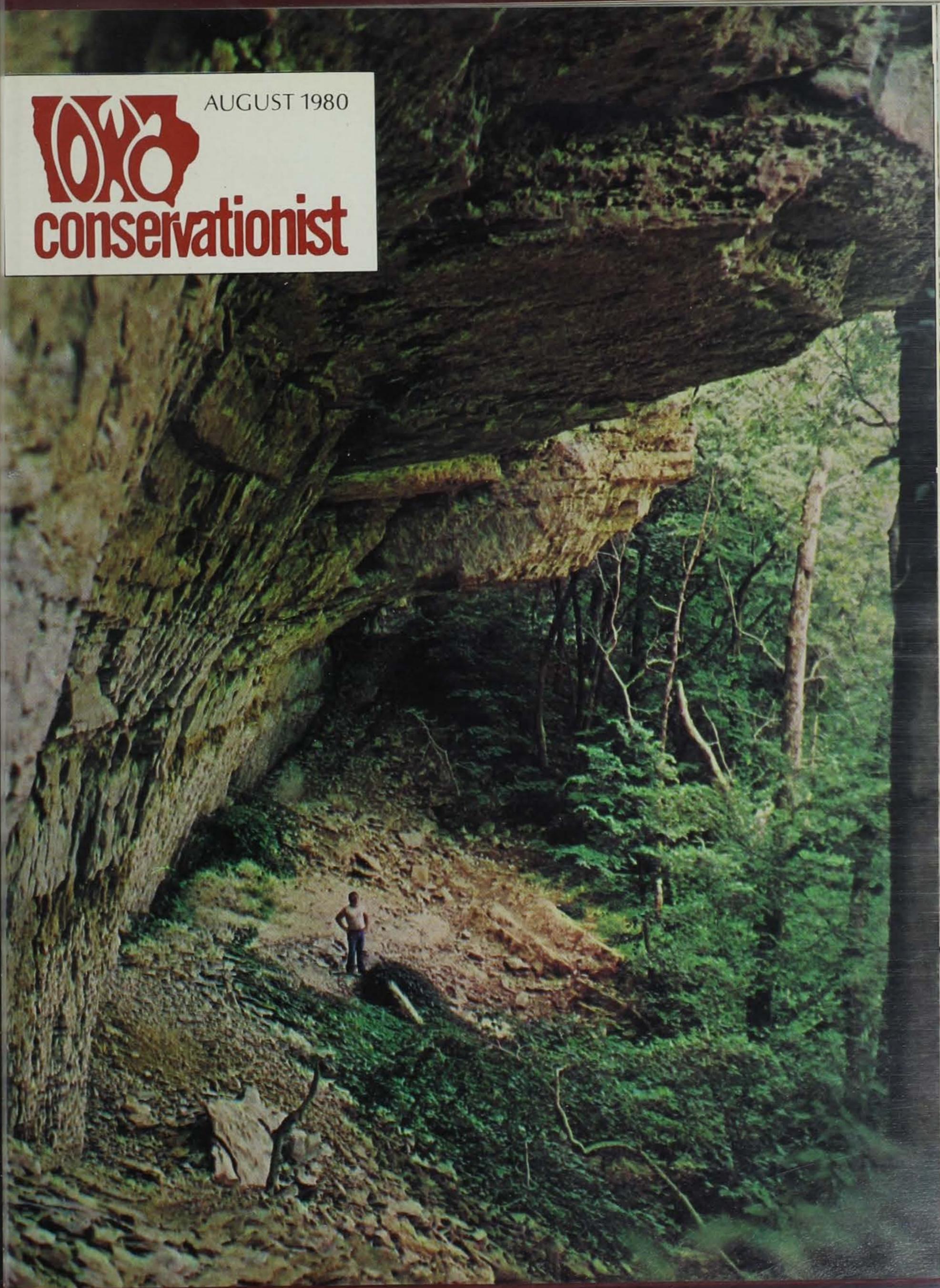




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Cover Story

Des Moines County's
"Grand Canyon"

by Don Simonson

STATE CONSERVATION OFFICER

Photos by Pat Ricks & Don Simonson

DURING THE 1840'S, when John Tyler was President, the Mason family of Burlington acquired some property under the Homestead Act. This piece of land lies just north of the present Burlington city limits. Over the years the land was sold and handed down to various people including the Dunn family who obtained the property around the turn of the century.

In May of 1973 the Iowa Conservation Commission took the first steps to acquire this beautiful property from Herb & Alice Dunn. Both the Duns and the State of Iowa were keenly aware of the value of this area and that it should be preserved for the people of Iowa for aesthetic and scenic reasons.

In August 1974, the State and the Duns reached an agreement, and deed was given to the State Preserves Board, with the payment appropriated from the Open Spaces Act. In July 1975 the State of Iowa entered into an agreement with the Des Moines County Conservation Board for them to manage the 142 acre park-preserve, known as Starr's Cave.

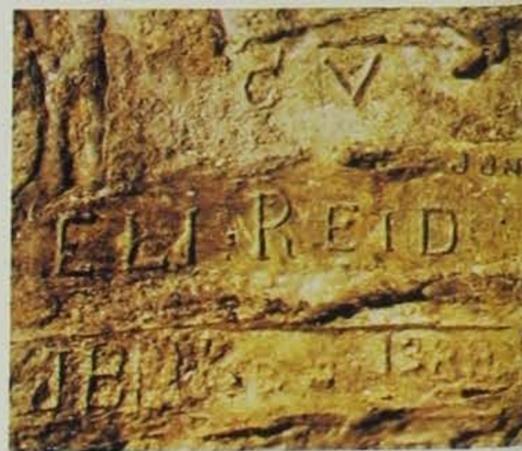
On the area, which is bisected by Flint Creek, are large limestone bluffs, beautiful timbered woodlots, the cave itself, and some old buildings about which there is much controversy concerning their original use. The old house was built in approximately 1860. Not too far away is the remains of an old Trading Post, which was later used as a winery and horse shoeing parlor. There is also an old barn that was converted into a night club in the early 1970's. The county conservation board now has plans to convert it into a nature center and museum.

There is an overlook which is reached from Irish Ridge Road, where one can see the beauty of the area from approximately 200 feet above Flint Creek. You can follow the well-established trail to the cave and it will take you through a

cave-like overhang called the Devils Kitchen. Rumor has it the James Gang spent a few nights here and that certain slaves knew the area well during the Underground Railroad days. Following the trail on down to the Flint you will see Starr's Cave, and with the help of the stairs which have been constructed you can actually go inside and see some of the old carvings that were surely made by some of the area's early settlers. Let your conscience be your guide about exploring the far reaches of the cave, as it gets rather narrow the further you get from the opening. Some local residents had to be rescued a few years ago when they became wedged into the small area at the rear of the cave.

