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**Aiding Non-Game Wildlife**



# IOWA CONSERVATIONIST MAGAZINE

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COVER: A detail of the 1980 Non-Game Support Certificate from a photograph by Ken Formanek. Certificates will be available soon.

## THE IOWA CONSERVATION COMMISSION

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Van Buren County Conservation Board employees worked closely with Peter Schramm of Galesburg, Illinois, a well-known prairie expert. Schramm is shown planting the roadside with a Nesbit seed drill.





## A PRACTICAL USE FOR PRAIRIE RESTORATION

By: Paul Zoske

*Mr. Zoske is Executive Director of  
the Van Buren County Conservation Board.*

With the disappearance of most of the original tall grass prairie from Iowa, there has been in the past years, an increasing interest in replanting and restoring a part of this original grassland that once covered about 85% of Iowa's landscape. Over a span of about the last 15 years, prairie areas have been planted or restored all across the state, on college campuses, schools, state and county owned areas, industrial landscapes, wildlife areas, private homes and along roadsides.

In view of today's fuel shortages, sharply higher prices, and shrinking budgets, prairie plantings become more and more attractive because of their ability to become completely self-maintaining. Once established these plantings require very little in the way of ordinary maintenance practices such as mowing and spraying. The prairie plants are able to crowd out and out compete the annual weedy species for moisture, light and nutrients so there is no need for the costly annual maintenance work. In fact, mowing and or spraying an established prairie planting is actually harmful to the health and vigor of the plants. The only maintenance required is an occasional fire or burn of the prairie area, a practice very minimal in cost and actually beneficial to the prairie plants. It recycles the above ground nutrients for quick reuse by the plants. Fire also prevents the invasion of the area by small woody plants.

Since a restored prairie is nearly maintenance free, couldn't it be used to our benefit? Consider the untold thousands of tax dollars spent each year state wide for the maintenance of our roadsides. The substitution, or at the very least the introduction of the prairie roadside planting then becomes unavoidably attractive. In Van Buren County, the County Conservation Board has been successful in introducing

the idea of the prairie roadside planting. Last June, the Conservation Board in cooperation with the County Board of Supervisors and County Engineer, planted a 5-acre roadside test plot. On the 5-acres the Board planted a total of 25 different species or varieties of prairie plants. They were the following:

*Grasses:* Big bluestem, Indian Grass

*Legumes or Nitrogen Producers:* Lead plant, Purple prairie clover, White prairie clover, Showy tick trefoil, Round headed bush-clover, White false indigo.

*Composites or Strongly Flowering Plants:* Blazing star, Pale purple coneflower, Wild quinine, Compass plant, Rosin weed, Stiff goldenrod, New England aster, Black-eyed Susan, Prairie oxeye, Yellow cone flower.

*Others:* Rattlesnake master, Culvers root, New Jersey tea, Mountain mint, Prairie cinquefoil, Spiderwort, Golden Alexander.

If the test plot proves to be a success, the prairie roadside planting program will be implemented county-wide wherever new roadside seeding is required.

In addition to lower maintenance costs, the prairie roadside also has a great deal to offer in beautifying our roadways, restoring the quality of the soil upon which it is established, offering a rich habitat for birds and animal life and giving us a fair glimpse of what our original Iowa landscape was like without problems of access for the public.

With all these things in mind, the idea of the roadside prairie planting deserves at least an experimental try. Don't hesitate to ask for a similar program in your area. You're likely to find that decision maker's, especially elected ones, can hardly afford to ignore such a practical plea for saving tax dollars — It's called job security.



# A BIT OF COLOR

by Denise Stocks



Ken Formanek

**C**OME NOVEMBER of each year, just before the first snowfall, the bird feeder goes up at the Commission's northeast Iowa district headquarters. In a few days the earliest of the winter visitors show up, among them are the titmice and white-breasted nuthatches.

Some of the birds seen during the winter are not just winter birds, they are annual residents who have hidden in the trees and brush all summer. The white-breasted nuthatch is one of them. All summer and autumn they have been climbing around the oak trees in front of the hatchery, picking bugs out of the bark. They are almost comical in their actions, climbing down trees headfirst. Even when they come into the feeder, if another bird is on the other side instead of hopping around the feeder they will flip upside down and look underneath to see what it is.

The first snow fall really brings in the birds. Chickadees hop about excitedly occasionally giving out their well-known call "*chick-a-dee-dee-dee*". Looking like tufts of gray fluff with black caps, it hardly appears that these tiny birds could survive Iowa's cold, blustery winters. A flash of red brings the cardinal. A little more shy than the other birds, he will stay at the feeder and hull the seeds as he eats. Sometimes, the drab olive-colored female will join her mate but most of the time she will stay in the nearby pine trees when anyone is around.

The loud, coarse call "*jay-jay*" announces the arrival of one of the less welcome birds at the feeder. The bluejay chases the other birds away and continually throws the seeds out on the ground until finding what he wants. While eating he screams to all the other bluejays that "*dinner is being served*" and what appears to be an invasion arrives.

Another bird that usually comes to the feeder in a much quieter fashion is the goldfinch. In winter colors of yellowish-brown the male is barely recognizable although the brilliant white wingbars are still conspicuous.

The slate-colored juncos hop around foraging for food among the hulls and seeds which have been thrown on the ground by other birds. They are charcoal gray in color with white breasts. Very rarely an Oregon junco will join them. Found in the western states they occasionally stray into Iowa. They are lighter colored than the slate-colored junco and also have some chestnut around the wings, the head is black.

As winter progresses, the purple finches, redpolls, and evening grosbeaks visit the feeder. The purple finches look as though they were splashed with paint. The redpolls are brown and have a red cap. In my estimation, the evening grosbeaks are one of the more beautiful birds. They are a large yellow bird with prominent black markings.

The cedar waxwings soon arrive and eat the ornamental crab apples still hanging in the trees. They have a yellow breast, a black mask, and a crest.

The woodpeckers come in for suet. The downy woodpecker is the smallest and probably the plainest being mostly black and white. The yellow-bellied sapsucker is next in size. The red-headed woodpecker with its black body and red head is known by almost everyone. The red-bellied is seen quite often but is not as well known. A member of the ladderback family it has bars of black and white up its back and red on the top and back of its head.

Sparrows present very few problems since they are definitely outnumbered. The biggest trouble causers are the fox squirrels. It's much easier for them to climb up the feeder pole than to burrow through the snow for acorns. They can devour a large quantity of feed in a short time.

Most birds like sunflower seeds although it is best to give them a variety. The mixed seed packages are fine if you mix half sunflower seed with them. Woodpeckers like suet, which I press into a pan and hang from the feeder. Don't forget grit, since the birds have trouble finding sand and small gravel in the winter time, parakeet grit will serve the same purpose. Dried bread can also be fed, moist bread tends to cake when eaten making it hard for birds to digest. Many other things can be fed but it is best to check the local library for books on feeding birds first. They can also give you ideas on types of feeders.

As spring slowly arrives the birds begin to disappear. Some for summer homes further north in Canada, others into the trees and brush. Some change color and very soon we forget about our winter visitors, that bit of color which brightens the winter days. □



**B**ACKBONE STATE PARK, located in the Northwest corner of Delaware County, is one of the most picturesque parks in the state of Iowa.

Backbone State Park was dedicated October 1, 1919, making it Iowa's first park. The park itself is extremely rugged with limestone rock rising 90 to 100 feet above the Maquoketa River. The romance of the past is strong with tales of Indian massacres, train robbers, cattle rustlers and horse thieves who have used the Backbone for hiding. Old timers in the area knew it as a rugged hole in the ground, that abounded with bobcat, timber wolves and wild turkeys.

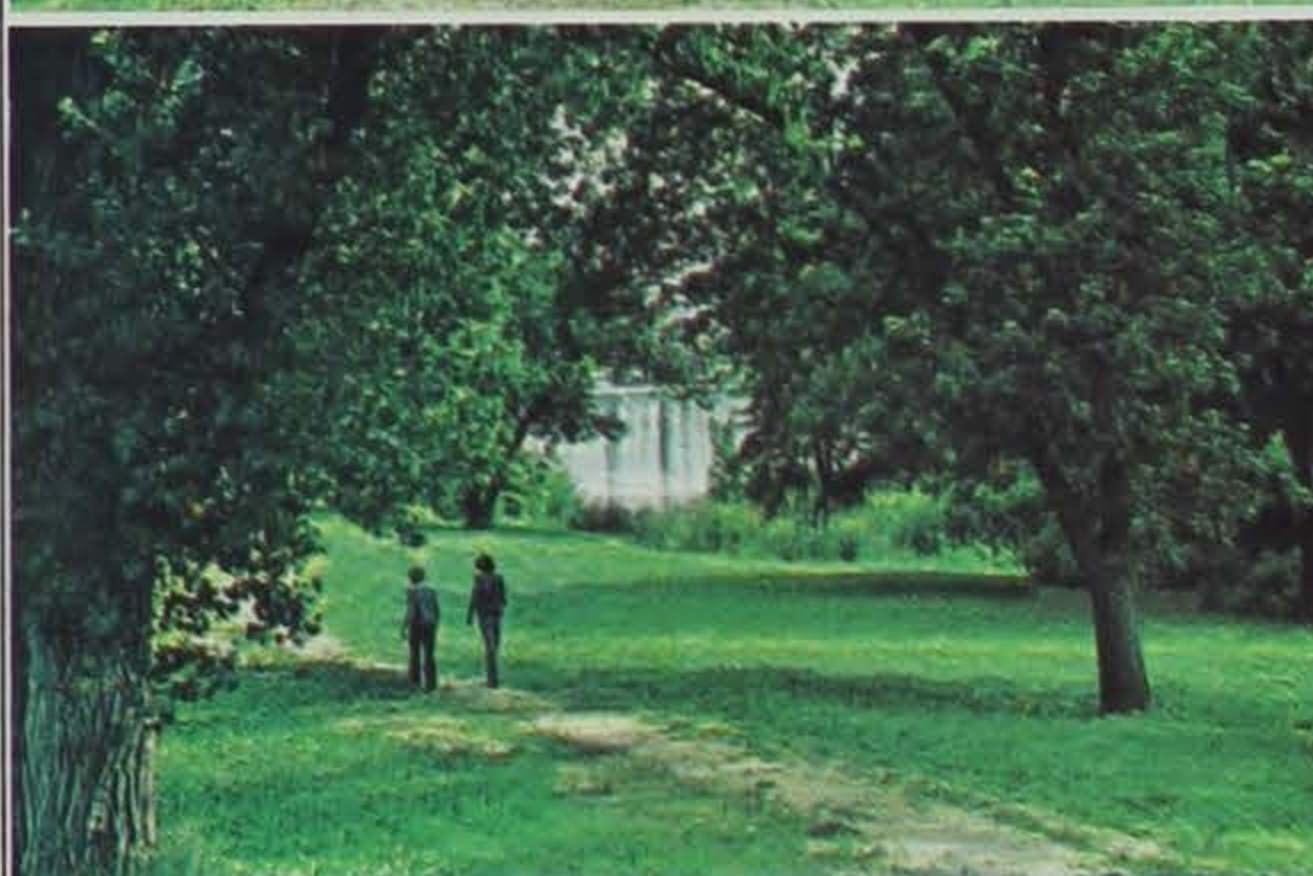
The first idea for a park grew from a picnic gathering of the Travel Club of Manchester, which was held on September 18, 1919, at the area then known as Devils Backbone. Dr. Pammel, later chairman of the Board of Conservation was invited to attend and to deliver a speech. A committee was formed to set about securing the area for a state park.

The land was purchased in the year of 1919, Governor Harding accepted the Backbone property for the State of Iowa as public property to be "a park for us and for our children, while the common wealth endures." At this time the park was 1200 acres, since it has grown to nearly 2000 acres.

On a tour of the park we journey down Highway 410 from Strawberry Point, at the North entrance we have the Backbone County Club, open to all, green fee charged. On the other side of the entrance we have Backbone Forest Area, approximately 160 acres of pine forest.

On down the hill we arrive at Richmond Springs, start of the trout streams in the park. A spring flows out of the rock wall at the rate of 2300 gallons per minute at a temperature of 48 degrees. Also located here is an open shelter and picnic areas.

As we move on into the park we find the Auditorium where many weddings are held, plus many other types of gatherings. This is a large open structure with park benches for 200 people.



## BACKBONE STATE PARK

by Gene Bloudek

PARK RANGER

Photos by Ron Johnson



We then cross a trout stream and come up the cave, an interesting stop on our journey. Again we cross a trout stream which winds through the park, and we come upon the Fish Exhibit, where from May to September, personnel are on duty to give you information on trout fishing.

From here we journey on into the park, on our left is a large rock balanced on a small pedestal. From there we take a scenic drive through a timber area, which in the spring has an abundance of wild flowers such as trillium, dutchman breeches, blood root and many types of ferns.

Now we have arrived in the valley with picnic areas and shelters. We come to a T road, turn right and drive up and out of the valley. We pass the Assistant Rangers Residence, past more picnic area, just as we arrive at the West Gate, Highway 187 from Lamont, we turn left past another open shelter and into the non-modern camp area, where there is room for 64 camp units.

We reverse our travels, back to the T road and go out the other side. Getting up on top on a very winding road we find the Backbone, a narrow ridge of rock which the Maquoketa River has to detour around. This makes an interesting stop for us, with a hike onto the Backbone. Here we have a view of the river below us and some very narrow trails through the rock. We can stop and have a picnic and this is also a favorite spot for older people to rest while children are out on the Backbone.

