Iowa CONSERVATIONIST

May/June 1995

Department of Natural Resources

Drive Home Your Support For Iowa's Natural Resources

Our plates are for the birds . . .

. . . and frogs and deer and beavers and fish -- in fact, all Iowa's wildlife. But most importantly, **REAP** plates are for people like you who enjoy the natural beauty and outdoor recreation our state has to offer -- and who want to improve it.

Created in 1989, the Resource Enhancement and Protection program, **REAP**, has received the highest national award for improving local, county and state natural resources. Money from the sale of **REAP** license plates is directly invested in natural resource improvements in Iowa. So far, that's $70 million and rising.

How to get yours:

Take your current plates and registration to your county treasurer and request the natural resource plates. The initial cost of the standard **REAP** plate is $35 in addition to your regular registration fee, and in following years, $10 annually. Personalized plates are also available. For additional information on a taped message, call 515-281-5145. After the recording starts, dial 145449

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May/June 1995
Volume 54, Number 3

Iowa Conservationist (ISSN 0021-0471) is published bimonthly by the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034. Second class postage paid in Des Moines, Iowa. **Subscription rates: $9.97 for one year, $14.97 for two years and $19.97 for three years. Prices subject to change without notice.** Include mailing label for renewals and address changes. POSTMASTER: Send changes to the *Iowa Conservationist*, Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

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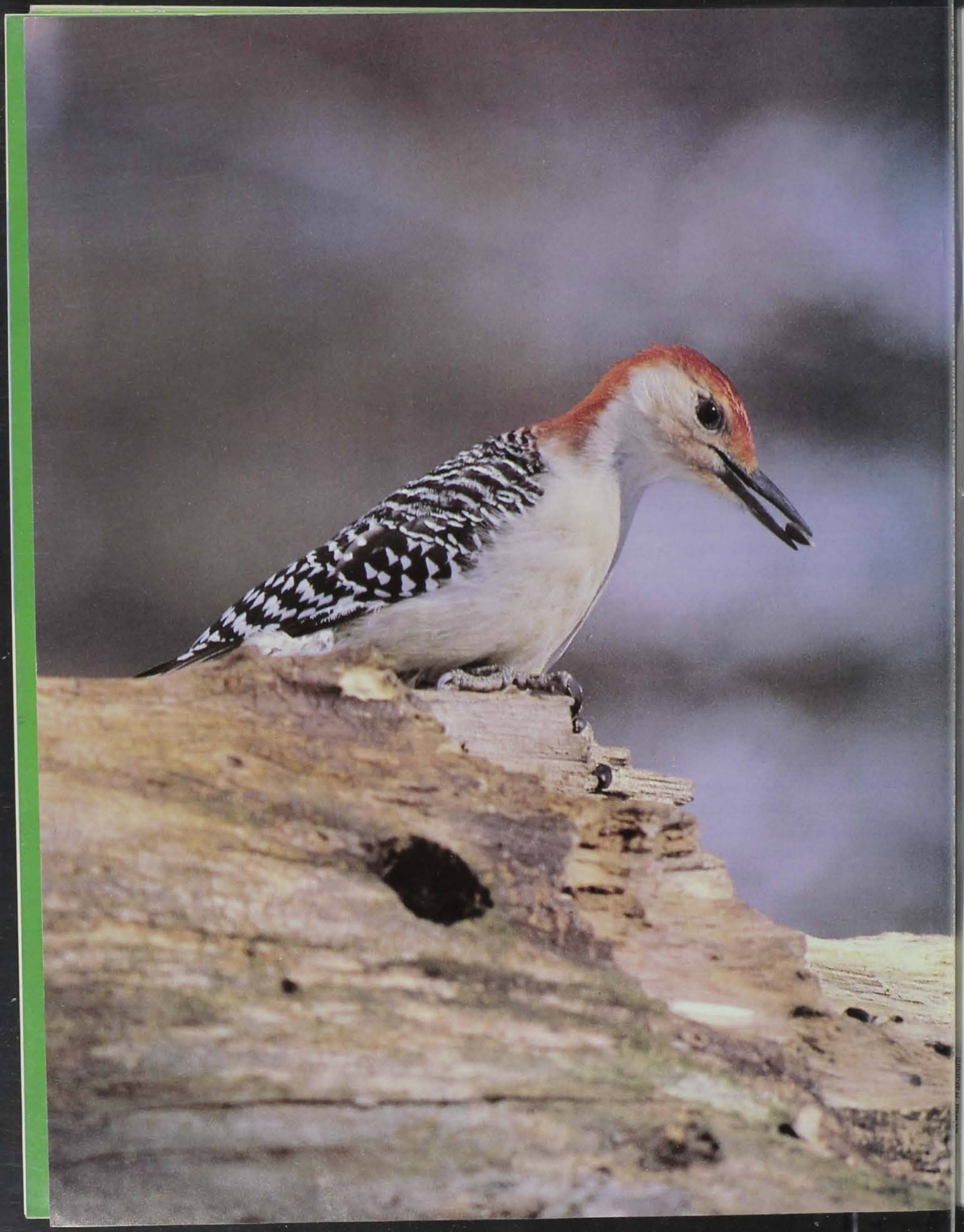
FEATURES

DEPARTMENTS

COVERS

Front -- Giant Canada goose and gosling by Lowell Washburn
Back -- Ledges State Park first park ranger, Carl Fritz Henning, circa 1930

PRINTED WITH SOY INK



Roger A. Hill

Common Cents for Common Wildlife

A bright red cardinal at your backyard feeder, a red-tailed hawk perched on a utility pole along the highway as you drive to work, the croaking of frogs in a neighborhood pond on a warm summer night, a chipmunk scurrying for cover as you walk along a wooded trail . . . the sights and sounds of Iowa's more common wildlife.

Of course, whooping cranes, northern harriers, barn owls, wood turtles, speckled kingsnakes, Indiana bats, ornate box turtles and the plains pocket mouse used to be *common* in Iowa. Now, they are on the state threatened and endangered species list. How did this happen? We often lose what we take for granted. Will it continue to happen? Perhaps. And here's why:

Roger A. Hill

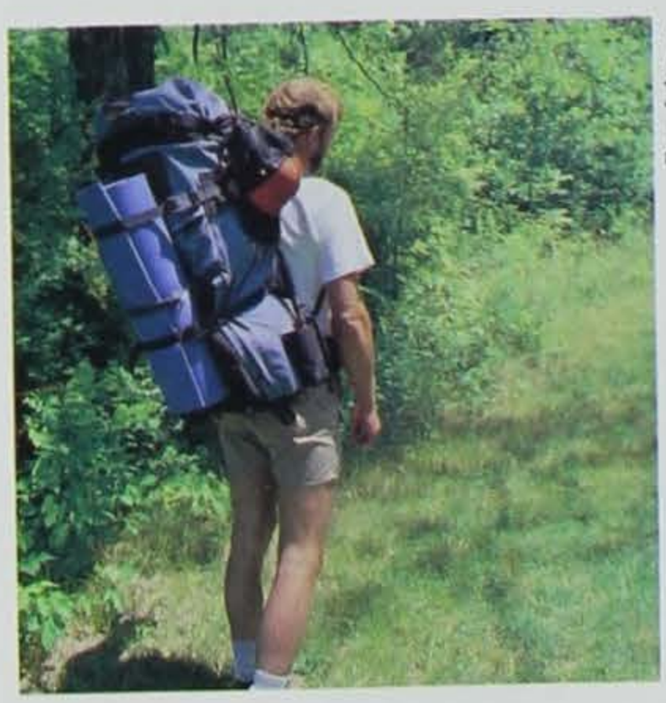
Iowa receives about $5 million annually in federal excise taxes paid by sportsmen and women on hunting and fishing equipment. This money is used to purchase property for wildlife, to manage those areas and to conduct research projects that will lead to better wildlife management. While all types of wildlife benefit from the programs made possible by this money, the main benefactors are the 60 or so species commonly hunted or fished for in the state.

Less than $40,000 in federal money was available this year in Iowa for conserving the more than 400 other vertebrate species -- "nongame" species -- animals that we pursue with binoculars and cameras instead of guns, traps and

by Lisa Hemesath

fishing poles. Of the $40,000, approximately $17,000 was used for conserving federally threatened and endangered species. Only $20,000 was available for the conservation of *common* wildlife.

Why do game animals receive more funding and more attention by the state wildlife agencies than nongame species? Hunters and anglers learned a long time ago what can happen if you take wildlife for granted. In Iowa, many common game species, such as wild turkeys, white-tailed deer and Canada geese were extirpated by the early twentieth century due to unregulated hunting and habitat loss. In the 1930s hunters successfully promoted placement of a 10 percent (later increased to 11 percent) manufacturer's excise tax on sporting arms and ammunition to help pay for wildlife programs. Hunters were willing to pay more for hunting equipment because they saw the extra money as an *investment* in their outdoor interests.



Ron Johnson

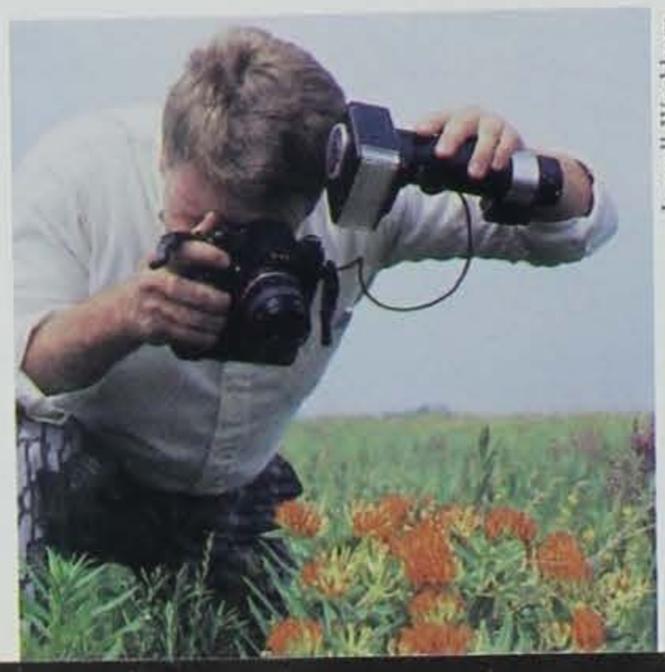
Ron Johnson

◀ ▲

The red-bellied woodpecker (page 4), gray tree frog (page 5 top), tree sparrow (page 5 bottom), alfalfa butterfly (above right) and house wren (above) are all part of Iowa's common wildlife.

▶

Backpacks, sleeping bags, tents, binoculars, photo equipment, spotting scopes, bird seed and feeders, recreational vehicles and field ID books would be subject to the user fee.



Lowell Washburn

Ken Fromanek

Ron Johnson

Ron Johnson

Their investment payed off. Canada geese can now be found nesting in marshes and farm ponds all over Iowa; turkeys are heard gobbling during the springtime in most woodlands; and white-tailed deer are a common site in our parks, along our roadways and even in our backyards. Sportsmen and women invested in their outdoor interests and received increased opportunities for hunting.

Now, the International Association of Fish and Wildlife Agencies (IAFWA), along with a host of conservation groups, hopes to achieve for all wild creatures what has been accomplished for game animals and sport fish. The nationwide campaign, referred to as the Wildlife Diversity Initiative, is an ingenious way of *investing* in the future by giving Americans the opportunity to contribute to conserving nonharvestable fish and wildlife.

The return on their investment will be:

1) the conservation of our nation's fish and wildlife by preventing species and their habitats from becoming endangered,

2) increased recreational opportunities in the form of more and better wildlife viewing sites, photo blinds, observation towers, hiking trails and wildlife education projects, and

3) the advancement of public education on important wildlife issues.

The goal of the IAFWA is to generate $350 million a year through a five percent user fee on the wholesale price of outdoor equipment typically used by birders, hikers, campers, nature photographers and other outdoor enthusiasts. Items subject to the user fee would include backpacks, sleeping bags, tents, binoculars, spotting scopes, photographic equipment, bird seed, bird feeders, recreational vehicles and field identification books. The increase in price of these items would be minimal. For example, a five percent surcharge on a $100-tent that wholesales for $50 would be $2.50; a $10 field guide would have a surcharge of 30 cents; a $300 pair of binoculars would have a surcharge of $9. The average Iowan who participates in wildlife recreation would spend *less than $2 per year* on this surcharge.

The five percent user fee on outdoor equipment would be collected from manufacturers or through import duties. The money would be passed on to the U.S. Fish and Wildlife Service, which would distribute it to the states; the same approach used successfully for more than 50 years to manage game animals and fish. Assuming a $350 million annual appropriation, Iowa cold receive a federal grant of $4,731,622 annually for the conservation of its 400 nongame species! This is a huge increase from our average annual budget of $190,000 provided by the Chickadee Checkoff.

If the Wildlife Diversity Initiative became a reality, what would Iowa's Wildlife Diversity Program do with all this money? About one third of the budget would be allocated to land acquisition. This means we would cost-share with county conservation boards, conservation organizations and private foundations to buy wildlife habitat -- grasslands that are important to bobolinks, upland sandpipers,

The Iowa Department of Natural Resources Wildlife Diversity Program conducts research and surveys on Iowa's nongame species, restores native nongame animals that were eliminated from Iowa during the settlement era, develops interpretive programs and educational material to broaden Iowan's appreciation of wildlife, and works with land managers and private landowners to provide habitat for nongame wildlife. Presently, the Wildlife Diversity Program is funded solely through contributions via the Fish and Wildlife Protection Fund, better known as the Chickadee Checkoff, on the state income tax forms. Last year, the Chickadee Checkoff produced our lowest contribution rate since the initiation of the checkoff in 1982. In fiscal year 1996, Iowa's Wildlife Diversity Program will be working to conserve 400 nongame species with a meager $143,000.

and meadow jumping mice; forests that provide habitat for pileated woodpeckers and cerulean warblers; and wetlands that are homes to black terns, American bitterns and cricket frogs. Another third of the budget would be used to increase personnel so that we could provide better conservation of nongame to all four corners of the state.

Habitat improvements in the form of restoration and enhancements, construction of watchable wildlife viewing sites (trails, observation blinds, etc.) on public and private ground would also receive increased funding. Research and monitoring of species suspected of declining would receive 10 percent of the budget. Research projects might include the effects of forest management on breeding neotropical migratory birds, the relationship between the health of hill prairies and wintering timber rattle snake populations, possible reasons for the decline of cricket frogs in northern Iowa marshes, or upland management techniques needed to increase breeding success of songbirds. Education would receive a sizeable increase in funding allowing us to produce publications, posters, slide programs and videos for teachers and the public, and coordinate workshops and watchable wildlife events.

The Wildlife Diversity Initiative has already gained support from the World Wildlife Fund, National Audubon Society, The Wildlife Society, Defenders of Wildlife, American Fisheries Society, Wildlife Management Institute, National Wildlife Federation and the Iowa Chapter of Pheasants Forever. However, it needs the support of all wildlife enthusiasts to make funding for state wildlife diversity programs a reality.

To promote the initiative, we ask all outdoor enthusiasts to take the following action:

-- Join Iowa's Wildlife Diversity Funding Initiative Coalition. Regional meetings to support the Wildlife Diversity Funding Initiative are occurring, **NOW**. Organization of grassroots efforts are essential to the success of the initiative. If you want to get involved, please contact the Wildlife Diversity Program, 1436 255th Street, Boone, IA, 50036. We need your help.

-- Spread the word about this legislation to other organizations and

Sample Letter for Industry Contacts Supporting Wildlife Diversity Funding Initiative

Outdoor Equipment Manufacturing
1100 Yourtown Rd.
Anywhere, IA 00000

Dear Sir or Madam:

I am writing today to express my support for the Wildlife Diversity Funding Initiative and to encourage company name to support this program as well. This program could provide $350 million annually for wildlife conservation, recreation and education. This is a tremendous opportunity for outdoor enthusiasts to invest in the future of wildlife.

For years, hunters and anglers have been supporting state and federal wildlife agencies through surcharges on hunting and fishing equipment. This funding had a direct and positive impact on a variety of game and sportfish species. The Wildlife Diversity Funding Initiative will allow wildlife and outdoor enthusiasts to provide similar support and protection for the same or better wildlife recreation opportunities as we enjoy today. In addition, these funds would provide more hiking trails, photo blinds, canoe paths, and other facilities that will increase the public's participation in outdoor recreation.

With more than $18 billion currently being spent by the public on wildlife-related recreation, the outdoor industry has much to gain by supporting wildlife diversity. Outdoor recreation is greatly enhanced by the presence of wildlife and the outdoor equipment manufacturers can expect to benefit by supporting the initiative. America's wildlife is part of our national heritage, and as more people turn to outdoor recreation, wildlife becomes an even more valuable commodity to enhance these experiences.

As a customer of company name, *I express by support for this initiative and encourage you to do the same. Thank you.*

Sincerely,

Your Name

Note: Please feel free to revise this letter to better fit your personal interests. An original letter that contains your own thoughts and feelings has more of an impact on the recipient than a form letter.

individuals. If you belong to a conservation organization, garden club, sportsmen's and women's group, or any other outdoor/recreation group please inform them of the Wildlife Diversity Funding Initiative. The more support we generate, the better our voices will be heard.

-- Write letters to outdoor equipment manufacturers and suppliers to express support of the five percent surcharge. No legislation placing a user fee on sale items will pass in Congress if the manufacturers are against raising their prices. The manufacturers need to be convinced that the user fee is an investment in America's wildlife resources and will ultimately benefit their company by enhancing their customers' opportunities to view wildlife. As an outdoor enthusiast, you need to tell the outdoor industry that a small increase in price is worth the increase in conservation, education and recreational opportunities provided by the user fee. (The Pittman Robertson Act, legislation that placed an excise tax on hunting equipment, was supported not only by hunters, but also by the manufacturers and retailers of guns and ammunition.) A sample letter to industry contacts and a list of manufacturers has been included in this article to encourage people to write, **NOW**!

-- After legislation is introduced in Washington this spring, write letters of support to Congressional representatives in support of the Wildlife Diversity Funding Initiative. After the manufacturers are convinced of the utility of the user fee, our congressional representatives need to be encouraged to support the initiative and to vote for the surcharge on outdoor equipment.

Please join us in our efforts to attain increased funding for Iowa's Wildlife Diversity Program. Your annual investment of **only $2** will help protect more than 400 species of wildlife in Iowa.

Lisa Hemesath is a nongame biologist for the department located in Boone.

Partial text adapted from the Georgia Department of Natural Resources' brochure "Common Cents for Wildlife."

Following is a list of companies to whom you can write in support of the Wildlife Diversity Funding Initiative. This list is not all-inclusive. It contains only a few outdoor equipment manufacturers in the United States.

Outdoor Gear

Raine
4708 E. State Road
Daleville, IA 52556

The Natural Balance Design Co.
503 W Broadway, Suite 1
Fairfield, IA 52566

Mr. Dick Cabela, CEO
Cabela's Inc.
812 13th Avenue
Sidney, NE 69160-0001

Mr. Mike Hammes, CEO
Coleman Outdoor Products, Inc.
250 N. St. Francis Ave.
Wichita, KS 67201-2931

Mr. Leon Gorman, President
L.L. Bean, Inc.
1 Casco Street
Freeport, ME 04033

Mr. Bill Simpson
North Face
999 Harrison Street
Berkeley, CA 94710

Mr. Don Gobel, President
Browning
One Browning Place
Morgan, UT 84050

Hiking Shoes

Mr. Frank Uhler, CEO
La Crosse Footwear
1407 Saint Andrews Street
La Crosse, WI 54602

Mr. Sidney Swartz, President & CEO
Timberland Co.
P.O. Box 5050
Hampton, NH 03842

RV Manufacturers

Fred G. Dohrmann, President
Winnebago Industries Inc.
P. O. Box 152
Forest City, IA 50436

Backyard Wildlife Products

Mr. Brooks Pennington
Pennington Seed
P.O. Box 290
Madison, GA 30650

(Birdseed)
Mr. Mike Powers, President
Kaytee Products Corp.
292 East Grand
Chilton, WI 53014

Photographic Equipment

Mr. H. Murase, President
Canon USA Inc.
One Canon Plaza
Lake Success, NY 11042

Mr. George Fisher, President
Eastman Kodak Co.
343 State Street
Rochester, NY 14650-0229

Optics

Mr. Joseph Messner, CEO & President
Bausch & Lomb
Sports Optics Division
9200 Cody
Overland Park, KS 66214

Mr. Ed Greene, President
Carl Zeiss Optical, Inc.
Sports Optics Division
1015 Comerce
Petersburg VA 23803

Publishing Companies

(Publishers of Peterson Field Guides)
Houghton Mifflin
215 Park Avenue, South
New York, NY 10003

Canoes

Mr. Mike Cichanowski, Owner
Wenonah Canoes
1252 bundy Blvd.
P.O. Box 247
Winona, MN 55987

Streambank Stabilization Success

Willow Posts

by Kimberly K. Coulter

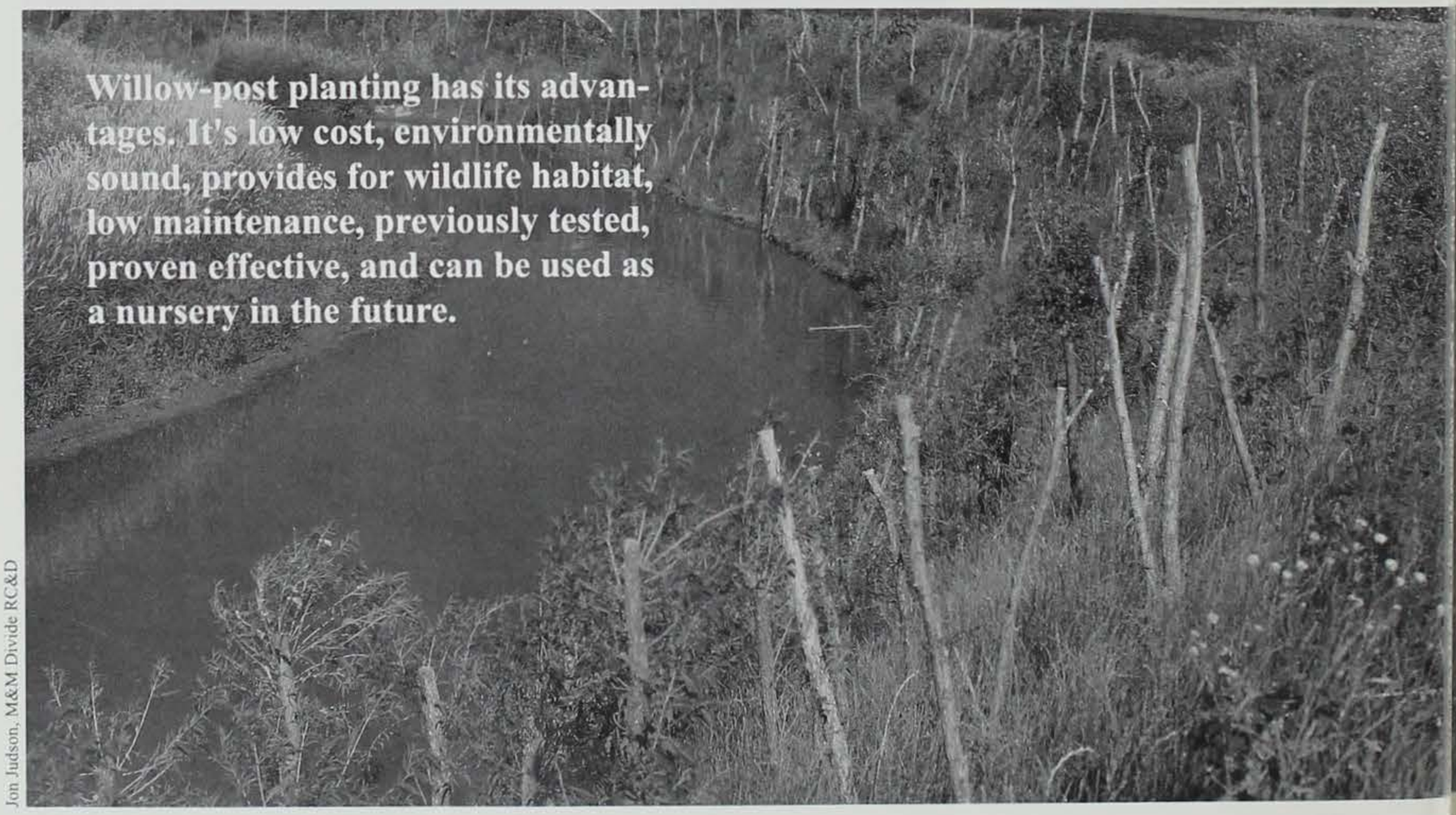
Floodwaters in '93 were of major concern along Iowa's creeks and streams. Many of them turned into raging torrents, causing major destruction of property. Valuable farmland was washed away. Bridge embankments gave out and roads were closed.

Before intensive agriculture became the primary use of the Iowa countryside, these streams meandered through hill and valley, posing little threat to the natural ecosystem. But in recent years, new streamside management practices have become more and more important to save crop and pasture land from being eaten into by rampaging waters. Streams and agriculture can get along with each other, but it takes special management to prevent stream degradation.

A variety of soil conservation practices, such as conservation tillage and terraces, can be used to reduce erosion and excessive water runoff from sloping crop land. Similarly, maintaining adequate vegetative cover on pastures and timber can slow water runoff and protect these areas from erosion. Even with these practices, it may be necessary to provide additional protection to streambanks in areas where flowing waters cause excessive bank erosion. One technique for providing such protection is willow-post plantings.

