

Iowa

January/February 1994

# CONSERVATIONIST

Department of Natural Resources







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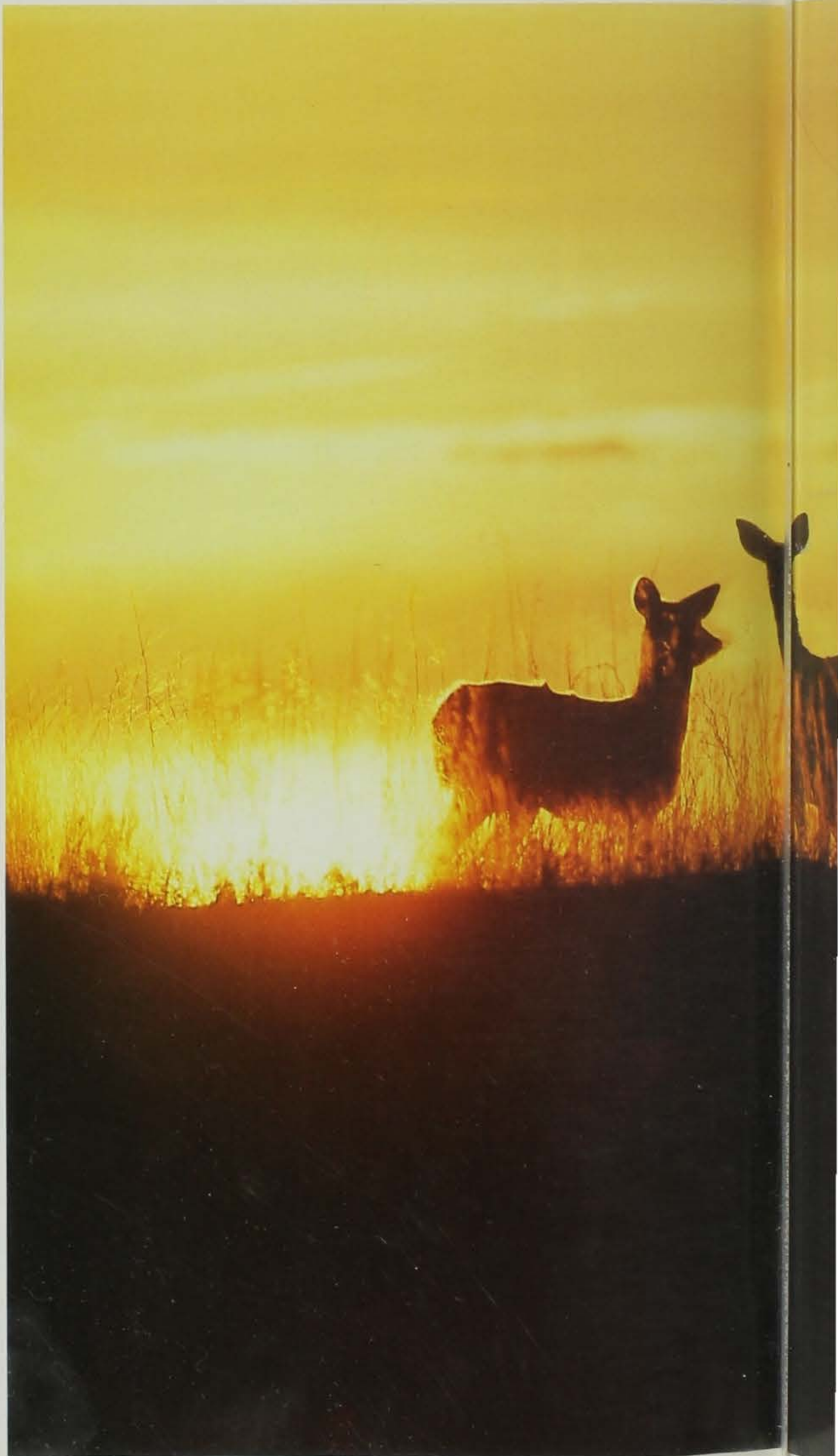




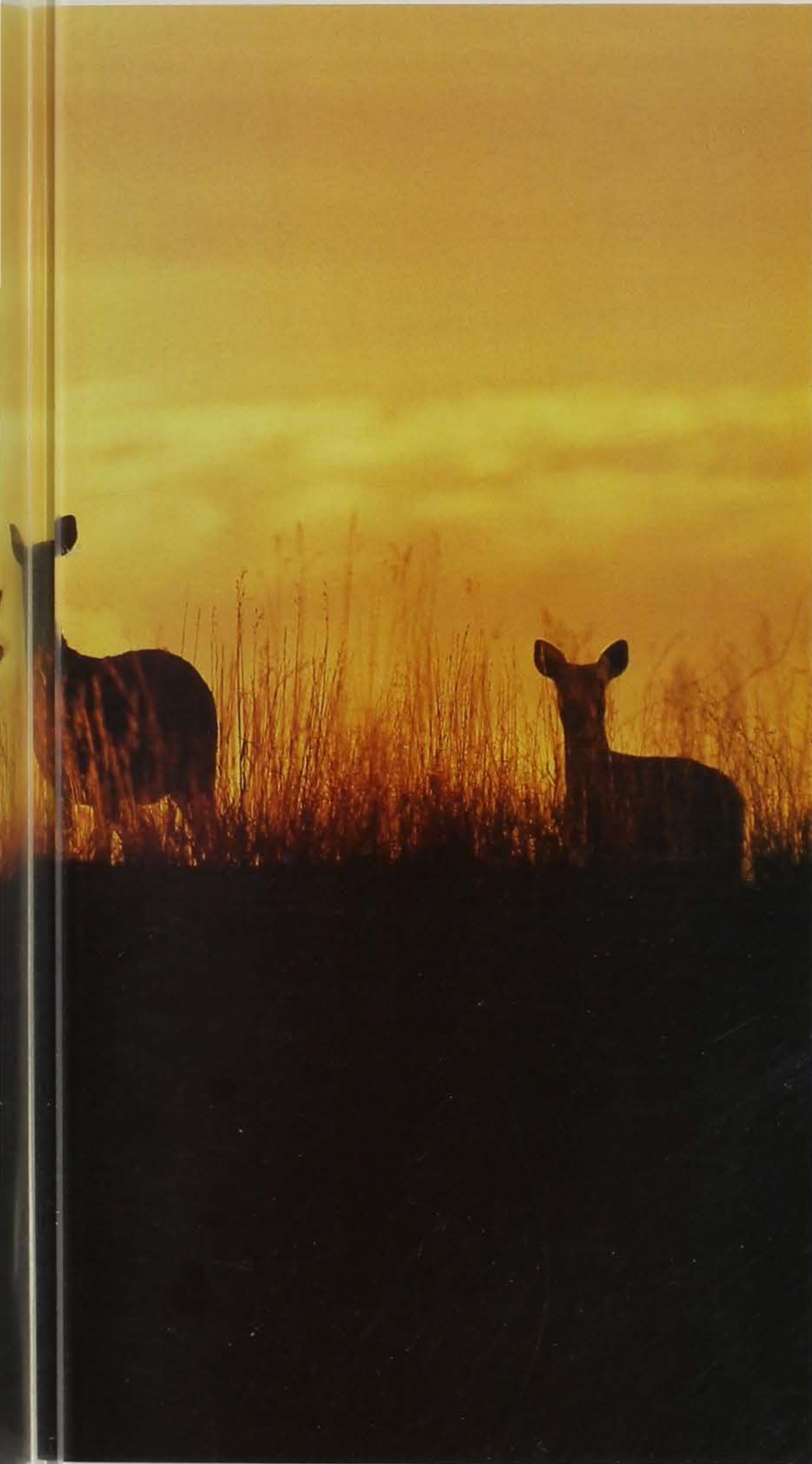
Article by Rich Patterson  
Photos by Roger A. Hill

# DEER, OH DEAR!

**Is Iowa's deer herd becoming more urbanized? Conflicts between deer and humans seem to be increasing as deer move into the cities.**







"I've lived in this house for more than 20 years, and I don't believe what's in the back yard," an excited Cedar Rapids homeowner told me on the phone. "There are two deer out back. What do I buy to feed them?"

This was the first of hundreds of deer calls that I've handled as Director of the Indian Creek Nature Center. It took place about a decade ago.

As a burgeoning deer population gradually moved into towns and cities, and as new homes were built in traditional deer habitat on the edge of town, people's reactions to them progressed from delight to apprehension, and sometimes to anger and frustration.

Wanting to keep them around, many homeowners at first bought apples, corn and salt blocks for them. But, within a couple of years, the tone of the calls began to change. "How do I get rid of those deer?" is more common today.

#### **Historical Perspective**

Prior to Columbus, deer were common across most of the continent. They had evolved under heavy predation by wolves, bears, mountain lions, and native Americans -- all of which lived in Iowa and much of the rest of North America. To survive amid relentless predation, deer relied on their keen senses of smell and hearing, their camouflage, and their amazing ability to produce many fawns in a lifetime.

Then, like now, deer are most numerous where they find open, grassy meadows, brushy areas, and patches of large trees in close proximity.

When European colonists moved to North America, they immediately began changing the habitat. Trees crashed to the ground to create farms, brushy areas were converted to pasture and cropland, fires were immediately extinguished, and few humans passed up an opportunity to convert a deer into venison steaks or a few quick dollars. There were no laws protecting the animals, and even does and fawns were shot in any season.

Until about a century ago market hunting was common, and professional hunters sold deer hides and meat. In the 1830s Iowa venison sold for two to



three cents per pound. Forty tons of deer hides were sold in Iowa in 1877.

Under such tremendous pressure, deer populations crashed, and in the early years of this century the animals had disappeared from much of their former range.

#### Deer Herds Rebound

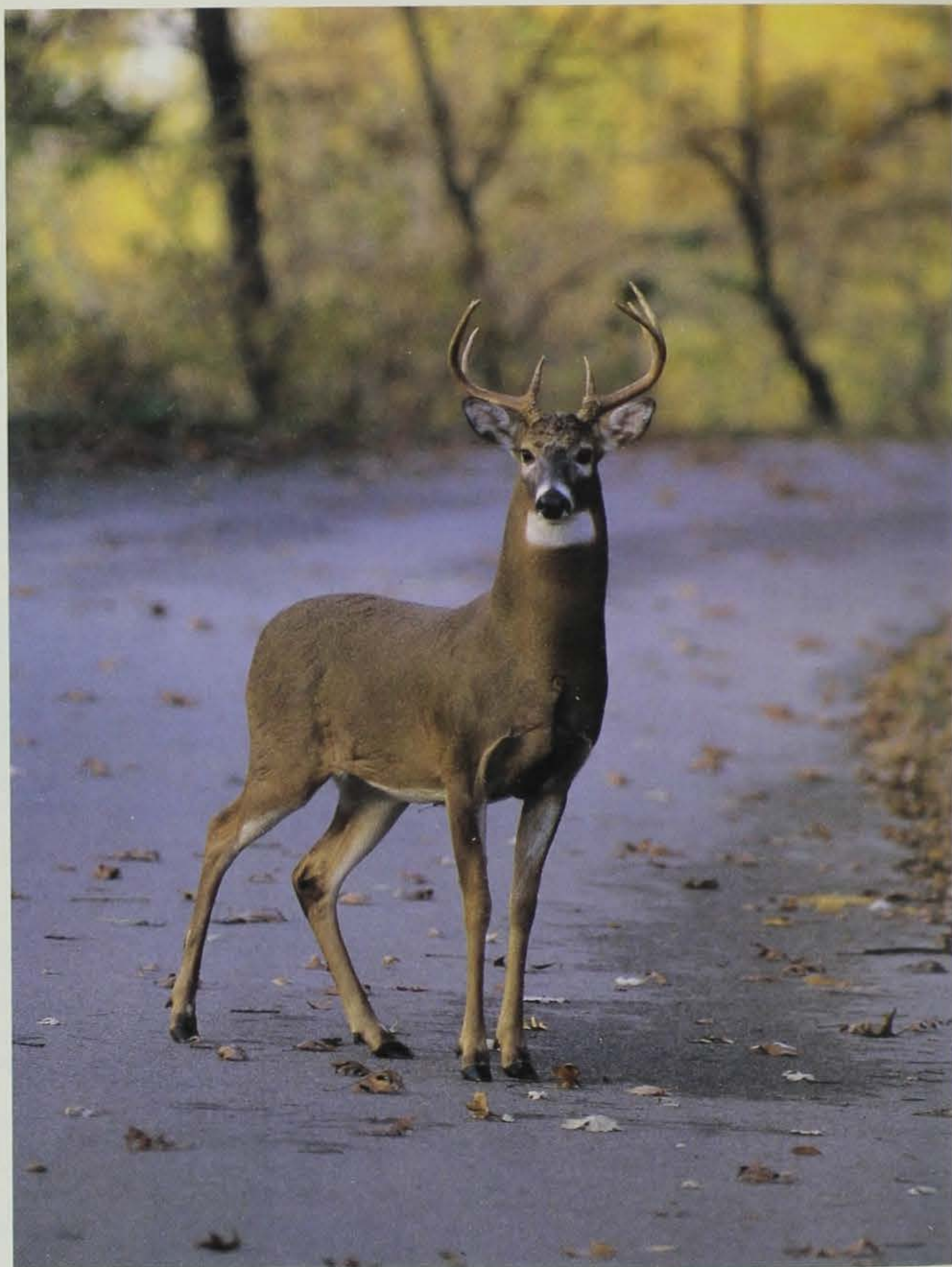
Around the turn of the century a combination of human and ecological factors combined to resurrect the once-common deer. Attitudes began to change. President Theodore Roosevelt voiced what many people had come to realize -- natural resources, including wildlife, were not limitless and needed protection.

Laws were passed protecting deer.

Another factor that helped deer increase was the abandonment of thousands of acres of marginal farmland, beginning in the 1930s.

When agriculture stops, brush quickly carpets former cropland and creates excellent deer habitat.

In addition to changed human attitudes and improved habitat, predators remained absent in Iowa. The state had become deer heaven.



Many wildlife biologists believe that deer moved back into the state by themselves from Wisconsin and Missouri, where remnant populations had survived. The Iowa Conservation Commission accelerated recolonization by moving deer from areas where they had become numerous and releasing them into good habitat.

By 1953 deer had become abundant enough that the commission held the first legal hunt in modern times.

Harvests were restricted and deer numbers continued to gradually rise.

In the 1980s deer populations literally exploded. Perhaps the best indication of the rapid growth is an analysis of animals legally killed by hunters. In the early 1980s, the harvest hovered at a little more than 20,000 animals per year. By 1990 it stood at a remarkable 100,000, with plenty of healthy deer left in the woods following hunting season.



Deer underwent this huge population increase for a number of reasons, including the habitat changes and lack of predation. But, another was the management philosophy of the Iowa Conservation Commission and its successor, the Iowa Department of Natural Resources. For many years the state managed the herd for growth. Deer are strongly polygamous. One buck can impregnate dozens of does. When hunters are restricted to killing only bucks, protected does survive to produce young the following spring. That's exactly what happened, and the Iowa deer herd experienced exponential growth during the 1980s.

### Deer Move Into The City

Wildlife biologists can limit deer populations by doe harvest quotas, however, they have not developed effective solutions for stabilizing deer numbers in areas where hunting is illegal or impractical, such as cities.

Does living inside city limits have a ten- to 12- year life span, and usually produce twins every year. With no significant predators, there is a tremendous potential to increase their population rapidly.

Whether or not there are too many deer is a matter of perspective. Nearly everyone loves to see deer. Most people welcome deer to the city, but some are having second thoughts. Deer complaints are rising, and with the population growing at a rapid rate, there is bound to be increasing conflict between deer and people.

### Deer Problems

Deer cause a number of problems, but they can be categorized as either threats to health or safety, or damage to gardens, flower beds and landscape plants.

Probably the most serious threat caused by deer is their potential to hurt or kill people when they dart in front of cars. There were more than 9,200 reported deer/car collisions in Iowa in 1992, and Willy Suchy, deer biologist for the Iowa DNR, believes that only one in three collisions is reported. Hitting a deer usually results in major damage to a car, severe injuries to the

deer, and sometimes human injury or death.

There are many things drivers can do to reduce the odds of hitting a deer. The most important is to drive defensively. A deer might bound in front of a car anywhere the road penetrates wooded or brushy areas. Deer/car collisions peak in mid-November when deer are in the mating season, or rut. For a few weeks the animals abandon their normal movement patterns and are seen in unexpected places, day and night.

Suchy suggests, "If you have to hit a deer, hit it. Don't swerve or lose control of the car when trying to avoid the animal. People have been killed because they have swerved into a ditch or oncoming cars."

Another threat posed by deer is Lyme disease. Although many mammals, from dairy cows to field mice, and birds contract and help spread the disease, there is a strong correlation between a high deer density and a high incidence of human Lyme disease cases. Iowa has been lucky. Lyme disease cases slowly increased in Iowa, peaked and actually dropped in 1992. Still, Lyme disease is here and poses a health threat. The tick which carries the disease is so tiny, many people don't realize they have been bitten.

Lyme disease symptoms include a hot red rash, weakness, lethargy and joint pain. In its early stages, the disease can be treated easily with antibiotics. Treatment becomes more complex in the latter stages.

Although only a small percent of the human population will experience a health or safety problem caused by deer this year, many more will suffer damage to vegetation.

Deer are voracious herbivores. In the spring deer love unopened tulip bulbs, hostas, and many other herbaceous plants. By midsummer they often shift their diet to peas, carrots, lettuce, spinach, chard, corn, pumpkins, squash and cucumbers. They usually leave tomatoes and potatoes alone until they've polished off other crops. In the fall bucks rub their antlers on the bark of young trees, often girdling and killing the plant. They seem to prefer



Ken Formanek

aromatic trees, such as pines, cherries and apples.

By the time cold weather sets in deer have shifted their diet from softer plants to twigs, frozen and dried fruit, and whatever green foliage remains. They eat many kinds of trees, but seem to particularly love arbor vitae and many other common landscape evergreens. There are many cases of homeowners planting expensive shrubs and trees in the fall, only to have them devoured by January.

Gardeners have developed many techniques for keeping deer away from crops. Surprisingly, one of the most effective is to forget gardening. Many people only plant a token garden and



then become incensed when deer nibble a few bean plants. Some casual gardeners simply give up and buy their produce at the farmer's market.

Serious gardeners, however, need to protect their crops from deer. The most effective technique is a stout fence -- an ordinary garden fence won't work. Deer can jump seven feet or more. To be deer proof a fence must be at least eight feet tall. Double fences don't need to be as tall, but they are hard to build. Fencing a yard or garden is expensive and often unsightly. Electric fences can effectively protect gardens where they are legal.



▲ Deer can wreak havoc with shrubs and young trees. This buck rub is an example.

► Dr. Russell Anthony, Cedar Rapids city veterinarian, keeps accurate records of deer carcasses picked up and disposed of by the city. In 1981 five dead road-killed deer were retrieved. In 1991, 52 were disposed of, giving a good estimate of the rate of deer population increase in Cedar Rapids.

Some, like Cedar Rapids gardener Alan Campbell, have developed techniques that work well. Campbell builds cages that fit over raised garden beds. When he plants, weeds or harvests he props the cage up on a forked stick. Often deer walk through the garden, but they can't damage crops. The only drawbacks to cages are their expense and the difficulty of caging tall or spreading crops like sweet corn or pumpkins.

Protecting trees and shrubs is much more challenging than protecting gardens, since landscape material tends to be scattered all over a yard. Again, fencing the entire yard works, but it's not a viable option for many people.

Young trees can be protected from rubbing bucks by wrapping the trunks or by building cylindrical cages of chicken wire around the tree. It works fine if a landowner only has a few trees, but it is not practical to cage hundreds of small trees on an acreage.

Repellents discourage deer from nibbling on foliage or twigs. They can be used to save a few special trees, but

they are expensive and must be reapplied frequently and after every rain.

### Solutions?

As urban populations continue to rise, more people call for reducing deer numbers. Three solutions to reducing urban deer have been attempted. These include the use of contraceptives, moving deer out of the city and shooting.

Using birth control methods to control growing deer herds sounds appealing. Scientists have developed hormones that prevent pregnancy in deer. However, two important factors are likely to keep contraceptives off the market. If deer are fed or injected with contraceptives, traces of the chemical permeate the meat.

Someone could legally shoot the deer if it wanders out of city limits. Eating contraceptive-laced venison could have an impact on human health or fertility.

The second problem involves administering the drug. Deer travel great distances, moving in and out of city limits. Like humans using contraceptives, deer need to receive a steady dose of the drug to keep from getting pregnant. Simply, contraceptives are not a viable option for reducing deer populations.

Live-trapping and moving deer has also been tried as a means of reducing deer herds. Like contraceptives, it is fraught with problems.

Deer can be baited into large box traps, and they can be moved out into the country and released. However, catching and moving deer puts some animals into shock, and many die. Also, no one wants deer released on their property any more. Turned loose in unfamiliar territory, wandering deer succumb to



DNR Photo

*continued on page 11*



# A Case In Point

by Joe Wilkinson



▲ Radio telemetry is giving Black Hawk County information on its growing urban deer population.

Somewhere, on the slope above a creek bed, on the northwest edge of Cedar Falls, is doe #14. Over the soft, constant beep of his radio receiver, Department of Natural Resources wildlife biologist Willy Suchy pins down her location. "She's just down over the edge of the creek here," explains Suchy. He slightly adjust the antenna mounted atop his pickup and then notes the signal coming through the radio receiver in the cab. "She is not running around. If I had to guess, I'd say she was bedded down." Marking the coordinates on the map he holds, Suchy is done for the day.

