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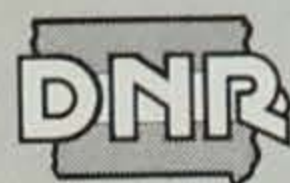
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HAZARDOUS SPILLS

The DNR Responds

by Ron Kozel

Tuesday, 10:12 a.m. - A chemical tanker overturns on the highway. Minutes later the Des Moines Fire Department is on the scene. They will eliminate the immediate danger to the public and keep the situation under control by isolating the area.

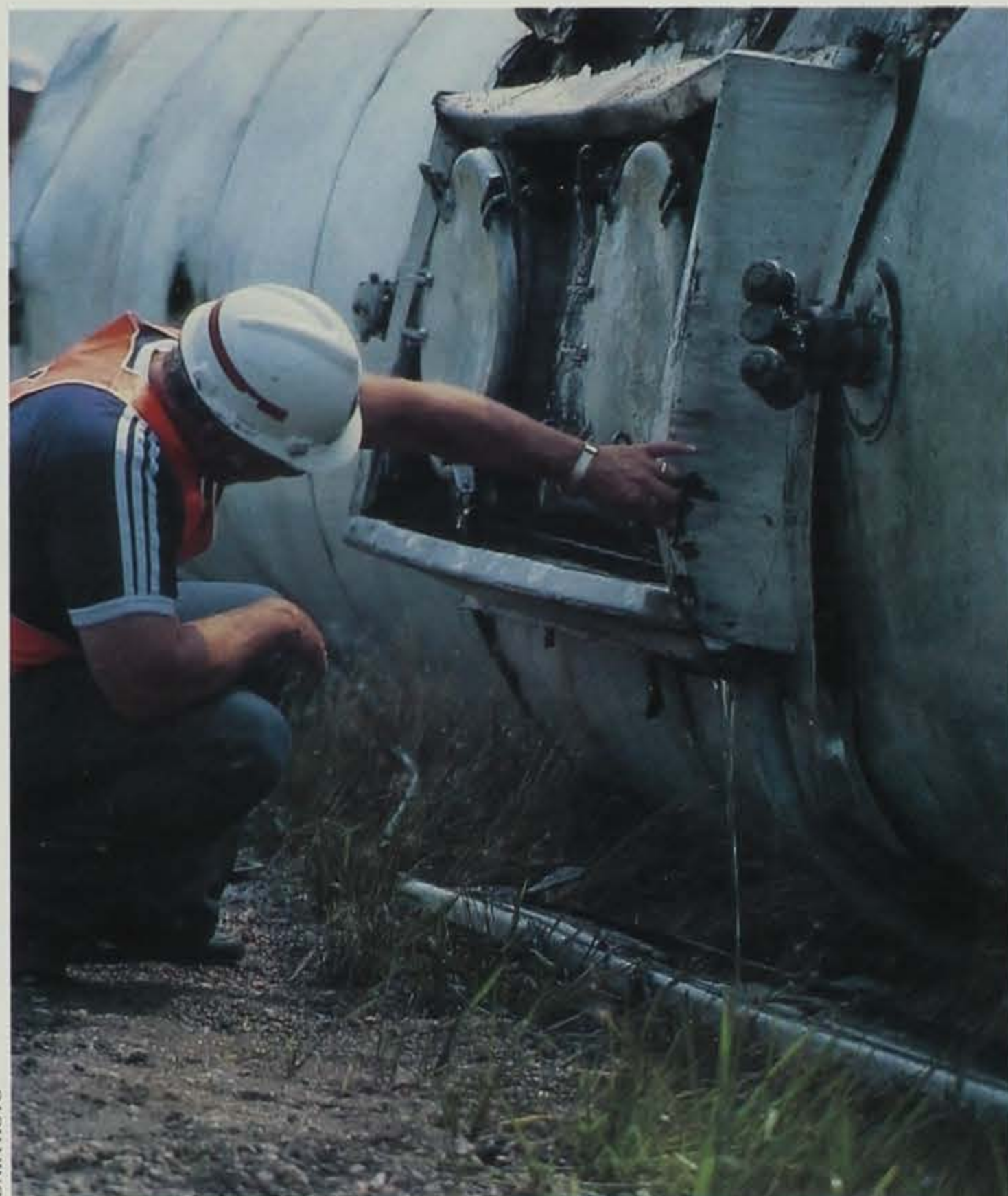
11:05 a.m. - The spill is now ready to be neutralized. The Department of Natural Resources' Emergency Response Team is contacted for assistance in managing the situation.

11:56 a.m. - The responsible parties, the trucking company and the chemical manufacturer, have been notified and are on the way to the spill site. The fire department has handled the danger and the area is ready for the responsible parties to begin the clean-up process.

Two days later - The area is free of the hazardous material.

State law requires that a "hazardous condition" must be reported to the Department of Natural Resources within six hours of onset or discovery. A hazardous condition is defined as "any situation involving the actual, imminent or probable spillage, leakage or release of a hazardous substance onto the land, into a water of the state or into the atmosphere which creates an immediate or potential danger to the public health or safety or to the environment." Within the last six years there has been a dramatic increase in the number of hazardous spills reported. In 1987, 705 reports were filed with the DNR; this was up from the 238 reports filed in 1981.

While the number of reports has risen each year, the numbers reported for any given month have been variable. Generally, the largest number of spills occur in late spring and early summer, while the fewest are reported during the winter. Reports of spills involving fertilizers and pesticides have actually declined during the past two years. This drop



DNR PHOTO

has been accompanied by a rise in the number of incidents involving petroleum products. Such an increase is probably due to a higher frequency of reports regarding leaking underground storage tanks.

Spring thaw, more precipitation, and rising water tables could account for more reports during the spring and summer. Also, as people engage in more activities outside, a greater number of releases are discovered.

This increase could be due to a number of reasons, but not necessarily a rise in accidents. The most likely explanation is that more people are aware of the state and federal reporting requirements. This awareness could be related to the DNR's Emergency Response Training Program.

Truck and train transportation accounts for about 25 percent of the spills, with highway accidents occurring more frequently.



DNR PHOTO

Petroleum and petroleum products are the most frequently spilled chemicals in Iowa. This may be due to the increase in reports regarding leaking underground storage tanks.

The DNR's Emergency Response Program was developed in 1980 to provide timely and accurate information during emergencies, to ensure industry compliance with state regulations and most importantly to assist local governments in preparing for hazardous spills. The DNR offers a training program to local officials, municipalities and industries. Since the induction of the training program, more than 5,000 people have been trained in preparing for spills.

Although tailored to individual needs, the basic program incorporates information on the characteristics and harmful properties of chemicals, techniques for containment and treatment, proper protective clothing that should be used and the correct methods that should be

employed for decontamination. The training program consists of classroom instruction as well as mock disaster exercises. The simulated disasters are put together by the DNR and the Environmental Protection Agency (EPA) to offer "hands-on" experience. In 1986 a simulated chemical spill was staged in Des Moines. In 1987 a similar situation was staged in Bettendorf.

In addition, the Emergency Response Team has developed an outline for use by local governments in contingency planning and will review and comment on plans upon request. Emergency Response Team also aid communities or counties who are creating their own hazardous materials teams. They also coordinate all courses provided by the Environmental Protection Agency within the state, and arrange for special seminars and conferences in conjunction with local and federal government and industry. With the assistance of the League of Iowa Municipalities the team has also drafted a model ordinance for local governments to use to recover costs associated with spills.

Approximately 65 percent of released materials in Iowa result from problems with handling and storage at fixed facilities. Truck and train transportation accounts for about 25 percent of the spills, with highway accidents occurring more frequently. The remaining releases are caused by pipelines, fires and other sources - some unknown.

As a group, the most frequently spilled chemical is petroleum and petroleum products, commonly gasoline and diesel fuel. The next most common spill is mineral oil used in electrical transformers which is sometimes contaminated with PCBs (polychlorinated biphenyls). Chemical fertilizers constitute the third largest group, and herbicides and insecticides the fourth. Acids,

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bases, solvents and an assortment of miscellaneous chemicals are the least common spills.

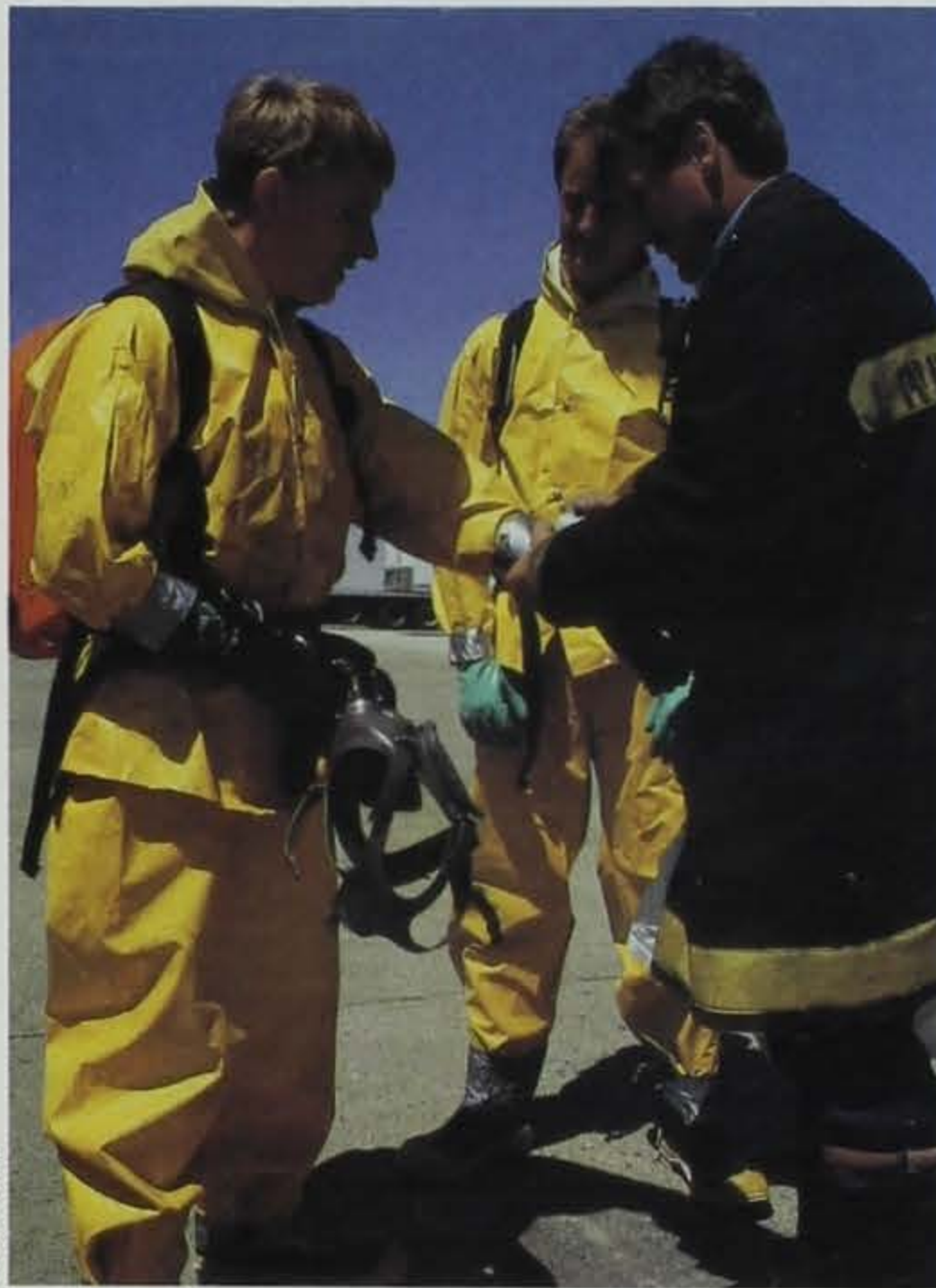
The clean-up of a spill such as the one mentioned earlier encompasses gathering the waste, packing it in salvage drums, disposing of the contaminated soil and towing the truck wreckage. An acceptable disposal site must be found and the salvage drums loaded and shipped. Contact is made with landfills across the country to find an appropriate site for disposal.

The Emergency Response Team's role in most spills is that of coordinator. In case of accidents involving acids, bases, solvents or certain rare chemicals, the Emergency Response Team acts as a technical assistant and if the situation warrants, will offer on-site aid. The vast majority of on-site assistance is accomplished by personnel from the department's six environmental protection field offices.

After the site has been cleaned up and returned to normal, the Emergency Response Team remains in contact with the responsible party or parties — educating them on state and federal regulations, receiving the company's follow-up report, setting up a training program and helping with a contingency plan.

Although accident reports have increased, the DNR's Emergency Response Team spends a good deal of their time training others so each accident is handled more efficiently and safely. With better handling of each accident, comes an improved environment for each Iowan. The DNR's 24-hour Emergency Spill Response number is (515)281-8694.

Ron Kozel is an environmental specialist with the department and is located in Des Moines.



