids were full in 2- ½ hours. All materials were sorted, identified, placed in 55-gallon drums, packed in vermiculite and sealed. Vermiculite absorbs liquids if any container is broken. The contractor also carried overpack drums in case of drum leakage. All drums were checked every two hundred miles along the route.

All toxic materials were taken to the hazardous site except the waste motor oil. It will be used to treat fence posts. This waste oil could also go to a refinery and have the contaminates removed for recycling. A Department of Natural Resources ruling now requires that all waste oil be tested before reusing it. Waste oil can mask other contaminates such as PCBs. In the past, unsuspecting county road departments spread waste oil on roadways to suppress dust. Area residents then became ill from exposure to hazardous chemicals hidden in the oil.

Wendy Zohrer

Waste oil only made up a minor portion of materials brought to the clean-up event. Pesticides and herbicides accounted for 40 percent, and 37 percent was paint or paint products. The other 22 percent was household and automotive products.

Cedar Rapids collected six tons of pesticides and fertilizers as compared to one ton in Dubuque. DDT, chlordane, lead arsenate and 2,4,5-T (an acid herbicide which may contain dioxins) is a sample of a few toxic items brought to the Cedar Rapids site.

Results from these "Toxic Clean-up Days" have been presented to the state legislature. It has been determined that it will cost between $1.5 and $2 million to hold a similar event in Iowa's other counties over a two-year period. It is an expensive endeavor and provides only a temporary solution.

Pete Hamlin, DNR bureau chief, states that an Iowa disposal site is needed. It would be above ground in order to prevent ground water contamination. This site would be available to all citizens, be less expensive and safe.

Education is another key factor in maintaining a safe environment. Educate yourself on the safe disposal of those toxic materials under your sink, in the basement or in that shed out back. If you wish additional information on coping with these potential hazards, contact your local county extension office. For the brochure, "Hazardous Waste, What You Should or Shouldn't Do," write the Water Pollution Control Federation, 601 Wythe Street, Alexandria, VA 22314-1994.

Contamination by some of these toxic materials can and are creating human health hazards, affecting wildlife populations, and impacting the recreational use of certain areas. Learn how to handle toxic materials.

County Conservation Board Feature

Black Hawk County

FOX TOWNSHIP WILDLIFE AREA

Bill Haywood

By Steve Finnegan

As wildlife areas go, the Fox Township area located alongside the new four-lane Highway 20 on the east edge of Black Hawk County is not one of the biggest. Rather, the significance of this 58-acre public wildlife area is how it came into existence. The key was the cooperation of many agencies and individuals working together for a common conservation goal.

A branch of Spring Creek runs through the property from north to south. The creek is fed by a good-sized spring located about one-half mile north. There were once several seeps on the property and old-time residents remember picking watercress from the stream.

Nicholas Ehr owned the land in the 1960s. It seems he and several of his sportsmen friends decided to dig out the seeps to build a pond. Their equipment was crude, mostly farm tractors, an old-fashioned carry-all, and tumblebugs. They were able to dig three small ponds to hold the clear, cold water.

Stocking the ponds was the first order of business. At that time, there was a trout farm located just west of LaPorte City. Trout were stocked, and they did quite well in the cold water. Next came the planting of trees and shrubs for wildlife habitat and, later, a small cabin was built. It was a sportsman's paradise. But after Ehr moved, cattle were allowed to graze the area and, as wildlife habitat, the land soon deteriorated.

In the 1970s, the Iowa Department of Transportation purchased the property as right-of-way along the new highway. The DOT removed fill material from the area for an overpass, enlarging the ponds considerably.

The Black Hawk County Conservation Board heard about the project in 1980 from Jim Gallagher, who was a state senator at the time. He suggested that the property would make an excellent public area, and volunteered his services to coordinate the efforts of the conservation board and the DOT. The DOT wanted to retain ownership in case additional fill was needed for completion of the highway project.

A five-year lease was worked out in 1981 allowing the conservation board to begin reclamation. Money from the habitat stamp fund provided 75 percent of the cost of seedlings and seed for replanting the area.

Native grasses and forbs, because of their ability to thrive in unfertile soil, were chosen to replant the drier areas. Planting was accomplished by using a hydroseeder owned jointly by the Black Hawk County highway department and two other counties. Seedling evergreens and shrubs were planted along the borders to provide cover for wildlife, and a special duck and goose mixture of wetland plants was seeded in the low, wet area surrounding the pond.

The wildlife habitat area hosts pheasants and rabbits and is seasonally visited by migrating waterfowl. Limited fishing and hunting is allowed in the area. Future plans include construction of a structure to control water levels more beneficial to waterfowl populations.

Fox Township Wildlife Area is a perfect example of developing a highway with wildlife considerations. What was once a barren landscape is now a haven for many wild creatures. It took the collective efforts of many, including the Iowa Department of Transportation and the Black Hawk County Conservation Board, to develop such an area.

Steve Finnegan is the director of the Black Hawk County Conservation Board. He has worked for the county board since 1970.

Ron Johnson

DNR Photo

Fingerling fish ready for stocking.

Walleye Research on Large Lakes

By Larry Mitzner and Dick McWilliams

How many walleyes were caught in Iowa last year? There is no way of knowing for sure, but a 1981 statewide survey suggested two million walleyes may have been creeled. That equates to perhaps one million pounds of fillets — a lot of fine eating.

Unlike Wisconsin, Minnesota and Ontario, Iowa is not particularly known for its walleye. It does, however, have a fair share of fertile, walleye-producing water. And indeed, the demand for the glassey-eyed critter in Iowa is great.