Soil bioengineering practices, including willow-post plantings, are becoming more popular across the nation. This creative approach uses living plants, native to a particular area, to anchor erosion-prone streambanks and other problem areas on slopes. The willow-post technique has been proven effective in helping to keep soil in place along streams in Illinois, though little work has been done in Iowa, until now.

According to Dr. Richard Schultz, ISU Department of Forestry and project leader of the Leopold Center Agroforestry Research Team, the new willow-post technique slows the collapse of a streambank by protecting the bank from erosion and by trapping soil and debris that is flowing down the channel. The roots, limbs and leaves act as a barrier to reduce the erosion force of flowing water on the streambank, creating a more stable bank during storm events.



Jon Judson, M&M Divide RC&D

Although streambank erosion is a naturally occurring geological process, modern farming practices and urbanization have tended to accelerate the process. Practices associated with these activities that frequently increase the volume and velocity of surface runoff into streams include:

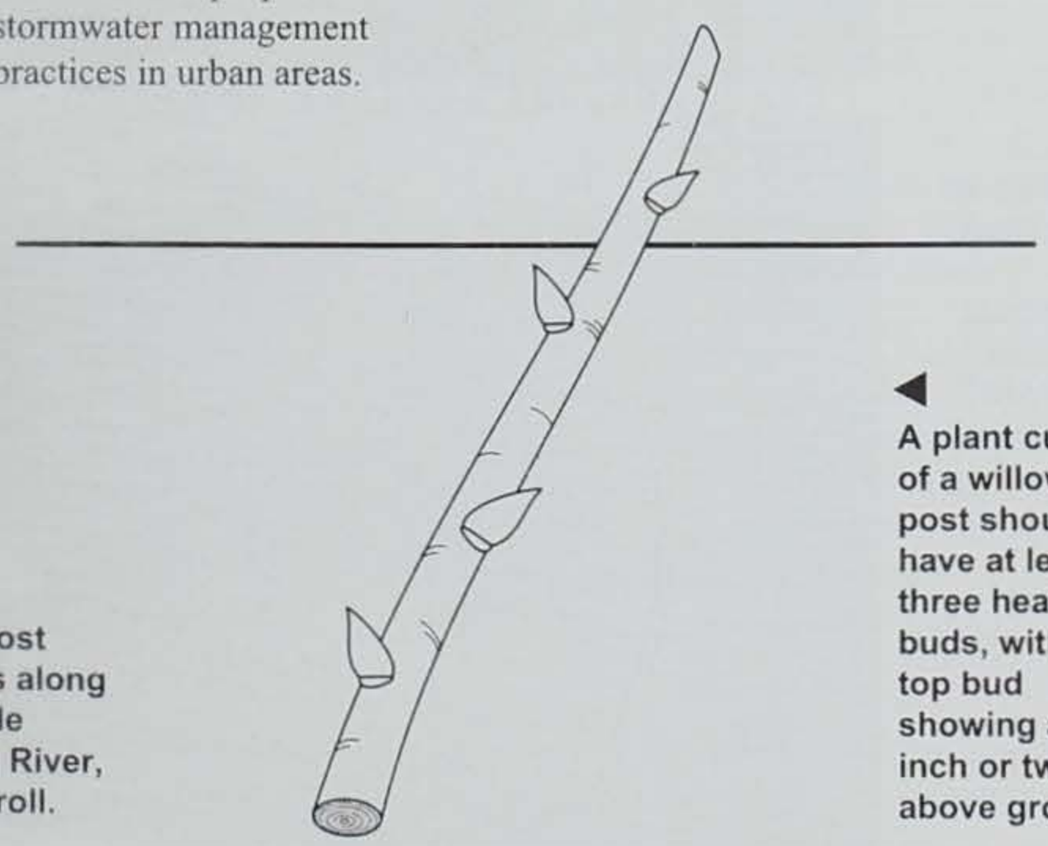
- Straightening and channeling creeks and streams.
- Clearing vegetation from streambanks, which could also mean giving grazing livestock access to streams.
- Less land in soil-conserving crops of hay, pasture and cereal grains.
- More land planted in erosive rowcrops of corn and soybeans.
- Larger farms and bigger equipment, which involve the removal of fencerows, hedgerows and windbreaks.
- Lack of proper land management on steep sloping pasture and timber acres.
- Increased surface drainage to eliminate "pot holes" in fields.
- A high percentage of urban land used for buildings, roads, and parking lots, which increases both the volume and rate of surface runoff.
- Failure to use proper stormwater management practices in urban areas.

Various species of trees that do well in wet areas can be used, but willows are the most common. Cottonwood, Silver Maple, Green Ash and dogwoods are other species that will also work. Since these are planted in the form of cuttings, the host tree is not destroyed. The cuttings are usually harvested from local trees, and can be any where from 1-4 inches in diameter and 5-12 feet in length depending on the site, condition of the soil and how far down the water table is.

These unrooted cuttings are planted in the ground, usually at the waters level and 2-3 feet above. A rubber mallet can be used if soil is too solid for pushing in the cuttings. Even large augers and hydraulic rams can be used to plant the large 4-inch diameter cuttings, 5-8 feet deep. Depending on where streambank protection is needed, the cuttings can be spaced every 4 feet or closer along the outside curve or bend of an eroding streambank where erosion is evident. The posts can also be used beside bridges to help support the bank where the water is narrowly channeled.

Usually the cuttings root and grow rapidly, producing a dense vegetative growth above the ground that protects the bank from erosion. If the post is planted deep enough, the subsoil becomes bound with a dense root mass that also helps hold the soil in place. During high water, the foliage, branches and trunks will also deflect the current of the river away from the streambank. The end result is a major reduction of bank erosion. With streambank erosion under control, grasses and other trees will grow, filling in the spaces.

As the cuttings and additional plant life takes hold they also begin to provide wildlife habitat for aquatic life, small animals and birds. Because willows prefer the waters edge, they seldom spread upland into the fields or into the water channel. If spreading does occur, some maintenance, like tillage or the use of herbicides, may be required to control the growth of the willows.



◀ Willow-post plantings along the Middle Raccoon River, near Carroll.

◀ A plant cutting of a willow post should have at least three healthy buds, with the top bud showing an inch or two above ground.

Willow-Post Advantages

- **Low cost,** both in terms of material and installation. As native trees are used, cuttings are easy to obtain. Installation is fast and permanent.
- **Environmentally sound.** The use of native materials encourages natural habitats in and around streams and enhances their scenic beauty.
- **Ongoing maintenance costs are low** and control is long-term because the willow-post method creates a natural environment that is self-sustaining.
- **Tested and proven effective** in Illinois and now in Iowa under flood conditions, even when heavy spring floods carry ice flows.
- **Other trees and landcover can grow** after the willows slow streambank erosion.
- **Once established, a planting of this type can be used as a nursery** from which additional cuttings can be harvested. The cutting taken from your first planting can be used to establish another site or expand the existing one.

Iowa Successes . . .

Traditional methods for controlling streambank erosion rely on riprap or a variety of cement and steel retaining structures. These methods typically cost $50 to $200 per foot and require maintenance and repair through the years.

The willow-post technique can be installed for $7 to $15 per foot, depending on the size and velocity of the stream and height and composition of the streambank. If using small posts on a creek, it could cost little or nothing but may require a small amount of maintenance or repair. Cost-share programs may be available that will cover up to 75 percent of these buffer strip expenses, including the willow-post plantings (see ***For More Information*** following this article).

In March 1993, one of the first willow-post projects in Iowa, was planted along the Middle Raccoon River. Jon Judson, project coordinator with the Mississippi and Missouri Divide Resource Conservation and Development Board, Dedham, Iowa (M&M Divide RC&D), said the project was done free of charge to the landowners. "This was a demonstration site so that others could view how willow posts work," said Judson.

The three-year project has sites along the Middle Raccoon River, between Carroll and Panora, in Guthrie and Carroll counties. In 1993, flooding of the Raccoon provided a dynamic demonstration of the project's value: after the river returned to its banks, Judson observed that most of the willow plantings had survived the water's force. Additional sites were planted following the flood. One site is located on Ed Tomka's farm, two miles east of Carroll. "After the flood in 1993, you could see that something needed to be done," said Tomka.

Judson planted a 630-foot section of streambank on the Tomkas farm with the willow posts in the spring of 1994. Tomka followed up by planting grasses on the sloped uplands and grass strips parallel to the trees. "There has been little maintenance," says Tomka, "but I did replace a couple of the willows due to some beaver and muskrat activity in the river early in the summer."

Judson says this demonstration project currently has five planting sites funded through the Leopold Center for Sustainable Agriculture at ISU and the Lake Panorama Watershed Association at Panora. Other project participants include the USDA Natural Resources Conservation Service (NRCS, formerly SCS), and the ISU Extension Service. Judson hopes that through work like this, programs will be developed to support similar work along all of Iowa's streams and rivers.

A second project is located along the banks of Bear Creek in Story County, just north of Roland on the Ronald Risdal farm. This research and demonstration project, now in it's sixth growing season, started as a stream corridor buffer strip demonstration. It has now expanded into using more specialized management techniques in the stream, including the willow-post plantings. It is funded through the DNR with money from the EPA's Section 319 Nonpoint Source Program and with Leopold Center funds. Additional funding was provided by the Stewardship Incentive Program, the Story County Pheasants Forever chapter, the USDA Cooperative Research Service and the Agriculture in Concert with the Environment program.

In the spring of 1992, willow posts of 3-5 feet in length were pounded into the stream bottom and shorter cuttings were pushed into the streambank at a bend of the creek where severe bank collapse occurred. Previously, as much as 15 feet of the bank and two rows of trees

ISU Department of Forestry

▶ This demonstrates the need for streambank stabilization after a 1991 storm event. Fifteen feet of bank was lost as well as buffer strip tree plantings.

ISU Department of Forestry

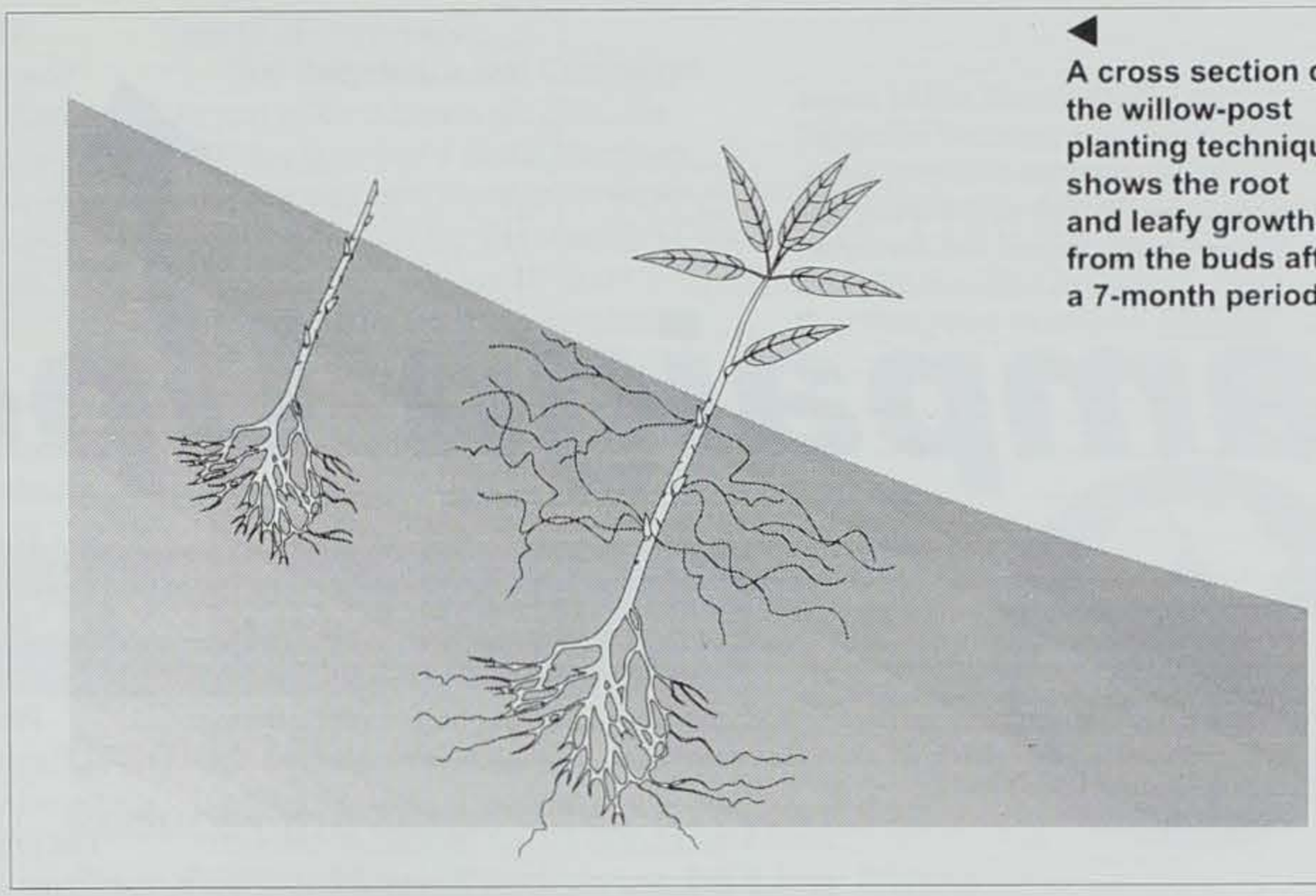
▶ Photo taken at same location after establishment of the willow posts. Growth of the willows has been dramatic and very little streambank has been lost since their establishment, even after the floods of 1993.

were lost in 1991, because the streambank was not protected from erosion.

In 1993, when Iowa had some of the worst flooding in years, the project area received some of the most intense rainfall on record, with 40 inches falling on the site by the end of July. Schultz said that it was remarkable that less than two feet of bank actually collapsed through all of those floods.

Schultz feels this technique has good promise for streambank stabilization, but says it doesn't work equally well under all conditions. "The technique is usually simple to apply, but there are important evaluations that should be made before using it and there are tricks to installing it, if it is to work effectively." Schultz also points out that where serious bank erosion occurs, site conditions such as soil, water velocity and depth, bank slope and upland activities can all effect the willow-posts ability to work well under stressful conditions such as flood events. Schultz says it works best as part of a total stream corridor management system.

This spring, a project on Sny Magill Creek, in northeast Clayton County, will be using willow-post and a variety of other traditional and soil bioengineering techniques. NRCS project coordinator, Jeff Tisl, is excited about the potential for the posts to control erosion. "We've seen it done for streambank stabilization, however our second goal here it to provide and improve on the natural habitat for the trout," said Tisl. They'll be using riprap from the bottom of the channel up to 1-2 feet above the water line. Then two-to-three rows of willows and Box Elder posts will be planted above the riprap and up the side of the bank. "This will cost substantially less than the normal six feet of riprap it would take to control the bank erosion," stated Tisl. To install the willow-posts, Tisl will conduct a workshop for interested technicians and landowners to actually come out and plant a section of the posts on Sny Magill Creek. Later in the fall, the project will be using other forms of soil bioengineering including root-wads and brush mattings for bank stabilization. Handicap assessable riprap bank-hide structures will also be built to enhance the creek for trout fishing.



A cross section of the willow-post planting technique shows the root and leafy growth from the buds after a 7-month period.

Kimberly K. Coulter is the nonpoint source information specialist for the department through a grant from the U.S. EPA under the Federal Nonpoint Source Management Program (Section 319 of the Clean Water Act).

For More Information:

Iowa Department of Natural Resources (DNR)
Provides information on tree planting and distributes tree seedlings to improve stream corridor timber stands. Cost-share money is available through the Stewardship Incentive Program. Property tax deferment is through the Iowa Forest Reserve Laws.

USDA Natural Resources Conservation Service (NRCS, formerly SCS)
Offers technical assistance for developing streambank erosion control plans. NRCS assistance can be requested by contacting your county Soil and Water Conservation District offices.

Iowa Department of Agriculture and Land Stewardship (IDALS) - Division of Soil Conservation (DSC)
Provides cost-share funding for a variety of conservation practices, including tree planting under the Resource Enhancement and Protection Program. Contact your county Soil and Water Conservation District offices for help with incorating these practices into your conservation farm plan.

USDA Consolidated Farm Service Agency (CFSA, formerly ASCS and FmHA)
Provides cost-sharing assistance for conservation practices, including streambank erosion control.

Iowa State University Department of Forestry and Extension Service
Supplies educational information on the willow-post method and erosion control alternatives for cropland.

Land Improvement Contractors
Offers specialized equipment for installing the willow-post stabilization system.

Buy Recycled, Iowa!

Campaign Update

by Beth Hicks

When Iowans are asked how they benefit the environment, recycling tops the list. To meet public expectations, recycling collection programs are rapidly expanding in Iowa. But what good does all this collection really do? None, if we don't put our money where our mouths are. Recycling - the collection , remanufacturing and purchasing of recycled materials - is only effective when we buy recycled products and "close the recycling loop." To make recycling work, the materials collected at offices, curbsides or drop-off centers must make their way back into the products businesses, governments and consumers purchase.

In October 1992, the National Recycling Coalition (NRC), a nonprofit organization in Washington, D.C., created and sponsored the Buy Recycled Business Alliance . The Alliance is a group of companies committed to increasing their purchases of recycled-content products and creating awareness of recycled materials' value, reliability and performance. National charter members of the Alliance with an Iowa presence include Bandag, Quaker Oats, McDonalds, Wal-Mart and K-Mart. The goal of this campaign is to enlist the support of business and industry to purchase recycled supplies and use recyclable materials in manufacturing whenever possible. Iowa companies have the purchasing power needed to increase the demand of recycled-content products in Iowa and across the country. Members of the Alliance have direct access to an established network of companies taking a leadership position in buying or manufacturing recycled products. There is no cost to join the Alliance.

Program Perks. By joining the Alliance, companies can gain valuable knowledge on buying recycled products. The program will also connect an organization with numerous companies throughout the United States that are doing the same. The benefits of membership include: technical assistance and information; peer counseling on any aspect of buying recycled; the *Buy Recycled Guide Book*, a step-by-step guide to help companies evaluate recycled-content products and to establish and/or expand a program; special assistance at "buy recycled" seminars held by the Alliance throughout the country; access to an extensive information network on recycled products; and a quarterly newsletter with tips from companies that have successful programs and advice on cost savings.

In the Eyes of the Consumer, You Are What You Buy. Many recycling and buy-recycled initiatives throughout the country have started as grassroots efforts by employees, either at work or in their communities. Both employees and customers respect companies that are planning for the future by responding to environmental issues.

Manufacturing and buying recycled products are no longer just "environmentally friendly" things to do. Today's consumers are expressing a clear preference for recycled-content products, so buying recycled makes good business sense for any company, whether it's a multinational corporation or a local business.

Why Should I Buy Recycled?

Buying recycled conserves energy and resources and reduces pollution. Buying recycled products reduces our dependence on virgin raw materials. Use of recycled materials often saves energy over virgin manufacturing processes.

Buying recycled reduces the disposal of valuable recyclable resources. By creating markets, recycled products help increase recycling rates and decrease the amount of waste being disposed in landfills and combustion facilities.

Buying recycled creates jobs and economic development opportunities. According to the Center for Biology of Natural Systems, recycling programs create approximately 2,000 jobs for every one million tons of waste materials handled annually. To maintain and expand recycling industries, end markets for recycled products are needed. Buying recycled products helps create these end markets.

Buying recycled persuades manufacturers to use more recycled materials. To use recycled materials, manufacturers sometimes must invest millions of dollars in processing and other equipment. To justify the investments, there must be demand for the finished recycled products. Buying recycled products helps create the demand.

Buying recycled saves money. As more and more recycled products are manufactured and purchased, costs will continue to decrease. Companies throughout the United States are proving that a buy-recycled program can improve the bottom line. One Alliance member saved over $33,000 by printing its annual report on recycled paper instead of virgin paper.

Buy Recycled, Iowa! Campaign.

As part of the Alliance program, the NRC has launched a media campaign and has asked state members to do the same on a local level. The Waste Management Assistance Division (WMAD) of the DNR is managing the local campaign. Iowa companies that join the Buy Recycled, Iowa! campaign will automatically become Alliance members through NRC.

Signs of the Times (from top):
Recycled Symbol: *Product contains some recycled content material*
Recyclable Symbol: *Product can be recycled, but doesn't necessarily contain recycled material*
Buy Recycled Business Alliance Logo

▼

Top Ten Reasons to Buy Recycled

10. Creates New Markets
9. Reduces the Disposal of Recyclables
8. Convinces Manufacturers to Use More Recycled Materials
7. Conserves Resources and Energy
6. Creates Job and Economic Development Opportunities
5. Satisfies Legislative Mandates (if applicable)
4. Sets an Example for Other Organizations
3. Provides a Proactive vs. Reactive Approach to Waste Management Problems
2. Enhances an Organization's Image
1. **Saves Money!**

Iowa has established a steering committee comprising representatives from public- and private-sector organizations dealing with Iowa business and industry. In addition, charter companies for the Iowa program were recruited. Charter companies to the Buy Recycled, Iowa! program are Bandag, Inc. (Muscatine), Burrows Paper Corporation/Packaging Division (Fort Madison), Hammer's Plastics (Iowa Falls), Iowa Plastic Technology Center (Waverly), Pella Corporation (Pella), Simpson College (Indianola) and University of Northern Iowa (Cedar Falls).

Governor Branstad declared October 1994 "Recycling Month" in Iowa by signing an executive proclamation encouraging local government, business and industry to take an aggressive approach in establishing programs that encourage use of recycled products.

In addition, the WMAD, steering committee, and charter companies kicked-off the Buy Recycled, Iowa! campaign at the fourth annual Iowa Recycling Conference in Des Moines this last October. The kickoff event was

planned to increase awareness of the program and recruit companies. The Iowa campaign will continue to recruit Iowa companies with a direct mail campaign and state-wide presentations.

Iowa's Own. In October 1994, the WMAD published the *Buy Recycled, Iowa! Recycled Content Products Guide*. The guide lists more than 200 manufacturers and distributors of recycled products in the state. The guide is organized by commodity. The guide will be available on a database system and updated regularly. Hard copies will be updated every six months, and are free to Iowa companies.

Lights, Camera, Action. A professional "buy recycled" presentation complete with graphics and a slide show was created for the Buy Recycled, Iowa! campaign. WMAD staff are available to make "buy recycled" presentations or a presentation kit is available for use by local recycling coordinators or organizations for local seminars, conferences, class activities, etc.

Green Shopping. The Buy Recycled, Iowa! campaign focuses on Iowa businesses and industries, not the public. However, the WMAD has carried over the "buy recycled" concept to its 1995 Earth Month Campaign. This April, WMAD, in conjunction with the Association of Iowa Merchants (AIM), will promote the Buy Recycled, Iowa! message to Iowa consumers through local discount retail stores. Participating stores will receive promotional items (such as clerk buttons, door signs and display posters), along with ideas for in-store promotions and media contacts. Stores will be encouraged to display recycled products they have in stock and educate their consumers on product availability.

The NRC and Alliance, in conjunction with the state of Georgia and Turner Broadcasting are promoting the "buy recycled" message to consumers through public service announcements and paid advertising this spring. Commercials will be aired on most major networks.

Close the Loop. Recycling and business belong together. Iowa companies can make a difference. The solid waste reduction from one buy-recycled program alone is significant. Do your part and close the recycling loop today.

Beth Hicks is a recycling specialist with the department's Waste Management Assistance Division.

Buy Recycled, Iowa! Charter Companies

Pella Corporation,
Pella, IA

Pella Corporation manufactures wood windows and doors among its three Iowa production facilities. The company recycles virtually all sawdust, aluminum, and glass. In addition, proceeds from company-wide paper recycling are donated to the Iowa Natural Heritage Foundation. A recipient of the 1992 Iowa Governor's Waste Reduction Award, Pella Corporation places recycling and buying recycled as an integral part of their on-going environmental stewardship efforts.

Bandag, Inc.,
Muscatine, IA

Bandag , Inc. is a manufacturer of retreading materials and equipment for a world-wide network of over 1,300 independent franchised dealers who produce and market cold process retread tires. The company buys large quantities of recycled products including office paper, wooden pallets, plastic slip sheets, ground rubber and maintenance supplies. The company's environmental steering committee's mission statement reads, "Evaluate and organize recycling waste minimization, and other environmental initiatives at Bandag."

Burrows Paper Corporation/
Packaging Division,
Fort Madison, IA

Burrows Paper Corporation is a paper converting company that produces sandwich wrappers and food service paper with recycled content. Buying recycled has helped Burrows Paper Corporation strengthen their partnerships with existing customers who stress recycled products and has enabled them to obtain new business in meeting the demand for recycled products. Their future plans include a search for new sources of recycled materials that could be used in production processes.

Plastic Recycling,
Iowa Falls, IA

Plastic Recycling manufacturers a full line of 100 percent recycled plastic traffic control items, park furniture, and dimensional plastic lumber. These items are not only a cost-effective alternative for wood, metal, and concrete, but they also have the environmental benefit of reducing the amount of plastic that would otherwise be placed in a landfill.