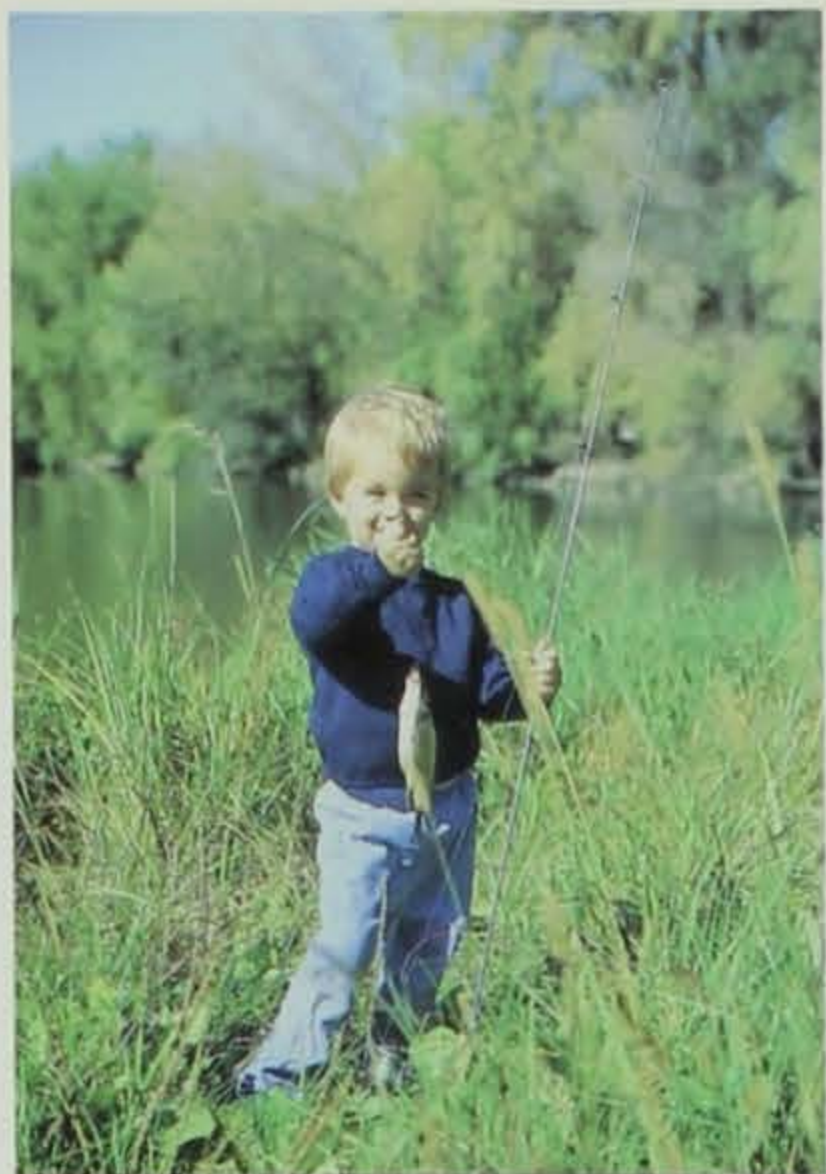
DNR PHOTO

The Emergency Response Team offers a training program for local officials. Covered in the instruction is information on the harmful properties of chemicals, techniques for containment and treatment, as well as proper protective clothing to be used.

Although reports of fertilizer and pesticide spills usually rise in the spring and summer, the number of overall reports has dropped in the last two years.



ROBERT RUNGE



DON HERRIG

KING CARP

Connoisseur of the Doughball

by Lannie R. Miller

I have always hated to see July arrive. The month's hot weather usually signals an end to the easy fishing for walleye, bluegill, crappie and bass. You can still catch those species, but you either have to fish in early morning or late evening and fish in deeper water. It seems I either have to change tactics or quit fishing until cooler water temperatures prevail. But then I discovered carp fishing! I didn't really discover it — people have been carp fishing for a long time. It's just that I have always considered myself "above" that type of fishing — an elitist, if you will. But my opinion has changed drastically, and now I believe that, with the possible exception of the muskie, no fish fights harder than "old buglemouth."

Several attributes endear the carp to the carp-fishing addict. I have already mentioned two of them — its superb fighting ability and preference for warmer water. Another plus for

the carp angler is that the carp is found in practically every river and lake in the state, so extended travel is not necessary. Last but not least, whether you pickle, can, smoke or fry it, the carp is excellent table fare.

Ultralight tackle is not recommended for this species unless you want the tackle destroyed. Instead, I use a medium-action rod and my favorite spinning reel loaded with six- or eight-pound test line. If you are after lake carp, the only additional tackle that you need is a #10 or #12 treble hook or a #6 or #8 aberdeen hook, depending on what kind of bait you are using. There is absolutely no need for a weight when fishing with doughballs. If you are using corn or nightcrawlers, a small split shot is all it takes to get the bait on the bottom. Carp are, in most cases, very delicate feeders. The slightest drag or resistance from too much weight will cause the fish to drop the bait. River fishing for carp



requires just enough weight for the bait to remain stationary.

Carp are usually not found in swift current, preferring the sluggish backwaters instead. A bobber or float is of little use in carp angling. One look at a carp's sucker-like mouth will tell you that it is adapted to feeding on the bottom. A bobber actually takes the bait away from the fish you are after. Therefore, another plus for carp fishing is that it doesn't take a thousand dollars worth of tackle to catch one.

The question of which bait to use when carp fishing could fill a small book. Every carp angler has his or her favorite bait and will defend the choice vehemently. Natural baits run the gamut from nightcrawlers, crayfish and mulberries to whole-kernel



DON HERRIG



DON HERRIG

sweet corn. A carp is an omnivorous feeder, gobbling up anything it can get into its mouth. Fresh, milky sweet corn, right out of the corn patch is probably the most widely used bait for carp. The canned, whole-kernel corn can also be used when sweet corn isn't in season. A few kernels, threaded onto a small #8 hook with a tiny split shot attached to the line will usually do the trick. Nightcrawlers are also widely used carp bait, but are tough to fish with if bullheads or small bluegill are present in the lake or stream.

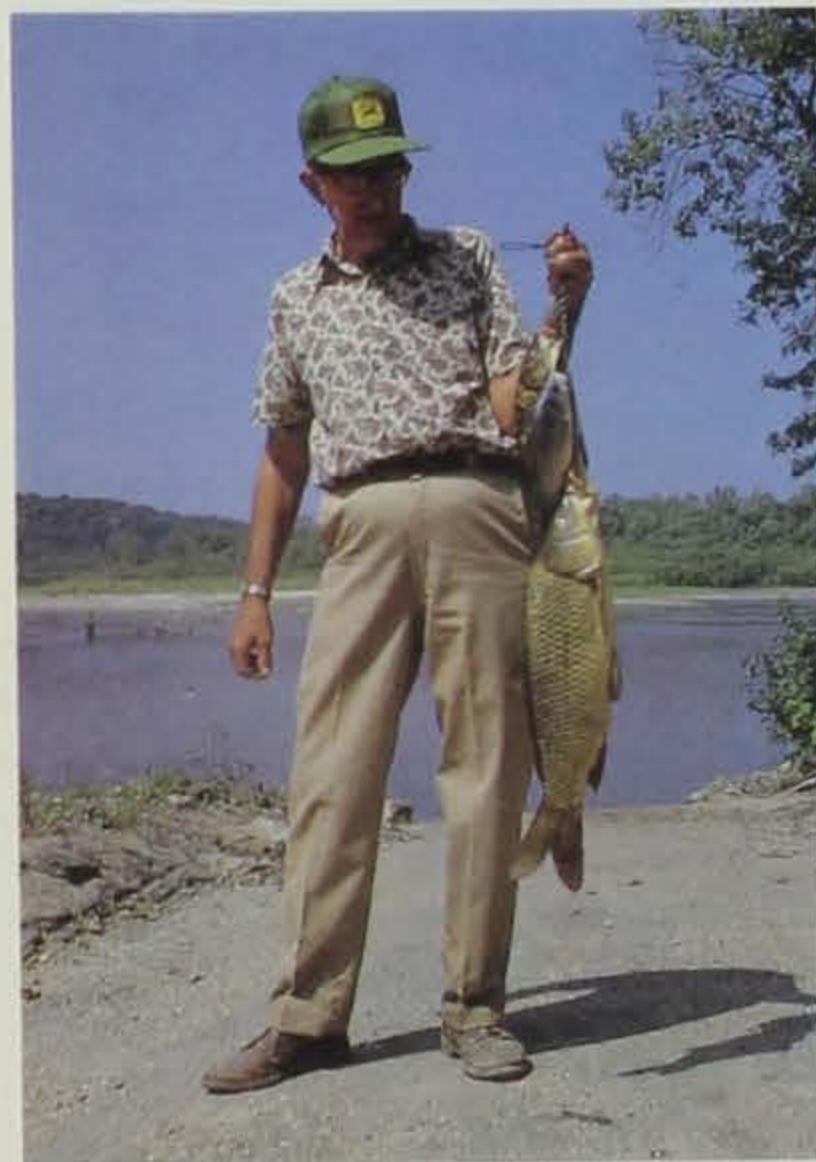
Late last winter, I was talking to world-famous fisherman Dan Gapen at a sports show in Sioux City. Although he is renown for his ability to catch bass, walleye and other game fish, he loves to fish for carp. He has even written a book on carp fishing. When I asked him what his favorite bait was for catching carp, I could hardly believe his reply — small half-boiled potatoes. He says carp love them, and you won't be bothered by small fish. The bigger the potato, the larger the fish it takes to eat it. I'm going to give this method a try this summer — I think it has some merit.

My all-time favorite carp bait has to be doughballs, especially when fishing in lakes. I've heard hundreds of different recipes for doughballs. Ingredients in these recipes range from common to unusual. Bread, cornmeal, flour or cereal form the base of most doughballs. It's the seasonings that are added for flavor that cause me to wonder. Garlic salt, onion powder, cinnamon, soy sauce and nutmeg are just a few of the more unusual seasonings that I have heard of people using in doughballs. I'm sure that the people who use these and other ingredients catch their share of carp. I'll give you one of my favorite recipes to get you started. After that, use your imagination to concoct your own special variety.

- Doughballs
- 2 cups water
 - 2 cups cornmeal
 - 1 cup flour
 - 1/2 package flavored gelatin
 - 2 tablespoons sugar
 - 1 tablespoon vanilla
- Bring the water to a boil in a large saucepan. Add gelatin, sugar and



JACK KIRSTEIN



JERRY LEONARD

Although not at the top of the list of favorite fish, the carp possesses several endearing traits to the Iowa angler. Carp are superb fighters, are found in almost any water of the state and are excellent table fare.

vanilla to water and stir. In a separate bowl, mix flour and cornmeal. Slowly add dry mixture to warm liquid, stirring constantly.

Take dough mixture from pan and place on a large piece of aluminum foil to cool. Shape into ball, wrap in foil and place in refrigerator until cool. I usually make my doughball the night before I plan on fishing to allow sufficient time to cool. My favorite flavor of gelatin is strawberry, followed by cherry, black raspberry and orange.

This recipe will make a large amount of bait. If the weather is really warm, I keep the doughball in a cooler so that the bait remains firm while fishing. When you're finished fishing, wrap the remainder in foil to prevent it from drying out and store in the refrigerator until the next trip. It will usually stay usable for about two weeks.

To fish with the doughball, pinch off just enough to completely cover a #10 or #12 treble hook. If you use too much bait, the carp will only nibble the bait and not run with it. As I mentioned before, no weight is needed with this bait. Leave a little slack line so that the fish will not feel resistance when biting. When the

carp starts to run with the bait, set the hook hard.

Carp will vary their feeding locations in lakes according to the time of year and temperature. I always wait until July before I start carp fishing to make sure that the carp are finished spawning. They are more interested in romance than eating during their spawn. If the weather has not been too warm, I'll fish in the shallow bays and inlet areas, usually in water less than four feet deep. As water temperatures warm, carp will move into deeper water. River carp seem to bite earlier in the season, although water temperatures should be above 65 degrees for best results.

If you have never tried carp fishing, don't let your ego or pride get in the way. It is some of the most exciting angling you will ever experience.

If you have a favorite doughball recipe, jot it down and send it to me at Box 815, Lake View, Iowa 51450. If I get a sufficient number, maybe next year I can publish a list of the "All-Iowa Doughball Recipes."

Lannie R. Miller is a fisheries biologist located in Lake View.

Keeping Your Guns Under Wraps

Story by
Bob Mullen
Photos by
Ron Johnson



A closet is one of the worst places to keep firearms because of its easy access by thieves.

Many people who have firearms are not aware that such ownership creates a real security problem. Firearms have become a top-priority item for thieves. If you doubt such a statement, check with any law enforcement agency, and they will confirm that firearms are the major items in most thefts. Unfortunately, many gun owners almost seem to invite theft by their lack of firearm security.

Let's look at a few things gun owners do that can invite firearm thefts.

When a person runs an ad selling a firearm, they often include their name, address, when available to receive calls and their phone number. With such an ad, you're telling the world where you live and when you're in your home. We are fooling ourselves if we think everybody that reads such ads are honest, law-abiding citizens. If you are going to advertise firearms for sale, give nothing more than a phone number along with the description of the firearm being sold.

With the pride of owning a fine firearm there is the temptation to display it openly in the home. Avoid doing so. Don't mount guns on a wall in your home or in a cabinet which is easily visible from outside the home. Keeping guns out of line with a window is no guarantee against a prowler entering your home, but why advertise your firearms to anyone passing by your home.