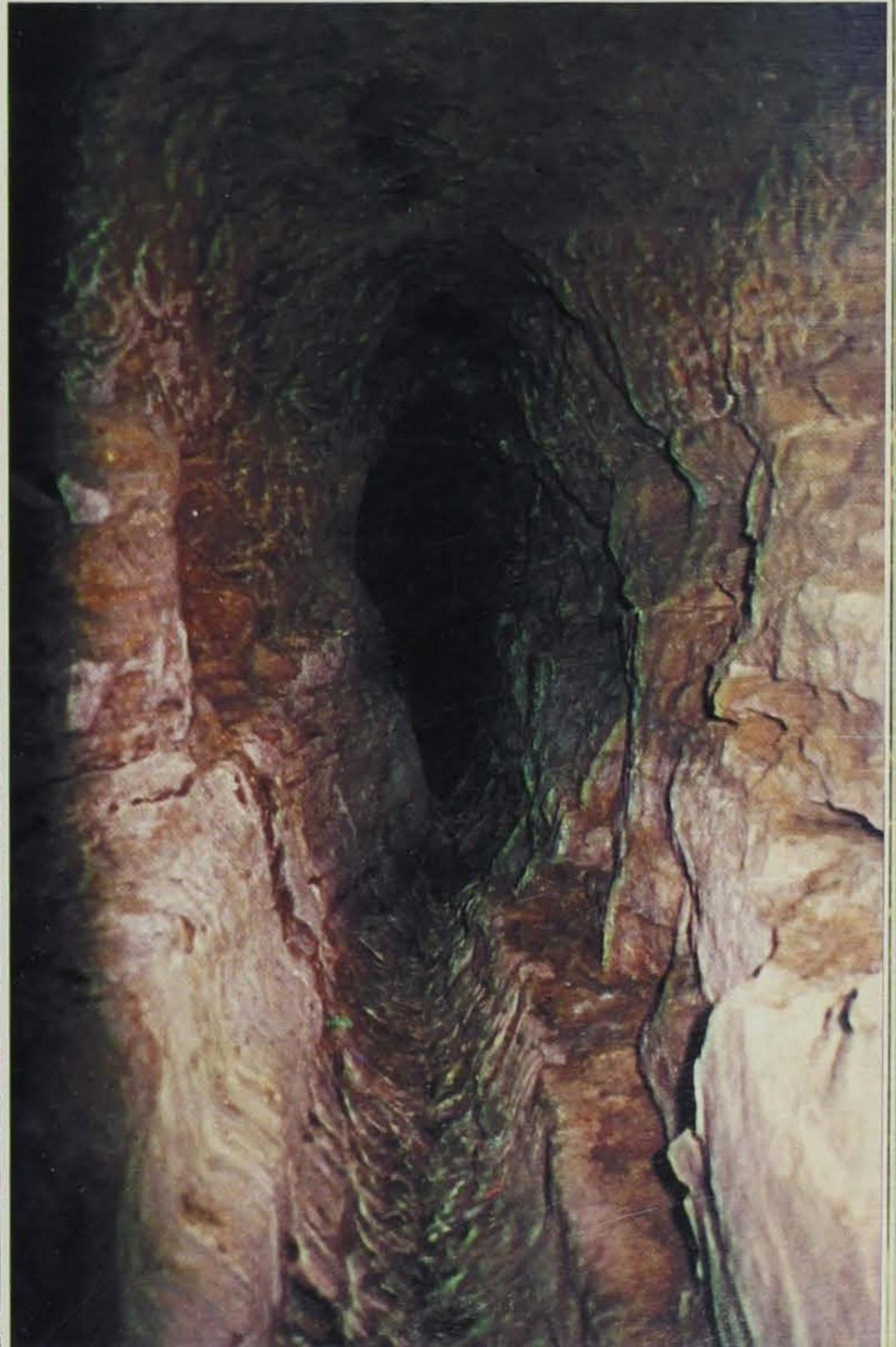
Former owner, the late Herb Dunn, took with him many memories and much history of Starr's Cave, but I'm sure he would agree that you should see it for yourself. The area is a State Preserve, and has a limited use including picnicking and nature hiking. As stated previously, the old carvings in the cave are very interesting, but to add any additional name carving would be a violation of law. Beautiful areas are to be admired, not abused. You will enjoy Starr's Cave. □

Names carved in cave wall.





Above: Old trading post; Right: View of Flint Creek from mouth of Starr's Cave; Below: Main entrance to the cave; Below, right: Looking back into far reaches of the cave.



Restoring Iowa's Woodlands at Lake Red Rock

by Larry Johnson, Park Ranger, U.S. Army Corps of Engineers, Lake Red Rock

EVEN THOUGH 1980 has been proclaimed by Governor Robert Ray as the year for the "Plant Iowa Program," tree planting and reforestation activities are not new at Lake Red Rock. Many people think the U.S. Army Corps of Engineers is primarily a dam construction agency. Actually, this is just a part of the overall commitment of the Rock Island District to total resource management.

The Corps of Engineers manages over 50,000 acres of land at Lake Red Rock, in addition to the 10,000 acre lake. As a government agency charged with managing public land, the Corps of Engineers has an obligation to manage the public's land and resources to get the greatest benefit for the greatest number of people.

In its eleven year history, many changes have taken place at Lake Red Rock, but perhaps the longest lasting and most beneficial changes are the reforestation activities currently underway.

In accordance with the Plant Iowa Program, and in conjunction with the Marion County Plant Iowa Committee, a Children's Forest has been established at Red Rock. A six acre plot in the Whitebreast Recreation Area was selected for the project. The tract was mowed prior to planting to give the bare-root saplings a better start. Various species of trees and shrubs native to Iowa were planted, with the emphasis on wildlife habitat. Every school district in Marion County enthusiastically participated. The goals set by the committee included: to plant trees and shrubs native to Iowa, to restore and maintain the natural beauty of the area, and to have every fourth and fifth grade student plant two trees. The trees were purchased from local nurseries by the students, who raised the funds through various "odd jobs" at home and in the neighborhood. The children's families were encouraged to become involved, and to visit the site often through camping trips and picnic outings to witness the growth of their forest.

In addition to the Children's Forest, reforestation and restoration of Iowa's once vast forests have been a continuous program at Lake Red Rock. In the spring of 1979, 150,000 seedlings of various species were planted on 190 acres of Corps managed land. Species ranged from Black Walnut and Shagbark Hickory to Autumn Olive and the fast growing Hybrid Poplar. A unique method of pre-planting site preparation was used, with excellent results. During the fall of 1978, the areas to be planted were strip sprayed with Roundup brand herbicide to control annual weeds that also compete with the new seedlings. The use of simazine is not recommended for certain tree species, so the label must be carefully read.