Every couple of weeks, the scene is played out again around Cedar Falls and Waterloo. Radio telemetry tells Suchy, and the rest of the Black Hawk County Urban Deer Task Force, where the deer are. It tells them how much the deer have moved since last winter. And in the months ahead, it will tell them how much of a problem those deer pose in an overcrowded urban setting.

The DNR was asked a year or so ago, whether it would help. "We had a growing concern at Hartman Reserve Nature Center due to the unique nature of the reserve," points out Steve Finegan, director of the Black Hawk County Conservation Board. "The determining factor, though, was landowners in the area experiencing damage from deer. They made some calls and a task force was created."

Hartman Reserve and nearby George Wyth State Park are natural areas surrounded by human progress. The cities of Cedar Falls and Waterloo have boxed in the areas. Now, a growing population of white-tailed deer is showing it's effect. Highway 57 runs adjacent to George Wyth State Park, a corridor for car-deer collisions. In the park, a red cedar tree, stripped five feet up the trunk by browsing deer, is evidence of the overcrowding. Just a few feet away, protected by an enclo-



sure fence that is part of the deer research project, grow a variety of healthy, "unbrowsed" plants.

Hartman Reserve director Vern Fish says for some neighbors, the novelty of deer in their yards rubbed a little thin. "This has allowed the public to participate in a research project. That's not normally the case. The public has taken an active role. It's been a powerful education tool."

Now, radio telemetry is helping answer those questions about overcrowding. "We're looking at a population that could [go] over the carrying

capacity, to where they would have to do something," explains Suchy, the DNR's deer biologist. "We're trying to see what proportion of deer are in an area during the wintertime, and how many are having fawns in the spring. This will give us an idea of how fast the population is growing."

Telemetry has a great advantage over more traditional forms of deer spotting. It is non-intrusive. "We can take readings and find out where the animals are, without disturbing them or influencing how they behave," says Suchy. "That's the real advantage of telemetry."

This high-tech approach to monitoring had a pretty simple beginning. Deer were baited into large box traps last winter. Before turning them loose, biologists would wrestle each whitetail to the ground. Each deer was ear-tagged and given an antibiotic. Female deer were fitted with specially designed radio collars. They were released unharmed.

Deer are matriarchal creatures. When allowed, the females in a family unit stick together. The Black Hawk study will show how many of them stick around in urban settings. If results show that too many deer are crowding into available urban habitat, the task force can then look at options available. Those options will range from doing nothing to removing deer.

What has Suchy found so far? "The majority of the deer have stayed in the area," he reports. "We've had three or four that have moved to the northwest of Cedar Falls." Number 14 doe was one of them. Tagged and collared in January, she had moved four miles up the Cedar River, then back in to town, where she had spent time at the Beaver Hills Country Club. In July, she moved northwest of town again. Presumably, she had a fawn, or fawns, in tow.

The roaming urban deer don't seem to fear human obstacles. "It's kind of amazing," says Suchy. "The deer were caught on the south side of the river. They had to move right through downtown Cedar Falls. They had to go by houses, buildings, highways and bridges." It was either that, or swim the flood-swollen Cedar River.

Flooding was a big factor in 1993. Deer movement was dictated by the overflowing Cedar River. Some were trapped within the park boundaries, as the rising river cut them off. Three deer died due to the flooding. A fourth deer is still unaccounted for. By early fall, its collar as still sending signals . . . from under water. Until he retrieves it, Suchy won't know whether the deer drowned or whether it lost the collar.

The task force currently collecting valuable winter 'return' data. "The surveys we do in the winter are real important," says Suchy. "We want to see the deer when they come back. Do they bring their fawns? Do they stay here in the winter? Do they leave? There are lots of questions."

With increased community support, the task force has purchased more collars. More radio-collared whitetails will help expand that information base that is building in Black Hawk County.

And other areas are interested, too. Johnson County has begun addressing deer overcrowding in one of its county park. Cedar Rapids recognizes that it has hundreds of deer in its city green spaces. Des Moines has acknowledged a growing deer concern, too. DNR officials stress that any decisions will lie with the local decision makers. Each individual community will have to decide how many deer are *too* many. If there are too many, then what will be the best way to deal with them?

*Joe Wilkinson is an information specialist with the department in Iowa City.*



Randy R. Fratzke

▲ **DNR researchers wrestle a captured whitetail doe to the ground. It will be tagged and radio-collared.**



*continued from page 8*

stress, hunting and vehicles accidents. Live-trapping and relocation is extremely expensive, too.

Shooting deer, particularly does, is certainly an effective technique for reducing or stabilizing populations. Legal hunting is an effective method of population control in the country. But, shooting becomes controversial in urban areas. Often a proposal to shoot city deer brings heated response from animal rights groups, people concerned about safety and those who just like to see deer.

Shooting urban deer is a common practice in areas east of Iowa and in Minneapolis. It is usually done in one of three forms: using a sharpshooter to kill large numbers of deer, urging legal hunters to take more deer on the fringes of cities, and conducting special deer hunts on urban fringe areas.

Although millions of people pass through O'Hare Airport every year, few of them realize that deer live on the grounds. Several years ago a deer ran across a runway and was sucked into a jet engine. Fortunately, the plane was landing. There were no human injuries, but the jet engine was destroyed.

The accident convinced O'Hare's management that deer and airplanes can't coexist. A thorough study of the site's deer was undertaken, and in the late winter deer were baited to a safe site. A law enforcement officer shot them, and a licensed butcher processed the meat. It was given to low-income families. Throughout the study process the news media was kept posted of options being considered, and the deer kill was relatively free of controversy.

Using sharpshooters has also been successful in Wisconsin.

Owners of acreage's just outside town who, just a few years ago, did not allow hunting, now encourage bow hunters on properties. In theory this should reduce deer population pressure on the land. If enough deer are removed near city limits, overpopulated deer inside the city might move there or fill the void. However, it's unlikely that hunters remove enough deer for this to happen.

Strictly controlled legal hunting in urban fringes has been successfully used to lower deer numbers north of New York City and in many other locations. Wildlife biologist Jay McAninch, now of the Minnesota DNR, developed a strictly controlled hunting season in an urbanized area when he worked in New York. People interested in hunting had to pass stringent safety classes, shoot a type of deer specified (usually a doe) and pay a fee above and beyond their normal hunting license. They also had to pass a marksmanship test. Safety was stressed, hunter density was kept low, and the hunts were carefully organized. There was landowner support for the hunt, and it succeeded in reducing deer numbers.

#### **Looking In The Crystal Ball**

At present no one can predict the direction management of urban Iowa deer herds will take. It's possible, although unlikely, that traffic deaths, poaching and urban-fringe legal hunting will remove enough deer from the population annually to keep the

herd stable. More likely, urban deer numbers will continue to rise, and more and more homeowners will ask the government to "do something."

In an effort to solve the problem in the best way possible, some cities have formed urban deer task forces -- a committee of citizens which examine the local deer situation and the options for stabilizing its population. An urban deer task force has been meeting in the Cedar Falls/Waterloo area for more than a year. A two-year radio tracking project, with 20 specially collared deer, is underway. (See "A Case In Point" on page 9.)

Hopefully, urban Iowans will work together to develop political, legal and biological techniques that will allow them to live with this dynamic but controversial animal.

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*Rich Patterson is the director of the of the Indian Creek Nature Center in Cedar Rapids. Paterson is also an active free lance writer.*







## The Landfill Alternatives Grant Program

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# Not Just A Bunch Of Garbage

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by Jeff Geerts

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Iowans generate more than two million tons of solid waste, or approximately 216 million cubic feet per year. That is enough to fill 54,809 semi-trailers, lined up end to end, stretching from Des Moines to Cincinnati. The Landfill Alternatives Grant Program is one way the State of Iowa is trying to reduce that line of semis, both by the amount of garbage that is made in the first place, and by the amount that winds up in a landfill.

The Landfill Alternatives Grant Program was established by the Groundwater Protection Act of 1987 and is administered by the Waste Management Assistance Division of the Department of Natural Resources. The purpose of the grant program is to provide financial assistance to develop and implement projects that are alternatives to landfilling solid waste. Any public or private individual, group or business with responsibility for or an interest in solid waste disposal is eligible to apply.

Two rounds of grants are awarded each year with applications being due the first Monday in May and the first Monday in December. Approximately \$1.5 to \$2 million dollars are available for each round of grants. Local match dollars are required of the applicant with the percentage determined by how the project relates to the hierarchy of waste management in Iowa. From highest to lowest priority, this hierarchy in Iowa is: volume reduction at the source, recycling/reuse, combustion with energy recovery, and combustion for volume reduction. Funding for the grant program comes from a percentage of the solid waste tonnage fees paid by the landfills to the state for every ton of waste disposed in the landfill. Initial program funding in fiscal year 1988 and the first half of fiscal year 1989 came from federal court settlements involving oil company overcharges during the 1970s.

To date, the Landfill Alternatives Grant Program has awarded 131 grants totaling \$14.7 million. These grants consist of 18 waste reduction projects including new equipment for waste reduction in business and the develop-





◀ Blueberry Plastic Mill Corporation, recipient of two Landfill Alternatives Grants, is providing a stable market for recycling collection centers in Iowa and is producing recycled resins that manufacturers are able to use in place of virgin resins. The Des Moines-based company manufactures a wide variety of resins from recyclable plastics.

## Another Good Resin to Recycle

Consumers in the United States use 2.5 million plastic bottles every hour. With Americans only recycling one percent of their waste plastic, most plastic ends up in the landfill where it comprises seven percent of the waste stream by weight and 20 percent of the waste stream by volume. The lack of stable markets for plastic recycling and the minimal use of recycled plastic resins by manufacturers are the biggest obstacles to plastic recycling. Blueberry Plastic Mill Corporation is helping to eliminate the obstacles of plastic recycling in Iowa and possibly the country. The corporation received a \$100,000 grant from the

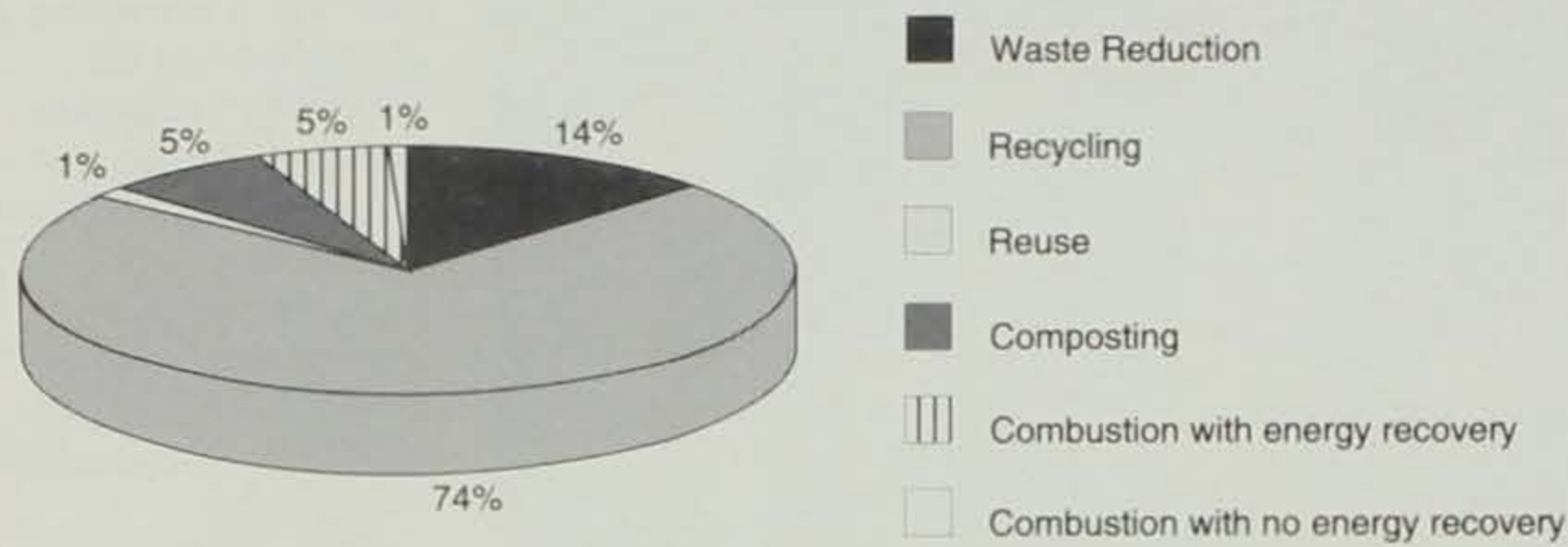
Department of Natural Resources' Landfill Alternatives Grant Program in 1992 and a second Landfill Alternatives grant for \$187,500 in 1993.

After a period of two years devoted to development and research, Blueberry Plastic Mill Corporation began operations in August 1992. The corporation was created to process recyclable plastics into plastic resins that can be used by manufacturers for making new plastic products. Blueberry Plastic Mill Corporation receives recyclable plastics from cities and counties located all over Iowa. In addition to the many cities and counties Blueberry serves, they also serve as a reprocessing service for washing and pelletizing plastic wastes generated by plastic manufacturers. The reprocessed plastic waste is in many cases returned to the manufacturer for reuse which reduces the manufacturer's costs for disposal and raw materials. Blueberry Plastic, in its first year of operation, processed nearly 900 tons of plastic from cities, counties and industries in Iowa and neighboring states.

The recyclable materials are brought to Blueberry Plastic in a variety of ways including city drop-off boxes that have all types and colors of plastic mixed together. Large 1,000 pound bales of recyclable



## PERCENTAGE OF PROJECT TYPES



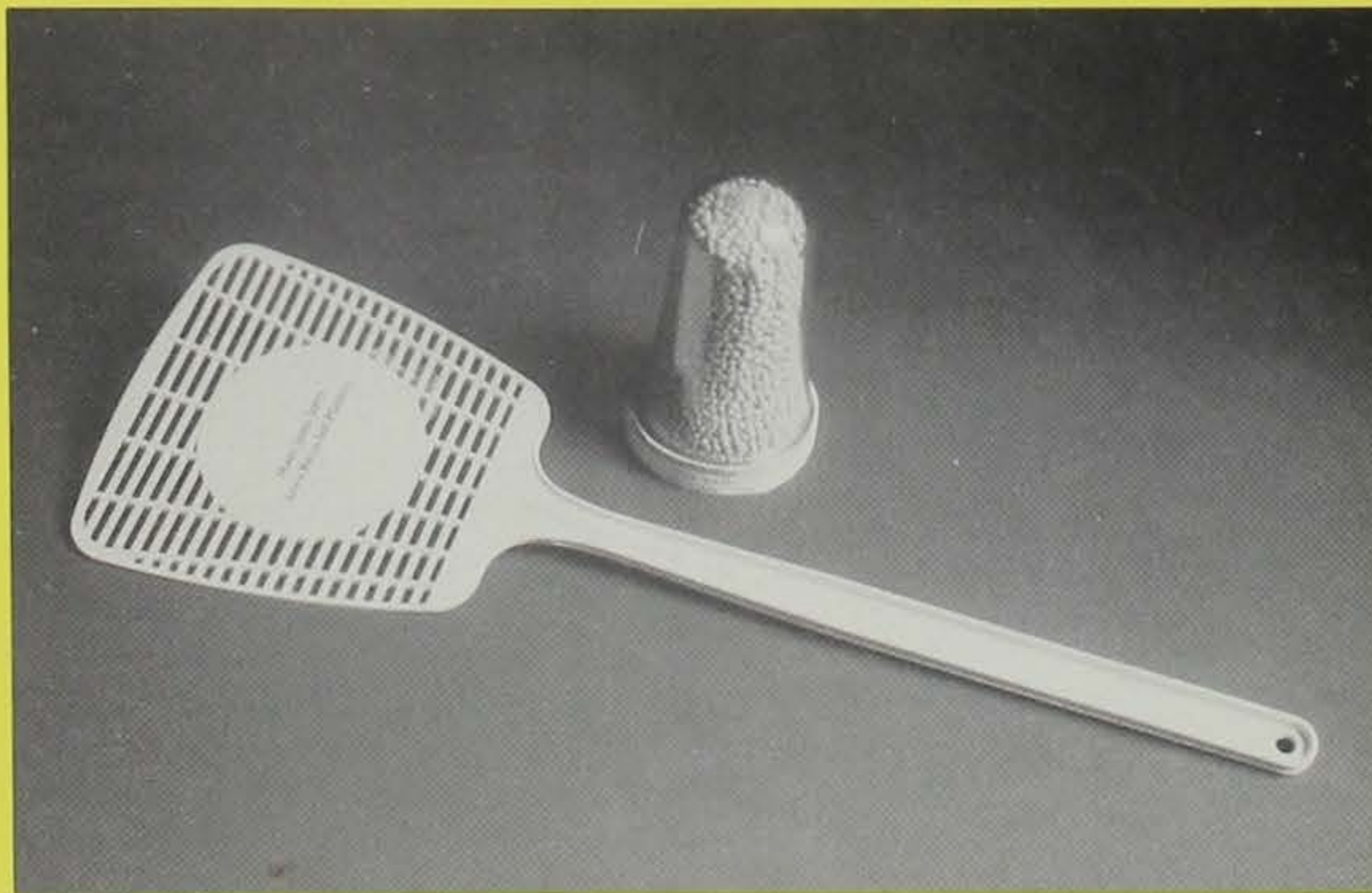
ment of waste reduction education. Grants have been awarded for 97 recycling-related projects including city, county and regional recycling programs and facilities as well as recycling programs for business and industry. In addition, one reuse project, seven composting projects, seven projects combining combustion with energy recovery and one project for combustion for volume reduction have also been funded (see figure at left). Approximately 42 percent of the funds awarded to date have been received by private for-profit entities, 15 percent of the funds have gone to private not-for-profit organizations and 43 percent of

▼ **Blueberry contracts with molders to make from its resins the only full-color line of products in the U.S. made from 100 percent recycled plastics. The Blueberry flyswatter is made from 100 percent recycled #2 yogurt containers.**

plastics from recycling collection centers, along with boxes from smaller recycling collection centers and bags from curbside collection programs are also received at the plant. The corporation purchases its raw materials for an average of two cents per pound. Once the materials are received at Blueberry's facility they are then placed on a 60-foot conveying system where shifts of the company's 25 employees work around the clock, separating the different colors and types of plastic resins. Once separated, the materials are fed into a plastics grinder

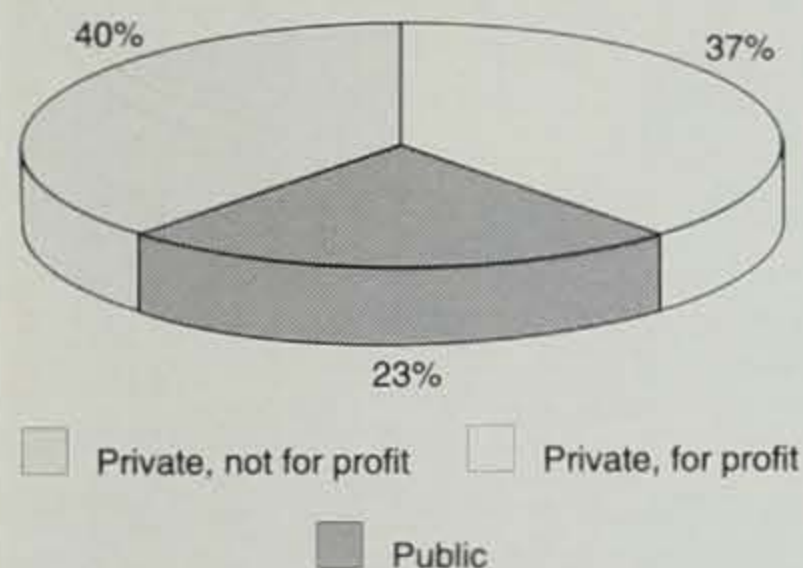
that is capable of grinding everything from milk jugs and bread trays to five-gallon buckets. When the material has been ground, it comes out in flakes about 1/2 inch in size. The flakes are processed through the company's proprietary continuous flow washing system in 200-degree water, then rinsed and fed into a dryer where the excess water is removed, filtered and recirculated into the system. After the flakes have been dried, they are conveyed to an air classifier which uses blown air to separate the remaining labels from the washed plastic flakes. The completely washed and dried flakes are then fed into an extruder that melts the plastic at temperatures exceeding 400 degrees. The melted plastic is forced through a 40-foot extruder where it is made into long spaghetti type strands. As the plastic comes out of the extruder it is cut into pellets in an underwater system that carries the pellets to a dryer. The dried resin pellets are then placed into a container for storage and delivery. Blueberry is able to sell the recycled resin at an average of 26 cents per pound.

The Des Moines-based company manufactures a wide variety of resins from recyclable plastics including; #2 high-density polyethylene (HDPE)





## DISTRIBUTION OF GRANT FUNDS



the grant dollars awarded have gone to units of local governments including cities, counties and councils of government (see figure at left).

More than 225,000 tons of materials have been diverted from the landfill by projects funded through the Landfill Alternatives Grant Program. Nearly 900 people are involved in working with a variety of grant projects from composting facilities, recycling centers, manufacturing plants and local government facilities and offices. In addition to the nearly \$14.8 million dollars awarded, the grantees have documented more than \$34 million dollars in local match. For a closer look at one past

grant recipient, see the article regarding Blueberry Plastic Mill Corporation on page 13.