The old practice of leaving your trap or skeet gun in the gun rack while you eat lunch or relax is becoming increasingly risky. Such practice might be fine at a small local gun club where everyone knows each other, but at a large club

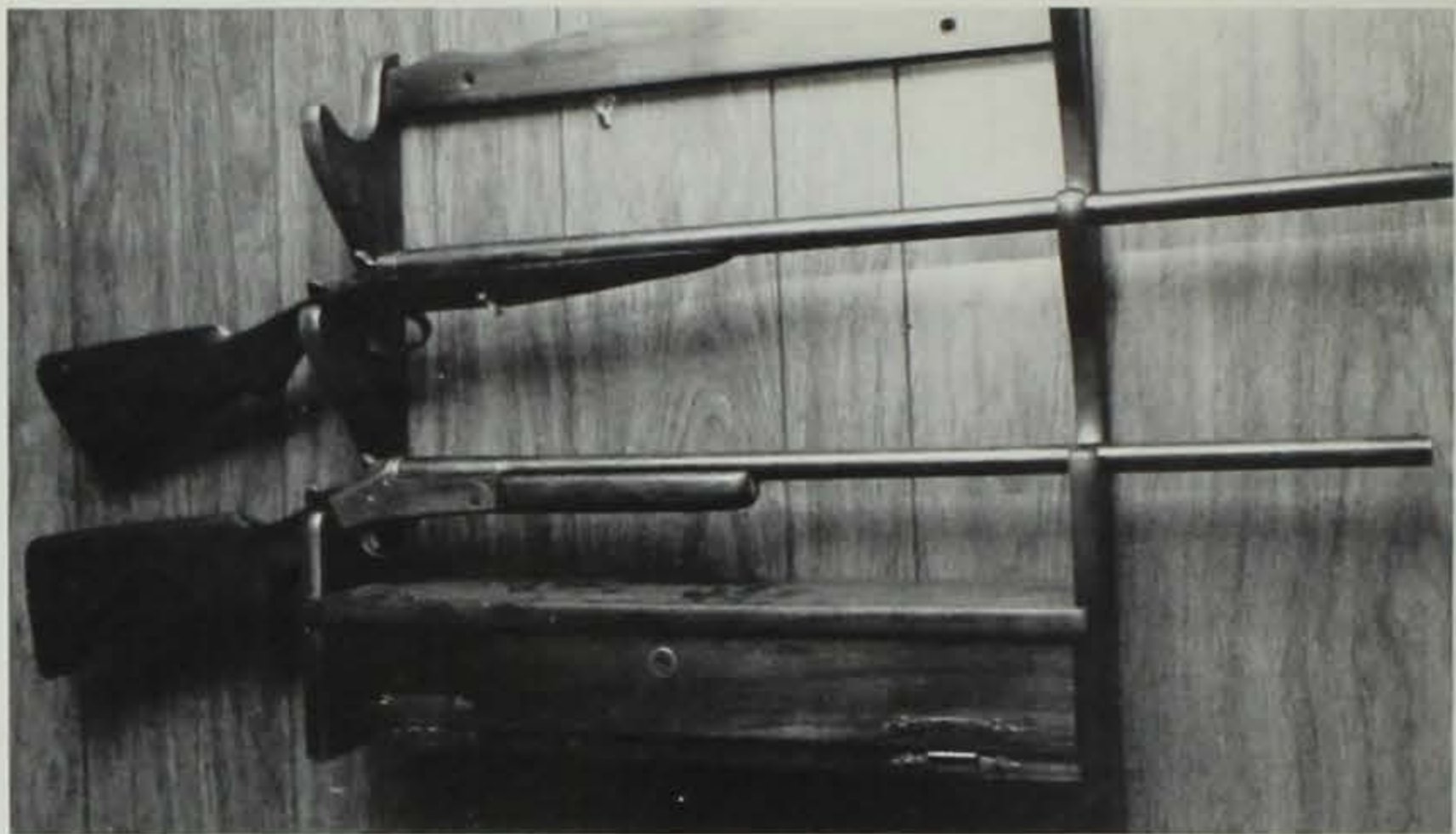
or shoot it is easy for someone to walk off with your gun.

Various security methods are available to protect your firearms, and most require little more than common sense. Don't assume too much about your homeowner's insurance policy. Questions about your homeowner's policy and what it covers should be directed to your insurance agent now, not after a loss. On visiting with a number of insurance carriers, it was reported that 95 percent of firearm owners have less than adequate coverage. A regular homeowner's pol-

icy, depending upon the carrier, will have a limited amount of coverage on individual firearms or an aggregate limit on firearms. Most firearm owners will find their coverage falls short of providing adequate coverage.

Inland marine insurance provides total coverage of your firearms, regardless of what happens. The only thing inland marine insurance does not cover is normal wear. Such policies require a list of firearms and their serial numbers. Appraisals are required of firearms above certain values. This varies with different insurance carriers. Premiums for inland marine insurance varies from \$2 to \$3.50 per \$100 value of firearms. Replacement value of any loss is completely covered. Firearm collections above a certain value may require an electrical alarm system and doors and windows to be protected. It is advisable to shop around with different insurance carriers, as coverage costs and restrictions may vary between carriers. The National Rifle Association offers the lowest rates and total coverage on firearms to its members.

Displaying your firearms on a gun rack makes them easily accessible to thieves. One of the best ways to store guns is in a steel gun chest, which can be bolted to a floor or wall and is designed so the door cannot be pried open. Traveling with guns can also cause security problems. Never leave your guns in the back seat of an unattended vehicle and do not leave firearms in the trunk of the car when staying overnight at a motel.



It is of utmost importance that you have a written inventory of your firearms, and better yet, to have a photo of each firearm. It is a sad fact, to which numerous police auctions attest, that more stolen items are recovered but are unclaimed because the owners never took the time to record serial numbers or used other means to identify their property. When you have made a complete inventory of your firearms, keep one copy hidden in the home and another copy in your safety deposit box.

It is important family members are aware that an inventory exists and where a copy is available. What if a theft occurred in your home and you were gone for an extended period of time? Could your family members give the law enforcement officials a full description of all your firearms, including the serial numbers? If you died suddenly, would your family have a reasonable idea as to what your firearms are worth? Many times a surviving spouse sells firearms at a fraction of their worth because he or she has absolutely no idea of the firearms' value. Perhaps you promised a certain firearm to your hunting partner or to a family member. It is important that your family members know what you desire in case something should happen to you.

The gun that fits you perfectly or has a sentimental value cannot be replaced. We have examined the importance of adequate insurance to cover your firearms in case of theft. Let's look at some ideas to help you hold onto your valuable firearms and prevent theft.

A highly technical security system can run into thousands of dollars and is beyond consideration except for a serious collector of antique or high-quality firearms. The system we will consider could be called the "poor man's security system." It consists of a few simple steps — privacy, inconvenience and lack of utility.

The ideal system of security for the homeowner is a steel gun chest which is made specifically for firearm security. Due to the weight of the chest, it would take several people to carry one away. The chests can be bolted to a floor or wall, eliminating the chance of it being

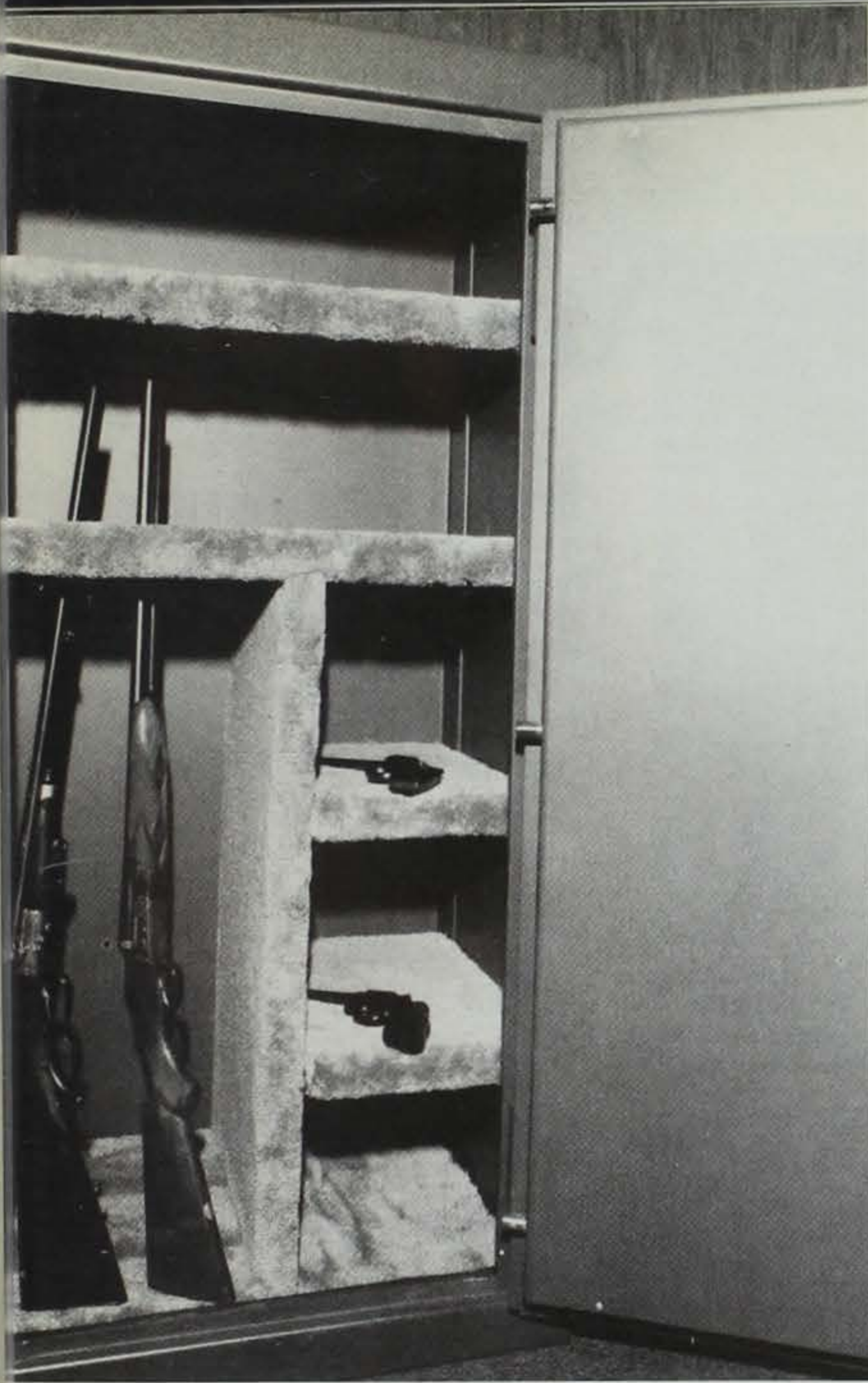
moved. The steel firearm security chest is designed so the door cannot be pried open. These chests are not inexpensive, but over a period of time, they are the least expensive of any other quality security system available.

If your firearms don't seem worth a steel gun safe, then at least hide them. Just putting your firearms in a closet is about the worst thing you can do. A closet is the first place a thief looks. If a thief enters your home, they want to enter and leave as soon as possible. Hiding your firearms so a thief will not take the extra time necessary to find them is part of your security system.

With this in mind, take the time to walk about your home. As you do, visualize where you would look if you were a burglar, and where a thief would be least likely to look. If you are creative, you will find countless areas on your premises where a firearm can be concealed. I know of one firearm owner who has a gun rack which holds inexpensive firearms. The owner considers these "decoy" guns, if the home is ever broken into. The owner's other guns are well hidden around the home.

Inconvenience and lack of utility go hand-in-hand to prevent theft of firearms. It is simple to remove the bolt from a bolt-action gun, remove the trigger assembly from most semi-automatic or pump-action guns, and to remove the cylinder from a revolver. It is not necessary to be a genius at concealment to hide the removed parts. Removing such parts only makes it obvious that the firearms are inoperable and useless. Having only part of a firearm is useless to a thief. Most thieves do not want to gamble getting caught with a gun they know they cannot sell because it doesn't function.

If you are going to be gone for a period of time from your home, a good defense is simply to leave your firearms with a good friend during your absence. Don't tell anyone your guns are removed from home or the place you are keeping them. The friend who keeps them for you should never tell anyone they keep your guns. Another possibility for security while you are gone is to check with your local bank about storing firearms in



their vault or in a safety deposit box.

Traveling with guns leaves them particularly vulnerable unless you take some easily used precautions. Putting firearms in a gun rack in the back window of a pickup is an open invitation to theft when the vehicle is left unattended. When hunting, spare guns can be particularly vulnerable in your parked vehicle. Firearms are also vulnerable when you stop to eat at a restaurant or stay overnight at a motel.

It seems obvious when in the field not to tempt or invite a theft by having cased guns, binoculars or a camera in plain view from outside the vehicle. You should never depend upon the fragile security of a vehicle door lock. If the vehicle does not have a trunk, put your spare cased gun, binoculars and camera on the floor and cover them with casually strewn clothes. Don't forget and leave ammunition on the dash or on the seat of the vehicle. You are advertising the possibility of firearms being present in your vehicle. When stopping at a restaurant, park your vehicle so it is visible to you while you eat.

When staying overnight at a motel, don't leave firearms in your vehicle's trunk at night. A trunk lid can be easily pried open and the trunk contents removed quickly. During daylight hours, a trunk is a better place to keep firearms than in a motel room. Most thieves are reluctant



to attempt a vehicle break-in during daylight hours when a lot of people are coming and going.

