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The Compromise

Story by Michael Carrier
Photos by Ron Johnson

Brushy Creek State Recreation Area in Webster County represents a unique opportunity for Iowans. Present in this 4,200-acre area are all the elements needed to create a multiple-use recreation area that will serve a variety of users, while protecting Brushy's diverse natural qualities. This article tells the story of Brushy Creek — a story that has taken nearly 30 years to unfold; a story of conflicting interests among outdoor recreationists; and a story that includes a public discussion of environmental concerns and successful resolution of those concerns through enlightened and thoughtful analysis.

In 1962, the Iowa Conservation Commission launched a study to identify sites for large recreation lakes in Iowa. One site identified was along a tributary of the Des Moines River in Webster County, known as Brushy Creek. After further study, it was concluded that the Brushy Creek site contained all the features necessary to create a lake of over 1,000 acres. In fact, the study showed that this lake had the potential of being Iowa's best artificial lake in terms of water quality, fishing and other recreation pastimes.

Land acquisition began in 1968 and was completed in 1975, totaling 4,200 acres at a cost of \$2.6 million. As the Conservation Commission and the Iowa Legislature pursued acquisition of the area, they did so with the intention of constructing a major lake. In 1976, a design was completed for the necessary dam and spillway to create a 980-acre lake. And, in 1977, a master plan for recreation facilities was developed.

From the first land purchase, people began to realize that the state had purchased something much more than just another lake site. Brushy's lower valley was found to contain a mosaic of natural resources that made the area worthy of protection. Exceptional scenic beauty, nationally significant archaeological sites, habitat for a state-listed threatened mammal species, highly significant geological formations and mature forests blend together to create the area known as the lower Brushy Creek valley.

Concern over the impacts a large lake would have on the lower valley resulted in completion of an environmental impact study published in 1982. The study identified in detail the area's significant features. It also considered several alternatives for the development of the recreation area. It was during the study process that the Conservation Commission modified its development proposal to include a smaller, 470-acre lake rather than the 980-acre original version. In 1988, the Natural Resource Commission (formerly the Conservation Commission) modified this proposal to a 690-acre lake after it

learned that the 470-acre lake would not produce water quality satisfactory for long-term recreation and fishing benefits, and after it was shown that the 690-acre lake would not affect lower Brushy Creek valley.

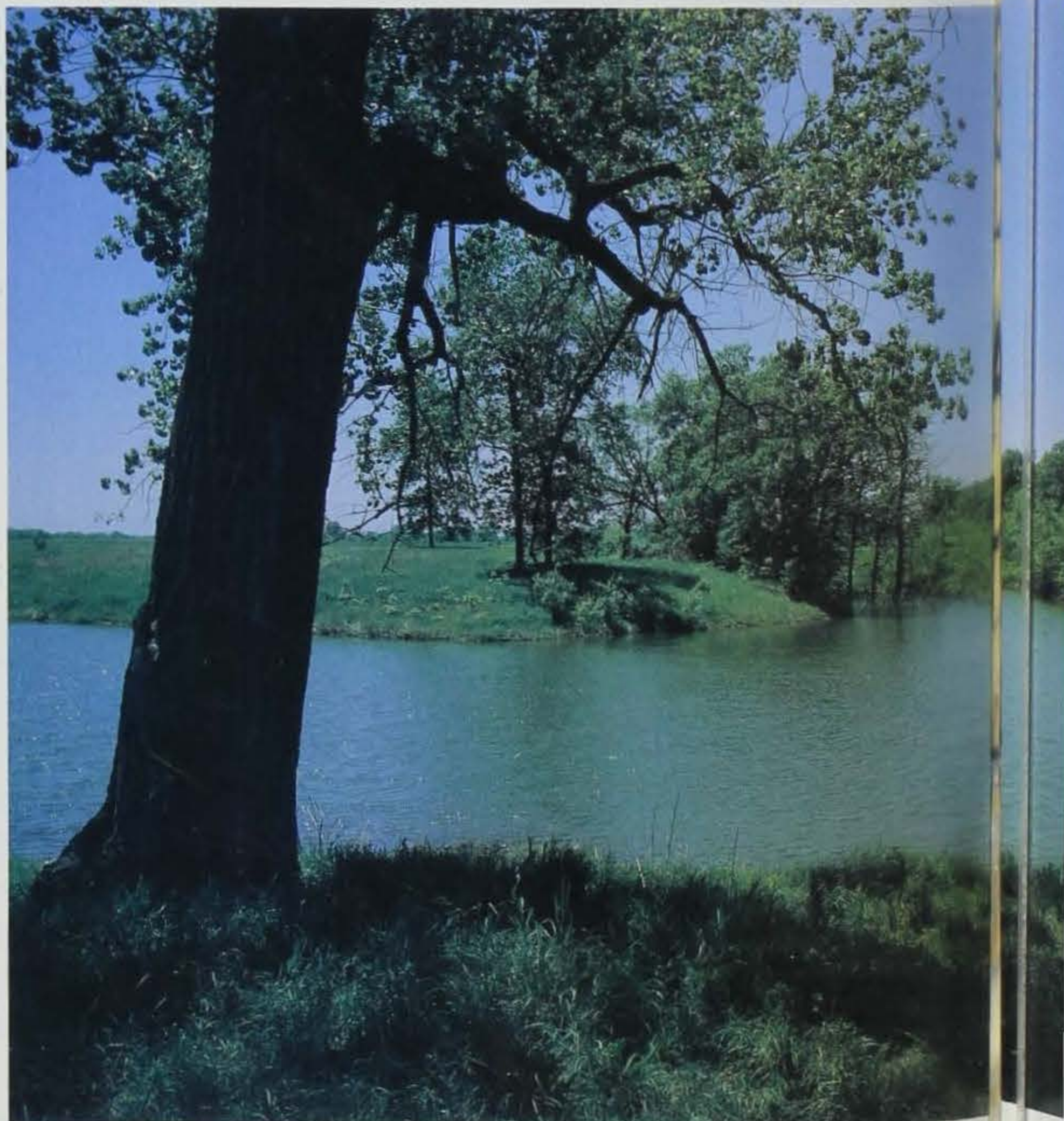
A study was completed in 1988 that was intended to supplement the 1982 environmental impact study. The more recent study reviewed the environmental issues previously considered, but took an in-depth look at the new lake proposal to determine what benefits it would provide. The study concluded:

- Water quality in the 690-acre lake would be comparable to Big Creek Lake in Polk County; second only to West Okoboji.

- The 690-acre lake would not affect lower Brushy Creek valley; thus, habitat for the threatened species of mammal (woodland vole), the high-quality forest, archaeological sites, and the most scenic areas would not be hurt.

- Potential sport fishery in the 690-acre lake would be excellent.

These features, combined with years of additional analysis, public discussion and careful consideration have led the Natural Resource Commission and the Department of Natural Resources to propose development for Brushy Creek that can be viewed as the best possible use of the area. This development is a true compromise between those who favored a 1,000-acre lake and





those who oppose lake construction.

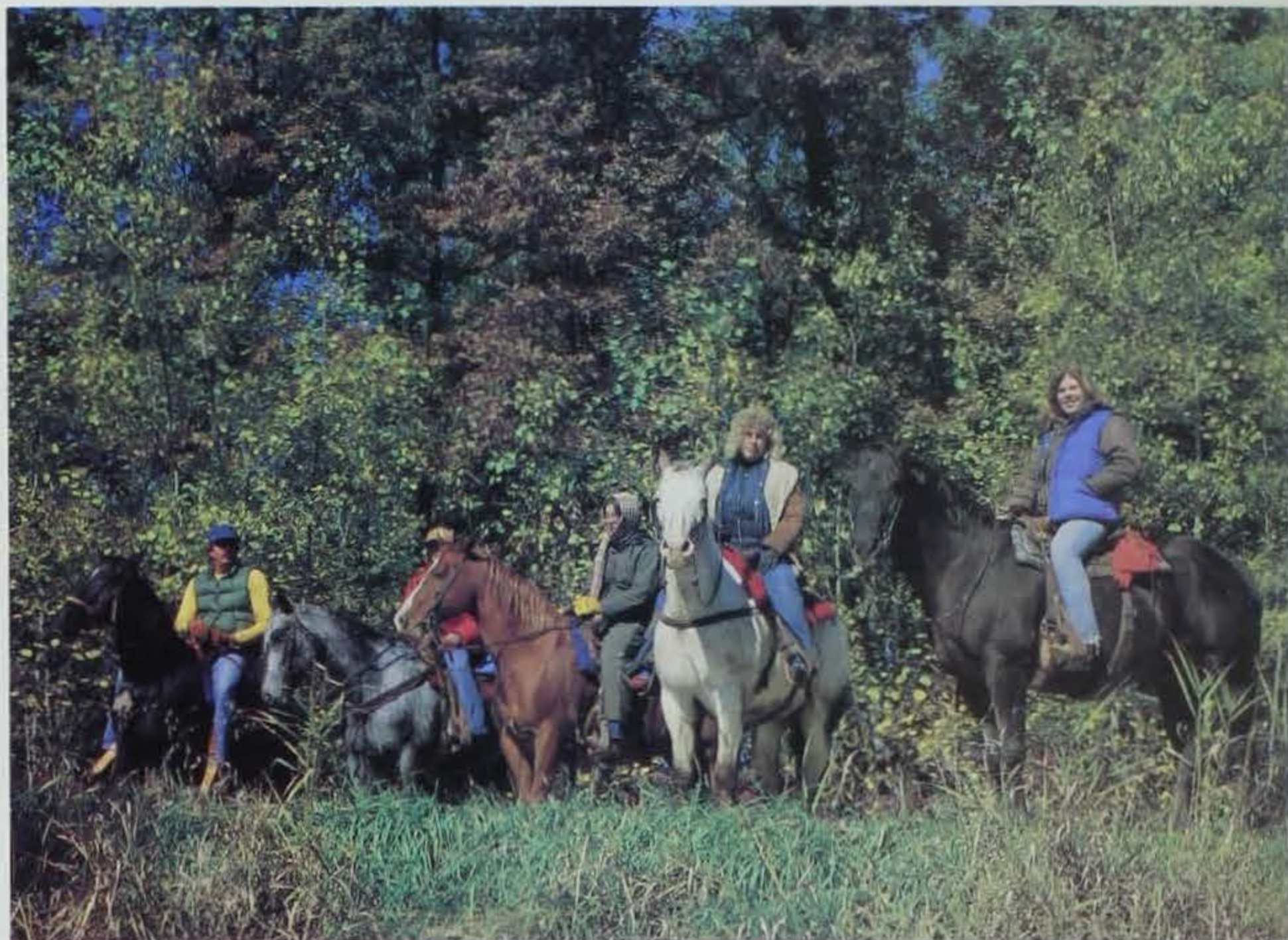
Despite this, opposition remains to the currently proposed 690-acre lake at Brushy Creek. Opponents have campaigned against a lake and in favor of development of smaller lakes on the area. Such a proposal would leave the area virtually unchanged in appearance and in use. For example, horseback enthusiasts, who have enjoyed almost exclusive use of the Brushy Creek area for the past 20 years, do not wish to see the area changed. Anglers, campers, sailboaters and canoeists, however, would gain little from the small lakes proposal and even less from leaving the area undeveloped. They logically prefer a large body of water such as the 1,000-acre lake. Further, studies have shown that any lake smaller than the 690-acre lake would have unacceptable water quality or result in excessive construction costs in relation to the benefits provided.

The compromise of providing a 690-acre lake which does not impact the best features of the area and which preserves the geological/archaeological treasures, fits the Department of Natural Resources mission to provide outdoor recreation opportunities and to protect the environment. Accordingly, the DNR has proposed many develop-

The "new" Brushy Creek Recreation Area will offer water quality second only to West Okoboji and, therefore, provide excellent fishing. At the same time, the 690-acre lake will protect historic treasures of the area, such as Indian burial mounds.



The 690-acre lake at Brushy Creek is a compromise that will give recreational opportunities to many more people.



ments for different types of uses at Brushy including:

- Equestrian and regular camping facilities, both modern and primitive.
- Family cabins for extended overnight stays.
- Extensive trails for horseback riders, snowmobilers, hikers and skiers.
- Boat ramps, beaches and fishing facilities.
- Picnic areas and scenic overlooks.
- 260-acre state preserve for permanent protection of unique features, public enjoyment, research and education.
- Creation of special management areas for forest growth, wildlife habitat and hunting opportunities.