There are many possibilities for increasing walleye populations, including stocking, restricting harvest, improving spawning areas and providing better food sources. Determining what is needed for a certain lake is the role of fisheries research.

Presently, walleye research is being carried on in two major areas of the state — Lakes East and West Okoboji in Dickinson County and Lake Rathbun in Appanoose County. Investigations at each area are designed to address specific problems in walleye management.

Walleye in the Okoboji Lakes

East and West Okoboji Lakes are part of a chain known as the Iowa Great Lakes. For years, they have been one of Iowa's premier recreational fishing areas. Both lakes have native walleye populations, and unlike many of Iowa's lakes, have a classic walleye/yellow perch community.

The importance of the walleye sport fishery in the Okoboji's has long been recognized by the Iowa Department of Natural Resources. Walleye fry and fingerlings have been stocked for decades to supplement natural reproduction. In fact, the Spirit Lake fish hatchery, one of the first in the state, is devoted primarily to walleye reproduction.

Studies on the walleye populations during the 1950's and 1960's showed good numbers of these fish were present in the lakes; however, collection of brood fish by the Spirit Lake hatchery in the 1970's indicated a disturbing decline in large walleyes in the lakes. The cause was unknown, but the trend indicated a need to investigate the status of the walleye population.

A research program was started in 1981 to assess the well- being of the adult walleye. Thousands of adult walleyes were captured and marked by fin clipping. Many of these fish were recaptured later for observation. Findings from this study showed growth and condition of adult walleye were good; however,

the numbers of adult walleye were below the desirable population level of 40,000.

Findings also indicated the problem of declining walleye numbers may be related to the survival of young fish. Therefore, a program was initiated in 1984 to determine the contribution of stocked fry and fingerling walleye to the adult population. Presently 3,000 walleye fry per acre are stocked annually in East Okoboji Lake and fingerling walleye are stocked in West Okoboji Lake. Again, fish marking and sampling at later dates will provide some answers. The thrust is to assess the effectiveness of these stockings and to provide answers to how many and what size of fish are required to maintain and increase the walleye population in the Okoboji's. Continued research on Okoboji walleyes could provide enough information to fisheries biologists to make a big difference in the quality of fishing.

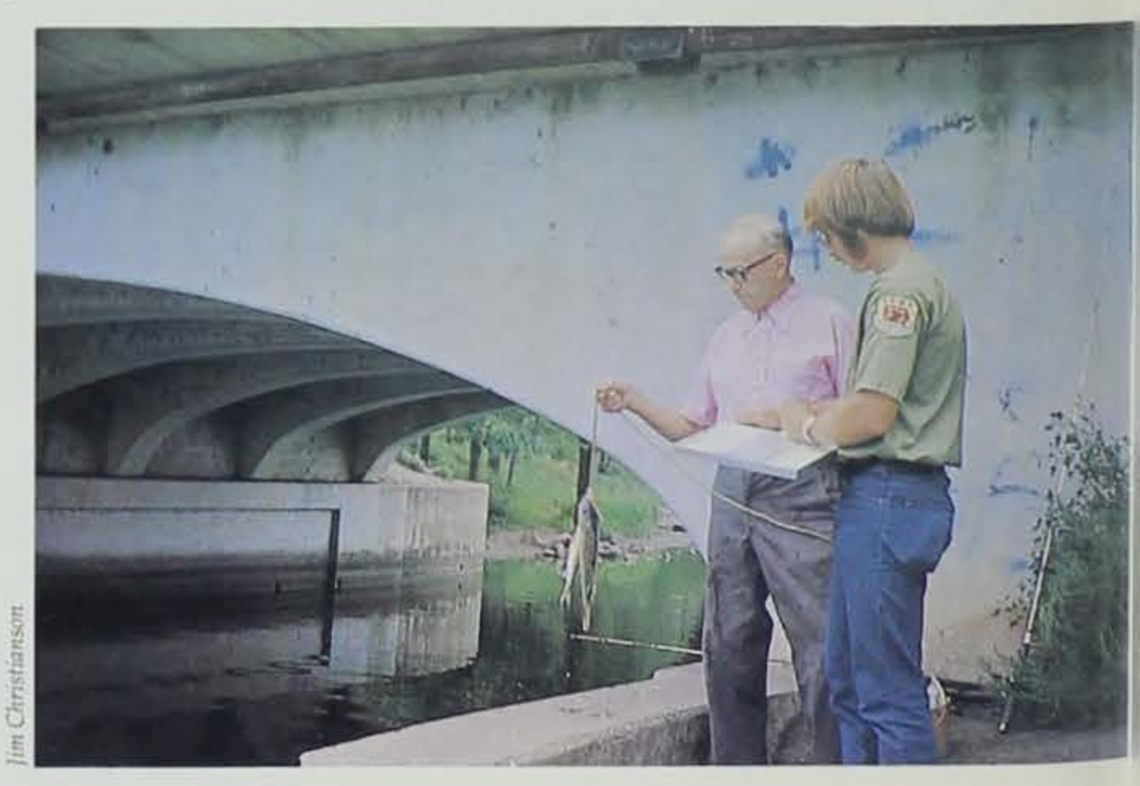
Walleye in Rathbun

Lake Rathbun is a newcomer to the fishing scene particularly when compared with the glacier-formed Okoboji's. The lake was constructed in the 1960's by the U. S. Army Corps of Engineers and impounded in 1969. Fish stocking commenced in 1970. The walleye, too, is a newcomer to southern Iowa and is often overshadowed by channel catfish, crappie and largemouth bass. However, that doesn't belittle the importance of the walleye at Lake Rathbun. A growing number of avid fishermen are hunting ol' marble eyes. Since the fishery began in 1972, approximately 50,000 walleye have been caught.