At a motel, tell the establishment you will be bringing cased firearms into your room when you make reservations prior to your trip. Make it clear that you will be keeping your guns in your room, if the management does not provide a vault to store them.

If you happen to use a vault when lodging, make sure you get a receipt when your firearms go into the vault. Make sure in advance that someone will be available to open the vault at the specific time you plan to leave.

Unfortunately, many people feel a theft is something that happens only to others or in large metropolitan areas. Thefts of firearms can occur anywhere and to anyone. Take the time now to initiate these simple security methods to prevent the possibility of you becoming a victim and losing the lifetime of enjoyment your firearms will provide you.

Bob Mullen is a conservation officer for Tama and Benton Counties.

Fuel Tax Means Access for

Story by James Zohrer Photos by Ron Johnson

Taxes, taxes, taxes...we all hate them, but yet a modern society could not function without them. One of the least controversial types of tax is known as a user tax. These are paid by individuals who actually use the facilities or services supported by those taxes. One such Iowa user fee is known as the Marine Fuel Tax. A state excise tax collected on the sale of motor fuel used in watercraft is placed in a Marine Fuel Tax Fund. This money is then used to support the recreational boating program administered by the Department of Natural Resources.

This program funds many boating access developments built by cities, counties and the state of Iowa. New

boat ramp development is the most common type of project funded. Approximately 30 new boat ramp sites are developed each year. Most of these are modern concrete ramps with adequate parking and good road access. A number of small boat and canoe access sites have also been developed throughout the state on small rivers and water impoundments.

A portion of the Marine Fuel Tax Fund is used to cost-share water access developments with cities and counties. Under this part of the program, the city or county doing the development pays for 25 percent of the cost and the Marine Fuel Tax Fund will pay for the remainder.

Grant applications are reviewed every six months for the selection of projects to be funded. Grants totaling more than \$700,000 were approved during the first review of 1988. After adding in the cities' and counties' share of these developments, a total of more than \$900,000 worth of projects was approved in this six-month period. Thirty-three projects were approved at this review. They included such things as a new ramp, dock and road in the city of Camanche; a new boat ramp, parking lot and road at Yellow Banks Park in Polk County; a new boat ramp at Roberts Creek Park in Marion County; a major Missouri River access project in Sioux City; Missis-



Boaters

Mississippi River access work in Fort Madison and many other excellent projects. All of these improvements will directly benefit boating access to Iowa's waters.

A portion of the Marine Fuel Tax Fund also goes towards the development of boating access projects on state-owned or controlled lands. Major improvements to boating access on the Mississippi and Missouri Rivers have recently been completed, and more are planned on these and other inland rivers and water impoundments. Major boat ramp improvements have recently been completed in Elk Rock State Park, on the Des Moines River near Fraser, on the Raccoon River near Minburn, on the Missouri River near Hamburg and at a number of other sites.

The long-range goal of the program is to provide adequate safe boat access to all of Iowa's public boatable waters. Boat access sites will normally include a concrete boat ramp, adequate parking area to service the projected public use, a good all-weather access road, adequate signing to the area and possibly developments such as latrines, docks and lights. General guidelines call for an established boat access site along every five miles of river or five miles of lake shoreline.

All access sites developed using Marine Fuel Tax Funds are open to the public at no charge. A directory of Iowa boat access sites is being developed and should be available by the spring of 1989.

The next time you back your boat trailer down a nice new concrete boat ramp in Iowa you can bet that your boat fuel taxes helped pay for it. This is a tax program that works for you, the Iowa boating public.

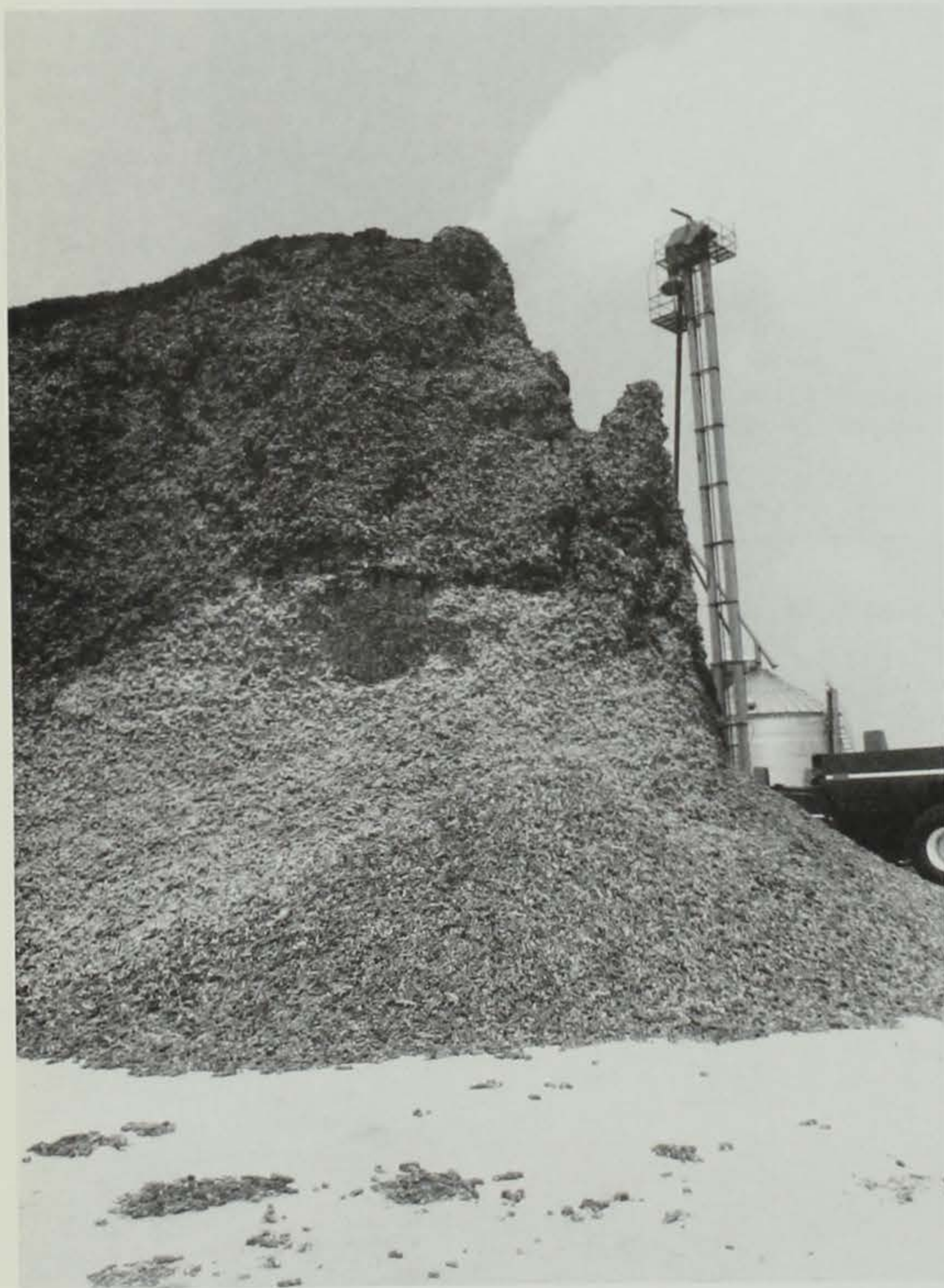
James Zohrer is the department's water access coordinator and is located in Des Moines.



DNR PHOTO

Story by Patrick Pisarik
Photos by Ron Johnson

A Search for Renewable Energy



Every day, thousands of people traveling on Interstate 80 see biomass energy at work. These people are passing Kinze Manufacturing, Inc., near Marengo, and many are unaware that Iowa-grown corn cobs are being burned to provide heat for the four-acre facility. Upon seeing the mountains of corn cobs and wood chips near the factory, travelers may raise their eyebrows, point their fingers and ask lots of questions. "Can corn cobs really heat such a large building? Is it economical? Are others using cobs or other biomass materials for energy in Iowa?"

Most Iowans know very little about Iowa's renewable fuel sources and how they are being used. Iowa currently imports more than 90 percent of its energy, even though renewable biomass fuels such as corn stover (stalks, leaves, husks and cobs), small grain straw, grass hay, low-quality corn and wood can replace substantial amounts of imported fossil fuels. Converting these homegrown materials to energy could help stimulate the local economy and keep energy dollars within the state.

Iowa's neighbor to the north has demonstrated the benefits of using renewable fuels. Minnesota now has more than 250 biomass energy systems in operation in manufacturing facilities, schools, government buildings, rural utility plants and farms. This emerging biomass industry has created new jobs, generated new markets for locally grown materials, expanded markets for midwestern equipment manufacturers, and increased state and local tax revenues. In fact, the Minnesota Department of Energy and Economic Development estimates that every dollar spent on biomass energy generates \$1.50 in additional economic activity.

Iowans are also resourceful. Although we have less than 30 biomass energy systems in operation, interest in these systems is growing. Much of this interest is sparked by current users who enthusiastically share their knowledge and experience with others. For example, John Kinzenbaw of Kinze Manufacturing likes to tell how he designed a

furnace fueled by corncobs or wood chips to heat his large factory. Darwin Meyers, a farmer near Sheffield, describes how corn husklage is collected, burned in a furnace made by Sukup Manufacturing of Sheffield, and in turn the heat is used to dry grain on his farm. Officials at Garrigan High School in Algona tell of their decision to install a biomass furnace fueled with corncobs. And Matt Schryver of Green Products, Inc., near Conrad, shares his experience with burning sawdust and corncobs to heat an alfalfa dehydration plant.

To help these people tell their stories and to ensure that information on biomass fuels is available across Iowa, the Energy and Geological Division of the Iowa Department of Natural Resources has funded several biomass energy projects. One grant to the Iowa Natural Heritage Foundation enabled the distribution of a biomass energy educational package throughout the state.

The educational package includes a handbook, "Decision-Makers' Guide to Crop Residue Energy Systems," developed by the Foundation for the Great Lakes Regional Biomass Program. In addition to listing current biomass system users and equipment manufacturers in the Midwest, the handbook gives an overview of different types of crop residues, harvesting and holding systems, combustion units, and economic and environmental options to consider. These topics are also condensed into a 60-minute videotape suitable for home, classroom or workshop use.

An important element of the educational package is a computer program, RESIDU, which helps analyze the environmental impact of residue removal. Residues like corn stover and soybean straw which remain on the soil surface are essential to soil conservation. They diminish the erosive effect of wind and water by holding soil particles in place and slowing surface runoff, and they also help to maintain soil fertility as decomposition releases nutrients. While sufficient residues should be left on the field, some crops produce excess residues which can be removed from some fields. The RESIDU program estimates the amount of residue needed on an individual field to control erosion and calculates nutrient

replacement costs to maintain soil fertility.

The software also includes economic analysis for those who are considering conversion to a biomass energy system. By estimating capital inputs, energy demand, residue supply and operating costs, a potential user can determine the cost of biomass conversion. For many people, the payback period is short and fuel savings will soon pay for initial conversion costs.

Thanks to the DNR grant, the educational package (handbook, video and software) is available at all area Cooperative Extension Service offices and some county offices, all Soil Conservation Service area offices and Rural Conservation and Development offices, and all Area Education Agencies. Educational packages may also be purchased for \$25 from the Iowa Natural Heritage Foundation, 505 Fifth Avenue, Suite 1005, Des Moines, Iowa 50309.

As Iowans become more aware of the great energy potential in agricultural residues, we will be taking a more careful look at the wise management and use of these materials. Biomass crops and residues are the key to conservation of our soil and water resources. They also offer a reliable, renewable energy source that can fuel rural economic development as well. It is an abundant resource too good to ignore.

Patrick Pisarik is an energy consultant for the Iowa Natural Heritage Foundation and lives in Mount Vernon, Iowa.

Current biomass users are eager to share their ideas with others. John Kinzenbaw of Kinze Manufacturing likes to tell of his design — a furnace fueled by corncobs which heats his large factory.



The World In A Jar

Story and photos by
Lowell Washburn



It was obvious that the boys, ages seven and eight, were having the time of their lives. Armed with boundless enthusiasm and a brace of dip nets, the pair was currently standing knee deep in the soft ooze of the neighborhood wetland. Progress had recently come to a halt as the boys stood mesmerized, gazing into a large glass jar held between them.

"What have you got in the jar?" I queried.

"We've got the whole world!" blurted out the older boy without looking up.

Eagerly accepting an invitation to examine the container's contents, I discovered that the answer was not all that far off. The jar was absolutely pulsating with a myriad of marsh-type wiggly squiggles bearing testimony to the fact that acre for acre, or in this case square inch for square inch, the prairie wetland is the most productive of our ecosystems.



Included among the jar's inhabitants were diving beetles, water boatmen, damselfly larvae, some assorted snails, a water scorpion and a couple kinds of tadpoles. The boys had indeed done a commendable job of setting up their counterfeit marsh, even to the point of adding natural vegetation for underwater cover.

The youngsters noted that probing this shallow marsh with nets represented one of their favorite summer pastimes and added that the spoils of their efforts were duely divided at the end of each foray. Today's outing had been especially eventful. Three jumbo crayfish had been captured and a yellow-headed blackbird nest containing two nestlings had been discovered at the water's edge.