University of Northern Iowa,
Cedar Falls, IA

The university is a four-year accredited educational institution under the Board of Regents of the State of Iowa. The university purchases large quantities of the following recycled products: copier paper, toilet paper, brown towels, newsprint for printing, trash can liners, post-it notes, legal pads, file folders, envelopes, computer forms, etc. The university plans to continue buying recycled products, as long as prices are reasonably competitive and to expand the type of products purchased, where feasible.

Iowa Plastics Technology Center,
Waverly, IA

Iowa Plastics Technology Center serves as an informational and technical resource for Iowa plastics companies and companies with plastic processes.

▼ Urban wetland habitat slated for development and restoration

Walnut Wetland
And Open Spaces Project

by members of Walnut Community High School's Junior Class

Photos courtesy of The Natural Resources Conservation Service

Is a $62,000 project too big for ten high school students to take on? Yes? Maybe? We don't think so.

We, ten juniors of the Walnut Community High School, adopted the Walnut Wetland and Open Spaces Project in February of 1994 as a community service project. At that time, the school was trying to incorporate community service into the curriculum.

We took on this project to provide the town and surrounding communities with a much needed place for exercise, an area for classroom nature study, and a wetland and riparian habitat for area wildlife. Leroy Kadel, the director of the Pottawattamie County Conservation Board stated, "As well as providing more habitat for wildlife, this is an opportunity for your community to provide both the school-age children, as

REAP
Funds in Action

◄▼
Currently undeveloped wetland, the proposed park area is largely inaccessible and unsuitable for commercial or residential building. The addition of a butterfly garden, picnic shelters, benches, walkways and various other simple structures will beautify the area and encourage public usage.

well as adults, an area to enjoy and at the same time be an educational tool."

To carry out our plans, we received $39,825 from REAP (Resource Enhancement and Protection) and $12,300 from ISTEA (Intermodal Surface Transportational Efficiency Act.) The proposed site for our project is in the southwest corner of Walnut on approximately ten acres of land. This area is already a natural undeveloped wetland, and has no other useful purpose.

With the site chosen, our elected committee officers began holding weekly organizational meetings. For a brainstorming boost, the committee took a trip to the Adel bike trail and Saylorville Nature Habitat/Bike Trail to gather further ideas and information.

Next, five group members assisted an engineer with a topographical survey of the proposed area. "I thought going out and surveying was a great experience. I realized there was a lot more to the land than just junk and trees," stated junior Tonya Alff, who helped with the survey.

Another student accompanied an aerial photographer while he took pictures and a videotape of the wetland. "Going up in an airplane gave me an overview look of the open spaces and undeveloped land. From the airplane, it was a different view, and gave a better look at work that will need to be done," explained Chris Gurley.

In May, we met with a technical advisory team to evaluate the site for the proposed wetland. The advisory team consisted of a landscape architect, a soil conservationist, a wetland specialist from the National Resource Conservation service, a wildlife biologist from the U.S. Fish and Wildlife Service, and an engineer from the Golden Hills Resource Committee and Development. Then in late June, with the help of the advisory group suggestions, we participated in a design workshop to draw up a base plan, which would later be developed into a master plan. The suggestions included self-guided interpretive trails, shelters, a butterfly garden, a refuge area for wildlife, parking lots, a wooden catwalk over the wetland and an elevated wooden viewing platform.

After finalizing ideas, the master plan consists of restoring and protecting two wetlands, a riparian habitat, and native grasses and flowers. Within these restoration areas there will be a butterfly garden and 3,000 feet of vegetative

"... this an opportunity for your community to provide both the school-age children, as well as adults, an area to enjoy and at the same time be an educational tool."

REAP

Funds in Action

◀ This aerial photo shows the Walnut site with new proposed park developments.

buffers. The project will include a 3,000-foot-long trail of asphalt and granular stone. Two foot bridges and the wooden catwalk across the wetland will also be part of the path. There will be two orientation/picnic shelters, a wooden viewing platform, and two accessible parking lots. The restoration of a windmill is also planned.

The estimated cost of the project is $61,000. Our goal is to have the entire wetland completed in the next three to five years, with the planning group, community volunteers, and a local 4-H group (Layton Willing Workers) providing the labor. We plan to pass the continuation of the project on to a younger class.

Besides the REAP and ISTEA grants, we have held fund-raisers, such as Watkins and Tupperware sales and a spaghetti supper, to help finance the project, but most of the funding has come from local donations and grants. We are counting on financial support from local residents, businesses, and organizations to complete our project.

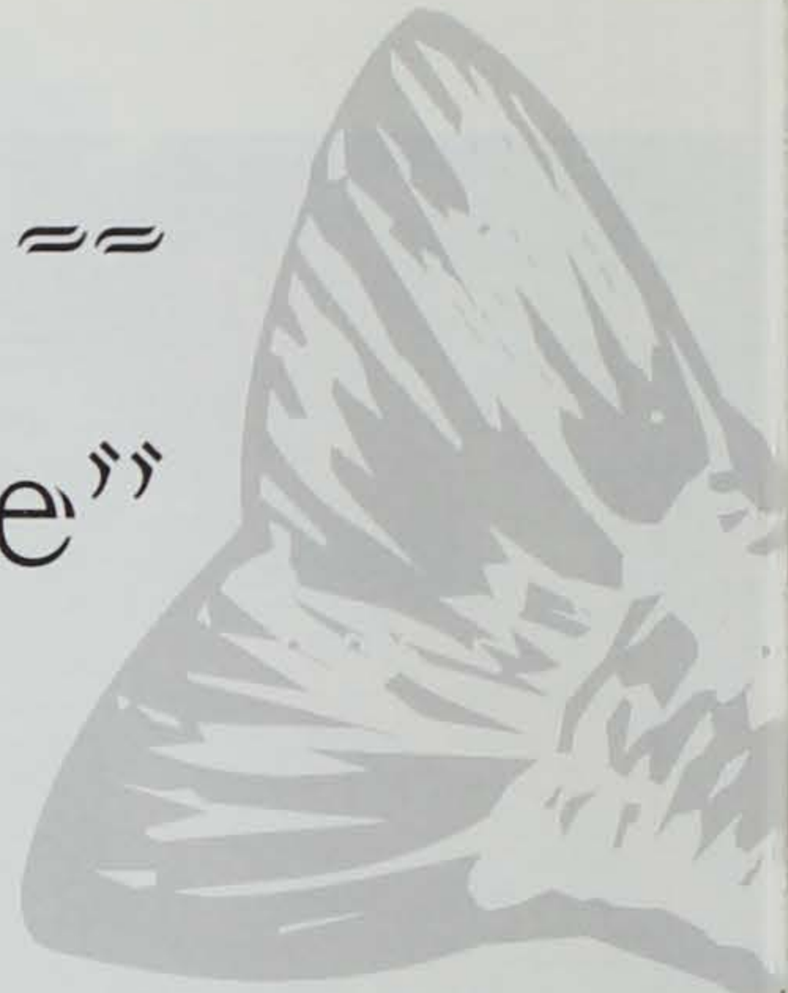
Walnut superintendent Warren Winterhof said of the endeavor: "I think the project is worthwhile. Personally, I appreciate all their efforts they have made to improve our community."

We feel that a project of this size takes time and cooperation from the members ourselves and from those we are working with. We feel that we wouldn't have been able to do it on our own and would like to say "thank you" to everyone who is helping to make this project possible.

◀ Through participation in the wetlands program, students have received a working knowledge of conservation practices and native habitat.

Authors Tonya Alff, Chris Gurley, Brent Hansen, Stacy Holtz, John Jensen, Le Anne Larsen, Rob Sampson and Erika Snyder are students at Walnut Community High School.

Lake Wapello -- A New "Release" On Life



by Jim Bruce
photos by Brian Hayes

Lake Wapello has a long, 60 years more or less, history as a good fishery and recreation area. Constructed in the mid-thirties as a Civilian Conservation Corps project, the lake and park conjure up many stories, among those long familiar with the area, of big bass and fine times.

This image became somewhat tarnished by the seventies, as Wapello became supplanted by Lake Rathbun as the place to be, plagued by panfish of less than impressive size and angling pressure began to fall off.

When gizzard shad were first found in Lake Wapello, in 1981, some people were quick to forecast the demise of the lake as a sport fishery. Others, viewing work being done in Missouri, felt shad might have potential for improving the fishery.

The prophets of doom based their view on first and second-hand knowledge of numerous small Iowa lakes where a proliferation of shad had resulted in a dramatic decline in the availability of harvest-sized sport fish and a resulting decline in good angling. This decline in sport fish may have resulted from their inability to compete successfully with shad for food, and perhaps a change in the food web by the addition of many efficient, filter-feeding shad.

Those who held a brighter view of shad theorized that a properly controlled shad population would be small enough to allow adequate food for good crappie growth and additionally, would provide excellent forage for predator fish. Largemouth bass were prescribed as the logical agent for the control of shad numbers. This theory also held that largemouth bass would be able to control panfish numbers so that panfish growth would improve and enhance recreational fishing.

In 1983, with rapid expansion of the shad in Wapello and infestation of shad in other state lakes, it was decided to implement an experimental management program which would control and use the shad population. Instead of poisoning the entire fish population and restocking with desirable species, this new program included the use of length limits and supplemental stocking.

Implementation of an 18-inch minimum length limit on largemouth bass (1984) caused a shift in the size composition of the largemouth bass population, with more 12- to 18- inch bass being available to the catch-and-release bass angler. While there was some increase in

number and weight of bass present, the high figure of around 10 pounds per acre greater than or equal to 6" in length, fell far short of the 45 pounds greater than or equal to 14" length deemed necessary for the control of shad numbers.

The stocking of fingerling bass in the fall of 1984 resulted in a significant increase in the number of one-year-old bass in 1985. However, during the next two years this large group of same-age fish dwindled dramatically until their numbers resembled those of previous, unsupplemented years.

During the same period, the shad population maintained itself at about 100 pounds per acre. There was little change in the panfish population, with light angling pressure resulting in the harvest of numerous bluegill and crappie of marginal size. In 1990, 70 percent of the harvest was of crappie with an average length of 7.9 inches. Bluegill, averaging 7.5 inches, made up another 27 percent. Channel catfish were less than one percent of the catch and the majority of these were less than 13 inches. *Angling pressure declined from 113 hours/acre in 1973 and 1983, to 99 hours/acre in 1985, to 63 hours/acres in 1987 and 1990.* This fell short of our goal of 120 hours/acre and indicated a growing angler dissatisfaction with the fishery.

The failure of the "shad management plan" to create the desired improvements prompted the decision, in the fall of 1990, to renovate the lake at the earliest possible date. The lake was drained in late fall of '91 and construction on the improvement began the next spring.

The renovation consisted of many activities. The Sport Fish Restoration Program provided $430,000 for construction of two, in-lake, silt-nutrient traps, enlargement of one existing silt-nutrient trap, four fishing jetties and one handicapped-accessible fishing pier. Other work, accomplished by department personnel with assistance of the Army National Guard, included two small fishing jetties, 1,200 feet of shoreline deepening, more than 8000 feet of ditch and hump to create bottom structure, 2,400 feet of shoreline riprap and placement of 2,500 pallets and 200 trees for fish structure.

Much of this work was done in 1992, and water started to collect in the lake after the headgate was closed in the fall of '92. Construction on the silt-nutrient trap in the summer of '93 required that some water be released and contract work on enlargement of the silt-nutrient dam was delayed until the fall of '93 which impeded refilling of the lake. The lake finally filled in the summer of '94.

Restocking Lake Wapello started as the lake was refilling. Largemouth bass, bluegill and channel catfish were stocked in the summer and fall of 1993. Additional bass and catfish were stocked in '94. Bullhead, green sunfish and black crappie were washed in from ponds in the watershed and are also already present in the lake.

Good fishing should return to the lake in 1996 and 1997. Catch-and-release fishing for bass and bullhead angling will lead the way with bluegill and channel cat fishing following. Crappie sizes and numbers will interest the angler beginning in about 1998.

A mandatory catch and release (no-kill) regulation for largemouth bass has been implemented at Lake Wapello. The benefits of this regulation will be high catch rates for bass and better quality sizes of bass to catch. The lake's panfish *and* panfish anglers will also benefit. With more bass in the system, both bluegill and crappie sizes will improve. Everyone benefits! Remember, in order to have the best fishing, lake anglers must release their bass; take the panfish and catfish for eating.

All the work that has been done will improve water quality, fish habitat and the fish population to the extent that Lake Wapello will become, once again, the place to be.

Jim Bruce is a fisheries biologist at the department's fish hatchery at Lake Rathbun.

The series of pictures on these two pages shows the changes and improvements at Lake Wapello. (from left to right)

◄

The placement of pallet "structures" adds shelter for fish. Trees anchored near the shoreline provide even more structure.

◄

Riprap added stability to the shoreline.

◄

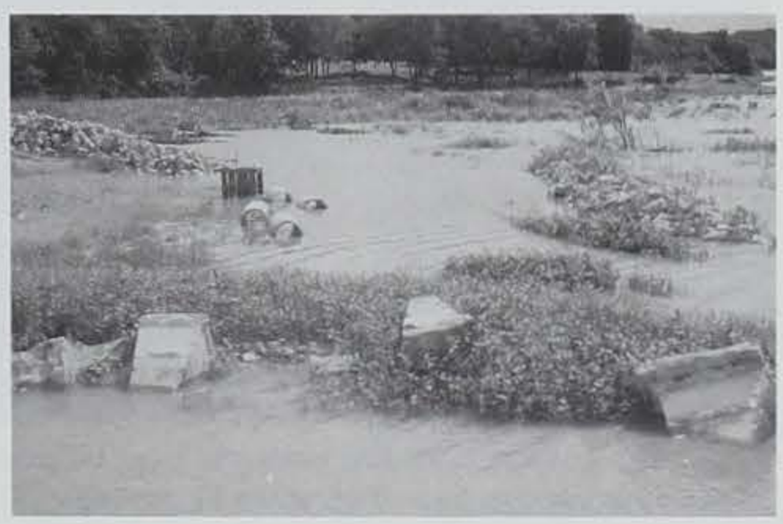
The National Guard did trenching in 1992 to create "ditch and hump" bottom diversity.

▼

The Wolf Hollow silt-nutrient trap is shown here in the spring of 1993. The main lake basin is still dry.

▼

This 1993 view near the campground shows rock and broken concrete added for structure. The water level is still six feet from full.



New Landmarks for Iowa: *Wind Towers*

by Ward Lenz and
Sharon Tahtinen

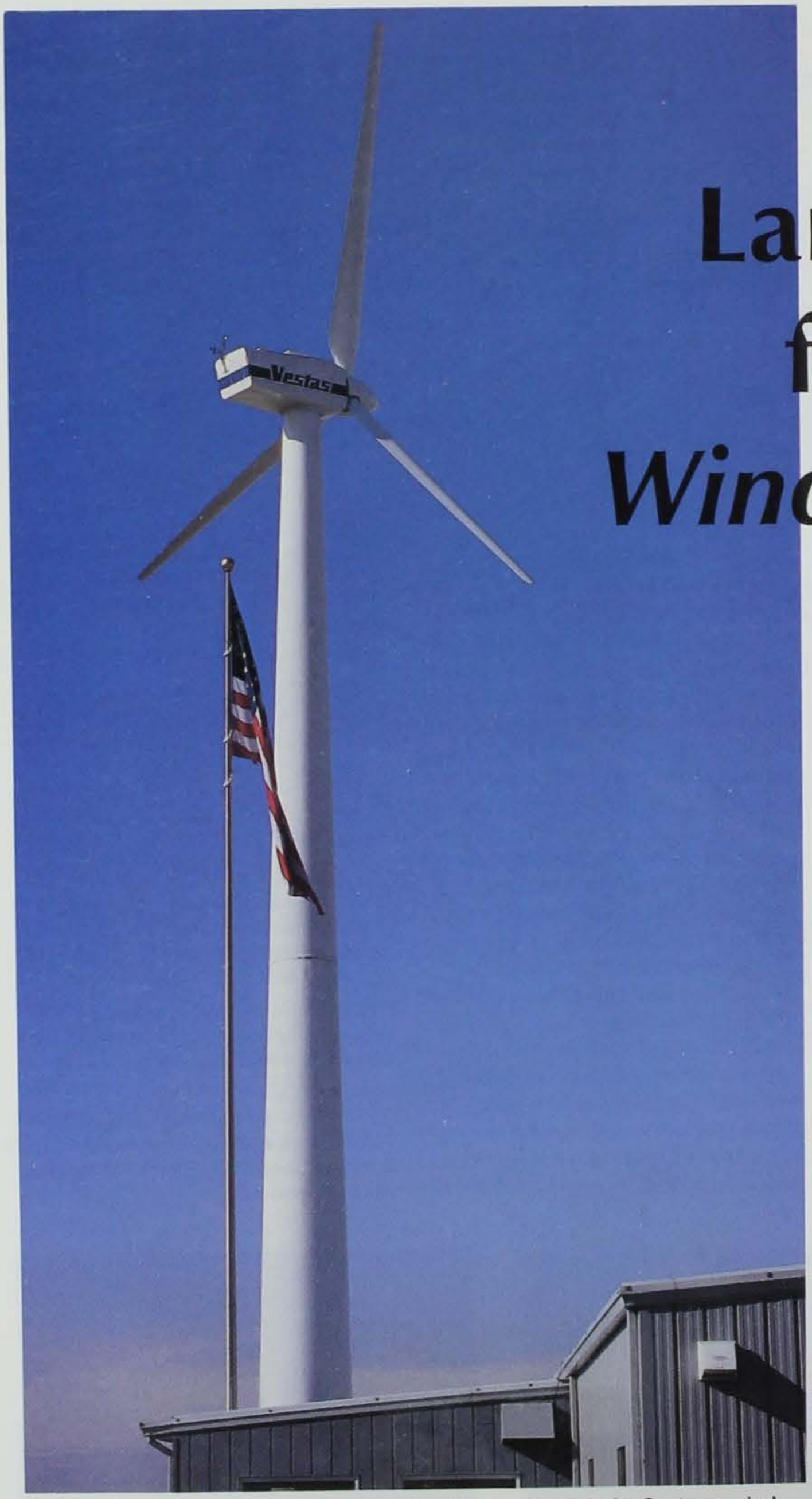


Photo by Ward Lenz

▲ A new landmark on the western Iowa landscape, the Schafer Systems wind turbine towers over Interstate 80 at Adair.

Frequent travelers on Interstate 80 between Des Moines and Council Bluffs have become accustomed to the smiling face painted on the Adair water tower. Now, however, residents of Adair have yet another landmark to point to in their town of 800. Schafer Systems, Inc., a local plastics manufacturer, has put up a 132-foot high wind turbine. The turbine, located right next to I-80, is visible for miles from either direction. The installation of the wind tower was completed on January 20, 1995.

The three 44-foot blades of the turbine are capable of generating 225 kilowatts of electricity. This is approximately enough energy to power forty homes but it is expected to provide 70-80% of Schafer Systems electrical needs.

Chris and Betty Schafer, owners of Schafer Systems Inc., as well as their purchasing manager, Phil Littler, became intrigued with the possibility of putting up a wind tower after reading about a school in Spirit Lake using wind to generate electricity. Taking matters into their own hands, the team started their research by installing an anemometer to gauge wind speed near their facility. "After taking computerized

readings for more than a year and a half, and finding wind speeds averaging 12.8 miles per hour, we determined it was economical to install a wind generator," said Littler.

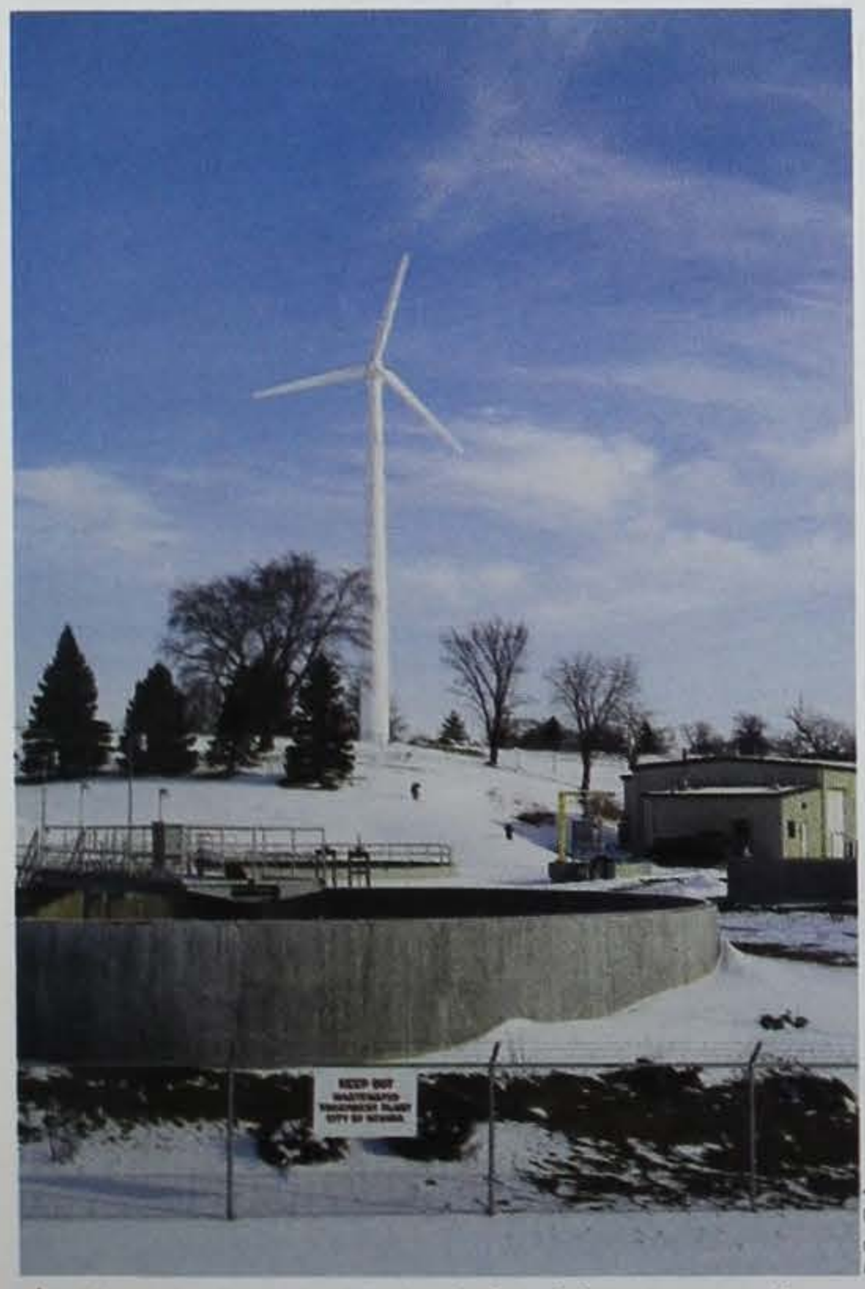
The town of Adair is in a good location for wind generation. According to Littler, "the top of our drive represents the second highest point in Iowa." A high altitude in relation to surroundings is often a good sign for wind production.

Only after proving wind power was feasible did the Schafer team begin to look at wind towers and develop contracts with the local utility. "If anyone learns anything from this project," said Littler, "it's that you need to learn your actual wind conditions first." One of the drawbacks of wind energy is that the wind speed generally drops during the summer months when the electricity demand for cooling is highest.

Even with the summer slowdown, Schafer Systems, Inc. expects to save enough in electricity costs to make the system pay for itself in eight years. A general rule of thumb for estimating costs of wind systems is that you can expect to spend $1,000 for every kilowatt of wind energy installed.

Schafer Systems is not just interested in wind power. The company works hard to reduce energy costs and eliminate wastes in many ways including installing efficient lighting and heating and cooling systems. The company actively recycles much of their waste from cardboard boxes to excess plastics. They are even working on a method to use the waste heat generated from plastic molding processes to warm the sidewalks and driveways to keep them free of ice and snow.

Schafer Systems is responsible for building and selling many of the plastic dispensers used in state lotteries in Iowa and more than 25 other states. They also export dispensers to over 25 foreign countries. The company employs 75 people.



P.S. Cale

▲ **Nevada, Iowa's third wind turbine powers the city's wastewater treatment plant.**

Schafer Systems is but one Iowa organization to go with the wind energy flow in recent times. Schafer Systems' mentor, the Spirit Lake Community School District, is generating approximately $29,000 per year in savings from the wind system they installed in 1993. In addition, the Nevada Community School District has installed a 200 kilowatt and a 250 kilowatt wind turbine with the expectation of generating about 50% of their electrical needs for the middle and high school buildings. The wind generators were the generous gifts of local philanthropists, Harold Fawcett and his sister, Josephine Tope. In late 1994 a third 250 kilowatt wind generator, owned by Story County Hospital, was installed in the same community. The turbine generates energy that is actually used by the city's wastewater treatment facility. General operation and maintenance services of the hospital's generator will be provided by staff at Schafer Systems in Adair.