The spring of 1980 was also active. Lake Red Rock's commitment to the Plant Iowa Program was to reforest 140 acres of Corps managed land with 60,000 seedlings of various species native to Iowa. The objectives for species selection ranged from fall color and nut and berry production to timber and wildlife management. Some of the more unique species selected were Butternut, Serviceberry, American Filbert and Tamarack. All but Tamarack are native to the area but are rarely found. An 18 acre experimental plantation of Black Walnut and Autumn Olive has been set up as well. Autumn Olive, when interplanted with Black Walnut, stimulates height growth, causes natural pruning, minimizes wind damage, fixes nitrogen in the soil, and is beneficial to wildlife. Hopefully, this

plantation will produce a valuable timber resource in the years to come.

Reforestation activities at Red Rock have traditionally been a community affair. Several volunteer groups and organizations have contributed their time and labor to plant trees for the benefit of the public. Examples of such groups are the Izaak Walton League, the Boy Scouts and Girl Scouts, and college groups.

Even though many people still believe the Corps of Engineers only builds dams, all it takes is a trip to Lake Red Rock to learn otherwise. The management staff at Lake Red Rock is enthusiastic and optimistic about the Corps' total commitment to natural resource management. So come out to Red Rock and get in on the action! □



A Corps Ranger mows the Children's Forest area near Whitebreast Campground.

Reforestation is an active program at Lake Red Rock.



CAGE-REARED CATFISH

by Stephan C. Derman

EXECUTIVE OFFICER, LEE COUNTY CONSERVATION BOARD

WHAT HAS a tail, needs a shave, swims, and gets a lot of people excited? No, the answer is not Mark Spitz. It's the cage-reared channel catfish. That's right, the one that fights like a champ when hooked and tastes delicious when cooked.

The catfish cage-rearing program in Iowa originated in 1970 as a cooperative effort between the Fisheries Section of the Iowa Conservation Commission and participating County Conservation Boards. The state agency provides all technical assistance plus the starter fish, while the counties provide the confinement cages and ration food to the caged fish daily. County cage-rearing lakes are fairly evenly distributed throughout the state. If an individual has a pond or lake on his or her property they can also raise catfish in confinement. However, it is suggested that those interested contact the Fisheries Biologist in their area, and after evaluating the pond, he will be able to tell you whether or not it is suitable for catfish cage-rearing.

There are several advantages to temporarily caging channel catfish as opposed to the general stocking method of releasing fingerling catfish 2-3 inches in length into an open pond or lake. The most important reason is that general stocking of small fish leaves them wide-open to predation from any larger fish which may already be present in the water.

A cage-rearing program in Iowa normally begins in May with the fingerling catfish placed in a specially designed cage. The cages are then left anchored and suspended in the lake or pond in which the young fish will be released the following September. During this "caged" 3-4 month period the catfish are fed a pelleted ration daily. The ration is usually a dry, floating type which the small fish can easily see and consume, and it is specifically manufactured for cage-reared catfish. Due to their confined quarters, the caged catfish will not have the opportunity to supplement their diet with any natural foods that the lake or pond might otherwise provide. Because of this, it is

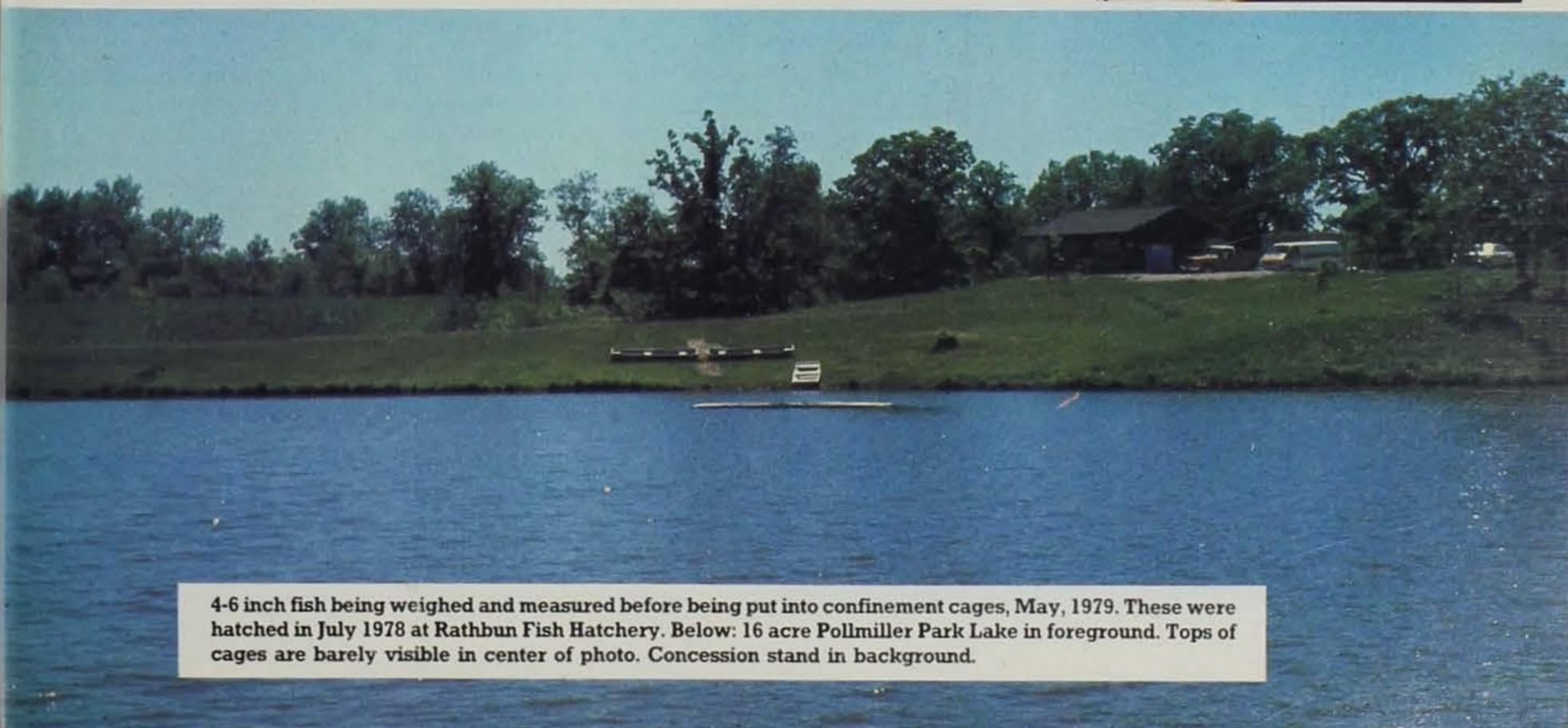
extremely important that the ration used is high in protein content; 36% protein or higher is best. There are catfish rations on the market designed for pond-reared catfish which have a considerably lower protein value; these should definitely *not* be used for feeding cage-reared catfish. The pond-reared catfish need less protein in their ration because they are able to supplement that diet with natural protein which they consume while having access to the total area of the pond. On the average, cage-reared catfish will gain weight 4-5 times faster than catfish of the same age that were produced naturally in Iowa's rivers and streams. This incredible weight gaining ability produces larger, catchable size fish in a relatively short period of time, thus providing sport-fishermen with more hours of angling success and heavier stringers!