For more information about the Landfill Alternatives Grant Program, including an application booklet and a summary of projects funded, call the Iowa Department of Natural Resources' Waste Management Assistance Division at 1-800-367-1025.

*Jeff Geerts is an environmental specialist with the department's Waste Management Assistance Division in Des Moines.*

natural from milk jugs, #2 HDPE blow-mold grade colored, #2 HDPE injection-mold grade colored from items such as yogurt and butter containers, #4 low-density polyethylene (LDPE) film from items such as dry cleaning bags, #5 polypropylene (PP) from video cassette cases and hospital water bottles and #6 high-impact polystyrene (HIPS) used in making products like institutional food trays. Not all blow-molding and injection-molding companies use the exact same types of resins in their manufacturing process. Each manufacturer needs to have a resin that will melt under a specific temperature. Blueberry has been able to meet this challenge by combining resins with different melting points during the extrusion process resulting in a plastic resin with the exact melt flow rate and product flexibility a manufacturer requires.

Throughout its first year of operation, Blueberry Plastic has continued to establish major partnerships with several Iowa companies, the City of Des Moines and the State of Iowa. The Iowa Department of Economic Development has been a major partner of Blueberry Plastic through the Department's Iowa Product Development Corporation, which is Blueberry's largest outside shareholder. Blueberry Plastic also signed a 10-year agreement with the City of Des Moines

requiring the City of Des Moines to provide 500 tons of plastic recyclables during the first year and 1,500 tons each of the next nine years.

The Blueberry Plastic Mill Corporation has received nationwide recognition for many noteworthy accomplishments in its first year. Blueberry Plastic was able to procure, remodel, equip and permit its 30,000-square-foot manufacturing plant in three months. The company then installed a proprietary washing system for its ground plastic flakes that successfully removes 100 percent of all odors and 99 percent of all labels. The washing system is capable of processing up to 1000 pounds per hour depending on the type of plastic being processed. Blueberry Plastic has succeeded in producing a 100 percent recycled plastic resin that is of almost equal quality to virgin resin. The company has established informal partnerships with select molders and has developed the first full-color line of 100-percent-recycled plastic products in the United States. The most recent accomplishment of Blueberry has its wholly-owned subsidiary, Blueberry Products, to market Blueberry's own recycled plastic product line consisting of nearly 40 different products varying from drink bottles to rulers to flower pots.

Some of the ordinary household products have already been distributed in Dahl's and Hy-Vee stores in central Iowa and some products will be making their national debut early next year at Wal-Mart stores in Texas, Florida, North Carolina and Iowa. Blueberry Products also custom-designs plastic products, plastic sheeting, and poly liners/bags from its 100-percent-recycled resins.

Blueberry Plastic Mill Corporation is providing a stable market for recycling collection centers in Iowa and is producing a recycled resin that manufacturers are able to use in place of virgin resin. By overcoming these obstacles, Blueberry Plastic Mill Corporation is molding a bright future for its company as well as for the future of plastics recycling in Iowa. For more information about Blueberry Plastic Mill Corporation or Blueberry Products, contact John Neubauer, President, at 515-265-3339. For additional information regarding the Landfill Alternatives Grant Program call the Iowa Department of Natural Resources' Waste Management Assistance Division at 1/800-367-1025.

-- J.G.



# 1994 Iowa Stamp Designs

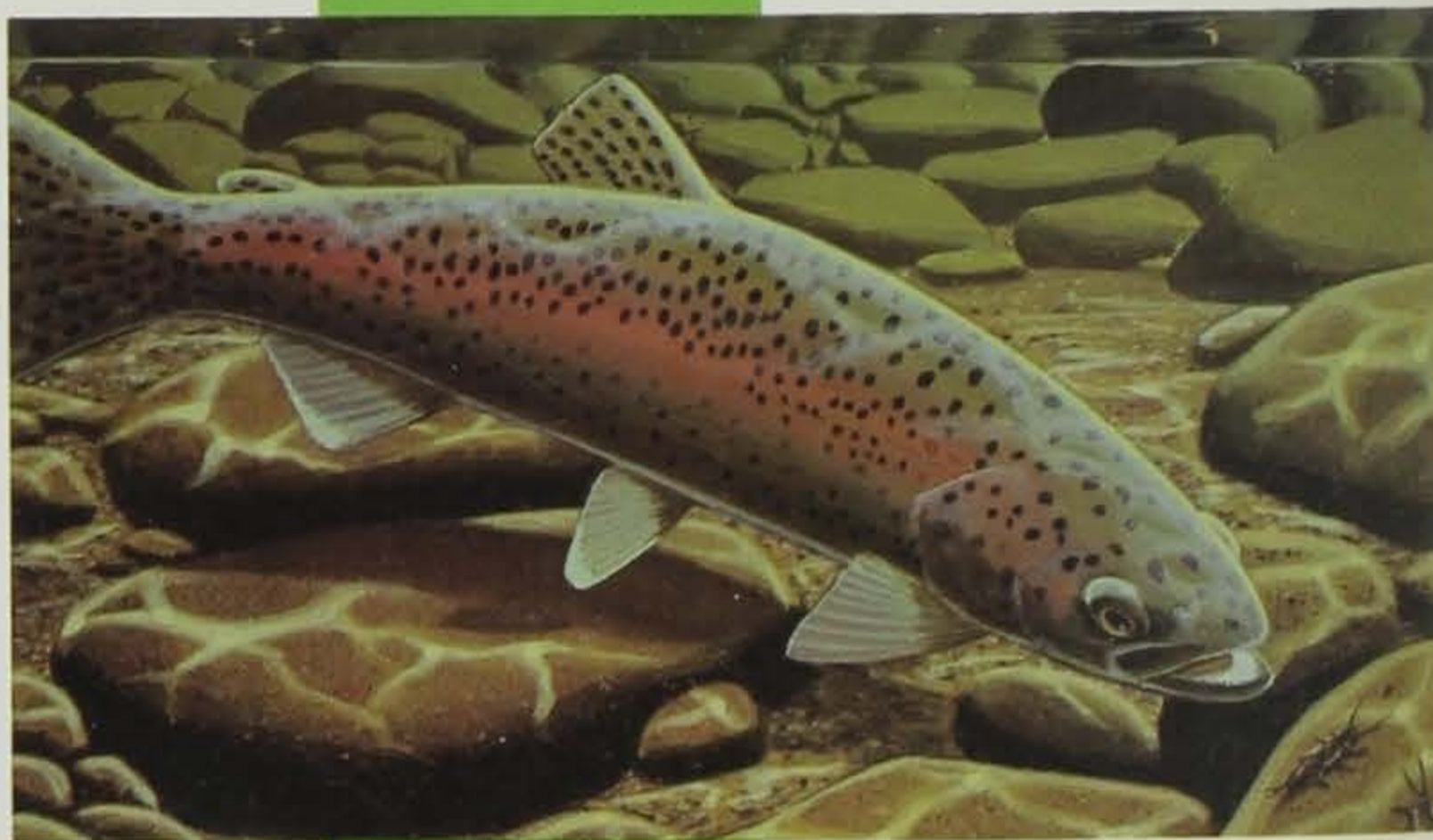
The **1994 Iowa Waterfowl Stamp** was designed by Michigan artist Dietmar Krumrey. Krumrey designed the 1981 and 1989 Michigan duck stamps and has been named Michigan Duck Unlimited Artist of the Year on four different occasions. Iowa Ducks Unlimited coordinates the design of Iowa's duck stamp each year. Prints are available by contacting your local DU chapter or state president John Kruse at (712)732-4370. Or, signed and numbered prints are also available from the artist for \$125 by writing or calling Dietmar Krumrey, Route 2 Box 2472F, Manistique, Michigan 49854, (906)341-5263. Please add \$5 to the order if you wish to buy a duck stamp with the print. Image size of the print is 6-1/2 x 11 inches.



Once again, former Iowa artist Brian Wignall has designed the **1994 Trout and Habitat stamps**. Both *Wild Rainbow* and *Fields Edge* are 6-1/2 x 11-inch prints. Each has an edition size of 150 and sells for \$65.

Prints are available by contacting Wild Things by Brian Wignall, P.O. Box 27474, Las Vegas, Nevada 89126-1474, (702)258-8484. Please add \$5 for the habitat stamp and \$10 for the trout stamp and indicate if you would like your stamps signed by the artist.

*Wild Rainbow*



*Fields Edge*





# Listening, Speaking Out, Making A Difference

by Kevin Szcodronski

REAP is special to Iowa. Its need for public involvement is one of the major reasons why. As an Iowan -- you have several opportunities, even an obligation, to help make the program all that it can be.

Perhaps what makes Iowa's REAP program unique from the few similar efforts throughout the country is its many opportunities for people to get involved. Whether you have very specific or very broad interests in resource enhancement and protection, there are places in REAP's public participation elements for you to make a difference. If your "cup of tea" is rallying friends and neighbors to accomplish a small, home town project, REAP offers an avenue for you. Or, you may be a person with ideas on how to improve the inner workings of REAP. If so, ways are available to discuss those ideas with other interested people and, if desired, submit them to state lawmakers, the Governor, and appropriate state agencies. Whether you get involved and the way you do so is totally up to you. One key to REAP's success is that opportunities exist for whatever way and level you decide is right for you.

The incorporation of public participation methods into REAP is a natural. After all, REAP was designed by a coalition of private conservation organizations and a few state legislators. Built-in public involvement assures that these and other organizations and individuals can continue to have an influence on REAP after being handed over to state government to fund and implement. Also, these early REAP pioneers realized that ongoing, active public support will be needed for the program to receive significant state funding in years to come. What better way to build public support for a program than to let private organizations and individuals help "fine tune" it? Because people throughout Iowa are actively involved in REAP, a sense of ownership has grown among them and they have a vested interest in seeing it succeed. Some individuals refer to this as a form of constituency building. REAP itself was purposely designed to have a large

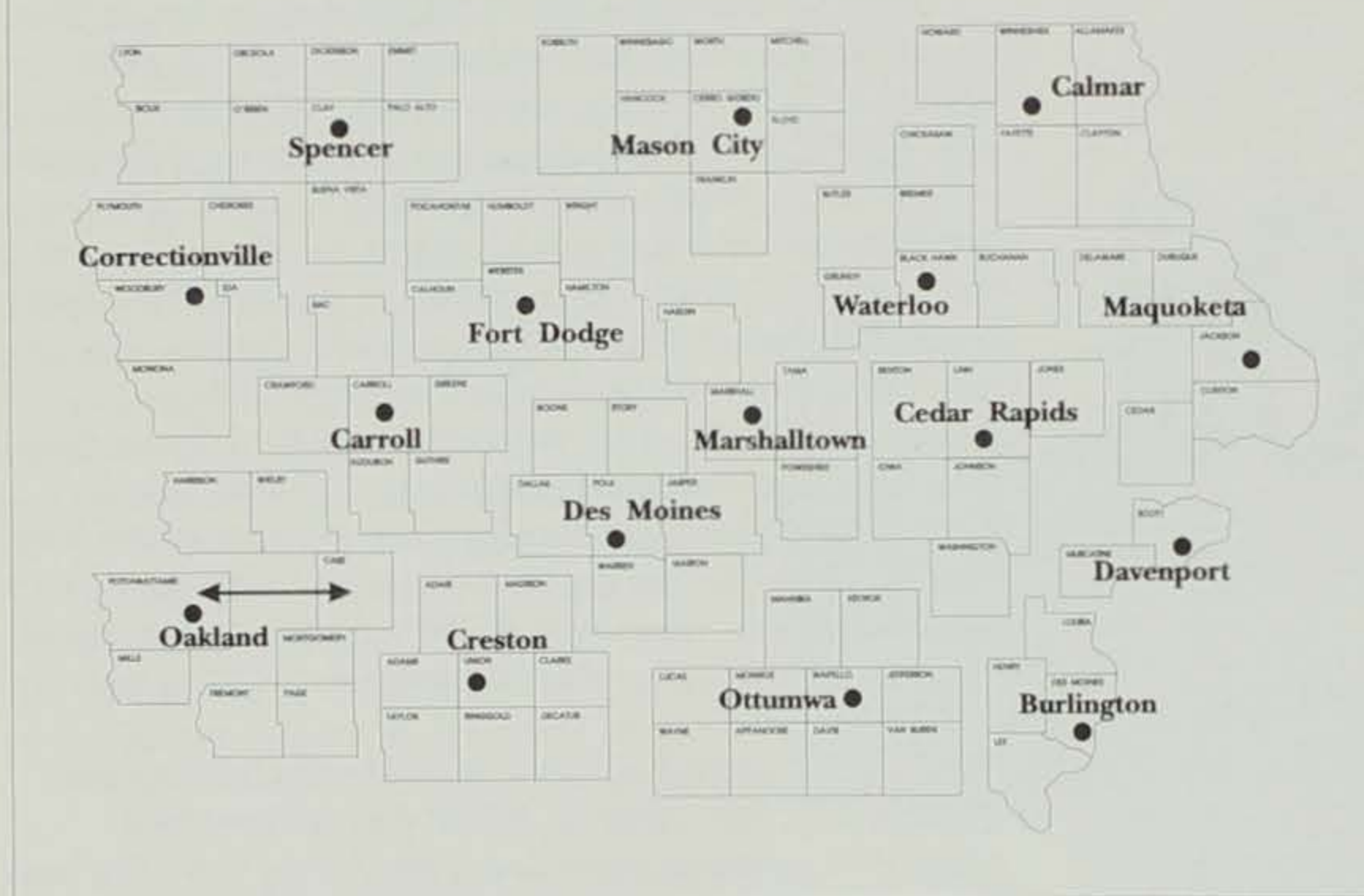
REAP = Resource Enhancement And Protection, an Act created by the 1989 Iowa Legislature, originally planned as a 10-year, \$30 million a year program to improve Iowa's natural resources and outdoor recreational opportunities.

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Unique among the few similar programs around the nation, REAP requires a huge amount of public participation to make it work.



### Borders of Regional Assemblies (Council of Governments)



number and wide range of beneficiaries, or customers. These numbers and diversity bring people together from all walks in life to support the program. By adding public participation opportunities to this beneficiary phenomenon, a very solid foundation is built for ongoing program stability.

Those of you who have been involved in REAP may question just how solid this foundation is, given the downward trend in funding for the program. Very real and significant state government budget woes have undoubtedly affected REAP. But, I often wonder where REAP would be if it were not for the many constituents who have been expressing sincere support for the program. Another good indicator of a solid foundation is that REAP's original design has remained intact. When times get tough, it is easy to become vulnerable to being "divided and conquered." I often credit its many public involvement mechanisms for this not happening to REAP. Public involvement in REAP can be on a local basis through your county committee, or at the regional level in the assemblies, or even at the statewide, REAP Congress. Or you could be lucky enough to be involved in all of these.

#### County Resource Enhancement Committees

Each of Iowa's 99 counties has a County REAP committee. These committees are comprised of anyone and everyone interested in any of REAP's purposes and programs, and

who wish to be actively involved in REAP on a local level. The following organizations are specifically listed in the state law as having membership on the county committees:

- County Board of Supervisors
- County Conservation Board
- Commissioners of Soil and Water District
- Board of Directors of each school district in the county
- cities in the county
- Iowa Farm Bureau Federation
- Iowa Farmers Union
- National Farmers Organization
- Iowa Farm Unity Coalition
- Any other recognized farm or farm commodity group
- Iowa Audubon Council
- Iowa Sportsmen's Federation
- Ducks Unlimited
- Sierra Club
- Pheasants Forever
- The Nature Conservancy

- Iowa Association of Naturalists
- Izaak Walton League of America
- League of Women Voters
- other recognized wildlife, conservation, environmental, recreation, conservation education, or historical-cultural preservation groups in the county.

See what I mean by anyone and everyone! County REAP committees have the potential of being big groups, but they tend to be relatively small. Some may only have 4-5 active members, but I know of one that has 35-40 people who regularly attend meetings. More typical is a group of 8-10 members.

▼ **DNR Director Larry Wilson fields questions at one of the 17, 1990 REAP assembly meetings; this one in Des Moines.**



Ken Formanek





Ken Formanek

▲ **REAP has funded land acquisition for hunting and other recreational uses.**

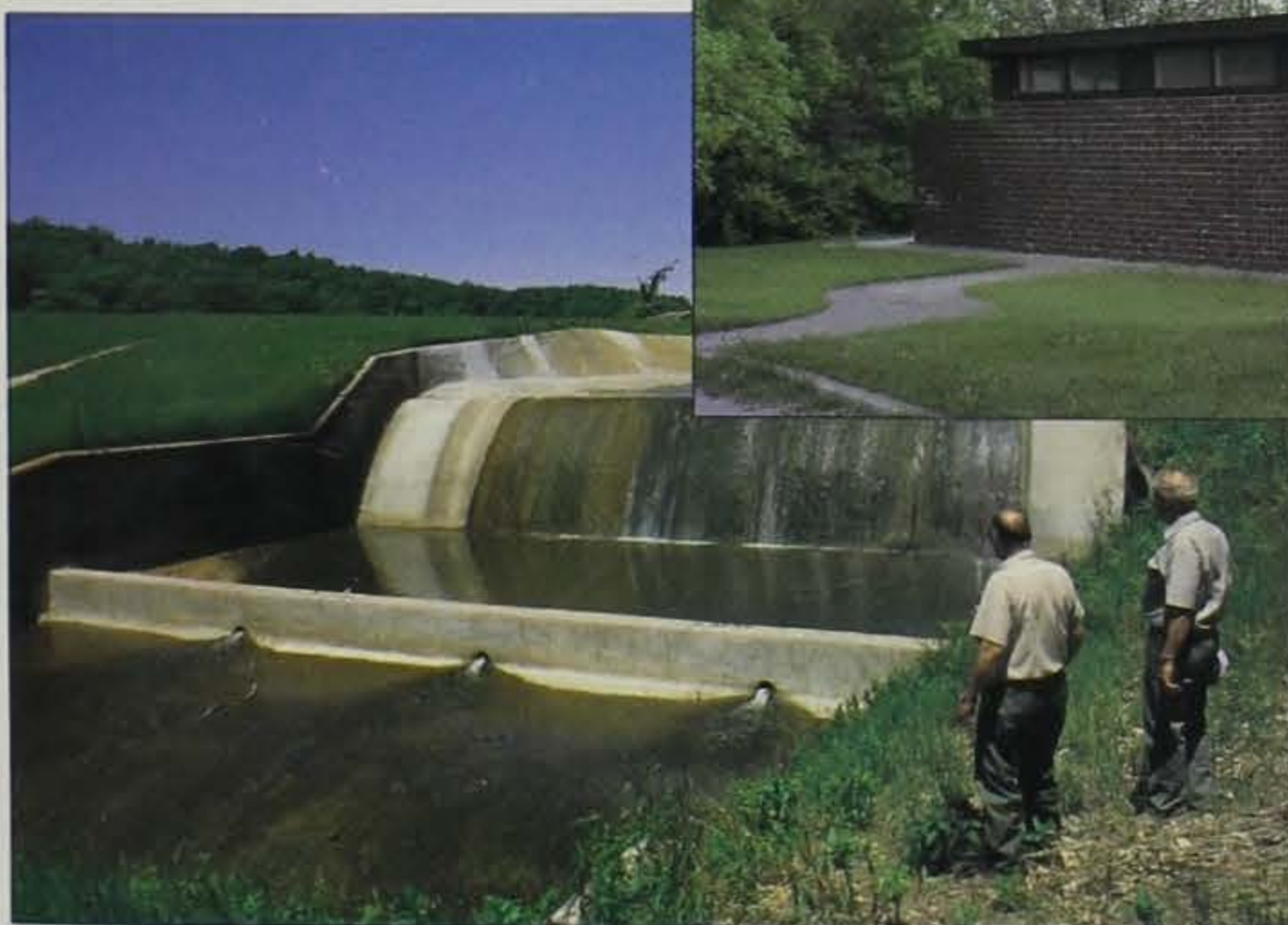
The basic duty of County REAP Committees is to coordinate plans and projects developed by cities, counties and soil and water districts. Committee members look for opportunities to link projects and to make projects complement one another. Such opportunities can often help get the most benefits out a project for a given amount of money, or save money that can be used for other projects. The DNR promotes this coordination by requiring all city and county REAP grant applicants to present the project proposal to its County REAP Committee prior to submitting the application for grant consideration.

A project to develop a new trail is a good example of

how coordination and cooperation are beneficial. Two cities and the county conservation board could work together on the project for a better chance of success. Each city could be responsible for the portion of the trail within its corporate limits and the county board can do the portion of the trail that crosses the countryside and connects the cities. This same trail could also be routed by a county park to provide an additional point of interest or destination for trail users. The three entities could work together on providing support facilities such as parking lots, rest rooms and rest areas. This will assure that unnecessary duplication of facilities does not occur and that gaps are not left where facilities are needed.

▼ **Funds for city, county and state maintenance and development are eagerly sought from REAP accounts for projects like dam repair at Springbrook (below), latrine construction at Red Haw (center), and trail development at the Ledges (right).**

Ken Formanek



Ken Formanek



DNR photo



Every County REAP Committee is responsible for preparing a five-year REAP plan. This plan identifies priorities for resource enhancement and protection and lists specific projects that address those priorities. These plans are ideally updated annually to keep them current. Cities and counties often mention these five-year plans in grant applications to show how the proposed project will help accomplish priorities established by the REAP Committee.