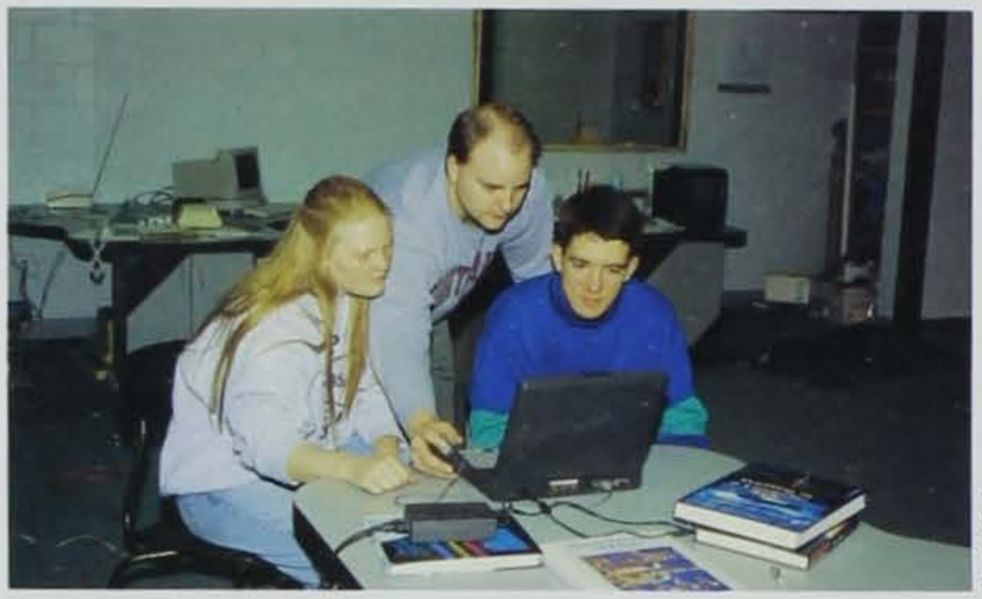
P. S. Cale

▲ **Old windmills are a familiar and treasured landmark to Iowans.**

Windmills of yesterday are as commonplace as the family farm in Iowa but were used primarily as water pumpers. The influx of modern wind turbines onto the Iowa landscape is evidence of an evolving wind industry in the state. Contributing to the increasing affordability of wind energy are innovations in wind generator efficiency and design. In fact, these changes have resulted in an almost 75% drop in the cost of wind generated electricity over the past 15 years. Meanwhile, with stronger materials and more experience, designers have been able to make products which have reached new levels of reliability. Today's systems are operational 99% of the time wind is available — a dramatic increase over the late 70s and early 80s when many wind generators were operational only 50-75% of the time.

Like Schafer Systems, individuals and organizations interested in develop-

ing wind energy must do their homework. Knowing the amount of wind resource in your area is the first step in proceeding with a project. Resource assessments, much like the one completed at Schafer Systems and the Spirit Lake School District, are being conducted around the state. The Iowa Energy Center has funded the installation of 13 anemometers across the state to assess the state's wind resources. The anemometers are located at 33, 100 and 145 feet on large towers. The data is collected via cellular phone hookups and will be an invaluable tool in helping to determine the cost effectiveness of a wind energy project. It is leadership and support from both the technical and institutional arenas that can make a difference to Iowa's wind industry.



P. S. Cale

▲ Students and staff monitor the Spirit Lake wind turbine through a computer program and modem.

The State of Iowa has demonstrated its support and commitment ot the development of renewable energy, and particularly wind, in a number of ways. The Iowa Legislature passed legislation in 1990 requiring Iowa's investor owned utilities to purchase 105 megawatts of independently produced energy. This legislation has enabled organizations such as Spirit Lake to enter into a contract to sell excess electricity to their utility for a guaranteed rate. In addition, legislation passed in 1993 exempts wind energy conversion system equipment from sales taxes. This same legislation allows local jurisdictions to exempt landowners from paying additional property taxes on the value of the wind energy conversion systems. Finally, wind energy conversion systems, as well as other cost effective renewable energy projects planned for installation by cities, counties or school districts, are eligible for low cost loan financing through the Iowa Energy Bank Program which is operated by the Department of Natural Resources.

As the technical, economic and institutional barriers to the development of wind energy become more and more understood and overcome, spinning wind turbines generating clean and renewable energy for Iowans will become a more common sight. "It is through the innovation and commitment demonstrated by school districts and industry alike that will make wind energy become a part of Iowa's energy mix," said Roya Stanley, DNR Energy Bureau Chief. For a state that imports 97% of its energy, the answer may indeed be, at least in part, blowing in the wind.

Ward Lenz is a Program Planner and Sharon Tahtinen is an Executive Officer with the Energy Bureau in Des Moines.

Steps to consider when contemplating wind energy:

1. Determine yearly electrical requirements or consumption rates and the cost per Kilowatt hour.
2. Measure wind speeds at several altitudes for a minimum of 6 months.
3. Evaluate the site.
- **A. The site should have easy access to power lines.**
- **B. The site should be in an open area with no obstructions (buildings, trees, hills)**
- **C. Contact planning/zoning office regarding local regulations.**
- **D. Contact the County Engineer to ensure that the soil structure at the site is solid enough to handle a large turbine.**

4. Shop around!
- **A. Contact various wind turbine manufacturers for system sizes and costs.**
- **B. Calculate preliminary payback based on electrical requirements.**
- **C. Make an estimate as to cost effectiveness of proposed wind system based on the cost of borrowed money, electric rates and tax incentives.**

5. Establish a working relationship with your utility representative.
- **A. Review utility and insurance liability requirements.**
- **B. Inquire about utility buyback options, net billing or AEP rates.**
- **C. Develop a contract with the utility.**

Looking for the Perfect RAINBOW

The headline in a recent Iowa newspaper read: "A different kind of rainbow trout to be stocked in Iowa trout waters."

Upon reading this, an angler asked me, "Isn't one rainbow trout just like the next"

"Good question," I answered, "Yes and no."

Yes, all rainbow trout have similar characteristics associated with appearance such as coloration and body structure that make them all alike. All rainbow trout have a pink to reddish stripe running along the lateral line from the head to tail and there are black spots on the side, back and upper fins. This distinct coloration distinguishes the rainbow trout from other trout species such as the brown and brook trout. To an angler fighting a rainbow on the end of the line, yes, they are all the same -- beautifully colored and aggressive fighters. But this is where the similarities end.

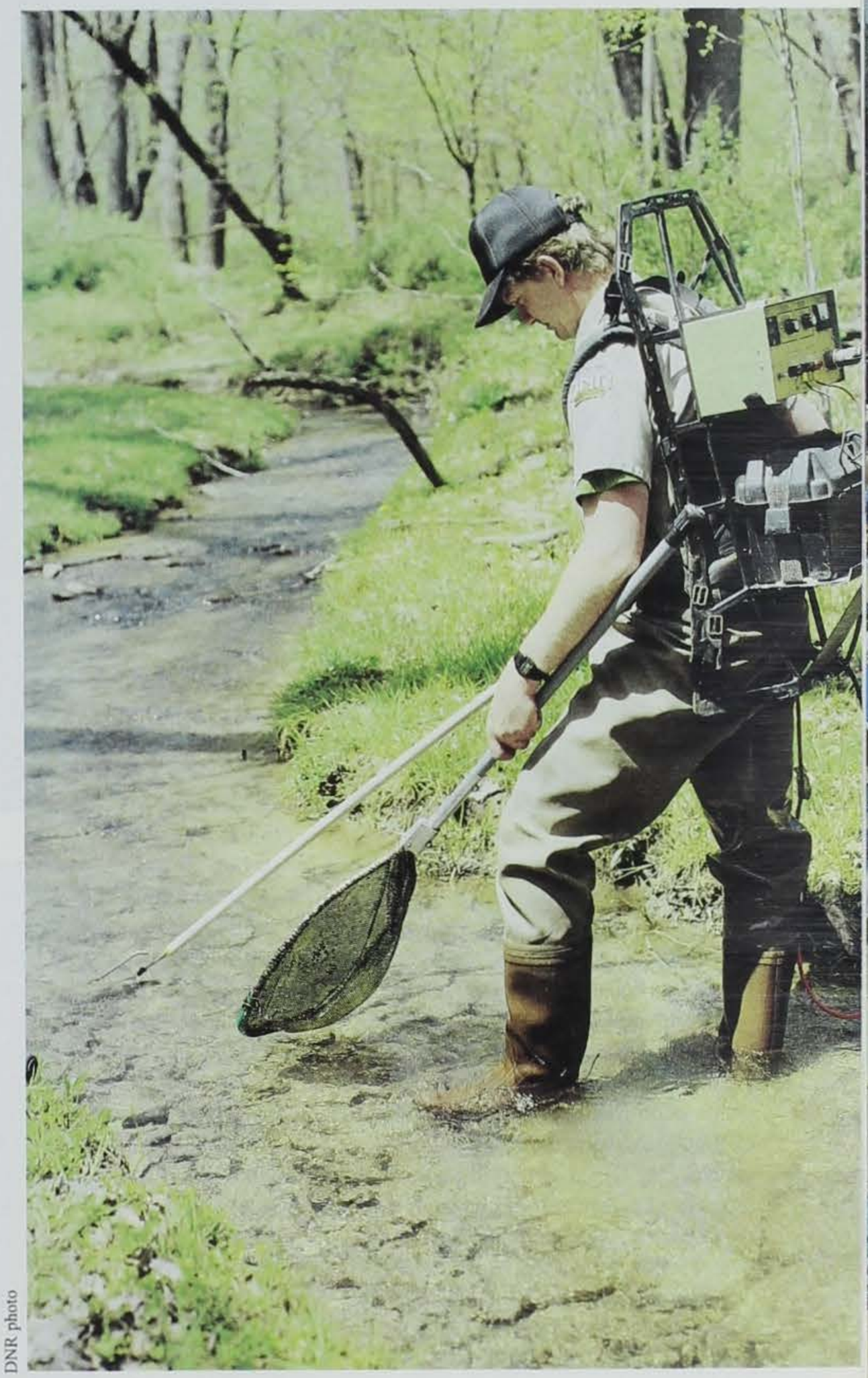
The "not " part of my answer to the angler is much more complex. Within the rainbow trout species there area number of differences involving characteristics that are not noticeable to the untrained eye. Separate populations of trout may show differences in growth rate, breeding season or resistance to disease to name a few. Populations of trout with in the same species that exhibit different characteristics are commonly referred to as strains. In domesticated animals like cattle or dogs, these differences are referred to as breeds.

It is a continual process within the department's fisheries bureau to seek out strains of fish that are best suited to Iowa for Iowa anglers. To select the proper strain of fish that most appropriately meets those needs, DNR fisheries personnel research important characteristic like those previously mentioned. For rainbow trout this process began nearly 20 years ago.

Prior to 1970, most of the trout stocked in Iowa

◆ ◆ ◆

by David M. Marolf



DNR photo

▶

The Shasta strain of rainbow trout grows fast, survives well and provides plenty of action to anglers.

◀ (Facing page) Backpack electro-fishing a small trout stream. Electro-fishing is a technique used to sample trout.

Manchester trout hatchery is one of three Iowa trout-rearing facilities.

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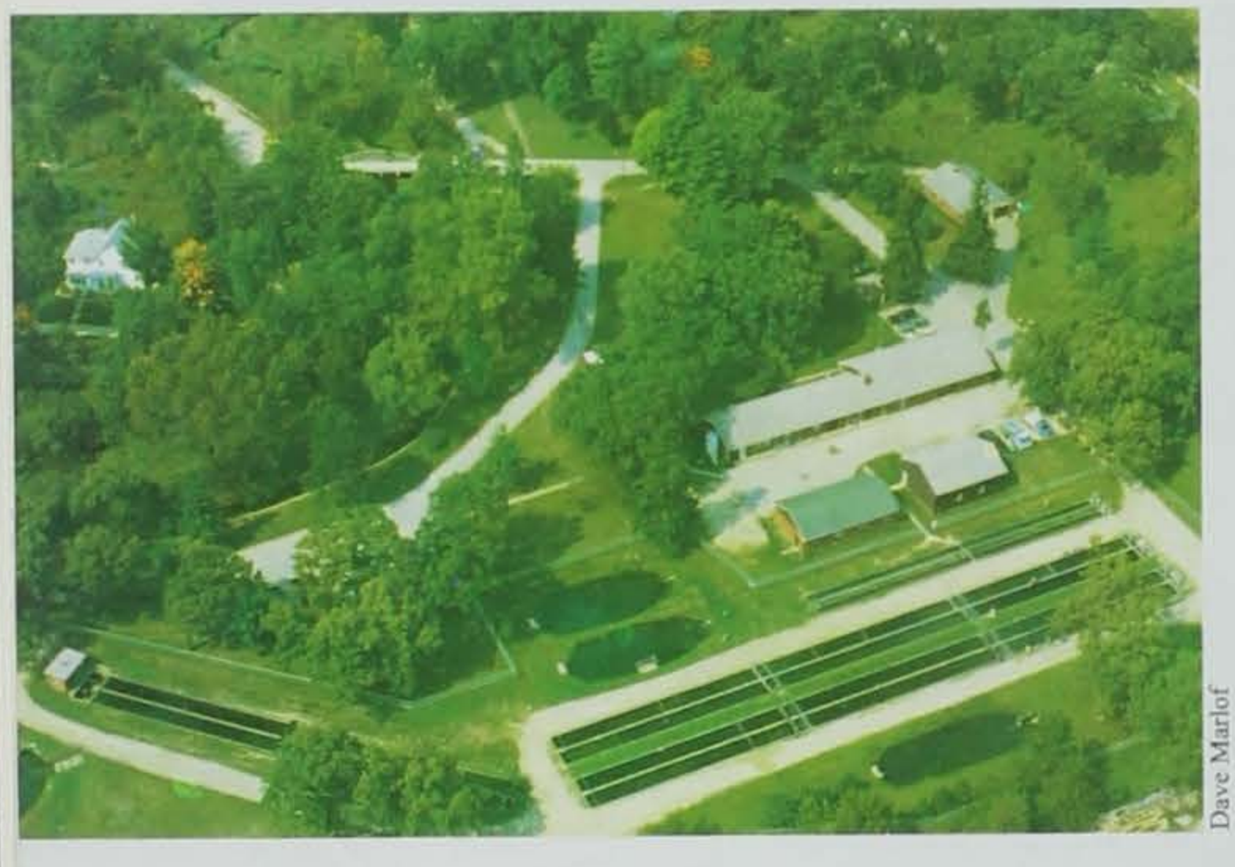
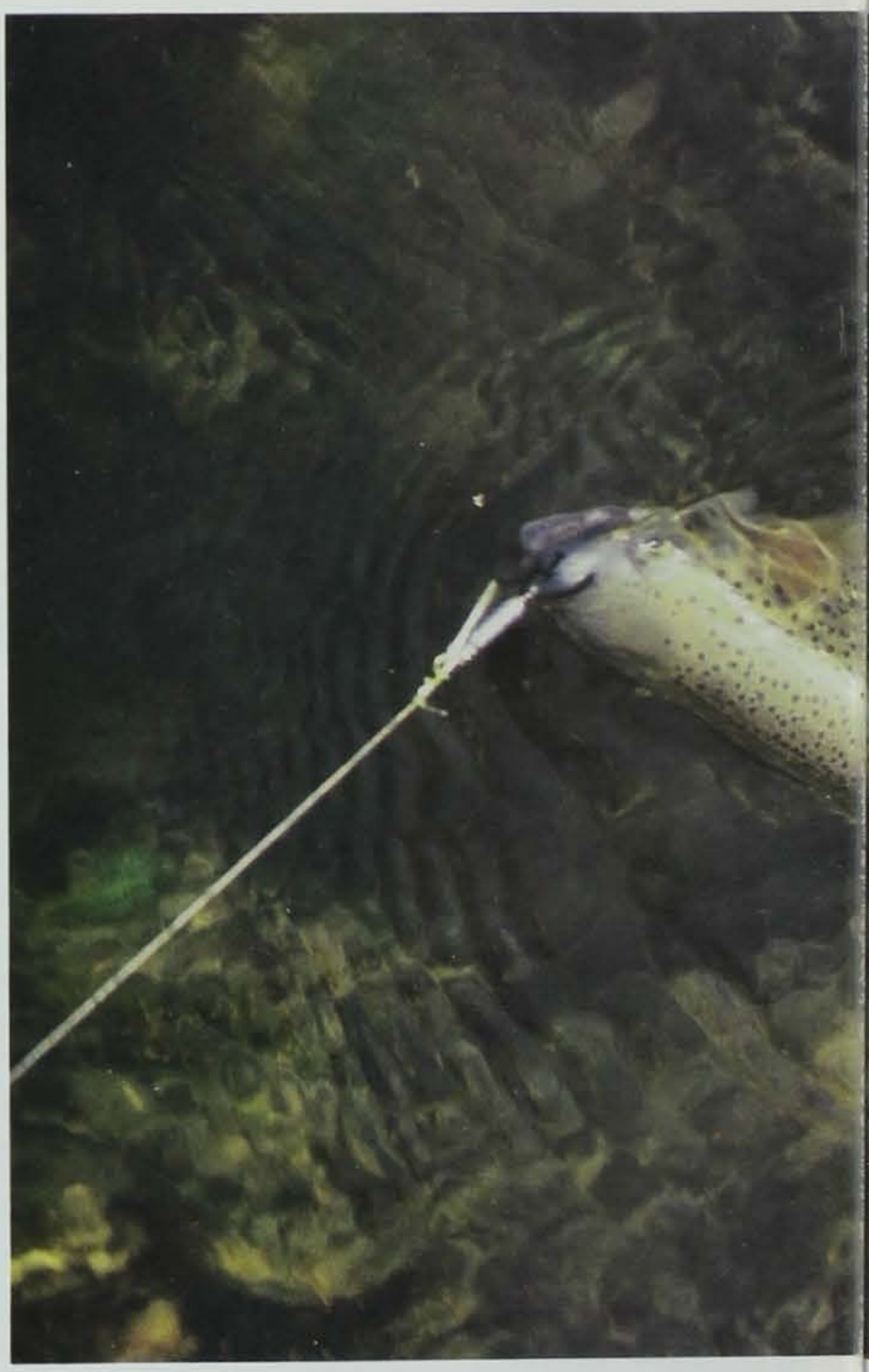


Dave Marlof

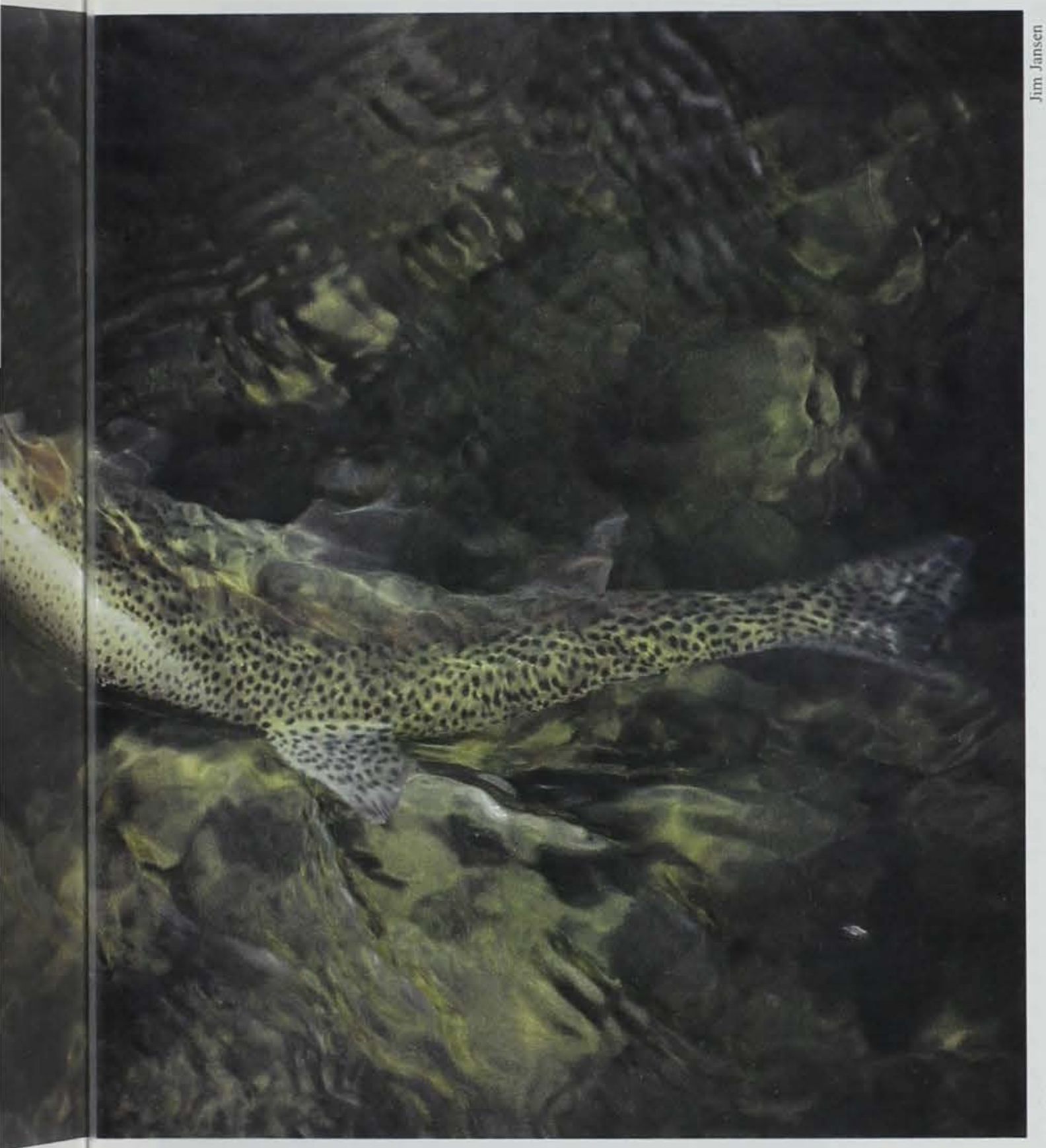


waters came from eggs that were shipped into Iowa from other states or U.S. Fish and Wildlife Service hatcheries. At certain stages of development, trout eggs can be shipped safely in cartons packed with ice. Years ago, however, the egg supply was not always dependable and the possibility of contaminating an Iowa hatchery with an egg transmissible disease was high.

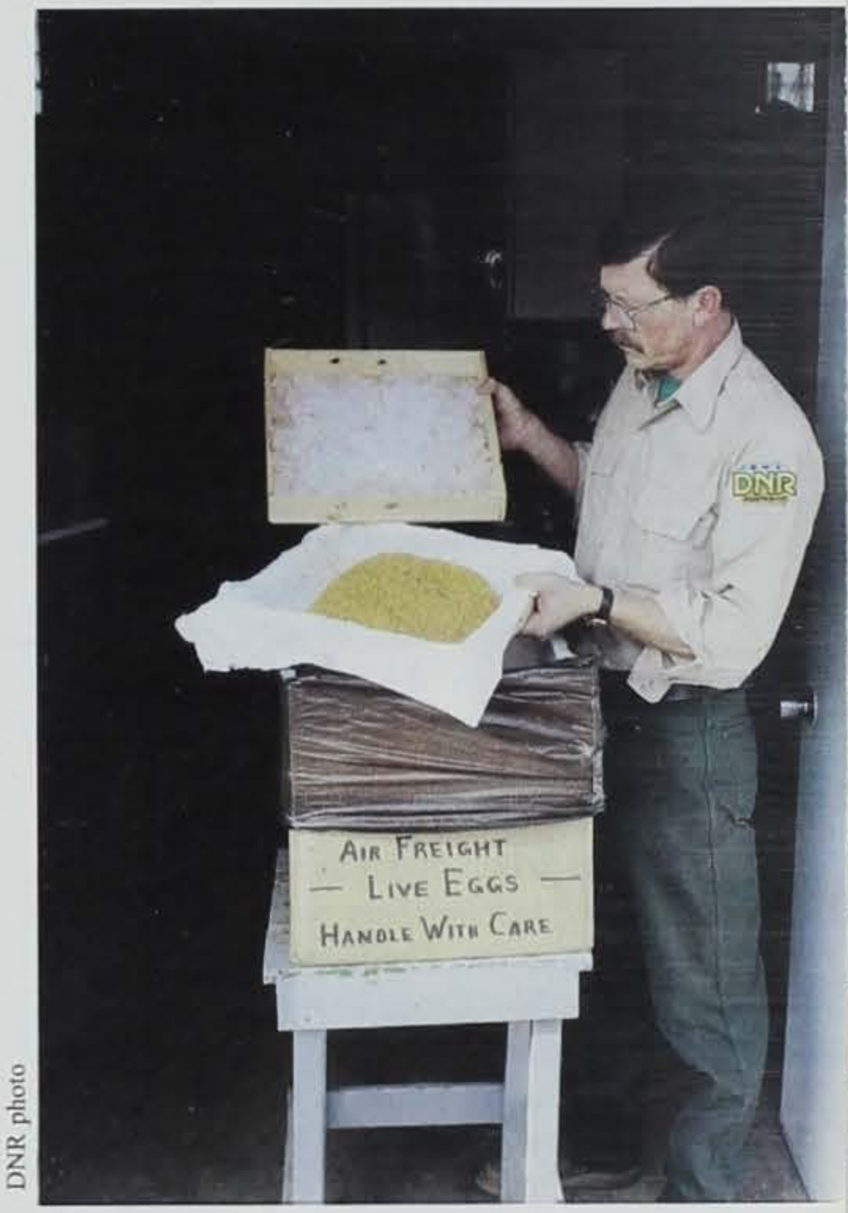
In 1971 the old Backbone hatchery received a shipment of rainbow trout eggs from Nevin State Fish Hatchery near Madison, Wisconsin. From this shipment, Iowa's own broodstock was developed. The Nevin strain rainbow was a good fish for Iowa. The offspring of this broodstock exhibited a good growth rate (eight-tenths of an inch per month), was resistant to common trout diseases, and it was a good fighter that was relatively easy for anglers to catch. The Nevin strain rainbow spawned in September giving hatchery workers plenty of time (18 months) to raise a half-pound, 11-inch stocking-size trout. However, by 1976, we realized that 18 months was actually too long. It would be beneficial if we could find a strain of rainbow trout that would spawn in the winter or spring. Doing this would reduce, by several months, the time that the trout would have to spend in hatchery confinement and reduce production cost.