This plan will provide facilities and activities for many more recreationists than currently use Brushy Creek. While some present users may have their special areas relocated, the quality and quantity of their recreation will not be diminished.

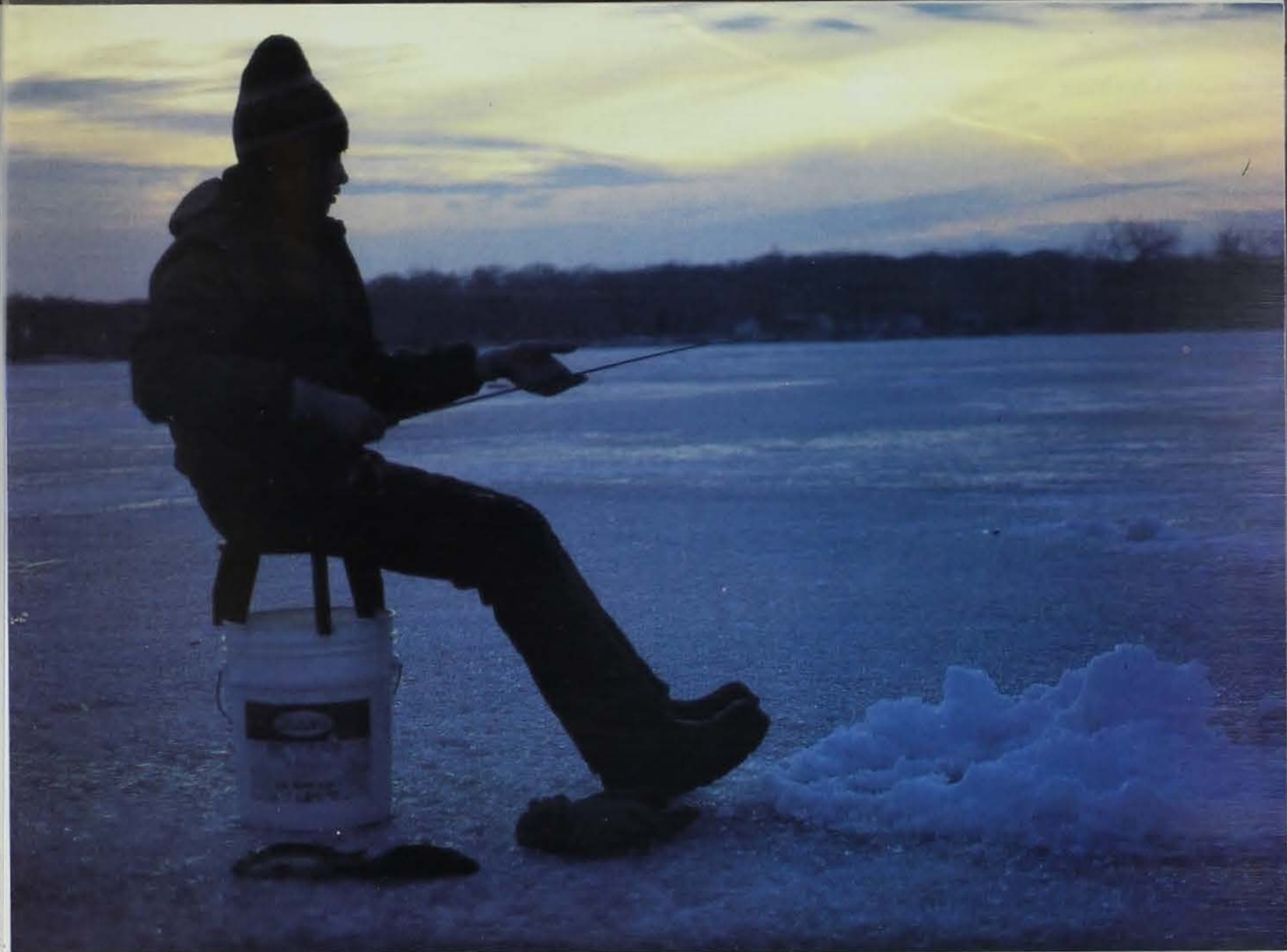
The presently proposed development plan for Brushy Creek represents a true compromise. After years of study and analysis, the environ-

mental issues have been addressed. A development plan is proposed that would provide significant improvement in the many potential uses of the area, representing sound resource management. Nonetheless, some who oppose this plan claim that serious environmental damage will result if the lake is built and the plan implemented. Such claims are simply inaccurate. The battle over Brushy Creek is a disagreement over uses of the area, not over environmental issues. Equestrians disfavor the plan because it will change their present use of the area. Some preservationists oppose the plan because they are committed to preserving all natural areas. The goals of both groups reflect legitimate concerns, however, those concerns are addressed and provided for in the development plan; a plan that will assure their needs are met plus adding benefits for many others.

Why has the DNR proposed development of the Brushy Creek area? Because of the economic benefits it will provide? Or because it favors the interests of those who fish, swim or boat over the interests of other recreationists? Neither is the case. The DNR has proposed lake development because that was

the original intent of the project. Also, because the region that Brushy Creek State Recreation Area serves is devoid of high-quality lakes. While there are numerous lakes within 50 miles of Brushy, none provide the benefits that the proposed 690-acre lake will offer. Finally, the DNR has proposed the lake and associated facilities because they are compatible with the department's philosophy of multiple use of natural resources to produce multiple benefits for the citizens of Iowa. This leads to the basic difference between a recreation area and other DNR lands (such as state preserves, forests and habitat areas). Recreation area management, including that of Brushy Creek, is guided by the multiple-use philosophy, a philosophy that serves Iowa well by providing numerous popular public recreation areas and parks which, in turn, improve the overall quality of life in our state.

Michael Carrier is the administrator of the DNR's Parks and Preserves Division and is located in Des Moines.



ICE FISHING IOWA

I figure there are really only three types of Iowan; (1) those who hate Iowa winters and winter weather in general, (2) those who hate winter but just accept it as something that goes with the territory, and (3) those who actually enjoy it.

Your "Category 1" Iowan will someday retire and move to sunny Arizona, live in a condominium with other "Category 1" brothers from Michigan and Indiana. Snow and negative wind-chill factors will be only cold, fading memories for them.

The "Category 2" Iowan also hates cold Iowa winters (almost as much as our friend in Category 1). He does however, consciously or


not, appreciate some things about living in Iowa. He probably even enjoys the change of seasons.

"Category 3" contains a very different type of human being. This person actually looks forward to many of the things so despised by #1. He probably has some of the traits of #2, but instead of simply enduring the months November through February, he relishes them.

Since this article is about ice fishing in Iowa, only Category 2 and 3 people need read on. Number one-ers, this does not contain anything you would appreciate.

Ice fishing in Iowa is fun, easy to learn, and requires little investment in equipment. Here's how to get started.

It's 
Not For
Everyone

by Bruce Adair 



Clothing

The most important equipment is probably what covers the angler. This is one area where it is not wise to skimp. Start off with a pair of insulated boots. Without them you will be miserable, even on mild days. Combine these with a heavy pair of wool socks. Cover the remainder of your body with layers of clothing as needed. The key word here is "layers." Cover your head with a decent cap (style is not important—keeping the heat in is). You're going to need gloves or mittens, but unfortunately it is often tough to come up with the right combination to keep you comfortable since your hands must often be exposed to various combinations of snow, water and fish slime. On mild days or when fishing from a shelter, a cheap pair of cotton gloves may be adequate. Under more adverse conditions, something more substantial will be needed.

Auger, chisel

It is a basic fact in ice fishing that to be effective, one must first devise a method of getting the bait or lure down through the ice to the fish. A couple alternatives are available; either an auger or a chisel (commonly called a spud bar). An auger is really the best choice for most circumstances in Iowa, but don't skimp. If you buy a decent auger and take care of it, it will last a lifetime. Buy a smaller one than you think you will need. Large diameter augers are no fun at all, even when sharp. In the bluegill-crappie lakes of southern Iowa, I have never needed anything larger than the five-inch diameter I have used for years. A friend of mine uses a four-inch and loves it. I personally think that gas augers are nothing but a noisy toy for most ice conditions in southern Iowa. However, when dealing with the three feet or more of ice often found to the north, they have a place, especially if you plan on boring many holes.

Tackle

Panfish (bluegills, crappies, perch). You can get about as simple or as complicated as you want for

your ice fishing tackle. I've seen everything from old broom handles with line wrapped around a couple nails, to custom made graphite rods and reels. Panfishing only requires a little light action rod with a couple pegs or a small plastic reel to hold the line (two- to six-pound test). Keep everything tiny. Use little flashy lures with #6 to #10 hooks, tipped with a small grub. Minnows can be deadly, especially

for crappies. They can also be nuisance to keep alive and to use. Remember what I said earlier about keeping your hands warm and dry.

Walleye, northern pike. Moving up from bluegills, perch and crappies to something a little more substantial requires beefed-up equipment. Line in the 6- to 12-pound test range is pretty common for the winter walleye angler. A reel with



WAYNE LONNING



RON JOHNSON

an adjustable drag and a rod with a bit more backbone would be a good idea. Your lure size should increase accordingly. Keep in mind what you're trying to catch. Live minnows or lures tipped with minnows, cut bait or even fish eyeballs are all effective.

Tip-ups loaded with heavy dacron line, monofilament leaders and a hefty chub or shiner for bait get a lot of use by pike anglers along the backwater areas of the Mississippi River. This is a totally different ballgame, but very effective and a lot of fun when conditions are right.

Shelters

Get as simple or as elaborate as you want. Shelters are not mandatory for ice fishing, but there are days when they sure are nice. Often all that is really needed is some sort of a windbreak. A number of tents have appeared on

the market, however, it is easy to find or devise plans to make your own portable shelter.

Semi-permanent shanties are another option. Let your imagination run if you like, but remember, the bigger and more elaborate you make the thing, the heavier and harder it will be to move. Ice fishing shelters left on the ice overnight must have the owners name and address printed on all sides. Also, amber reflectors must be attached to all sides of any shelter on the ice after sundown. Shelters must be removed from all state-owned waters by February 20 or ice-out, whichever comes first.

Accessories

Bobbers—Many anglers use a spring device taped to the end of the rod to detect the slightest nibble. Some still prefer a small bobber floating in the hole, made either of cork or plastic (keep it tiny).

Bucket—You will need something to carry your rods and equipment, and also something to sit on. A five- or six-gallon plastic bucket works great.

Skimmer—Used to keep the ice and snow out of your hole. Almost a necessity on really cold days.

Ice creepers—I waited too many years before I finally bought a pair. They are tremendous on glare ice.

Electronic fish locator—Nice to have at times, especially if you are unfamiliar with the lake. But, don't make the mistake of spending all your time playing with the machine instead of fishing.