County REAP Committees do not have the authority to decide how REAP money will be used in the county. They make suggestions, but the ultimate funding decisions are up to the county conservation board, soil and water district and cities that receive money from the various REAP accounts.

County REAP Committees do not use REAP money to operate. Expenses incurred by committees are paid from the county general fund. Examples of expenses are printing and mailing costs for five-year plans, meeting announcements and meeting minutes.

### **Regional REAP Assemblies**

On the even numbered years -- and 1994 is one of them -- it is a must for people interested in any facet of REAP, particularly those who truly want to make a difference, to attend a REAP Assembly.

There are 17 REAP Assemblies throughout the state -- one in each of Iowa's 17 Council of Government or Regional Planning areas. The map on pg. 18 shows these regions. The dots indicate the cities which will host the assemblies in 1994. On pg. 21 is the schedule.

The director of the DNR is responsible for calling each assembly to order with the first business being to elect a chairperson from the audience. This job is not as tough as it may seem because the DNR director and staff from other state agencies come prepared to present information on all REAP programs and write down the ideas that people have for regional projects and for changes to REAP. The primary jobs of the chairperson are to keep the meeting on track and to make sure everyone who wants has a chance to speak. No tomatoes have ever made it up to chairperson's podium during the 34 assemblies held thus far, so our past chairpersons must have done a pretty good job!

REAP Assemblies are basically public meetings at which information is given out and ideas are taken in. The REAP law requires the following things happen at each assembly:

- The DNR provide information regarding REAP expenditures. The overall REAP budget is presented and projects in the region are listed that have been funded with REAP dollars.

- People attending the assemblies shall identify opportunities for regional REAP projects. Examples that have frequently come up are trails, river corridor protection, wetland restoration,

soil erosion prevention, conservation education and resource inventories.

- People attending the assemblies shall also review and recommend changes to REAP policies, programs and funding. This is the portion of the meeting that people speak out on anything they want regarding the inner workings of REAP.

- And last but not least, the people at the assemblies are responsible for electing five individuals to serve on the REAP Congress. (The REAP Congress is described later in this article.) In addition to the five delegates, 3-5 other people are elected as alternates, in the event that delegates cannot attend the Congress.

The election of REAP Congress delegates has the tendency to bring the audience to the edge of their seats more than any other time during the meeting. Perhaps, this is where the chairpersons most earn their keep. Rules of the election are not pre-established, so the chairperson must first lead the audience through a process that determines how this democracy will work. Several ways have been developed to select delegates and alternates. In regions having exactly five counties, the tendency is to have county caucuses. Each caucus individually elects a delegate and alternate. The election process gets more involved for other regions. The rules in regions with less than five counties often assure that at least one delegate is elected from each county. Nominations are typically taken from the floor until the audience feels there are enough candidates to cover all aspects of REAP. The candidates are then given an opportunity to make a "campaign speech," which basically includes the background and interests of the person. Votes are then cast on a written ballot or by a show of hands. The top vote getters become the delegates and alternates according to the predetermined distribution among the counties. The same process is basically used in regions with more than five counties, except the assembly typically specifies that no one county can have more than one delegate. In these situations, at least one alternate comes from each county that does not have a delegate. As you can see, it is

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**... ongoing, active public support will be needed for the program to receive significant state funding in years to come.**



important to people attending the assemblies that delegates and alternates be aligned by county boundaries and the distribution of elected people be as equal and fair as possible among all counties.

Some assemblies fill delegate and alternative slots one at a time. In this situation, nominations are taken from the floor for one "seat" at the Congress. Nominations are typically ceased after three to four nominations. "Campaign speeches" are then given and votes are cast by show of hands. The top vote getter fills the slot. The process is repeated until all delegate and alternate seats are filled. Even with this process, rules are established to assure that delegates and alternates are distributed as equally and fairly as possible among the counties.

Two rounds of assemblies have been held since REAP began. The 85 delegates collectively represented all aspects of REAP. Perhaps the most notable tribute to the elected delegates is their commitment to serving on the Congress. These people are elected in February and March to serve at a Congress held the following July. Even with today's busy schedules and the Congresses held during peak vacation time, both the 1990 and 1992 Congresses had remarkable attendance rates. In 1990, 81 of the 85 elected delegates attended and two alternates served as substitutes. This left just two seats empty, only because last-minute, unscheduled personal events. In 1992, 75 delegates and six alternates attended the Congress. This left only four vacant seats. "Hats off" to the participants of the first two REAP Congresses and, just as importantly, to the people who elected them.

The next REAP assemblies will be held this February and March. Good attendance is a must to help assure REAP's future livelihood. The 1990 assemblies were very well attended with almost 3,000 people turning out, for an average of 175 per assembly. Attendance at the 1992 assemblies dropped off to just over 1,000, an average of 60 per assembly. Some of this drop may be attributed to REAP no longer being a new, unknown program. Also, funding levels were reduced, which in turn caused interest in the program to decline. Still, a two-thirds reduction in attendance is more than what was expected and, I believe, is not a true reflection of the support and enthusiasm for REAP. Our goal for the 1994 assemblies is to be closer to the 1990 attendance level than to the 1992 level. That means we are looking for a total of more than 2,000 people and an average of at least 120 people per assembly.

## 1994 REAP Assemblies

### February

- 1 -- **Marshalltown**, Best Western Regency, Highway 30 and 14
- 3 -- **Spencer**, Eagle Lodge, 10 West Third St.
- 5 -- **Des Moines**, Ikes Building, 4343 Valley Dr.
- 8 -- **Ottumwa**, St. John Auditorium, Indian Hills Community College
- 9 -- **Davenport**, Scott County Courthouse
- 10 -- **Waterloo**, Recreation Center, 225 Cedar St.
- 15 -- **Creston**, Southwestern Community College, Room 220 (Auditorium), Highway 25
- 17 -- **Mason City**, Public Library, 225 Second St. SE
- 22 -- **Oakland**, Community Building, Highway 6, Frontage Road
- 24 -- **Correctionville**, Community Center, 716 Fifth St.

### March

- 1 -- **Fort Dodge**, Room #1, Voc Tech Building, Iowa Central Community College, 330 Ave. "M"
- 2 -- **Carroll**, Carrollton, Highway 71 North
- 3 -- **Maquoketa**, Community Center, 506 South Eliza St.
- 8 -- **Calmar**, Wilder Building, Northeast Iowa Community College, Highway 150 South
- 10 -- **Burlington**, Pzazz Executive Conference Center, Highway 61 (3003 Winegard Dr.)
- 20 -- **Cedar Rapids**, Kirkwood Community College, Room 234, Cedar Hall

*All assemblies are scheduled for 7 to 9:30 p.m., except for the Des Moines assembly which will be from 1:00 to 3:30 p.m., Saturday, February 5.*

### REAP Congress

The 85 delegates who are elected to the REAP Congress have a high degree of interest in the program; some with single purposes, others with multiple interests. Both types of delegates and all those who fall somewhere between have very important roles. Most importantly, delegates are responsible for working on REAP policies, that is, the inner workings of REAP. Examples of policy-level decisions are how much funding should go to REAP, how should the funding be distributed among REAP elements, what is the best way to elect Congress delegates, what should be done at REAP assemblies, who should serve on County REAP Committees, and more. The following is an excerpt from the REAP Law, Chapter 455A.17.3, Code of Iowa, which sets the charge of the REAP Congress:

"The delegates to the congress on resources enhancement and protection shall organize, discuss, and make recommendations to the governor, the general assembly, and natural resource commission regarding issues concerning resources enhancement and protection."



It is important to understand that the REAP Congress does not get involved in selecting specific projects for funding. If your interest in REAP is to promote a specific project for funding, the REAP Congress is not the place to accomplish this. Project-specific discussions are more appropriate at County REAP Committee meetings, REAP assemblies (if the project is regional in nature), and state, county, or city agencies responsible for deciding how REAP grants are specifically spent.

The Congress itself is a one-day meeting, but much time and effort is committed to preparing for it. First, a report on the 17 assemblies is prepared and distributed to the delegates. This report describes proposed policy changes, or support for no change, that were discussed during the assemblies. Issues that come up at several assemblies are highlighted and become the starting point for delegates to prepare for the Congress. Ideally, a delegate will discuss these issues with other people in their local area and get input from them. Delegates may attend some County REAP Committee meetings to receive input for use during the Congress. They may attend soil and water conservation district, county conservation board, city council and historical society

meetings to receive suggestions. Or, they may not do any of this and simply rely on their knowledge and experience and public contacts to prepare for Congress. Delegates are primarily elected because they have knowledge and a philosophy that is consistent with and beneficial to the goals of REAP. These people may have little to prepare for the Congress and to represent those who elected them.

The Congress convenes in the House of Representative chambers in our state's Capitol building. Work begins early on a Saturday morning and ends mid to late-afternoon on that same day. It is held in the middle of July. In fact, the first two Congresses were on the same day as the Greater Des Moines Ruan Grand Prix and we could hear the roar of the race cars as Congress worked its way through its own challenge-filled course.

Just like the 17 assemblies, the Congress's first order of business is to elect a chairperson. Typically, three to four nominations are made, campaign speeches are made, and a vote is taken by a show of hands. The top vote getter then goes to the front of the chambers and leads the Congress through the day's work. Wayne Gieselman of Morning Sun in Louisa County was the chairperson for the 1990 Congress and that

▼  
**Ski trail being groomed with equipment purchased through REAP.**

Ken Formanek



Ron Johnson



► **1992 REAP Congress in action in the Iowa House of Representative chambers.**



Ken Formanek

experience got him elected to lead the 1992 Congress. Gieselman was not only a good delegate, but also a good chairperson. He is or has been involved in many activities that relate to REAP, such as Iowa Farm Bureau, County Conservation Board, 4-H and several other local boards and committees.

The Congress agenda consists of all aspects of REAP policy. Each item begins with a summary by the state agency that is primarily responsible for that element of REAP. Specific issues under the element are discussed and, if desired, recommendations of the Congress are developed. Votes on each recommendation are taken and it takes a simple majority of the delegates that vote on the motion to become officially adopted as a recommendation by the Congress. These recom-

mendations are ultimately submitted to the Governor, legislature or state agency that has the authority to make the change or to assure a change is not made.

Experience has shown that recommendations of the REAP Congress are taken seriously. Most recommendations are ultimately accomplished. The most notable exception to this has been its recommendation for the overall REAP appropriation, but state budget woes have prevented this from occurring.

Recommendations of the first two REAP Congresses are very similar. The overriding recommendation is to continue to let REAP function as originally designed. It had operated very well during its early years and the program needed more time before any significant changes were recommended.

▼ **Roadside vegetation management -- helping to bring back native prairies -- is one of REAP's visible priorities.**



DNR photo

▼ **Conservation education is funded by issuing REAP grants totaling \$350,000 each year.**



DNR Photo



In 1990, the REAP Congress adopted 21 recommendations and the 1992 Congress adopted 22. Rather than listing the individual recommendations here, they can be summarized as follows:

The Resource Enhancement and Protection (REAP) program was originally designed very well and its layout, or "blueprint" remains solid after its initial few years of implementation. The primary limiting factor keeping the program from reaching its full potential is the progressively lower funding levels dedicated to it. Time has come to begin actively promoting REAP to show Iowans its many and diverse benefits. Upon showcasing REAP's accomplishments, increased and continual support for the program will almost come naturally. Some questions remain unanswered, or in some instances, are misanswered. Additional information therefore needs to be gathered and presented in a concise manner so people's image of REAP is accurate and complete. New approaches to resource enhancement and protection need to be explored and used if they will help achieve program goals. "Hats off" to all agencies and people throughout Iowa who are working to make REAP all that it can be and a program that well deserves the national award from Renew America that was recently bestowed upon it.

If you would like a complete list of the specific Congress recommendations, you can request one by writing to the DNR, REAP Coordinator, Wallace Bldg., Des Moines, IA 50319.

The next REAP Congress will be July 1994. The stage for it will be set during the next round of REAP assemblies in February and March.

#### **REAP Alliance**

We have covered the public participation elements that are specified in the REAP law. Another form of public participation exists for REAP, and it is not a part of state or local government, nor does it use REAP funding to operate. It is called the REAP Alliance.

The REAP Alliance is a coalition of the following 27 private, non-profit organizations:

- American Fisheries Society, Iowa Chapter
- American Society of Landscape Architects, Iowa Chapter
- Association for Integrated Roadside Management in Iowa
- Audubon Society, Iowa Audubon Council
- Iowa Association of County Conservation Boards
- Iowa Association of Naturalists
- Iowa Association of Soil & Water Conservation District Commissioners
- Iowa Conservation Education Council
- Iowa Ducks Unlimited
- Iowa Historic Preservation Alliance
- Iowa Land Improvement Contractors Association
- Iowa Natural Heritage Foundation
- Iowa Park and Recreation Association
- Iowa Pheasants Forever Council
- Iowa Society of American Foresters
- Iowa Sportsmen's Federation
- Iowa Trails Council
- Iowa Trappers Association

- Iowa Wild Turkey Federation
- Iowa Wildlife Federation
- Izaak Walton League of America, Iowa Division
- League of Women Voters of Iowa
- Pheasants Forever, Inc.
- Sierra Club, Iowa Chapter
- Soil and Water Conservation Society, Iowa Chapter
- The Nature Conservancy, Iowa Chapter
- Wildlife Society, Iowa Chapter

This impressive list of organizations represents thousands and thousands of members throughout Iowa. I suggest you slowly read through the list again to get a better feel of the diverse interests that are represented in the Alliance.

The Alliance was very instrumental in designing REAP and working with state legislators on the REAP law. It continues to work with state legislators, the Governor's office, and state agency officials as the program is being implemented. Since REAP's inception, the Alliance has remained focused only on REAP. It feels that undivided attention is needed to help assure that REAP remains among the top priorities for state funding appropriations. The Alliance has also worked over the years to prevent changes in how funds are allocated to the various REAP elements.

Perhaps the most remarkable aspect of the REAP Alliance is that its membership has remained intact and united. This is particularly impressive when you consider the diversity of interests represented among the membership. When economic times get tough, the unity of a coalition can become vulnerable as individual members begin thinking it may be best to at least get what they can for their individual cause. This has not happened to the REAP Alliance because it firmly believes that REAP's strongest aspect is its diversity of benefits and beneficiaries.

#### **In Closing . . .**

The ultimate REAP public participant is active on a County REAP Committee, attends REAP Assemblies, is a REAP Congress delegate, is in at least one of the REAP Alliance membership organizations, attends Alliance meetings, and does not miss an opportunity to chat with a state agency official and state legislators about REAP. Believe it or not, there are a few people who do all these things. On the other end of the spectrum are people who are involved in only one element of REAP public participation. These people also play a very important role in REAP's success. And of course, we have many participants who fall within these two extremes. The most important thing to remember is that all Iowans can be somewhere on the spectrum -- if they choose to be. One key to REAP's success thus far is that the spectrum is crowded, but there is and always will be room for one more. I hope to see you at a REAP assembly in February or March.

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*Kevin Szcodronski is the REAP coordinator for the department in Des Moines.*



# The Peregrine's Return

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*Man has emerged from the shadows of antiquity with a peregrine on his wrist. Its dispassionate brown eyes, more than those of any other bird, have been witness to the struggle for civilization, from the squalid tents on the steppes of Asia thousands of years ago, to the marble halls of European Kings in the seventeenth century.*

*--Roger Tory Peterson, Peterson Field Guides*



**T**here was just cause for Iowans to celebrate this year as two pairs of wild peregrine falcons successfully reared their young within the state's borders. It has been a full 30 years since such an event has occurred.

The first successful nest containing three young was located in Des Moines at an easily observed site in an alcove atop the west wall of the American Republic Insurance building. The second pair produced two young in a nest box located on the Firststar Bank building in Cedar Rapids. One of these chicks became chilled during a storm and died. However, the Iowa Falconer's

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Article and photos by Lowell Washburn





Association purchased a captive-reared replacement bird of the same age. The foster baby was eagerly accepted by the adults and both chicks survived to migrate last autumn. Shortly after fledgling, one of the Des Moines young drowned in an air conditioner unit. However, the other two birds did survive to independence. Normally, 60 to 70 percent of immature peregrines may die before their first year. But, if they survive the first year, they may enjoy up to 80 percent survival in subsequent years, and adults may be productive breeders for 12 to 15 years.

For more than a quarter of a century now, the regal peregrine falcon has become the symbol for a growing commitment to a healthy environment. In the annals of wildlife conservation, their legacy remains unparalleled.

A half century ago, more than 350 pairs of the majestic





◀ Until the peregrine returns to its original nesting habitat -- the cliffs of the Upper Mississippi River -- Iowa's peregrine restoration efforts could be considered incomplete.



raptors nested on cliffs in the eastern half of the United States. But at the conclusion of World War II, their numbers began to plummet sharply as a result of DDT contamination -- a lethal and persistent pesticide that caused egg shell thinning and other reproductive maladies among peregrines and other raptors.

Prior to the use of DDT, there may have been 50 peregrine pairs on the cliffs of the Upper Mississippi. By 1956, a survey revealed just 13 eyries remaining on the Upper Mississippi. Even more alarming was that none of the nests had produced even a single chick. By the early 1960s, only one peregrine nest remained on the Mississippi River. It was located on a cliff near Lansing, and some experts believe that it may have been the very last nest to exist in the eastern half

*continued on page 30*

▲ **Banding chicks from Iowa's first "modern day" peregrine nest at the American Republic Insurance Building in Des Moines (top). Dr. Pat Redig is repelling down to the nest to remove the chicks for banding and examination.**

**Viewing the peregrine nest in Des Moines was of great public interest (above).**

◀ **Peregrine egg in a nest box.**



►  
Peregrine with mallard.  
The peregrine falcon  
feeds solely on other  
birds that it catches in  
flight. In ancient times,  
the peregrine was the  
"bird of choice" for  
falconers from Europe  
and Arabia, and remains  
so today. In Iowa,  
peregrines are currently  
used to pursue game  
including pheasants,  
waterfowl and partridge.



Lowell Washburn

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# Portrait of a Superb Aerial Predator

I'll never forget the sight of my first wild peregrine. It was a blustery March morning, and the spring waterfowl migration was under a full head of steam. I was busy taking photos at the north end of Cerro Gordo County's Zirbel Slough. Business was brisk and my supply of film was dwindling fast.

Suddenly, the falcon appeared from nowhere and came scorching its way across the marsh in an incredible burst of raw energy. Needless to say, the falcon's arrival did not escape the attention of the several hundred ducks located in my immediate vicinity. Those that were on





the ice stayed there, and those that were in the air quickly left it.

There was a small airhole out front, and I watched in amazement as a flock of a dozen or so pintails became so intimidated that they bailed from the sky like so many diving seabirds. The ducks struck the water like arrows, disappeared, resurfaced and then dove again. As I stood and walked to the edge of the hole, the ducks bunched tightly and stretched their long necks in alarm. But, again to my amazement, they would not leave. It was then I realized that even the large and wary

pintails feared the peregrine even more than they feared me -- an incredible testimonial to the peregrine's aerial prowess.

The falcon had now completed a loop of the wetland and came burning back in my direction, hot on the tail of a terrified drake redhead. The peregrine's flight seemed effortless and in a few rapid wingbeats it overtook the duck. Incredibly, it made no attempt to strike down its prey. Instead it repeatedly strafed and harried the bird until the redhead lost heart and joined the rest of the fowl cowering on the ice. Apparently, the falcon had already fed and was simply enjoying the exhilaration of the chase and the fulfillment of its role as one of creation's most superb predators.

The falcon banked and made one more flight across the marsh. It passed within 10 yards, cocking its head in my direction. For a split second our eyes met. And as it passed, it seemed to me as if the falcon held an expression of curious disdain, or perhaps even mild contempt for the two-legged creature glued by gravity to the earth below. Suddenly I remembered the camera. I had time for only one shot. Miraculously, it turned out to be in perfect focus and remains one of my prized possessions.

At last satisfied that no other creature dared share the sky, the falcon adjusted its course and turned on the after burners. It rapidly became a mere dot on the northern horizon and then vaporized into the crisp blue atmosphere. I believe it was at that moment that I realized there would never be another bird for me.

Loosely translated, the word peregrine means the wandering of migrating falcon. And wander they do -- the species has been recorded on every continent except Antarctica.

The peregrine's powers of flight are virtually unparalleled, and when under the influence of the urge to migrate, they can cover large expanses of sky in amazingly short periods of time. A classic example is represented by a chick that was banded in its Greenland eyrie (nest) and was captured just three weeks later by a bird bander at Lansing,

Iowa.

During 1991, scientists working in the Canadian Yukon and Siberia were able to mark fledgling arctic peregrines with radio transmitters. The bird's movements were monitored as they migrated down the western hemisphere. After stopovers in Arizona and Texas, one of the falcons was tracked as far south as Peru. They are indeed "the migrating falcon."

As is the case with most falcons, peregrines build no nests of their own but fashion scrapes along the ledge shelves of vertical cliff faces. Pairs often occupy the same nesting territories for generation after generation so long as one of the pair survives from year to year. One of the most famous eyries is located on a Welsh island and is said to have been constantly occupied since before 1300.

Another intriguing nest is located on a picturesque arctic cliff in Russian Siberia. The thing that makes this eyrie so unique is that protruding from the cliff wall approximately 75 feet above the scrape is the perfectly preserved tusk of a mastodon. When not out hunting, the male can often be seen loafing on this handy perch. The site is so remote that ivory hunters have not vandalized the nest. (It is unknown what impact the breakup of the Soviet Union will have on this historic site.)