The Lee County Conservation Board began their catfish cage-rearing program in 1979 at Pollmiller Park Lake. Two 4' x 4' x 8' cages were used in the 16 acre man-made lake and 1,800 4-6 inch Channel catfish, 900/cage, were placed in the floating cages on May 22 at a combined weight of 104 lbs. On September 25 the same group of caged catfish were weighed and released into the lake. Total weight of the fish after 16 weeks was 764 lbs. 1,200 lbs. of the pelleted 36% protein cage ration was fed during the confinement period. Mortality during that time was less than one-half of one percent. 660 lbs. gained compared to 1,200 lbs. fed figures to be, roughly, 1 lb. of fish gained for every 2 lbs. of ration fed. These figures easily indicate a successful program and one we hope that we can duplicate this year on our second batch of cage-reared channel catfish.

Past studies of catfish cage-rearing programs in Iowa have shown that 90% of the cage-reared fish are caught by sport-fishermen within the first 3 years following their release. These encouraging statistics prove that the catfish cage-rearing program, as we know it in Iowa, is providing the angler with many hours of fishing enjoyment! □



A nice-sized fish ready for release



4-6 inch fish being weighed and measured before being put into confinement cages, May, 1979. These were hatched in July 1978 at Rathbun Fish Hatchery. Below: 16 acre Pollmiller Park Lake in foreground. Tops of cages are barely visible in center of photo. Concession stand in background.

Birds are for the Birdwatchers



By Jim Zohrer

WILDLIFE MANAGEMENT BIOLOGIST

PHOTOS BY THE AUTHOR



IOWA OFFERS A VARIETY of outdoor activities for nature lovers, but none can be more rewarding than observing the array of birds that can be seen in our state. Birdwatching can be an unending educational experience. The correct identification of a bird is only the first step. Studying the habits and migratory status of a bird can add greatly to the bird watching experience. Although many people travel the country to observe birds, you can stay right at home and enjoy this activity. Iowa is a great place to watch birds because of its geographic location and variety of habitat types. We are in a zone of overlap between Eastern United States and Western United States bird species. We are also on the border of two great waterfowl travel routes, the Mississippi Flyway and the Central Flyway. Waterfowl using these flyways differ in their species composition, abundance, and their breeding and wintering ground usage. There is some overlap in these flyways and so we get to see birds from both.

The mid-continent location of Iowa also means that we are crossed by birds that migrate to northern breeding grounds and to southern wintering areas. As a result, we can see a variety of birds in the spring and fall that do not actually nest in our state.

The diverse habitat in State and County parks, forests, preserves and wildlife management areas offers the potential for viewing a variety of unusual birds. You need not travel outside of town to birdwatch, however. Back yard bird feeders and ornamental trees and shrubs attract a large number of birds for your viewing. With the addition of several bird feeders, bird baths and tree and shrub plantings, a back yard can in fact become a real bird sanctuary.

How do you get started in serious bird watching? First you will need two basic equipment items: a good pair of field glasses, and a bird identification book. Two of the better bird books are *Birds of North America* by Robbins, Bruun, Zim and Singer, and *A Field Guide To The Birds* by Roger Troy Peterson. You should learn to use both your field glasses and your book before you go out to look for birds. It is a good idea to study your book beforehand to learn where the different groups of birds are found in the



ght: goldfinch; above: red-tailed hawk.

ok, and what identification marks you should look for when you see a bird. You may want to mark the pages in your book with tabs for the individual groups of birds such as ducks, owls, sparrows, warblers, etc. You may only have a few seconds to see a bird, and if you spend half of your time in the field thumbing through your book you will miss a lot of birds. Learning to use your field glasses is also critical. Nothing can be more frustrating to a beginning bird watcher than to see an unusual bird in a tree top, and then not being able to find it through the field glasses. The technique that I have found most useful is to fix your gaze on the bird, and then move the glasses to your eyes without moving your eyes off of the bird.

It is a good idea to take your first few bird watching trips with experienced bird watchers. They can point out how a bird's flight, its movements in the trees, its habitat preference, or its song can all aid in correct identification. The same bird will look

different at different times of the year, and an experienced observer can help you with this problem also. There are many amateur bird watchers around. Your local chapter of the Audubon Society might be a good place to find expert bird watchers who would be willing to help you.

Where should you look for birds? Areas that have the greatest diversity of habitat types will have the greatest variety of birds. Locations that have water, grasslands, shrubs and trees in close proximity offer good viewing. The edges of a cover type, such as the edge of the woods, will also have more birds than the center of that cover type. Marsh areas offer the greatest variety and abundance of individual bird species. Natural or man-made marshes would be a good place to start your bird watching activity.

When is the best time to look for birds? Birds are most active and most easily seen during the first hour or two after sunrise, and again around sunset. Periods of spring and fall bird migration also offer the best chances to see birds. April and May are probably the best months to observe birds since they are in their most colorful plumage, and will be most actively singing. At this time of the year the leaves on the trees are not yet fully open and it is easier to see the many small birds that move through the tree tops.

Over 350 species of birds can be seen in Iowa, with approximately 190 of these being fairly common. Many bird watchers compile what they call "life lists" of the birds that they have seen in their lifetime. A good number to strive for is 100 species at first. Later you may reach 200 or even 300 species. I have seen 251 species so far, and I hope to see a few more this year.