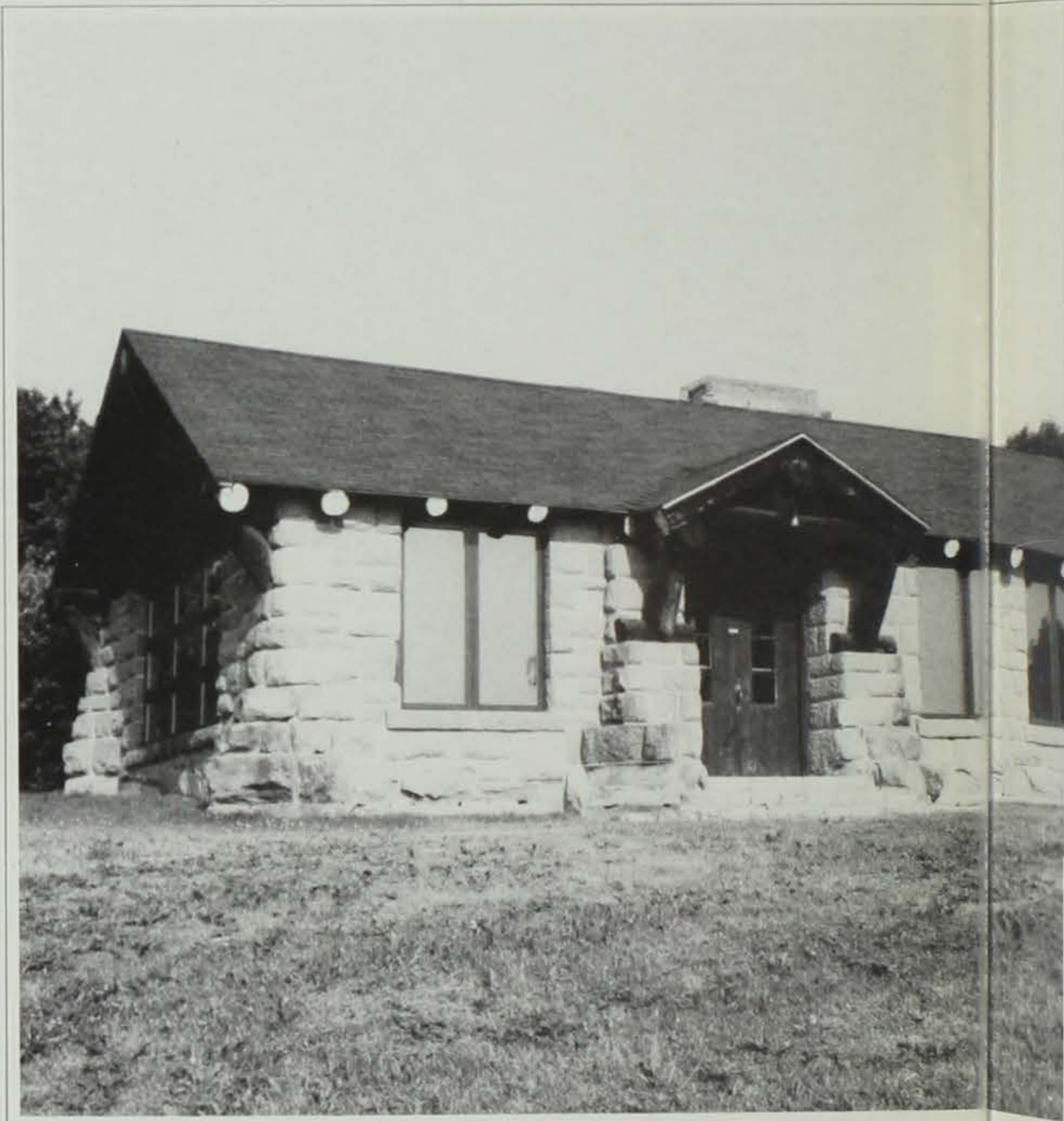
While replaying a mental tape of this scene a few days later, it occurred to me how very unfortunate it is that most young folks will grow up without ever having the opportunity to explore a marsh in such a fashion. It is equally regrettable that everything from organized sports to video games will continue to widen the chasm between kids and marshes, and consequently, from many of the fundamental realities of nature.

I wish I could mandate that every Iowa young person spend at least an afternoon or so exploring a cattail marsh. Beyond their educational value, such first-hand encounters cannot help but foster an appreciation for the resource that runs far beyond the childhood experience. I can assure you the two boys discussed earlier will never return to the marsh for the purpose of draining it. In fact, it just might be that many of their adult perceptions could be positively influenced because they once took the time to discover the natural wonders of the world in a jar.



The Resting Place

Story by Don Pudwill



Many of Iowa's state parks contain scenic enclosed shelters or lodges. The majority of these were constructed during the 1930s by the Civilian Conservation Corps (C.C.C.) or the Works Progress Administration (W.P.A.). All provide excellent settings for group activities and are available on a reservation basis through the park ranger. The lodges are used for every type of event imaginable, including weddings and wedding receptions, school graduations, company picnics and family reunions.

The lodge that sits on a hill overlooking beautiful Lake Ahquabi, an Indian name meaning "resting place," has been the site for one family's gathering since 1947. The first

Sunday of each June has been the time for the Lehman family to come to Lake Ahquabi State Park for their annual family reunion.

When Jack and Jean Hardenbrook were expecting their first child, the family decided to celebrate by combining a baby shower with a family picnic. What began as a simple baby shower for Jean Lindquist Hardenbrook turned out to be a family reunion that has been held each year for 40 years. It is a story that generations of Lehmans, Lindquists, Hardenbrooks, Johnsons, Perrys, Pludes and Grochals have shared in.

Every year, the family gathers at Lake Ahquabi for volleyball, horseshoes and plenty of food. Recipes handed down from year to year

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RON JOHNSON



include such items as Grandma C's (Mildred Campbell) barbecued raccoon to Aunt Mary's (Mary Lindquist) ring salad.

Many old traditions have gone, but the annual reunion of the Lehman family at Lake Ahquabi State Park continues.

During 1988, the Lake Ahquabi lodge will undergo major repairs. For further information on reserving the lodge, write or call Lake Ahquabi State Park, Indianola, Iowa 50125 (515)961-7101. The lodge may be reserved by day-use only at a rate of \$40 for each 100 people per reservation. A fee of 25 cents is charged for each additional individual in excess of 100.

Other Iowa state parks with lodges

available for rent are: A. A. Call, Bellevue, Clear Lake, Dolliver, Fort Defiance, George Wyth, Gull Point, Lacey Keosauqua, Lake Keomah, Lake Wapello, Lewis and Clark, Palisades-Kepler, Pammel, Pine Lake, Stone, Walnut Woods and Wapsipinicon. For information on reserving these lodges, contact the parks directly. General information on Iowa's state parks can be obtained by contacting the Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034, 515/281-5145.

Don Pudwill is the park ranger at Lake Ahquabi State Park in Warren County.

The Lehmans celebrated their fortieth family reunion last summer at Lake Ahquabi State Park.



RON JOHNSON

Support Your Local Wildlife BUY HABITAT STAMPS

by Dean Dalziel

Wildlife enthusiasts frequently ask the question, "What can I do for wildlife?" The answer, of course, is that there are numerous wildlife-related projects that can be undertaken to improve habitat and populations. One that comes quickly to mind is to annually purchase an Iowa wildlife habitat stamp.

At the urging of concerned conservationists and sportsmen's organizations, the Iowa Legislature enacted legislation in 1979 establishing an Iowa wildlife habitat stamp. This action requires certain hunters and trappers to purchase and carry a valid wildlife habitat stamp when hunting or trapping. Residents of Iowa who are permanently disabled or are younger than 16 or older than 65 years of age are exempted from this legislation. All nonresident hunters and trappers are required to have a valid habitat stamp in their possession.

Money obtained from this source is deposited into the fish and wildlife protection fund and must be used for wildlife habitat development within the state. One-half of the habitat stamp funds are made available to the county conservation boards for cost-sharing selected wildlife habitat development and improvement projects in their

respective counties. A selection committee reviews and selects the projects to be funded through this program. The remaining funds are used by the Iowa Department of Natural Resources in a similar manner.

The Legislature established a \$3 price for each wildlife habitat stamp. Approximately 250,000 of them are sold annually. Between 1979 and 1987, \$3.5 million of habitat stamp revenue was available to the DNR for use on state-sponsored wildlife projects. During this nine-year period, 48 individual tracts of land and water totaling 11,146 acres of excellent wildlife habitat were purchased by the Iowa DNR. The size of the individual land purchases ranged from 1 to 1,297 acres, with an average size of 234 acres per tract.

Some of the more significant acquisitions occurred adjacent to existing wildlife management areas, thereby enlarging the site and expanding wildlife habitat development and management options. For example, acquisition of a 320-acre private in-

holding adjacent to Cardinal Marsh in Winneshiek County resulted in improved management opportunity on an upland hardwood forest and an area of oak savannah, development of some satellite wetlands, and establish-



The 1988 Habitat Stamp features a pair of mourning doves and was designed by Jack Hahn of Middle Amana. The stamp's purchase price is \$3. Approximately 250,000 stamps are sold annually. Over the last nine years \$3.5 million dollars has been available for wildlife habitat improvement projects.

ment of prime nesting cover for waterfowl and upland wildlife species.

In Wapello County, the Fox Hills Wildlife Area, a former YMCA camp, was acquired and consists of a large acreage of upland hardwoods. This land is being intensively managed for woodland-dwelling wildlife species and will provide extensive public use benefits to outdoor enthusiasts.

The 756-acre Boone Forks purchase in Hamilton and Webster Counties will eventually be expanded into a larger wildlife management complex of woodland and river greenbelt corridor. Wildlife management and outdoor recreation opportunities in the vicinity have been expanded considerably as a result of this habitat stamp project.

Southwest Iowa's 932-acre Dekalb Wildlife Management Area also consists of some very fine wildlife habitat. Its expansive woodlands and rough terrain provide habitat for a highly varied wildlife population.

These examples, while considerably larger than the average-sized wildlife habitat stamp project, are representative of the type of wildlife habitat that is being acquired under this program. In addition, wetlands and upland nesting areas are being purchased in northwest and north-central Iowa as opportunities arise.

Eleven thousand acres of land purchased under this program over a nine-year period is a relatively modest figure. On the other hand, it is 11,000 acres more than would have been acquired if the wildlife habitat stamp program had not been in effect. We must also take into consideration the fact that the county conservation boards have acquired some excellent wildlife habitat with their portion of the funding program as well.

While land acquisition expenditures represent the primary use of habitat stamp funds by the DNR, some monies have also been expended toward funding other wildlife habitat improvement programs.

The Native Grass Demonstration Area, Wildlife Shelterbelt, and Wildlife Food and Cover Plot Programs have all been funded with habitat stamp money. These cooperative public/private cost-sharing projects have been used to develop improved wildlife nesting cover, tree and shrub windbreaks, and wildlife food and cover plots on private lands in Iowa. Improving upland wildlife populations is the primary goal of these efforts. Restoring pheasant populations to former levels is of particular interest and importance to many Iowans.

Other uses of habitat stamp funds have been for payment of property taxes on the land purchased (as stipulated in the legislation) and for payment of land appraisals and other acquisition costs.

The wildlife habitat stamp program was well-conceived and is of great importance to the DNR's overall conservation effort. To their credit, sportsmen have accepted the extra financial cost quite well. Most of them realize that Iowa has a very small percentage of land in public ownership (49th out of the 50 states). They also understand that when they purchase a wildlife habitat stamp, they are providing an important benefit to wildlife and themselves. Whether you hunt or not, you too can participate and take pride in aiding wildlife by purchasing a habitat stamp.

**LAND ACQUISITION - IOWA DEPARTMENT
OF NATURAL RESOURCES
FISH AND WILDLIFE DIVISION
July 1, 1979 - April 1, 1988**

Wildlife Habitat Stamp Funds

Area	County	Acres
Hazelbrush Wildlife Area	Carroll	72
Elk Creek Marsh	Worth	113
Cardinal Marsh	Winneshiek	320
Tuttle Lake	Emmet	237
Boone Forks Wildlife Area	Hamilton and Webster	756
Badger Lake	Monona	151
Shimek Forest	Lee	215
Hawthorne Wildlife Area	Mahaska	315
Fox Hills Wildlife Area	Wapello	1,297
Lakin Slough	Guthrie	18
Kiowa Marsh	Sac	303
Gabrielson Wildlife Area	Hancock	434
Sweet Marsh	Bremer	317
Pool Slough	Allamakee	370
Black Hawk Bottoms	Des Moines	401
Cheever Lake	Emmet	25
Soap Creek Wildlife Area	Appanoose and Davis	777
Ringgold Wildlife Area	Ringgold	240
Stephens Forest	Davis	519
Big Marsh	Butler	231
St. John's Wildlife Area	Harrison	65
Round Lake	Harrison	1
Three Rivers Area	Harrison	300
Whiting Access	Monona	150
Lakeport Wildlife Area	Woodbury	121
Washta Access	Ida	2
Princeton Area	Scott	13
Muskrat Slough	Jones	24
Ram Hollow	Delaware	380
Soldier Bend	Harrison	10
Wapsipinicon River Area	Clinton	86
South Bear Creek	Winneshiek	260
Wells Wildlife Area	Dickinson	70
DeKalb Wildlife Area	Decatur	932
Little Sioux River (Reiter Access)	Clay	4
Hull Wildlife Area	Mahaska	40
Ocheyedan Wildlife Area	Clay	150
Betram Wildlife	Linn	130
Lansing Wildlife Area	Allamakee	18
Lennon Mills	Guthrie	111
Little Sioux Wildlife Area	Clay	18
Dunbar Slough	Greene	37
Canoe Creek	Winneshiek	72
Waterman Creek Wildlife Area	O'Brien	139
Indian Creek	Van Buren	587
Eight-Mile Wildlife Area	Hancock	100
Hendrickson Marsh	Story	175
Joy Springs	Clayton	40
		<u>11,146</u>

Dean Dalziel is a district wildlife supervisor in northeast Iowa and is located in Manchester.