In North America, modern-day peregrines generally use skyscrapers as substitutes for traditional cliffs. Beginning in 1989, nongame personnel with the DNR's wildlife bureau have been working to restore the bird as a nesting species in Iowa. (The effort is part of the Mid-Continent Peregrine Recovery Program involving the U.S. Fish and Wildlife Service as well as several other states.) In addition to returning to Iowa, survivors from the state's three release sites have established breeding territories at locations including Winnipeg, Canada; LaCrosse, Wisconsin; St. Louis, Missouri; Omaha, Nebraska; Topeka, Kansas and Minneapolis, Minnesota..

--LW





◀ Peregrine chick donated by the Iowa Falconers' Association to augment the Cedar Rapids nest.

▼ Peregrine nest box in Mason City, Iowa.



*continued from page 27*

of the U.S. By 1964, no active nest, adult pair or even a single peregrine could be found anywhere in the eastern U.S. The peregrine falcon had vanished.

In the investigations that followed it was discovered that DDT also posed very severe health threats to humans. This soon elevated the peregrine to the figurative equivalent of the canary in the mine shaft. In essence, the falcon served as an environmental barometer that indicated civilization was fouling its own nest beyond the limits of tolerance.

But like the legendary Phoenix, the endangered peregrine falcon is rising from the ashes -- and with the aid of conservationists, is currently making a remarkable recovery. Two events have made the restoration possible. Both occurred in 1972. The first event was a ban on DDT. The second was that a falconer named Tom Cade was successful in hatching a peregrine egg in captivity. Cade became caught up in the vision of using captive-produced falcons to begin a new

generation of wild peregrines. Within a short time he had convinced other falconers to pool their efforts and their captive falcons. It is the descendants of these birds that are now repopulating the American landscape.

Since 1989, the DNR has released a total of 40 young peregrines in Des Moines, Cedar Rapids and Muscatine. The cost has ranged from \$2,000 to \$2,500 per bird. The effort has been greatly enhanced by monetary donations and volunteer labor from private groups such as the Quad-Cities Conservation Alliance, the Iowa Wildlife Federation, the Cedar Rapids and Des Moines Audubon chapters and the Iowa Falconers Association (IFA). In addition to donating the chick to the Cedar Rapids nest, the IFA is also conducting an aggressive peregrine nest box program -- primarily on power plant smoke stacks along the Mississippi River.

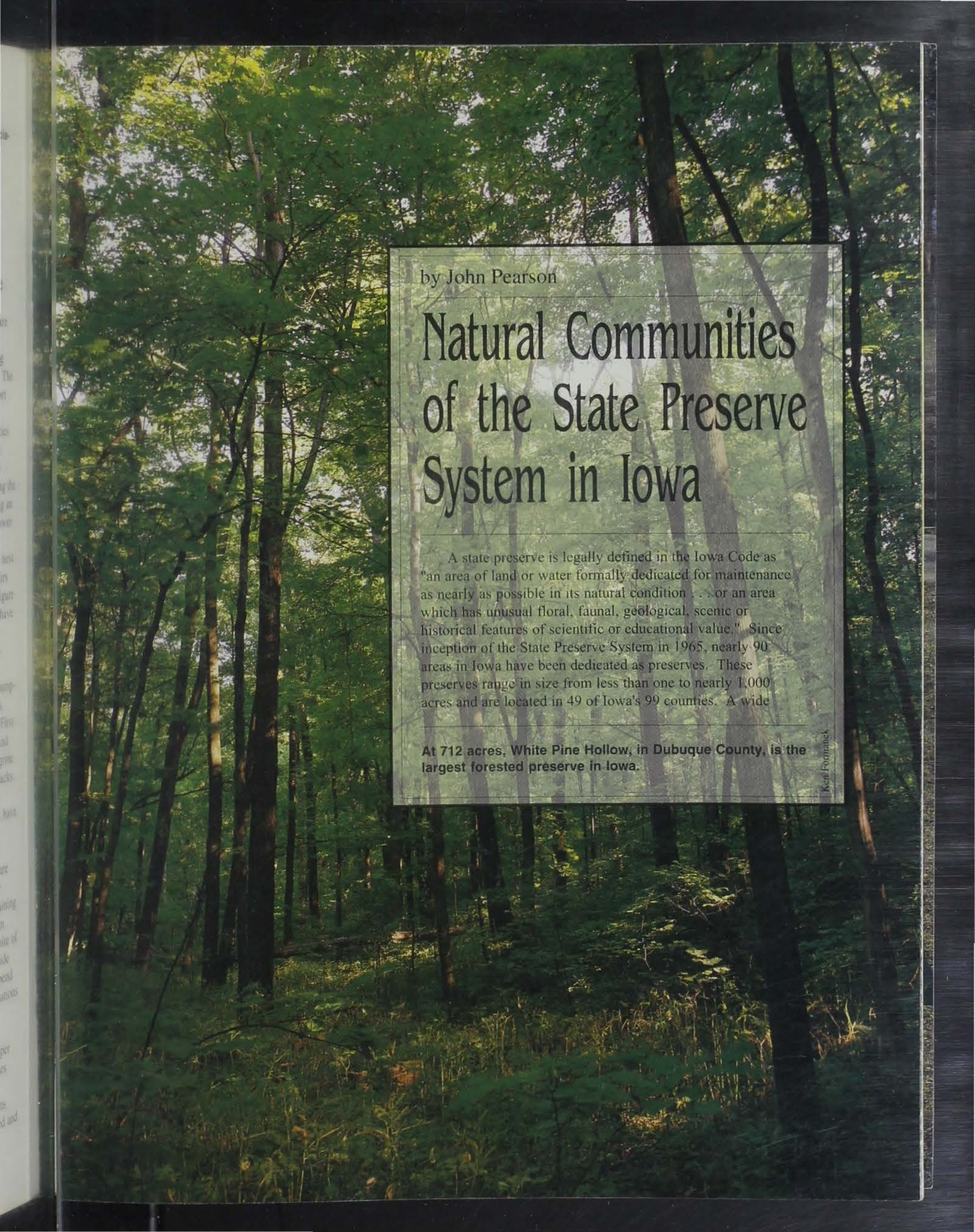
During 1993, 42 pairs of peregrine falcons defended nest sites in the mid-continent region. Thirty-two of those pairs were successful and fledged a total of 82 young. (This figure includes 11 augmented chicks.) The goal for Iowa is to have five nesting pairs by the year 2000.

At this point it could be tempting to sit back and announce to the world that the peregrine falcon has been restored. However, to do so might prove to be both presumptuous and irresponsible. The established goal of 40 pairs, although obtainable, is in my view somewhat arbitrary. First of all, the number falls far short of historic populations and completely fails to take into account all of the new peregrine habitat created by office buildings, bridges and power stacks. In direct contrast to these circumstances faced by other endangered species, suitable nesting areas for peregrines have actually increased dramatically over historic times.

Although peregrines are again nesting across mid-America, we should never lose sight of the fact that we are dealing with a very small and potentially fragile founder population of birds. Some adults, for example, are remaining on territories until late in the year. What effects could an unusually severe winter have on those pairs? Also, in spite of the fact that DDT has been outlawed here, it is still in wide use in South America where peregrines and their prey spend at least part of the year. What are the long-term ramifications to that? No one can say.

Just as importantly, not one peregrine pair has yet attempted to reclaim any of the historic eyries of the Upper Mississippi. And until this great river valley again echoes with the territorial screams of this dynamic hunter, the mission can only be considered incomplete. Until falcons return to the cliffs, the ultimate goal has not been reached and our debt to the peregrine remains unfulfilled.





by John Pearson

# Natural Communities of the State Preserve System in Iowa

A state preserve is legally defined in the Iowa Code as "an area of land or water formally dedicated for maintenance as nearly as possible in its natural condition . . . or an area which has unusual floral, faunal, geological, scenic or historical features of scientific or educational value." Since inception of the State Preserve System in 1965, nearly 90 areas in Iowa have been dedicated as preserves. These preserves range in size from less than one to nearly 1,000 acres and are located in 49 of Iowa's 99 counties. A wide

**At 712 acres, White Pine Hollow, in Dubuque County, is the largest forested preserve in Iowa.**

Ken Formanek





DNR Photo

▲ Diverse plant and animal life exist in Iowa's preserves, including the blue-spotted salamander (above).

diversity of natural and cultural features are now held in trust against "alienation" (conversion to incompatible use) in the state preserve system.

Along with geological, archaeological, historical and scenic features, plant and animal communities are one of the many special elements of Iowa's natural diversity protected within the state preserve system. Approximately 70 preserves contain some type of forest, prairie or wetland community. In fact, several preserves -- such as *Cayler Prairie* in Dickinson County and *Merritt Forest* in Clayton County -- are best known for their plant communities. Natural vegetation is often the most conspicuous feature of even preserves such as the *Catfish Creek* originally established to protect archaeological, historical or

geological sites. In addition to providing a scenic backdrop to an area, natural vegetation in preserves often contain rare plant species and also supports a variety of wildlife, from common animals such as deer and goldfinches to rare ones like the blue-spotted salamander and the Dakota skipper butterfly.

Forest vegetation is present in 46 of the "natural" preserves and is the predominant feature in most of these. Several types of forest are represented in the preserve system, including dry areas dominated by white oak or bur oak, mesic (moist) areas dominated by sugar maple, basswood or red oak, and wet areas dominated by cottonwood, willow, silver maple, boxelder and other wetland trees. The largest forested preserve is *White Pine Hollow* in Dubuque County with 712 acres. One of the smallest wooded



*... plant and animal communities  
are one of the many special elements  
of Iowa's natural diversity protected within the state  
preserve system.*



Ron Johnson  
DNR Photo



DNR Photo

▲  
Purple prairie clover, Cayler Prairie,  
Dickinson County (top)

Pecan Grove, Muscatine County  
(above)

▶  
Stiff goldenrod







Dean Roosa

▲  
Clay Prairie, Butler County

preserves, *Merritt Forest* at 20 acres, is known for its old-growth condition. It contains numerous trees that are more than 200 years old and is dominated by "climax" maple and basswood. Most of the forested preserves contain mainly upland forests, but two preserves -- *Rock Creek Island* in Cedar County and *Pecan Grove* in Muscatine County -- contain bottomland forest. Forest preserves in Iowa contain many species, ranging the common spring beauty to the rare yellow trout lily.

Prairie vegetation occurs in approximately 30 of the preserves and varies from dry areas dominated by little bluestem and sideoats grama, to mesic areas dominated by big bluestem and Indiangrass, to wet areas dominated by bluejoint, cordgrass and sedges. The largest prairie preserves are *Hayden Prairie* in Howard County and *Five Ridge Prairie* in Plymouth County. Hayden Prairie is 240 acres in size and is



Mark Leoschke


*Forest preserves in Iowa contain many species, ranging from the common spring beauty to the rare yellow trout lily.*

▲  
Cattfish Creek, Dubuque County (top)

▶  
Yellow trout lily and spring beauty







*Depending on their size, history and location, individual prairie preserves in Iowa contain anywhere from a handful to as many as 300 species of plants . . .*

almost entirely dominated by mesic and wet prairie. It is also well known for its spectacular flowering display of shooting star in late spring. The *Five Ridge Prairie Preserve* is nearly 800 acres in size, but contains a mosaic of both prairie and woodland -- the prairie alone comprises about 300 acres and occurs as irregular bands on ridges and upper slopes in a rugged Loess Hills landscape. Other large prairie preserves are *Steele Prairie* in Cherokee County, *Cayler Prairie* in Dickinson County and *Kalso Prairie* in Pocahontas County. Each is 160 acres in size. The

smallest prairie preserve is the *Clay Prairie* (three acres) in Butler County. In addition, some preserves contain patches of prairie occurring as small openings in a mainly forested landscape, such as *Woodman Hollow* in Webster County and *Catfish Creek* in Dubuque County. Depending on their size, history and location, individual prairie preserves in Iowa contain anywhere from a handful to as many as 300 species of plants, including common species such as stiff goldenrod to rare ones such as the western prairie fringed orchid.

Angela Corto







◀ Silver Lake Fen in Dickinson County is a unique boggy upwelling of highly calcareous groundwater which supports numerous rare wetland plants such as grass-of-Parnassus and brook lobelia.

Most of the state preserves were established primarily on upland areas, but about a dozen contain significant wetlands. Several types of wetland are represented in the state preserve system, including marshes, fens, wet meadows and wet prairies. *Cheever Lake State Preserve* in Emmet County, for example, contains a large marsh dominated by cattails

*Several types of wetland are represented in the state preserve system, including marshes, fens, wet meadows and wet prairies.*

and bulrushes. *Silver Lake Fen* in Dickinson County is a unique boggy upwelling of highly calcareous groundwater which supports numerous rare wetland plants such as grass-of-Parnassus and brook lobelia. Other, more acidic fens including a seepy peatland in the *Cedar Hills Sand Prairie Preserve* in Black Hawk County and the bog in Dead Man's Lake in *Pilot Knob State Preserve* in Hancock County. Still another type of seepage wetland -- a woodland seep or "forested fen" -- is found in the *Hanging Bog State Preserve* in Linn County. *Williams Prairie State Preserve* in Johnson County contains a wet meadow, a wetland type characterized by a predominance of sedges. Wet

Bob Howe



prairie, a wetland type dominated by true grasses, is found in *Doolittle Prairie* in Story County, *Hoffman Prairie* in Cerro Gordo County and *Liska-Stanek Prairie* in Webster County.

In addition to conspicuous types of vegetation such as forests and prairies, state preserves also harbor a variety of smaller and more subtle kinds of natural communities. Cliffs and talus slopes, although usually small parts of the Iowa landscape, support a different group of plant and animal species than the general vegetation surrounding them. Many cliffs in northeast Iowa, for example,

▼ **Federally threatened wild monkshood can be found on an "algific" talus slope, where cold air flows through it from adjacent bedrock fissures.**



Bill Watson



DNR Photo

▲ **Western prairie fringed orchid (top)  
Cheever Lake, Emmet County (above)**



Mark Leoschke

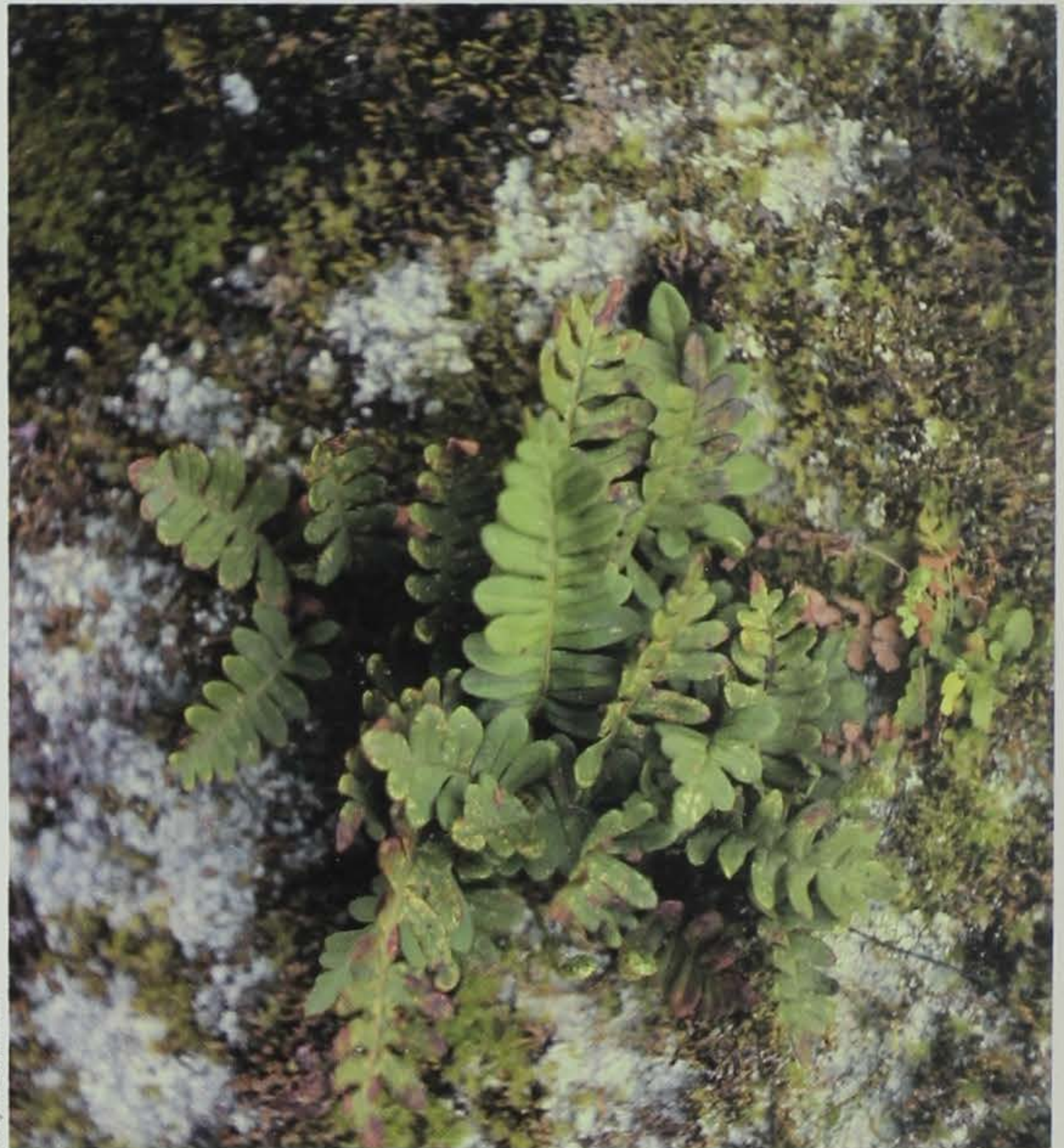


*Many cliffs in northeast Iowa, for example, are draped with Canada yew and polypody fern -- plants found almost exclusively on rock outcrops.*

are draped with Canada yew and polypody fern -- plants found almost exclusively on rock outcrops. Some preserves with significant cliff habitats include *Mossy Glen* in Clayton County, *Brush Creek Canyon* in Fayette County and *Woodman Hollow* in Webster County. Talus slopes are deposits of loose rock on steep hillsides or in ravines; they, too, support a distinctive flora usually not found in other habitats. A special kind of talus slope with cold air flowing through it from adjacent bedrock fissures is known as an "algific" talus slope, a habitat which contains many rare species such as the federally threatened wild monkshood and the Iowa Pleistocene snail. The most well known algific slope in Iowa is located in *Bixby State Preserve* in Clayton County.

Another natural community, typically occurring as very small patches in some preserves, is the "glade," an open woodland developed on extremely thin soils with frequent rock outcrops. Eastern red-cedar and chinquapin oak are the dominant trees with a mixture of prairie and forest herbaceous species such as little bluestem and columbine. One of Iowa's largest glades is found on a long, narrow, rocky ridge in the *Turkey River Mounds State Preserve* in Clayton County. Glades are also found in *White Pine Hollow* and the *Little Maquoketa River Mounds State Preserve* in Dubuque County.

Natural communities add a contemporary, living element to the state preserve system, complementing archaeological and historical features primarily representing the past and geological features primarily representing non-living natural



Wayne Schemmum

forces. Together they form the best examples of Iowa's natural and cultural history. Dedication as a state preserve helps to insure that their special values will be recognized and maintained forever.

*John Pearson is a community ecologist with the department's preserves and ecological services bureau in Des Moines.*

▼ Iowa Pleistocene snail (bottom), White Pine Hollow, Dubuque County

Polypody fern (below)



Bob Howe



# In Demand

For many years, the investor-owned utilities of Iowa have provided their customers reliable energy. Being able to turn on the faucet and have hot water, or flip a switch and have light is something we all take for granted. But now, concerns about long-term energy demand and the environmental problems associated with power generation methods have given utility companies a new duty -- to sell less energy.

Iowa spends \$2.6 billion annually for the natural gas and electricity used in our homes, farms, businesses and factories. Many of these dollars go to

the other states and nations which supply the 12 million tons of coal and 210 billion cubic feet of natural gas we consume each year.