Watching wildlife has always fascinated man. Whether you are a hunter or a non-hunter, an urban or a rural dweller, bird watching can be a very rewarding and educational experience. You live in a good state for this activity, and there is no better time to start than today. □



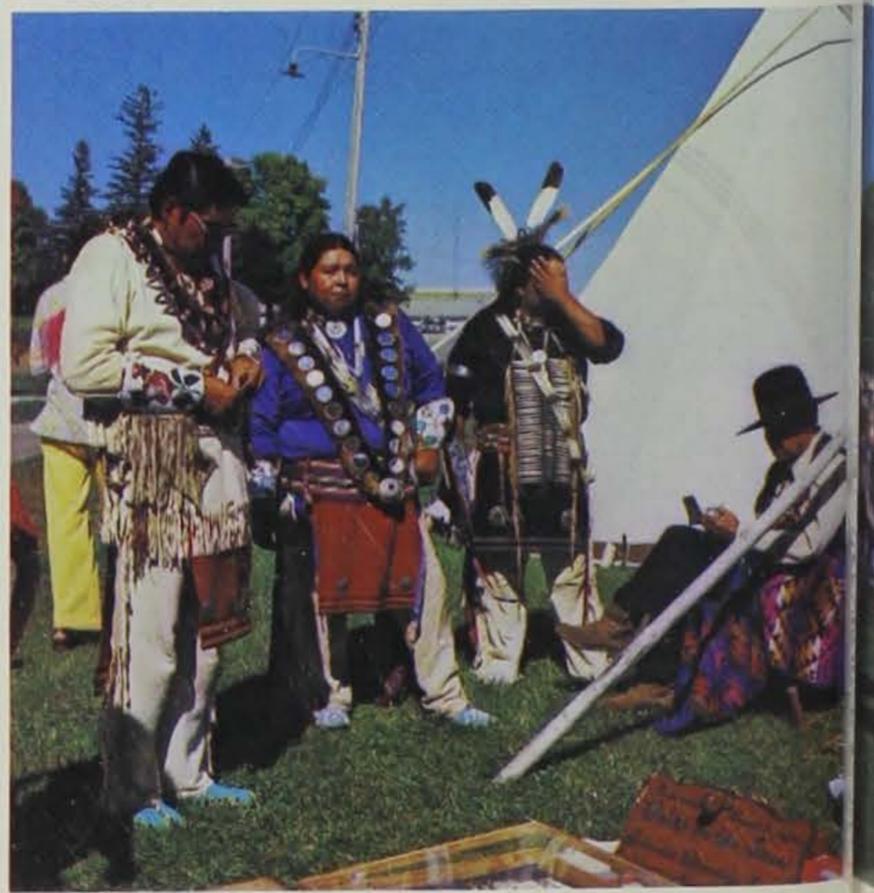
Ft. Atkinson – A Look at Frontier Life

Photos by Ron Johnson

EVER WISH YOU COULD JOURNEY BACK through time to see what life was like in frontier times? If so, do not miss the third annual Fort Atkinson Rendezvous on September 27-28, 1980!

Fort Atkinson, which is located in northeast Iowa, 14 miles southwest of Decorah on Highway 24, was one of the few forts built to protect Indians from each other. The soldiers were stationed there to protect the peaceful Winnebago tribe, which had been settled by the government in the middle of a 40-mile neutral zone between warring tribes.

Originally, a "rendezvous" was when frontiersmen and trappers would gather at a place like Ft. Atkinson to sell their furs and trade supplies, and to socialize. The Iowa Development and Iowa Conservation Commissions revive the event annually, with the cooperation of the Fort Atkinson community, to give Iowans an opportunity to visit the fort and see what life was like for people in the 1840's. There is no admission charge.



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yle McGonigle, marketing and sales coordinator for the
Travel Development division, attributes the popularity
of the Rendezvous to its uniqueness. "The Rendezvous
captures the romance that goes along with the frontier fort.
People can see, smell and hear what life was like in
the 1840's."

More than 250 persons will re-create the life of buck-
skinners, blacksmiths and craftspeople, dressed in the type
of clothing that was worn 140 years ago. Mesquakie
Indians from the settlement near Tama will also re-create
the lifestyle of Indians in the mid-1800's.

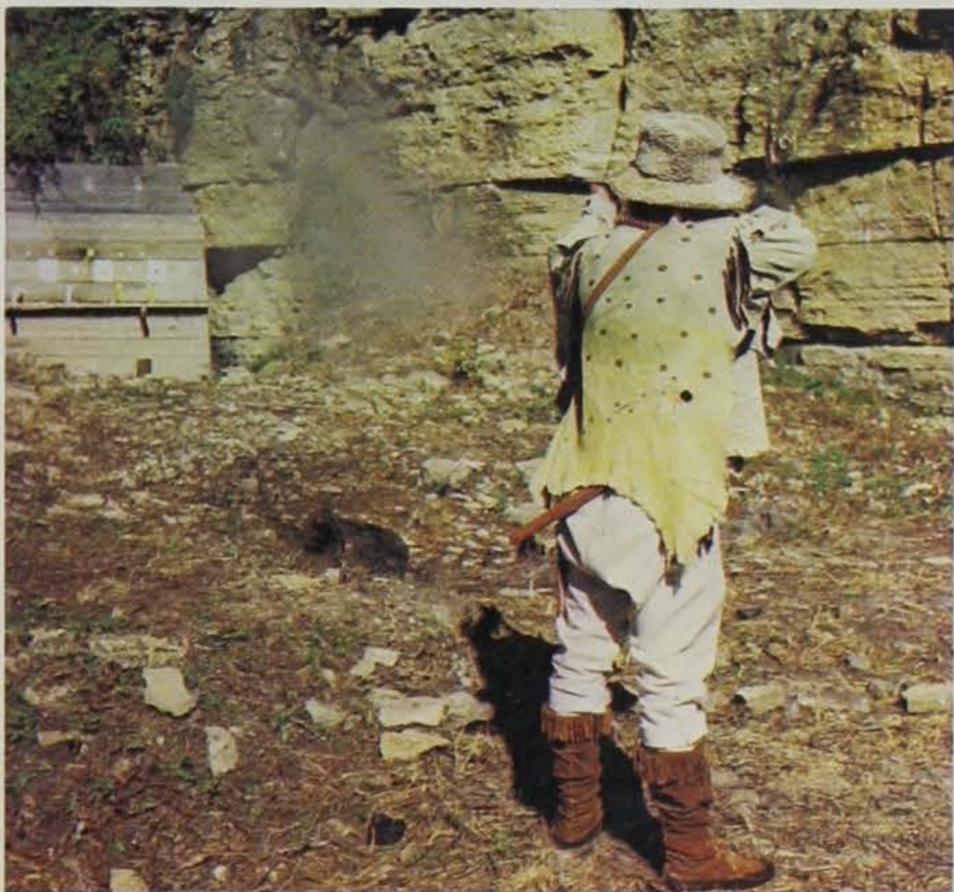
Among the sights planned for visitors this year will be
basket weaving, wool carding, beadwork, and vegetable
dyeing. Persons dressed in buckskins, muslin and
moccasins will spread out trade blankets loaded with
beaver, powder horns, knives, leather clothing, rope and
hand-fashioned toys.

There will be tomahawk throwing, post cutting and
string shoot contests. In addition, spectators will be able to
see a challenge which pits two-person teams against each
other as they start a fire . . . with flint and steel . . . cook a
pancake over it, and then eat the pancake.

Frontier foods, such as venison stew simmered in large
iron kettles over an open fire, will be available. Period
plays — melodramas where the audience is encouraged to
boo and hiss — will also be staged at the fort.