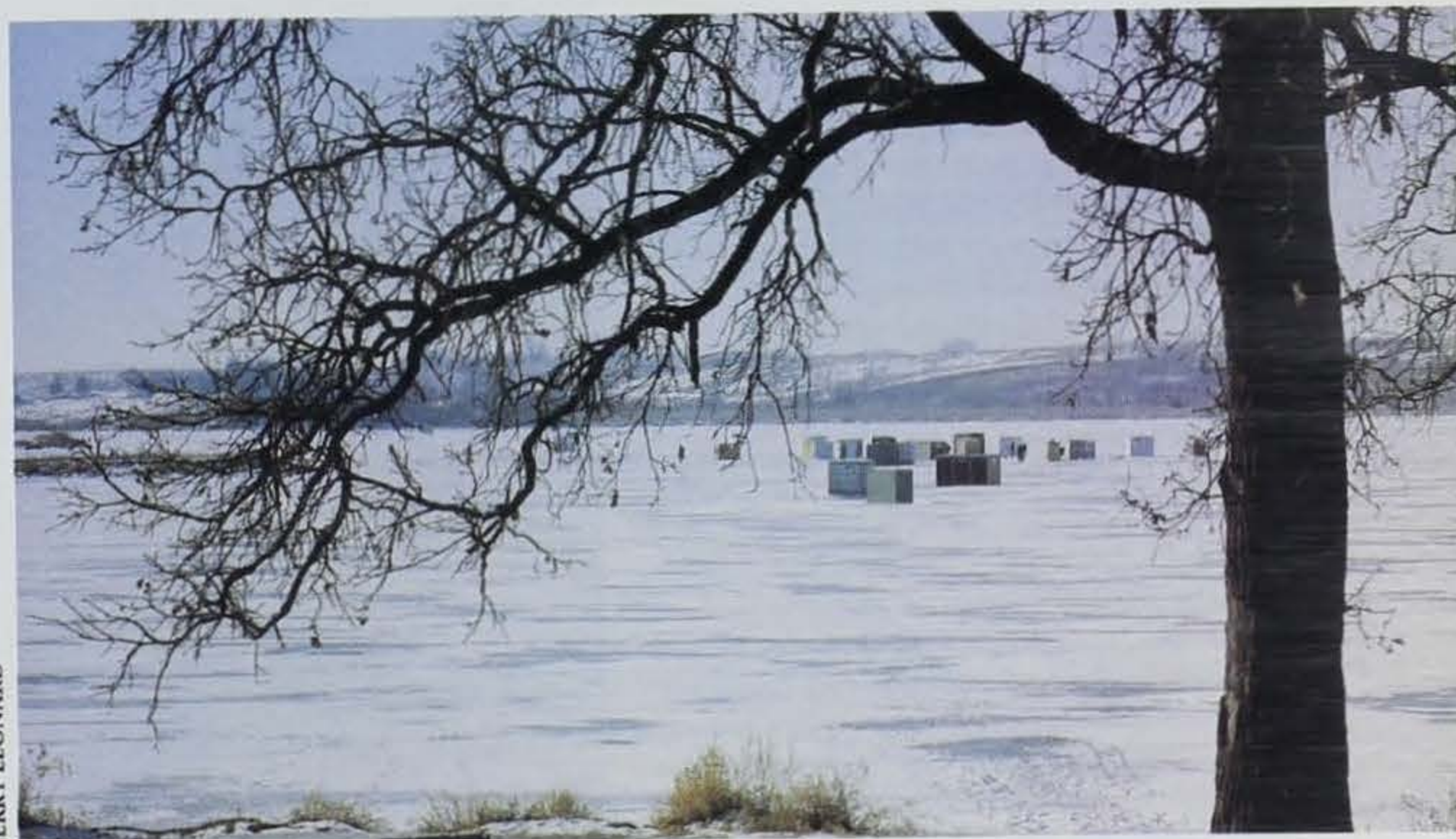
Maps—A topographic map of the lake bottom can be a great help especially if the lake is new to you. The DNR has topo maps of most public lakes in Iowa.

Sled—Great for easy transport of your equipment. "Borrow" the kids' old one.

Miscellaneous—thermos, hand warmer, electric socks and gloves, gas lantern, stove or heater, radio, etc.



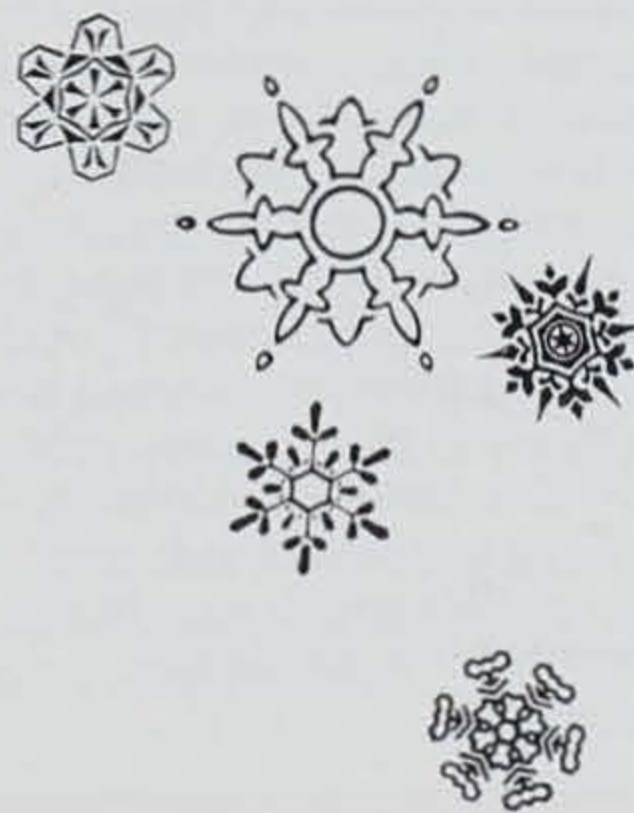
RON JOHNSON



JERRY LEONARD

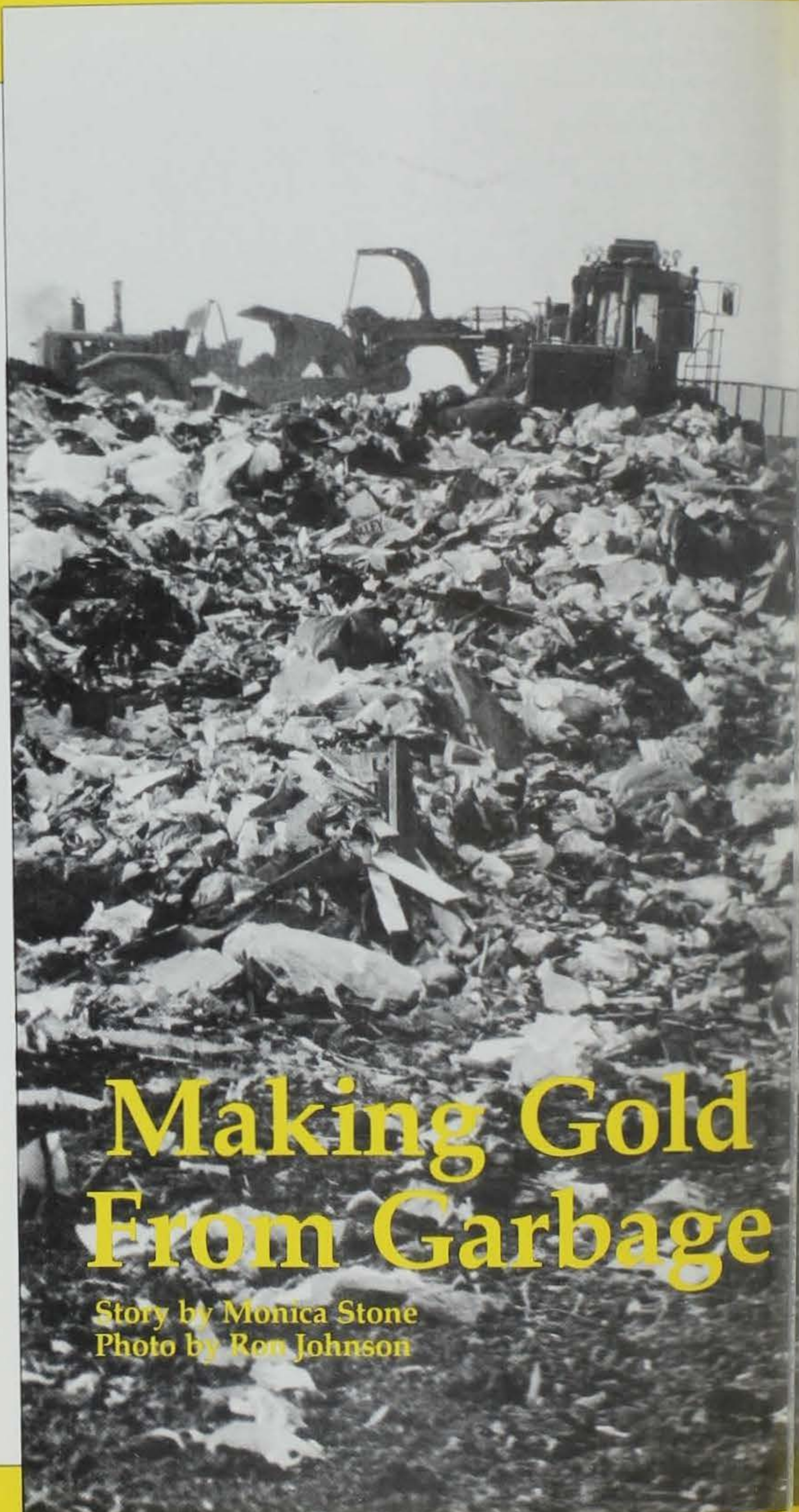
The main point is to get out there and enjoy what our Iowa lakes have to offer during these snowy, winter months. Your wimpy neighbors may shake their heads in amazement and shudder at the thought of sitting on a bucket over a frozen lake. But, I'll bet they don't turn down those packages of fresh fillets you offer them when you return.

Bruce Adair is a fisheries management biologist located at the Cold Springs District Office in Lewis.



"There's gold in them thar hills!" That is what many energy conscious people are saying these days. This time the hills are not only in California and the "gold" is not a finite resource. The heaps and mounds of garbage created every day are a gold mine of energy saving possibilities. The solid waste found in Iowa's 86 landfills is an infinite resource. Every day, our state produces 5,500 tons of solid waste. At the present time, all of our solid waste is disposed of in landfills, with the exception of the plants which burn municipal solid waste in Ames and Sioux Center. In the past, landfilling was an acceptable disposal method but looking to the future it can easily be seen that changes must occur. The good news is that not only can we find alternatives which will save energy, in addition to protecting the environment, we can use existing landfills in the conservation of energy as well.

What began as an environmental problem in landfills has become an energy saving boon. As more and more solid waste is compacted into a landfill, the organic materials decay, creating a build-up of methane gas. Methane gas can be used as an energy resource. One study done at the Cedar Rapids Municipal Landfill in Linn County shows the landfill can produce one million cubic feet of gas per day. This production could generate enough electricity to replace the burning of 30 tons of coal per day. The gas generated at this landfill would not only save exhaustible energy resources, but it could heat 700 homes each year. Similar energy saving production could be accomplished in Black Hawk, Polk and Scott Counties, and feasibility studies have tentatively indicated 11 other landfills which may have the potential for methane gas production.



Making Gold From Garbage

Story by Monica Stone
Photo by Ron Johnson

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This solution is not a cure all, though. The problems of limited landfill space and inorganic materials which do not break down in the soil still exists. Landfilling is not an energy saving alternative. Besides being costly and less environmentally safe, it allows us to ignore one very important alternative - recycling.

Recycling can be as simple as a Boy Scout paper drive or as complex as new waste-to-energy plants. The key in recycling is the material recovered and energy saved through the reuse of a product. The simple Boy Scout paper drive can save 34 percent of the energy used to produce new newspaper, and that is only the beginning. The recycling of aluminum (including pop cans) can save 95 percent of the energy over the cost of producing new aluminum. Recycling glass can save up to 22 percent and recycling common plastics (polyethylene) could save 96 percent.

Plastic and glass recyclers have discovered many ways to use the materials brought in for recycling. Polyethylene terephthalate (PET) and high density polyethylene (HDPE) products can be used over again rather than allowing them to contaminate our landfills. Old milk jugs, pop containers, detergent bottles and toothpaste dispensers can be remade into many useable products. For example, Plastic Recycling, Inc. of Iowa Falls accepts used plastic products and melts them down for making such products as park benches and car stops. Instead of simply tossing our plastic products into a landfill we can save energy and our environment by recycling.

A recycling center in El Cerito, California accepts wine bottles separately from other beverage bottles. They are then washed and reused. Far less energy is involved in heating water to wash these

bottles than is used to melt glass cullett. Recycling in this way also saves the energy that would be needed to manufacture new glass cullett, multiplying the energy saving figure of 22 percent many times.

Another type of recycling is more appropriately called energy recovery. Energy recovery is the capturing of the energy value of a material through incineration. Energy recovery systems can be divided into two categories mass burn and refuse derived fuel.

Mass burn systems will take waste as it is delivered to a recovery plant and burn it. The heat released during combustion is captured to produce energy for heating purposes, to generate electricity or both (co-generation). If only one half of this potential energy resource from Iowa's landfills was recovered, over \$13 million per year would be kept in Iowa that would otherwise be spent on imported energy. At the same time, through incineration, the volume of municipal solid waste could be reduced by 90 percent, extending the life of our landfills for several years.

A refuse derived fuel system (RDF) comes from the garbage each of us throw away. The fuel is prepared by separating the organic and inorganic portions of the waste. This means metals such aluminum and other non-combustible materials like glass are removed, leaving the "fluff" for burning. The RDF can be burned in a boiler specifically designed for this fuel or co-fired with another fuel such as coal or wood. The plant in Ames is an example of a facility using municipal solid waste and coal to produce electricity. The Sioux Center operation uses fuel pellets made from the municipal solid waste.

Awareness of the environmental considerations of RDF plants is

very important when talking about their capabilities. The perception of solid waste incinerators as smokey, smelly, facilities putting out toxic pollutants is no longer completely accurate. Although it is not possible to have a solution to solid waste management that does not have an environmental impact, there are many steps we can take to reduce the impact to acceptable levels. Scrubbers, filters and combustion process controls are all helping to ease the amount of pollutants emitted by RDF plants.