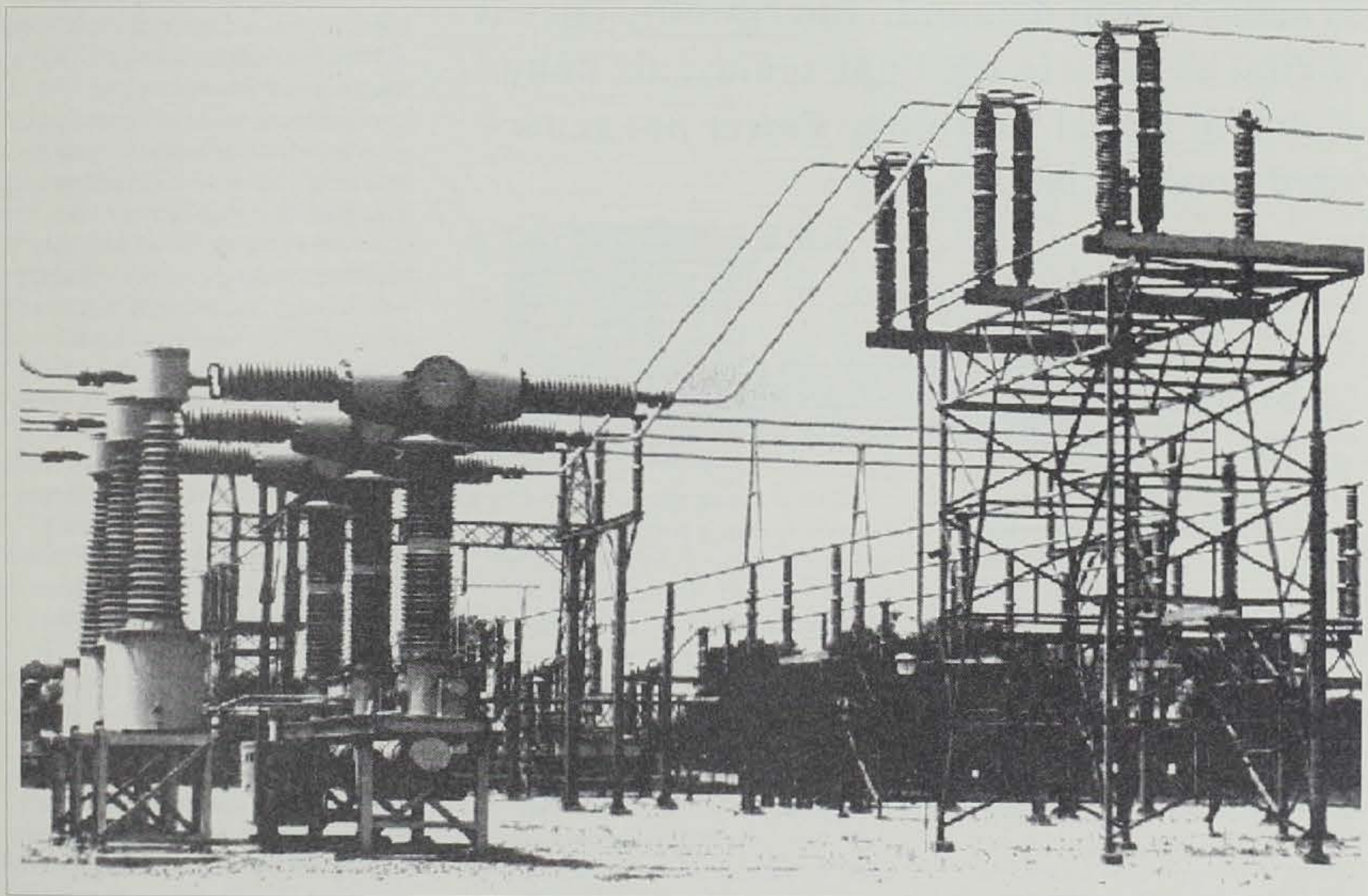
Two potential options may alleviate these problems. They are using alternative, renewable energy sources and reducing consumer demand.

Displacing the use of energy through efficiency and with renewables helps both the environment and the economy. Avoiding the use of fossil fuels reduces air pollutants and strengthens the economy by reducing the cost of energy. Further, global

competition is encouraged through investment in energy efficiency.

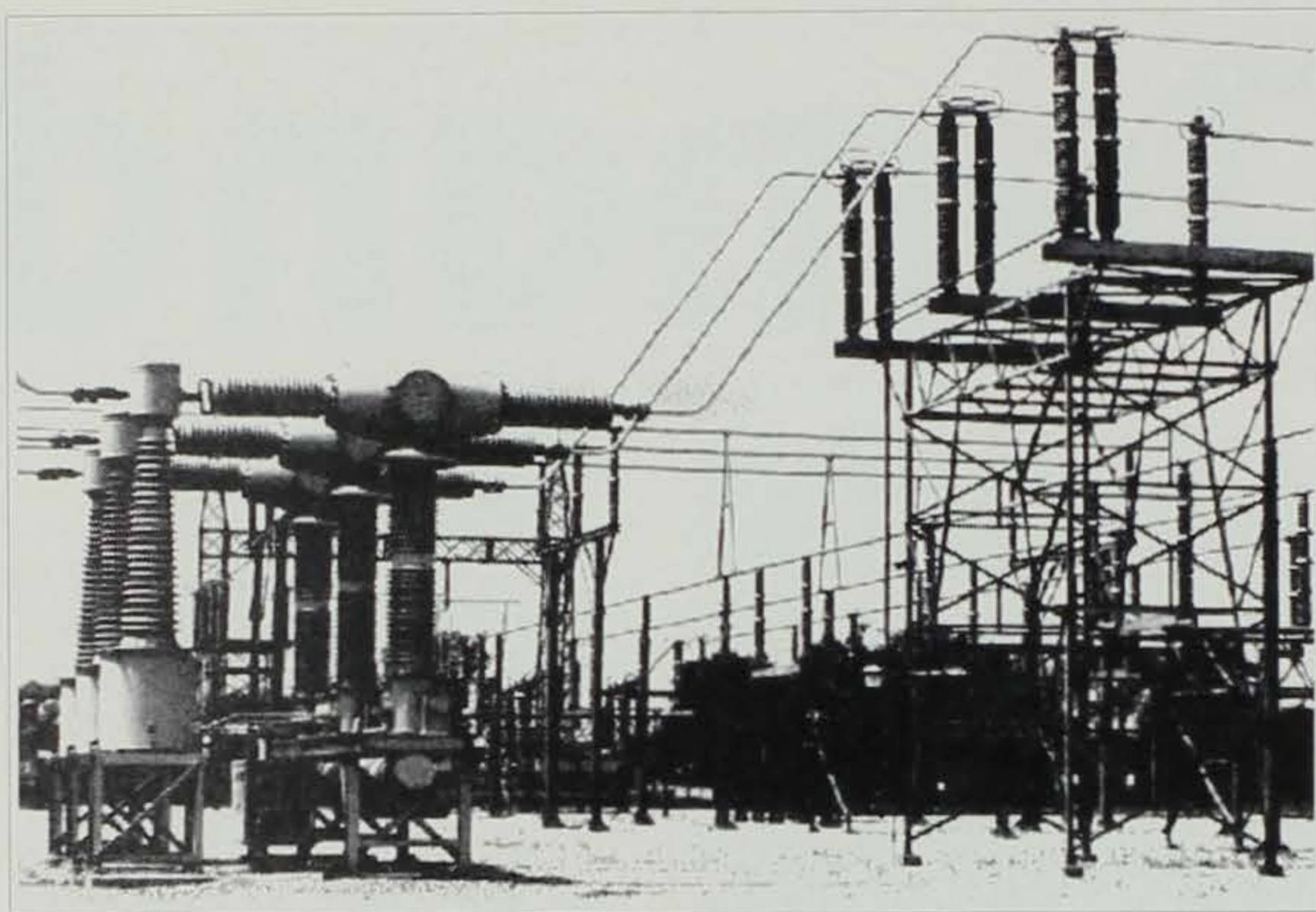
With these benefits in mind, Iowa governmental officials, utility representatives and state legislators created a law, which became effective in 1990. Its intent is to firmly establish energy efficiency programs within the investor-owned utilities. These programs promote energy efficiency and renewable fuels as alternatives to building additional power stations and the continued consumption of non-renewable, fossil fuels.

An important component of this



by C.E. Conover





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**"The most immediate and effective solution is reduction in demand. Energy efficiency is a vital weapon in the fight against air pollution and global warming. Power not generated does not pollute."**

**-- Iowa Utilities Board  
*Partners in Energy* report**

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approach, also called demand-side management (DSM), is the legislative requirement for a two percent set-aside by investor-owned electric utilities, and one and one-half percent set-aside by investor-owned gas utilities, for energy efficiency. This percentage is based upon the utilities' gross operating revenues. Utilities present bi-annual plans, to the Iowa Utilities Board, defining their energy efficiency plans and how the utility will spend their money cost effectively. Upon approval of the plan, utilities implement programs to help their customers save energy. "The legislature spurred our efficiency activities," said George Phillips of Iowa-Illinois Utilities of Rock Island, Illinois. "We had no active program until that time. Three

years later we have seen very positive feedback and participation by our customers."

This is a most unusual posture for a business to take; a posture that encourages the customer to reduce consumption of a product. Utilities won't be penalized for doing the right thing, however. Incentives provide financial support, helping the investor-owned utilities implement the DSM program.

The Iowa Legislature established a cost-recovery mechanism for qualifying investor-owned utilities, which they may claim after their programs have been in continual service for a minimum of 18 months. The incentives help cover the expense of establishing a demand-side management program as well as covering lost revenues due to

reduced consumption. The idea behind the incentives is that although customers' rates may increase, their total utility bills will go down through conservation.

The principle selling point for consumers is the anticipated reduction in their utility bills and the added benefits of newly established consumer service programs. Some of the more universal programs are tree planting, low-income housing weatherization, commercial lighting and hot water heater insulation. "The utilities are now participating in active programs, reaching tens of thousands of customers," said Gordon Dunn of the Iowa Utilities Board. "There has been a lot of initial success with the program, but we are still in the process of gauging the cumulative results."

Each utility may have a different approach, but according to Chris Mettes of Iowa Southern Utilities (ISU), all are reporting very positive results. "At Iowa Southern, we have divided our program into three separate, independent areas -- commercial, residential and industrial," said Mettes. "We approach all our decisions from the customer's perspective. We offer free walk-through audits to any individual or business that requests one. We have pretty much perfected our system so that the customer can usually have the audit's results within six hours of our initial visit." ISU has completed more than 1,000 audits and identified more than \$1.2 million in improvements. Mettes indicated that 40 percent of the customers that request and complete the work-through audits implement the improvements.

"We have had a lot of success, with our customers, using rebates to encourage implementation of efficiency improvements. The commercial division is split into two separate units -- existing structures and new construction. In our existing structures program we offer rebates for improvements such as lighting projects, air conditioning and heat pumping units, motors and HVAC systems. Our new construction



program relies heavily on set standards for the rebates. We do this to strongly encourage the parties to use energy efficient materials whenever possible," said Mettes.

Most importantly, according to Jeff Custer of Iowa Electric (IE), you must let the program work for you. "We have a five-year time line," said Custer, "This is how long it takes a program of this magnitude to become established and to generate the name recognition required to be successful. We have received favorable feedback from the participants. There are still some sceptics, but IE has never heard a complaint about the rebate checks."

Custer credits IE's success to having a "head start" on the other investor-owned utilities. "We had some efficiency services, such as an interruptible rate program, in effect before the 1990 mandate."

"When the legislation took effect, IE used that time period to increase our promotional efforts and to expand existing programs, especially in the commercial and residential lighting and the commercial air conditioning rebate promotions," said Custer. "We are currently researching how to further expand our programs."

Expansion is a key word at Midwest Power, according to Al Zeman, the director of DSM programs. "We continue to aggressively market our programs, which have only been ongoing for three years," said Zeman. Midwest Power offers benefits to individual participants and businesses. The more participants, the more benefits the customer base will see as a whole."

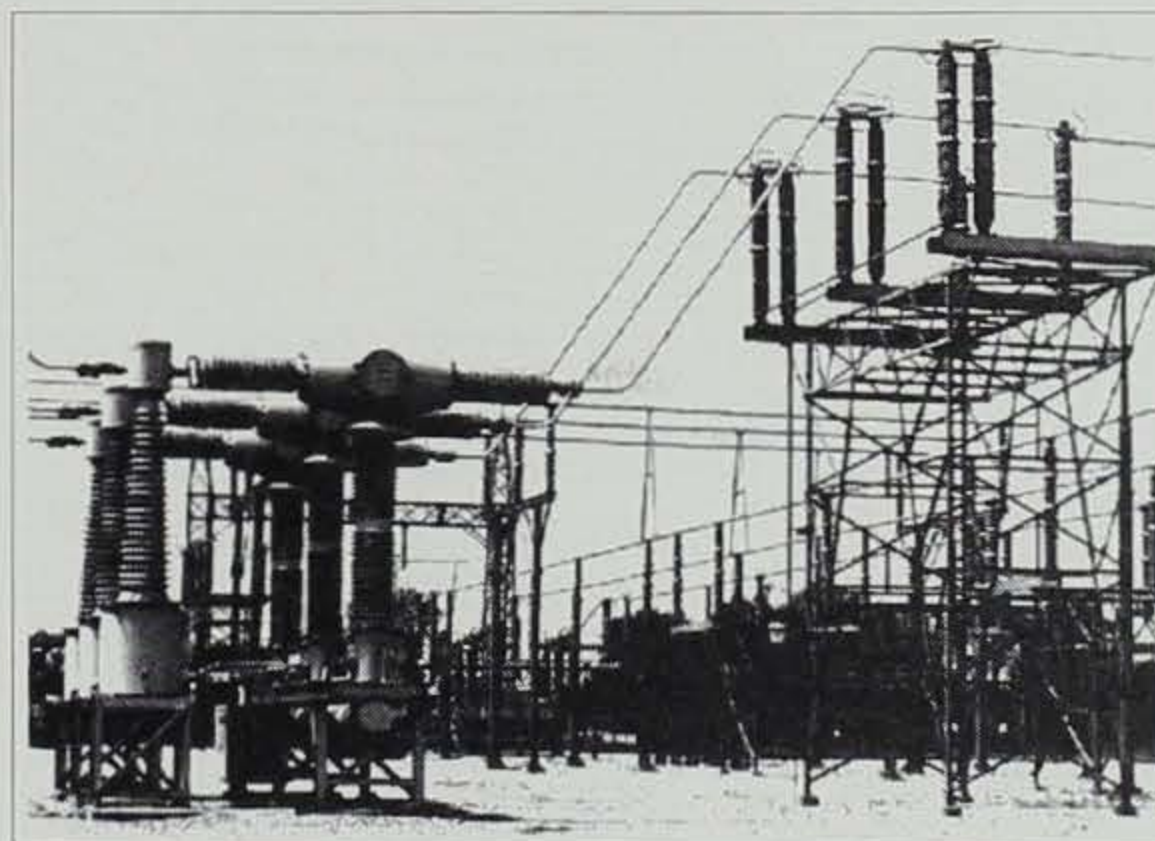
Zeman indicated that the most successful programs have been the air conditioner cycling program, the large appliance efficiency program and low-income weatherization. "We also won national acclaim for our thermal energy storage program at Des Moines Area Community College," he said.

"Midwest Power has set a goal to reduce new capacity by one third," said Zeman. "This, more than any other

factor, will help assist us meet our future goals for energy management programs."

The same positive attitude is also present when Bud Karkchiwala speaks of the energy utilization programs that he administers at Midwest Gas. "The people of Midwest Gas are very pleased with the overwhelming response our customers have given us," Karkchiwala said. He singled out the residential housing and the equipment rebate programs as the two most successful. "Both programs will be expanded in the coming two years," he said.

Iowa has now become a leader in demand-side management and energy efficiency. The demand for electricity and gas continues to grow. Utilities are now given the opportunity to employ energy efficiency methods to reduce



peak shortages, that will hopefully eliminate further power plants, and the costs and pollution that come with them.

"We will be looking at a number of the procedures regarding DSM policies," said Dunn. "Our evaluations, plus any forthcoming energy legislation dealing with power plant development, will decide the continued course of the DSM program. Iowa has a fair amount of capacity and the only 'hot spot' we have is during peak periods in summer months. We are observing the current DSM program and its effectiveness

very carefully."

Joe Murphy, a state economist with the Office of Consumer Advocate (OCA), said, "The OCA likes what it has seen. We are continuing to encourage the utilities to move forward with their implementation plans. We encourage all customers [of investor-owned utilities] to make that extra phone call and check into the opportunities that are being presented to you. Large industries should like the opportunity, since the programs are flexible and may be specifically tailored for them."

With demand-side management everyone wins. Consumers and utilities will reduce their costs and benefit the environment. As participation in energy efficiency grows, so does the potential to meet new energy needs, without having to produce more energy.

Phillips of Iowa-Illinois adds, "You must tell everyone possible the positive impact of DSM." When his customers or investors ask about demand-side management he gives them these three accomplishments:

- 1.) Customers will lower their utility bills.
- 2.) DSM will improve the local economy.
- 3.) DSM will have a positive impact on the surrounding

environment.

Iowa is a major energy importer and the challenge to use that energy wisely must be met. By planning now, the future is anticipated, the environment is improved and money is saved. Energy efficiency and demand-side management are advantageous -- for everyone.

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*C.E. Conover is a Iowa State University student majoring in journalism. He served as an intern for the department's energy bureau in 1993.*



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*Regional collection centers, an outgrowth of the Toxic Cleanup Days Program, will offer ongoing collection of household hazardous materials.*

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AN

# EVERYDAY NEED

by Jeff Fiagle and  
Caroline Gathright-Conner

*Imagine that you have just closed the deal on your dream of a lifetime -- a 100-acre farm, where you plan to build your new home. The family decides to take a drive to look at fall colors, and visit the farm to look around. During your visit you discover in the barn 30 50-pound bags of DDT that were left by the previous owner. Knowing that this is a hazardous material, you want to dispose of this pesticide properly. But there won't be another Toxic Clean Up Day until next spring and it is two counties away.*

*Or, imagine that you've just accepted a new job out of state. Towards the end of your packing, you uncover old cans of paint and paint thinner that you had tucked away in the basement after painting the house four years ago. You are left with these decisions, "Do I leave them behind for the new owner to dispose of them? Do I pour them down the storm sewer or do I just place them in the trash? How do I properly dispose of these items?"*

These two scenarios are all too real for many Iowans: Inheriting unused portions of household hazardous materials (HHMs) from previous owners or coming across leftover household hazardous materials from years ago. Whatever the case may be, that person is left with the task of determining what disposal options are available to them. The establishment of regional collection centers will help eliminate improper disposal of household waste in the future.

Regional collection centers (RCC) are an outgrowth of the Department of Natural Resources' Toxic Cleanup Days Program. In 1991, the legislature provided funding for the establishment of RCCs in Iowa through a grant program. The funding for this grant program is provided by landfill tonnage fees. The RCCs are intended to assist citizens across the state with the management of their hazardous wastes similar to the toxic clean up days (TCD). The toxic cleanup days





Tami Foster

are *one-day* collection events held to prevent household hazardous materials from being improperly disposed and to promote public awareness, and education about household hazardous materials. The RCCs will be established to accomplish similar goals, but provide collection on an *ongoing* basis.

Regional collection centers will operate as transfer centers; collecting, sorting and packaging hazardous wastes from urban and rural households and small businesses producing less than 220 pounds of hazardous materials a month.

The RCCs will *temporarily* store these packaged materials prior to transportation to a permitted disposal facility and may recycle items like paint, household batteries, waste tires and other items. The RCCs will not be hazardous waste landfills; rather, they *temporarily* store the processed waste until transportation arrangements can be made.

#### COLLECTION

Nationally RCCs are referred to as "permanent collection facilities." When persons who are not familiar with the concept of these facilities hear the term "permanent collection facility," they think of a toxic waste dump and all of its negative connotations. The term "regional collection centers" more accurately depicts the function of Iowa's centers. They are not, nor will they ever be a toxic waste dump or landfill.

Some of the RCCs may be able to provide mobile capabilities. Because the RCCs will be providing a regional approach to hazardous waste management some of the centers may feel that it is appropriate to have a mobile unit. The unit could be a semi-trailer outfitted for one-day collections within the counties served -- providing more accessibility to the citizens.

The centers may be able to provide disposal opportunities that currently are not available, including fluorescent

▲ **Toxic Cleanup Days offer one-day service for citizens with household hazardous materials. Regional collection centers will offer an ongoing service.**



tube recycling, waste tire collection, usable "waste exchanges," used paint recycling and others. An RCC's ability to provide these "extra" opportunities will depend on the economics of the

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. . . the centers will offer services that will be more accessible to Iowa's citizens. This added accessibility will help prevent the improper disposal of HHMs resulting in a cleaner, safer environment for all of us.

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region. Each RCC will be responsible for its own disposal costs. Some additional money will be available to the RCCs for hazardous waste disposal.

Iowa's RCC program is somewhat unique because it will collect hazardous wastes from small businesses called conditionally exempt small quantity generators.

These small businesses traditionally produce wastes that include photographic processing chemicals, washer solvents, paints and thinners, sludges and heavy metals. Many of these businesses are unable to identify or properly manage these items. In

many cases the cost of hiring a licensed hazardous waste hauler can be quite prohibitive. An RCC will help provide access to the appropriate technical information that these businesses may need, including source reduction, appropriate waste management and disposal options. The RCC will be able to provide a more economical means of assisting these businesses with their waste.

As of November 1992, 25 states have established programs to collect hazardous wastes from households on an ongoing basis. Only four of those 25 states have programs that collect wastes from households *and* small businesses. Iowa will become the fifth.

#### EDUCATION

Both the Toxic Cleanup Days program and the regional collection centers have solid education programs built into their goals. Both promote awareness of what household hazardous materials are and how their improper use and disposal can harm people and the environment. The education programs do not advocate the elimination of HHMs, because there will always be a need for these products, but strives to heighten public awareness of their improper use and disposal, alternatives to HHMs, and ways to reduce the amount of HHMs at the source.

Such education programs help meet the programs' overall goal of reducing the amount of hazardous materials disposed in Iowa's landfills. They also help reduce the amount of toxics that will need to be disposed of over a period of time.

The regional collection centers will bring a more active education program to local communities. Each RCC will work with schools to provide resource materials, presentations and tours of the center. The RCCs will provide presentations aimed at various groups and organizations as well as use the local media to

►  
An important aspect of both the Toxic Cleanup Days program and regional collections centers is education. Improperly disposed of hazardous wastes pose a serious threat to people and the environment.