Walleye research at Rathbun is centered around a combination of problems. Factors which keep walleye from reaching their full potential can be summed up quite simply — sparse natural reproduction and a deficient food supply. First and foremost is the lack of spawning habitat at Rathbun. Any natural reproduction occurs on riprap along the face of the dam, and natural reproduction is woefully lacking. If left to fend for themselves, walleye would soon pass out of the picture. Thus, the population must be maintained by stocking either spring fry or fall fingerlings.

In recent years, the population at Rathbun has been on a downward trend. Recent stockings have simply not been doing the job. During the 14-year history, fry have been used five times, fingerlings have been stocked three times and a combination of fry and fingerlings have been stocked five times. Stocking densities have varied considerably. Fry stocking has normally been at 1,000 per acre, ranging from 800 to 1,500 per acre. Fingerling stocking has ranged from 2.5 to 10 per acre. Research at Rathbun will provide answers to the question of how many and what size to stock.

Ron Johnson



Jim Christianson

Checking anglers' catches, propagating fish in the hatchery, monitoring water quality and sampling fish in lakes are all part of walleye research on large lakes.

DNR Photo

DNR Photo

Another problem being addressed at Rathbun is the walleye-food relationship. Larger walleye have absolutely no problem. Gizzard shad are the mainstay in their diet, and large shad are plentiful. However, small walleye are often faced with near starvation in mid-summer when gizzard shad outgrow the size young walleyes can feed upon. That's the crux of one of the problems at Rathbun — food for small walleye is either boom or bust. There's a boom in early summer, but in many years, a lack of sufficient quantities of food in spring and autumn. Similarly, food for newly hatched and stocked fry is critical to their survival. Again, research can help provide some answers. Stocking the correct number and size of fish should be coordinated precisely with food abundance. The ultimate solution is not necessarily to stock more walleyes, but to introduce new and varied species of minnows. In many years, gizzard shad alone won't fill the bill.

Another potential problem in Iowa's large lakes is overharvest of adult fish by anglers. This has occurred with largemouth bass in some lakes, but has never been documented in the case of walleye. Past records of angler harvest did not support the more restrictive harvest regulation such as reduced catch limits or minimum-length requirements. Still, more fishing pressure and improved methods have the potential to lead to overharvest of walleyes.

Thus, research is zeroing in on stocking strategies and the need for changes in the regulation of walleye harvest. These programs will help provide necessary answers for maintaining and improving the walleye populations in Iowa's large lakes.

Dick McWilliams is a fisheries research biologist located in Spirit Lake. He holds an M.S. degree from Iowa State University and has worked in fisheries research since 1971.

Larry Mitzner is a fisheries research biologist located at Red Haw State Park. He holds a B.S. degree from the University of Minnesota. He has been in fisheries research since 1966.

WALLEYE PRODUCTION RESEARCH

By Alan Moore

A common hatchery problem is the shortage of fertile male walleyes at the peak and latter part of the spring spawning season. Plenty of males are available throughout the spawning season, but males cannot be held long in the hatchery without losing their ability to fertilize eggs.

A possible method to improve this situation employs techniques borrowed from the cattle breeding industry. The idea utilizes cold storage to preserve walleye semen, obtained early in the spawning season, for fertilizing eggs taken at a later date.

In the spring of 1982, a research project was initiated to develop techniques necessary for short-term (refrigeration) and long-term (freezing) storage of walleye semen. This research has led to the development of methods which now allow walleye semen to be refrigerated for 18 days at 33°F and frozen at -196°F in liquid nitrogen. Careful analysis indicates refrigerated semen produces a higher fertility rate than that achieved by semen used directly from male fish. This fact, coupled with successful attempts to store walleye semen indefinitely by freezing, should improve hatchery walleye production.

The storage process begins when semen is taken from sexually mature male walleyes, placed in containers, and cooled in an ice water bath. Care is taken to avoid any type of contamination. Next the semen is mixed with a solution called an "extender." This extender is a mixture of salts, sugars and antibiotics which helps keep the sperm cells alive during the storage process. This mixture is then placed in bottles and stored unsealed in a refrigerator at 33°F. The bottom area of the refrigerator contains water, and oxygen is bubbled through the water into the refrigerator. This aids sperm cell survival. Fertilization is accomplished by simply pouring the contents of the bottle onto about one pint of freshly stripped walleye eggs.

Frozen storage of walleye semen requires the addition of several items to the extender. The chemical dimethyl sulfoxide and protein substances, like egg yolk, are added as freezing protectants. These ingredients help keep ice crystals from damaging the sperm cells. After semen is added to this extender, the mixture is drawn into clear plastic straws, sealed and placed on dry ice for 30 minutes. This freezes the semen and lowers the temperature to -78°F. The straws are then placed in containers and plunged into liquid nitrogen to give a final storage temperature of -196°. The semen can be stored at this temperature for at least 20 years without damage. Close analysis indicated thawing techniques can destroy the sperm cell's ability to fertilize eggs. Experimentation showed straws taken from liquid nitrogen and placed directly into 70°F water produce the best and most active sperm. This rapid thawing reduced ice-crystal damage within the sperm cells.

The refrigeration process has been used to increase walleye fry production, reduce by almost one-half the number of males necessary for spawning, and thus increase hatchery efficiency. The frozen storage process will allow semen to be stored from one year to the next, if necessary, and provide a method for long-term preservation of valuable genetic material.