The search for a winter- or spring-spawning rainbow strain began by getting eggs shipped into Iowa's Manchester Hatchery from federal hatcheries located in West Virginia, Tennessee, Wyoming and Montana. There are literally scores of rainbow strains across the continent, each with different characteristics. The availability of a particular strain varies from virtually impossible to obtain wild strains to easily obtainable domestic strains commonly cultured at many hatcheries in the U.S. We were looking for a domesticated trout; one that would be suitable for a crowded hatchery environment. Our search focused on approximately 30 strains that we felt fit our criteria.

Several other characteristics were also essential. The new rainbow had to spawn between January and April and it had to grow well enough to reach stocking size within one year at a reasonable production cost (less than $1 per fish). Like the Nevin strain, it had to be resistant to common diseases in both crowded hatchery confinement or in a winding, coldwater stream. Equally important, it had to be acceptable to Iowa trout anglers. To assess these criteria, each new strain had to be analyzed on its performance both in the hatchery and after it was stocked into streams.



Jim Jansen



DNR photo

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Careful shipping and handling of Shasta rainbow eggs, including air delivery, is necessary to ensure their viability.

DNR photo

◄

Fin clips are used to mark trout, helping biologists identify fish and determine success rates of stocking programs.

It is not a fast-paced process. Complete analysis of a strain takes at least four years. Most female rainbows produce eggs for the first time at three years of age. About every other year a new strain would arrive to begin testing. Each had its benefits; each also showed negatives. Hatchery personnel would joke that the Donaldson strain from Montana would "beat the stocking truck back to the hatchery." In other words, they migrated out of the stocking area quite rapidly. Not a good trait for an Iowa trout since it leads to poor survival and poor angler catch rates. Therefore, the Donaldsons were rejected. The Winthrop strain, like the Donaldson, was hard for anglers to catch and did not do well in hatchery confinement. They too were rejected. The search continued. For one reason or another, each new strain failed to meet our standards. Throughout the process we continued to use the Nevin strain as our primary rainbow broodstock. Finally, in January 1986, we received a shipment of 10,000 Shasta rainbow eggs from Ennis National Hatchery in Montana. Things were about to look up.

The origin of the Shasta strain can be traced to a hatchery on the McCloud River in norther California where in 1950, the Hot Creek strain from California was crossed with an unnamed strain from Pocatello, Idaho. The Idaho fish likely came from Neosh, Missouri. The Missouri Department of Conservation had been having success with Shastas, so we were anxious to try them in Iowa.

From the start, the Shasta rainbow looked promising. The eggs developed well and hatched with more than a 90 percent survival. The newly hatched fry accepted a dry granular diet equally as well and, when fingerlings were moved outdoors into concrete raceways, they grew very fast -- more than an inch per month. Compared to the rainbow we had been using, the Shastas had as good or better survival, growth rate and food conversion. Two more egg shipments were lined up for 1987 and 1988. Records kept of the eggs and fish from each shipment proved that the Shasta would be fine from a production standpoint. Better survival and growth would reduce labor and feed costs.

Once the Shastas reached stocking size, how well would they perform in the stream? To answer this, creel studies were conducted at Bailey's Ford on Spring Branch Creek and at Joy Springs on the Maquoketa River. Equal numbers of Shasta and Nevin rainbow were fin-clipped to distingquish the two strains and then stocked together for a comparison of how easily they were caught and how much they traveled in the stream.

Data collected from both creel studies indicated that the Shasta rainbows were superior to the Nevin strain after they were stocked. More of the Shastas were caught by anglers on the day they were stocked (58 to 38 percent) and this pattern continued, days after the stocking. The creel studies indicated a total of 89 percent of the Shastas were eventually caught compared to 54 percent of the Nevin rainbows. Where were the fish that did not get caught? To answer this question, gear was used involving biologist wading in the stream with backpack electronic sampling equipment to find fish still present in the study area. Results indicated that within 24 hours, 35 percent of the Nevin rainbows were gone, but only four percent of the Shastas were missing. No mortalities were observed to indicate trout had perished due to stress or disease. Predators? There was no sign to indicate trout were being eaten by herons, monk or other animals. It was assumed that migration out of the area accounted for the majority of the missing fish. Even though more of the Shasta were caught on the first day, more were still in the stream and available to the angler on the second and third days after stocking.

A short hike will get you to some fine trout fishing in one of many spring-fed streams.

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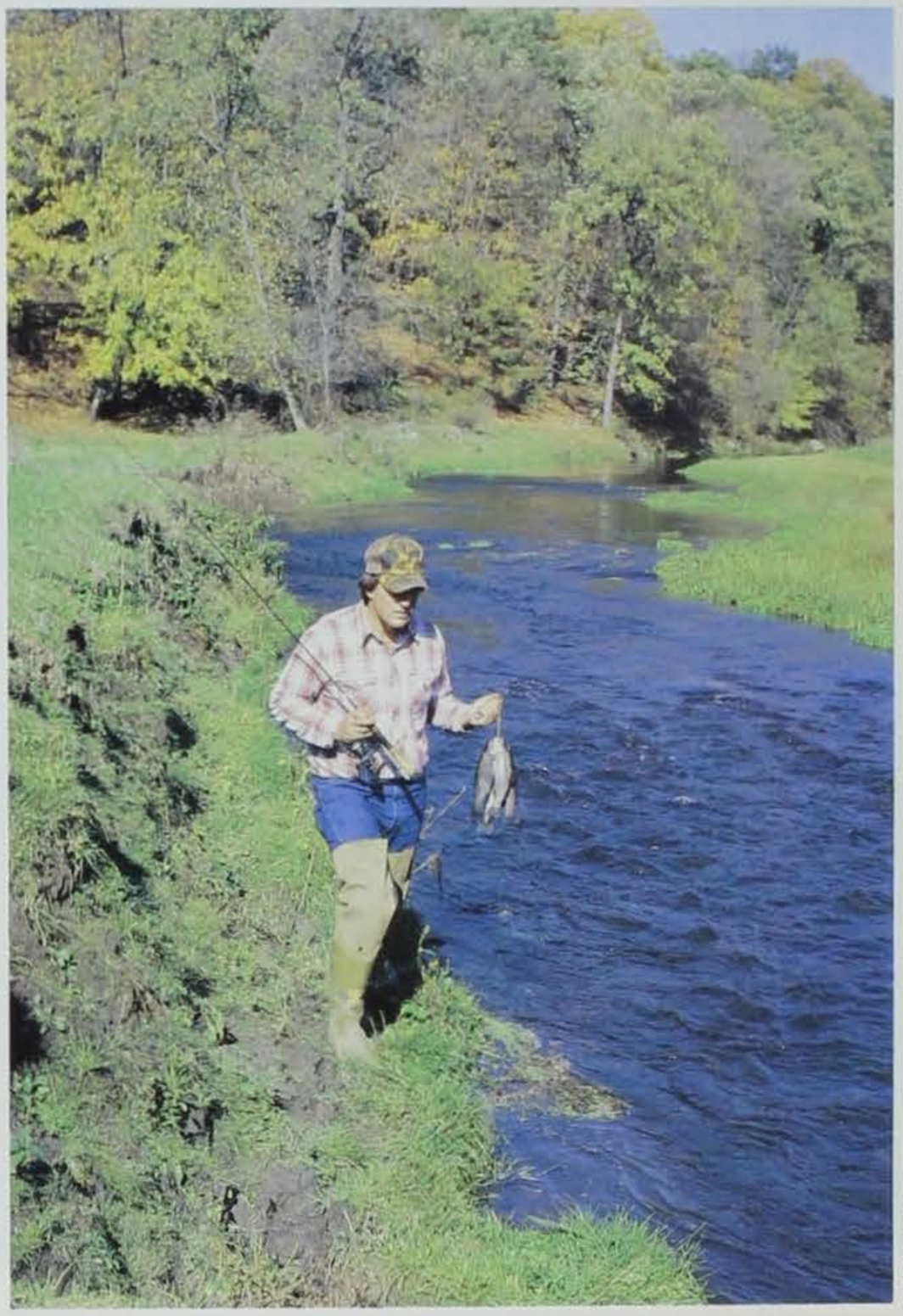


Ron Johnson

Interviews conducted during the studies indicated anglers were happy with the "new" rainbow. Shasta's were scrappy fighters and readily caught with a variety of tackle, using either bait or artificial lures.

At this point we were sure the Shasta were the better fish we were

Ron Johnson

◀ New trout species means fuller stringers, better eating and more excitement and fun for Iowa anglers.

Iowa's trout fishing rivers are located in the northeast corner of the state. ▶

looking for. We now had to develop a broodstock adequate to produce 300,000 to 400,000 eggs per season to propagate in Iowa hatcheries. Young fish produced from each of the three egg shipments were selected to develop a broodstock. To ensure the good traits of the Shasta are passed on from one generation to the next, new fish are selected randomly from each year's production and periodic genetic testing is planned.

Prior to introduction of the Shasta rainbows, anglers often complained, "The stream is fished out." Stocking truck drivers were regularly greeted by anglers who hadn't 'wetted a line.' Today, anglers are more often catching "holdover" rainbows any time of the year. Truck drivers commonly see trout on the stringer already when they arrive to restock a stream. Since introduction of the Shasta, DNR personnel have verified natural reproduction in two streams. That's a first for a rainbow trout in Iowa as nearly as we can tell.

This year, all rainbow trout stocked in Iowa waters will be from the Shasta strain. This could have occurred earlier, however, an unprecedented three floods since 1990 at the Big Spring Hatchery on the Turkey River made it necessary to keep the old Nevin strain a few extra years to ensure adequate numbers to stock.

Time to relax? No! The job has only just begun. We are now in the midst of similar projects to improve brown trout and reintroduce Iowa's only native species -- the brook trout. Hopefully, in the future Iowa trout anglers will see strains of these species better suited to Iowa coldwater facilities and resources. Is the Shasta a perfect rainbow? Maybe. Maybe not. But I can assure you we won't stop looking!

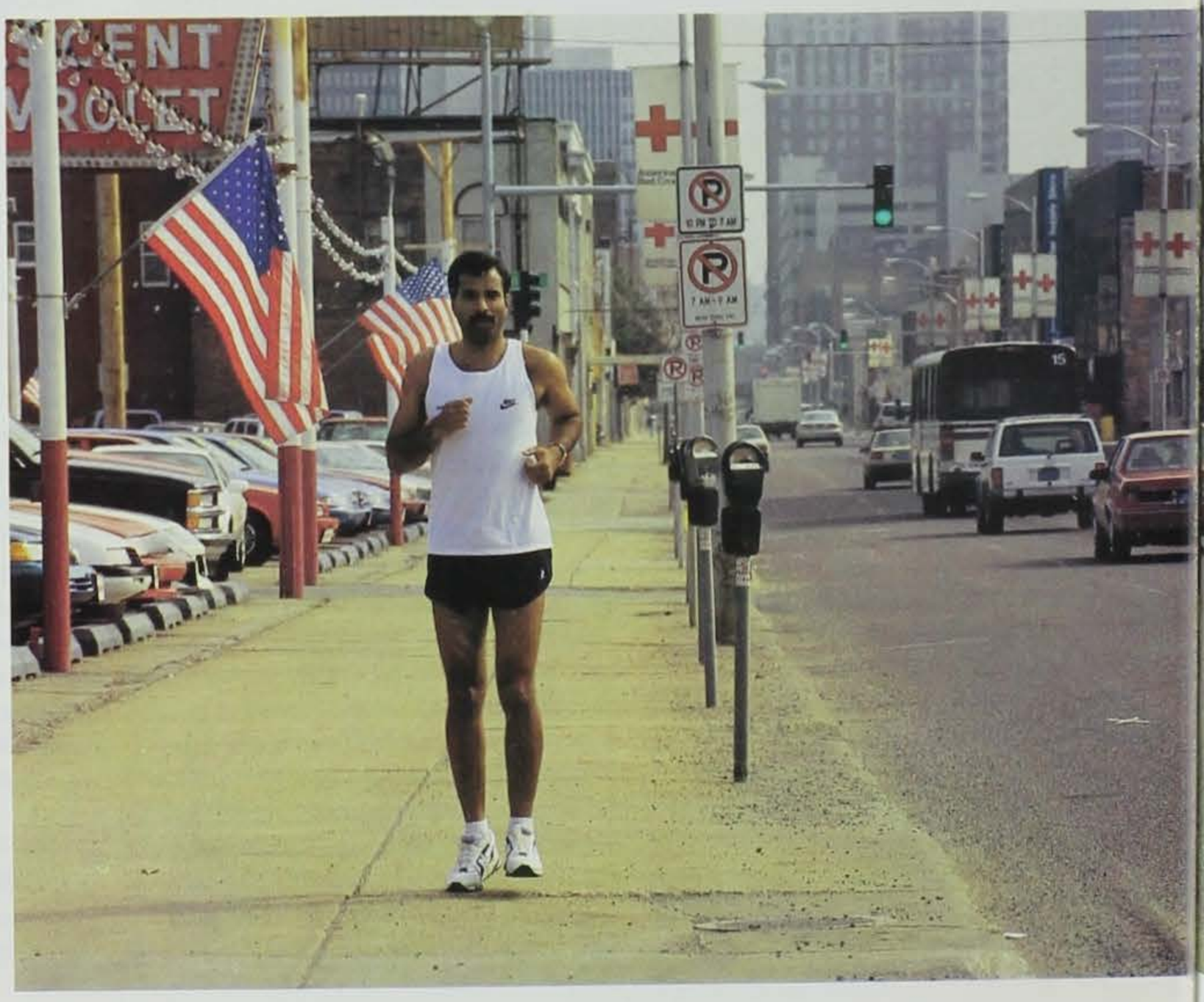
David M. Marolf is the hatchery manager for the department's trout hatchery at Manchester.

CHANGE IS IN THE AIR

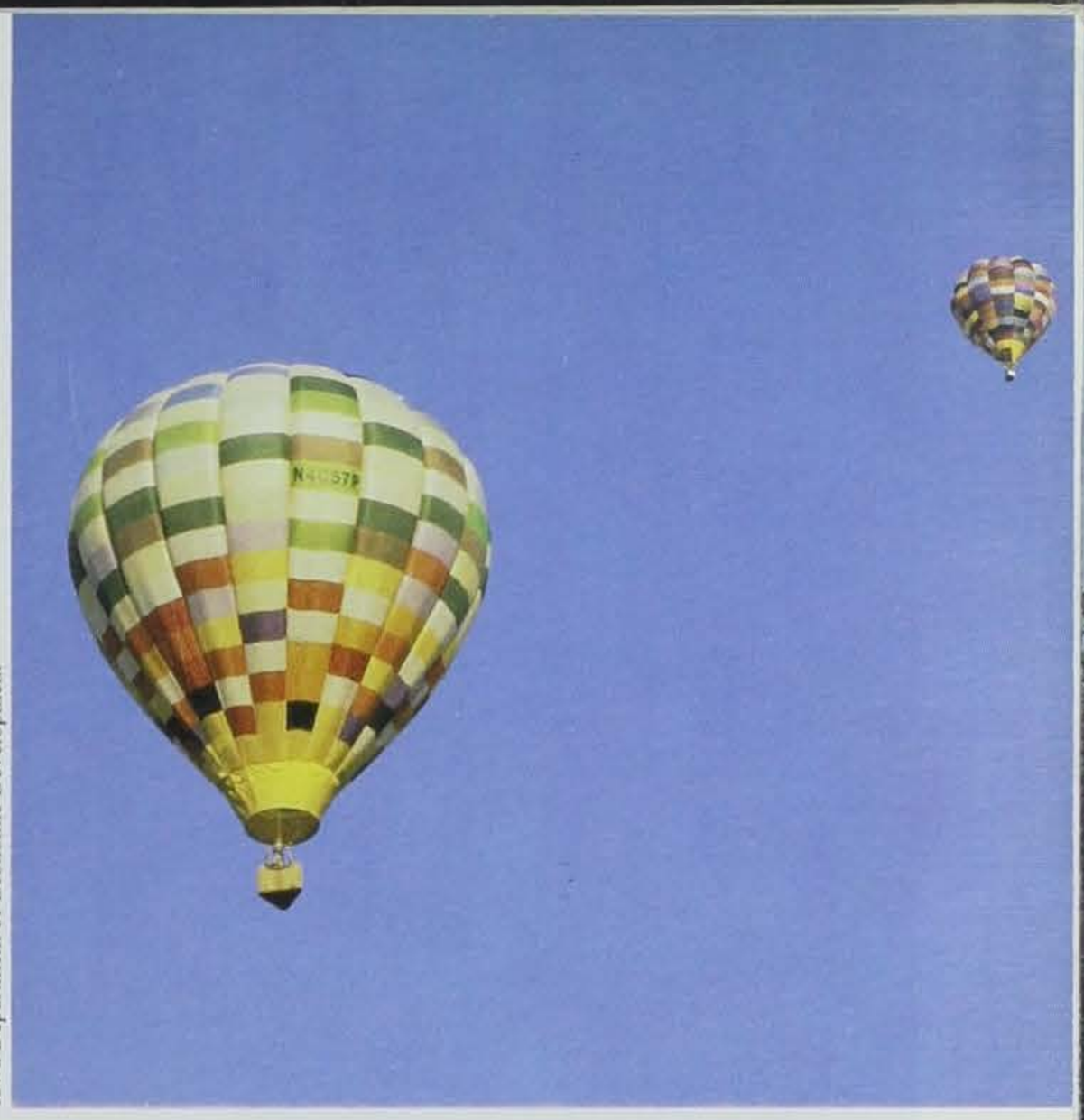
Iowa Department of Economic Development

This is the first of a two-part series on the Clean Air Acts of 1970 and 1990

by Brian Button



Ken Formanek



Iowa Department of Economic Development

Des Moines area residents' air quality is on the rise, thanks in part to crucial pollution-limiting legislation like the Clean Air Acts.

Iowa has never had to endure an air pollution disaster, like the 1952 London pollution episode that killed 4,000, or the 1948 episode that killed 20 and left 7,000 sick in Donora, PA. Nor have we experienced continuous smog like Los Angeles or Denver. Yet, despite the lack of extreme air pollution, Iowa has experienced some problems over the years.

To many Iowans, air quality often means low humidity or mild temperatures. Many do not consider air pollution an issue, because rural states are more often associated with clean air. Yet every breath of clean air Iowans inhale is likely the result of 25 years of hard work under the Clean Air Act.

Clean Air Act-related improvements are visibly obvious. Industrial processes no longer emit dense, black smoke, dumps no longer burn garbage, junked auto open burning is a bygone era; and pollutant emission standards are much tighter for facilities -- especially coal-fired utilities.

Just after passage of the 1970 Clean Air Act, the state generally had worse air than today. One success in Iowa has been a general cleanup of air pollution, especially for lead and airborne particulates such as dust, ash and soot.

But cleaning Iowa's air and protecting areas with good air quality requires vigilance. To detect and measure levels of air pollution, air monitoring stations were first used in Iowa in 1957 as part of the federal government's National Air Surveillance Network. As concerns about air pollution in Iowa and across the nation began to rise during the environmental movement, the state created the Iowa Air Pollution Control Commission in 1967. The next year, statewide air monitoring dramatically increased with hundreds of dustfall collection stations and increased air-monitoring stations.

At the national level, concerns led to the first automobile exhaust controls in 1968. It was only a breeze in the changing wind, as two years later the fight for cleaner air changed dramatically.

With the environmental movement at a peak and creation of the federal Environmental Protection Agency (EPA), today's modern regulatory air program began under the 1970 Clean Air Act. Although earlier acts passed in the 1960s, the programs were relatively minor and ineffective, since each state could have different standards for clean air and states with tougher standards faced hindered economic development.

The 1970 act set uniform National Ambient Air Quality Standards (NAAQS) between states to ensure that all Americans have the same minimum health and environmental protection. Presently, concentration levels exist for carbon monoxide, sulfur dioxide, ozone, fine particulates, nitrogen dioxide and lead.

The standards set primary pollution concentration limits to protect human health, and secondary limit levels to protect our quality of life, since air pollution can impact visibility, plants, animals and non-living materials such as paint, metals and buildings.

The act also required states to develop plans to improve areas with dirty air to meet the standards. This included numerous areas across Iowa.

After 1970, a permitting program began, with industry required to obtain permits for equipment that emitted air pollutants. Permitting programs allow the DNR to ensure that facilities are in

Before federal legislation like the Clean Air Act of 1970, black smoke being belched into the sky was a common sight near industrial sites.

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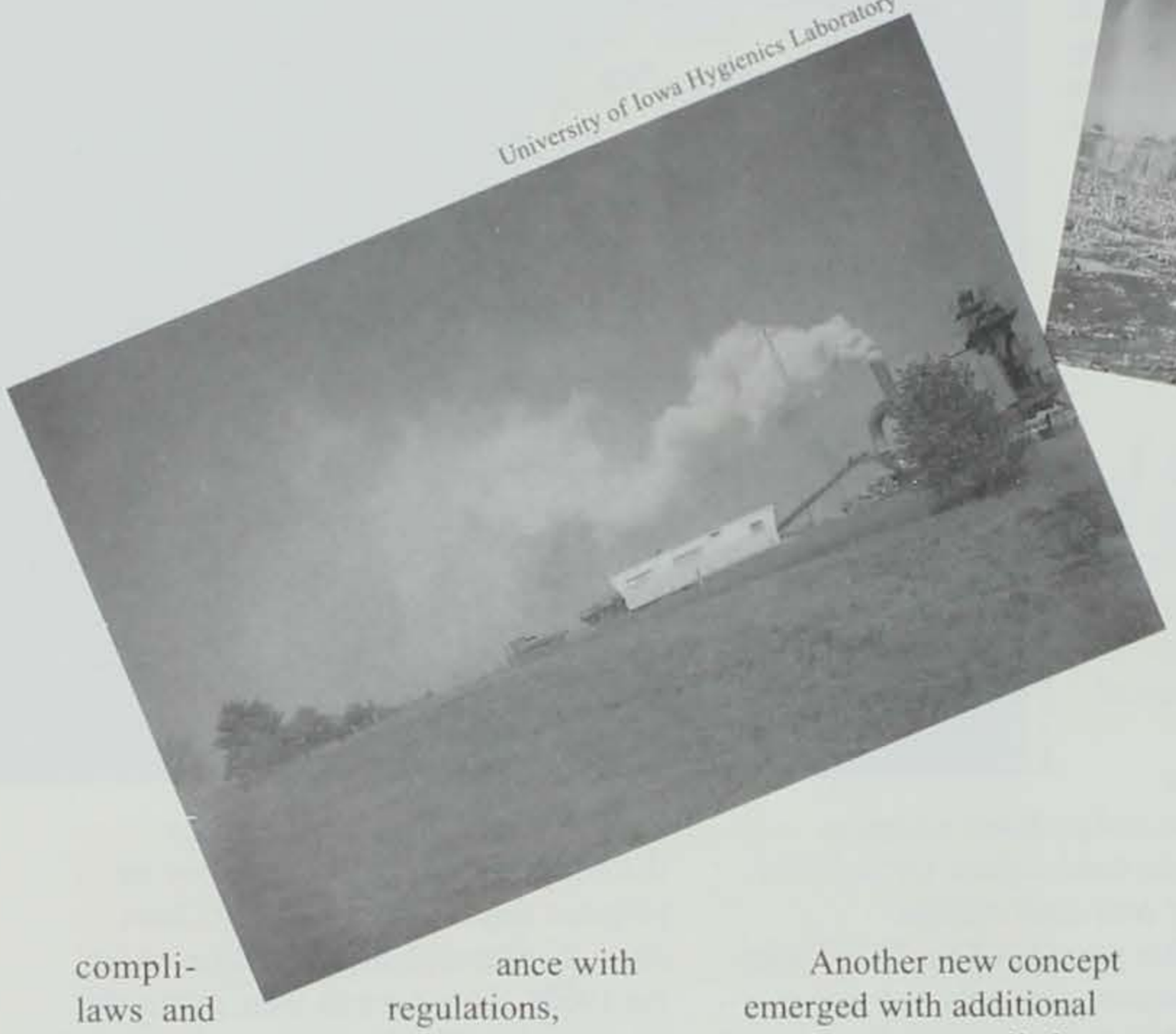
University of Iowa Hygienics Laboratory

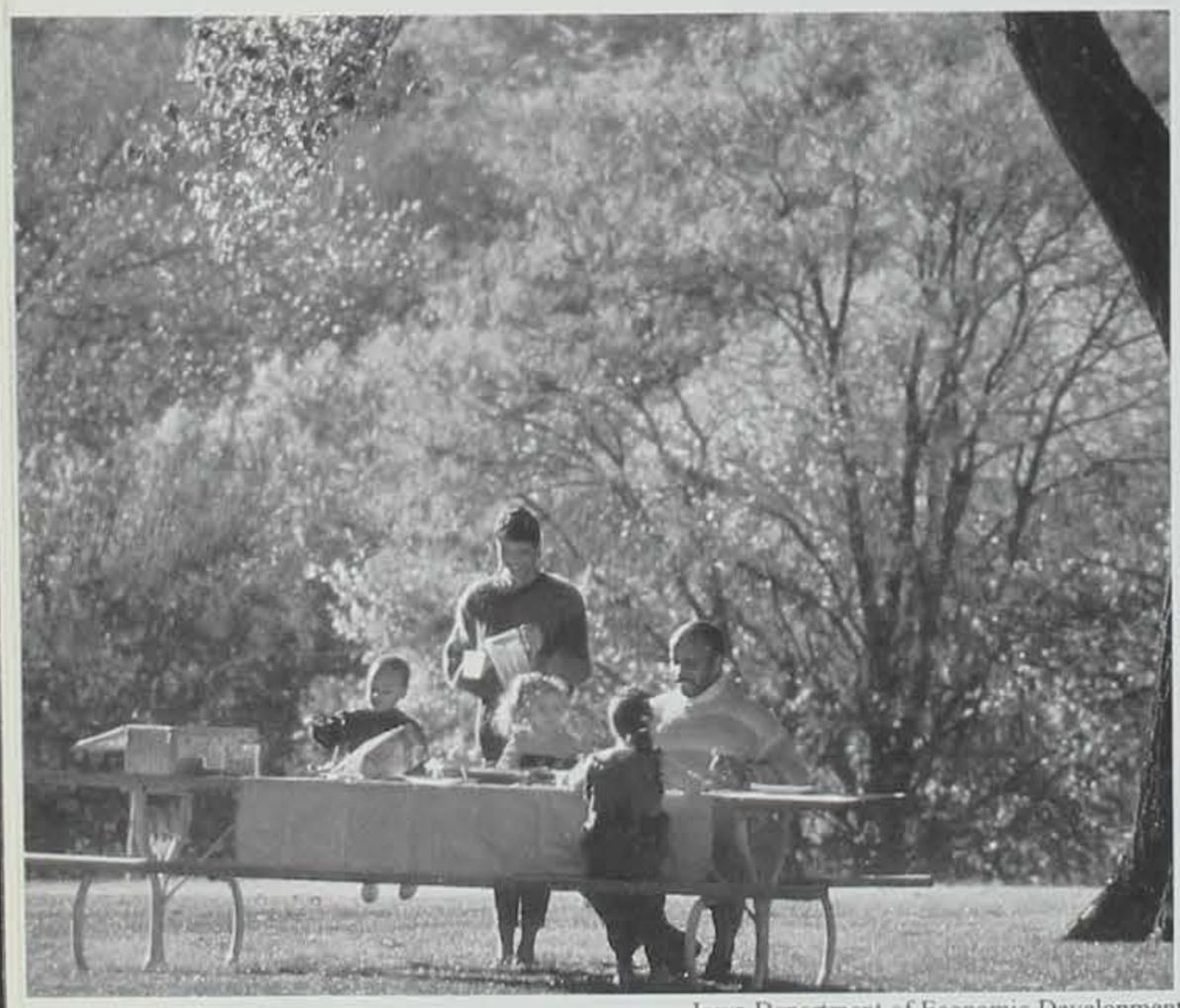


University of Iowa Hygienics Laboratory

University of Iowa Hygienics Laboratory

compliance with laws and regulations, determine the type and quantity of pollutants emitted, and other important information.