Then out the East Gate (being an unusual area we have to go out of the park to get to the lower area) down to the lake, with beach, 18 cabins, picnic areas and modern camp area. The cabins are open from May 15 to September 15. They are furnished with everything but bedding and whatever linens you would need; they will sleep four.

On the way back from the cabins we could stop and rent a paddle boat or canoe for a scenic trip up the lake and then enjoy a lunch at the kitchen near the beach house.

And then around the lake past two dams, impounding the Maquoketa River, with a boat ramp in between. The lake is 125 acres with 6 horse motor limit.

On up the hill we pass the Rangers Residence and Park Office, on to the modern camp area with two shower houses, electric hookups and sewage dump, with room for 168 units.

Backbone has year around activities with snowmobiling, cross country skiing and winter camping in the winter months. Fall will find park roads bumper to bumper viewing the scenery. But any time of year is a great time to visit Iowa's oldest park.

See you at Backbone. □



# The HONEST HUNTER

by Bob Mullen

STATE CONSERVATION OFFICER

**H**UNTING IS WITHOUT QUESTION the oldest and most diversified sport known to man. Hunting began long before the dawn of recorded history. It is the only major sport today which was born out of necessity, that continues as a form of recreation for millions of people.

The first hunters employed hunting to provide the basic essentials needed for survival, food, clothing, and shelter. The families of the successful hunter survived; the others starved.

Why do we love to hunt? What is it that causes an individual to occasionally desert both home and family to enjoy the chase? What causes the hunter to leave a warm bed on a bitter cold morning, long before the approach of dawn, to wander to a favorite duck blind, and then nearly freeze while awaiting legal shooting time? What is it that causes an individual to put up with the discomforts and strenuous physical exercise (which one would not tolerate at home) just to go out hunting?

The answers are both simple and complex. The thrill of the chase has been retained from our primitive past, and is still one of the fundamental drives of the hunter. Today mankind has lost the need but not the urge for the chase and the stalk of hunting.

To the sportsman hunter the kill is only a part of hunting. The thrill is becoming a part of nature. There is much pleasure in just being there. The satisfaction and pleasure of wandering through the timber at daybreak is hard to describe. It's an inward feeling of peace that one can only experience by being afield as a hunter. Maybe it can best be described as becoming a part of nature. This is so much more than feeling as though one were a trespasser in the realm of nature. The hunter enjoys listening to the rustle of the leaves in the early morning



Photo by Ken Formanek

breeze and hearing the hoot of an owl as it returns from a early morning flight across the fields in search of food. The serious hunter is aware of the habits of both the wildlife he hunts, and of non-game birds and animals as well. An indepth knowledge of wildlife makes hunting more enjoyable and successful. Being aware of where certain animals are found at different times of the day, and of the food requirements of wildlife is a part of hunting. Being afield allows you to relax, and walk off frustrations that you might have from everyday life. Observing wildlife is one of the joys of hunting. The sportsman hunter can return from a day of hunting without ever having fired a shot and feel as though he still had a successful hunt. One does not have to get the limit, or to have killed something, to really enjoy the sport of hunting.

Unfortunately, there are hunters who feel a successful hunt only means getting the limit or having killed something. This type of hunter is missing what the sport is really all about.

The anti-hunter is quick to say, "if having a good hunt does not necessarily mean getting the limit or killing something, then why do hunters even have to carry guns and shoot wildlife? Why not just go out and enjoy the outdoors and let the animals live peacefully together?" The anti-hunter fails to realize that the hunter is needed in wildlife management. Many people feel if we stopped all forms of hunting we would have more wildlife. That just isn't so. The hunter is a tool needed for a successful wild life management program. If wildlife populations were left unchecked the results would be disastrous. Man is a part of nature, and unfortunately has upset the balance of nature. Over the years some wildlife species have not been able to cope with the encroachment of mankind on the animal's environment and their numbers have dwindled. This reduction usually is the result of loss of protective habitat





## Straight Shooting at Sunnyside

by Roger Sparks

In an effort to provide a variety of fun things to do there, the people at Camp Sunnyside near Des Moines decided to build a rifle range. The lifetime shooting sports program has proven to be popular with the several hundred orthopedically handicapped children and adults who visit the camp each summer. Target shooting is just one of many activities within the well-equipped camp's sports and games category. Other categories include arts and crafts, swimming and nature experiences.

The Easter Seal Society of Iowa operates Camp Sunnyside, one of many fine programs within the scope of that organization. In addition to the rifle range, the 80 acres of woods at Sunnyside contain a spacious lodge-dining hall with recreation area, an enclosed swimming pool, a health lodge, an infirmary, an arts and crafts lodge, a nature study lodge, a chapel, an archery range, a miniature golf course, a stocked lake for fishing and boating and six resident cabins. Ed Stracke, Director of camping and recreation at Sunnyside said the philosophy at the camp is simple. "We develop and adapt recreation facilities so that everyone can enjoy them. Like other camps, the objective here is to have fun."

The rifle range is of official dimensions and many shooters at Camp Sunnyside have scored well enough to qualify for National Rifle Association Awards. The setup includes color-coded target holders and stations equipped with bench rests. Standard .22 caliber rifles are mounted in brackets so that complete muzzle control is possible and no round can go beyond the dirt backstop. A shade roof has been constructed over the shooting area to provide sun protection for the shooter. Each shooter receives individual instruction and assistance from a well-trained camp counselor.

The rifle range, like most of the facilities at Camp Sunnyside, was built with donated materials and labor. The entire camping complex was completed in 1961, with the support of literally tens of thousands concerned Iowans.

If you are or know an Iowan over eight years of age, who is orthopedically handicapped, or if you are interested in sponsoring a campship, get in touch with the folks at any of the Easter Seal Society's regional offices. They will send you the whole story on Camp Sunnyside and how it's making straight shooters out of all of us.

needed for shelter and breeding, and the loss of food and cover. Each species has definite needs, and once altered they cannot adequately maintain their populations. It has not been the hunter that has caused the imbalance in nature. Some of these animal species which have decreased in numbers were part of the natural checks and balances that exist in a well balanced environment. When natural predators decrease it causes overpopulation of other species. This is where the hunter fits in as a needed tool for wildlife management. The hunter is used to harvest the surplus population that would be dying from starvation, disease and other such causes. There exists only so much food for wildlife, and if populations are left unchecked, many animals die of starvation. By the hunter harvesting a segment of the population, the remaining numbers do not have to compete for the limited food and cover which is available during the dead of winter. The hunter will also be harvesting the weaker animals; leaving the strongest to survive and perpetuate a species for future seasons.

For an animal to die to a well placed shot from the hunter's gun is much more humane than death in nature. Death from starvation takes a long period of time. An injured or weak animal cannot fend for itself and will die an agonizing death. Natural predation, one animal feeding upon another for survival, is definitely not pleasant to observe. When one creature captures another for food for survival, it doesn't worry whether the victim is killed instantly or painlessly. A well placed shot from the hunter's gun causes an instant, painless, death to the animal hunted. The traditions of hunting and the hunter's own personal code of ethics, dictate that the game be taken in a spirit of fair chase. This is of no consolation to the animal pursued, but it should have a definite meaning to the hunter. For the hunter to achieve any measure of honest satisfaction from the sport, one must employ honest sporting methods. This involves the hunter utilizing his own personal skills of woodlore and knowledge of natural science, as well as marksmanship against the animal's strong will to survive. Pursuing with four wheel drive vehicles, and utilizing the use of radios to pursue and locate, definitely does not involve the skill of the hunter. Such activity is hard to justify in the name of sportsmanship. Those that hunt by illegal methods or hold little regard for seasons, limits, and methods of take, end up giving the honest hunter a bad name.

Theodore Roosevelt established well his *Credo of fair chase* in the book *American big game hunting* published in 1893. In essence Roosevelt's term fair chase meant not killing with the aid of traps, fire (hunting with the aid of lights at night to take game), nor pursuing game in deep snow which made it difficult for the animal to move. Roosevelt considered it very unsporting to kill game from a boat while the animal was swimming in the water, or taking deer by any other method than by a fair stalk or still hunting. These rules, laid down over twenty years ago, are simple and to the point.

These basic rules establish a level of conduct for the sporting hunter to follow, and any hunter that takes pride in his or her sport would not violate them. The hunter will honor the spirit as well as the letter of the code of fair chase — especially in these days of unfair use of cars, planes and other mechanical hunting aids which were not in existence when Theodore Roosevelt envisioned the plan of "fair chase".

The honest hunter has a respect, and it might even be called a reverence, for the game he pursues. If the hunter does not accord the animal dignity in life, then as a trophy it is utterly meaningless. Sadly enough, far too many hunters still rate the success afield by the weight of game bag. If it depends upon the number killed, or that game is killed at all, then a false standard exists for what constitutes a successful hunt. The hunter gains from every trip afield. He builds his knowledge and understanding of the wildlife he seeks, and increases the chance of success in future hunts. Taking of game by the hunter may fulfill the mission of the chase, but the land and its surroundings is the greatest joy to the hunter.

The honest hunter has several roles. He is a sportsman, a conservationist, and an environmentalist as well. □





## A Short Tale about a Long-Eared Owl

by DeWaine Jackson  
WILDLIFE RESEARCH ASSISTANT



Photos by the author

**M**ANY EXPERIENCED ORNITHOLOGISTS have never seen a long-eared owl nest, yet it was my good fortune to observe and photograph these two five-day-old owl chicks as they grew to adults. The long-eared owl nest, located May 4, 1979, during a systematic search of a mourning dove research plot in Lucas County, was indeed a rare find. Commonly misidentified, the crow-sized long-eared owl can be told from the larger great horned owl by its streaked belly and from the smaller screech owl by its rusty face and contrasting gray body. State Ecologist Dean Roosa has listed the status of long-eared owls in Iowa as "threatened," and Woodward Brown in 1971 described long-eareds in Iowa as a "rare permanent resident." In the past 20 years, only three other nesting records have been recorded in this state.

Long-eared owls prefer to nest in or near dense conifer groves. This female had chosen an osage orange tree adjacent to a large stand of red pines for her nest site. She had lined the nest of coarse sticks with forbs, pine needles and a few of her feathers. During the day, the long-eared owl desires the shelter and concealment of the conifers and seldom ventures from this dense cover unless disturbed. Although it may be common in an area, it is seldom seen because of its diurnal habit of frequenting dense cover, its protective coloration, and its effective hiding pose. It has been written that the long-eared owl can elongate its body, extend its "ears" and "freeze" in position to where it resembles a tree limb.

Although our particular nest appeared to be freshly constructed, an old study done in 1892 indicated that the long-eared owl rarely constructs a nest of its own. Long-eareds are known to have used nests of crows, herons, hawks, ravens, magpies and squirrels.

The long-eared commonly migrates southward in late fall or early winter and may roost communally until early spring when they disperse and nest as isolated pairs. This early dispersal allows the long-eareds to nest earlier than most species and thus it can gain possession of old nests prior to the return of the original builders.

Four or five glossy, pure-white eggs are usually laid by the female during March or April, but the number of eggs can range from 2 to 8. Incubation of the eggs starts immediately after the first egg is laid, and since an egg is laid every other day, the young may vary considerably in size after hatching. The new young, clothed in pure-white down, develop quickly and within 6-7 weeks possess adult plumage and are fully grown. Once grown and skilled in the art of hunting, the young begin feeding forays of their own. Like the parents, they feed heavily on mice.

This owl is one of our most beneficial birds of prey because 80-90 percent of its diet consists of mice and other rodents which injure crops. Only during the nesting season, when there are young to be fed and mice hard to obtain, does the long-eared owl take small birds in any quantity. Hunting almost exclusively at night, the owl frequents open meadows and grasslands near its daytime hideaway in search of its favorite prey, the meadow mouse.

By early summer, the young are able to fend for themselves, but they usually remain with the parents. The family group appears to remain together, even during migration, which may account for the large communal gatherings observed during the winter. As spring approaches, the new adults choose mates and disperse to raise broods of their own.

Protection of beneficial species such as the long-eared owl is a must. In the past, many long-eareds were shot on sight because of the mistaken belief that they destroyed game and domestic poultry. All owls and other birds of prey are now protected by both state and federal laws. Habitat destruction, however, is the most serious threat to their survival. With a little luck and some effort you too may be one of the few that gets to observe this unique and picturesque bird of prey.

*Editor's note: Both fledglings were banded with aluminum leg bands on 22 May 1979. Be on the lookout for the return of numbers 816-32702 and 816-32703!*





## IOWA'S LIVING RESOURCES

### Aiding Nongame Wildlife

BY DAVID A. NEWHOUSE  
WILDLIFE RESEARCH BIOLOGIST

**T**HE AMERICAN PIONEER PERSPECTIVE, regarding natural resources as inexhaustible, is unique — and shortsighted. Free land, clean water and abundant energy have all gone the way of the passenger pigeon, victims of over-exploitation. Generations of Americans have struggled to do, make and have more, seeking the good life. While income and possessions are gratifying, the quality of life depends as well upon recreation and enjoyment of our culture and environment. We rely on others to provide facilities and opportunities for stimulating experiences that enliven us. Our lives are better when "Someone" furnishes us access to rivers and lakes, safe roads, interesting museums, inspiring parks, good schools and police, fire and military protection. "Someone" else supplies opportunities to indulge our tastes for bowling, movies, concerts, dining or races. We can see America, fly the friendly skies or shop and save through services provided by "Someone" else. Of course, we invest a smart part of our incomes (as taxes, user fees, admissions, tickets, etc.) in each "Someone" who affords us these services and benefits. Without patrons, arts and amusements could not exist. Unfortunately, nongame wildlife is one of Iowa's living resources without a "Someone", without definite patrons (although it has many users and admirers). Responsibility for these appreciatively used animals

and plants constituting Iowa's "Living Resources" has fallen upon the Fish & Wildlife Division, although it has heretofore been provided no funds to accomplish management or research. Other living resources are more fortunate. The beautiful natural areas comprising our state parks and forests are provided and maintained by state general funds, assisted to a small extent by scant user fees and federal money. County conservation boards manage outdoor areas primarily for more active recreation, funded again by tax revenue, federal funds, and income from the new wildlife habitat stamp. Access to lakes and rivers is provided and patrolled at the expense of the Iowa public and federal government as well, with some costs offset by boat registration fees. The Nature Conservancy and Iowa's new Heritage Conservation Foundation seek to acquire and preserve areas of unique natural resources, using private contributions. The Preserves Advisory Board performs a similar function with very limited public revenue. Persons involved in the wildlife resource through such organizations as National and State Audubon chapters, Iowa Ornithological Union and National and State Wildlife Federation chapters have been instrumental in raising public consciousness, and some limited habitat management and research in other states.