Ron Johnson









# MAQUOKETA RIVER MAGIC

Article and photos by Bill Kalishek

It was the biggest smallmouth bass that I had ever caught. After carrying the bass a mile back to my uncle's farm, the fish tipped the milkhouse scale at just over three pounds. My cousin, who had been fishing with me that day, was as wide-eyed as I was. Both of us were still in grade school and had never imagined that a bass could get that big.

Over the next 20 years there have been other smallmouths as big or bigger. Two that quickly come to mind are the 18-incher from a secluded spot on the Upper Iowa River and a bass more than three pounds from the Cedar River. These fish were difficult to catch — true top-of-the-food-chain predators that you really had to work for.

Today, it is easier to catch lunker smallmouth in Iowa than it was even 10 years ago. With many anglers believing that location is the key, then the catch-and-release area on the Maquoketa River has to be *the* location for catching big stream smallmouth bass.

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Deep holes, exceptional scenery and increasing numbers of smallmouth bass combine to make the Maquoketa River a memorable fishing destination.







► The black bass catch-and-release area on the Maquoketa River contains ample rock habitat to support an excellent smallmouth bass population.

**B**eginning in 1988, a mandatory catch-and-release regulation for black bass went into effect on a 4-1/2-mile segment of the Maquoketa River in Delaware County. This regulation covers both smallmouth and largemouth bass in an area from the Lake Delhi dam downstream to the first county gravel road bridge. Either artificial lures or live bait can be used. The intent of the regulation is to try to produce a smallmouth bass population with high numbers of big fish. After six years of protection, it is evident that it is working.

Estimates of the total number of smallmouth bass in this section of the Maquoketa River were determined in 1980 through 1982 and again in 1991. During the 1980-82 period, a 12-inch size limit was in effect. The overall number of smallmouth has not changed significantly; however, a big change has occurred in the number of smallmouth bass larger than 12 inches since the catch-and-release regulation was initiated. During 1980-82, the number of smallmouth more than 12 inches varied between 44 and 128 fish. In 1991, 522 smallmouth bass were greater than 12 inches, more than a four-fold increase in the number of big fish. These fish range to more than 20 inches in length and greater than four pounds.

All other vital signs of this bass population are also positive. The smallmouth bass are growing at the same or a slightly faster rate. And, even with the higher numbers of large fish, these smallmouth are still fat and healthy fighters.

Most Maquoketa River anglers do not have to be told that releasing bass is resulting in more trophy



smallmouth in their river. They realize this with the size and numbers of fish they are catching. The rare bass of more than three pounds is now becoming a common occurrence -- almost expected on every trip by experienced anglers.

The quality of smallmouth bass angling on the Maquoketa River far exceeds most other high-quality stream fisheries in the Midwest. Two additional Iowa smallmouth bass streams are managed for catch-and-release fishing -- the Middle Raccoon River in Guthrie County extending downstream from below the Lennon Mills dam at Panora to the dam at Redfield, and, the Cedar River in Mitchell County extending downstream from below the Otranto Dam to the bridge on county road T26 south of St. Ansgar. A trip to one of these two areas could also result in memorable experiences.

*Bill Kalishek is a fisheries management biologist stationed at the northeast regional office at Manchester.*

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... a big change has occurred in the number of smallmouth bass larger than 12 inches since the catch-and-release regulation was initiated.

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# How to Release a Fish Unharmmed

There are no restrictions on the types of bait or lure used in Iowa's catch-and-release smallmouth bass streams. This is based on research that has shown no significant increase in the number of fish that die after being caught and released from the different types of tackle.

Although the fish may not die from being hooked, nonfatal injuries to the eyes, mouth and gill covers can occur. Here are some steps that can be taken to make it quicker and easier to release fish, unharmed:

- When using live bait, set the hook quickly after a bite to reduce the chance of deeply hooking the fish.

- If a fish is deeply hooked with live bait, cut the line rather than trying to remove the hook.

- Pinch down the barbs on a hook to make it easier to remove the hook from the fish.

- Remove treble hooks from spinners and replace with a single, barbless hook.

- Remove all but the rear hook on baits with multiple treble hooks.

- Handle the fish as little as possible and return it to the water as quickly as possible.

--BK

► **The smallmouth bass population on the Maquoketa River has increased dramatically since the initiation of catch-and-release management (top).**

**Pinching down a hook's barb with a needle-nose pliers (middle) and removing forward hooks from lures with multiple treble hooks (bottom) are two ways to reduce non-fatal injuries to fish that are intended for release.**



Ken Formanek





# THE PRACTICAL CONSERVATIONIST

## THE PRACTICAL CONSERVATIONIST

### Ice Fishing and The Best Way to Flash-Freeze Your Catch and Not Yourself





If the weather stays crisp and cold, almost any bathtub-size or larger fishing spot can attract an angler this time of year. Ice fishing is really the great equalizer. Once the ice is on, lakes and ponds that were not accessible to the 90 percent of Iowans without boats are available to everyone.

You do not need an elaborate shelter or expensive equipment to enjoy this winter activity. It is true that some shelters can have everything from carpeting and hide-a-beds to VCRs and microwave ovens, but these amenities are not needed to enjoy a day on the ice. In fact, ice fishing is a sport that does not require a large outlay of cash for new equipment, and it provides an ideal way to recycle old gear and existing clothing and materials.

It also is a sport that allows for the best merging of new, high tech materials with old-fashioned common sense. Depth sounders merge with old-time ice-awareness and fish behavior knowledge to produce some great catches.

The most important task is to stay warm and safe. Practice good ice safety (see box at top); wear a flotation device such as a float coat and practice the buddy system. Remember, while fish may gather near trees, docks, brush and other obstructions in the ice, those obstructions also make the ice in that area deserving of extra care. Watch for warm spells that may make the ice unstable.

Staying warm is benefitted by layering. Keep the fit somewhat loose to maintain circulation. Start at

WHEN ICE FORMS SOLIDLY THEN:				
	MAYBE	A FEW SPREAD OUT	GENERAL USE	SNOWMOBILES
NO! NO!				
1"	2"	3"	4"	5"

the bottom with insulated boots and warm socks. Flannel and wool are the traditional choices for shirts and sweaters, but newer materials can make layering a bit more comfortable and easier to move. The same clothing used for snowmobiling, skiing or ice skating can make ice fishing a more enjoyable experience.

The newest polypropylene underwear, socks, mittens and gloves allow for perspiration to be wicked away while the material stays dry. Polyester "fleece" that wicks away moisture and dries quickly, is available in socks, sweaters, sweatshirts, pants, gloves, scarves, hats, mittens and other outerwear.

Cover all the inner layers with a windproof outer layer, such as a hooded coverall or parka and windpants. Ice fishing is no fun if you are shivering from the cold. Remember to bring several pairs of gloves as hands get wet when changing gear.

One-time, as well as reusable, "instant heat" materials come in all sizes from hand warmers to "hot seats" and make those once-chilled spots warm and comfortable again. Once

activated, the material warms and stays warm for one to three hours. The small sizes can be slipped into boots or mittens to keep extremities warm while the "hot seat" can make the difference between fun and misery. Reusable "instant heat" materials are usually reclaimed by boiling or microwaving the packs when the angler returns home. Both the single-use, disposable models and the reusables are available at sporting goods stores, many hardware outlets and lumberyards.

Your ice fishing rig can be put together to fit any budget. It can include any of the following:

**Old fly rod tips or spincasting rods** -- Fly rod tips can be used much like cane poles by tying the line to the business end and shortening.



Ice Fishing Rigs

◀ Staying warm means staying dry, so be sure to practice good ice safety when ice fishing. Look out for honeycombed or dark-colored ice and remember that underwater springs and currents weaken ice.



Spincasing rods with reels are fine as long as there is a guide at the business end. Perhaps the most commonly seen ice fishing pole is a broken rod that has been fitted into a dowel for a more comfortable handle.

**Jigging stick** -- This may be purchased or self-constructed. It is a stick about 15 inches long, notched on the lower part to fold the line. It has a hole in the upper end for the line to pass through.

**Ice fishing poles** -- There are commercially produced, ice fishing poles that are about three-feet long.

**Tip-up rigs** -- These are structures that can be set over the hole in the ice. They have a trigger device that goes off when a fish pulls on the line. This "tips-up" a flag and alerts the wise anglers behind the wind-break that they have (possibly) caught a fish.

Other tackle includes line and terminal tackle, pliers, a knife and hone to sharpen your auger. Because the most commonly caught species include crappie, bluegill and yellow perch, a four-pound monofilament line is best. Baits and lures vary with each species so check what is popular in your area.

You need some sort of chair or stool. A five-gallon bucket works well to carry your gear to the site, used as a stool and to hold your catch on the way home.

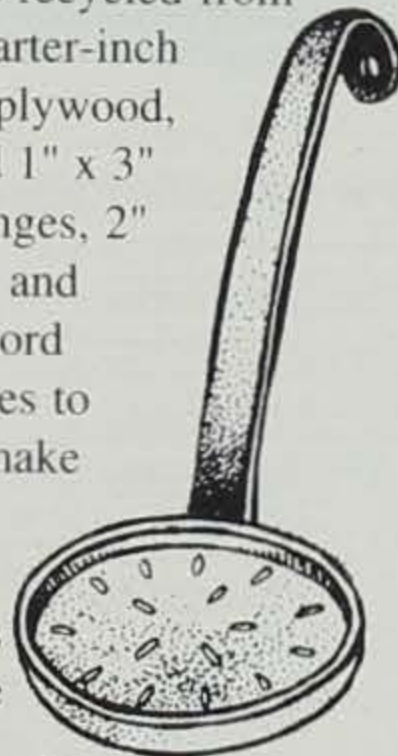
Making the hole in the ice is a key activity. The hole may be made using an auger or spud and need not be any larger than 12-inches in diameter. You may want to dig more than one hole

and try each for a few minutes. Try to smooth the edges on the hole to reduce fraying the fish line. One of the best places to fish is where there are already other anglers. There are bound to be recently abandoned holes or others that are easy to reopen. You will need an ice scoop to remove ice from the hole as it begins to refreeze. An old slotted spoon works well.

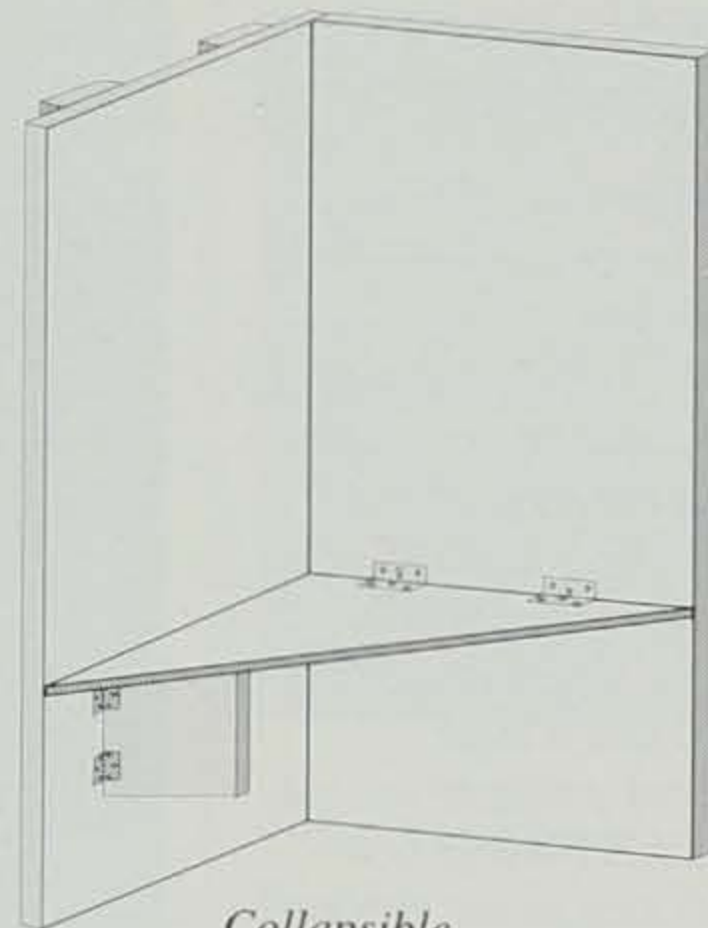
Many times, staying warm involves getting out of the wind while you wait for that bite. While high-tech gear can come to the rescue again in the form of an easy-to-set-up "pop-up" tent or wind shelter, a simple wind break can be made from materials recycled from other projects. Quarter-inch hardboard, 3/8 inch plywood, scraps of 1" x 2" and 1" x 3" lumber, some old hinges, 2" x 2" for sled runners and some rubber shock cord attached to screw-eyes to hold your gear can make a small, collapsible shelter. Similar materials and canvas can be used to create a light windbreak that does not have a seat.

If you are just getting started in the sport, take a look around at what is used in your area. Make use of the best recycled material around -- experience. Ask old pros what they have found works best for them. While they are not likely to share their hole in the ice with you (especially if it's a "hot spot"), many a tip has been gathered from sharing a hot beverage and "good-ies" over conversation on the ice.

Stay warm, stay safe and enjoy the freshest catch you will ever have -- flash-frozen with a glaze of ice that prevents drying.



Ice Scoop



Collapsible Shelter

▼ With care, ice fishing can provide hours of enjoyment for anglers of all ages.



Ron Johnson



## CONSERVATION UPDATE

### CONSERVATION UPDATE

### More On the Floods Of '93

What effect did the floods have on wildlife? In the short-run, the persistent rains and high flood waters literally washed out much of 1993's reproduction for some game and nongame species, in many areas of the state. For many species that produce a large number of young or several broods, 1994 brings new hope as long as the weather improves.

The long term effect of the flood of '93 on nongame species will be decided by the habitat changes that occurred. In some areas, the flood waters scoured the streambeds, removed silt and plant material and left vegetation-less sandbars. For piping plovers, least terns or some turtles, the expansive sandbars are excellent nesting habitat. For great-blue herons and shorebirds, the scoured areas and newly created silt deposit sites may provide better shorelines for foraging. For waterfowl and winter sparrows, the barren floodplains contain little food for this winter.

This spring, the floodplains may be avoided by early nesters that like dense ground cover, but by the time the goldfinches nest in August, the sites will be full of aggressive plants.

Perhaps the biggest effect will come from the



Ken Formanek

#### ▲ Flood damage at the lower Ledges State Park, July 1993

forests and changes in local forest conditions. Stressed trees will produce a good insect crop for many wildlife species. The dead or dying trees will also provide nesting cavities for birds ranging from wood ducks to bluebirds. A big, localized loss of some trees such as the oaks could mean a loss of the acorn crop. That is an important food source for turkeys, woodpeckers, chipmunks and squirrels. Likewise, a loss of the canopy trees would mean a change in the wildlife composition from forest species to open and brushland species.

Many people will probably be aware of the change in and damage to trees and bushes in their area before they notice any other habitat changes. How

the trees react in a given area will be determined by a variety of factors. Saturated soils and the deposition of sediment restrict the growth of some trees because of the lack of soil aeration. There may be an increase in secondary insects and diseases. Three inches of sediment is enough to smother and damage a tree's root system. Cold or fast-moving water contains more oxygen and damages root systems less than stagnant, warm water.

Fewer trees will die in areas where the soil was just saturated compared to areas covered with water. Once a site is covered, the depth does not matter until the foliage is submersed. Few species can survive total submersion. The ability to survive depends on the tree species, the percent of the crown covered with water

and the length of submersion. The pH of flooded soils may also change, and water-logged soils may produce high concentrations of ethanol and hydrogen sulfide which can damage roots. Scouring by flood waters may expose the tree's roots, stressing the tree and increasing the chances of toppling over. Debris carried by flood waters may gouge and cut trees, creating wounds vulnerable to disease. Chemicals in the runoff water may also damage trees.

All of the above factors vary by site, but a several factors were constant across the state. The rains which preceded and followed the floods caused soils to be saturated much of the spring and summer. This means that trees were stressed for a



long time. The floods also occurred during the growing season, which is more damaging than floods that occur when trees are dormant.

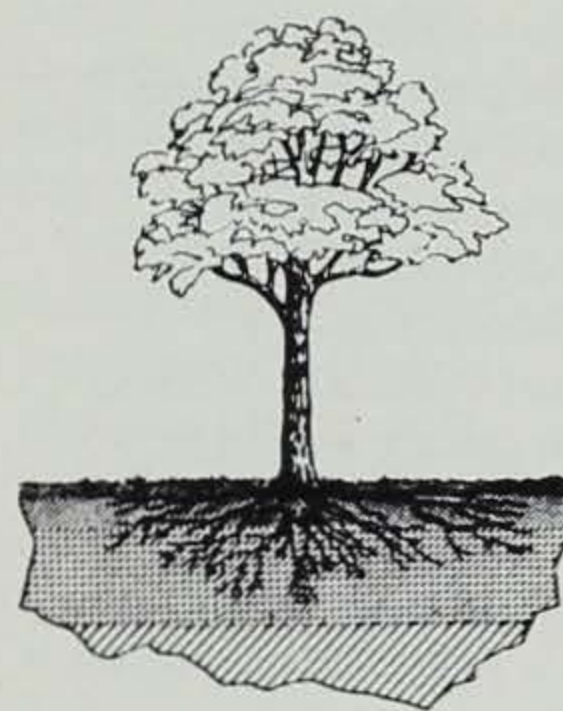
Normal flooding in bottomland hardwood sites is important for natural regeneration. Most trees produce a bumper seed crop following a flood, but the '93 flood lasted so long in many areas there was no seed crop. Although there will probably be a bumper seed crop this fall, the tree seeds will have to compete with the herbaceous seeds that will cover the sites next spring and summer.

This year's weather will also affect tree survival. Green ash and black willow can usually survive more than one growing season of deep, prolonged flooding. Boxelder, red maple, silver maple, hackberry, white ash, sycamore, cottonwood, shingle oak and pin oak can survive one year of

flooding but have significantly more mortality if flooded a second year. Shagbark hickory, red bud, Kentucky coffeetree, black walnut, red mulberry, wild plum, black cherry, white oak, red oak, post oak, and black oak may already be severely stressed.

The effects of the flooding on wildlife will be directly tied to the effect of the flooding on the habitat. It may be three to five years before we know which trees will die. What may be a boon for one plant or animal species may be a bust for another. Nature, in a very dramatic way, proved how very dynamic Iowa's waterways, habitats and associated wildlife species can be.

--Reprinted from the Winter 1993 *Nongame News*. To subscribe to the newsletter call the DNR's 24-hour information line, 515/281-5145.



### Tree Information and Newsletter Available

Tree information is available through the *Community Trees* newsletter from the Iowa Urban and Community Forestry Council. The newsletter includes tips on tree planting and maintenance as well as information on grants available for urban tree-related projects.

Contact the Iowa Urban and Community Forestry Council, in care of Trees Forever, 776 13th Street, Marion, IA 52302 to request the free, quarterly newsletter.

In addition, there is a package of information entitled *Flooding and Its Effect on Trees*, prepared by Northeastern Area State and Private Forestry, USDA Forest Service Office at St. Paul. For more information on flooding or to request copies of the information call the DNR forestry services bureau at 515/242-5966.



Don Poggensee

### 1994 Nongame Poster

Sandhill cranes are the featured species on this year's nongame poster. The photograph was taken by Don Poggensee of Ida Grove who has been a long-time supporter of the Nongame Program. Poggensee's photographs have been used in slide shows, publications and several other posters by the Nongame Program. His work has also been featured in numerous regional and national publications. The poster highlights the return of the sandhill crane to Iowa and discusses the importance of wetlands. Posters will be available through many tax preparers to clients who contribute to the Chickadee Checkoff. Posters are also available for a \$5 or more donation to the Nongame Program by writing the DNR central office or the nongame office at 1436 255th St. Boone, IA, 50036.



Ken Formanek

▲ Submerged trees at Lake Red Rock, July 1993



## CONSERVATION UPDATE

### CONSERVATION UPDATE

#### Army Ammunition Plant Energy Efforts Recognized by Federal Award

Richard M. Luttenegger, manager of the Iowa Army Ammunition Plant's energy program, was honored in October with one of ten individual Federal Energy Efficiency, Renewables and Water Conservation Awards by the U.S. Department of Energy. The ammunition plant is located at Middletown, Iowa.

Luttenegger has been manager of the plant's energy program since 1975. He is senior mechanical engineer with the Mason and Hanger-Silas Mason Company, facilities engineering team. Mason and Hanger-Silas Mason is the operating contractor for the plant which produces munitions for all branches of the U.S. armed forces and allies.

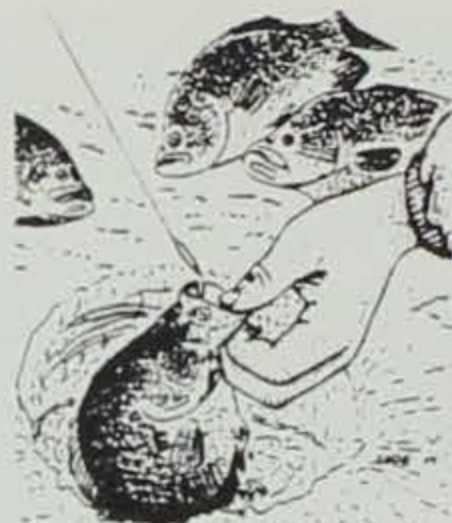
The plant's energy program approach includes using life cycle cost analysis to minimize energy consumption. Since 1985, the program has saved \$787,000 in energy costs, a 24 percent reduction in energy use per square foot.