Another new concept emerged with additional standards that applied to new industries that typically emit large amounts of air pollution, like smelters, acid manufacturers, refineries and other facilities. The standards, known as New Source Performance Standards (NSPS), apply to all facilities regardless if located in clean or heavily polluted areas. The strategy was to control pollution from new facilities for quick improvements in air quality. Long-term improvements occurred as industry expansion or modifications to equipment could require pollution control equipment.



Iowa Department of Economic Development

The act also required stringent auto emission reductions of 90 percent for 1975 vehicles.

Such efforts were needed to achieve the act's main goal -- that national clean air meet the standards by July 1, 1975. Could it happen?

Although progress occurred under the 1970 legislation, many areas of the country, including parts of Iowa, struggled to meet the air quality standards.

In Iowa in the 1970s, hundreds of air quality violations occurred across the state. Several serious air pollution problems occurred in Mason City, Des Moines and Keokuk in 1973. Particulate levels surpassed the alert and warning levels and hit air pollution emergency levels.

The mid-1970s also showed the

Iowa Department of Economic Development

state's urban areas to have high levels of carbon monoxide, exposing large populations to unacceptable levels of pollution.

In 1975, several ozone advisories and one alert was issued -- a first for Iowa. Ozone, a precursor to smog, increased dramatically in 1976 in Iowa. Cedar Rapids had the highest reading that required a smog alert. Cedar Rapids fared worse in 1977, as some violations involved pollution concentrations nearly four times higher than in 1976.

In 1975, the state tackled a "smokin' hot topic" in Des Moines -- leaf burning. Numerous citizen complaints, many from those suffering from asthma, emphysema and chronic bronchitis, triggered a local study.

Aerial photos showed an intense layer of haze blanketed the city, extending upwards several hundred feet. Air monitors recorded elevated particulate and carbon monoxide levels. The photos, air-monitoring data and computer models all indicated unrestricted leaf burning was environmentally unacceptable. Leaf burning stopped in Des Moines after a correlation between peak periods of leaf burning and increased hospital admissions for respiratory ailments was shown.

While some progress occurred, like cleaner autumn air in Des Moines, many areas of Iowa and the nation made little progress in meeting the tough air standards. Realizing that national air pollution goals could not be met without significant economic hardship, amendments made in 1977 to the Clean Air Act postponed several federal deadlines and delayed auto emission requirements.

A major new concept in air pollution regulation also surfaced in 1977 through the legal system. A landmark Supreme Court case won by the Sierra Club triggered regulations for "Prevention of Significant Deterioration" or PSD. These regulations helped ensure that areas with clean air are protected and not allowed to fall below federal air standards. To do so, new or expanded industries that were expected to emit pollution levels above certain limits were required to have PSD permits. Many of these air pollution sources are required to install cost effective technologies to control air pollution. This helps prevent new pollution problems by ensuring that contaminants cannot exceed significant levels, yet allows economic growth.

While such measures help protect the air we breathe, an area miles above the earth -- the stratosphere -- also needed help.

The 1977 amendments gave the EPA the authority to help reduce human impact on the stratospheric ozone layer. While ozone at ground level causes smog and harms human health, ozone in the upper atmosphere is beneficial as it filters ultraviolet radiation from the sun. With the thinning ozone layer prompting concerns in 1978, the most common ozone-destroying pollutants, chlorofluorocarbons, or CFCs, were banned from use as aerosol spray can propellants. The measure reduced national CFC emissions by nearly 40 percent.

Iowa experienced several successes, too. In 1978, particulate levels reached the lowest average since extensive monitoring began in 1973. The decline occurred due to reduced industrial emissions and increased rainfall that prevented dust from non-point sources.

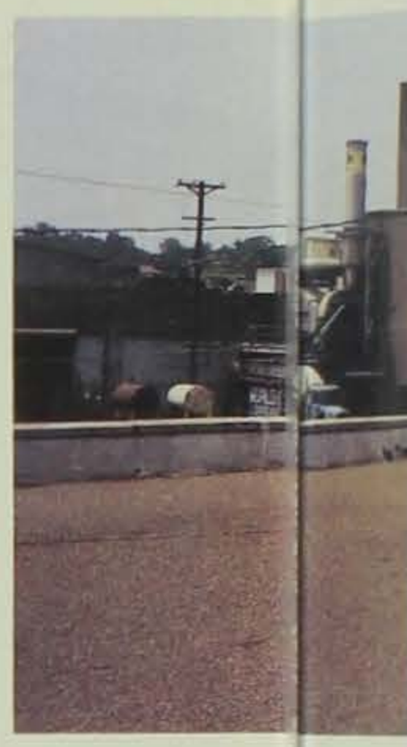
Another significant achievement happened with the nationwide decline of airborne lead, a toxic substance especially dangerous to children. The phase-out of leaded gasoline began in 1974 and will be complete January 1, 1996. Nationally, from 1979 to 1988, an 89 percent decrease in airborne lead occurred, a significant success.

During the 1980s, though, new concerns arose concerning air pollution. Hazardous air pollutants, acid rain, pollution prevention and global climate change came to the forefront of political discussions.

These issues helped trigger a review of the 1970 Clean Air Act in the late 1980s, eventually leading to significant changes with the 1990 amendments to the Clean Air Act.

Brian Button is an environmental specialist with the department's air quality bureau.

Common Regulated Pollutants and Their Health and Environmental Impacts



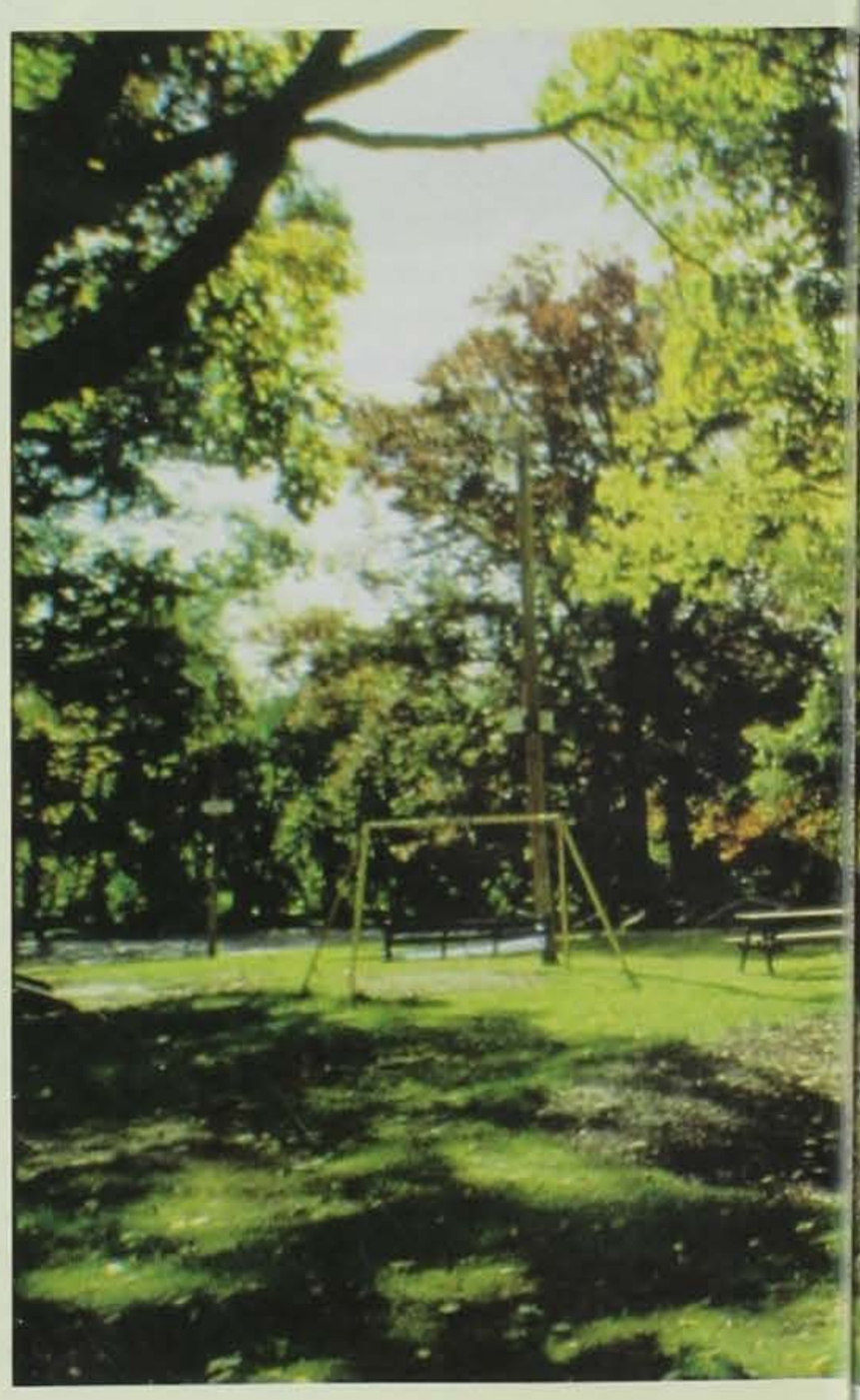
PM_{10} Particulate matter (PM) is airborne solids or liquids. Small particles ten microns or less (PM_{10}) pose greater health hazards than large particles. (For scale the dot in the letter "i" is roughly 300 microns.)

These microscopic particles behave like a gas, remaining airborne for weeks. Respiratory filters have difficulty removing PM_{10} and the particles reach the deepest portions of the lungs where they can remain imbedded in lung tissue for extended periods of time. Fine particulates can pass through lung walls and into the bloodstream.

Common sources include fuel combustion and industrial sources that grind, abrade or move dusty materials like rock or grain.

Sulfur Oxides The most common sulfur pollutant is sulfur dioxide (SO_2). Sulfur oxides have adverse affects on human health, property and vegetation. They also combine with atmospheric moisture to form "acid precipitation." Long term inhalation of sulfur dioxide damages lung tissue and contributes to respiratory diseases like asthma and chronic bronchitis, especially in children and the elderly. Acid precipitation also damages buildings, monuments, paint and metal. Although Iowa does not have acid rain problems, the forests and lakes of Minnesota and Wisconsin are experiencing adverse acid precipitation.

Carbon Monoxide This odorless, colorless gas is also the most abundant, with total emissions exceeding all others combined. The main non-natural source of CO is motor vehicle exhaust. Unfortunately, Iowans are consuming more gasoline and CO emissions are expected to increase. CO is toxic and large amounts kill humans and animals. CO decreases the ability of blood to carry oxygen. Lower levels affect people with heart disease, and decreases athletic performance in young, healthy individuals. Higher concentrations cause dizziness, headaches and fatigue.



DNR photo

Ozone Ozone both protects and hurts us. Ozone in the stratosphere shields the earth from damaging levels of ultraviolet radiation from the sun. But at ground level, the reaction of volatile organic compounds (VOCs), nitrogen oxides and sunlight produce ozone, a component of smog.

Of all pollutants, ground level ozone is the most injurious to plants, causing reductions in growth and yield. It also irritates the respiratory system, causes coughing, lung inflammation and may aggravate existing respiratory conditions.

Nitrogen Oxides

(NO_x) The gaseous oxides of nitrogen include nitrous oxide (N_2O), nitric oxide (NO) and nitrogen dioxide (NO_2). Nitrogen dioxide is a reddish-brown gas with a pungent odor. It contributes to urban haze, causes smog and acid precipitation. NO_2 impairs normal respiratory functions, destroys plant cells, reduces plant yields and changes plant product quality.

Non-natural sources of NO_x occur from fuel combustion from vehicles and utility and industrial boilers.

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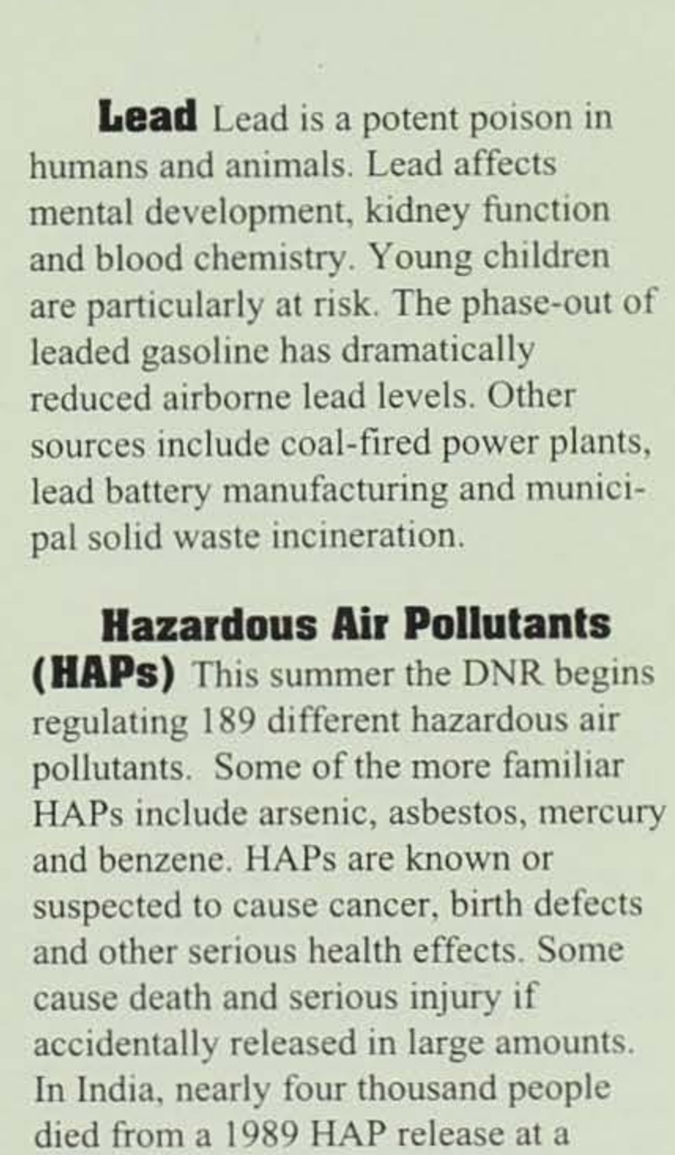
Air monitors are mounted on rooftops (left), as well as on mobile units, like this trailer.

DNR photo



Iowa Department of Economic Development

Lead Lead is a potent poison in humans and animals. Lead affects mental development, kidney function and blood chemistry. Young children are particularly at risk. The phase-out of leaded gasoline has dramatically reduced airborne lead levels. Other sources include coal-fired power plants, lead battery manufacturing and municipal solid waste incineration.

Hazardous Air Pollutants

(HAPs) This summer the DNR begins regulating 189 different hazardous air pollutants. Some of the more familiar HAPs include arsenic, asbestos, mercury and benzene. HAPs are known or suspected to cause cancer, birth defects and other serious health effects. Some cause death and serious injury if accidentally released in large amounts. In India, nearly four thousand people died from a 1989 HAP release at a pesticide manufacturing plant.

TRUMPETING THE CAUSE FOR WETLANDS

Iowa's Swan Song Means Welcome, Not Good-bye

by Ron Andrews
photos by Lowell Washburn

"Trumpeting the cause for wetlands" is the DNR's theme song as we embark upon one of our most exciting wildlife restoration programs. The trumpeter swan is North America's largest waterfowl. It weighs up to 35 pounds and has a 7 1/2 foot wing span. Early explorers Lewis and Clark first encountered the large snowy-white birds in 1805 as they explored north-central America. Historically, these birds nested as far south as northern Missouri. (See page 38.)

Like the whooping and sandhill cranes, trumpeter swans disappeared from the state during the period of intense wetland drainage and unregulated waterfowl harvest in the late 1800s. When the pioneers first reached the eastern shore of Iowa, there were 2.5 million acres of plant and wildlife-rich wetlands. With the advent of the plow in the 1850s and extensive drainage, about 98 percent of the wetlands were drained. The lion's share had disappeared by the turn of the 20th century.

Unregulated waterfowl market hunting for swan quills, skins, plumage, meat and eggs, also added to the trumpeter's demise. It was not until the 1918 Migratory Waterfowl Treaty with Canada and Mexico that trumpeter swans were given complete protection.

By the 1930s, only 69 trumpeters remained in the continental United States at the Red Rock Lakes National Wildlife Refuge (NWR) west of Yellowstone National Park in a remote area of the Rocky Mountains. Alaska and northern Canada still had a viable nesting population of trumpeter swans.

From the Red Rock Lakes NWR, a few swans were transplanted to La Creek NWR in South Dakota. Since the mid-1960s, additional swans have been transplanted to Hennipen County Parks near Minneapolis and to northwest Minnesota, Wisconsin, Michigan and Ontario. In 1993, the Iowa DNR officially began our trumpeter swan restoration journey.

In order to achieve our goal of least 15 wild, nesting pairs of trumpeter swans by 2003, we need to release about 150 young trumpeters into the wild, during that time. Besides restoring trumpeter swans to the state, we hope the swans will help us truly trumpet the chorus -- wetlands.

Thanks to the North American Waterfowl Management Plan, the Prairie Pothole Joint Venture, the Conservation Reserve Program of the 1985 farm bill and the contributions of Pheasants Forever, Ducks Unlimited and other outdoor groups, the DNR has been able to acquire and restore more than 20,000 acres of wetlands and uplands. This wetland habitat will greatly benefit many migratory and wildlife species. Not only do these wetlands provide invaluable wildlife habitat, they also reduce runoff, restore underground water supplies and provide a great variety of both consumptive and nonconsumptive wildlife recreation. Wetland values are indeed the

▶ **Note the "lipstick line" characteristic of trumpeters.**

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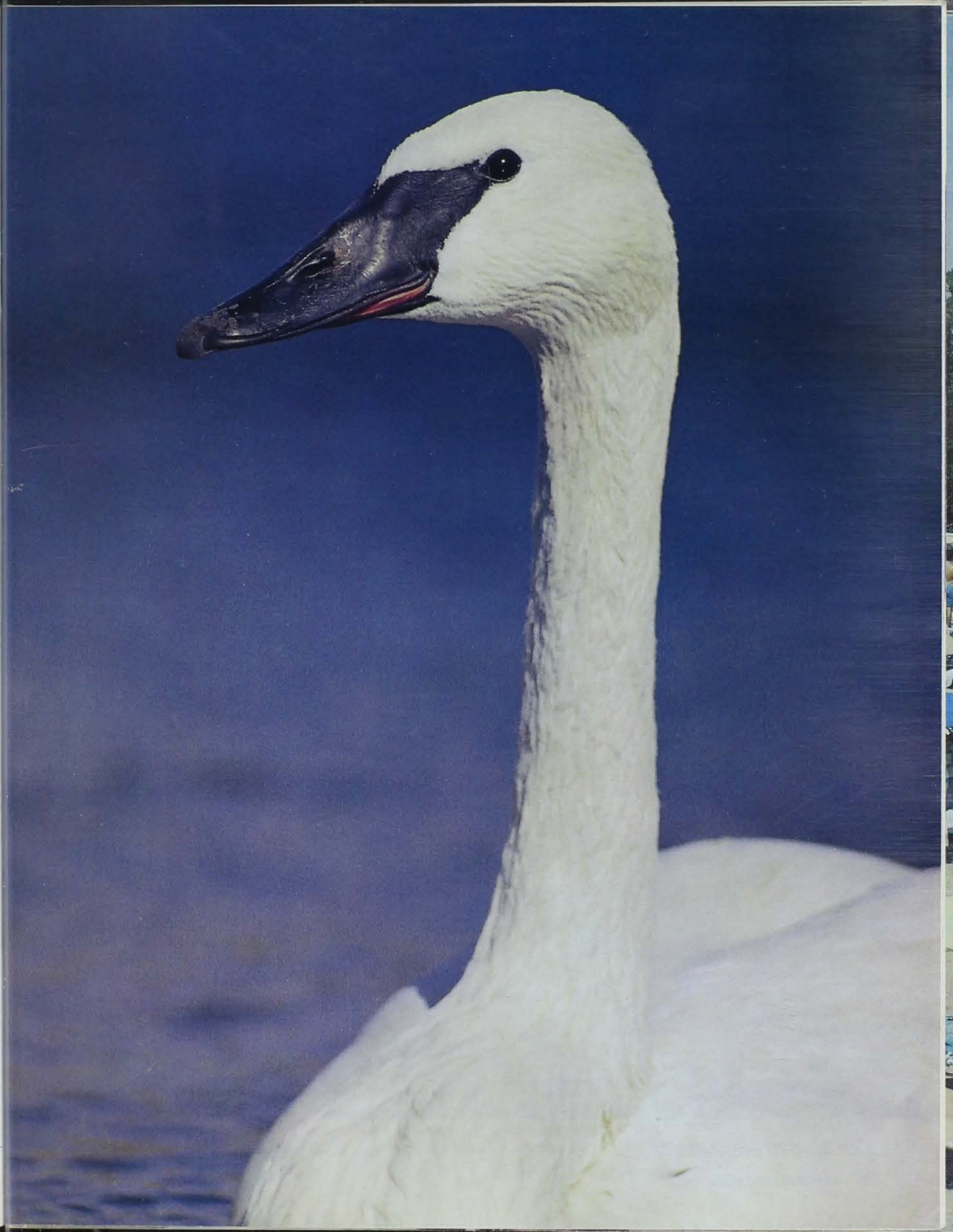


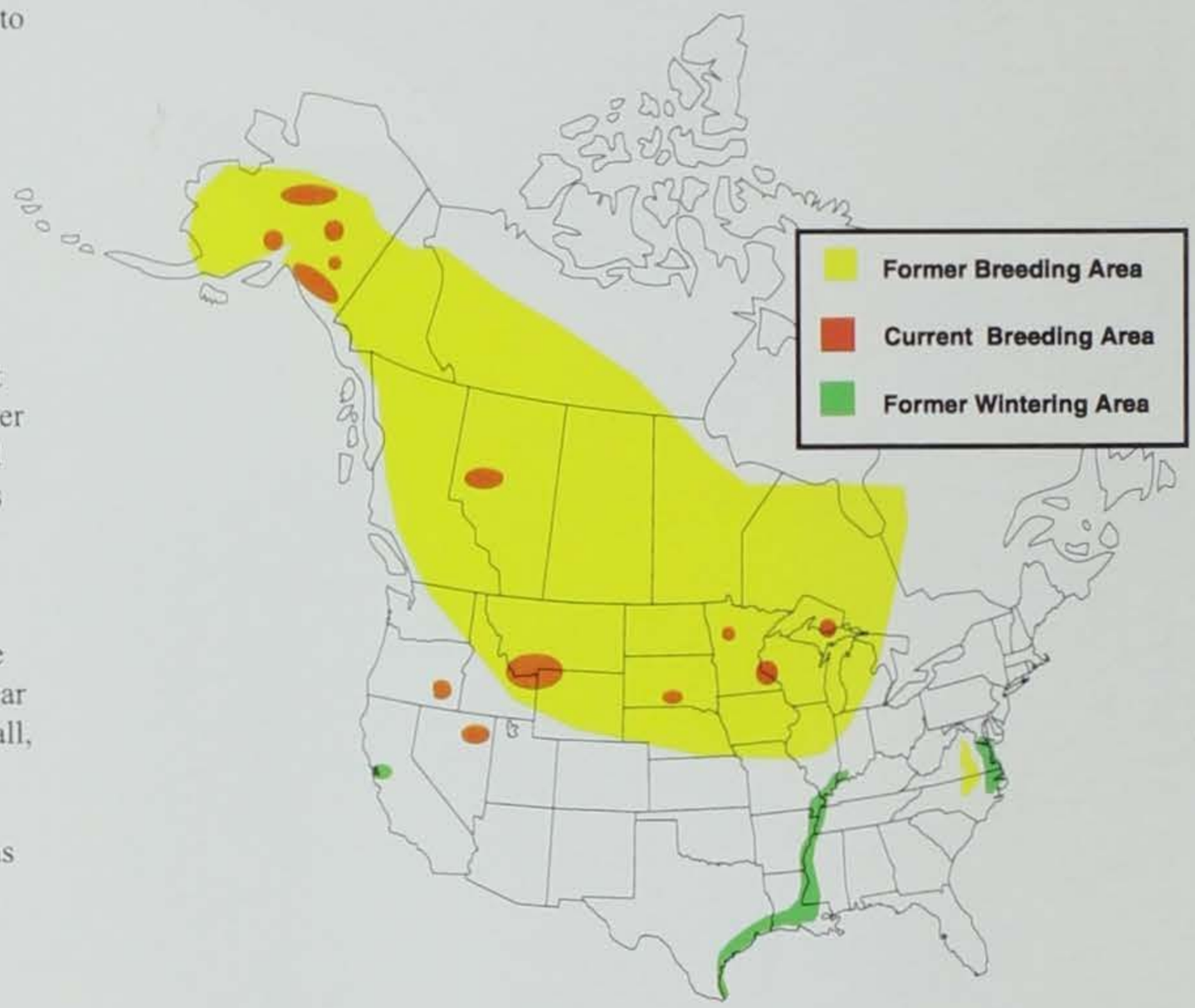
"high note" in our plan and we hope trumpeter swan restoration will only add to the lyrics of "trumpeting the cause for wetlands" and promoting the value of these precious wetland habitats.