Iowa's living resources benefit more, however, from the patronage of hunters, anglers and trappers than from any other source. State and federal waterfowl stamp monies fund land acquisition, management and research for waterfowl both here and in Canada. Wildlife habitat stamp funds are earmarked for acquisition and management of land, and for providing incentives for demonstrations of wise private land management. Trout anglers pay for their sport through the purchase of trout stamps, incidentally improving streams for other species and users. Since 1937 these resource users also have paid an 11 percent excise tax on sporting arms and ammunition (and more recently, on fishing equipment) to perpetuate the wildlife resource. These funds make hunting, fishing and trapping license monies go even further, and support greater management activities in behalf of Iowa's living resources.

If nongame wildlife has had any constituency, any "Someone" in Iowa, it has been among these consumptive recreationists. Federal nongame revenue programs similar to those for fish and wildlife have died in Congress the last few years, stymied in part by misguided opposition from trade unions and hikers' associations. Although some wildlife habitat has been acquired by federal and state general revenues under open spaces and protected water areas programs, the majority of land managed to benefit wildlife in Iowa has been acquired with the fees paid by hunters and anglers. Marshes managed for ducks support massasaugas, Blanding's turtles and marsh wrens as well. Pheasant nesting cover also produces upland sandpipers, grasshopper mice and northern harriers. Broad-winged hawks and spring peepers make their homes with deer and turkeys in forested areas. Nongame wildlife has been a by-product of beneficent game management.

This is not to say that the Fish & Wildlife Division of the Iowa Conservation Commission has not been purposefully concerned with the welfare of nongame wildlife. Even prior to official designation of a nongame wildlife program, Commission personnel have been involved on a personal level with Iowa's living resources. They cooperate with various universities and state, federal and provincial agencies by reporting observations of marked nongame species. In January they assisted with the National Wildlife Federation's nationwide winter bald eagle survey. They participate in many local Audubon chapter Christmas Bird Counts, Breeding Bird Surveys, Cornell's Colonial Bird nesting and Nest Record Card programs, and the winter Raptor Survey established by state ecologist Dean Roosa. Their observations of rare or unusual species in winter, migration and nesting periods are collected to expand our knowledge of the abundance and occurrence of nongame wildlife. The Missouri River unit biologist, Neil Heiser, involves his summer workers in surveying the small mammal populations in the Loess Hills, providing important information on that unique land area.

Research conducted by Division biologists concerns nongame wildlife, either directly or indirectly. The nongame biologist at Boone has just completed a study of utilization of different habitats in winter by nongame birds, which documents the value of timber and shrub plantings. Over the first 9 km of habitat traversed, a new bird species was detected every 818 meters (on the average) in farmland, compared to 529 m in shrub-planted agricultural fields and 391 m in forest. New species continue to be found in diverse forest habitats during successive visits, while the few species wintering in farmland are soon detected, without additions. Nongame bird information is also being collected as part of a study evaluating pheasant and duck nesting habitat manipulation on the Ventura Marsh and McIntosh Wildlife Areas in northern Iowa. About 500 red-winged black birds, 20 boblinks, 30 yellowthroats, 50 goldfinches and many long-tailed weasels, mourning doves, dickcissels, meadowlarks and field and song sparrows were known produced last season on the McIntosh Area alone. About 50 white pelicans also summered in this area of habitat SUPPOSEDLY manipulated solely to benefit game species, like the teal, shovelers, mallards and coots nesting there.

Commission research biologists at Chariton have recently completed a 4-year study to evaluate reintroduced native grasses which could provide both wildlife nesting cover and very desirable warm-season livestock forage for the private landowner. Properly managed native grass pastures seeded to pure stands of switchgrass, Indian grass, or big bluestem provided suitable nesting cover for a variety of birds including ring-necked pheasants, red-winged blackbirds, eastern meadowlarks, dickcissels, yellowthroats and field sparrows. Based on the results of this

study, switchgrass is being widely planted on public lands in Iowa, and the Commission is currently planning to use some of the revenue from the sale of the new wildlife habitat stamps to cost-share the establishment of switchgrass pastures on private land. We believe cattlemen will be impressed with switchgrass and will continue to plant and include switchgrass in their grazing rotation programs even after cost-sharing ceases. Both game and nongame species of wildlife are expected to benefit from this program.

The upland wildlife research team is also currently conducting a mourning dove nesting ecology study in cooperation with the U.S. Fish and Wildlife Service. This study compares mourning dove nesting success in states which have a dove hunting season and in those which do not. The project also gives perfect opportunity to study nesting habits of many nongame and song birds. Five study plots of differing habitat types, including both coniferous and deciduous trees and shrubs, are searched intensively once each week. Nests which are found are monitored on a weekly basis until the fate of the nest is determined.

In 1978 and 1979 the mourning dove was the most common nester found in the study plots, accounting for 39% of the total nests. Other common nesters were brown thrashers, red-winged blackbirds, cardinals, robins, grackles, gray catbirds and black-billed and yellow-billed cuckoos. The black-billed cuckoos found to be common nesters are apparently quite rare in some parts of Iowa. In 1979, the nest of a long-eared owl, a threatened species in Iowa, was found on the study area and the nest was monitored until young successfully fledged. Several other unusual (green heron, rufous-sided towhee and cedar waxwing) nests have been found and monitored during the two years of the study. One whip-poor-will nest and one yellow-breasted chat nest have also been located. Iowa's nongame birds are an important resource which should not be overlooked when wildlife management plans are being formulated.

Besides saving wildlife habitat from the ravages of plow and paving machines, these land management activities for wildlife are the Wildlife Division's greatest contribution to nongame animals. Much of the quality wildlife habitat in Iowa would not exist, were it not under Commission stewardship. Rather than being managed for a biologically depauperate monoculture of corn or beans, wildlife management areas are managed in a *synecological* way. This means that many different types and ages of vegetation are maintained in, and considered as, one management unit. Such diversity of habitat results in use by diverse wildlife species, which we enjoy consumptively and/or nonconsumptively.

What follows is an annotated catalog of habitat areas available to Iowa's living resources, drawn from the responses of Iowa's 20 wildlife management biologists. These managers most intimately familiar with wildlife habitats have quantified the amount of land they control in each of eight general habitat categories. They have also noted nongame wildlife species they feel are indicative residents and users of each of those habitat types.



The most cover over 4 units (WMU) glacial lakes. Along the n landlocked n have been c federal reser viously, Fish water resourc the Wildlife Nongame double-creste grebes, great nose shiner routinely visi Bald eagles a ing eagle co Woods and central newt ponds, also.



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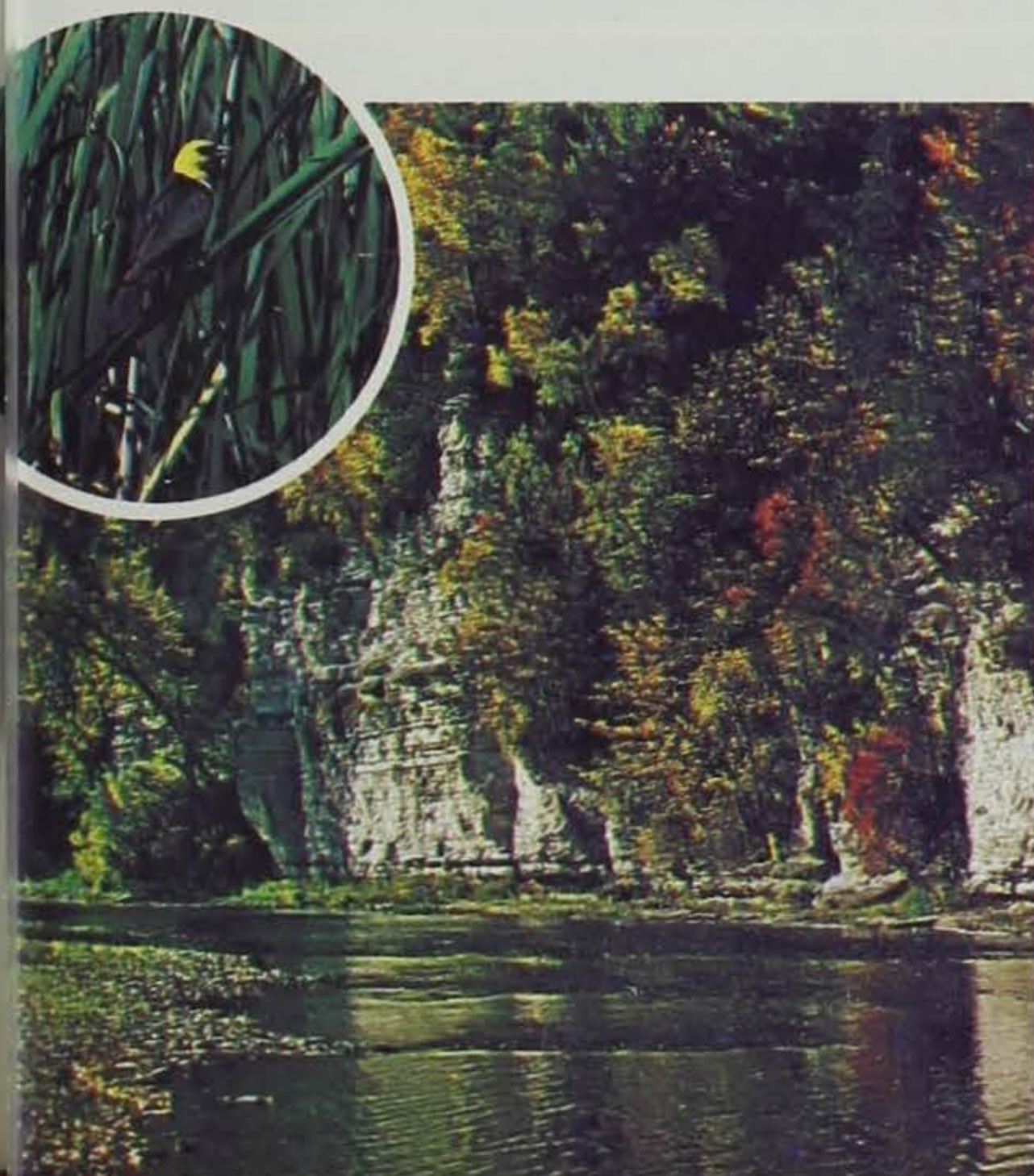


by the Author

### Lake

The most extensive habitat managed by the Wildlife Division, lakes cover over 49,000 acres (20,000 hectares) of the 20 wildlife management units (WMUs). In north-central and central Iowa, these are mostly natural glacial lakes which have survived widespread agricultural drainage. Along the major border rivers, lakes are frequently oxbows and now landlocked meanders of the mighty rivers. Elsewhere, lakes and ponds have been created by impounding streams; the largest of these are the federal reservoirs Saylorville, Red Rock, Rathbun and Coralville. Obviously, Fisheries and Waters Divisions are more involved in the open water resource, but lakes play an important part in the holistic approach the Wildlife Division applies to managing for wildlife.

Nongame species commonly associated with lakes are white pelicans, double-crested cormorants, painted turtles, herring gulls, pied-billed grebes, great blue herons and belted kingfishers. The endangered blacknose shiner has been found in Trumbull Lake, and migrating ospreys routinely visit lakes on wildlife management areas (WMAs) across Iowa. Bald eagles also scavenge fish from lakes, particularly around the wintering eagle concentrations near Missouri Valley and the Quad Cities. Woods and prairie pools in southeastern Iowa harbor the endangered central newt. Threatened spring peepers still chrous from eastern woods ponds, also.



### Marsh

Unfortunately, only a tiny fraction of the prairie marshes that once dotted Iowa, giving rise to place names like Curlew, Mallard and Plover, still remain. Marsh habitat managed by the Wildlife Division has been rescued from agricultural tiling or recreated after ill-considered drainage. Our larger marshes are shallow flood-plain impoundments, watered by diversion from adjacent streams.

Here we find pied-billed grebes, American bitterns, yellow-headed blackbirds, long-billed marsh wrens, Blanding's turtles, red-winged blackbirds, great blue herons, snapping turtles and leopard frogs. Similar species (redwings, grackles, bobolinks, black terns, swamp sparrows and yellow-headed blackbirds) are documented from Illinois marshes. The Blanding's turtle is threatened, yet occurs in this limited habitat on the Big Sioux, Black Hawk, Coralville, Odessa and Sweet Marsh WMUs. Massasaugas, threatened rattlesnakes of vanished prairie marshes, now enjoy management which ensures their perpetuation, with several Natrix water snakes, on WMAs in Bremer and Louis counties. Eared grebes, threatened by loss of habitat, use marshes of northwestern Iowa. Cattle egrets and king rails visit Sweet Marsh. Endangered northern harriers were formerly called marsh hawks because they hunt rodents so extensively in this habitat, as do short-eared owls, now considered extirpated by habitat degradation. Blue-spotted salamanders, endangered even where they occur in east-central Iowa, use this habitat. Least shrews and long- and short-tailed weasels, though seldom seen, call marshes home. Fortunately, nearly 31,000 acres (12,400 ha) of such habitat is managed to their benefit.