One of the highlights is the firing of the cannon (to open
and close the event and every two hours) by the Fort
Atkinson "Ghost Garrison," which is composed of persons
dressed in the same style uniform as that worn by
volunteer soldiers stationed at the fort from 1840 to 1849.

Plan on visiting Fort Atkinson this year. You and your
whole family will enjoy this short trip back to the
"frontier". □



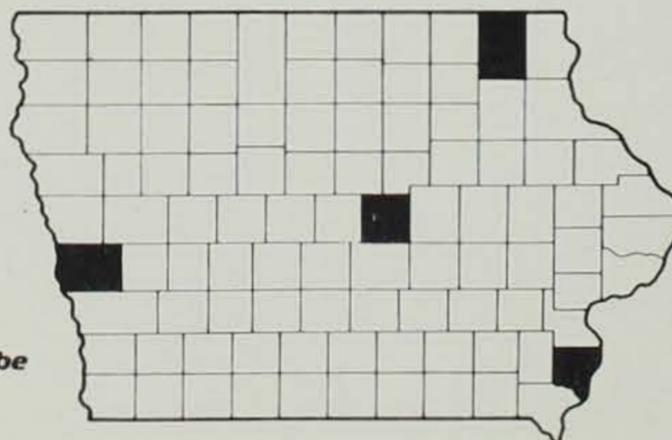
Stop Signs for Deer

by Lee Gladfelter
WILDLIFE RESEARCH BIOLOGIST

Photos by the Author



Dead deer in highway — results of a deer-vehicle collision.



Counties where deer reflectors will be tested.

THE NUMBER OF DEER-VEHICLE ACCIDENTS IN IOWA has steadily increased during the past 30 years and in 1978, about 3,000 deer were killed on our highways. These accidents also cause about \$1½ million worth of damage to vehicles annually. The extent of human injury or death in Iowa is not known, but studies in southern Michigan show that injury occurs in about 4 percent of such accidents. This would indicate that 120 human injury cases could have occurred in Iowa from deer-vehicle accidents in 1978. Often, these injuries are caused by secondary collisions as motorists try to avoid a deer on the highway. The value of deer lost in these accidents cannot be estimated, but recreational potential for this natural resource is diminished for hunters and wildlife enthusiasts alike. Also a great deal of money is spent by government agencies to process accident reports and remove dead animals from highways.

The increase in deer-vehicle accidents over the years is basically due to increase in volume and speed of traffic; expansion of the network of hard surface roads, especially four lane interstates; and increase in deer populations. Initiation of a 55 MPH speed limit in 1974 reduced deer-vehicle accidents briefly, but since 1975, rates have continued to climb. Various methods of reducing accidents have been attempted in other states. These include: deer crossing signs, deer-proof fencing, construction of underpasses for deer, clearing timber along road rights-of-way, controlled hunting to reduce deer population size, and installation of light reflecting devices. These methods have met with varying degrees of success, depending on methods used, animal behavior, population fluctuations, topography, road-side

VEHICLE readily vegetation, traffic patterns, and highway configuration.



Deer crossing sign — current method warning motorists of impending danger.

vehicle causes a continuous change in angle of the radiated light beam. The resulting effect is a type of "optional warning fence" which makes the animal shrink back and wait. Immediately after the vehicle has passed, this "optical warning fence" collapses, permitting the animal to safely cross the road.

Some aspects of deer behavior help determine the alternatives available to reduce accidents. Deer are creatures of habit and they tend to cross highways in predictable areas. They are most active during hours of darkness and 86% of the deer-vehicle accidents in Iowa occur at night. About 80% of the deer-vehicle accidents occur on hard surface roads. A warning system that functions under these conditions would be well suited to reduce deer-vehicle accidents in Iowa.

Five deer crossing areas with a history of high deer loss have been selected for installation of the "Swareflex" reflector system. These include one four-lane interstate and four two-lane highway sections about one-half to one mile in length. Study areas are distributed around the state to measure different driving conditions, traffic volume, and deer densities. Areas were selected for their suitability for the study and availability of interested Conservation Officers and Maintenance Engineers who can become involved in collecting data and maintaining reflector sites.

Reflectors have already been installed or are now being installed in all six locations. Records have been recorded on the number of deer-vehicle accidents at each site prior to reflector installation. These will be compared to the number of deer-vehicle accidents after installation of reflectors. This evaluation will be conducted during a two year period. Traffic counters will also be installed in

each area to document changes in traffic volume during the entire study period. A control area extending a half-mile on either side of the reflector section will be considered part of the study area in an attempt to document changes in deer behavior. If deer start moving around reflector areas, there should be an increase in deer-vehicle accidents in control areas.

The last phase of the project will involve removing reflectors and documenting the number of deer-vehicle accidents. This will test behavior of animals to reflector devices. If deer change their habits and no longer cross in test areas, reflectors may not need to be permanent, but could be rotated between crossing areas, thereby reducing future costs.

There are several disadvantages of the reflector system that may affect its use on a statewide basis. The cost of reflectors, posts, and installation runs about \$5,000 per mile. This would expand to about \$5 million to install reflectors on every deer crossing area in the state. However, priorities may have to be set so that areas with highest deer-vehicle accident rates are considered first for available funds. Also, it is not known what effects weather, damage from vehicles, and vandals may have on reflector sites. This aspect will be closely documented during the study period.

If this reflector system could effectively reduce deer-vehicle accidents in Iowa, it would save a great deal of human suffering and property damage, and reduce annual loss of deer. Results of this study may also have a bearing on other states that face the same problems. So, as you drive those highways at night, be aware that something may soon be done to reduce the chances of a deer jumping in front of you and becoming just another statistic. □

MEETING NONGAME WILDLIFE NEEDS ON IOWA'S PUBLIC HUNTING AREAS

by Douglas Harr
WILDLIFE MANAGEMENT BIOLOGIST
Photos by the Author



Marshes and river bottoms managed for waterfowl offer safe habitat during spring and summer months for a wide variety of aquatic life including the Great Egret and other wading birds.

RECENT STATISTICS show that the number of people in the U.S. who hunt and fish continues to increase as our population grows. But other outdoor recreational pursuits are increasing at an even greater rate than the aforementioned traditional sports. It seems that as our urban population grows faster than the rural segment, people who were not raised on hunting and fishing look towards new outdoor recreational and educational opportunities.

Camping, hiking, canoeing, birdwatching, wildlife photography, and nature study are but a few popular activities. Some of these interests can be pursued at parks and recreation areas, but too often such areas are very heavily used. This sometimes results in disturbance of wildlife, illegal flower picking, littering, and many other problems. Serious birdwatchers, wildlife photographers, and students of nature must then look elsewhere to satisfy their needs. State wildlife management areas (WMA's) can prove to be the solution.