We are obtaining cygnets (young swans) from several zoo sources and private propagators throughout the U.S. The swans are then held at several sites throughout the state. In addition, several pairs are being purchased and farmed out to cooperators/contributors at several other places in Iowa. A special thanks is owed to county conservation boards, Pheasants Forever Chapters and other local interest groups for helping fund these local joint venture swan restoration partnerships.

In April, swans will be placed on the Kettleson Waterfowl Production Area near the northwest side of Spirit Lake. Last fall, a 55-acre enclosure was built to handle swans during the spring and summer. These swans will be allowed free flight as new feathers grow in late in the summer.

Our plan is to hold swans until they are 22 months old before we allow free flight. It appears older swans encounter less mortality. The major mortality factors

Map 1



▲
Adult trumpeter pairs mate for life.

in swans are lead poisoning from residual lead in the bottom of some wetlands, encounters with utility wires, diseases such as aspergillosis and fowl cholera, predation of cygnets by snapping turtles and mink and the incidental shooting that will occur. We expect all or some of these mortalities, but will move forward with the project so that once again these majestic birds will grace Iowa's skies and wetlands and their intriguing trumpeting call will echo across the state.

Although map 2 on page 39 shows sites where swans can be easily viewed by the public, these swans are not part of our goal of 15 wild, nesting pairs. The young from these production sites will be released into the wild.

The support for this project has been phenomenal. A diverse cross section of groups and individuals have rallied behind this effort. Besides the DNR, the list includes: the U.S. Fish & Wildlife Service, Iowa Wildlife Federation, Pheasants Forever, Ducks Unlimited, Iowa Army Ammunition Plant, Iowa Natural Heritage Foundation/Wetlands for Iowa, Iowa State University's (ISU) Furharvesters Club,

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Ron Andrews, DNR coordinator of the swan restoration project, holds a banded swan (see neck collar) on a north central Iowa wetland.

►
Juvenile swans are easy to tell from adults. Young swans are gray like young snow geese but are still four or five times larger.

Map 2
Areas where swans can be seen

1. Kettleson WPA near Spirit Lake
2. Stolley's Park, Spencer
3. The Grotto, West Bend
4. Thorpe Park west of Forest City
5. Ventura Marsh, Ventura
6. Clear Lake Outdoor Classroom, Clear Lake
7. Beamer's Pond, Southwest of Webster City
8. Bays Branch, northeast of Panora
9. Lake Terra, Johnston
10. Des Moines Blank Park Zoo
11. Iowa Army Ammunition Plant, Middletown
12. Henry Bohlen, West Burlington
13. Bob Boock, Wheatland

ISU Fisheries and Wildlife biology Club, ISU Student Environmental Council, Iowa Trapper's Association, Iowa Furtakers, Iowa Wildlife Rehabilitators Association, several Iowa Audubon Chapters (including Des Moines, Prairie Lakes, and Linn County Chapters), Iowa Wild Turkey Federation, Iowa Association of County Naturalists, Izaak Walton League of America, several Iowa county conservation boards (including Hamilton, Winnebago, Worth, Ida, and Clinton counties with others soon to be announced), Roland-Story 4th grade students, the Grotto at West Bend, Iowa Public TV and the City of Johnston, the City of Des Moines, the Greenbrier Lake Homeowner's Association, the Amana Colonies, many Iowa private waterfowl propagators, and many corporations, businesses and individuals.

We encourage and invite others to join this chorus of trumpeters, sounding for not only restoration and wetlands, but also the causes of greater wildlife diversity, stabilized nongame funding, continuation of the Conservation Reserve Program, increased funding for REAP and many other important natural resource issues, to make Iowa a better place to live and grow.

As with any DNR project, we always manage to bring out a few naysayers. This is true with the swan project as well and the following questions are commonly asked.

1. Will swans impact goose hunting in Iowa?

There is no reason that swans should be mistaken for Canada geese or snow geese. Unlike adult snow geese, swans do not have black wing tips on their outer primaries and swans are four or five times larger than snows. Their calls are very distinct from snow goose calls. Young swans are gray, like young snow geese, but are still four or five times larger. We do not plan to restrict duck and goose hunting at swan release sites. Anyone shooting a

Wanted:

Individual or corporate pond owners interested in helping the trumpeter swan restoration project. Ponds should be at least one acre in size, fenced, with aeration.

Preferably, ponds should be viewable by the public. Local funding will be required to obtain the trumpeter swans.

Patience is also required because the supply of swans is currently less than the demand.

Call 515-357-3517.

swan in Iowa should realize that a fine of more than $1,000 could be assessed.

2. Will trumpeter swans reduce Canada goose production?

There is no reason to think that they will. Canada geese initiate nesting about 30 days earlier than swans and most geese are hatched and gone before swans even begin laying eggs. Canada goose broods are very mobile and many goose families appear in large concentrations, called gang broods. Because swans are highly territorial, we do not expect to see more than one family on any one marsh. In other swan restoration states, such as South Dakota, Minnesota and Wisconsin, breeding swans have not impacted resident Canada goose flocks.

Iowa trumpeter swan restoration can only be viewed as positive. With the wide cross-section of public support for the project, trumpeter swans could become a symbol of help to shore up differences between recreational users.

If you would like to jump on the swan band wagon and become part of the chorus of *"Trumpeting the Cause for Wetlands"* call or write Ron Andrews, Iowa Department of Natural Resources, 1203 North Shore Drive, Clear Lake, IA 50428, phone, 515/357-3517.

Ron Andrews is a wildlife biologist with the department's fish and wildlife station in Clear Lake.

IOWA TRUMPETER SWAN RESTORATION SHIRT ORDER

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Make checks payable to:
ISU Furharvesters Club; c/o Trumpter Swan Project

Order From: Iowa Wildlife Federation
c/o Trumpeter Swan Project
3125 Douglas Avenue
Des Moines, Iowa 50310

ALL PROFITS GO TO
IOWA TRUMPETER SWAN RESTORATION PROJECT.
EXCELLENT GIFT IDEA. WORTHY CAUSE.

Trumpeting the Cause

for Wetlands

T-SHIRTS:	S, M, L $12 + $2 P/H			XL, XXL $14 + $2 P/H	
Adult sizes only	S	M	L	XL	XXL
Gray T-shirt, 5 colored logo					

(Logo size approximately 8"x12")

Trumpeter Swan Restoration Funding

The DNR has received a $100,000 gift in memory of David A. and Robert Luglan Sampson to boost Iowa trumpeter swan restoration efforts. The people of Iowa are indebted to the Sampson family for this tremendous support. (See *Iowa Conservationist*, Jan/Feb, 1995, Volume 54, Number 1, page 72 for for information and a picture of the wildlife diversity/ nongame support certificate)

Also, a $1,000+ memorial gift was received in memory of Cherie Davison, an Iowa State University animal ecology student actively involved with the cooperating ISU Trumpeter Swan Committee. We are equally grateful for the generosity of the Davison Family and this gift in Cherie's memory.

The Iowa Wildlife Federation has established a trumpeter swan trust fund. Their contribution is appreciated and essential to the success of the project. Corporations, businesses, memorials and individuals can all contribute to the swan project by sending a check payable to: Trumpeter Swan Project. Mail to the Iowa Wildlife Federation, 3125 Douglas Avenue, Des Moines, IA 50310.

With a $500 or greater donation, you can adopt a swan and receive annual updates on the life and travels of your adopted swan. To adequately restore swans to the state, an estimated $250,000 is needed during the next decade. Funds will be used to purchase swans, food, fencing or aerators at release sties. They will also be used to develop informational, kiosks, public service announcements, slide programs, etc., about trumpeter swans, wetland habitats and their many associated values. Research and medical treatment of sick and injured birds will also be paid from the swan trust fund.

Swan Paraphernalia Available

"Trumpeting the Cause for Wetlands"

Three Iowa State University groups, the ISU Furharvesters Club, the Fisheries and Wildlife Biology Club, and the Student Environmental Council are selling T-shirts to raise funds. An order blank telling what is available and how to order is shown on page 40.

Wildlife Diversity/Nongame Poster

The 1995 Wildlife Diversity/Nongame Poster features an adult female swan with young cygnet on a nest. It is available from local tax preparer's with a donation to the chickadee checkoff/Fish and Wildlife Protection Fund on your state income tax return. With a $5 donation sent to the Wildlife Diversity Program, Iowa Department of Natural Resources, 1436 225th Street, Boone, IA 50036, you can also obtain a poster.(See the *Iowa Conservationist* information mentioned above for a view of the picture.)

1995 Nongame/Wildlife Diversity Certificate

The 1995 nongame certificate features a female swan with several cygnets on a nest. The limited edition photo is available for $5 each at the Iowa DNR, Wallace State Office Building, Des Moines, Iowa 50319-0034. This photo was taken by DNR information and education specialist Lowell Washburn of Clear Lake.

Trumpeting the Cause for Wetlands Education Curriculum Being Developed

A committee of county naturalists, together with the DNR, are developing a trumpeter swan/wetland education curriculum to assist educators in informing the students about the benefits and value of wetlands and trumpeter swan reintroduction. The package is schedule for completion by fall of 1995. The following people are on the Iowa Trumpeter Swan/Wetland Education Committee:

Brad Block, Pocahontas County Conservation Board (CCB)
Janyce Keeney, Woodbury CCB
Dan Riedell, Sac CCB
Karen Hanson, Webster CCB
Doug Schroeder, Floyd CCB
Darrien Siefken, Bremer CCB
Chuck Ungs, Chickasaw CCB
Ron Andrews, Iowa DNR, Wildlife Bureau
Barb Gigar, Iowa DNR, Aquatic Education Program

Educators wanting more information on this curriculum should contact Darrien Siefken at 319/882-4742.

Le Mars Students Go "Hog Wild" Over Recycling

by Jennifer Campbell

photos by Lowell Washburn

Picture it. One morning you're sitting comfortably at the breakfast table reading the daily newspaper — checking out the news, maybe clipping some coupons. Just days later, the newspaper has been recycled and shredded into a black and white cloud of livestock "hay." That very week along the outskirts of town, a 240-pound hog flops down contentedly amongst last week's grocery ads and news of the day — and two of Le Mars' elementary schools have money in the bank.

It began simply enough. In the Fall of 1993, fifth-grade teachers from Le Mars' Kluckhohn and Kissinger elementary schools asked themselves and their students a question: "Nature recycles everything — how good of a job do we do?" The answer led them to a paper recycling project that has blossomed from a month-long activity into a full-scale paper drive that pulled in parents and other Le Mars citizens to participate. Last year's fifth graders have moved on to 6th grade, but many are still involved with the program and recycling.

Publicizing Their Activities

During the project's infancy students wanted to publicize their efforts by entering a float contest for a July 4th parade. They designed and built the float with completely recycled materials. Students bought materials with seed money from The Environmental and Energy Education Seed Grant program, sponsored by the DNR.

The seed grant program was designed to implant a broader environmental perspective within students, and to provide them the opportunity to develop problem-solving skills needed to manage energy and environmental resources wisely. Last year seven Iowa schools participated:

Woodward-Granger plans the creation of a "mini prairie" this spring; students from WACO purchased photovoltaic cells to build solar cars; Des Moines' Moore Elementary went on a field trip to a local wildlife area; students from Janesville planned a landscape beautification project; Grinnell Middle School students toured the Poweshiek County landfill during a study unit on solid waste; and Paton-Churdan students planted various bushes, plants and trees in their "outdoor classroom" complete with wooden benches and podium for teacher instruction.

The Le Mars' Kissinger and Kluckhohn schools clearly stood out from the crowd; however, in terms of what they have accomplished within the scope of their community.

The students' "flatboat float" demonstrated the concept of bringing recyclables to market. They showed what happened to plastic, tin and paper materials dropped off at parking lots of supermarket recycling bins. Those recyclable goods eventually get to buyers in a variety of ways, including flatboats that make their way down the Mississippi.

The students won second place for their theme float and came away with another $20 for their "piggy" bank that still held a majority of their seed money. Both teachers and students became even more familiar with the concept of bringing recyclables to market as Ric

Hofmeyer came into their recycling picture.

The "Piggy Bank"

Ric Hofmeyer farms locally near Le Mars and also owns a small business, PrimGhar, where he converts recyclable paper into livestock bedding — "paper hay" — with a chopper/baler. Hofmeyer participated in the first Le Mars paper drive and initially purchased the paper on site at $12 per ton. The latest figure Hofmeyer has paid for the paper is $25 per ton.

Only months into the paper recycling project the schools found themselves literally collecting tons of paper. Sixth-grader Emily Faber's mother who worked at the *Daily Sentinel* newspaper of Le Mars arranged for the newspaper's "droppings" to be picked up by students. Those "droppings" had nothing to do with the previously mentioned 240-pound hog, but were actually rolls of newsprint that were run through inked presses until the desired amount of ink was achieved — then discarded. The "droppings" amounted anywhere from two to five tons per month — hundreds of newspaper issues.

With the additional influx of newsprint, storage of the paper had become a problem. One parent, Wayne Toel, donated the use of his barn on the outskirts of town and solved the problem — for the time-being.

"The response has just been wonderful. We have a community of 9,000 people — just imagine what could happen if a program like this could take off across the country," said Toel.

For The Trees

Travis Hawkins, former Kluckhohn student and now a sixth-grader at Le Mars Community Middle School, has used the recycled hay for his own livestock and thinks it's good for the environment. "If it blows away it decomposes easy and doesn't sit around in a landfill," said Travis. "You can buy a *bunch* of recycled paper. You don't have to kill a whole bunch of trees and stuff to get it." Travis has convinced many people to recycle, and has spoken to Lions Club meetings and to personal friends and family.

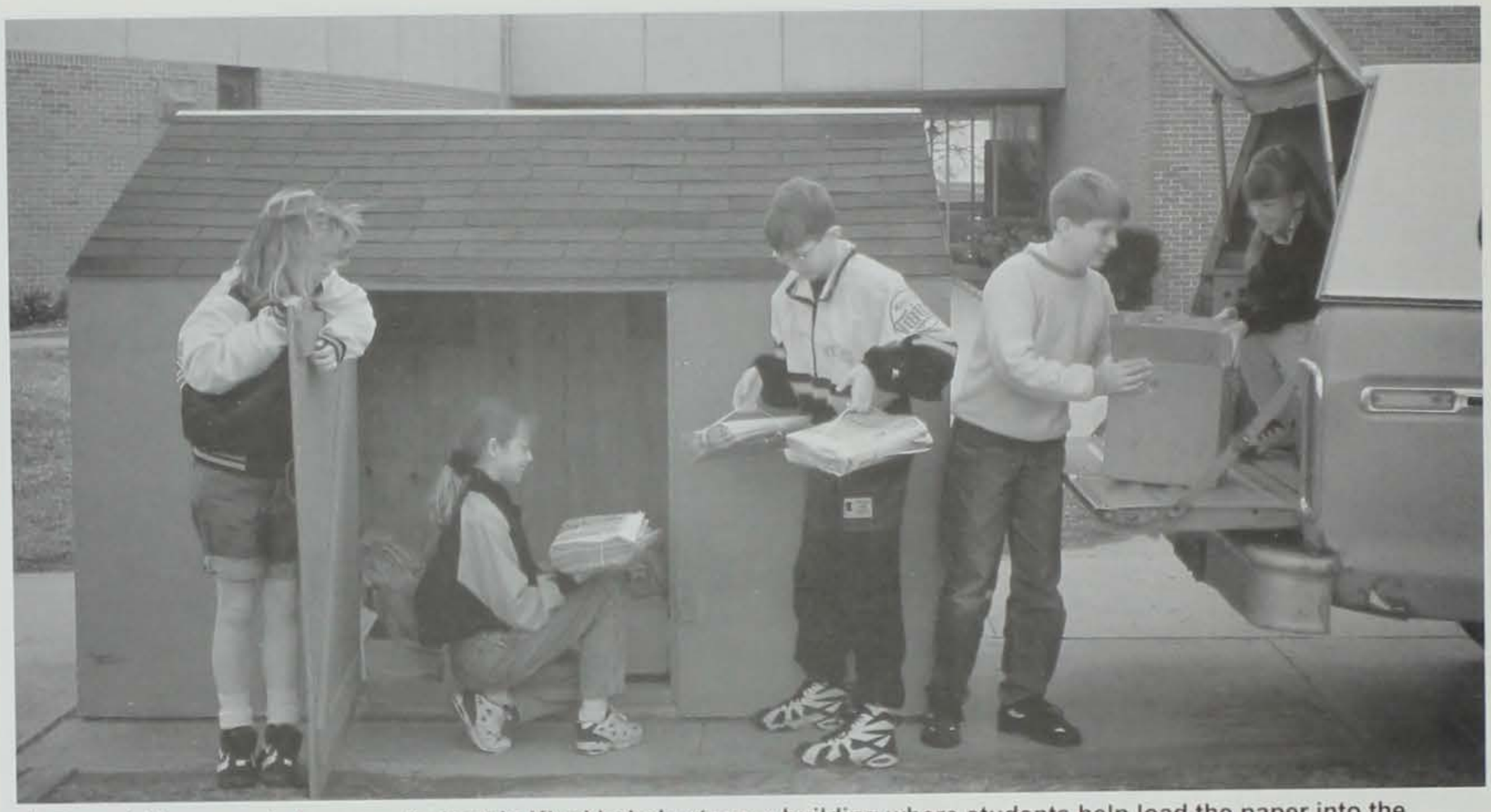
▲
◀Wayne Toel stands outside his barn where students continue to deliver paper for temporary storage.

"I have one friend that just decided it was too much work to collect newspapers and store them in her basement, so she doesn't like to do it much, anymore. I kind of understand that it's sometimes not really easy, but I feel sorry for her that she's given up so early," said Travis.

Classmate Emily Faber was concerned about the future. "I'd kind of like to tell more people about recycling because some people just don't believe it does any good — a lot of people don't think the environment means much to them. But if it goes down, then there's

◀At left: Sixth-graders Emily Faber and Travis Hawkins on the playground at Kluckhohn Elementary School. Both are avid recyclers.

◀Right: Fifth-graders Cole Wagner and Callie Ohm hug a tree, and agree that recycling saves trees and landfill space.



▲ Recyclable paper is temporarily kept in Kluckhohn's storage building where students help load the paper into the "recycling truck." The paper is then transported to Wayne Toel's barn or the city's storage building until it is purchased.

not much we can do about it," she said.

Fifth-grader Cole Wagner from Kluckhohn said that if each person would plant a tree it would help a lot. "People are cutting them down and we're losing them," said Cole.

"It's really not that hard to do it — just throw your paper in a bag and bring it the first Saturday of every month." — Travis Hawkins

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Callie Ohm, fifth-grader at Kluckhohn, agreed: "If we save trees they won't get in the landfill and fill them up. The trees will be all gone pretty soon if we don't recycle," she said.

Community Involvement

Tom DeKoster, fifth-grade science teacher at Le Mars and "chief motivator" of the students, according to several Le Mars parents, couldn't be happier about the community's growing involvement.

"It's getting to the point where the whole community wants to be involved," said DeKoster. "It's spreading. People are feeling it, and the kids are getting the message home," he added. A few students designed newspaper ads and spoke over the radio waves to Le Mars citizens to further market and promote their paper drive.

The paper drive still continues on the first Saturday morning of each month. One day the local phone company hauled in more than 2500 phone books (students brought in about 200), and students removed all covers with staple removers purchased with some seed grant money. Two parents now pick up paper from local banks. Harker's, a midwest frozen food distributor, gave the schools more than 800 pounds of computer paper. Le Mars Mutual, a local insurance firm, gives 10 boxes a week; North Iowa Power (NIPCO) drops off 8-10 boxes, and another local company, Tyson, also gives paper. (The boxes each weigh between 30 and 40 pounds)

Less than a year after the recycling project's inception , storage again became a problem. The city of Le Mars came to the rescue donating the use of an unused building that, along with the original barn, continues to be used to this day. DeKoster says that every month the number of people coming to the paper drive visibly increases.

During those Saturday mornings, DeKoster said that there was always a steady flow of cars for an hour and a half, or more. With the teachers supervising, the kids are always busy getting the paper out of the trunks and back seats of vehicles.

K-I-D-S Spells Success

Hofmeyer said that the recycling project is successful because the kids are involved.

"They do a good job drumming up support — the key to a successful paper drive," he said. "Tom DeKoster motivates the kids," he added. Fred Riter, another Le Mars citizen, said,

"You get a lift from the whole experience — I had to call Mr. DeKoster to let him know what a good job the kids were doing. I do feel it's a reflection of some good leadership by the school," Riter continued. "The children come with so much enthusiasm and a pleasant approach to this whole thing."

"They act like they're getting a Christmas present!" Riter said.

Frosting

According to DeKoster, the school has recycled about 121 tons of newsprint so far, and the school has acquired more than $1,700 in funds from the sale of its recyclable paper to Hofmeyer. It may look as if they'll be needing a larger "piggy" bank, but the amount fluctuates when "frosting," as DeKoster puts it, is purchased.

"This is the frosting, not the cake," said DeKoster. "We're buying things that the school wouldn't get otherwise," DeKoster said. He also counts "the fun and the camaraderie" at the paper drives as frosting, too. The belly of the students' piggy bank may contract as new math manipulatives, hand-held solar calculators, teachers' overhead projectors and color printers are purchased — but it expands yet again as monthly paper drive funds are stashed away for future frosting purchases.

DeKoster said that as of April this year they're "making the switch to change paper buyers." DeKoster said that a Nebraska insulation company has offered the schools $65 per ton of paper, as opposed to the current $25 sale price. That price will fluctuate due to supply and demand and the price of corrugation. (Newsprint is used as filler in corrugated boxes).

"We have to look at the practicality — there is both money and economics involved with recycling," said DeKoster. "The goal of this project has been to recycle as much paper as possible," he said.

Practicality is the most important issue for the school in terms of what kinds of paper the Nebraska company will accept from them. Newsprint, ad slicks and magazines, envelopes with windows, phone books and even farm feed bags will all be accepted.

Stewards of the Environment

The project is growing bigger and better everyday, according to information in a recent "Recycling Update" provided by Kluckhohn and Kissinger staff members. The message to reduce, reuse and recycle (the "3 R's") seems to have gotten through to students, parents, educators and the community. They're happy about the continued growth of the paper recycling project in Le Mars. Especially the hogs...

Jennifer Campbell is the DNR's energy information intern in Des Moines.