Most of the possible environmental problems are caused by inefficiently run plants. Dioxins, sulfur dioxide, carbon monoxide and a host of other pollutants can be controlled when an RDF plant is run correctly. Incomplete combustion is the main cause for the excess quantities of pollutants. When RDF plants are burning at sufficiently high temperatures, for long enough periods of time, with the right amount of air added to the fires, pollutants can be controlled. In most cases, scrubbers and filters are added to the smoke stacks and they rid the smoke of any excess pollutants contained in the smoke. Scrubbers are especially useful because they add lime to the gases escaping in the smoke. The lime causes particles to become more alkaline, which makes the ash more stable when it is landfilled.

Although the energy saving incentive alone is often enough to persuade companies and people to recycle, markets which use the recovered materials are critical to really get the programs under way. Mining Iowa's energy "gold" will be a boon for the future—there is gold in garbage, it is just a matter of perception.

Monica Stone is an intern with the DNR's energy bureau.

A majority, but not all, of Iowa hunters would answer no to the above question. Although more an exception than the rule, many Iowa couples and families enjoy hunting together as much as other outdoor recreational activities.

One of the most popular themes for outdoor writers is the topic, "Why do men hunt?" It is a fare that has drawn philosophers, social scientists and outdoor writers to the table. When an occasional article features a woman who hunts, it is often associated with a note of discovery or surprise . . . and with good reason. As a female wildlife manager from another state pointed out, "Hunting is probably the last frontier to be fully explored by women."

Nationally, only six percent of all hunters are women, and only three percent of all women hunt. That figure may well be higher in Iowa where other studies suggest that women participate recreationally more than in any other state. Of 92,400 paid shotgun deer licenses in Iowa in 1987, between four and five percent were purchased by women.

An array of reasons could be cited for the slow acceptance of hunting among the female population. To mention a few: traditional perception as a masculine activity; lack of female role models; lack of teaching and encouragement by male friends and family members; personal aversions to killing; dislike or fear of firearms; and inability to find outdoor clothing and guns that are designed to fit women.

Hunting has long been a male-dominated recreational activity. Women's choice of leisure activities has been traditionally influenced by their roles in family and community, thus often have centered around home and indoor activities. The attitudes of men towards female participation in hunting often reflect indifference. As one male hunter described it, "It's an equalizer for women and some men don't like it."

Male hunting enthusiasts have begun to realize the future of hunting, as they know it, could be at stake. It is estimated that only 40 percent of those born in 1988 will



grow up in a two parent family. What will the future of hunting be without male models or motivators for young boys and girls? Will female single parents permit their children to own guns, hunt or attend hunter education classes? Male hunters, too, are very aware of the voting power that women would have if hunting were put on a referendum.

To influence the attitudes of women towards hunting and to stimulate further interest and participation in the shooting sports, it is important to know more about the life histories, motivations and satisfactions of those females who do hunt. To accomplish this, the authors conducted a mailed questionnaire survey of over 200 Iowa women hunters, selected at random from license sale records. Actual participation in the hunt was then

verified through phone calls. Some mention will also be made in this article of women hunters in Wisconsin and Washington, where the study was replicated.

Characteristics and Development Influences

Among the women who participated, the most popular form of hunting was upland bird where 63 percent took to the field. This was followed by small game (56 percent), and deer/gun with 38 percent participation. Approximately 83 percent of female subjects were married; of these, less than one fifth declared themselves as full-time homemakers. We learned that half of these women began to hunt after 20 years of age. When asked if they had taken a hunter education course, only 11 percent answered yes (a figure much lower than for

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Is There a Woman in Your Hunting Party?

Story by Karen Peterson Craft and Dr. Robert Jackson

Photo by Ron Johnson



Wisconsin or Washington female hunters). Of these, 57 percent took the course before their age 16.

Studies of male hunters consistently report the importance of fathers in introducing boys to hunting and influencing their development. While 34 percent of the female subjects responded that their fathers introduced them to hunting, the largest percent (51) reported that spouses filled this role. Where the father served as mentor, certain factors appeared frequently. One might be described as the "tom-boy" syndrome. As one woman stated, "I only have one brother and my father would have liked more, so I grew up as a "tom-boy" and loved every minute of it." Another woman commented, "I was definitely a tom-boy and played with my brother's friends. I have always enjoyed being outside

and doing things designated as "male" activities." A second factor frequently cited was that the young daughter felt she could earn approval from her father by learning to hunt.

Husbands not only introduced more women to hunting, but were also rated as most influential in their development as a hunter, (self influence was ranked second and the influence of fathers, third). Among the comments on the developmental process were, "My main reason for hunting is companionship with my husband. I like to share in his favorite pastime," and "Hunting makes me able to spend time with my husband while he enjoys his second love (I'm his first)." Another reports, "Hunting has become a true family activity, even though our two girls may not actively partake in the actual shooting of game."

Many women admitted that an important factor in learning to hunt was desire to share more time with their husbands. "During hunting season I never saw him. I wanted to spend more time with him so I started going scouting and learned how to shoot his guns. One thing led to another and I ended up with a bow of my own which he made me practice with for a year. Now he calls me his best hunting buddy." Our female subjects consistently reported that they were expected to move towards their husband's recreational interests, never the reverse, but as one stated, "If you can't beat 'em - join 'em!"

Motivation and Satisfaction

Each Iowa female hunter surveyed was asked to evaluate 17 fac-

tors in terms of their relative importance in motivating them to participate in outdoor recreational activities. The top rated item was desire to be outside. This was followed by: opportunity to share interests of husband; popularity of activity with my husband; need to get away and escape; and need to improve and maintain my health. In contrast, the lowest ranked items included socialization, competition, meeting the expectations of others, and opportunity to perform in front of others.

As a 29-year-old medical student put it. "My reasons for hunting are many, but most important I love wildlife, nature and just being outdoors. I love to prepare wild game and try different recipes. Hunting provides me with a peace and an appreciation for God's wonderful creation."

Hunting alone and hunting with other women were given the lowest two ranks among six categories of hunting companion preferences, while hunting with a spouse and hunting with family members were ranked highest. The low preference for hunting with other women could be due in part to the inability to find women companions who hunt. It is the female author's opinion and experience that most female hunters enjoy the companionship of another woman hunter when possible. In a 1984 survey of women hunters in Kansas, 24 percent reported hunting in groups with both males and females, and two percent hunted exclusively with female companions.

Other female authorities on recreation have recommended participation with other women as a

device for improving motivation. Some of our subjects frankly admitted that "men can intimidate women," and described the anxiety when "every male eye in the group is on you waiting for you to miss." One female shooting instructor in another state suggested that men ask themselves what it would be like to go to a first ballet class, one filled with women who know all the social nuances of being a ballerina.

No other factor associated with hunting or fishing has been so intensively studied as satisfaction. At one time, managers seemed to assume that hunter success in bagging game was the only determinant of hunter satisfaction. The authors would contend that satisfaction is really determined by expectation, or literally, what the hunter carries to the field in his head. We measure hunting, work or other life experiences against these expectations. For example, our research indicates that bow hunters usually have very different expectations that gun hunters; they do not need to kill a deer to be satisfied. Because of their different childhood experiences and up-bringing, a woman's expectations could be very different from those of her father, brothers or spouse.

A set of factors associated with hunting satisfaction were rated by the Iowa women as well as females from Washington and Wisconsin. An identical set of factors was presented to a comparison group of 250 male hunters from Wisconsin. The same three factors were ranked highest by women hunters in all three states: nature appreciation; seeing game; and exercise and outdoor activity. The comparisons across the three states suggest that female hunters are remarkable for their similarities rather than their differences.

Male deer hunters in Wisconsin, responding to the same factors, scored seeing deer highest and using hunting skills as second. Satisfaction from hunting skills seems to emerge, at least in male hunters, as a product of many years of experience. Many of the other differences in satisfaction between the two sexes were associated with

the so called "macho" factors. Men found greater satisfactions in getting to shoot, marksmanship, killing game, telling hunting stories, displaying a trophy, and in doing better than friends.

Our female subjects were asked the open ended question, "In what ways do the satisfactions that women derive from outdoor recreation differ from those of men?" Responses consistently stressed a less competitive approach to hunting.

Towards Greater Participation

What can we do to help women experience hunting? First, it is obvious that women will have trouble accessing the shooting sports. Hunting is best learned by personal experience and from seasoned hunters. Will a young girl of 12 or 13 whose mother is unlikely to be a hunter and whose father hunts be offered the same hunting opportunities as her brothers?

Currently, 58 of Iowa's 1500 certified hunter safety instructors are women. Our hats are off to these women who already instruct in hunting education and shooting programs and do it well. In the words of Sonny Satre, the Iowa DNR's recreation safety coordinator, "Some of our *very best* instructors are women". A female model teaching in the classroom and on the shooting range can clearly be helpful in providing positive reinforcement and stimulating interest of young girls and other women.

Once in the classroom, young women will do well. Shooting instructors across North America consistently report that women can, and do, become excellent shots and are typically more teachable than young males. To quote the shooting editor of a national magazine, "Shooting is a competitive sport in which boys, girls, men and women can all compete and hope to excel."

It would be nice too, if more women were welcome at more of our shooting ranges and clubs. Some can only participate during the summer when the men are not thinking hunting. The trend in sportsmen's organizations has been

slowly moving toward acceptance of women members. Memberships in groups such as Ducks Unlimited have changed to include not only male hunters but nonhunting males and females as well. Ducks Unlimited in Iowa, for example, now has 13 ladies' chapters throughout the state.

But let's turn to our hunter-subjects for a final summary. The last question of the survey asked them how they would justify hunting to another woman. Most of these women wanted to enlist other women into the shooting sports. One summed up her frustration with, "I've tried - I can't." A selection of some of the other responses included "It's a terrific hobby that brings you closer to nature and your husband" . . . "It sharpens your senses and gives you a feeling of independence" . . . "First, it is such good exercise; also if you are a farmer's wife (like I am) you get to know the fields in your section, the wet holes, the sandy, poor ground, the big snow drifts and the deserted old farmsteads" . . . "It teaches you to love and respect all aspects of nature, and gains you the respect of the men as an equal or better. It sure gets men's attention when you talk their language." Many women justified hunting as a food source; "Shooting a rabbit for food and eating it is just a more difficult way of shopping for meat."

Finally, as so many male hunters have told us in our studies, shared recreational experiences with their wives and daughters were unequaled in satisfaction and one of the strengths of their marriage and family life. One of the authors has shared his fishing interests with a wife and daughters now for almost 40 years. "But I've never taken any of "my women" hunting . . . my "second love." It's too late, but I can only ask, "What have I missed?"

Karen Craft is a wildlife research biologist located in Boone.

Dr. Robert Jackson is a professor of psychology at the University of Wisconsin, Lacrosse.

AN IOWA VICTORY

by Laura Spess Jackson

Historically, river otters were one of the most widely distributed mammals in North America, occurring along waterways throughout most of the United States and Canada. By 1900, the otter had been reduced throughout much of its former range, and by 1960 it has been eliminated from most of the Midwest and central plains states. In Iowa, the otter was extirpated from the central and western portions of the state by 1929. However, a small population of otters survived in the northeast part of the state along the Mississippi River. Although this population of otters along the Mississippi survives today, it never expanded or re-colonized the other areas where otters had been eliminated.

The demise of the otter was due to several factors. Prior to the 1900's, otters were vigorously pursued for their pelts. There were no hunting and fishing laws back then, so unregulated market hunting decreased the number of otters in many areas. Once the fur market was regulated, the otter should have been able to rebound, but unregulated changes in the landscape destroyed much of the habitat needed by otters. Wetlands were drained, rivers were channelized and forests were cut. Siltation and chemical pollution of waterways affected the otter's food source. The otter could not adapt quickly enough to the drastic changes and degradation of the areas it used to call home.

Fortunately, the changes have slowed. People have realized that water and environmental quality are important to otters as well. Some degradation still occurs, but we are trying harder to reduce the negative impacts of civilization. We've also come full circle, and now we are restoring otters to their former haunts.

In 1985, the Nongame Program initiated the otter restoration project. To obtain otters, the Iowa Department of Natural Resources traded turkeys to the Kentucky Department of Fish and Wildlife Resources which in turn purchased otters from Louisiana. The first bayou otters were released at Red Rock Reservoir south of Des Moines in March 1985. To document the survival and dispersal of the first 16 otters, small radio transmitters were surgically implanted into each otter's abdomen by a team of surgeons from Iowa State University's School of Veterinary Medicine. These transmitters allowed research personnel to track the movements of the otters for the next 15 months.