Similar research projects are also being conducted with muskellunge and rainbow trout. Progress here will hopefully produce similar results — more and higher quality fish at a lower cost.

Alan Moore is a fisheries research biologist located at the Rathbun hatchery. He has a B.S. degree from Iowa State University and has worked in fisheries research since 1975.

The Spring Hole

By Tom Neal

It all started when the boy was nine years old. He wanted to trap. His older brother knew how to trap and caught lots of muskrats, an occasional raccoon, and once or twice a season, that most elusive prize — a mink. The younger boy's desire to trap was fueled not only by watching his successful older brother, but by an old stack of *Fur-Fish-Game* magazines that he read and re-read.

His first trapping season was a disaster, at least financially. With a worn out trap begged from his brother, he went into partnership with a friend who knew less about trapping than he did. Their technique consisted of tying a potato to the pan of the trap and setting it on the riverbank. The total catch for the season consisted of one muskrat, which escaped from the trap at the boy's approach, and the partner's dog, which was released with no small amount of commotion.

The second season went a little better. Sure in the conviction that he didn't want a partner and armed with four brand new traps, the boy sallied forth. Thirty days of hard work yielded four muskrats and a small beaver. The furs brought a total of $4.60, and the boy was hooked.

By his third trapping season, the young trapper was reasonably well equipped and possessed the basic skills necessary to catch a few animals. His family and teacher objected quite strongly to skunks, so he concentrated on the easily caught muskrats. But always foremost in his mind was the mink.

He saw their tracks and places where they had eaten a fish or frog. On two occasions a mink even ate a trapped muskrat, but the mink themselves seemed immune to capture. After several years of not catching a one, it became almost an obsession with the boy. He dreamed of mink in his traps. He read all the old trapping books he could find and stayed awake nights planning elaborate schemes for catching one.

Still the mink eluded him. With dependable regularity, they sprung his traps and left tell-tale paw prints in the mud. They stole his bait, jumped over the traps or went around them. On one frustrating occasion, a trap was frozen and inoperable because of cold and snow.

Exactly in the middle of the trap pan was the delicate track of a mink.

After four years of trapping, muskrats came easy. Even a raccoon was fooled now and then, but never a mink. It no longer mattered to the boy that the mink was the most valuable of all furbearers. All that mattered was that somehow, some way, he must catch one.

It was a cool November day and raining lightly. The pack on his back was pleasantly heavy with three muskrats caught earlier in the day. It was Saturday, so he didn't have to rush back in time for school and he was happy.

And then it happened. The next trap was set where a tiny spring seeped into a hole. The boy had reasoned that a mink might investigate the hole and had placed his trap there. For two weeks, the trap had been untouched. The set seemed undisturbed again today. But wait — wasn't that a bit of fur showing in the water-filled hole? Another muskrat? But muskrats don't have furry tails. Could it really be? It was a mink!

The boy yelled. He jumped up and down. He ran in circles. When he finally regained his sanity, he reverently wiped the mud from the mink and placed it inside his shirt. With the wet fur against his body where it couldn't possibly get dirty or lost, he ran the two miles home to show his folks. His only stops were to admire the mink once again or make sure for the hundredth time that it had not fallen out of his clothes.

Late that night, the boy still sat in the basement admiring the silky fur. This magical creature which had eluded him so long was now his. He had indeed caught a mink.

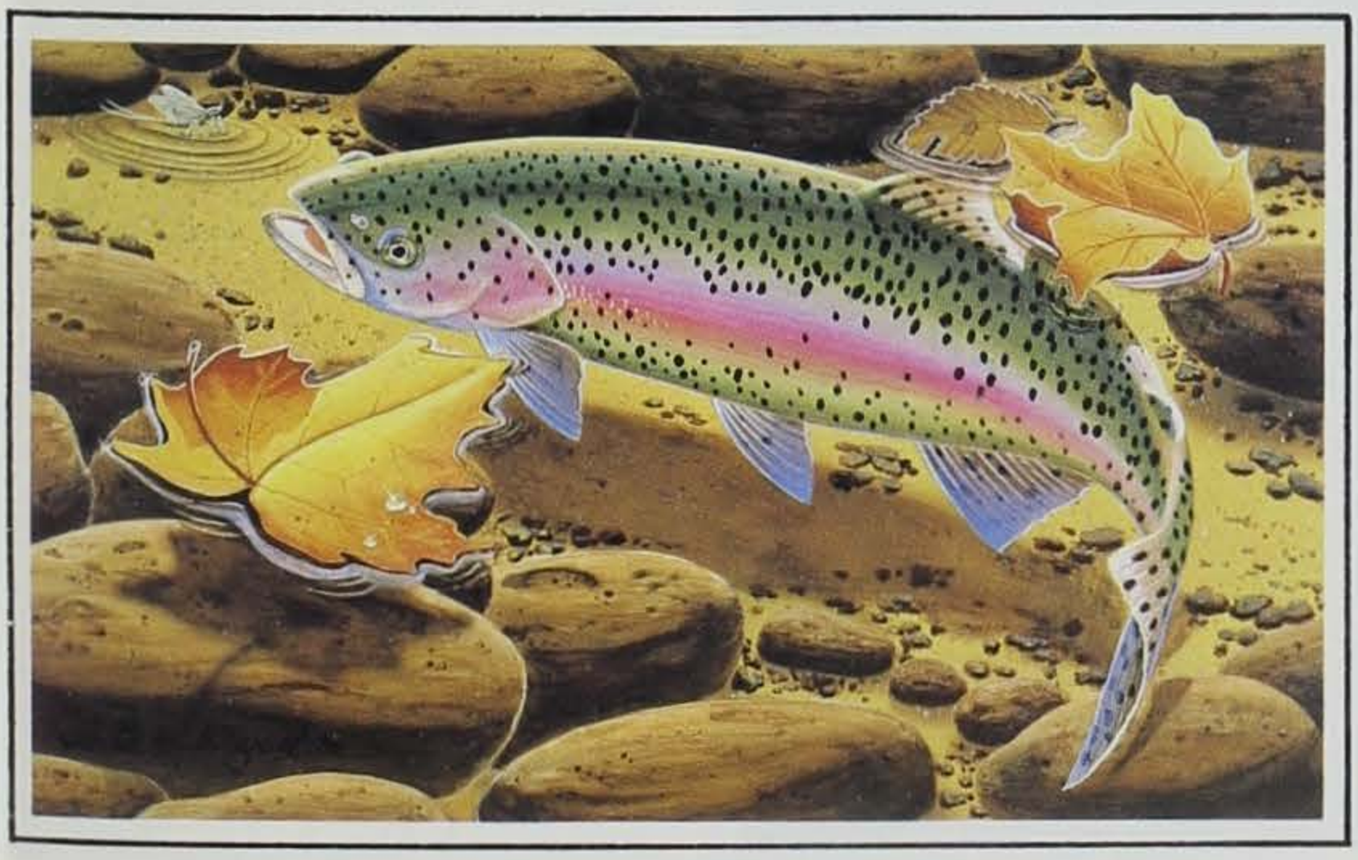
The boy never lost interest in trapping, and has caught dozens of mink over the years. Each one gives him a special thrill, but none stays so vivid in his mind as the one taken from a tiny spring hole those many years ago.