### Stream

Approximately 306 miles (492 kilometers) of streams flow through WMAs. Most are warm-water streams of low gradient, lined with riparian timber considered later as a separate habitat type. About 47 miles (76 km) are cold-water ("trout") streams, all in the northeast, whose narrow valleys lined with upland hardwoods are also home to ruffed grouse. Fishing, boating and canoeing are the obvious open-water activities. Careful observers, however, note the activity of belted kingfishers, great blue herons, green herons, bank swallows and even flathead minnows typical of riverine habitat.

Channelization, impoundment and siltation from erosion have altered the character of Iowa streams. Few rivers except in the northeast still support threatened river otters. Redside dace, considered extirpated, are known from the Maquoketa River. The endangered plains topminnow has been found in the Little Sioux River. Topeka shiners have held out in the Little Rock River, also in the northwest. Illinois mud turtles, piping plovers and least terns are endangered by alterations of major boundary rivers which remove the sandy areas they need. Red-eared and Blanding's turtles, both threatened, survive in quiet vegetated stream back-waters on WMAs like Odessa. Wood turtles, stinkpots and orangethroat darters may also find refuge in streams in WMAs, managed by enlightened conservation principles.



### Riparian Forest

The forest growing along warm-water streams typically consists of elms, ashes and cottonwoods; willows and silver maples are also tolerant of the periodic flooding common in this habitat. Small mammals are obviously limited in such a flooding environment, but the highest quality habitat for birds, and for some amphibians and more mobile mammals, is located in or near floodplain forest. Dean Stauffer found that floodplain woodlands supported higher densities of breeding birds than herbaceous or upland woodland habitats in Guthrie County. My research has found more kinds of birds in this habitat in winter than in any other cover type studied. In fact, a new bird was seen every 53 m throughout this forest, on the average. Here, too, are found the snags (dead trees, usually victims of Dutch elm disease) vital to cavity-nesting birds like woodpeckers. Riparian hardwoods form protective migration corridors for many wildlife species. They also create thermal refuges, protecting wintering wildlife from whistling winds. Division biologists manage 36,500 acres (14,800 ha) of riparian forests, including Corps of Engineers lands.

Barred owls and turkey vultures nest almost exclusively in this environment. Other common inhabitants are blue jays, red-headed woodpeckers, common flickers, white-breasted nuthatches, great horned owls, red-tailed hawks, black-capped chickadees and short-tailed shrews. Cardinals and great-crested flycatchers frequent openings in this forest, as documented in Illinois. Endangered Indiana bats are known to use caves in eastern Iowa, and probably have maternity colonies in south-eastern riparian forests; more research is urgently needed. Endangered woodland voles and red-shouldered hawks are known from the Odessa and Upper Iowa WMUs, respectively. Endangered peregrine falcons have visited Red Rock and may use river valleys in the northeast.

### Upland Forests

Upland forests in Iowa are typically oak-hickory stands, or maple-basswood in the northeast. Often they rise across rugged hills above riparian forests. Thus some plant and animal species may appear in both upland and lowland habitats. The edge between types is very rich in animal life; I encountered different birds every 12 m (average) along this edge in winter counts. Historically, prairie fires restricted forests to these timbered ridges and slopes, reinforcing this amalgamation of habitats and species. Upland forests are usually drier, but are certainly not deserts, as evidenced by their destruction for pastures and crop fields. In winter, I walked less than 77 m (on the average) between successive bird encounters in upland forest.

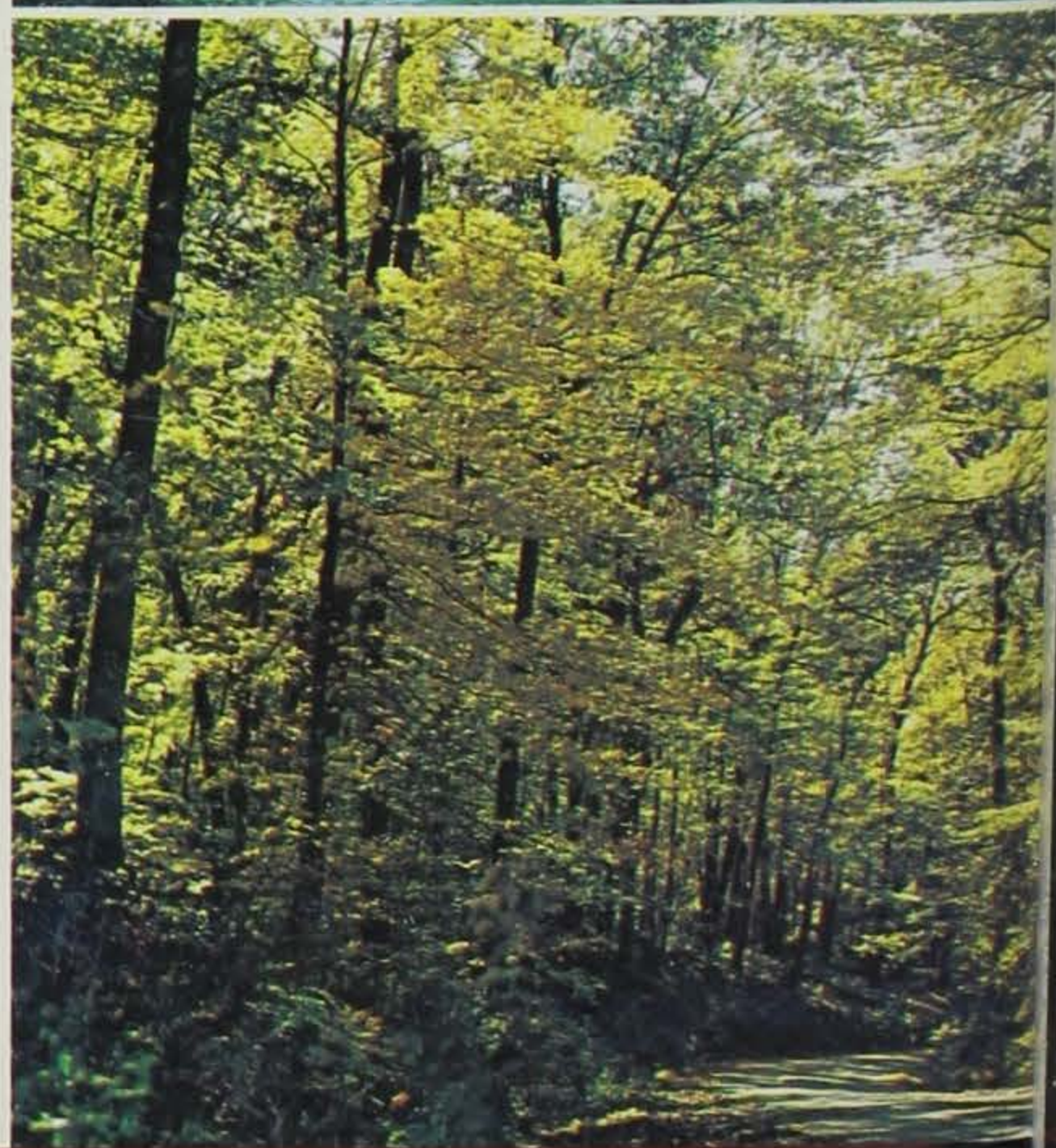
Blue jays, chickadees, great horned owls and redtails occupy upland forests as well as riparian timber. Downy woodpeckers, northern orioles, eastern chipmunks, white-footed mice and rose-breasted grosbeaks are also common in this upland timber. Graber and Graber also found indigo buntings an important inhabitant of upland forests in Illinois. Broad-winged hawks, though threatened, are known to use the Big Sioux, Rathbun and Red Rock WMUs. Spring peepers sing from forest ponds near Odessa and Volga River. Cooper's hawks, sharp-shinned hawks and long-eared owls visit WMUs along the length of the Des Moines River valley across Iowa. Five-lined skinks, black rat snakes and bobcats may all evade human contact in extensive northeastern forests.

Management in this forest type which retains or enhances additional vegetative layers (by restricting grazing or by all-age management, for example) increases the number of avian feeding associations using the area. Most winter resident birds found in my research are ground feeders, bark gleaners or probers, predators and adaptable generalists with variable diets. Loss of understory shrubs, predicts Dean Stauffer, would lead to reductions in rufous-sided towhees, ovenbirds, acadian flycatchers and wood thrushes. These same species require extensive blocks of timber habitat, as do American redstarts, tufted titmice, warbling vireos and scarlet tanagers. Large habitat blocks are most important to rare species that require that habitat type; many small blocks of essentially similar habitat are of much lower value. This highlights the importance of wildlife management planning for nearly 42,000 acres (16,900 ha) of upland forests, including some State Forest lands, by Division biologists.

### Shrub/Tree Plantings

Although Iowa has relatively little forest land, shrubs and trees are usually planted in open areas for reasons other than reforestation. Windbreaks, farm groves, fencerows, landscape plantings and Christmas tree farms begin in this way. Such plantings are used by nongame animals almost immediately. Here they find shelter from frigid winds, searing sun and aerial predators. They also utilize the strips of cover as avenues of travel and escape. An amazing number and variety of songbirds nest in these plantings, also. Installation of such cover to break the monotonous expanse of crop fields benefits both wildlife residents and human managers. Durward Allen (in *The Farmer and Wildlife*) and Wallace Anderson (in *Making Land Produce Useful Wildlife*) both point out that songbirds, raptors, weasels, *etc.* using shrub rows are efficient eradicators of agricultural pests (ground squirrels, insects, *etc.*). Deep-rooted, wind-breaking, perennial plantings also reduce the loss of wind- and water-borne soil by erosion.

The species commonly associated with shrub plantings are adaptable generalists, also found in forest edge situations. Brown thrasher nests are usually found in multiflora rose thickets by division researchers. Catbirds also utilize this cover, and Scots pine as well. Mourning doves, common grackles, song sparrows, American robins, yellow-billed cuckoos and white-footed mice also frequent hedgerows, and tree sparrows are common there in winter. Graber and Graber found field sparrows, indigo buntings, red-winged blackbirds and American goldfinches in Illinois shrub/orchard plantings, as well. Hawthorn is used here for nesting by rose-breasted grosbeaks and eastern kingbirds. One of nature's little dramas, in which a threatened loggerhead shrike impales a captured vole





up a hawthorn spike for a later repast, is seldom witnessed by humans. Yellow and blue-winged warblers, subjects of concern, also nest in this brushy habitat, including plum thickets and willows.

Commission land managers have been dividing cropfields and grassland areas with wildlife plantings that provide food and/or cover. Over 4,000 acres (1680 ha) have been planted to nine-bark, pine, honeysuckle, Russian olives and dogwood, with more planned each year. Private citizens may obtain these same plants to establish wildlife cover from the State Forest Nursery in Ames. As figures from my research show, enhancement of agricultural fields with strips of shrubs and trees has the effect of adding 50 percent more bird species in this improved habitat. Bird species diversity trebles, as well.

### Grassland

Native bluestem prairie originally covered roughly the northwestern quarter of Iowa. Much of that land is now managed for a taller annual grass with yellow seeds. Grasslands that presently cover most of the glaciated southern half of Iowa were wrested in part from oak-hickory forests. Livestock, pheasants and coyotes have replaced bison, prairie chickens and red wolves as human use changed the character of the land. Now we commonly find meadowlarks, dickcissels, bobolinks, American goldfinches, plains pocket gophers, short-tailed shrews, thirteen-lined ground squirrels, upland sandpipers, meadow voles and deer in pastures and hayfields. Illinois accounts add redwings, house sparrows and grackles to these grassland nesters.

The continued existence of many species has been threatened as prairies died for corn. Endangered upland sandpipers and northern harriers both nest on the Rathbun WMU, however, and are known from

Harrison and Monona counties and the Big Sioux, Blackhawk, Mount Ayr, Red Rock, Riverton and Saylorville WMUs. Grasshopper mice, pygmy shrews and burrowing owls are holding out on WMAs in the northwest. The threatened plains spadefoot toad and endangered plains pocket mouse survive along the Missouri River. Spotted skunks and least weasels are declining, and should be considered threatened by loss of habitat. Threatened ornate box turtles benefit from management along the Iowa River. And short-eared owls, considered extirpated or occasional migrants, are thought to nest in southcentral WMAs.

Commission biologists manage over 33,000 acres (13,500 ha) of grassland/hay for nesting cover. Delayed first cutting of hay, to prevent destruction of pheasant hens and nests, and timing the last cutting to allow sufficient regrowth to provide winter cover, are essential management practices. Rotation of grazing between cool- and warm-season grass pastures, suggested earlier, also benefits wildlife, as shown by heavy nest densities of songbirds in big bluestem and Indian grass pastures.

### Cultivated

Intensive agriculture manages Iowa's rich soil for one or two crops, to the unfortunate detriment of most other living resources. Since approximately 95 percent (34 of 35.8 million acres) of Iowa's surface is cultivated, this constitutes a major impact on wildlife. The few species we usually see in farmland are horned larks, meadowlarks, deer mice, thirteen-lined ground squirrels, killdeer and plains pocket gophers. House sparrows also abound where farm buildings provide nest sites.