The research showed that more than 85 percent of the otters survived their first northern winter. The otters used beaver lodges, bank dens, log jams and brush piles for loafing and denning. They ate rough fish such as bullheads, carp and drum, plus crayfish, frogs and turtles. Some male and female otters were located together, so it appeared that they were at least trying to reproduce. The news was so positive that plans for additional releases were made.

In 1986, otters were released at Springbrook State Park (Guthrie County), Boone Forks Wildlife Area (Webster County) and of course, Otter Creek Wildlife Area (Tama County). Whereas the 1985 release was only attended by a few media and Department of Natural Resources personnel, the 1986 releases were attended by hundreds of school children.

"If the otter can be restored to many of its former haunts, it will be a victory not only for the otter but for man. It will mean that man has reversed the destructive abuses of civilization which have threatened the eventual extermination of both species."

Leonard Lee Rue III

In 1987, the otters made another splash as they were released at Rathbun Reservoir (Appanoose County) and the Little Sioux River near Peterson (Clay County). The grand finale was in 1988 when otters were released along the Nodaway River (Montgomery County), Sweet Marsh Wildlife Area (Bremer County) and the Wapsipinicon River (Linn County). Over 2,000 people watched the otters as they stretched and played with each other before disappearing into the water.

A total of 176 otters were released into Iowa by the Nongame Program. At each release site after 1985, 10 male and 10 female otters were liberated. The otters continue to have tremendous survival. Thus far, only 11 dead otters have been found. Three otters died of unknown causes, two were hit by cars, one was a research fatality and five were accidentally trapped. Trappers have been very supportive. Traps cannot be set within 10 yards of a beaver lodge, in the areas where otters have been released. This allows otters to use the lodges without danger. Compliance with the law has been excellent.

Necropsies are performed on dead otters to determine the animal's body and reproductive condition. This provides insight on the overall health of the animals and whether or not the animals have successfully mated. If you find a dead otter in your travels, please report it to your conservation officer or nearest state wildlife biologist.

The final goal of the reintroduction project is to document reproduction. Unless the otters produce young, they will never become a viable part of Iowa's wildlife. Observations of young otters were not expected until two years after a release. Although they were released

continued on page 18



HOME AGAIN

Remember—

Check the
Chickadee

It's For
You.



during the spring, the animals were expected to become accustomed to their new home rather than mate. Consequently, they would not mate until a year after their release. To complicate matters, after mating the female holds the embryo for over nine months. With this delayed implantation, the otters were not expected to give birth until their second spring.

Young otters are born blind, toothless and dependent on their mother. They have a silky black coat, but it is not waterproof at birth. A few days after the young are born, the female mates again. The pups open their eyes when they are about 10 to 12 weeks old. After the pups emerge from the den, the male sometimes returns to help the female raise the young. The young are water-shy at first. After some encouragement from the parents, the pups dive in and learn how to swim.

The young stay with the adults through their first winter. They disperse to establish their own home ranges prior to the adult female giving birth again. Until they are nearly a year old, the pups are smaller than the adults. An adult otter weighs 10 to 25 pounds and is 36 to 50 inches long. Thus, otters are much larger than mink, which weigh less than three pounds, or muskrats which weigh two to four pounds. Otters also have an elongated weasel-like look with a large, furred, roundish tail.

The easiest way to document reproduction was to observe the smaller pups with the adults. To date, through public and DNR observations, reproduction has been documented at Springbrook, Boone Forks and Otter Creek.

Overall, Iowa's otter reintroduction program has reached its first goal. Otters have been released in nine different areas, they survived our winters and they are beginning to reproduce. Although the Nongame Program has concluded its otter releases for the time being, Iowa State University's Fish and Wildlife Club, Iowa Trapper's Association and Furtakers of Iowa hope to release additional otters from funds raised from otter t-shirt and sweatshirt sales.

To continue to monitor the progress of the otters, the Nongame Program has developed a computer program to keep track of observations of otters, their young or any mortalities. If you observe an otter or otter sign, please note, if possible, how many otters there were, if young were present, your location and the date. Then call the Nongame Program at 515/432-2823. We'll ask you a few additional questions, then record the information in the computer.

To commemorate Iowa's otter victory, the Nongame Program produced an otter poster to use in its annual fund-raising efforts. For more information on the poster and how to obtain it see "Home Again" on this page.

The Nongame Program has recently developed a slide show about otters which is available for schools, county conservation boards or other groups to borrow. Contact the program at the above phone number to make arrangements.

The successful reintroduction of the otter has been the result of the work and dedication of numerous peo-

ple. The Nongame Program wishes to thank DNR's administrative, management and furbearer research personnel, Iowa State's Veterinary School, Iowa Trapper's Association, Furtakers of Iowa, Mitchell County Conservation Board, those people who are working toward releasing more otters and those people who have taken the time to report the otters they have observed. We enjoyed the presence of the thousands of people who came to the otter releases and hope that in the future thousands of other people will be able to observe an otter while they canoe, hike or fish throughout Iowa.

Laura Spess Jackson is the urban biologist for the department and is located in Boone.

Home Again

The Nongame Program is pleased to announce its third wildlife poster. This year's poster features a beautiful photograph of one of the otters recently released through the Nongame Program. A small portion of the photo can be found on pages 16 and 17.

The poster measures 19 x 29 inches and includes a section describing the life history of the otter and the accomplishments of the Nongame Program.

The photo was taken by Ron Johnson, photographer on the *Iowa CONSERVATIONIST* staff, and it provides a reminder that Iowa's otters are "Home Again." The poster is also an expression of thanks to all the people who have contributed to the Nongame Program.

To obtain a copy of the poster:

1. Check with your income tax preparer. Many of them ordered posters to give to those who contribute to the Fish and Wildlife Protection Fund (Chickadee Checkoff) on line 60 of the 1040 or line 13 of the 1040A. If your tax preparer did not order posters, ask them to write the Nongame Program and we will supply them.

2. If you do your own taxes, or already contributed to the Nongame Program via the Fish and Wildlife Protection Fund, send a card with your address plus \$2.50 for postage and handling to:

IOWA NONGAME PROGRAM
Department of Natural Resources
Wildlife Research Station
Route #1, Ledges Road
Boone, IA 50036

3. If you forget to contribute on your income tax form, you can send a direct donation to the Nongame Program at any time. To receive a poster, send in your donation plus \$2.50 for postage and handling to the above address.

4. Limited quantities of posters will be available at special events such as Bald Eagle Days.

Address all checks to NONGAME PROGRAM DONATION. Thank you for your support. We hope you'll remember to Check the Chickadee because it truly is for you!

WARDEN'S DIARY

by Jerry Hoilien

One of the hardest things for a game warden is to keep his mind and priorities straight. With the ever-changing seasons, it's tough. One day you're trying to concentrate on hunting, and the next day it's fishing. Throw in trapping, commercial fishing, hunter safety, etc. — it keeps you on your toes.

In the summer, even though you might be in the full swing of the fishing season, you're still mopping up after some leftover deer cases from last fall and winter. With today's court system, it is not unusual to be going to court in May over something that occurred last November or December. Delay seems to be the main defensive maneuver anymore.

Trials are most interesting sometimes, and you never know what a judge or jury is going to do. The laws of evidence apply to all cases, so a chain of possession must be kept as well as the evidence itself. That can prove quite difficult when you consider perishable items like deer meat. Then when you've got a whole deer, complete with head, hide and antlers . . .

I remember one case involving not one, but three deer — two large trophy bucks and a small doe — plus three wild turkeys. All that takes a lot of freezer room. When you look at the storage cost, you wonder sometimes just who was *wrong!* In many cases, it is really a trial of the officer's patience and procedure. Did he do everything right and according to all the rules of evidence? If not, out goes the case. It is extremely frustrating for a warden to sit in court and watch his evidence (perhaps a whole deer)

disappear in legal smoke before his very eyes. That usually happens once, and you get awfully particular with your evidence and procedures.

Like all wardens, I don't like to lose in court. It is embarrassing, to say the least. Our wardens are good. We maintain almost a 98 percent conviction rate over the years which is something we are justifiably proud of.

I have been lucky, losing only a couple in more than 25 years, and if I had known then what I know now, I wouldn't have lost *those*.

One "handicap" we have is we are stuck with the truth, no matter how badly we want to win. Sometimes we have been trying to catch a particular violator for a long time, coming "oh so close" so many times, but with just not quite enough to go to court. We can only testify to what we say and know — not what we think or guess.

Now the other side doesn't always stand by so strict a set of rules. I have noticed this several times throughout the years, although I still think, by far, that the majority of people will not lie on the stand under oath, and I have the highest respect for them. But then, there are others — to hear their side of the story and then ours, makes you wonder if they were at the same place at the same time. But then, perhaps, that is the way they would *like* to remember it.

I remember one of the best defense attorneys in the state, walking in with his client one day, saying, "Well, warden, have you got it stacked clear to the ceiling again this time (referring to the evi-

dence)?" We had been in court before.

"Just about the same," I told him. He asked to see the evidence and the county attorney accompanied him into the next room where it was all laid out. A short time later, the attorney returned to the courtroom, shook his head at his waiting client and said, "Better pay the man." This produced an explosive reaction from the defendant — "D---! I hired you to defend me; not plead me guilty!"

The silver-haired attorney smiled and said, "You should have thought of that before you shot those two deer."



Why the Indians Always Had Plenty . . .



. . . And the White Man Never Had Enough.

Why Game Wardens Go Crazy

From a Duckling to a Swan

Story by Kay Hill
Photos by Ron Johnson



As part of its restoration, Swan Lake was dredged, giving the lake a maximum depth of 15 feet. Also, shoreline improvements were made and 10 fishing jetties were built.



Imagine the conversation of two anglers enjoying a hot cup of coffee in the warm confines of a western Iowa cafe. It's January and the weather is bitter cold. Both wanted to go fishing and thought the weather was too cold to sit on a bucket and ice fish. One fisherman then suggested they fish in the enclosed fishing shelter at Swan Lake in Carroll County. They would be protected from the wind plus they wouldn't have to bore or chop holes through the ice. This idea may sound fishy, but this type of winter angling is now a reality at Swan Lake.

Swan Lake is a recently-restored, artificial lake in Carroll County, Iowa located three miles south of Carroll. Swan Lake had a history of frequent winterkills which resulted in poor fishing. Fish managers stocked fish, but just when a good fishery was developing, a winterkill would kill most of the game fish and leave the more tolerant rough fish.

Swan Lake originally covered 130 surface acres, had an average depth of four feet and a maximum depth of six feet. The lake was drained in 1982 to initiate a \$650,000 lake restoration project. The first step involved deepening the lake and placing the dredged material around the upper end to eliminate extremely shallow areas. The restored lake was reduced to 116 acres and deepened to a maximum depth of 15 feet with an average depth of six feet. While the lake was drained, a winter aeration system was installed to prevent winterkills and 72 units of fish habitat were put in place. The entire shoreline was lined with rock to reduce bank erosion and 10 fishing jetties were built to improve shore angling areas.

Two new water supplies were added because the watershed erosion control implemented would greatly reduce the runoff into the lake. The new water sources consisted of a well and installation of a tile line from 90 acres of land south of Swan Lake.

While the above projects were being completed, a \$40,000 enclosed fishing shelter was built over the water. The shelter, paid for by pri-

vate donations, is surrounded by a deck and features a large, guard-rail-surrounded hole in the floor to facilitate fishing. Air lines were installed around the opening to prevent ice from forming beneath the shelter.