Tom Neal has been a wildlife biologist for the department since 1972. He holds an M.S. degree in wildlife biology from Iowa State University.

1987 HABITAT STAMP — *John Heidersbach of Cedar Falls won the design contest for the 1987 Iowa Habitat Stamp, with a majestic bald eagle above a fog-shrouded river.*

1987 WATERFOWL STAMP — *Heidersbach also won the 1987 Waterfowl Stamp contest with this Canada goose entry. Order both the Habitat Stamp and Waterfowl Stamp prints, individually signed and numbered, from John Heidersbach, 319 Balboa Ave., Cedar Falls, IA 50313. Prices per print: $120 unframed; $200 pencil remarque; $240 color remarque. Add $5 for Waterfowl Stamp and $3 for Habitat Stamp. Prices subject to state sales tax.*

1987 STAMP CONTEST WINNERS



1987 IOWA TROUT STAMP — *Brian Wignall of Johnston won the 1987 Trout Stamp design contest with this beautiful painting of a rainbow trout taking a mayfly in a clear stream. Individually signed and numbered prints are available from Brian Wignall, 6032 Greendale Place, Apt. 206, Johnston, IA 50131. Prices per print: $108 unframed including stamp; $190 remarque including stamp. Prices subject to state sales tax.*

Discover Woodcock Hunting in Iowa

By Greg Hanson

An acquaintance recently told me a story of a "strange" Michigan outdoor writer that he took on an Iowa pheasant and quail hunt last fall. He said they went to an area in southern Iowa that usually has several quail coveys and a few pheasants.

They had scared up a couple of roosters with no luck and had just scattered a nice covey of quail into a brushy draw and were hunting up the singles when the writer's dog went on point. However, the bird that flushed was a woodcock, not a quail. The Michigan hunter quickly emptied both barrels and missed. The unusual thing was what he did next. He called his dog, left the quail, and went after the woodcock leaving my acquaintance somewhat stunned. This story sounds funny, but gives an accurate perspective of woodcock hunting in Iowa and elsewhere.

Outside of Iowa, the American woodcock is a gamebird of significant stature, primarily in states to the north and east. Interest in the woodcock in Iowa has been dormant for many decades, being restricted primarily to ornithologists, conservationists and serious birdwatchers. There are early historical references to woodcock hunting in the state, but sportsmen in recent years have expressed little interest in the species. In Canada, woodcock comprise approximately 50 percent of the annual harvest of migratory gamebirds other than waterfowl. In the eastern United States, woodcock hunting provides over three million hunting days of recreation per year and has increased tenfold in the last 20 years.

Why has this sport become so popular out East? There is increasing awareness of the sporting qualities of the woodcock. Also, unlike many upland gamebird species, woodcock populations have not shown drastic declines over the last 25 years. In fact, in the Midwest the woodcock seems to be holding its own. Since

Jerry Leonard

they are migratory birds, responsibility for their management is a function of the U. S. Fish and Wildlife Service under terms of international treaties with Canada and Mexico. Part of their management includes population surveys which show breeding populations in the Midwest well above the long-term average.

If they are that plentiful and such a good sporting bird, why aren't they hunted by more Iowans? Tradition probably has a lot to do with it. The woodcock is a "shorebird" that lives in the forest. Since most of Iowa is nonforest, the average Iowa hunter usually doesn't hunt forest wildlife. Also, woodcock are migratory, and peak migration through Iowa does not coincide with the period when most of our hunters are afield. Peak woodcock migration through Iowa has been estimated to occur about two weeks either side of October 19. Most Iowa hunters do not go afield until the first weekend of November when pheasant season opens.

Because woodcock occur in woodlands and are most abundant in Iowa in October, most are bagged by grouse hunters. However, a few are bagged by quail hunters in early November and a very few are bagged by those individuals who have *discovered* woodcock hunting.