CONSERVATION UPDATE

IOWA WOOD DUCK PROJECT LARGEST IN WORLD

by Lowell Washburn

Glen Welp was not on the scene yet when the very first brood of wood ducks hatched in 1962 from an artificial nest box located at the Union Slough National Wildlife Refuge in Kossuth County. However, as a new recruit with the U.S. Fish and Wildlife Service, Welp was around when the second nest was produced in the spring

of 1963. Although neither the wood ducks nor the man could know, this encounter sparked the beginning of an amazing conservation story that has spanned a quarter century.

Since that first brood of wood ducks, Welp has never missed an opportunity to get acquainted with each of the hundreds of wood duck families that have come his way. And what originally began as a side-lined project of less than a dozen nest boxes, has currently become a waterfowl factory of awe-inspiring proportions.

In 1964, the program began to move forward when two pairs of wood ducks nested at the refuge. By 1974, 79 pairs of woodies nested at Union Slough, and 10 years later, the number had escalated to 138 nests.

Although the first nests erected at Union Slough were made of wood, Welp now uses structures fashioned from metal canisters. As the colony has attracted an ever-increasing number of nesting hens, more and more boxes have been added to

the project.

During 1987, a total of 275 structures resulted in 251 clutches of eggs which produced nearly 2,500 ducklings. An initial survey has revealed more than 300 nests present this season, and a new record hatch is anticipated for 1988. Other wildlife taking advantage of the nests have included screech owls, swallows, kestrels, flycatchers and hooded mergansers.

Welp's eyes twinkle as he relates the fate of various wood duck families he has gotten to know. And if the 25-year wildlife service veteran remains overly enthusiastic, there is good reason. Due largely to Welp's dedication, the Union Slough project has become the largest and most successful wood duck nesting colony in the world.

This year, the Fish and Wildlife Service has begun "spreading the wealth" as the service has made wood duck families available to the Iowa Department of Natural Resources for the purpose of establishing new wood duck colonies. To initiate the project, six families containing 119 ducklings were released at Ventura Marsh in Hancock County. According to Ron Andrews, DNR wildlife biologist, Ventura Marsh has excellent wood duck potential, but no birds are currently using any of the nests available. "Although woodies would probably have used the boxes eventually, the brood transplants should speed up the process of discovery,"

said Andrews. "Any female ducklings surviving to next spring should return here to nest," he added. More transplants are planned for 1989.

UPLAND GAME POPULATIONS INCREASE

Results of the Iowa Department of Natural Resources winter game surveys are in and indicate that upland game populations came through the hunting seasons and winter in excellent shape over most of the state, according to Greg Hanson, upland game biologist for the DNR.

Officials of the DNR reported upland game sightings during normal winter work activities and recorded sex ratios of pheasants during periods of complete snow cover from Jan. 4 to March 13, 1988. The objective of the annual survey is to determine post-hunting season pheasant sex ratios and to monitor the distribution of gray partridge, quail, jackrabbits and turkeys in Iowa.

Pheasant sex ratios averaged 2.9 hens per rooster statewide, ranging from 2.2 hens per rooster in western Iowa to 3.9 hens per rooster in south-central Iowa. According to Hanson and Ron Munkel, upland wildlife research technician, these numbers represent an estimated 65 percent harvest of roosters statewide. This represents a fairly moderate level of rooster harvest, as several studies have indicated that



Glen Welp (left) and Ron Andrews (right), DNR wildlife biologists, erect metal canisters at Union Slough to be used for nesting sites by wood ducks.

a 90 percent rooster harvest will still provide good reproductive success the following spring.

Gray partridge sightings were frequent over the northern two-thirds of Iowa and were up dramatically from previous years. According to Hanson, the number of gray partridge sighted during this survey is normally in the hundreds, but this year more than 8,000 partridge were sighted.

"Gray partridge have spread over the entire

state in recent years, but these numbers indicate that partridge densities are at very high levels over most of northern Iowa," said Hanson. "Upland game populations as a whole seem to be coming out of the winter in better condition than we've seen for several years. This is the first year of established cover on most CRP acres, and with good weather during the nesting season, we could see a substantial increase in bird numbers in many parts of the state."

TERRACE HILL CERTIFIED AS BACKYARD WILDLIFE HABITAT

Iowa is the fourth state in the U.S. to have its governor's mansion certified as a "Backyard Wildlife Habitat" by the National Wildlife Federation. On June 28, Terrace Hill was formally recognized and dedicated by the National Wildlife Federation. Being certified as a wildlife habitat area means that the property provides adequate food, cover and water for a variety of wildlife. Terrace Hill is indeed a wildlife haven — particularly considering its proximity to downtown Des Moines.

The nine-acre property contains 16 types of large trees ranging from oaks and hickories to maples and cherries. All of these trees provide food for wildlife. Many of the large trees also have cavities which provide nest sites for woodpeckers, chickadees, nuthatches, squirrels and raccoons. Additionally Terrace Hill has small trees and shrubs such as crabapples, hawthorns, honeysuckles and sumacs, again providing food and cover for wildlife. The property also has rocky areas which provide den sites for chipmunks, ground squirrels and woodchucks. A fountain and a couple spots which tend to retain moisture at Terrace Hill accommodate wildlife's need for water.

To further enhance the area for wildlife, Terrace Hill started a bird feeding

program this past fall. Immediately chickadees, downy woodpeckers, juncos, goldfinches and blue jays found the feeders in addition to house sparrows and starlings. The Iowa Department of Natural Resources' Nongame Program, which did the inventory and planning necessary to certify the site, donated several feeders to the property. The Des Moines Feed Company also donated a feeder and the Des Moines Audubon Society donated seed.

In March, the DNR added bluebird boxes to the property. Less than two weeks after the boxes were erected, a chickadee moved into one box, incubating its five tiny eggs. A house wren also took up residence in a house. The boxes were donated and are being faithfully monitored by the Ding Darling Chapter of the Izaak Walton League.

Yet this year, the Iowa Chapter of the Wildlife Federation, the Men's Garden Club and Business Women's Garden Club will be donating some flowers and shrubs to the Terrace Hill project. The flowers will include plants such as purple coneflower, blazing star and butterfly milkweed which are attractive to butterflies. Later, the Boys Scouts of America will contribute a purple martin house or bat house to the property.



IOWA HUNTER EDUCATION PROGRAM RECEIVES AWARD

The Iowa Department of Natural Resources hunter safety education program recently received a national top 10 award from the National Rifle Association. Iowa's program is ranked as one of the top 10 programs in the nation.

Iowa's program was voluntary when it began in 1960. In 1983, the program became mandatory for anyone born after Jan. 1, 1967, to take a hunter safety education class. Since 1960, more than 270,000 students have been certified, with more than 10,000 students being certified in 1987. Iowa currently has six recreational safety officers (RSO) to oversee the program and has 1,500 volunteer instructors to teach the classes.

DNR staff who administer the program are: (back row, left to right) Dale Anderson (RSO), Denny Phillips (RSO), Arlen Throne (RSO) and Sonny Satre, recreational safety coordinator; (front row, left to right) Rod Slings (RSO), Martha Downs, hunter education secretary, Randy Edwards (RSO) and Craig Jackson (RSO).



1987 BOATING ACCIDENT REPORT

Iowa boaters were involved in 48 accidents in 1987, resulting in 37 personal injuries and eight fatalities, according to Iowa Department of Natural Resources officials. Property losses exceeded \$100,000. This is a decrease from 1986 statistics when there were 68 reported accidents, resulting in 36 personal injuries and eight deaths.

Satre, recreational safety coordinator for the DNR, almost all of the accidents could have been prevented by using common sense and following simple navigational rules. According to Satre, causes of accidents included overloading, rough or hazardous water conditions, an improper outlook, operator negligence, excessive speed, faulty equipment and alcohol use.

Satre urged boaters to be familiar with Iowa's boating regulations. To



During 1987, 48 boating accidents occurred as compared to 68 accidents in 1986. The majority of these accidents were a result of vessels colliding with other vessels or fixed objects.

Iowa's inland and border rivers proved to be the most dangerous, accounting for 25 accidents. Iowa's lakes and reservoirs accounted for 23 accidents. Types of accidents included four vessels capsizing, four people falling overboard, five vessels colliding with fixed objects, 14 boats colliding with other vessels and three fires on board.

According to Sonny

avoid collisions, boaters should be knowledgeable of right of way rules and speed and distance regulations. Boaters may obtain a copy of the Iowa Boating Regulations from county recorder offices or by writing to the DNR, Wallace State Office Building, Des Moines, Iowa 50319-0034. "Keeping Iowa Waters Safe," a 16-page booklet on water safety is also available.

TAKE A FREE BOATING COURSE

If you enjoy boating, even if only as a weekend passenger, you should learn more about seamanship. Boating courses are readily available through the U.S. Coast Guard Auxiliary, U.S. Power Squadron, American Red Cross and the Iowa Department of Natural Resources. Topics covered by the course include boat handling, piloting, rules of the road, survival techniques and understanding and coping with the weather and Iowa boating regulations.

Most boating courses are offered free of charge, except for a fee to cover the textbook and other expenses, and are taught in the evening.

The DNR has developed a home-study boating safety course which is ideal for ages 12 and older. Those who successfully complete the course will receive a certificate and safe boating patch from the DNR. Successful students may also receive a discount on their boating insurance from several companies. To receive information on the course, call (515)281-6824 and the materials will be mailed to you.

According to Sonny Satre, DNR recreational safety coordinator, most boating accidents occur because of skipper failure, but skipper failure is preventable. Accidents happen because of ignoring the rules of the road, moving around in a small boat, improper loading or just carelessness.

Boating is a great recreational activity. The more you learn about it, the more you enjoy it. For more information, contact your local conservation officer; the U.S. Coast Guard Auxiliary, State Liaison Officer, 4305 Mary Lynn Dr., Urbandale, Iowa 50322, (515)276-7710; U.S. Power Squadron, Lloyd E. Linn, 4800 Merced St., Des Moines, Iowa 50310, (515)270-1188; or the Red Cross, 2116 Grand Ave., Des Moines, Iowa 50312, (515)243-6281.

COUNTY TOPOGRAPHIC MAPS AVAILABLE

Topographic maps of each county in Iowa showing contours, cultural features and map coordinates are now available from the Iowa Department of Natural Resources.

The maps, produced at a scale of 1:100,000 (one inch equals approximately 1.6 miles), are printed in color and display contours (lines of equal elevation on the land surface); cultural features such as highways, streets, roads, trails, railroads and high voltage electrical lines; and map coordinates including township, range and section numbers, latitude and longitude designations and Universal Transverse Mercator (UTM) grid convergences.

The maps are available for \$4 each (plus 40 cents per map for mail orders) through the Iowa Department of Natural Resources, Geological Survey Bureau, 123 N. Capitol St., Iowa City, Iowa 52242.



**JIM MCELDOON,
PARK RANGER
AT LAKE
DARLING, DIES**

Jim McEldoon, park ranger at Lake Darling State Park, passed away on April 23, 1988, of cancer.

McEldoon began working with the state parks after his graduation from high school — first as a seasonal employee, then as an assistant park custodian at Clear Lake State Park, and, since 1961, as a park ranger. His first assignment as a ranger was at A.A. Call State Park near Algona. Next, he was the ranger at Lake Manawa State Park at Council Bluffs, and, in 1965, McEldoon and his family moved to Lake Darling.

During his many years as a ranger, McEldoon selected good personnel, treated them fairly, and ensured they did their job in a quality manner. He believed in working along with his staff whenever he could. The end result of his efforts was a well-

maintained, inviting state park that all could enjoy.

McEldoon was highly regarded by his co-workers in the parks and recreation bureau as well as by staff of other bureaus with whom he worked. One testimonial to the regard in which he was held has been the great amount of volunteer labor provided during his illness by parks personnel on the house that he and his wife, Helen, had purchased for their retirement in Brighton. When the house was purchased last year, McEldoon planned to renovate it during the next eight years so the house would be completed when he retired. In January of this year, McEldoon learned he had cancer. Shortly thereafter, parks personnel joined in the renovation and the house is now completed.

"Everyone said they'd be willing to help," explained Guy Leith, district supervisor, who approached McEldoon about the offer this spring. "He was wiring one day, and I could see he was wearing out. I told him there were a lot of guys willing to help."

Leith explained that McEldoon resisted at first, before giving the nod in early April. Most of the help came from park rangers, although several other park employees and friends also volunteered.

McEldoon was a quiet man, rarely vocal among his peers. He was an avid reader and enjoyed stamp collecting, fishing and searching for Indian artifacts.



CLASSROOM CORNER

by Robert P. Rye

People have held a fascination for owls since prehistoric times. Today this still holds true. Owls are found in cartoons, wall hangings, stories and decorations. They cause excitement as groups observe them on the Conservation Education Center's nature trails or listen to them at night.