In Iowa a vast majority of these wildlife areas are open to public hunting because they were purchased and are maintained with funds derived either directly or indirectly from hunters. It is expected that this primary use of WMA's will continue far into the future, barring a game population imbalance requiring closure to hunting until the population in question had sufficiently recovered. But since nonhunting use of WMA's is booming, nonhunting users frequently ask the Wildlife Management Biologists in charge of these areas why more isn't being done specifically for nongame wildlife.

An informal survey of Iowa's management biologists has revealed that most are doing all they possibly can for nongame species, considering the funding sources used to maintain WMA's and the mandates on how those funds may be utilized. Much of this might be termed "passive" nongame management; that is, nongame wildlife incidentally benefits from standard

practices used to manipulate game habitat for maximizing game production.

Habitat diversity is the key to a good game management program. In many states habitat diversity may not be achieved as easily as in Iowa. Pennsylvania, for example, is a forested state which manages its public wildlife lands with forest game as the prime beneficiary. South Dakota tends to manage many of its hunting areas chiefly for waterfowl and upland prairie gamebirds. In either example, a mature forest or a wetland-grassland complex could conceivably yield the highest species diversity for that particular ecological community. But maintaining one type of community precludes an even larger species diversity by eliminating other habitat or cover types found under conditions of natural ecological succession (such as wet meadows, brushy hedgerows, old field successional areas, etc.)

Iowa, on the other hand, straddles a portion of the United States where glacial lakes, eastern woodlands, tallgrass prairies, and major river drainages all converge in one region. This produces a much broader range of habitat types or communities and a correspondingly wide spectrum of wildlife species, both game and nongame. On our larger WMA's the game management goals might include providing habitat for white-tailed deer, cottontails, pheasants, waterfowl, quail, and perhaps even turkey. Since these creatures need a broad range of habitat types, including forest, brush, grasslands interspersed with grain crops, and wetlands, it stands to reason that a much greater diversity of nongame species would also result.

Dr. Paul Vohs, of the Oklahoma Cooperative Wildlife Research Unit at Oklahoma State University, has called this the "synecological" approach to wildlife management. Synecology is an ecologist's term referring to the study of groups of organisms usually associated together as a unit. In practicing game or nongame management according to this concept, we look not at just two



Leaving dead trees standing is a management practice which benefits many species of nongame wildlife such as this Hairy Woodpecker busily seeking a meal.



Screech Owls are common residents of our wooded public hunting areas.



Schools teachers have found Iowa's public hunting areas are excellent natural classroom sites because of their undeveloped nature and wide variety of plant and animal life. Winter sessions are becoming increasingly popular.

or three target species but rather at all creatures living in or on any particular tract of land to be managed.

This approach does not infer that Wildlife Management Biologists overlook the needs of certain desirable species, such as those considered to be endangered and therefore in need of special attention. On the contrary, there are many examples of efforts directed at certain target nongame species on WMA's all across Iowa while synecological management is still carried out.

On numerous larger WMA's the Wildlife Management Biologists and their staffs maintain houses for purple martins, eastern bluebirds, tree swallows, screech owls, kestrels, and others. Winter feeding stations serve the needs of several passerine bird species. Sorghum food patches once planted specifically for winter game food are now realized to provide even greater benefits to wintering songbirds. Timber management plans on areas with woodlands of appreciable size call for identifying and preserving dead or dying trees and snags. This practice aids owls, woodpeckers, and chickadees to name only a few.

Relatively recent grassland improvement techniques, first proposed to increase upland gamebird and waterfowl nesting, are now often used as nongame enhancement measures. Seeding native grasses and what are called "dense nesting cover mixes" of grass-legume combinations will boost nesting habitat for everything from marsh wrens to yellowthroats. Controlled burning of native prairies yields similar results while helping to preserve relict prairie plants, some of which are listed as endangered species themselves.

Individual projects to preserve certain endangered species have been initiated by management biologists on certain lands within their assigned wildlife units. At the Sweet Marsh Unit efforts are aimed at maintaining habitat for massasaugas (a type of snake) and short-eared owls. Coralville Unit personnel maintain sandhills undisturbed for use by ornate box turtles and

hognose snakes. Staffs of both the Wapello and Mt. Ayr Units are attempting to identify and preserve upland sandpiper nesting areas.

Several management biologists statewide voluntarily assist with nongame counts or surveys and some minor research. Though such projects do not yield direct benefits to nongame wildlife, information collected may provide data necessary to future nongame management programs. A few examples of these projects include bald eagle inventories, raptor surveys, colonial bird nesting surveys, songbird nesting surveys, breeding bird surveys, great blue heron studies, small mammal studies, barn owl reestablishment, the Rare Bird Alert, and assisting with the Audubon Society Christmas bird counts.

Iowa presently has no officially designated nongame program, though efforts are being made in that direction. It is hoped that sale of the state's new Nongame Support Certificate, plus a possibility for some federal matching funds in the future, may allow us to design and fulfill such a comprehensive plan.

For now, the Conservation Commission employs one Wildlife Research Biologist who devotes part of his time exclusively to studying nongame needs. Other research biologists working on game projects collect nongame data incidental to their assigned research. These efforts, though somewhat limited, when added to the nongame management work currently being accomplished on public hunting areas will give Iowa a real headstart on meeting the needs of nongame wildlife. Biologists of the Conservation Commission's Fish and Wildlife Division are acutely aware that nongame wildlife has in the past sometimes been only a stepchild to game production programs. But while game production remains a chief concern, nongame wildlife is now getting attention at every level of our management and research programs. □

Classroom Corner

by Bob Rye

ADMINISTRATOR, CONSERVATION
EDUCATION CENTER

Photos by the Author

ISN'T IT AMAZING how refreshing a cool, clear glass of water tastes on a hot summer's day?

Where does that water come from? How does it remain clear? How much water do you and I really use each day? What would happen if there were no more places that you might find clear water for drinking?

These questions may be perplexing ones, but they are questions that we must all ask ourselves if we are going to have clear, clean water available for our use. Many times we take for granted a glass of water and don't consider how important it is to our life and the lives of other creatures.

Most of the earth's water supply is stored in the oceans. Rivers and streams carry waters from springs, rains and snows to the ocean. There it slowly evaporates, forms water vapor as clouds, and gradually drifts away with the air currents. As the vapor condenses, usually through the action of cold air, it grows heavy and falls in some form of precipitation.

How much water do we waste every day? Here are some things to do that may help us measure that wasted water: 1. Place a quart jar under a dripping faucet. How long does it take to fill the jar? How much water is wasted in a 24 hour period? 2. Measure the water from the faucet when you let it run to secure a cold drink. 3. How much water do you dump out of the glass after having a drink? 4. How much water is dumped down the drain after vegetables are cooked for dinner?