What are the sporting qualities that so many easterners and so few Iowans are discovering? A description of a typical woodcock flush may be the best way to exemplify them. A chunky, seemingly neckless and tailless, quail-size bird with a dead leaf color and extremely long bill flushed from brushy cover is likely to be a woodcock. This short-legged woodland "shorebird" typically allows a close approach and then explodes with characteristic whistling wings. This habit of allowing a close approach permits some very fine pointing-dog work. Hunters who know where and when to go woodcock hunting can have an excellent warm up for their bird dogs and shooting eyes prior to the pheasant and quail season.

Greg Hanson

When should an Iowan look for woodcock? We have a few locally raised birds that have been around all summer. These are around when the season opens in mid-September. But your best bet is during the peak of the migration. Mid- October is best in Iowa, but try hunting after a good freeze in northern Minnesota followed by a north wind. Woodcock migrate at night so you don't see them coming. You just have to go out and see if they're there.

Where to look for woodcock depends on the part of the state you're in. In general, they like creek or river bottoms. They can be found along all the major river bottoms in Iowa, but they prefer thicker brush with little or no grass cover on the ground. They may be found in southern and eastern Iowa in brushy or timbered waterways. The Missouri River willow thickets are likely spots in western Iowa. In central Iowa, look in woody thickets along the Des Moines River and its tributaries. In wet weather, you can find them in the uplands where you might find quail or ruffed grouse. Once you learn the spots to find them, keep checking and sooner or later you'll have some good hunting. A study in Pennsylvania reported that woodcock hunters flush about one bird per hour of hunting and bag about 40 percent of the birds flushed. Iowa's limited habitat tends to concentrate the birds more, so Iowans who know the spots usually have more flushes per hour, but I won't guarantee anything as to shooting percentage.

If you're an avid bird hunter and are willing to "pioneer" a new species, try a couple of October hunts for American woodcock. You may not end up "hooked" like the Michigan outdoor writer, but you may be pleasantly surprised by some good Iowa hunting that has been overlooked for years.

Greg Hanson is a wildlife research biologist. He holds an M.A. degree from Southern Illinois University and has been with the department from four years.

Bob Mullen

A few of the many different brands of .22 rimfire ammo available.

It's Not All the Same

By Bob Mullen

The .22 rimfire cartridge unquestionably is the most popular cartridge produced today. There are more .22 rifles and pistols being used than any other caliber of firearm. More .22 cartridges are fired by hunters, competitive target shooters, and casual shooters than all other calibers combined. Current estimates of .22 rimfire ammunition used is in excess of five billion rounds. Manufacturers of ammunition have spent more money and time in developing and improving the .22 cartridge than any other.

Unfortunately, some have labeled the .22 rimfire as the "kids cartridge" and underestimate its capabilities and power. The .22 must be treated with the same respect as a large-caliber center-fire cartridge. A bullet from some center-fire cartridges can travel up to four miles when fired; while the .22 rimfire can travel up to one mile. When compared to the center-fire cartridge, the .22 may not seem very powerful, but anyone along its path of flight is in danger. The .22 shooter must make sure there is a safe backstop so the bullet will not ricochet and possibly cause injury. Once the bullet leaves the barrel, the shooter has no control over it.

The .22 cartridge comes in three lengths, .22 short, long and long rifle. We will look at only the long-rifle cartridge, as it is the most popular .22 ammunition sold. Many shooters have the idea that all .22 rimfire long-rifle cartridges are the same, but that is not true.

As the fall hunting season approaches, the hunter too often gets ready by buying a couple boxes of the lowest-priced ammunition. Today's .22 ammunition and rifles are capable of less-than-desirable accuracy. Buying the lowest-priced ammunition may result in the shooter experiencing less than satisfactory results.

The hunter owes it to the game he or she hunts to achieve the best accuracy from the firearm, and the best accuracy always depends on quality ammunition. Getting top accuracy from a firearm makes all shooting more enjoyable, but the hunter's concern should be that game is not wounded, but is killed instantly. The more accuracy the hunter can achieve from the firearm, the less the chance of only wounding the animal.

The best way to achieve the finest accuracy from a .22 rifle is by getting a variety of brands of ammunition and shooting from a solid rest, such as a bench rest, at a paper target. This helps eliminate some of the variables introduced by a willing but imperfect machine (a human being). When doing such shooting, a pair of ear protectors should be worn. A .22 is quiet compared to a shotgun or center-fire firearm blast, but over a period of time even the report of the .22 can cause hearing damage. Shooting from a bench rest will indicate which brand of ammunition gives the best accuracy for a particular rifle. Just because one rifle is accurate with a certain brand of ammunition doesn't mean another rifle will achieve the same accuracy with the same brand of ammunition. It's a matter of compatibility between the individual firearm and ammunition. Two barrels from the same drilling and rifling machine, even given the same lot of steel, can vary minutely and shoot differently with the same ammunition.

Ammunition will vary between manufacturers from a velocity of 1120 feet per second (fps) to 1600 fps. One brand of ammunition may shoot exactly on the bull's-eye without having to make any adjustments on the sights. Using another brand of ammunition may result in a completely different point of impact, and may be as much as a couple of inches different than the first brand. It is critical that once hunters or shooters adjust their sights for a particular type of ammo, they stay with that brand to maintain their point of impact.

In addition to differences in veloc-

ity between brands of .22 rimfire ammunition, the shooter has a choice of either solid or hollow-point bullets. Hollow-points have a cavity in the tip that caused the bullet to rapidly expand when it strikes an object. One group of hunters feel hollow-points are best for hunting small game. These hunters feel that the hollow- point bullet causes more tissue damage and will result in less wounding. A misplaced shot with hollow-points, however, can cause excessive damage and spoil a greater amount of meat.