The newly restored lake was treated with rotenone in early May, 1985 to remove existing fish. In late May 1985, adult bluegill and fingerling largemouth bass, channel catfish, and fathead minnows were stocked. The following year more adult bluegill, fingerling bass and catfish were added. The last stockings occurred in 1987 when black crappie and grass carp were introduced. A 16-inch minimum length

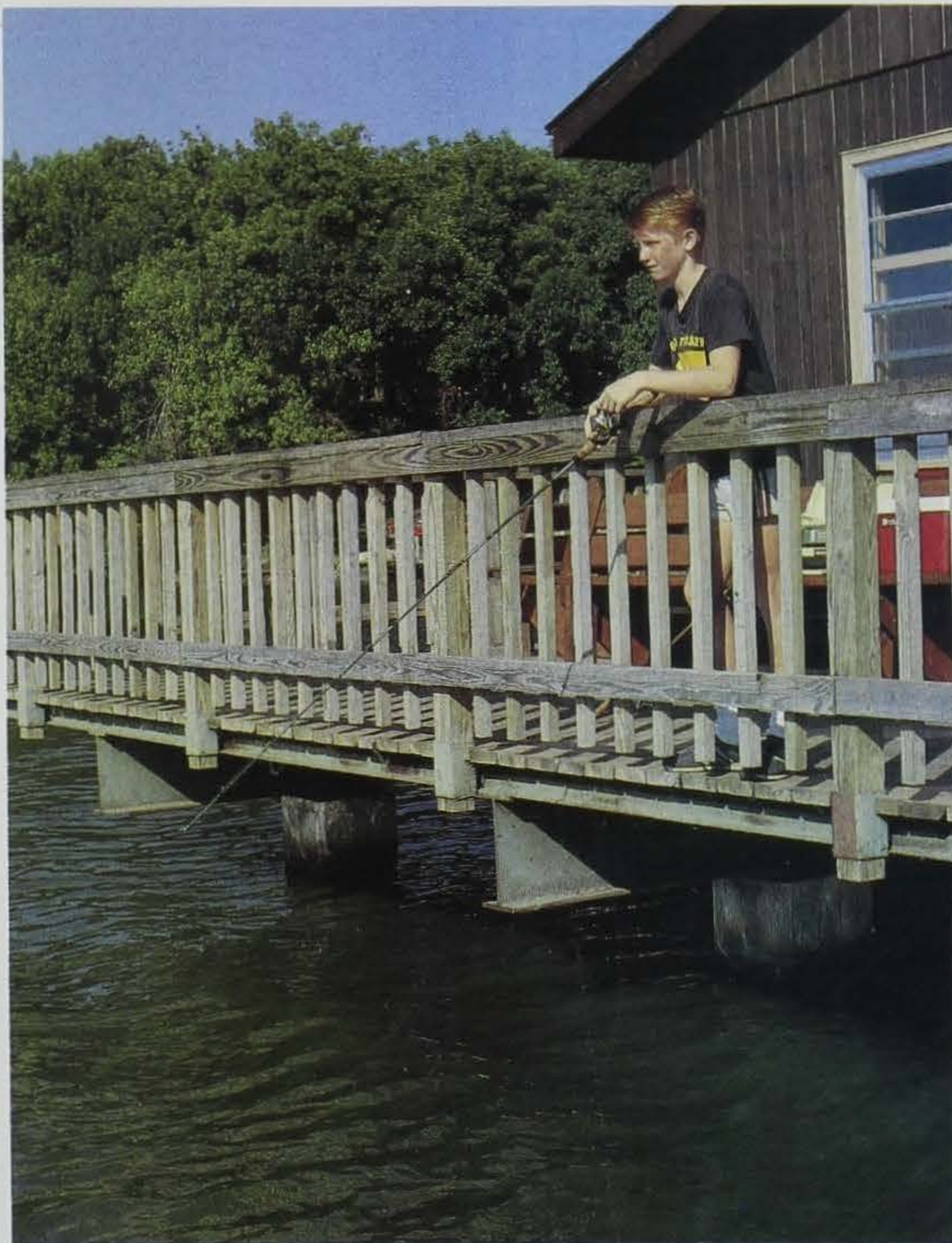
limit on largemouth bass was initiated to control harvest of bass and provide good bass and bluegill fishing.

A creel survey conducted in 1987 showed 33,000 angler hours were spent by 12,048 anglers. Anglers caught 16,800 bluegill, 8,140 bass, 1,240 channel catfish, and 100 black crappie. Of the 26,300 fish caught, anglers kept 7,500 — most of which were bluegill and catfish. The estimated total value of fishing at Swan Lake in 1987 was \$180,720 and \$36,135 of that value occurred from the fishing shelter. Creel survey data in 1988 shows higher angling use and at this rate, within three years, the value of angling provided

by the renovated lake will offset the cost of restoration.

At Swan Lake you can literally catch bluegill and large bass until you are tired. In addition to great fishing, Swan Lake offers camping, swimming, boat ramps, paddleboat rentals, nature trails, picnicking, walking/jogging trails, and a mini-zoo. Everything is free except the camping and boat rentals. If a truly enjoyable family outing is something you seek, you owe yourself a trip to Swan Lake.

Kay Hill is a fisheries biologist located at the Cold Springs District Office in Lewis.



MIKE OLSEN

The enclosed fishing shelter, built over Swan Lake, offers year-round fishing opportunities to Iowa anglers.

CONSERVATION UPDATE

Toxic Cleanup Days Successful

More than 240 drums of toxic household waste were collected from Iowans during the 1988 Toxic Cleanup Days held by the Department of Natural Resources.



Three Toxic Cleanup Days were held around the state in 1988 to help Iowans rid their households of hazardous wastes.

Nearly 1,300 households participated in this attempt to help protect Iowa's groundwater supplies, according to Teresa Hay, administrator for the Waste Management Authority Division of the DNR.

Cedar Rapids in Linn County was the first collection site in the fall 1988 series, with 618 households participating in the toxic cleanup event, held Oct. 22. Residents brought in more than 90 drums worth of hazardous material. Cedar Rapids was also one of the sites of the first Toxic Cleanup Days held in 1986. During this pilot project, many area residents were turned away because the drums

used to carry the waste were full.

"We were ready for them this time," said Stu Schmitz, environmental specialist for the DNR. "We did not want to run out of money or space for the collection of hazardous materials from Linn County residents."

The second clean up site in the series was held in Ames in Story County. During the Story County cleanup, DNR officials collected 80 drums of hazardous materials from 422 households.

The final 1988 Toxic Cleanup Day was held Nov. 5 at Red Oak in Montgomery County, where 70 drums of materials were collected from 250 households.

Materials collected during these events included: motor oil, motor oil filters and additives, gasoline and diesel fuel additives, degreasers, waxes and polishes, solvents, paints, lacquers and thinners, caustic household cleaners, spot and stain removers with a petroleum base, pesticides, and fertilizers with a nitrogen component.

The hazardous materials were sent to GSX Chemical Services of Greenbriar, Tennessee, for disposal. Currently Iowa has no permitted hazardous disposal site.

The Toxic Cleanup Days were funded through fees paid by retailers who have permits to sell hazardous materials. Currently

there are about 9,000 retailers who have such permits in Iowa. Additional programs will be organized in the future with money from these fees.

Household Hazardous Materials Storage Tips

For the majority of Iowa residents, there has been no opportunity to dispose of household hazardous materials that have been accumulating in the garage or basement for years.

The Department of Natural Resources' Waste Management Authority Division suggests these tips on storing hazardous materials until a Toxic Cleanup Day is conducted:

- Keep the material in its original container. Put the material in a strong plastic bag, and seal the top.
- Store the material in a cool and dry place.
- Do not subject the material to repeated freezing and thawing.
- Keep the material out of reach of children and animals.
- If material begins to leak, contact the DNR.

Each day Americans produce 1.5 billion pounds of hazardous waste. If the problem were shared equally, every adult in the United States would have to find a way to dispose of nine pounds a day. If they stuffed it in 55-gallon drums, the drums would cover 418 acres.

What Happens To The Waste After It Leaves The Collection Site?

The answer to this question depends on the type of waste involved. Three basic disposal options are used for the household hazardous materials collected — incineration, chemical treatment and hazardous waste landfilling.

Incineration at a hazardous waste incineration facility is the method the Department of Natural Resources prefers. It completely breaks down the chemical compounds into elemental particles, rendering them harmless. Pesticides (liquid or powder form) and flammable materials are the types of products most likely to end up in hazardous waste incineration. Some flammable materials are blended for fuel and sold as a fuel source for industrial furnaces.

Strong acids and bases are chemically treated to neutralize them and make them harmless. Acids, bases and many caustic household cleaners are treated in this manner. After neutralizing, these chemicals can be safely handled at a water treatment plant or sewage treatment facility.

The third option is the least favored by the DNR. Land disposal of hazardous waste is the least desirable technology. After all other disposal alternatives have

been explored, there will still be materials that remain. These materials will be packed in drums and sent to a hazardous waste landfill in South Carolina.

For more information on household hazardous materials and their effect on Iowa's groundwater, contact Kathryn Stangl, Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034 or call 1-800-532-1114.

Iowa CONSERVATIONIST Index Still Available

Copies of the 1988 *Iowa CONSERVATIONIST* Index are still available for purchase.

The index includes all stories published during 1988 and are listed by author's last name as well as by subject.

To order your copies, send \$1 per index to *Iowa CONSERVATIONIST* Index, Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034. Please allow eight weeks for delivery of the index.

Special Note:

On page 14 of our November 1988 issue, the telephone number given for information regarding spring seedling shipping schedules and tree species availability is wrong. The number to call for this information is (515)233-4110.

DNR Trades Wild Turkeys For Habitat

Department of Natural Resources' officials announced the completion of a trade of Iowa wild turkeys to Texas in exchange for funds to purchase forest habitat in Iowa.

Governor Terry Branstad accepted a \$150,000 check to the DNR from Rob Keck, executive director of the National Wild Turkey Federation (NWTf), for 300 turkeys that were shipped to Texas last winter. The Texas Game, Fish and Parks Department is using the turkeys to repopulate 16 million acres of forest land in east Texas that was historically turkey range. Money to finance the trade comes from special public-use stamps purchased by Texas hunters to gain access to designated private ranches. The money was routed through the NWTf's superfund account because NWTf arranged for the trade to occur and is coordinating trades for turkeys between Texas and several other states.

"We've already spent the \$150,000 on some excellent parcels of turkey habitat," said Al Farris, administrator of the DNR's Fish and Wildlife Division. Purchases include 222 acres on Bloody Run Creek in Clayton County, 80 acres adjacent to Shimek State Forest in Van Buren County, 260 acres next to Stephens State Forest in

Monroe County and 236 acres near Boone Forks Wildlife Management Area in Webster County. The Stephens Forest acquisition was cost-shared with DNR's Forestry Division. "These purchases will give us greater flexibility to manage turkeys and deer on these acres and provide more badly needed public hunting areas," Farris said.

Because the trade was so successful, a five-year extension was agreed to between Iowa and Texas that will bring Iowa \$1 million in habitat acquisition funds if all five years are completed. A separate agreement with Kentucky will bring in \$50,000 a year for five years. "Shipping 500 turkeys a year out of state is a small price to pay for the 4,000 to 5,000 acres of turkey habitat we expect to acquire in the next five years," said Richard Bishop, chief of the DNR's wildlife bureau. "We conservatively estimate there are at least 100,000 wild turkeys in Iowa right now, so the loss of 500 birds won't be noticed by our turkey hunters," he said.

These trades initiate another chapter in the DNR's successful wild turkey restoration program. "It's amazing to think that there were no wild turkeys in Iowa 25 years ago," said Bishop. "Now we have more than enough to provide excellent spring and fall hunting across most of the state and still have birds available for trades.

Iowa Adopts Federal Underground Storage Tank Rules

The Environmental Protection Commission adopted revised rules in October relating to underground storage tanks.

The rules incorporate the technical standards of the new federal regulations that were published Sept. 23, 1988. Owners of underground storage tanks affected by the rules are those whose tanks contain petroleum-based substances. The current registration and tank tagging requirements remain in effect.

Major changes in the rules include a revised schedule for phasing in installation of leak detection measures at existing regulated underground tanks and the requirement that the Department of Natural Resources must be notified at least 30 days in advance before a tank can be closed. Previously, leak detection was required of all tanks by 1990. New release detection deadlines for existing tanks based on age are: 25+ years, December 1989; 20-24 years, December 1990; 15-19 years, December, 1991; 10-14 years, December 1992; and less than 10 years, December 1993.

Existing pressurized pipe at all facilities must have a release detection system installed by December 1990. This date is earlier than leak detection for most tanks

since they are a major source of uncontrolled releases.

An additional change is allowing closure of a tank by filling the tank in place with an inert material. Previously, only tank removal was allowed. A site assessment must be done by the owner/operator to determine if any leakage from the tank has occurred before any tank can be closed.

Owners of farm and residential tanks are still required to register their tanks with the DNR. All tanks installed after July 1, 1987, must meet all requirements of the underground storage tank rules. This includes farm and residential tanks of less than 1,100 gallons which are not required to be registered under the U.S. Environmental Protection Agency rules, but which are required to be registered with the state. Owners of tanks containing petroleum products can still register their tanks without penalty until Oct. 1, 1989. Owners who do not register their tanks by that date are subject to a minimum fine of \$7,500.