Why then should the Commission lease some of its land for cultivation? Not for the small amount of cash rent received, assuredly. Rather, management plans which follow wise-use principles allow Commission lands to become demonstration areas which private land managers can emulate. Crop rotation, erosion control, proper harvest timing and field fragmentation with wildlife cover are all practiced here. About 20 percent of the crop is left for wildlife food, also. This not only makes the WMA more attractive to wildlife, but reduces the impact of wildlife feeding on adjacent private crops. As a result, unflooded fields managed by cultivation, especially along our major reservoirs, benefit all kinds of wildlife (including least shrews) and recreationists alike.

### Summary and Outlook

These habitats also exist in State Parks, Forests, Preserves and fishing access areas. The management and recreational use of those lands is different from WMAs'. From wildlife's standpoint, however, designated uses do not make habitats more or less desirable. Quantity, quality and type of habitat are the significant factors to our living resources. Wildlife habitat is a critical need in Iowa, yet the Wildlife Division manages only 0.69 percent of the surface of Iowa for wildlife. This puts Iowa at the bottom of the list of states, in terms of public lands management. Fortunately, those 246,500 managed acres (99,700 ha) are unmatched for their benefits to nongame wildlife. They also benefit the general public; 40% of the use of WMAs is by nonlicensed recreationists, who spend 860,000 to 1,105,000 days each year observing and enjoying our living resources.

An effective program for the future nongame resource of Iowa is now being designed in the Wildlife Division. This laudable effort is being supported by hunters and anglers, the effective but unofficial patrons of nongame wildlife to date. A primary consideration, of course, is program funding. The people of Iowa, all of whom enjoy or benefit from our living resources, must assume leadership and responsibility in this area. Exact sources of the revenue are less important than their continuity and effective use. Money devoted to nongame wildlife must produce, manage or preserve habitat to ensure the existence of nongame wildlife in our state. "Wildlife has continually been relegated to areas that are difficult to cultivate or to intensively manage, and these areas continue to dwindle as new economic uses are discovered. There are two broad alternatives available to society. The first is to continue managing with a dwindling habitat base usurped by an expanding urban population and intensification of agricultural practices, or secondly, stimulate incorporation of habitat management practices in land use planning . . ." (Evans and Probasco 1977:14-15).

We clearly need to take an assertive stand for expanding the habitat of the living resources with whom we share this land, and who improve the quality of our life. The Iowa Conservation Commission's Wildlife Division, supported by hunters and anglers, has shown the way. We challenge you to claim and perpetuate your heritage of living resources.

Photos by Ken Formanek



Photo by the Author





# Report from the State Ecologist

by Dean M. Roosa

## Winter Survey on Raptors

**B**ECAUSE no quantitative information existed on wintering populations of birds of prey, the Conservation Commission's State Ecologist organized a state-wide raptor survey in the winter of 1976-77. This survey has been repeated each winter since, with the eventual goal of estimating the size of the wintering population of each species, correlating the wintering population with habitat and establishing an index for analyzing population trends. We are especially interested in the boreal species like the rough-legged hawk and snowy owl.

Participants are volunteers and include personnel from the Iowa Conservation Commission, county conservation boards, universities and colleges and many other interested lay people. In 1978, 119 volunteers surveyed townships in 41 counties, keeping records on habitat, weather and number of birds seen.

Spiraling fuel costs and uncertainty of fuel availability make the future of this project uncertain. If it must be curtailed, it is hoped it can be conducted on a five or ten year basis as we attempt to determine the importance of Iowa as a wintering ground for raptors.

## Spring Nest Surveys

**I**N THE SPRING of each year, nesting surveys are conducted in various parts of Iowa and as many young hawks as possible are banded in the nest. Some interesting results are beginning to emerge as these banded birds are recovered in later years. Some of these results were described in the Conservationist last month.

Several volunteers regularly participate in spring banding; they are: Paul Bartelt, Steve Duecker, Dave Fuls, Darwin Koenig, Joe Schaufenbuel, Larry Stone, Jon Stravers and Dan Varland.

## Migration Banding

**D**URING PEAK TIMES of the hawk migration, usually during October, a hawk-trapping station is operated by the Commission's State Ecologist, with help from some of the volunteers mentioned above. This station has been operated along the Mississippi River for the past three seasons and along the Missouri River this fall.

Hawk counts, along with information on meteorological conditions, are taken in conjunction with trapping and banding activities. One species of special interest is the Peregrin Falcon, an endangered species.

As a result, we are hoping to learn the location and importance of migration corridors for raptors passing through Iowa to their wintering grounds.

## The State-wide Breeding-bird Survey

**I**N THE SPRING of 1979, a project was initiated to survey the breeding birds on a state-wide basis. To do this, 200 plots were randomly selected on the basis of the nine major landforms that compose Iowa. Between the dates of May 19 and June 30, two observers worked on this project, beginning one-half hour before sunrise and ending prior to 9:00 a.m. Special techniques were developed, considering the topography, large amount of agricultural land and regularity of roads in Iowa. The survey differed, in some aspects, from the state-wide surveys done previously in North Dakota and Illinois.

The project will be completed in the spring of 1980, when the marsh habitats and urban environments will be sampled.

The project was jointly funded by the Preserves Board, Fish and Wildlife Division and 'Ding' Darling foundation, Des Moines Izaak Walton Club and contributions from Gladys Black, Des Moines Audubon Club, Cedar Rapids Bird Club, Dubuque Audubon Society and a number of other private citizens.

Information gained from this survey is now being stored on computer cards for initial analysis. The final product, after the 1980 results are in, will be an estimate of the number of breeding pairs of all the major species of birds in Iowa.

It is hoped the same project can be run in, say, 10 years to determine the trend of bird populations in Iowa.

## The 'Foray'

**E**ACH YEAR in early June, the Preserves Board sponsors a 'foray' in a different part of the state. For about a ten-day period, specialists of each discipline of natural history, converge on a site and survey the area, usually a county, for habitats or communities containing populations of species they wish to study. Begun in 1977 in Fremont County, Allamakee and Lee Counties have been the targets of recent forays. In 1980, we will survey Lyon County.

Personnel representing the three major universities and several colleges, State Preserves Board, Iowa Conservation Commission, Putnam Museum in Davenport, as well as numerous private citizens have participated in these excursions.

A major thrust in these studies is the search for habitats of endangered and threatened species. Additionally, county lists of mammals, plants, birds, mosses, lichens, fish and herptiles are compiled and analyses of communities made. Standardized routes are run for bird species; these route locations are recorded so they can be repeated at some date in the future for comparative purposes.

Results are eventually published. The first foray results were run in the journal Iowa Bird Life. The Allamakee county results are now being prepared for publication.

## The Value of Endangered Species

**W**HY SHOULD a project be stopped for an endangered species? Good question. Difficult answer.

People around the country and over the world are debating this question. Politicians are split over the issue. Even personnel within the Conservation Commission are divided in their opinion as to whether a construction project which may benefit many Iowans should be halted, modified or scrapped because of the existence of a certain bat — or a certain flower — or a "little fish hardly bigger than a paper clip" — or a ... well, the list goes on and on.

The answer is difficult because we cannot turn to cost/benefit analyses as we can with so many game species. We know the worth of a trout based on the cost of the fishing license, trout stamp, rod, reel, creel, miles driven, hours spent fishing, etc. In dealing with non-game or endangered species, we must turn to less-tangible and, hence, less-understood things like esthetics, ecological diversity, genetic reservoirs and the moral view that man-kind, however, lofty his position may seem, perhaps has no moral right to force another species from the Earth.

What makes the problem more difficult to understand is that almost everyone evaluates species on their current usefulness. In 35 years, when there may be twice the current number of people in the world, we may need the contribution of an unpopular species to learn how to cure or prevent a disease. Perhaps the key to treatment of kidney dysfunction will be found in how hibernating bears recycle and de-toxify their wastes. Perhaps the key to rabies treatment or prevention lies in an uncommon species of bat, since bats seem to be immune to rabies virus. The key here is the fact that many species have had millions of years to adapt survival strategies to live in a hostile world. Bats may prove essential in insect control as we move away from chemical and toward biological controls.

Endangered species are ordinarily species with narrow ecological tolerances, which means they are more sensitive to environmental change than more common species. We can use certain of these rare organisms as 'early warning systems' to monitor the health of our environment. Land snails seem to be highly sensitive to certain chemicals and may serve as an inexpensive bioassay. Raptors, because of their position at the top of a food chain, serve as well. Human survival may be enhanced if we learn to use rare species as barometers that indicate environmental change.

The most scaring aspect of the extinction of an organism is its finality. The magnificent technological advances of this century cannot duplicate or re-create a species once it is gone. For the sake of people who will follow us on this planet, and who are dependent on our making the right decisions today, we must be very careful.

Let a species slip into the oblivion of extinction? We cannot afford to take the chance.



## Indicative Species

LAKE	MARSH	STREAM	RIPARIAN	UPLAND	SHRUB	GRASS	CULTIVOTEL
White Pelican Double-crested Cormorant Painted Turtle Herring Gull Pied-billed Grebe Great Blue Heron Osprey Bald Eagle Belted Kingfisher	Pied-billed Grebe American Bittern Yellow-headed Blackbird Long-billed Marsh Wren Blanding's Turtle Red-winged Blackbird Great Blue Heron Snapping Turtle Leopard Frog	Belted Kingfisher Great Blue Heron Green Heron Bank Swallow Fathead Minnow Leopard Frog	Blue Jay Red-headed Woodpecker Common Flicker White-breasted Nuthatch Great Horned Owl Barred Owl Red-tailed Hawk Black-capped Chickadee Short-tailed Shrew Turkey Vulture	Downy Woodpecker Northern Oriole Blue Jay Black-capped Chickadee Eastern Chipmunk White-footed Mouse Great Horned Owl Red-tailed Hawk Rose-breasted Grosbeak	Brown Thrasher Mourning Dove Common Grackle Song Sparrow Catbird American Robin Yellow-billed Cuckoo Tree Sparrow White-footed Mouse	Meadowlark Dickcissel Bobolink American Goldfinch Plains Pocket Gopher Short-tailed Shrew Thirteen-lined Ground Squirrel Killdeer Plains Pocket Gopher	Horned Lark Meadowlark Deer Mouse Thirteen-lined Ground Squirrel Killdeer Plains Pocket Gopher

## Endangered Species

Bald Eagle Blacknose Shiner Central Newt Spring Peeper	Blanding's Turtle Eared Grebe Northern Harrier Massasauga Rattlesnake Short-eared Owl Blue-spotted Salamander Least Shrew Long- & Short- tailed Weasels	Graham's Water Snake Redside Dace Topeka Shiner Plains Topminnow Orangethroat Darter Stinkpot Illinois Mud Turtle River Otter Piping Plover	Small-mouthed Salamander Western Earth Snake Keene's Myotis Indiana Bat Woodland Vole Red-shouldered Hawk Peregrine Falcon	Broad-winged Hawk Spring Peeper Cooper's Hawk Sharp-shinned Hawk Long-eared Owl Five-lined Skink Black Rat Snake Bobcat	Loggerhead Shrike Yellow Warbler Blue-winged Warbler	Upland Sandpiper Northern Harrier Grasshopper Mouse Plains Pocket Mouse Pygmy Shrew Burrowing Owl Short-eared Owl Plains Spadefoot Ornate Box Turtle	Least Shrew
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### Acknowledgements

Most of the material presented here has been collected and summarized from informed sources. Dr. Allen Farris, Chief of the Fish and Wildlife Division, clarified the activities of the Division and its personnel for nongame wildlife. Twenty wildlife management biologists found time in their extremely tight schedules to correct information on habitats and areas, and supplied lists of common and uncommon wildlife known from their units. This report, and nongame management, would not exist without their dedicated efforts. The eight wildlife research biologists gave freely of their notes, observations and time, and continue to do so in ongoing research. Dean Stauffer and Jim Bednarz are part of the new wave of graduate students researching nongame wildlife. Last, but not least, thanks are due Iowa's licensed hunters and anglers for their financial and philosophical support.

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## '79 Nongame Support Certificates Still Available

There is still time to help Iowa's living resources. Numbered collectors prints of the first nongame support certificate are still available at \$5 each. The prints feature a colorful male cardinal photographed by Kenneth Formanek. All the proceeds from the sale of these certificates will be used solely to support the Commission's nongame wildlife programs.

Small supplies of the 5000 original prints are still available from Conservation Commission District Offices, County Conservation Board Offices, or by writing to the Iowa Conservation Commission, Wallace State Office Building, Des Moines, Iowa 50319.





# THE ENDANGERED SPECIES PROGRAM

—Where it is, where it is going.

SINCE the addition of Chapter 109A of the Code of Iowa (the Iowa Endangered Species Act) in 1975, lists of endangered and threatened species of vertebrates and plants have been compiled. This compilation was a cooperative effort between Preserves Board personnel, Conservation Commission personnel, specialists from many colleges and universities and members of the Iowa Ornithologists' Union. This list identified the species needing protection and study concerning their distribution, abundance, basic biology, ecological tolerance and habitat.

To date, some accomplishments of the endangered species program are the following:

- located populations of five species of plants feared extirpated from Iowa.
- located three new populations of Monkshood (*Aconitum noveboracense*), a federally-threatened species.
- located three new populations of the Plains Pocket Mouse (*Perognathus flavescens*)
- determined the range of the Western Spadefoot (*Scaphiopus bombifrons*) to be much larger than originally thought.
- cooperated in research on the federally listed Indiana Bat (*Myotis sodalis*) in which several new stations for its occurrence were documented.
- found two new sites for Keene's Myotis (*Myotis keenii*)
- documented the sighting of eight occurrences of the Peregrine falcon (*Falco peregrinus*) migrating through Iowa.
- sponsored research which resulted in a new location of a gastropod on the federal list.