Are there other ways in which we waste water? Isn't it amazing how much we waste? Is there a way to stop this waste?

"Waste water" has another connotation. This is water that has actually been used and is awaiting recycling.

Today there is a great deal of discussion about all kinds of water pollution. Waters may be polluted by introducing raw sewage into a river or stream, by allowing silt from poorly managed land to enter by means of run-off, or from chemicals dumped into a river by a thoughtless industry.

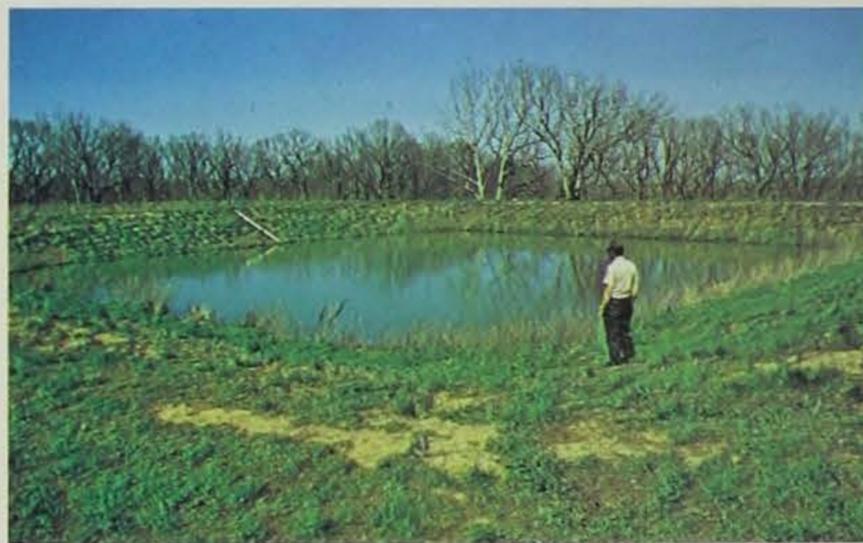
Water is polluted when man makes the quality of water poor. With our population centers growing and the heavy use we place on water, it just doesn't have time to purify itself through natural means before it is re-used. This means, in some parts of our country, water is being used faster than it can be naturally replaced by clean water.

Part of the water is held in the ground and is called ground water. How is it kept clean? Does the earth act as a filter?

Communities are building sewage treatment plants in order to return clean water to the stream for use by others. By treating sewage properly, we can be certain that disease and other forms of pollution will not reach other consumers.

Here is an experiment you might do to find out how a

primary sewage treatment plant works. Fill a quart jar with muddy water. Place a piece of fine hardware cloth over one empty jar and a piece of screen wire over another empty quart jar. Pour the muddy water over the hardware cloth into the first jar. Then pour it over the screen into the second jar. What materials are left on the screens? Let the last year stand over night. What happens? Are there materials left in the bottom of the jar?



Sewage treatment lagoon

Water sample will be analyzed by class



LOOKIN' BACK

Ten Years Ago



the *Iowa Conservationist* printed an article on floating the Boone River. This beautiful stream is still a favorite of central Iowa canoeists.

Wildlife biologists were preparing for the August pheasant count which provides the last segment of information used in establishing the hunting season.

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Twenty Years Ago



the magazine featured a story on what affects high water would have on catfish. The fall of 1959 and

spring of 1960 were unusually wet and caused much high water and flooding. It was determined that catfish attain 70 to 80 percent of their growth during high water feeding conditions. Fishing for catfish is generally better after a period of high water.

Thirty Years Ago



the *Conservationist* tried to analyze what made people fish. When it was all said and done, it

could be defined in one word: "contentment".

The dam for the lake at Geode State Park was one-third complete.

A recent law had required women over 16 to have fishing licenses if they wanted to fish in state-owned waters.

Warden's Diary

by Rex Emerson

The only twelve hole bird toilet in town is in my back yard. Last winter someone mentioned that martins are colony birds, and putting a mirror in the birdhouse would encourage them to nest in it. So, I went all out and put a mirror in each of the twelve compartments. They used it all right, not to nest in, but only as a rest stop. At least we have had some martins around this year.

We have checked a record number of fishermen this year and have heard a record number of excuses as to why some of them were not quite legal, such as, "I'm not fishing, just teaching my worm to swim," or "I hate worms so I am drowning them." When the warden told one fellow, "You can't fish without a license," the fisherman said, "Yes I can. I use bait."

When one person was asked, "Why are you fishing without a license?" he replied, "The devil made me do it!"

Then there was the lady holding the fish pole with a baited hook in the water who said, "I'm not fishing. The children are fishing, and they had to go to the restroom, so I am just holding the pole until they get back." One young man was **not fishing**, but only holding his wife's fish pole while she took the car and went home (5 miles) to the restroom. Sure hope she made it.

Then there was the man with an over limit of undersized bass on his stringer. He was just tying them up until he got ready to go home so they would leave his bait alone. The most disgusting case was the fisherman with double his limit of bass that were laying out on the bank, gasping for air. He was going to sort out his limit from the largest fish when he got through fishing.

The law requires a person to have a fishing license with him when fishing, and to exhibit the license when requested to do so by either an officer or a person who is in legal control of the property. Every day we check people who have left their license at home. Many times we notice they didn't forget the beer, but couldn't remember the license.

Just about the time you think you have heard every possible excuse for not having a license someone comes up with a new one. I thought everyone knew that residents over sixteen years of age and nonresidents over fourteen years of age must have a fishing license. Well, evidently not everyone!

We recently came across a man who thought he had a three pole license. He thought his friends were covered with his license as long as they didn't use more than three poles. That's a good way to lose friends.

We explained to one fisherman that fifteen hooks were all he could have on a throw line and we should have known better than to ask him why he had a fifty hook line out.

He said, "I hadn't had a chance to go fishing this year and was just trying to catch up."

It's quite common to hear a boater say, "I don't need a life preserver because I can swim." There is also the boater with at least fifteen gallons of gas on board who says, "I don't need a fire extinguisher. There is a lot of water out here if we have a fire."

How about the boater who painted white numbers on his white boat just so they would match? One boater locked his life preservers in a compartment so he would always have them on board — but then he couldn't find the key.

If you come up with a new excuse as to why you don't have a license or why you are in violation of the navigation laws, I would like to hear it. We will laugh all the way to court.

August is State Fair time. We will have a fine exhibit of fish and wildlife again this year in the Conservation building just inside the Grand Avenue gate. I'll be there the first three days, so stop in and say "Hello". My old friend who lives down by the river will be there, too, if his wife will let him. She thinks he enjoys himself too much at the midway shows.

Photo by Ken Forman