Test your level of awareness with the following true/false questions.

1. Owls are birds of prey, occupying by night the hunting and feeding niches that hawks hold by day.
2. Owl fossils have been found in the midwestern United States in rocks dating back 30 million years.
3. The plumage of owls is dense and soft, making them look heavier than they actually are.
4. The owl's drab-colored feathers blend into the background of the shaded daytime and the darkness of night. The feathers on owl's legs provide insulation and protection against bites by prey.
5. Extreme large retinas make their vision 20 to 30 times more efficient than human sight in distinguishing small objects in dull light.
6. Owls possess binocular vision — each eye sees same scene from a slightly different angle, thus improving depth perception.
7. Owls can twist their necks more than 270 degrees — almost completely around.
8. The leading part of the night hunter's wings — which cut the air when the bird flies — have soft, serrated edges.
9. Owls are able to swallow whole some if its smaller prey.
10. The owl's stomach absorbs nutritious portions and forms indigestible matter into pellets and regurgitates these about seven hours later.

Answers:

1. True 2. False (60 million years) 3. True 4. True 5. False (50 to 100 times) 6. True 7. True 8. True 9. True (Larger prey are torn apart.) 10. True

Backpacking at YELLOW BANKS PARK

Story by Larry Totton
Photo by Ron Johnson

Imagine parking your car near a small pond with a forest coming down to meet the pond on three sides, giving it the appearance of a framed photograph. Reflections of the trees add to the watercolor effect. In another direction, you can look out over a river valley carved gracefully into the surrounding hillsides by a meandering artist, the river.

Stepping out of your car and stretching after the drive, you think how good it would feel to get away from your job and home chores for a few days. You choose a direction to walk up into the forest, following a path the park ranger pointed out to you on a map. Your plans are to set up a small tent, lay down a sleeping bag and rough it for a couple of days while relaxing your mind and renewing your spirit.

There are few signs of people having previously visited your camping spot — no used shotgun shells lying on the trail, no burned circles from cooking fires, no electric outlets on posts. Dead wood has been left lying around the site to sprout interesting mushrooms and to shelter chipmunks. A red-tailed hawk not far away is calling from a tree top, sounding a high-pitched "screeee."



The scene brings back memories of a backpacking experience you had in the Rockies or in the Smokey Mountains during your college years. Or it may even bring to mind a childhood campout in the woods on Grandpa's farm. The Polk County Conservation Board wants you to be able to relive those experiences within a few miles of Des Moines.

Yellow Banks Park, located three miles east of Pleasant Hill on S.E. Vandalia Road, is situated on a bluff above the Des Moines River in southeastern Polk County. The bluff, when viewed from the river, used to reveal a large deposit of yellowish, windblown silt, called loess, which caused the area to be known locally as the Yellow Banks Area before railroad construction altered the landscape in 1965. Today, the fine, yellowish soil is still visible at a few locations within the 474 acres of the park.

Yellow Banks Park was officially

opened for public use in 1980.

Visitors will find a backpacking area, group shelters overlooking the Des Moines River valley, a nature trail with self-guiding brochures, two baseball diamonds, modern camping facilities, a group tenting area and fishing at a seven-acre lake or on the river. Posters in the park announce nature and archaeology programs presented for the public, especially during summer months. Yellow Banks Park is open year-round.

Yellow Banks Park has a backpacking area for use by reservation only. There are a half dozen individual campsites on a loop near the end of the trail, about a quarter of a mile from the closest parking lot.

Campers at the backpacking sites of the park are asked to follow a number of rules to preserve the quiet and natural qualities of this backpacking area. Reservations must be made by calling (515)266-1563, and tents must be set up before sun-

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CALENDAR of Events

JULY 24

Folk Arts Festival. Waubonsie State Park is the location for a festival of folk artists such as wood carvers, blacksmiths and buckskinners. For more information, contact John Lambert, Waubonsie State Park, Rte. 2, Box 66, Hamburg, Iowa 51640, (712)382-2786.

AUGUST 6 AND 7

Green Valley Buckskinners Rendezvous. Buckskinners with period costumes, historical demonstrations and period crafts, at Green Valley State Park. For more information, contact Green Valley State Park, Rte. 1, Box 121, Creston, Iowa 50801, (515)782-5131.

AUGUST 6 AND 7

Jakway Jamboree. Jakway Park in Aurora is the location for this festival of folk music and heritage crafts. Live music, contests and fur traders rendezvous are other event activities. Fee charged. For more information, contact Harry Graves or Dan Cohen, Buchanan County Conservation Board, Rte. 1, Box 268, Hazleton, Iowa 50641, (319)636-2617.

AUGUST 13

Whale Town Triathlon. Swim, run and bike at Lake Anita State Park. For more information, contact Lake Anita State Park, Rte. 1, Anita, Iowa 50020, (712)762-3564.

AUGUST 13 AND 14

Chichaqua Free Skinners Rendezvous. Crafts, nature hikes, canoe rental and displays at the Chichaqua Wildlife Area, five miles east of Elkhart. For more information, contact Mark Thompson at (515)967-2596 or Larry Totton, Polk County Conservation Board, Jester Park, Granger, Iowa 50109, (515)999-2557.

AUGUST 19, 20 AND 21

Iowa Game Fair and Outdoor Recreation Show. Black Hawk Park is the

location for the third annual game fair. Activities include air-rifle, muzzleloader and shotgun shooting, archery, dog fun-trials, wildlife art, boats and duck shoot and pheasant flurry. For more information, contact Steve Finnegan, Black Hawk County Conservation Board, 2410 W. Lone Tree Rd., Cedar Falls, Iowa 50613, (319)266-6813.

AUGUST 26, 27 AND 28

Country and Old Time Music Festival. Various bands and groups will play country and old time music from the Marion County Park campground, Knoxville. For more information, contact Steven B. Edwards, Marion County Conservation Board, Courthouse, Knoxville, Iowa 50138, (515)828-2213.

AUGUST 27

Big Creek Triathlon. Swim, run and bike at Big Creek State Park. For more information, contact Ed Wallace, Des Moines YMCA, 1000 Porter, Des Moines, Iowa 50315, (515)285-0444.



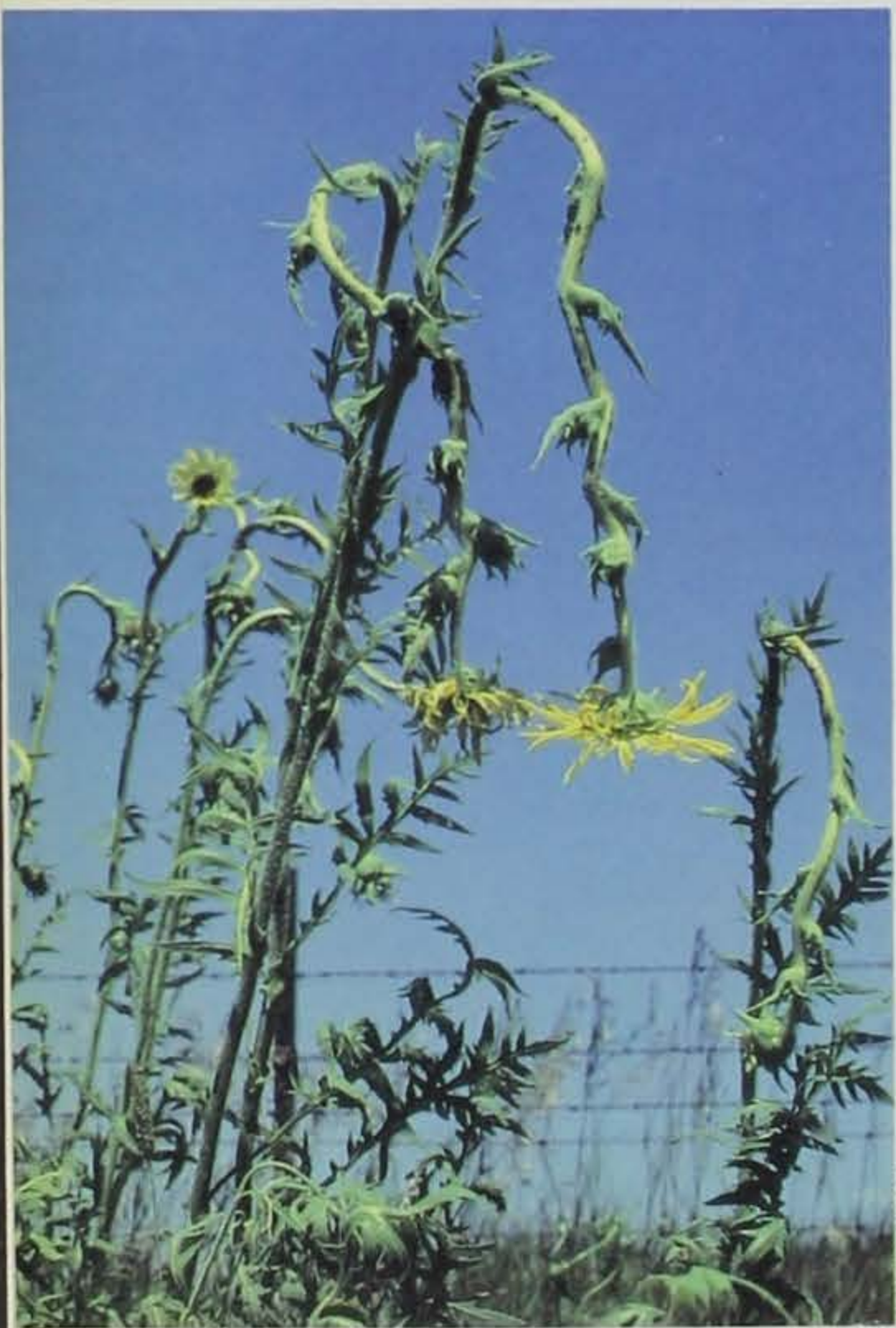
down. Campers must walk in, and all items carried in must be carried out by the camper. A maximum of two tents and six persons are permitted per site.

No ground fires are allowed, and all stoves must be operated in such a manner that grass, woods, etc., will not catch fire. Stoves are prohibited in dry weather conditions, and no holes may be dug for any reason. Quiet hours must be observed between 10 p.m. and 9 a.m., and tents must be moved after three days. No vehicle may enter or leave the parking area after 10:30 p.m., except in the case of emergency. The area opens at 6 a.m. The daily camping fee for the backpacking area is \$5 per site.

Larry Totton is a naturalist with the Polk County Conservation Board.

A New Era in Roadside Weed Control

by Lowell Washburn



Native compass plant withers and dies from the use of roadside chemicals.

You couldn't have asked for a prettier summer morning. They day was clear, calm and mild. I was checking out the sights along the back roads of Cerro Gordo County when a hen pheasant emerged from the tall grasses along the right of way. Stopping the car, I watched as the hen and her newly hatched chicks quickly crossed the road. I was able to count 14 before they disappeared into the opposite ditch. All in all, it was the kind of sight that tends to get your day off on the right foot.

Unfortunately, the driver of the oncoming vehicle didn't appear to feel the same way. His tank truck spray rig was running to capacity, and the waving steel boom was covering everything from roadside to fenceline with a silvery mist. In spite of the fact that the man couldn't have missed seeing the pheasant brood, he failed to hesitate, to shut off the nozzles, or to take any other action to avoid the birds which were now on his side of the road. As a result, the family received a soaking of whatever the chemical of the day happened to be.

The event occurred in 1971, and it was probably at that point that I began to lose much of my objectivity toward roadside spraying. Much of the state was still involved in what could be defined as the blanket spray era of county government's war on noxious weeds. The prevailing logic was that if a little spray is good, then a lot is better. Essentially, this meant that contractors were paid by the gallon. Once the treatment was begun, the booms were often left on until the tank was empty. Although these endeavors were aimed primarily at the eradication of thistles, the blanket spray technique was all encompassing, and in addition to target species, included the treatment of native prairie flowers, bird nests and intakes leading to surface water.

As the decade of the 1970s progressed, a "bigger is better" attitude toward agriculture rapidly fostered the road ditch to road ditch method of clean farming. And as the wholesale destruction of brushy fencelines, shelterbelts, woodlots and other habitats followed, the public's perception of roadsides began to

change. In some parts of the state's cash grain region, road ditches soon represented a major, and in certain instances, virtually the only area available to native fauna and flora. Consequently, the use of these areas became an increasingly sensitive topic.

In addition to being extremely costly, blanket spraying programs had several other flaws as well. A prime example was the accidents where chemical drift severely damaged or destroyed hedges or windbreaks on private property. The practice of spraying over water also stirred the public ire, as did the slow but steady disappearance of roadside prairies due to persistent treatments of 2-4-D. The classic example of treating a native prairie occurred in northwest Iowa in 1985 when 60 acres of publicly owned, pristine grassland was accidentally sprayed for thistle even though the area contained none of these plants.

As public pressure mounted, blanket spraying eventually gave way to a method known as spot spraying which involves the application of a chemical to individual plants. Although this approach is certainly more acceptable from an environmental perspective, critics point out that any subsidized spray programs are of dubious merit. Give or take a few plants, the persistent thistle is still as abundant as ever in spite of the thousands of gallons of weed spray aimed in its direction.