- cooperated with persons in northwest, northcentral and northeast in locating populations of Prairie Bush Clover (*Lespedeza leptostachya*).
- discovered four new sites for the endangered horsetail (*Equisetum scirpoides*).
- cooperated in the release of two captive-bred Barn Owls
- documented the nesting of Barn owls (Fremont Co.), Long-eared owls (Page Co.) and Burrowing Owls.

This fall, a cooperative agreement was signed with the Fish and Wildlife Service which may result in jointly-sponsored research in Iowa. Principal species to be included in this research are the Indiana Bat, Iowa Pleistocene Snail and Monkshood. A portion of the Preserves Board budget has been earmarked for the state's share of this program.

Long-range goals include designing recovery plans for the most critically endangered species. If successful, the plans would help the species increase in abundance sufficiently enough to be taken from the list. Other future goals include production of educational slide programs on the plight of endangered species in general and on certain species in particular to be loaned to service organizations and schools; sponsoring research on surveys of very rare gastropods in northeast Iowa; cooperation with other groups in presenting a major symposium on endangered species.

It is important the public understand why it is important that consideration be given to the species teetering on the edge of extirpation. Only with public support can tax dollars be spent and a program be established that will result in the maintenance of the beauty and diversity that Iowans have learned to take for granted.

## Profile of an Endangered Species

### Plains Pocket Mouse

(*Perognathus flavescens*)

by Dean M. Roosa

STATE ECOLOGIST

ONE OF THE RAREST of Iowa mammals is the Plains Pocket Mouse (*Perognathus flavescens*). It is so rare, in fact, that it was thought to be possibly extirpated from the state until the recent interest in rare species occurred. In 1975, John Bowles, in his book on Iowa mammals, stated he could find no evidence of this species being captured in Iowa since 1957.

The Plains Pocket Mouse is small, with body about two and one-half inches long and tail equal to body length, pale yellowish or tan with white underparts. Along with other members of the family *Heteromyidae*, it is adapted for arid or semi-arid conditions, has weak front feet and legs, well developed hind limbs and fur-lined cheek pouches, which it utilizes in storing seeds, the major component of its diet. In the accompanying picture, it can be seen filling these pouches with seeds. Adapted for arid conditions, it does not need to drink water, manufacturing it instead from the starchy food it ingests. Basically nocturnal, it leaves its extensive burrow system only at night or on overcast days and plugs its entrance during the day.

Pocket mice are mainly Great Plains species, where they find expanses of the conditions they require. In Iowa, such conditions prevail in limited quantity, with dry, sandy areas in eastern Iowa and the dry loess hills of western Iowa being the species' major remaining suitable habitat.

Despite weakly-developed front limbs, these little rodents are proficient diggers in loosely-compacted, friable (easily crushed) earth. One which I kept in captivity would create, in an hour or two, a new system of burrows in the fresh earth placed in the terrarium. Because loess is a friable soil material and because in the loess hills are yet found fairly large



grasslands with many seed-bearing plants, this landform offers an ideal habitat for this interesting species and individuals have been captured in several locations during the past two years. We are just beginning to document its distribution, determine population estimates and basic ecology of the species in this interesting and little-known landform. This is one of the goals of the loess-hills project, recently undertaken by the State Preserves Advisory Board, and scheduled to continue for several years.

Perhaps enough can be learned about this species and sufficient habitats protected so Iowans can forever appreciate this tiny visitor from the Great Plains. □

PHOTO BY RANDALL MAAS



# Nursery Stock Available

The Conservation Commission's State Forest Nursery grows tree and shrub seedlings for conservation uses on Iowa lands. Attached is the Nursery's 1980 application form. The following instructions should make it easy to complete:

## Delivery Information.

Check either "Pick up" or "Ship". If "Ship", give a shipping address; a P.O. Box number is not enough.

## Nursery Stock Requested.

Fill in the amounts you wish to order. You must order in units of 100, and the total order must be 500 or more plants (except the Wildlife Packet which may be ordered individually). If ordering plants to complete the previous year's planting, you may order less than 500 total but still in units of 100.

## Legal Description of Planting Location.

Fill in information (as found on your tax assessment).

## General Information.

Answer each question.

## Landowner Agreement and Signature.

Print your name, home address, and phone number. Read and sign the Agreement. (If it's not signed, we'll return it to you.) Check "Tax-Exempt" if applicable.

Check form for completeness — incomplete applications will be returned. (You can copy your order on the reverse side of this sheet for your records.) Detach the application, fold, and staple it twice. Attach postage and mail. **DON'T SEND MONEY AT THIS TIME.**

If we have the plants requested when we receive your application, we'll deduct them from the inventory and send you a bill for the correct amount (including 3 percent sales tax and shipping charges of 70¢/100 plants, if applicable). This bill is our acknowledgement of your order. **PAYMENT MUST BE RECEIVED BY THE NURSERY WITHIN 15 DAYS.** Otherwise, we'll cancel your order, putting your plants back in the inventory and making them available for other orders.

We begin preparing orders as early in the spring as possible. Unfavorable weather (rain, snow, etc.) can cause delays. The Nursery gets each order ready as quickly as possible, but we can't guarantee availability by any specific date.

For pickup orders, do not come to the Nursery for your order until you receive a postcard saying it's ready. Then bring the postcard with you when you come.

For ship orders, a postcard will be sent when your order is shipped so you can contact us if there's a delay in receiving it.

The Nursery reserves the right to make comparable substitutions if sufficient stock is not available.

Early orders have preference; the sooner you send your application, the better our chances of being able to serve you. We're all looking forward to a good planting season next spring!



## SUGGESTED SPACING

Species	Reforestation	Wildlife	Erosion Control
Pines & Larch	5' x 5' (1,742 plants/acre) to 8' x 8' (681/acre) (same for Xmas trees)	same (High density makes good cover)	same
Walnut, Ashes, & Maple	8' x 8' (681/acre) to 12' x 12' (302/acre)	8' x 8' (681/acre) to 16' x 16' (170/acre)	8' x 8' to 12' x 12'
Russian Olive		6' x 6' (1,210/acre) to 12' x 12'	same
Autumn Olive & other shrubs		3' to 5' between plants within rows; 5' to 10' between rows; range from 2,900 plants/acre (3' x 5') to 871/acre (5' x 10'). Or plant in clumps 4x4 or 6x6.	

## GENERAL INFORMATION

Species	Mature Size Range	Moisture			Light		Growth Rate	Remarks	# Ordered (For Your Records)
		Dry	Well Drained	Moist	Full Sun	Some Shade			
White Pine	50-80'		X	X	X	X	fast	Intolerant of air pollutants. Adaptable to most sites.	
Scotch Pine	30-60'	X	X		X		medium	Hardy. Adaptable.	
Red Pine	50-80'		X		X		medium	Requires cool sites.	
Ponderosa Pine	60-100'	X	X		X		medium	Recommended for Western Iowa only.	
Austrian Pine	50-60'	X	X		X		medium	Requires good air circulation.	
Jack Pine	35-50'	X	X		X		fast	Hardy and adaptable.	
Red Cedar	40-50'	X	X	X	X		medium	Tolerates poor, gravelly soils; prefers airy site. Very drought resistant. Good cover and food.	
European Larch	70-75'		X	X	X		fast	Needles drop annually. Firewood.	
Black Walnut	50-70'		X		X		fast	Valuable wood products tree. Firewood.	
White Ash	50-80'		X		X		medium	Valuable wood products tree. Good firewood.	
Green Ash	50-60'		X	X	X		fast	Valuable wood products tree. Good firewood.	
Soft (Silver) Maple	60-80'		X	X	X	X	fast	Bottomland sites. Valuable wood products tree.	
Osage Orange	20-40'	X	X		X		fast	More adaptable to southern Iowa. Withstands poor soil extremely well. Thorny, useful for cover.	
Russian Olive	12-15'	X	X		X	X	medium	Very hardy plant. Good food for wildlife. Drought resistant.	
Autumn Olive (Cardinal strain)	12-18'		X		X	X	medium	Good wildlife food and cover.	
Wild Plum	15-30'	X	X	X	X	X	fast	Hardy. Forms thicket. Good nesting cover for birds.	
Tatarian Honeysuckle	10-12'	X	X		X	X	fast	Very hardy. Dense growth. Good food for birds.	
Amur Honeysuckle	12-15'	X	X		X	X	fast	Occasional winter killing of branches in northern Iowa. Fruit available in September- November.	
Ninebark	5-9'		X	X	X	X	medium	Very hardy. Good cover.	
Redosier Dogwood	7-9'		X	X	X	X	fast	Produces cluster of stems from ground. Good wildlife food.	
Wildlife packet									

## FORESTRY SECTION IOWA CONSERVATION COMMISSION

The Forestry Section of the Conservation Commission assists the people of Iowa to enhance the woodland resources by following this broad objective: To foster environmental protection and strive to insure, for present and future generations, the greatest economic and social benefits from trees, forest land, and related resources. The Forestry Section works toward these objectives through forest management, tree planting, forest protection, timber processing improvement and demonstration of woodland values. These services are available to all landowners, public and private.

\*\*\*\*\*

For planting information and other assistance concerning the management, harvesting, marketing and utilization of your woodlands, contact the District Forester serving the county in which your land is located (see map on back of application). This is a free service, and we urge you to contact them before you plan any special or extensive plantings.

Similar management advice for wildlife is available from Wildlife Management Biologists (also listed on the back of the application). Planting assistance may also be available from your County Conservation Board.



## 1. DELIVERY INFORMATION

(Please print)

☐ I will pick up my order at the nursery when notified.

☐ I want my order shipped to the address below:

(NAME)

(ADDRESS)

(CITY)

(PHONE)

## 2. NURSERY STOCK REQUESTED

(Do not order less than 500,  
in units of 100)

Species	Age (yr.)	Height	Cost/ Hundred	Number Wanted
White Pine	3	5-12"	\$3.50	
Scotch Pine	2	4-10"	3.50	
Red Pine	3	6-14"	3.50	
Ponderosa Pine	2	5-12"	3.50	
Austrian Pine	2	5-12"	3.50	
Jack Pine	2	5-12"	3.50	
Red Cedar	2	6-12"	3.50	
European Larch	2	6-18"	3.50	
Black Walnut	1	10-18"	3.50	
White Ash	1	6-12"	3.00	
Green Ash	1	6-12"	3.00	
Soft (Silver) Maple	1	6-12"	3.00	
Osage Orange	1	6-12"	3.00	
Russian Olive	1	6-12"	3.00	
Autumn Olive	1	6-12"	3.00	
Wild Plum	1	6-12"	3.00	
Tatarian Honeysuckle	1	6-12"	3.00	
Amur Honeysuckle	1	6-12"	3.00	
Ninebark	1	6-12"	3.00	
Redosier Dogwood	1	6-12"	3.00	
Wildlife Packet (containing 50 conifers & 150 shrubs)			10.00/Package	

The Nursery reserves the right to make substitutions if necessary. These substitutions will be suitable for the purposes for which the Conservation Commission Nursery stock is sold.

# 1980 APPLICATION FORM



## 3. LEGAL DESCRIPTION OF PLANTING LOCATION

These trees are to be planted in \_\_\_\_\_ Quarter,  
\_\_\_\_\_ Section, \_\_\_\_\_ Township,  
\_\_\_\_\_ Range, in \_\_\_\_\_ County,  
Iowa.

## 4. GENERAL INFORMATION

A. I RECEIVED ASSISTANCE IN PLANNING THIS ORDER FROM: 1. ☐ No one, 2. ☐ Soil Conservation Service, 3. ☐ ASCS, 4. ☐ County Extension Service, 5. ☐ District Forester, 6. ☐ Conservation Officer, 7. ☐ Wildlife Biologist, 8. ☐ County Conservation Board.

B. MAIN PURPOSE OF PLANTING: 1. ☐ general forestry, 2. ☐ wildlife habitat, 3. ☐ erosion control, 4. ☐ other.

C. METHOD OF PLANTING: 1. ☐ machine, 2. ☐ hand.

D. THE PLANTING LOCATION IS: 1. ☐ farm, 2. ☐ city, 3. ☐ acreage, 4. ☐ government land, 5. ☐ other.

E. HAVE YOU PURCHASED PLANTS FROM THE NURSERY BEFORE? 1. ☐ yes, 2. ☐ no.

## 5. LANDOWNER AGREEMENT AND SIGNATURE

I agree to plant and use the nursery stock requested upon the described property for establishing or improving existing forests, erosion control, game or water conservation, with these restrictions: I agree NOT to resell or give these plants away with roots attached to any person, firm, corporation or agency nor to plant any of them for new windbreak, shade, or ornamental purposes. I agree to protect all plantings from fire and domestic livestock grazing. I agree to forfeit for destruction any trees planted or used in violation of the above restrictions.

☐ If you are a tax-exempt government agency, please check here.