Luttenegger was instrumental in converting the plant's vehicle fleet to 10 percent

ethanol-blended fuel. The plant is also saving automotive fuels by replacing trucks with sedans and moving to a 10-hour, four-day workweek. This allowed the plant to exceed its goal of reducing fuel consumption by five percent between 1985 and 1995. By 1992 the actual reduction was already 13 percent.

The energy program gains support of the plant managers and staff through programs such as "Adopt a Light" and an energy council. Luttenegger also publishes tips for energy saving at work and home in the plant newsletter and displays energy posters throughout the plant.

--Reprinted from the *Iowa Energy Bulletin*, Nov/Dec. 1993



#### Ice Fishing Shelters

Ice fishing shelters left unattended must have the owner's name, street address and city in four-inch or larger block letters on all sides. Reflectors must be attached to all sides on any shelter left on the ice after sundown. The structures must not be locked while in use. Ice shelters must be removed from all state-owned lands and waters by Feb. 20 or ice melt, whichever comes first, unless the deadline is extended. (See the related article on ice fishing in the *Practical Conservationist* in this issue, pages 50 and 51.)

#### Two Wild Turkey Chapters Support DNR Research

Donations are contributing to the success of DNR's ongoing turkey research. Two chapters of the Iowa Wild Turkey Federation have helped purchase transportation and computer software.

The eastern Iowa chapter in Clinton, in cooperation with C & C Cycle of Russell, donated \$2,056 to purchase a four-wheel drive, Polaris all-terrain vehicle. The cycle will be used to transport turkey trapping equipment and personnel into what had been relatively inaccessible areas on the Stephens State Forest study area.

It can be used to follow and get close to collared baby birds whose tiny transmitters have a very limited range. The quick access into more inaccessible areas saves staff time and provides immediate results.

The Big River Longbeard chapter in Davenport donated \$254 for a computer software package that displays and analyzes radio-telemetry data. The software allows researchers to rapidly determine accurate locations of radio-marked wild turkeys



▲ The plant's "Adopt a Light" logo is easily recognizable.



and significantly decreases time-consuming, tedious mapping.

"This equipment is extremely useful and important to the successful completion of our turkey research. The chapters' continued support is especially significant in these times of limited staffpower and research funds," said DeWaine Jackson, forest research biologist for the DNR.

The turkey research at Stephens State Forest is a cooperative research project with Iowa State University and is partially funded by a research grant from the National Wild Turkey Federation. "Without a cooperative research program and the commitment to wild turkeys that both the National Wild Turkey Federation and the Iowa Cooperative Fish and Wildlife unit at ISU have made, the DNR would not have been able to study the recent decline in Iowa's wild turkey reproduction," said Jackson.



### New Booklet On Maquoketa Caves Available



The DNR has made available a new publication, *A Guide to Maquoketa Caves State Park* by Thomas Henry. The booklet contains information that will help park visitors enjoy the many above and below-ground activities of the park. Visitors who enjoy hiking, rappelling, rock climbing, and bird and wildlife watching as well as cave exploring should find the book useful.

The booklet contains three sections. Part I gives background information on the park, including bits of its fascinating history. Part II describes some of the outdoor activities available in the park and gives many more details on the caves. Part III is a reference section and contains suggestions on further readings, a nature checklist and a list of organizations which can help make a visit to the park even more rewarding. In the center of the book, there is a removable, water-resistant map of the 13 caves, as well as hiking trails and other features of interest. The book is available for \$2 at the park,

through the Maquoketa Chamber of Commerce or the DNR office in Des Moines at East 9th and Grand.

Thomas Henry is a visiting assistant professor of mathematics at Gustavus Adolphus College in St. Peter, Minnesota. He is a member of the National Speleological Society and the Minnesota Speleological Survey and lists Maquoketa Caves State Park as his favorite vacation spot.

### Winter Activities In State Parks

Iowa's state parks and recreation areas offer a variety of winter activities from cross-country skiing to tobogganing. Here is a sampling of some upcoming events:

15K Volksski -- Jan. 29 at the Volga River Recreation Area, Contact 1-800-X-PLOR-IT for information and additional dates and sites.

Pilot Knob State Park Dog Sled Race -- Feb. 5 - 6 from 10 a.m. to 2 p.m. Participants are expected from across the Midwest. Contact Robert Schwartz, 515/565-3390.

Winterfest 94 -- Feb. 12 McIntosh Woods State Park, near Ventura/Clear Lake, snowmobile activities, ice sculpture contest, winter golf tournament, fireworks display, snowshoeing and more. Contact 515/829-3847 for more information.

Check with local park offices for additional events.

### Participants Wanted for Frog and Toad Survey



Iowans have a chance to learn about amphibians, visit the outdoors and help the nongame program by participating in the frog and toad survey. The survey is fun, easy and provides the department with the only statewide information on the distribution of Iowa's frogs.

Frog and toad survey forms will go out in March. Nongame staff will send participants a survey form and, for new people, a frog booklet and a tape of frog songs. Anyone interested in participating in the frog and toad survey should let the Nongame staff know by March 1.

Participants need to select five types of wetland areas: marsh, river, pond, or sheet water (there may be duplications of some types of areas in the selection) and note their location.

From April through July, listeners visit the wetlands on three different nights (early spring, late spring, summer) and record the species they hear singing. There are still some counties with no listeners.

Contact Lisa Hemesath or Bruce Ehresman at the nongame office for additional information.



# CONSERVATION UPDATE

## CONSERVATION UPDATE

### Upcoming NRC, EPC and Preserves Board Meetings

The dates and locations have been set for the following meetings of the Natural Resource Commission, Environmental Protection Commission and the Preserves Advisory Board of the Iowa Department of Natural Resources.

Agendas for these meetings are set approximately 10 days prior to the scheduled date of the meeting.

For additional information, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

#### Natural Resource Commission:

- No January meeting scheduled
- February 10, Des Moines
- March 10, Des Moines

#### Environmental Protection Commission:

- January 18, Des Moines
- February 21, Des Moines
- March 21, Des Moines

#### State Preserves Advisory Board:

- March 8, Burlington, IA
- Des Moines County

### The Principal Transportation Program

by Craig Stark, Energy Program Planner

The Principal Financial Group in Des Moines is concerned about the financial and environmental effects of their employees commuting to and from work. There are limited downtown parking spaces for employees of Principal -- 500 parking stalls will be lost to the proposed Hillside Development. Besides lack of parking spaces, traffic congestion, increased air pollution and fuel savings there are other important reasons why Principal has adopted transportation policies encouraging their employees to take buses and car pool. Carol Ward, senior human resources researcher, launched The Principal Transportation Program with the CEO David Hurd's whole-hearted support.

An employee transportation coordinator provides "one stop shop" assistance to employees. Last June, Billie Wade, a human resources staff person, was appointed to that position. Wade spends about 25 percent of her time monitoring and analyzing the company's current transportation programs, recommending improvements and implementing new transportation ideas. She is responsible for ordering and distributing bus passes and

coordinating ride-sharing programs for employees.

To kick-off their transportation program, Principal held a Transportation Festival May 25-27, 1993. Bus pass participants and car poolers signed up for a drawing and many employees won prizes. Bus line representatives attended and signed up employees for bus passes -- 365 employees requested monthly bus passes for the first time in June.

Combined with the 475 existing bus riders, Principal had a total of 840 employees that commuted by bus last June. New employees of Principal visit with bus line representatives to learn about commuting options. Principal fully subsidizes the Des Moines Metropolitan Transit Authority (METRO) \$22 monthly bus pass for their employees and has doubled their inter-city MTA Ankeny and Five Oaks bus subsidies.

Ride-share incentives also are offered by Principal. Quarterly drawings will be held for cash prizes: \$25 for 2 people/vehicle, \$35 for 3 people/vehicle, and \$50 for 4 people/vehicle. In addition, two employees who car pool from July 1, 1993 through Dec. 31, 1993 will win a grand prize of \$300 in travel certificates.

During the July 1993 flood crisis when Des Moines offices were closed, many employees took work materials from offices to work at their homes.

Although telecommuting is an alternative work program arrangement at the company, there are some very important transportation ramifications. "Principal continues to consider transportation and work options that can be financially feasible, reduce traffic congestion, improve the environment and save fuel," said Ward.



### Birdfeeder Survey Scheduled for Jan. 27 to 30

The large, annual, winter birdfeeder survey will be held on Jan. 27 to 30 to collect information on Iowa's winter birds. In particular, the Nongame staff needs more participation from the northern and southern parts of the state and from people who live on farmsteads.

The survey includes some weekdays, so school children can participate. Participants do not have to stay constantly "glued" to their window to participate.

For a copy of the survey form see the Winter 1993 *Nongame News* or call the Nongame office at 515/432-2823. Feel free to distribute copies of the survey form to your local newspaper or seed dealer.



# CLASSROOM CORNER

by Don Sievers

## Animal Adaptations

The following activity is adapted from *Investigating Your Environment* published by the United States Forest Service. At present, it is out of print with no plans for reprinting. This activity is popular with groups using the DNR's Conservation Education Center.

## Background:

This activity uses pelts from Iowa's furbearers. Iowa's furbearers include the following mammals: opossum, woodchuck (groundhog), beaver, muskrat, coyote, red fox, gray fox, raccoon, mink, badger, striped skunk, spotted skunk (civet cat), river otter, weasel and bobcat. None of Iowa's furbearers are listed as endangered species.

The DNR has 14 fur cases that contain pelts from Iowa furbearers. The fur cases are used for educational programs by the DNR, county conservation boards, Army Corps of Engineers and other organizations. To inquire about programs using the fur case, contact your local conservation officer.

Animals are adapted to their environment in many ways. Furbearing mammals, like all other species of animals, are dependent on having adequate food, water, shelter and living space if they are to survive. These basic life needs are found in the animals habitat. By examining pelts from furbearers, we can identify certain characteristics that provide clues about animal adaptations. These adaptations help indicate which types of habitats the animals live in. Iowa furbearers are found in two types of habitats -- either land or semi-aquatic (part of the time in water and part of the time on land).



Ken Formanek

▲ Fur cases are used to demonstrate habitat requirements.

## Age:

Grades 5-8

## Objectives:

Students will be able to:

1. observe the pelts of furbearers to identify characteristics;
2. make inferences about what habitats the animals live in; and
3. communicate their findings to other members of their class.

## Materials:

Pencil, blank sheet of paper and a pelt from the fur case.

## Resource Materials:

Andrews, Ron, and Sievers, Don (ed.). 1993. *Iowa Fur Harvester Education*. Iowa Department of Natural Resources. Des Moines, Iowa.

United States Forest Service. 1978. *Investigating Your Environment*. Washington D.C.



## Extensions:

1. Study skins, mounted animals, pictures of animals or animal skulls will also work well with this activity.

2. Place three or four skulls with matching pelts on a table where all students can observe them. Have the students match the skulls with the pelts.

3. Have students make a food chain using animal parts.

4. Have students construct an energy pyramid using the animal parts. They should be able to label different levels of consumers.

5. Ask students if an animal's habitat always remains the same? What kinds of influences can cause change to habitats? What will happen to the numbers of animals the habitat can support as changes take place? Which animals will survive longer when changes in habitats take place? (Those animals that are best able to adapt to the changes will survive longer.)



Ken Formanek

### ▲ Badger

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## Procedure:

1. Ask students what vertebrates (or mammals) they would expect to find living in their area? What are some of the needs of these animals? What types of habitats would the animals live in? What are some adaptations (characteristics) that help the animals survive in these habitats. List answers on the board.

2. Explain to students that they will be working in small groups to identify adaptations of furbearers using fur pelts. The adaptations they list will help them determine what type of habitat the animals live in. You may want to discuss a particular animal with the class as an example. Use a fish (*not* a furbearer) as a good example of an animal that lives in an aquatic habitat. Adaptations students might list may include: fins, gills, scales, eyes, body shape or color.

3. Stress the importance of *not naming* the animal. Students will make inferences from what they believe they know about the animal without investigating the pelt to find adaptations.

4. Give each group of students one pelt from the fur case and have them list the adaptations they have identified and which habitat they believe their animal lives in. The list of adaptations should support characteristics of the habitat and should be specific things the students can see on the pelt.

Examples of adaptations they may list include:

- color -- furbearers associated with semi-aquatic habitats are dark brown in color, those associated with land habitats have fur with a mixture of colors.
- webbed feet -- an adaptation that aids in swimming.
- body shape -- streamlined for swimming.
- leg length -- longer legs for running, shorter legs for swimming.
- size of eye holes -- larger eye hole size may indicate a greater dependence on sight.
- size of ears -- larger external ears may indicate a need for a more developed sense of hearing.

5. Have students explain why animals that live in those habitats have those adaptations. Examples may include: color differences for camouflage, or leg length for running after prey and escaping from predators.

6. Have students show their pelt to the class and report their findings. After all of the reports are given, have the students name their animals. Do their findings support what they know about the animals and their habitats?



# Doin' A Jig

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ead-headed jigs. Favorites with countless anglers, these versatile lures have brought about battles with most every finned species around.

Making your own jigs is actually quite easy. In fact, it's easier than tying flies since you're working with larger, more manageable materials. And, the advantages of doing it yourself are many. . .

by Gary Nelson

You can make an 89-cent jig for less than a dime, and you can create lures in colors, shapes and styles not available in stores and that fish have never seen before.

In addition, you get the pleasure of catching fish on something you've created with your own hands.

Jig-making can also be an enjoyable wintertime hobby and, if desired, a profitable spare-time business. And at Christmas, what gift would a fishing buddy enjoy more than a box of hand-tied lures?

The first items you need are some jigheads (the lead-heads attached to the hooks.) You can use

standard jig hooks which of course have an upturned shank end (or you can bend a long-shank hook to make a jig hook), and then clamp on a splitshot sinker below the eye for the head.

When finished off with feathers, these crude jigs definitely work, however most anglers prefer the conventional lead jighead molded onto a regular jig hook.

The naked jigheads can be purchased at tackle stores or through mail-order catalogs and are available in all sizes, head shapes and hook styles. Costs commonly range from nine to 18 cents each, or less when you order in bulk.

The other option is to melt your own lead and mold it onto the hooks. Molding adds time to your jig-making project but it can further cut costs if you plan to make lots of jigs. Molds are made for a wide variety of sizes and styles of jigs. With some molds, you can produce a half dozen different styles, while other molds allow you to make, say, three to six jigs of the same type. A mold commonly costs from \$19 to \$40.

Besides the mold, you'll need some standard jig hooks and lead. You can often find lead for free in the form of old sinkers, wheel weights, and so on. Or you can buy a supply from the local scrap metal dealer or via a catalog.

Lead, placed in a cast iron dipper,



Sonny Satre



can be melted over any heat source that reaches around 600 degrees, or you can use a specially made electric lead-melting ladle or pot (costing \$25 to \$175.) Melt the lead outdoors -- the fumes are toxic.

The next step is to place the hooks into the mold's cavities, clamp the mold shut and pour the molten lead into the

holes. The lead will set in a half a minute to a minute. Remove the jigs with pliers and trim off the excess lead. You now have the same as the pre-cast jigheads.

To paint the heads, you might use regular household enamel or spray paint, however special lure paints are available, with a two-ounce bottle costing around \$3. Not much is needed per jig, maybe just a few cent's worth, and it will often last the life of the jig. The head can be dipped into the paint and then hung on a string to dry. Gravity will cause a little point to form on the jighead's nose but this excess can be wiped off before it dries. When the paint is dry, you can paint on eyes if desired.

To put on the tail and body, the jig must be clamped in a vise so you have both

hands free to work. A workbench vise will do, but a lure-making or fly-tying vise makes the job easier. The jig is placed hook down on the vise.

Yarn or tinsel can be used for the jig's body or tail, but the most common choices are soft plastic, hair or feathers. To make feather jigs, you'll need some type of cement. Head cement, used for fly tying, is excellent. Dab on a little of

this behind the head, where you'll be doing the tying. Then, with string of the color you want your jig body, wrap a few turns around this glued section until the string will stay in place by itself. Any strong string can be used. Fly-tying thread is okay, but since it's thin, it takes longer to form a body with than, say, yarn or chenille.

Marabou plumes are popular for the feather tail, because they provide excellent action in the water. Cut off two sections of plume to the right length and place one on each side of the hook shank. With your free hand, make two or three turns of the string around the feathers. Now, inspect the jig to see if any more feathers are needed and, if so, add them. Continue wrapping until the body exterior is entirely covered with string.

To complete the tying, simply make three or four loops (half-hitches) behind the head and tighten each one. Cut off the excess string and coat the body with head cement to prevent unraveling. Once you get going, you can create a quality lure from a blank jighead in two minutes or less. You can make fancier, more time-consuming jigs with plastic wings and other frills, but the simple ones often catch just as many fish.

For hair-type jigs, you have a choice of natural or artificial hair. If you're a hunter, you might want to save a bucktail or squirrel tail, or for more color, purchase some dyed tails or imitation hair. Hair jigs are made in the same manner as feather ones, but some find hair is a little easier to work with.

For plastic-bodied jigs, you can buy a bag of pre-molded plastic-bodied grubs or tube tails, or you can purchase bulk plastic and plastic color, then make the bodies in special molds. Catalogs sell molds for many types of bodies, as well as complete grub-making kits.

Of course finishing off plastic jigs is much easier than feather and hair types: just slip the plastic on the hook. To keep the plastic from slipping down the hook, it's best to use a jighead which features the little catch knob or



Ken Formanek

▲ **Jig making not only saves money, but can give you the pleasure of catching fish on something you've made with your own hands.**



catch hook behind the head. This type of head works well for tying on feather and hair, too.

Yes, tying your own jigs is easy, and it can beat dishing out 50 cents or even a dollar for a single lead-headed lure. Besides that, what's more fun than to fool a fish with a hot jig of your own design?

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Wayne Lonning



◀ **Tying a Jig . . .**  
1) Place the jighead in a vise and paint the neck with cement. 2) Wrap string or yarn around the neck for two or three turns. 3) Place feathers or hair on both sides of the jig. 4) Wrap the string or yarn tightly to secure the tail material and to form the jig body. Tie the string off with half hitches at the neck. 5) Paint the body with head cement to prevent unraveling, and allow it to dry.



## WARDEN'S DIARY

by Chuck Humeston

**"Natural Resources"**

I was born and raised in Iowa. I've lived here all my life. But I have never seen anything like what this state has gone through in this last year. The weather in Iowa is always a topic of conversation, but this last year has had everyone groping for words to describe just what happened and how bad things were.

I live in an area relatively unaffected by the flooding, so I can't begin to identify with the suffering and losses of those who experienced it directly. But what I saw and read reminded me of a couple of things about this state.

First, we should always remember -- nature rules! We may think we love, appreciate and understand the environment. We may think we can bring the force of nature under our control. But, in the end, nature "wins" any time it wants. There is always more to learn about the natural world and there is always more we don't understand.

You know, I have heard a hundred explanations of the phenomenon of why geese fly north and south. Magnetic north forces? Evolutionary processes? Effects of daylight length? Maybe you're getting closer, but none of those explanations really answers all the questions.

I've always thought all these theories were biologists' ways of saying, "We really don't understand and possibly never will," without admitting that nature has unsolved mysteries. That makes me giggle because what I really respect about nature is the fact there is so much to learn, but we are arrogant enough to presume we can figure it all out and control it.

The "battle" for control over the natural world -- maybe that's the problem. We've tried to divert it, straighten it, drain it, burn it, cut it, pave it, block it -- you name it. But, have we ever tried living with it on its terms? If anything, did we finally learn this summer that we are part of a process that's sometimes bigger than us? Will we finally develop a respectful and cooperative, rather than adversarial, relationship with Iowa's resources?

The second thing I saw was what you've known all along if you've grown up here but what we tend to take for granted -- what Iowans are made of. Our tradition of helping each other when the need arises is a strong part of "Iowa character."

A while back, I was driving to an assignment in southern Iowa and took a route through the hills to avoid a bridge that was out. I popped over a hill which suddenly turned from gravel to mud. I ended up sliding down the hill first sideways then backwards, finally burying my Chevrolet up to the frame. The fellow officer following me in his vehicle was sympathetically doubled over with laughter as I slogged through the mud back up the hill.

We drove to the nearest farmhouse for help. It turned out that the family living there was the family of a man I'd gone to high school with and hadn't seen since.

The entire family was experiencing stresses I would never want to experience. They could easily have said, "Call yourself a wrecker," but they never hesitated. They drove a tractor down that hill, got in the mud, hooked up a chain

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**"The "battle" for control over the natural world -- maybe that's the problem. We've tried to divert it, straighten it, drain it, burn it, cut it, pave it, block it -- you name it. But, have we ever tried living with it on its terms?"**

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and pulled my mudball-of-a-squad car back up that hill. They wouldn't accept a cent for their trouble and wished me safely on my way and safety in my job.

I grew up in southern Iowa, and it's always been that way. I've also had the opportunity to work all over this state, and found it's that way all across Iowa. Iowans care and will help you out even when they are down.

Maybe that's why when I hear young people complaining about Iowa, and how they can't wait to leave, one of my first thoughts is, "Take a good look at what you're leaving! Don't you realize what we have here?"

Iowa means "the beautiful land." Iowa is a place of great beauty, yet it possesses natural forces capable of inflicting great human adversity. At those times, one of Iowa's greatest resources, its people, may not overcome those forces . . . but they will -- bet on it every time -- overcome that adversity.