Normally, standard-velocity .22 ammunition gives superior accuracy than the high-velocity cartridges. The real accuracy buffs often use standard- or low-velocity ammunition, using a 40-grain solid bullet at a velocity of about 1150 fps. This ammunition may be referred to as target or match ammunition, and has the additional advantage of not being as loud as the high-velocity ammunition.

Most hunters try for head shots on small game. Head shooting does not require hollow- point bullets, nor does it require the use of high-velocity ammunition. But again, the most accurate load may be either high velocity or standard velocity, using either a solid or hollow-point bullet. Let the gun make the decision.

Therefore, .22 rimfire ammunition is not all the same due to a difference of velocity and bullet types between different brands. Variations also exist in what is referred to as trajectory and wind-deflection abilities of different .22 bullets.

Trajectory is best explained as the path of a bullet in flight. Once the bullet leaves the barrel, it begins to lose velocity and fall toward earth. High velocity .22 ammunition will have a flatter trajectory, or flight path, than standard or target ammunition. But what is gained with a flatter trajectory of the high-velocity ammunition is often lost to the superior accuracy of standard-velocity loads. If a rifle was sighted in to shoot exactly in the bull's-eye at 50 yards, the standard-velocity bullet would strike almost 6-¼ inches below the bull's-eye at 100 yards. Take the same rifle and use high-velocity ammunition sighted in to hit the bull's-eye at 50 yards. Using high- velocity ammunition, the bullet will strike only 2-½ inches below the bull's-eye at 100 yards.

So how can standard-velocity ammunition be generally more accurate? Hunters often fail to take into account the affect wind can have on the bullet. A 20 mph cross wind could move the bullet 2-½ inches from its intended target. It would naturally seem that high velocity .22 ammunition would be less affected than standard velocity, but the opposite is true. This is due to a sharp increase in air resistance that occurs at velocities near the speed of sound. A standard-velocity bullet, traveling at 1150 fps, will be affected about 1/3 less by the wind than a high-velocity bullet traveling from 1300 to 1600 fps.

The hunter or shooter using a .22 rimfire rifle can only achieve the best accuracy from a firearm by trying several types of ammunition. A hunter must spend time target shooting to find his or her own personal limits as well as the limits of the firearm. Practice can definitely pay off with more game in the bag; but more importantly, it shows respect for the game by ensuring an instant kill.

Safety with the firearm must be foremost in any hunter's mind. Being completely familiar with a firearm, from time spent target shooting, can help prevent a hunting accident.

A safe firearm handler always watches where the muzzle is pointed. The safety is kept on until ready to fire. Being absolutely sure of the target, and what is behind the target, are practices that can prevent a hunting accident. There is much to this sport of hunting, but it can provide a lifetime of enjoyment if practiced in a safe and conscientious manner.

Bob Mullen has been a conservation officer since 1971. He graduated from Northwest Missouri State University with a B.S. degree.

Bob Mullen

Bob Mullen

Use a steady rest, such as a bench rest when finding what is most accurate ammo for your rifle. Always use hearing protectors when target shooting. The can on the left had been shot with a .22 rimfire standard velocity ammo and on the right with .22 rimfire high velocity hollow point. Standard velocity causes less damage to the meat of a game animal.

Bowhunters' Rendezvous

Shooting At Its Best

By Randy R. Edwards

On July 26-27, 1986, the third annual Bowhunter Rendezvous was held in Linn County. This event is sponsored each year by the Waltonian Archers of Linn County, and is held at their 80-acre club grounds along the Cedar River west of Toddville.

The Bowhunter Rendezvous is an exciting and challenging event. This year, 50 life-size animal targets were used on the shooting course. Most were handmade by club members.

Shoot chairman Jim Mahan explained that the shoot provides bowhunters an opportunity to get some practice shooting at lifelike animals in simulated hunting conditions. The 3-D targets are set up in various terrains and positions to simulate a wide variety of game species including white-tail and mule deer, cougar, moose, turkey, several species of bear and sheep, and mountain goat among others. The maximum shooting range is 40 yards, but tough angles and animal positions make the shooting a real challenge. This encourages concentration on the part of the bowhunter who learns to take only the proper shots. Sportsmanship and safety are an important part of this event.

The course of 50 targets takes about 3-½ hours to complete. Trophies are awarded to the top shooters, but most people just come to the rendezvous for the enjoyment and practice of shooting at the 3-D targets.

On Saturday evening a hog roast is held, and afterward a guest speaker presents a program. This year's guest was Cal Coziah, renown bowhunter from Idaho. He provided some insight into his hunting skills and successes. In 1985, Coziah put eight animals into the Pope and Young record book. Past speakers have included turkey expert Ray Eye and deer hunter Roger Rothaar.