(LANDOWNER NAME — PLEASE PRINT)

(MAIL ADDRESS)

(CITY)

(STATE)

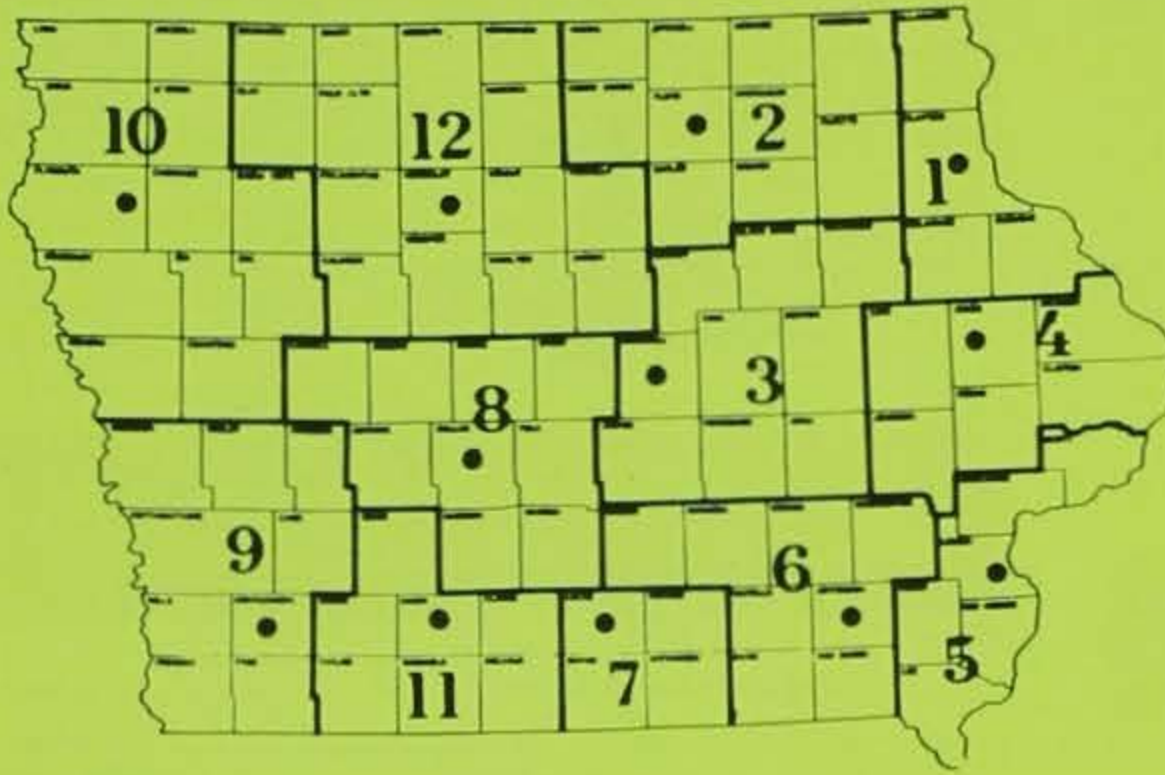
(ZIP)

(PHONE NUMBER)

(LANDOWNER SIGNATURE)



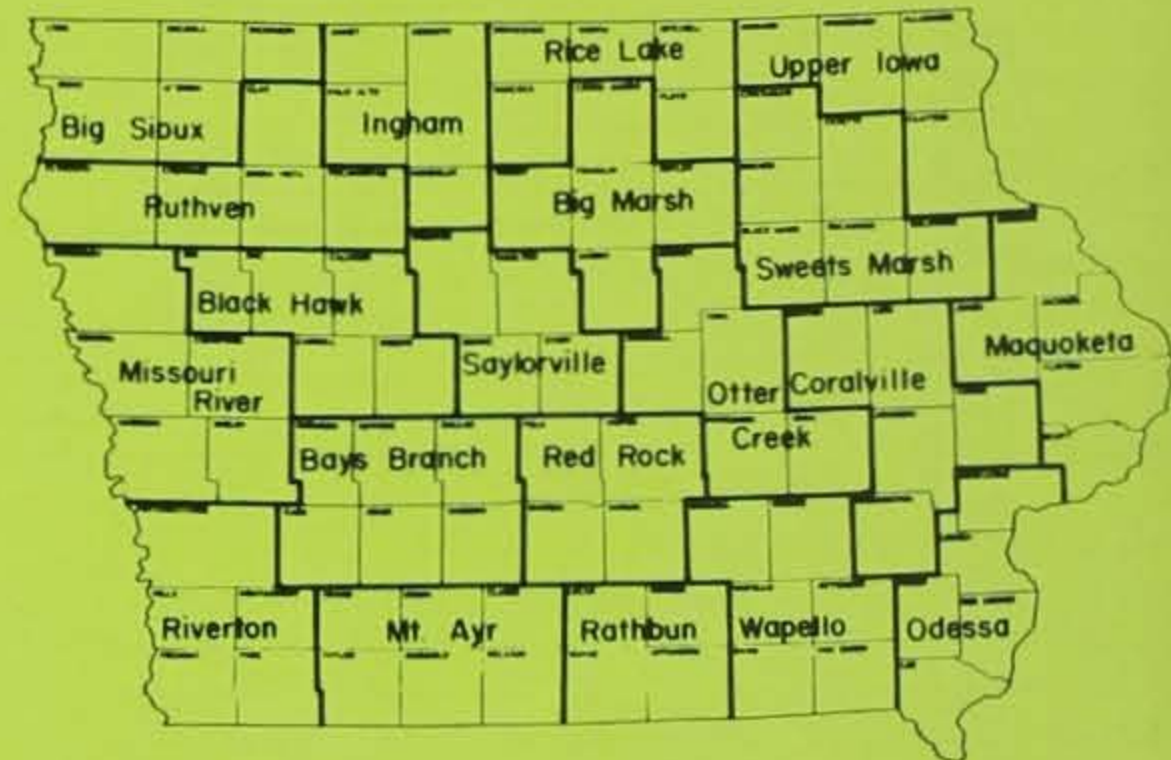
## DISTRICT FORESTER ADDRESSES



- |                 |                                    |                |
|-----------------|------------------------------------|----------------|
| 1. ELKADER      | Box 662, 52043,                    | (319) 245-1891 |
| 2. CHARLES CITY | Box 4, 50616,                      | (515) 228-6611 |
| 3. MARSHALLTOWN | Box 681, 50158,                    | (515) 752-3352 |
| 4. ANAMOSA      | Box 46, 52205,                     | (319) 462-2768 |
| 5. WAPELLO      | Box 62, 52653,                     | (319) 523-8319 |
| 6. FAIRFIELD    | Box 568, 52556,                    | (515) 472-2370 |
| 7. CHARITON     | Stephens State Forest, RR 3, 50049 | (515) 774-4918 |
| 8. ADEL         | Box 175, 50003,                    | (515) 993-4133 |
| 9. RED OAK      | Box 152, 51566,                    | (712) 623-4252 |
| 10. LE MARS     | Box 65, 51031,                     | (712) 546-5161 |
| 11. CRESTON     | Box 2, 50801,                      | (515) 782-8211 |
| 12. HUMBOLDT    | 102-8th St., S., 50548,            | (515) 332-2761 |

## WILDLIFE MANAGEMENT BIOLOGIST ADDRESSES

- |  |                |
|--|----------------|
| 1. Bays Branch Wildlife Unit                             | (515) 747-2278 |
| ASCS Office Bldg., Box 247, Guthrie Center, 50115        |                |
| 2. Big Marsh Wildlife Unit                               | (515) 456-3730 |
| ASCS Office Bldg., Box 296, Hampton, 50441               |                |
| 3. Big Sioux Wildlife Unit                               | (712) 472-3751 |
| SCS Office Bldg., Rock Rapids, 51246                     |                |
| 4. Black Hawk Wildlife Unit                              | (712) 297-7824 |
| SCS Office Bldg., 330 Richmond St., Rockwell City, 50579 |                |
| 5. Coralville Wildlife Unit                              | (319) 354-1074 |
| ASCS Office Bldg., 517 Southgate Ave., Iowa City, 52240  |                |
| 6. Ingham Wildlife Unit                                  | (712) 362-7222 |
| SCS Office Bldg., 2109 Murray Rd., Estherville, 51334    |                |
| 7. Maquoketa Wildlife Unit                               | (319) 652-2456 |
| Pershing Rd. E., Maquoketa, 52060                        |                |
| 8. Missouri River Wildlife Unit                          | (712) 423-2426 |
| SCS Office, Lindley Bldg., Onawa, 51040                  |                |
| 9. Mt. Ayr Wildlife Unit                                 | (515) 464-2220 |
| SCS Office Bldg., RR 3, Mt. Ayr, 50854                   |                |
| 10. Odessa Wildlife Unit                                 | (319) 523-8319 |
| ASCS Office Bldg., 117 S. 2nd St., Wapello, 52653        |                |
| 11. Otter Creek Wildlife Unit                            | (515) 484-3752 |
| USDA Office Bldg., 203 W. High St., Toledo, 52342        |                |
| 12. Rathbun Wildlife Unit                                | (515) 774-4918 |
| Highway 34 By-Pass, Chariton, 50049                      |                |
| 13. Red Rock Wildlife Unit                               | (515) 961-2587 |
| Box 423, Indianola, 50125                                |                |
| 14. Rice Lake Wildlife Unit                              | (515) 324-1819 |
| SCS Office Bldg., 706 1st Ave. N., Northwood, 50459      |                |
| 15. Riverton Wildlife Unit                               | (712) 624-9063 |
| SCS Office Bldg., Malvern, 51551                         |                |
| 16. Ruthven Wildlife Unit                                | (712) 225-4595 |
| SCS Office Bldg., Cherokee, 51012                        |                |
| 17. Saylorville Wildlife Unit                            | (515) 432-4320 |
| ASCS Office Bldg., 718 8th St., Boone, 50036             |                |



- |  |                |
|--|----------------|
| 18. Sweet Marsh Wildlife Unit                      | (319) 352-1113 |
| ASCS Office Bldg., 911 Bremer, Waverly, 50677      |                |
| 19. Upper Iowa Wildlife Unit                       | (319) 382-4895 |
| ASCS Office Bldg., 911 S. Mill St., Decorah, 52101 |                |
| 20. Wapello Wildlife Unit                          | (515) 682-3552 |
| ASCS Office Bldg., 1309 E. Mary, Ottumwa, 52501    |                |

Fold Here

From: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Nursery Forester  
State Forest Nursery  
2404 South Duff Avenue  
Ames, Iowa 50010**



# "HAWG HUNTER"

by Alan Moore,  
FISHERIES BIOLOGIST

DO YOU KNOW what a "hawk hunter" is? No, it's not a person who hunts pigs. It's a dyed-in-the-wool largemouth bass fisherman and his "hawk" is a larger largemouth bass (LMB). Yes, largemouth bass is one of our most sought after fish species, and as with many things, demand far exceeds supply. The size harvest to one by is the "5 inch plus" largemouth fingerling needed for stocking lakes with existing predator fish populations. The reason this particular sized bass is scarce is because largemouth bass feed on other fish and insects. Therefore, it is an almost impossible task to produce enough natural food to grow large numbers of bass to 5 inches with reliable results. Consequently, in 1977, the Rathbun Fish Hatchery was assigned the job of producing significant numbers (50,000 to 60,000) of largemouth in this size range for stocking using artificial diet.

Rearing bass on artificial feed is not a new idea but the technique requires considerable time and effort.

About mid-June, fingerling largemouth bass (1/2" to 2") are transferred from Fairport Hatchery to Rathbun Hatchery. Upon arrival, the fingerling are placed in 20 x 3 ft. concrete tanks containing 3 feet of water. Until this time, the bass have fed on natural foods (plankton and insects) but must now be trained to accept the artificial diet. In order to increase the competition for food and accelerate the training process, the fish are crowded, with screens, into a 6 foot space and lighted continuously. The unlit portion of the tank is darkened with a cover. This helps direct the attention of the bass to the lighted feeding area.

The teaching process begins immediately, with the bass being fed by hand at least 6 times each day at two hour intervals. Each feeding takes 20 to 30 minutes in the initial stages. Automatic feeders are now being used experimentally in conjunction with hand-feeding, with promising results. In order to expose as many fish as possible to the food (a soft diet termed Oregon Moist Pellet), it is slowly scattered to all parts of the confined area. Soon, some bass will start feeding and then a few more will gradually learn from these feeder bass and so on, creating a "snowball effect".

After approximately 2 weeks, 50 to 80 per cent will be actively feeding. At this point, the largemouth are fed 3 times each day. When the bass reach 3 inches in body length, they are moved to outside circulating ponds and reared until they reach an average of 4.5 to 5 inches. In late September, they are "marked", for later identification, (by clipping one pelvic fin) and stocked in predesignated waters.

During the past two years, Rathbun Hatchery has produced 121,000 large fingerling largemouth bass. The stocking program is in its experimental stages and populations that have been stocked are being evaluated in lakes at the present time.