A summary of the rules were sent to approximately 11,700 registered tank owners in December. Copies of the complete rules may be obtained by writing to the Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034, or by calling (515)281-8897.

Iowa Trophy Deer Records

Deer hunters who successfully bagged a deer with trophy-sized antlers are encouraged to enter the rack in Iowa's annual big game records regis-

records is identical to that used by the Boone and Crockett or Pope and Young Clubs.

Award certificates will be presented in four classes. The classes, with minimum scores for each, are:



try. Award certificates and patches will be issued to eligible entries which meet minimum standards set by the Iowa Department of Natural Resources. A list of the deer taken and measured each year will be printed in the *Iowa CONSERVATIONIST* magazine.

In order to qualify for an award, however, a rack must be measured and scored by an official scorer for the Boone and Crockett (firearms) or Pope and Young (archery) Clubs, or by a wildlife biologist, conservation officer, or other individual certified by the DNR. The scoring system used for Iowa

Shotgun-Muzzleloader

Typical150 Points
Nontypical. . .170 Points

Archery

Typical135 Points
Nontypical. . .155 Points

Deer hunters possessing trophy racks which have not been officially measured may contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034; (515)281-5145.

Because of shrinkage in varying degrees, racks taken during the recent hunting season cannot be measured for at least 60 days in order for the antlers to dry out properly.

Donations

Beniventi Chevrolet, Inc. Granger	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
Windsor Heights Fire and Rescue Windsor Heights	\$100 for water and ice rescue vehicle at Big Creek State Park
Des Moines Register Des Moines	\$250 for water and ice rescue vehicle (air boat) at Big Creek State Park
IMT Insurance Co. Des Moines	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
Continental Western Insurance	\$50 for water and ice rescue vehicle (air boat) at Big Creek State Park
American Mutual Life Insurance Co. Des Moines	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
Granger Motors Granger	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
City of Polk City	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
Crescent Chevrolet Des Moines	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
Izaak Walton League of America Des Moines	\$247 for water and ice rescue vehicle (air boat) at Big Creek State Park
Garst Seed Corn Co. Slater	\$250 for pressure washer at Big Creek State Park
T & S Small Engine Repair Hampton	John Deere string trimmer valued at \$100 for Beeds Lake State Park
Winterset Optimist Club Winterset	\$500 for playground equipment at Pammel State Park
Winterset Jaycees Winterset	\$500 for playground equipment at Pammel State Park
Aid Association for Lutherans Winterset	\$750 for playground equipment at Pammel State Park
Farmers and Merchants State Bank Winterset	\$300 for playground equipment at Pammel State Park
Robert Randell Oskaloosa	Four hours backhoe use valued at \$200 for culvert modification at Lake Keomah State Park
Terry Langstreet Cedar	Four hours backhoe operation valued at \$60 for culvert modification at Lake Keomah State Park

Brad Muhl Oskaloosa	12-compartment martin house and pole valued at \$160 for Lake Keomah State Park
Keil Bait Shop Bellevue	Assorted prizes valued at \$125 for special event at Bellevue State Park
Dell Pooler Bellevue	Refreshments, charcoal and ice valued at \$168 for special event at Bellevue State Park
Chuck Schroeder Bellevue	Refreshments and supplies valued at \$110 for special event at Bellevue State Park
Wagner's Unlimited Bellevue	Prizes valued at \$55 for special event at Bellevue State Park
Lampe True Value Bellevue	Prizes valued at \$52 for special event at Bellevue State Park
Jim Vislisl Mount Vernon	40 bushels cracked corn valued at \$80 and four hours use of tractor and disc valued at \$80 for bird feed and park maintenance at Palisades-Kepler State Park
Anonymous	23 poles valued at \$460 and 173 posts valued at \$692 for park maintenance at Palisades-Kepler State Park
A. J. Nelson Strawberry Point	160-slide program with synchronized sound, value unknown, for district public relations and interpretive programs at State Park District 3
Mrs. Paul Lynch Fort Dodge	\$300 for park improvement at Black Hawk State Park
Lang Tire and Automotive Ankeny	\$100 and 50 truck and car rims, valued at \$250, for water and ice rescue vehicle (air boat) and fireplace construction at Big Creek State Park
Hawkeye Ankeny Bank and Trust Ankeny	\$50 for water and ice rescue vehicle (air boat) at Big Creek State Park
City of Sheldahl	\$100 for water and ice rescue vehicle (air boat) at Big Creek State Park
Polk City Savings Bank Polk City	\$51 for water and ice rescue vehicle (air boat) at Big Creek State Park
BFI Waste Systems Des Moines	\$300 for water and ice rescue vehicle (air boat) at Big Creek State Park
Central Iowa Bass Anglers Des Moines	\$58 for water and ice rescue vehicle (air boat) at Big Creek State Park

Classroom Corner

by Robert P. Rye

In your study of wild bird life, you may find that water birds are a lot less accessible than land birds. If you have access to a reservoir, this may be different. In this case, you could look at ducks as excellent representatives of water dwellers.

When you see a duck on shore, you should look at its legs, which explains its proudness in water. You will notice the duck's short legs are set wide apart and far back on its body. The three front toes are joined with tough skin for webbing. These abnormally adapted legs and feet make perfect paddles in the water. Their thick feathers and down form an almost weatherproof coat which shields them from harsh weather. Other information on ducks can be gained by observation.

Answer the following questions to determine how well you have observed waterfowl in the past:

- The largest of the wild geese: a) Brant b) Ross' Goose c) Canada Goose d) Blue Goose
- In which duck is the coloration of the sexes most alike? a) Ruddy Duck b) Wood Duck c) Mallard d) Black Duck
- Which duck lacks the quack we associate with ducks? a) Pintail b) Black Duck c) Mallard d) Shoveler
- Which duck has wings not decorated with a colorful patch (speculum)? a) Gadwall b) Pintail c) Canvasback d) Mallard
- Which duck has a shaggy crest on its head? a) Redhead b) Hooded Merganser c) Blue-Wing Teal d) Old Squaw
- Which duck has the greatest wing spread? a) Common Merganser b) Greater Scaup c) Green-Wing Teal d) Bufflehead
- Which duck has a call one expects to come from a duck? a) Black Duck b) Pintail c) Goldeneye d) Wood Duck
- Which bird is quite terrestrial for waterfowl? a) Canada Goose b) Scoter c) Old Squaw d) Red-Necked Grebe
- Which bird is a tree nester? a) Blue-Wing Teal b) Mallard c) Shoveler d) Wood Duck
- What bird is a vegetation feeder? a) Canvasback b) Common Eider c) Common Merganser d) Scoter

Answers:

1. c 2. d 3. a 4. c 5. b 6. a 7. a 8. a 9. d 10. a

COUNTY CONSERVATION BOARD FEATURE

Thomas Mitchell—An Iowa Pioneer by Bonnie Callan

On May 20, 1843, Captain James Allen and his dragoons arrived at the confluence of the Des Moines and Raccoon Rivers to build a fort. The new Fort Des Moines was built to keep the peace and protect the Sauk and Mesquakie Indians from the Sioux and white traders.

In 1844, Thomas Mitchell, a native of Claremont, New Hampshire, obtained early access to the Iowa Territory from Captain Allen, commander of the fort and Captain Beach, the Indian agent. He built an inn to accommodate settlers on their way west. The Mitchell family built their first home in a wild apple grove near Camp Creek on the road from Iowa City to Des Moines. They became the first permanent white residents of Polk County.

Early post office operated by Mitchell near Camp Creek in Polk County.



STATE HISTORICAL SOCIETY OF IOWA—SPECIAL COLLECTIONS



Thomas Mitchell

STATE HISTORICAL SOCIETY OF IOWA—SPECIAL COLLECTIONS

By the time Iowa became a state in 1846, the Apple Grove Inn was a reality and welcomed early Iowa pioneers. Drawn by Mitchell, many settlers came from New Hampshire and Vermont. Soon a scattered community developed with blacksmiths, carpenters, a sawmill, a tannery and a limestone quarry. Apple Grove Inn served as the post office from 1849 to 1868. Settlers from the surrounding prairie made weekly trips to gather their mail.

Mitchell's Inn became a major stop-over during the Gold Rush, and in 1849, he fed 7,000 teams, consuming more than his farm could produce. Mitchell ran this ad for his inn in the January 1852 issue of *Harris Overland Guide*:

Tom Mitchell!!

Dispenses comfort to the weary!
feeds the hungry!
and cheers the gloomy!!
at his old, well-known stand,
13 miles east of
Fort Des Moines
Don't Pass By Me!

In 1856, he founded the town that today bears his name—Mitchellville. He sold the Apple Grove Inn and built a new hotel called Mitchell House. Prosperity reigned for 10 years.

Although the railroad was supposed to go through the original town, when the railroad was eventually built, it missed the town. The town was moved several miles west to gain rail service. Between



RON JOHNSON

Beaver dam on Camp Creek.

1867 and 1872, the hotel, school, store and several homes were moved. It is said people traded at Ed Valentine's store "as it moved."

In 1868, Thomas Mitchell donated the land and oversaw the building of the Universalist Church which still stands at the corner of 4th Street and Market, N.W., in Mitchellville. Several years later, a seminary was founded and Mitchellville became the Midwest center of the Universalist Church. Eventually, the seminary buildings were purchased by the state and became the Iowa State Training School for Girls.

Thomas Mitchell served the public most of his life. He was at various times postmaster, sheriff, county supervisor, state representative and senator.

Thomas Mitchell Pioneer Park preserves the site of the original homestead near Camp Creek. Located on Iowa Highway 6, east of Altoona, the 149-acre park is operated by the Polk County Conservation Board.

Mature woodlands, reestablished prairie, a small pond and gurgling Camp Creek provide a varied environment for picnickers, hikers and

campers. Electric and primitive campsites serviced by a modern rest room and shower facility are tucked under the trees along the creek. Picnic shelters and a rustic playground add pleasant diversion.

Wildlife abounds in this oasis, surrounded by farmland. Beaver fell cottonwoods, dam Camp Creek and burrow in the bank. Chipmunks tunnel through the rich woodland soil and deer browse unharmed. Birds are everywhere. Meadowlarks fill the air with flutelike song. Goldfinches chatter on their rollercoaster flights, and hawks scream as they wheel overhead. When night falls, the voices of the songbirds are stilled and are replaced by cricket chirps, owl hoots and bat wings.

Nature films are offered at the campground every other Friday night during the summer and numerous public programs are offered throughout the year.

For more information on what is happening at Thomas Mitchell Park, call (515)967-4889 or (515)999-2557.

Bonnie Callan is a naturalist for the Polk County Conservation Board.

CALENDAR

JANUARY 15

Winter Holiday. Big Creek State Park will be hosting their second annual winter festival. Activities will include an ice fishing tournament, volks march walk, bike ride, bird walk, guided snowmobile rides and cross country skiing. For more information contact Big Creek State Park, Route 1, Box 37, Polk City, Iowa 50226, (515)984-6473.

JANUARY 20-22

Bald Eagle Days. Keokuk will be hosting its fifth annual Bald Eagle Days. Indoor programs and displays will be at the Keosippi Mall on Main Street in Keokuk. There will be three outdoor observation areas set up with spotting scopes, and biologists available to answer questions. For more information, contact the Iowa Nongame Program, Iowa DNR, Wildlife Research Station, Route 1, Ledges Road, Boone, Iowa 50036 (515)432-2823.

JANUARY 29

Winter Fishery and Fun Festival. Pleasant Creek Recreation Area is the site for this winter event, featuring an ice fishing tournament with prizes for species and size. Ice skating, sledding, and winter activities demonstrations and classes will be part of the festival. For more information, contact Pleasant Creek Recreation Area, Drawer C, Palo, Iowa 52324, (319)436-7716.