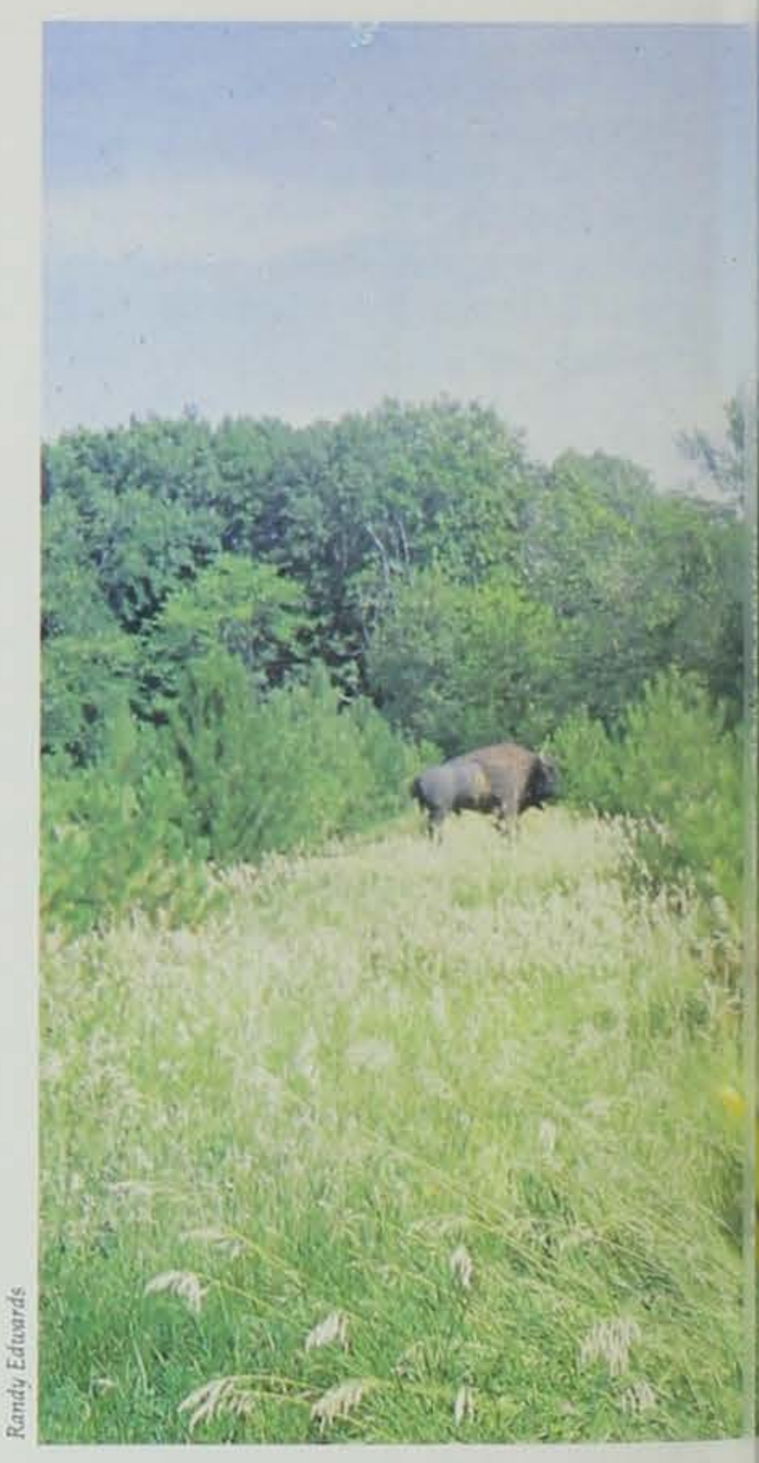
Many displays are spread around the club grounds during the event. Archery equipment, hunting supplies, taxidery, wildlife art and a multitude of other interesting exhibits interest visitors.

By late Sunday, over 1,264 shooters had been through the course. People of all ages and from nearly a dozen states participated. Jim Mahan recruited two other local archery clubs — the Northeast Iowa Bowhunters from Oelwein and the Anamosa Bowhunters from Anamosa — to lend a helping hand with the rendezvous.

The main attraction, of course, is the incredibly lifelike targets. The animals are carved from large pieces of styrofoam. Special foam inserts are placed in the vital area so they will stand up to a great deal of shooting. Various amounts of glue, paste, burlap, artificial fur and even real antlers make for very realistic targets. Though many of the club members spend a great deal of time creating these critters, Jim Mahan's wife, Chris Jamason, does most of the final "detailing." She is particularly proud of the new 11-foot tall Kodiak bear. But the best was the black bear the club made. This bear was almost *real*. The club constructed this bear to be raffled off at the rendezvous, with all of the proceeds to be donated to T.I.P. of Iowa. (T.I.P. is the Turn In Poachers program developed and citizens in cooperation with the Iowa Department of Natural Resources to help curb poaching by offering rewards for information leading to arrests for violations of Iowa's fish and game laws.)

The result of the club raffling this 3-D bear target will mean a $550 donation to T.I.P. by the group. In addition to promoting conservation and sportsmanship, the club also puts its money where it counts. Our hat is off to the Waltonian Archers of Linn County.

Randy Edwards is a recreation safety officer for northeast Iowa. He has been with the department since 1975.



Randy Edwards

Randy Edwards

Fifty three-dimensional life-size targets were a part of a shooting course set up by the Waltonian Archers of Linn County this summer. Shoot chairman, Jim Mahan and wife, Chris Jamason, stand with one of their targets — an 11 foot Kodiak bear. Displays were set up around the grounds including some very nice taxidermy work.

turn in poachers

TIP UPDATE

Law enforcement officials of the Department of Natural Resources are impressed with the results of the one-year-old Turn in Poachers (TIP) Program.

TIP offers rewards to persons who call a toll-free number (1-800-532-2020) with information that leads to the arrest of a person on charges of poaching Iowa's fish and wildlife.

While the rewards may be attractive and range to $1,000, the key to success of TIP is that callers can remain totally anonymous!

Records indicate that from September, 1985 to August, 1986, 877 calls were received resulting in 222 citations being issued. Of those cases, 57 rewards were approved amounting to slightly more than $10,000.

The TIP hotline is operated in cooperation with the Department of Public Safety which monitors the line outside of normal office hours and on weekends/holidays. During normal office hours, the calls come in on a special line in the law enforcement bureau of the DNR.

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