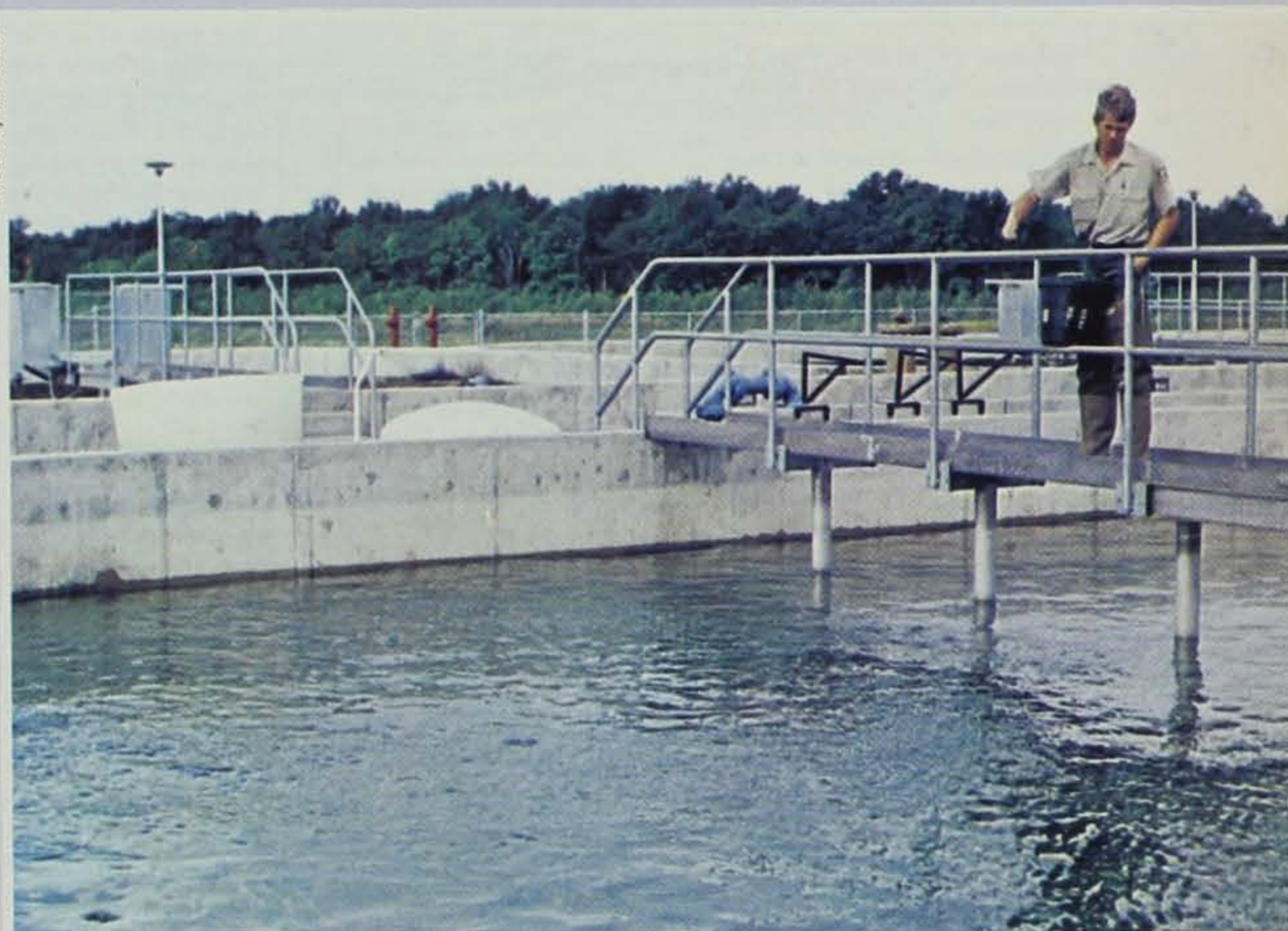
The following list of lakes and counties indicate where the large fingerling largemouth have been released:

Rathbun Reservoir (Appanoose)

Don Williams Lake (Boone)  
Lake Cornelia (Wright)  
Lake Odessa (Louisa)  
East Lake (Polk)  
Viking Lake (Montgomery)  
Lake MacBride (Johnson)

If the results look promising, Iowa anglers should have a reliable source of bass to maintain good fishing for those "hawgs". □

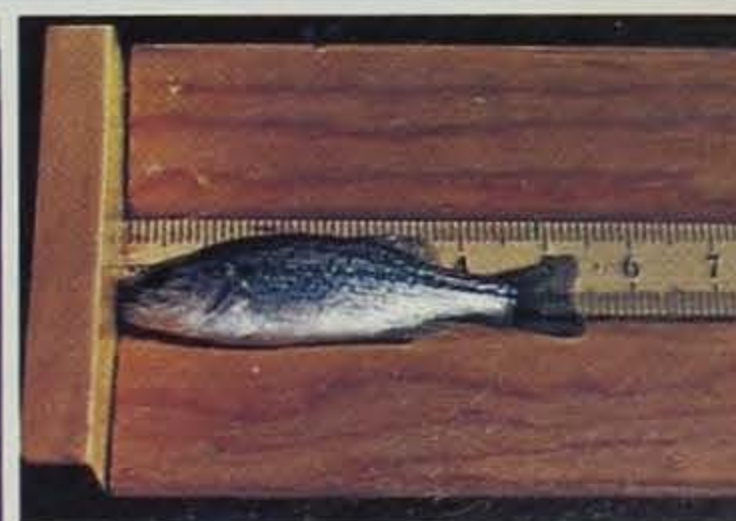
Photos by the author



While in the outside circulating ponds, the largemouth are fed all the feed they will consume, twice per day.



After having been marked for future identification, these bass are ready for release.



The finished product.



FROM THE

# Warden's diary

by Rex Emerson

LAW ENFORCEMENT SUPERVISOR

December is the month when we have big game hunting in Iowa — the white-tailed deer. Working during that season is a game warden's nightmare. There are many hunters out there with very little, or no, experience in hunting. Some think they have \$15.00 worth of meat coming because they have spent \$15.00 for a license. Some think the laws pertain to everyone except themselves.

Quite often we run across the farmer who says, "We feed 'em, we should get to hunt before anyone from the city".

Most of the hunters complain that there aren't enough of the "any sex" licenses issued. We have a special season for the bow hunter, so others want a special season too. One group would like a "muzzleloader gun" season and some want a "pistol only" season. There have been requests for a "spear" season, a "knife throwing" season and a season to hunt deer with dogs. There are always those who want to hunt with high-powered rifles.

We try to manage the deer herd in Iowa so there will be as many, or more, deer next year. If we tried to make everyone happy and

complied with each and every request the deer would soon be killed off. Guess who would get blamed for that! Most of the licenses are for "buck only". If all licenses were for any sex we would have to greatly limit the number of licenses. That method was tried, but no one liked it, except the few who were lucky and received a license.

The people who request a high-powered rifle season instead of a shotgun season have some good points. A high-powered rifle in the hands of someone who has had experience hunting with it is as safe or maybe safer than other guns. But, if all those inexperienced deer hunters that we have out there had a high-powered rifle in their hands you wouldn't be safe in a bomb shelter. A lot of them would be using borrowed guns, and the hunter would have no idea how far it would shoot.

Deer hunters are no different than anyone else. Most of them abide by the laws, but some don't. That's where the game warden fits into the wildlife management system.

On an opening day of deer season we saw a deer hanging from a tree in a farmer's yard. Upon

examining the deer we found it had been shot with a rifle instead of a shotgun slug. We seized the deer and found the farmer at a farm sale, where we issued a court citation.

One group of six deer hunters came out of the woods. We checked their licenses and found that three of them had landowner licenses. There can be no more than one free landowner license per farm, so two of them had to be wrong. After questioning all of the hunters in the party we found out all three were wrong. They were all off their own farm by at least five miles. They all started talking at once when they found out they were in trouble. They were telling me the laws are all wrong. "We feed 'em". "The city guy comes out, etc., etc.".

That's when I raised my voice to something like a sonic boom and got their undivided attention. Then in a nice quiet tone of voice I told them, "My mother told me one time if you're in trouble, keep your chin up. If it does nothing else it will keep your mouth shut." They got the point.

During one of the deer seasons when we had snow on the ground I could see fresh tracks where five people had walked into a field. There was a very high hill out there and some scattered timber. With no vehicle in sight, they were evidently going to come out at a different place, so I drove around the section to wait for them. A station wagon was sitting there with the motor running so it would be nice and warm when they got there. The driver was an old man who said he couldn't take that deer hunting any more so he just drove the car. When they came out of the field there were only four persons. They all had hunting licenses and deer permits but they didn't know anything about a fifth person. They piled into the station wagon and drove off. I drove back around the

section and, sure enough, here came the missing member of the hunting party down the long hill. He saw my car and ran back up the hill. It was going to be a cat and mouse game. The game couldn't last too long because it was so cold the river birch were turning blue. I was in a nice warm car and he couldn't stay hidden very long. I drove back around the section again. The hunter had a mile to walk over some pretty rough terrain. This time when he saw my car he hesitated a moment and then came on down the hill. In the warmth of my car he admitted to hunting deer without a license. I think he would have admitted to anything rather than to have to get out into the cold again!

Another group of deer hunters hadn't been having any success at all. They all had licenses with the transportation tags still attached. Later we found an old barn where they had their untagged deer stashed. About half of the group had each shot a deer, but didn't want to tag it until they had a deer for everyone. The deer must be tagged before it is moved, and those deer didn't get hung up in that barn by themselves. They could have tagged the deer and still helped their friends by driving deer, just as long as they only shot the one deer. But there were hoping to shoot one for the other people in the party. That is greedy, but not at all unusual.

Once in awhile we find a deer hunter out there not wearing any of the required fluorescent orange clothing. This is one of the best safety laws that we have. It's only required for shotgun deer hunters, but everyone who wanders around in the woods during hunting season should wear a fluorescent orange cap or coat. You're not a soldier in a combat zone where you are hiding from the enemy. Out in the woods the name of the game is "BE SEEN"!



# Classroom Corner

by Bob Rye

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## LOOKIN' BACK

in the files of  
the CONSERVATIONIST

### Ten Years Ago



The *Conservationist* featured an article about fly-in pheasant hunting. The hunters involved actually flew to several different areas, hunting a short time and flying on to the next. At the price of gasoline today, birds taken on this kind of hunt would probably run \$1.00 a pound.

Minnesota Vikings football coach Bud Grant was down for a while from a pheasant hunt. The next year he would be having an unpleasant time in the Super Bowl against Kansas City.

### Twenty Years Ago



We were hip deep in rabbits. Roadside counts showed cottontails to be at a nine year high and the season was somewhat

more liberal than in previous years. There were plenty of happy hunters in 1959.

It was noted that pigmy shrews, the smallest mammal, weigh only one ounce — less than a dime.

### Thirty Years Ago



The magazine gave a report on what newspapers around the state had written about the opening day on pheasant season. Hunting was

popular in areas like Fayette, Storm Lake, Griswold, Hawarden, Buffalo Center, Hampton. How did Griswold get in there? In the fifties everybody hunted up north.

Two West Virginia men were tested with over fifty squirrels in their possession. Neither one had a hunting license. That's one hunt that probably no one involved for quite awhile.

Do you notice deer in the field, hawks soaring overhead, trees swaying in the breeze or ground squirrels along the road? The opposite is also there — a piece of paper, a bottle, a stray piece of metal.

Conservation of energy and the condition of the environment such as air pollution and bottle bills have been in the forefront of the news for several years. They have also, during this same time, moved to the background. Most people do not stay with a cause for any length of time. Something new and different demands their attention. Do you recall the importance that was once given to space? Crime in politics? The coming of the metric system? The Great Iowa Cleanup?

We, as members of the human race, must try to establish a positive ethic in all of us. Some ethic is established via the pocket-book, some by having to live within our own "mess". In order to improve our environment and to reach others, education is the key. This education, however, should be viewed as something more than education. It must be fun.

The Iowa Conservation Commission has assisted the Iowa Conservation Education Council in looking at our forest environment and the establishment of a conservation ethic in youth. A booklet, "Learning Experiences in a Forest Environment" is available from the Iowa Conservation Education Council. It contains activities which can be run year round.

Included in the booklet is a program directed toward city or suburb dwellers entitled, "The Urban Forest". It will enable the participants to understand that trees and shrubs play a vital role

within our highly populated areas. The activity takes place on a neighborhood block within the city and requires only paper and pencil.

The activity starts by assigning each group of students a section of the block on which to plot the trees and shrubs visible from the sidewalk. Use a dot for each tree or shrub. It may be helpful to show the various sizes of trees in proportion to the various sizes of dots.

After returning from the walk, have the students place their plotted sections together to form the original neighborhood block. Compare multiple uses of the trees. Note the benefits provided by urban trees and shrubs.

A suggested questioning strategy is: What type and patterns of plantings are visible? This is an open question which will allow all of the students to participate. Next, a question which will focus on the purpose of the activity such as — What uses do they serve? An interpretive or comparative question should come third — Imagine this block without trees and shrubs. What change would there be? A summary statement by the students showing what they have gained from the experience is desired. This can be obtained with a question — Why is it important that we promote the use of trees and shrubs within our community?

Another forestry activity in the booklet is the study of bark and learning that trees have as many different characteristics as do people. This can take place in the same neighborhood as the previous activity. The students will need paper and a writing instrument such as

a crayon or a pencil. They will be making a rubbing of a tree's bark.

One the art work is done the questioning strategy can once again be employed. The series of questions might be: What are the parts of a tree? What words describe the bark of your tree? Compare the bark of your tree with others in the area. Summary questions would include — why is that tree's bark important? or, how does the individuality of your tree's bark compare to the individuality in people?

The two activities may be tied together into a caring for "our" neighborhood. This should bring out the value of trees and shrubs to wildlife, beauty, and even social studies. It should also show that all of us are individuals and as individuals can add our part to the forest in our neighborhood allowing it to be there for others to enjoy. These activities can be a part of the "education" that will aid in establishing an ethic. They can be used to look at our neighborhood and to "learn with fun".

More of these activities; such as "The Sun and the Forest," and "Plant Odors" can be obtained from the forest booklet and other activities at Conservation Education Workshops at the Conservation Education Center.

Conservation Education is commonly thought of as occurring in the classroom. Each classroom teacher has the classroom, the school grounds, the community and natural areas to serve as resources in teaching an ethic. We can assist the teacher by providing a community which shows the wise use of what we have.

All classes should have the opportunity to visit a natural area. A trip to Iowa's rivers, parks or wildlife areas in an educational setting can provide an excellent comparison. Take time now to plan how you will start this development of a conservation ethic.





IOWA WINTER SCENE BY DICK CASADY