Iowans may, however, be witnessing the beginning of what could prove to be the final chapter of this otherwise dismal saga. Currently a handful of county conservation boards have begun, at least in a figurative sense, to fight fire with fire in an attempt to ultimately end county spray programs (see following article). The approach is simple, and in a nutshell, pits native, warm season grasses against the Canada thistle. Not only is the plan ecologically sound, but initial experiments indicate that it is effective as well. As the technique becomes more widely publicized, additional counties are certain to adopt the program, and we owe them no less than our total support.



LOWELL WASHBURN



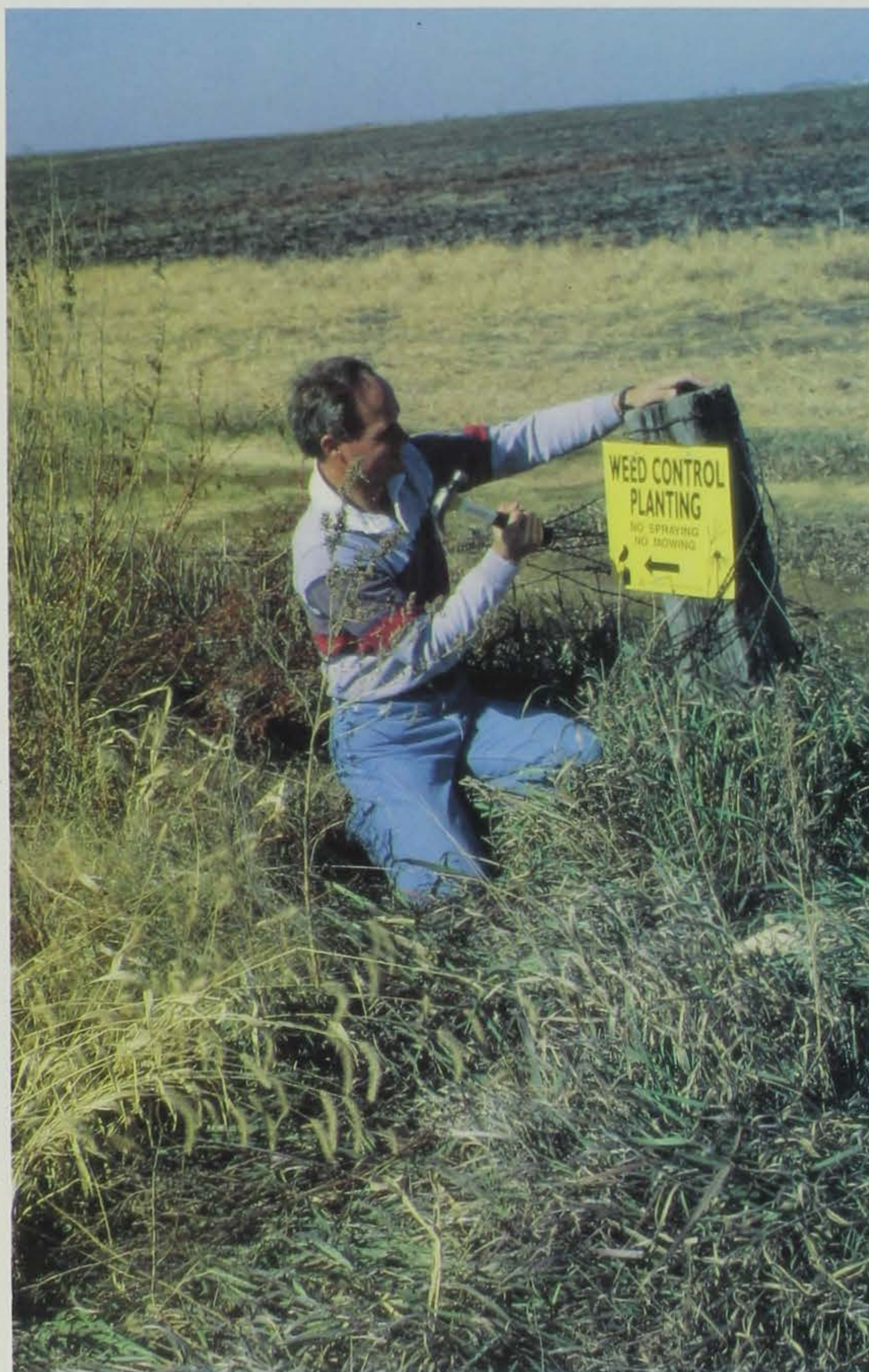
RON ANDREWS

Indiscriminate use of herbicides on Iowa's roadsides endangers more than just noxious weeds. Chemical drift damages many private plantings, contaminates water supplies, kills wildlife and eliminates the native plants that in fact may control the weed problem.

Blanket spraying douses Iowa's state flower (left) with a deadly chemical.

Ditches to Prairies

by Tre Wilson and Kathi Bason



This summer as you walk along the county roadsides in Black Hawk, Cerro Gordo, Guthrie, Lee, Mitchell or Story Counties look at the weeds (assuming there are any left). If their leaves are shaking, it may not be because of the wind. Chances are they are shaking from fear because these six counties have a new weed-control program that uses every trick in the book and some that aren't.

The people responsible for terrorizing roadside weeds are a group of biologists. On the whole, none of these people are really all that frightening, unless of course you are a weed. These roadside biologists tend to be sensitive and very aware of the things going on around them. They are also inquisitive and know a great deal about plants. In fact, in less than 10 seconds, they can look at a ditch and tell you the plants most likely to be growing there next year, three years from now or 10 years from now. And if you don't like their prediction, they can tell you exactly what would have to be done to encourage the vegetation you do want. These roadside biologists want to do more than eliminate weeds, they also want to prevent them from occurring in the first place.

A good roadside biologist attacks the cause of the problem rather than just treating a symptom. Often the cause of a weed problem is inappropriate use of herbicides or farming practices that cause topsoil to be deposited into a ditch. So Iowa's group of roadside biologists spend much of their time working with landowners, helping them get rid of their weeds and educating them about various methods which help prevent weeds from returning.

The first to hire a roadside biologist was the Black Hawk County Conservation Board. Bill Haywood, a forester by training, became Black Hawk County's roadside biologist in 1985. He soon realized that the smooth brome grass which dominated most of Black Hawk County's ditches wasn't nearly hardy enough to keep intruding weeds under control. He also knew that a mixed community of native prairie plants is the toughest, most weed-resistant ground cover that can be established in a roadside.

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So one of his initial goals was to plant and encourage prairie plants and manage them by burning the roadsides in April and early May.

Haywood began his weed-control efforts by completing a plant inventory of every mile of county roadside (roughly 800 miles) — an important step in developing a modern weed-control program. Plant inventories are important because the roadside biologist uses them to locate healthy ditches, weedy problem ditches and ditches where prairie plants are already growing. Roadside biologists use plant inventories to gauge their management success through future comparisons of ditches and plant types.

While planting prairie grasses and forbs is one way to eliminate weeds, the necessary prairie seed is somewhat expensive and may take time to establish. As much as three to five years might be required to allow the slower growing prairie perennials to fill in and claim the soil. So, in the meantime, roadside biologists use a very precise herbicide application called "spot spraying" to get the best weed control possible without stressing adjacent prairie plants. Eventually, the prairie grasses will fill in the gaps once occupied by weeds.

The Story County roadside team goes so far as to spray individual weeds, one plant at a time. This "point spraying" uses less herbicide and poses less risk to the environment. The chemical 2,4-D had been the most common herbicide used for roadside weed control; however, many roadside biologists now use Roundup. Roundup does an excellent job of controlling weeds and is much less toxic than 2,4-D. Now that prairies are being planted in ditches, using Roundup leaves the ditches in an ideal condition for immediate replanting because no chemical residue is left over to harm new prairie plants.

After a roadside area is replanted, the biologist may put up signs designating the area as a special weed-control zone, warning people not to indiscriminately spray or mow the roadside. A prairie roadside, which may take many weeks of work to create, can be easily destroyed by even a light application of herbicide.

Native prairie plants are the Mid-

west's best weed fighter and weed preventer because the prairie grasses and flowering plants are very adaptable. By selecting a few of the prairie species native to any Iowa county, a roadside biologist can design a plant community perfectly adapted for growing on practically any site.

In addition to the adaptability of native plants, the extensive root systems found in prairie soil are much stronger and efficient than the root systems of non-native plants and broadleaf weeds.

Prairie diversity is one more reason native prairie plants are preferred as roadside vegetation over non-native plants. In the old days, roadsides were managed for only one species, but no one plant is completely vigorous, spring through fall. Consequently, aggressive weeds will tend to move in on a pure brome grass stand during the dry period of mid-summer when brome grass is in its weakest condition.

The days of monotonous roadsides are numbered. The beauty, variety and texture of prairie roadsides are coming back. The diversity of native plants ensures that even if openings do occur, the various prairie plant species nearby will readily reclaim the bare ground before weeds can move in. Although prairies and prairie roadsides are certainly not new to the Iowa landscape, they have been sadly overlooked for many years. Iowa's county officials are now recognizing that native prairie provides roadsides with a permanent, hardy, low-maintenance vegetative cover at an overall lower cost to the taxpayer. The end result will be that the citizens of counties with modern roadside programs will have an additional 4,000 to 5,000 acres of public land for wildlife benefits, scenic enjoyment. The future definitely looks bright for modern roadside management in Iowa!

For additional information about roadside management, contact your local county conservation board office.

Tre Wilson is the roadside biologist for Story County.

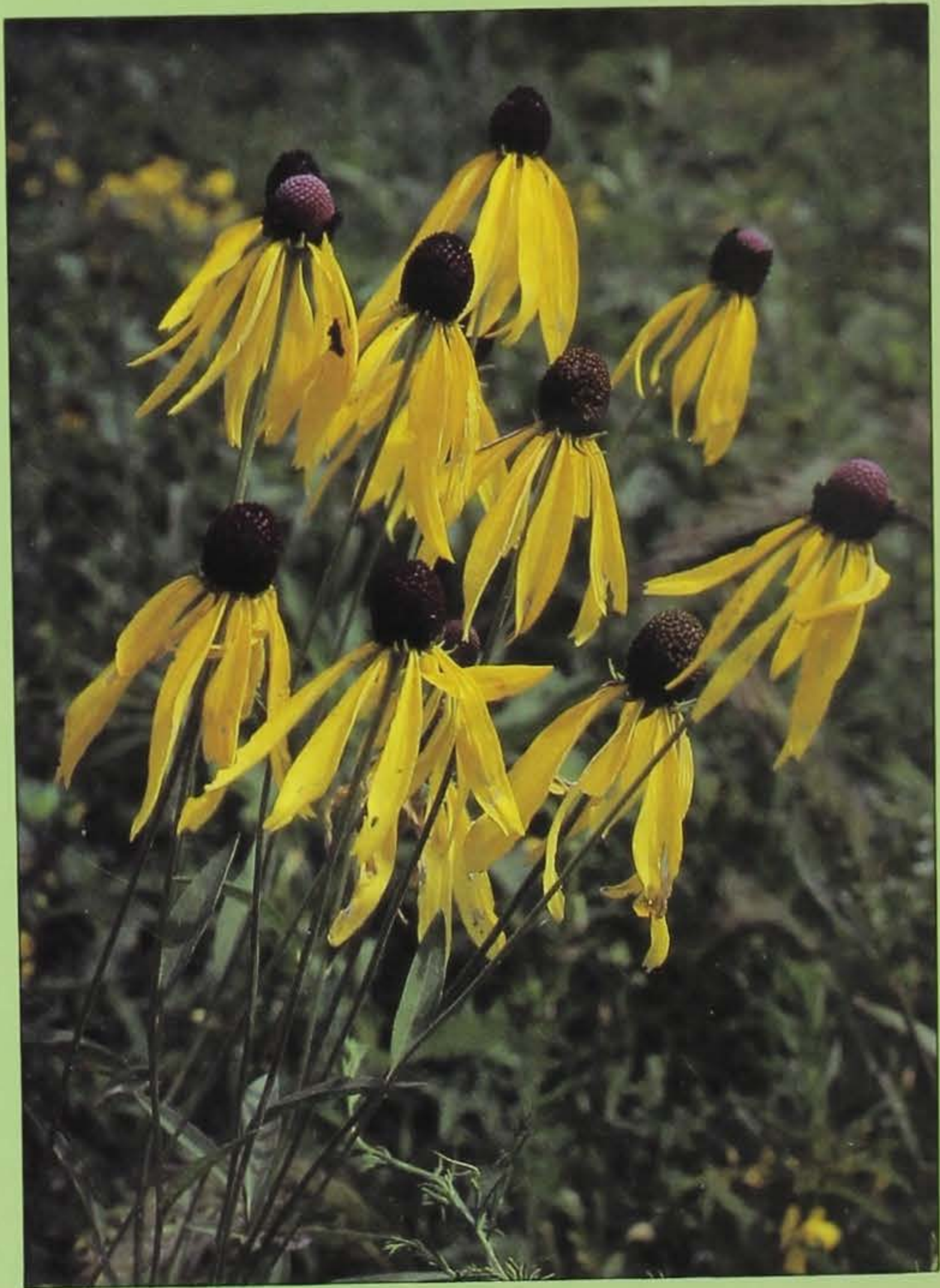
Kathi Bason is the assistant roadside biologist for Story County.



KEN FORMANEK

Blazing star and other native prairie plants can help control the weed problem in Iowa's ditches as well as beautify the roadsides. Many Iowans will celebrate Prairie Heritage Week this year, September 11-17.

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