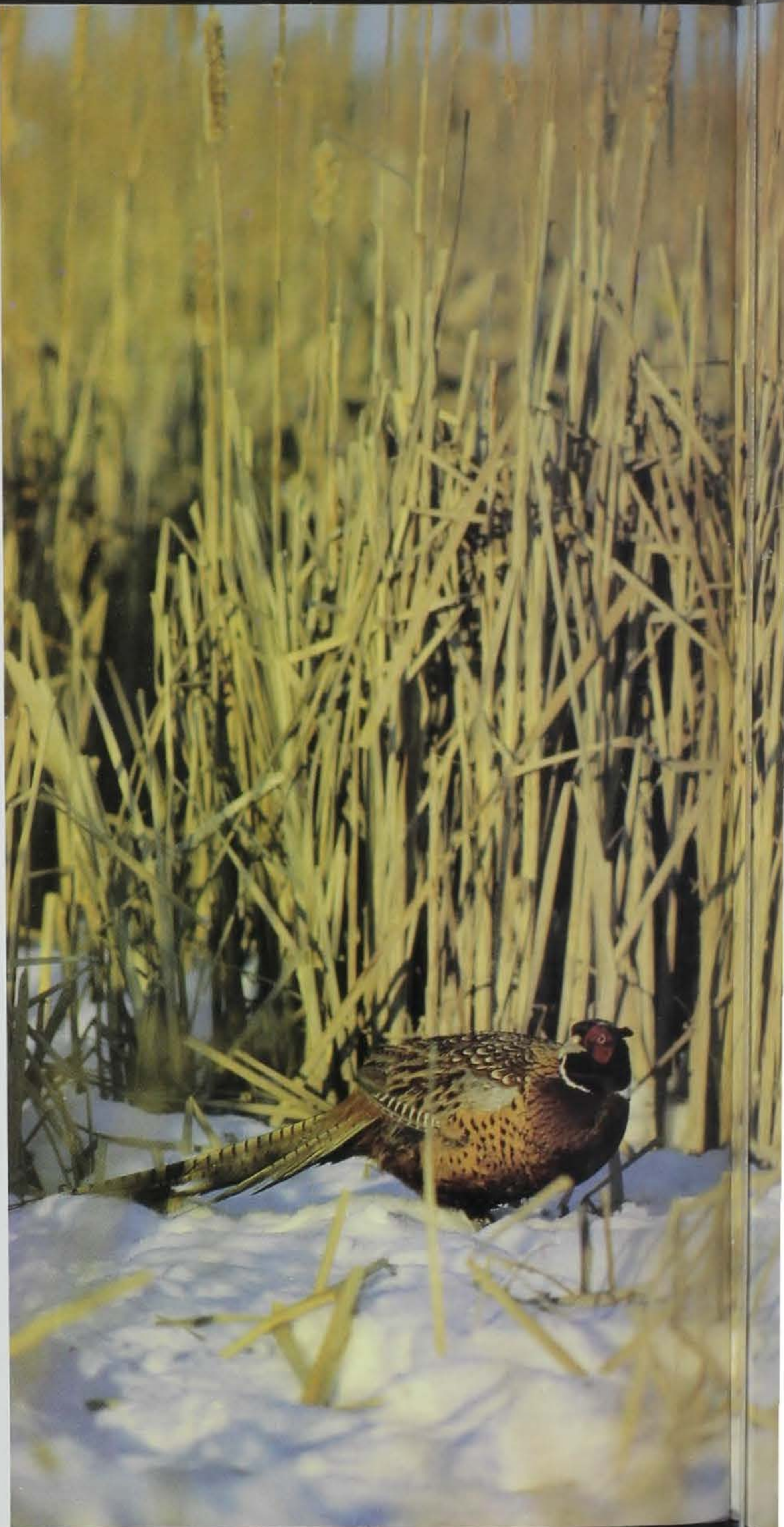
FEBRUARY 4 AND 5

Bald Eagle Days. The Quad Cities will hold their Bald Eagle Days at the Modern Woodmen Building at 17th and the Mississippi River in Rock Island. Displays and indoor programs, as well as outdoor observation areas, will be available. For more information, contact the Iowa Nongame Program, Iowa DNR, Wildlife Research Station, Route 1, Ledges Road, Boone, Iowa 50036 (515)432-2823.

The Winnebago Study Area

Story and photos by
Lowell Washburn

These northern Iowa acres would ultimately provide one of the most profound documentations to ever emerge regarding the relationship between land use and wildlife populations.



The Soil Bank days of the late 50s and early 60s provided pheasants with a tremendous amount of nesting cover and consequently hunters found their limits.



DNR PHOTO

Man has been helping the ring-necked pheasant expand its range for at least thirty centuries. Unfortunately, no one documented exactly when the first pheasants reached Iowa. However, it is known that the first major stocking occurred when around 2,000 birds escaped from a Cedar Falls game farm in 1901. By the end of the decade, the Iowa Conservation Commission (now the Department of Natural Resources) was getting both feet in the pheasant business; and in 1910, the state distributed over 6,000 eggs to 178 farmers in 82 counties.

Ring-necked pheasants were soon well established in northern Iowa. By contrast, the birds failed to prosper in the southern portions of the state. Efforts were still being made to establish pheasants in southern Iowa, and the Conservation Commission began a program of gathering eggs and trapping adult wild birds in Winnebago and Butler Counties. Farmers were paid a dollar a dozen for gathering eggs. Records show that in 1925 alone 7,000 adult pheasants and 60,000 eggs were gathered from those two counties. In spite of these inroads, the birds continued to flourish in the north.

By the 1920s, ringnecks had become numerous to the point of

being considered a pest in some north-central counties. In 1925, the state game warden received a petition from some 150 Hancock County farmers complaining of extensive crop damage due to pheasants.

Political pressure continued to mount, and in the fall of 1925, 13 north-central Iowa counties were opened to hunting. According to a news item in Hancock County's *Garner Signal*, at least one landowner invited the public to come and shoot his nuisance birds. But several farmers near Clear Lake also gave notice that no hunting would be allowed on their farms. At any rate, it was noted that nearly all of the 75,000 hunters who participated in that first Opening Day, were able to find and bag some of the new birds that would soon become Iowa's most sought-after game species.

Although pheasant populations continued to expand in Iowa, virtually nothing was known of the species needs and management. In an effort to address these unknowns, a research area consisting of 4,900 acres of private farmland was established in 1935 in north-central Iowa's Winnebago County. Dubbed the Winnebago Study Area, this research tract would ultimately provide one of the most profound

documentations to ever emerge regarding the correlation between land use and wildlife populations. In fact, nowhere in the world has the ring-necked pheasant been more intensively studied than on these northern Iowa acres.

Although the study was intended to address a variety of pheasant biology topics, its primary focus was to monitor and interpret long-term population trends. Methods for gathering data included fall roadside counts, direct winter counts made after the close of the hunting season, spring crowing counts, and August roadside surveys. These direct census methods began in the fall of 1935, and were originally made on foot or horseback. During periods of deep snow, skis were often used for conducting late-season winter counts.

The pheasant population on the Winnebago Study Area reached its all-time high in the fall of 1941 when an incredible 400 birds per section were inventoried. Research was suspended during World War II, but counts were resumed on about 2,500 acres of the area in 1950. During the early to mid-1950s, direct winter counts showed an average of about 100 pheasants per section. But during the late 1950s and early 1960s, populations rebounded reaching 235 birds per section by 1960.

Much of this resurgence was undoubtedly due to the Conservation Reserve Program created by the Soil Bank Act of 1956. This program reached its zenith from 1959 to 1964 and provided pheasants with tremendous amounts of upland nesting cover. By 1965, soil bank acreage had been reduced to less than one tenth of what it had been five years earlier. Farmers were soon encouraged to maximize production rather than profits, and the era of road ditch to road ditch farming began. From that time on, the study area's pheasant numbers suffered a steady and rapid decline. By 1976, direct winter counts recorded

Today's Conservation Reserve Program is bringing the pheasant back to the northern part of the state.



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● OAT
● COR
● SOY
● PAS
● FARM
● OTH
● TRE
● MAR

Cove
Ring

an average of zero pheasants per section on the Winnebago Study Area.

Reasons for this dramatic decline are more than obvious. In 1941, nearly 60 percent of the entire study area consisted of suitable nesting cover. But by 1980, potential nesting cover was only available on 9.7 percent of the area. Similar declines in winter cover areas were also documented.

My first opportunity to sample northern Iowa's pheasant hunting came in the winter of 1959, and the clouds of birds that often erupted from blocks of Soil Bank could only be described as "ringneck blizzards". One of my most vivid recollections of those densities was a scene witnessed in the winter of 1964 or 1965. It was late in the season, marginal habitats had drifted full, and the birds were concentrating in the heaviest cover. It was a Saturday afternoon when a friend and I pulled up to a large L-shaped, pheasant-infested farm grove near the south edge of Clear Lake. The windbreak contained so many birds that the hard-packed snow was only visible in scattered patches. I won't hazard a guess as to how many pheasants that farm grove contained, but I do know that it was one solid, writhing carpet of birds from one end to the other. However, look as we might, our



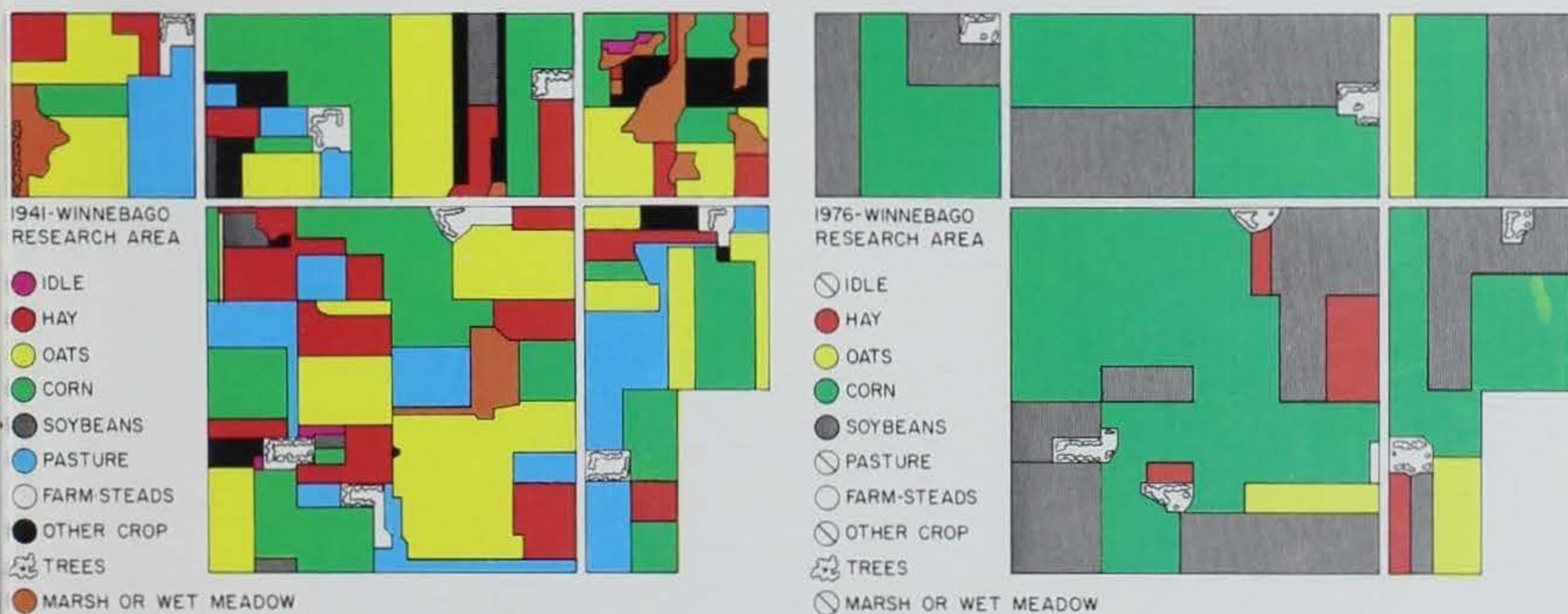
eyes could not detect one legal pheasant. The flocks were segregated, and each and every bird present was a hen. We moved on hoping to find the immense flock of roosters that we knew must be lurking nearby.

Within five years, most of the sloughs, brushy fencelines and other covers that I had tromped as a teen-ager had been plowed under. And, of course, the pheasants and other wildlife had gone with them.

But the story doesn't end here. Today there is a brand new Conservation Reserve Program at work in

northern Iowa. After only two nesting seasons, the resilient pheasant is back, and he is back in force. But the lessons of the Winnebago Study Area serve as a grim reminder that the new pheasant bonanza will last only as long as the habitat.

More about the Winnebago Study Area and the fascinating history of the pheasant can be found in *The Ring-Necked Pheasant In Iowa* by Dr. Allen Farris. This hard-bound, full-color book may be ordered by sending \$5 to the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.



Cover maps of the Winnebago Study Area in 1941 and 1976 tell the story of habitat loss in the area. Taken from *The Ring-Necked Pheasant In Iowa*.