▲▶
Fifth-graders from both Kluckhohn and Kissinger schools participate in the schools' paper recycling program and monthly paper drive.

CRAPPIE "CANARY" of the Mississippi?

by Tom Boland
photos by Don Kline

▲ On the Mississippi River, crappies are considered among the most popular members of the sunfish family. Good crappie "holes" are valued finds and used to produce buckets of fish.

A few months ago, at a Mississippi River meeting, I overheard some biologists talking about crappies.Crappies being of special interest to me, I moved in to include myself in the conversation. The group was talking about recent concern from anglers and other biologists, that crappie fishing in the Upper Mississippi was really going downhill. Good crappie "holes" were getting harder to find; and a day of crappie fishing that used to produce buckets of fish, was being replaced with days of catching merely a handful of crappies, or even on occasion, good crappie anglers being "skunked."

Then one of the biologists said something that really caught my attention. He said, "Crappies are probably the canaries of the Mississippi River -- as go the crappies -- so goes the river." (Canaries were used in underground mining operations of the 1800s to test for adequate oxygen levels and the presence of poisonous gases.)

It was one of those statements so profound, or seemingly so at the time, that you wished you had thought of it. He made me start thinking about, and looking for, an explanation concerning the reports of recent declines in crappie harvest on the river. Were these reports from anglers merely indicating a temporary slump in crappie fishing, or could I find any evidence of a more serious declining trend in crappie harvest? Also, I found myself pondering questions that should be of interest to serious Mississippi River crappie anglers. Questions like:

1) What are the habitat needs and general life history of crappies in the Upper Mississippi?

2) What effects have the locks and dams had on crappie habitat and populations?

3) Is there any evidence of changing crappie populations or harvest?

4) Can we predict the river's future using crappies as the river "canaries?"

Crappie Life History and Habitat Requirements

Crappies, as you probably know, are members of the sunfish family and are a group of spiny-rayed fishes that are native only to North America. The family is represented by 30 species of which 12 inhabit Iowa waters. Other popular members of this family include: largemouth and smallmouth bass, spotted bass, rock bass, bluegill, pumpkinseed and others. On the Mississippi River, crappies are considered among the most popular members of this family and are represented by two species -- black crappie (*Pomoxis nigromaculatus*) and white crappie (*Pomoxis annularis*).

Identification of the species is relatively easy if a few key characteristics are observed. Both species are silvery, deep-bodied, slab-sided fish with large eyes, moths and spines on both the dorsal and anal fins. The white crappie usually has seven to nine vertical dark bars on the sides, a bright silver or white belly and six spines on the dorsal fin. The black crappie usually has blackish spots irregularly spaced over the sides, no distinct vertical bars as in the white crappie, with a somewhat thicker body, and between six to eight dorsal spines.

Food habits for both species are quite similar and initially include zooplankton and insects the first year, changing to insects and small fish the second year throughout adulthood. Spawning requirements are also similar for both species, occurring in late April or early May, where the male fans out a depression in about three to ten feet of water. Nesting activity begins for white crappie at about 56°F, while black crappies start when water temperatures are slightly warmer, 58 to 64°F. Females of both species deposit their eggs in one or more nests, which are immediately fertilized by the males. The number of eggs in a crappie nest is highly variable, but will usually average 20,000. The eggs hatch in three days and remain attached to the substrate for several more days. After the yolk sac is absorbed, the fry will break loose from the substrate and leave the nest only at night for several more days.

The growth of both species is about two to three inches the first year, attaining 10 to 12 inches by the fourth year. However, black crappies grow somewhat slower and are usually heavier at the same length. There is a definite difference between the ability of the two species to tolerate changes in water quality. White crappies tolerate turbid waters far better than black crappies and are more abundant in waters that carry heavy silt loads. Therefore, a higher population (or ratio) of black crappie to white crappie should be a general indication of better water quality.

▼
The white crappie (top) usually has seven to nine vertical dark bars on the sides, and a bright silver or white belly. The black crappie (bottom) usually has blackish spots irregularly spaced over the sides, with a somewhat thicker body.

The Effects of the Locks and Dams on Crappie Populations

Within the last 50 years, the Mississippi River has been eastern Iowa's premier panfishing resource, which includes all species in the sunfish family. The construction of the 27 locks and dams on the Upper Mississippi during the late 1920s and early 1930s created a series of reservoirs that provided an expansion of excellent backwater habitat. The number of aquatic acres in the middle to lower sections of the pools increased dramatically. Not only did just the number of aquatic acres increase, but the number of areas with water depths from 3 to 10 feet increased. The thousands of acres of newly formed backwater lakes were "ideal" habitat for crappies. Thus, the construction of the locks and dams initially provided an increase in habitat required by both crappie species, and with

nature abhorring a vacuum, increased crappie populations, along with many other fish species to fill the new areas.

However, these new, ideal conditions for some fish species will not last forever. The new river reservoirs started filling with sediments almost immediately after they were impounded, and in many areas we have already lost considerable water depth in these artificially created backwater areas. Sedimentation rate on the Upper Mississippi has been estimated at one to two inches per year in many areas, more or less in others. Studies such as the Upper Mississippi Great River Environmental Action Team (GREAT) studies, estimated that many backwater lakes will be gone in as little as 50 years, and most shallow aquatic areas will return to terrestrial habitat. Whether you believe the estimates to be accurate or not isn't important. The important thing to remember is those natural forces (most still greater than human forces), *plus* human activity, such as agriculture and increased development with in the river basin, will act to return the river to pre-impoundment conditions.

Three extensive surveys of anglers were conducted at five-year intervals from 1962 to 1973. Seven river pools were surveyed, including Upper Mississippi pools 4,5, 7 (Minnesota-Wisconsin), 11, 13, 18 (Iowa-Illinois), and 26 (Illinois-Missouri). During the first two periods, crappies (black and white combined) along with bluegills, were the number one preferred species. They ranked third during the 1973 survey. Crappie ranked second by total number of fish harvested during all four periods (Table 1). The creel surveys were discontinued after 1973, however, a survey completed on Pool 13 during 1992, indicated that angler preference for crappies had dropped to fifth place and the harvest had remained ranked second in numbers of fish caught.

In the early 1980s, Iowa's fish biologists recognized the need for a long-term fishery monitoring program on the Upper Mississippi. In 1985, such a program was initiated by DNR fishery personnel in pools 10 (Guttenberg), 13 (Bellevue), and 16 (Fairport). Netting data has been collected annually since that time for bluegill, channel catfish, black and white crappies. Data from the first eight years (1985-1992) have been analyzed and a total of 33,303 crappies was collected. The number of white crappies collected per hour of netting varied from 5.4 fish per hour in 1985 to 19.8 fish per hour in 1987. Black crappies catch-rates were higher and ranged from 20.9 fish per hour in 1985 to 83.2 fish per hour in 1987. During the eight-year period (all years and all pools combined), although not dramatic, the general trend for the catch for white crappie increased, while black crappies decreased (Figure 1).

Harvest Rank	1963	1968	1973	1992
1	bluegill	bluegill	bluegill	bluegill
2	crappie	crappie	crappie	crappie
3	white bass	freshwater drum	sauger	channel catfish
4	freshwater drum	sauger	freshwater drum	sauger
5	sauger	channel catfish	white bass	walleye
Preference rank for crappies	1	1	3	5
Number of crappies harvested in Pool 13 (Bellevue)	32,889*	55,205*	25,183*	50,154*

*Calculated form harvest data

▲ **Table 1. Crappie rank by number of fish harvested and preference.**

Evidence of Changing Crappie Populations and Angler Harvest

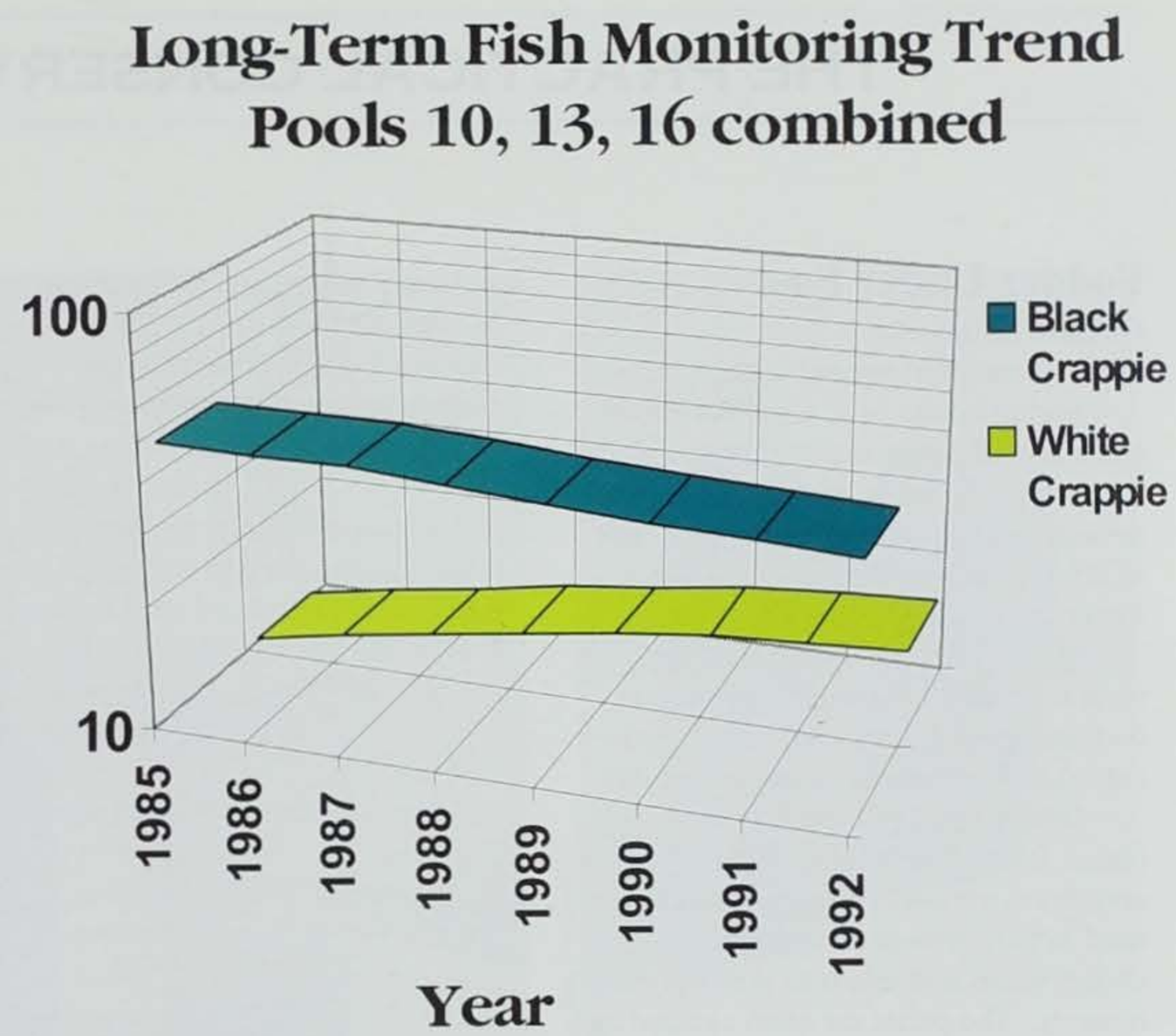
A publication called the *Distribution and Relative Abundance of Upper Mississippi River Fishes* provides some interesting trend information on crappie populations. In 1979 and 1982, both crappie species were common in all river pools from pools 1 through 26. (*Common = commonly taken in most sample collections, can make up a large portion of some samples.*) However, the most recent (1995) publication indicates that a decrease in abundance from common to occasional has been reported for both species in pools 1 and 3, and for white crappies in pools 4 and 8, all of which are in Minnesota-Wisconsin waters (*Occasional = occasionally collected, not generally distributed, but local concentrations may occur.*)

Crappie ranked second by total number of fish harvested during all four periods.

Predicting the River's Future Using Crappies as the "Canaries?"

So, what do you think? Can we predict the Mississippi river's future using crappies as the "canaries?" A quick "tally" of the indicators we've seen does not indicate that a total collapse of the fishery is eminent. However, it probably can be concluded that the general well-being of Upper Mississippi River crappie populations may be declining. Whether true or not, even a "perceived decline" in the quantity and quality of crappie fishing on the Mississippi is certainly something to be concerned about, and definitely deserves serious attention by river resource managers.

Not many of us can remember what the river looked like prior to construction of the lock and dam impoundments, but almost certainly the number of acres with optimal crappie depths between 3 and 10 feet would have been less.



▲ Figure 1. Catch trend for black and white crappies (fish/hour).

Without a doubt, we are now starting to "pay the price" for the temporary improvement in river habitat created by the construction of the locks and dams. As these reservoirs continue to age (most are now more than 50 years old) sedimentation rates will accelerate. The prognosis shared by most resource managers is that the ideal crappie habitats will steadily decline, mostly due to sedimentation, and as habitat declines, so will future crappie populations. Most certainly, future changes in crappie populaitons will be considered a good indicator of changes in the quality of Mississippi River *backwater* habitat. It does appear that crappies can be considered the Upper Mississippi River "canaries."

Tom Boland is a fisheries management biologist for the department located at Bellevue.

◄ **"Crappies are probably the canaries of the Mississippi River -- as go the crappies -- so goes the river."**

THE PRACTICAL CONSERVATIONIST

Fodder Under Foot

Outside Edibles for Year Round Enjoyment

Spring brings new, vigorous growth and a host of plants that flower and all too fast, are gone. Savvy practical conservationists can take advantage of these tasty treats now and preserve some of spring's flavor to enjoy throughout the year.

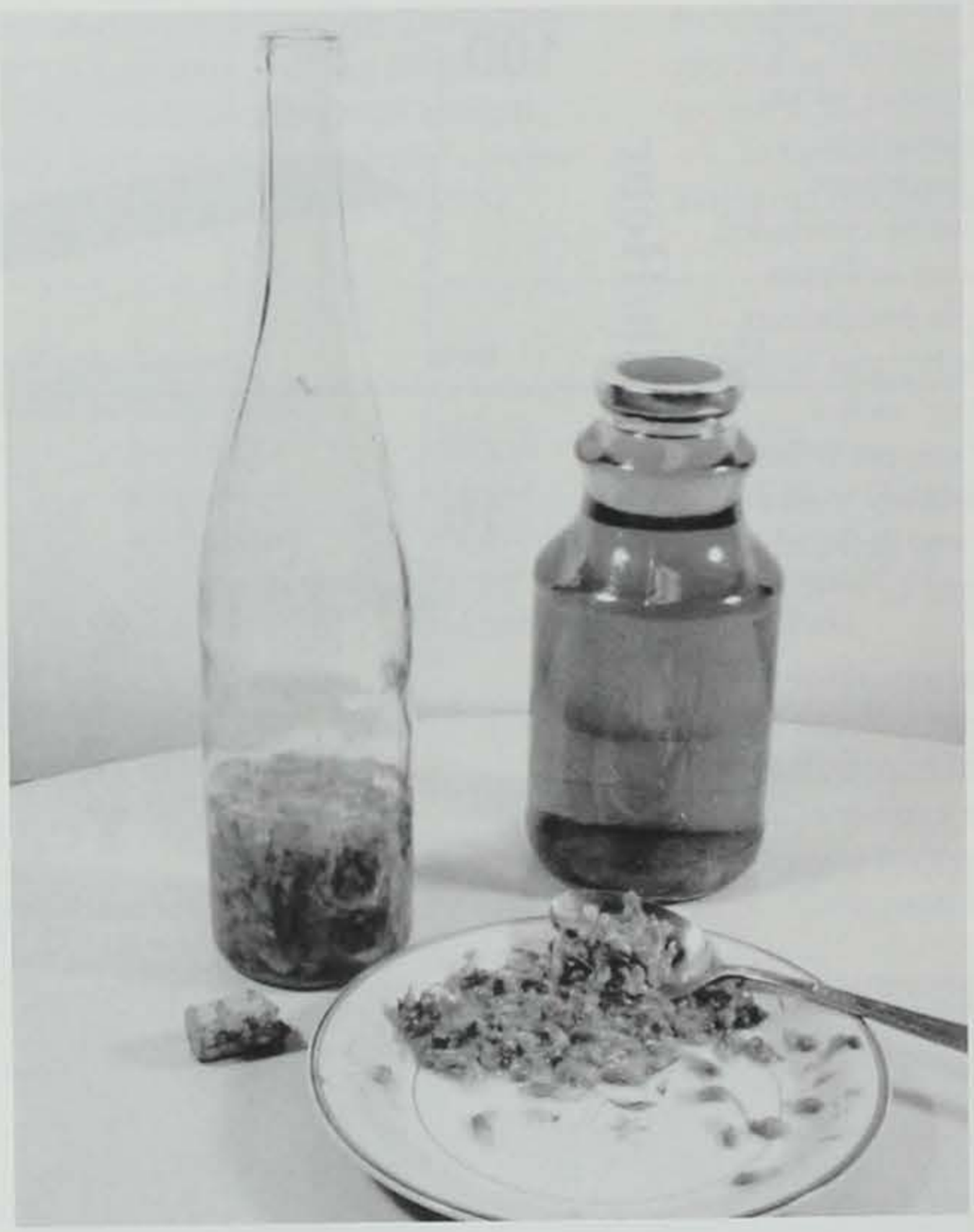
Make sure when gathering your natural edibles that they are from areas that have not been sprayed with chemicals. Always rinse the plants thoroughly.

One of spring's most delicate scents comes from violets. Both violet flowers and leaves are softly fragrant and can be used as garnishes in everything from chilled soups and salads to punches and desserts. The petals are often candied and used to top cakes, pastries and fruit.

Violets can add zip to jams, jellies, liqueurs, puddings, gelatins, green salads, breads, cupcakes, fruit compotes and ices. Simply substitute "violet tea" as the liquid in your favorite recipe. The tea is an infusion made by boiling water, pouring it over the violets, steeping, then straining the petals. Immediately refrigerate any unused tea.

Violet vinegar is a way to keep the flavor of violets ready for any time of the year. Pick as many violet flowers as you can. White and tri-color blossoms will give the same violet taste, but not the deep color. Put one or two cups of violets into a clean bottle or jar. Pour in white wine vinegar to the top of the bottle and seal. Let sit on the countertop for one week. The vinegar will pick up the wonderful sweet, fruity flavor of the violets, turning a deep, violet color. After 10 days, decant the vinegar and take out the violets. *(See picture above.)*

If you are adventurous, use a few of these pickled violets in a salad, as you would capers. They are tart with a hint of sweetness. The violet vinegar can be used as part of a light vinaigrette dressing over spring greens, including dandelion greens. Toss fresh violets in the salad for sweetness.



Ken Formanek

◀ Violet vinegar with its beautiful deep violet hue and delicate fruity taste makes a refreshing addition to vinaigrette dressings. They also provide a touch of spring on your shelf through weary, dreary winter months. Remove violets and re-bottle the vinegar once the color has deepened.

The vinegar will keep for a year in a sealed bottle, but the flavor is so delightful you will probably not have any left by the end of June, unless you ration yourself. Make as many bottles as you can!

As plants come into bloom other herbs and flowers that frequently go to waste can also be used in this way. Chive flowers, for example, provide a light, oniony taste. Remove the chive buds before they open or just as they start to open. Place washed buds in a bottle or jar and cover with white, cider, or red or white wine vinegar. (These will all give a slightly different taste.) Let sit on a sunny window sill for one week, or a dark cupboard for three to four weeks. Strain herbs, re-bottle and label the vinegar. This can be done with almost any fresh culinary herb or herb flower. Use four tablespoons of fresh herbs or one tablespoon of dried herbs per one cup of vinegar.

Let the vinegars capture the taste of spring, summer and the "outdoors" on your shelf for use any time and then try some of these other seasonal treats.

Candied Violets

1 egg white, slightly whipped
2 cups violet petals, (rinsed and air dried)
2 Tbs. confectioners sugar

Use a clean, small paint brush to brush petals with slightly whipped egg whites. Dip and coat petal in confectioners sugar. Air dry or dry in warm oven (100°) with door open for one hour. Store in an air tight container and use as garnishes on desserts.

Herb Jelly

Herb jellies are savory, sweet and good with meats, especially game. They also taste great spread on crackers with

cream cheese for party snacks. Use your favorite apple jelly recipe and substitute an herbal tea or infusion for the water called for in the recipe. Make the infusion by pouring boiling water over the herbs, steeping and straining. Almost any culinary herb will work. Tarragon, sage, rosemary, thyme and any of the mint varieties, including field mint, are very versatile, blending with many foods.

Basic Herb Butter

1/2 cup butter or margarine
1-3 Tbs. fresh herbs, chopped
or half that amount of dried herbs

Soften butter or margarine until you can easily blend in herbs. Let sit at room temperature for one hour, then refrigerate.

Cattails *

1. In early spring, gather young cattail shoots, which pull easily from roots. Peel to the tender white core. Boil like asparagus or eat raw.

2. Harvest green immature flower spikes in spring before they shed paper sheaths. Boil for a couple minutes in salted water, then serve with butter. They are eaten like corn on the cob. Or scrape from inedible core and bake in casserole: 2 cups of buds scraped from flower stock, 1 cup of bread crumbs, 1 beaten egg and 1/2 cup of milk. Season to taste with salt and pepper. Bake for 25 minutes in a medium oven (350°).

3. Spikes of male flowers erupt into pollen. Gather several pounds of protein-rich golden flour by shaking heads into a paper bag. Carefully sift and dry. Mix in equal amounts with wheat flour. Makes tasty and pretty pancakes.

Northeast Iowa Watercress Salad *

1 bunch of watercress,
with or without a little shrimp
1/4 cup tarragon vinegar
1/4 cup water
1/4 cup sugar

Mix vinegar, water and sugar together. Pour over individual salads. Can be topped with sunflower seeds, blue cheese crumbles, raisins or bacon bits.

Dandelion Greens

Fresh dandelion greens are favored by many as a crisp addition to a spring salad. Use tender young shoots as the leaves grow bitter with age. Many dandelion wine recipes are available, and we've included a fritter recipe to make use of those pesky flowers.

Fried Dandelion Buds *

dandelion buds — salt
butter or margarine — pepper

Wash dandelion buds and drain. Salt and pepper, to taste. Heat butter in a heavy skillet over medium heat until foam disappears. Place buds a few at a time in the skillet, and cook until the flowers burst into bloom. Keep warm while rest of buds are being cooked. Serve hot.

Ken Formanek

◄ **Fresh dandelion greens are featured in trendy "coast" restaurants but have been savored by many Iowans for generations.**

Ken Formanek

▲ **Herbal vinegars, like these chive and fennel mixtures, can make use of the flowers and herbs that would otherwise go to waste. They can spread a taste of spring and summer throughout all four seasons.**

Cooked Dandelion Greens *

1 grocery bag full of dandelions
8 to 12 strips of bacon, to taste

Dig dandelions before they blossom. Leave large white center root attached. *(Looks like a small green onion.)* Peel back outer brown leaves, and cut lower roots off, leaving enough of the root so that the plant remains intact. Then wash thoroughly with cold water. Bring water to a boil; add dandelions and cover. Boil for 5 to 10 minutes. Drain in a skillet. Fry 8 to 12 strips of pre-cut bacon into small pieces. Do not drain bacon grease. Add dandelions and stir. Cook over medium heat for 15 to 20 minutes. Stir occasionally. Serve with salt and brown vinegar, to taste. Serves two to four.

** These recipes are from the Wardens' Cookbook available for $14 (including shipping) from the Iowa Fish and Game Officers Association, c/o George Hemmen, 2277 250th St., GuthrieCenter, IA 50115.*

CONSERVATION UPDATE

Upcoming NRC, EPC and Preserves Board Meetings

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

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

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

Natural Resource Commission:
--May 11,
Council Bluffs
--June 9,
Creston

Environmental Protection Commission:
--May 15,
Des Moines
--June 19,
Des Moines
--July 17,
Des Moines

State Preserves Advisory Board:
--June 13,
Creston

DNR photo

▲ Fishing clinics are not only fun, but educational!

Brush-up On Your Skills--Fishing Clinics Are Here!

If it's been some time since you've tried your luck, or, if you have wanted to try fishing but weren't sure where to start, spring is an excellent opportunity to dust off the tackle and go fishing at one of Iowa's many lakes, streams or rivers.

Spring also brings fishing clinics to help you start out or brush-up on your angling skills. The DNR, along with other agencies, county conservation boards, sports angling and conservation groups, many city park and recreation offices offer fishing clinics, derbies, camps and other special events.

Events are scheduled across the state and include combination clinics and derbies, tournaments, camps, special outdoor family fun days and other community fishing events.

There are events for senior citizens, families, very young, novice and experienced anglers, disabled anglers and anglers of almost any age, skill or ability.

The following is a list of the 1995 events we are aware of at this time. They are listed by age group and whether they are instructional or offer prizes or awards. Please note there are several events that reach out to disabled anglers. For more information or to find out other events that may be scheduled for your area, contact your county conservation board or local park and recreation office.

FREE FISHING DAYS!
During the week of June 5-11, 1995, the DNR will join with other agencies and organizations to celebrate National Fishing Week. The DNR has also designated June 9-11, 1995, as Free Fishing Days and fishing license requirements will be waived for Iowa residents for these three days.

Clinics for youth

City	Date	Location	Contact	Event Information
Algona	June 10	Smith Lake, 2 mi. N. of Algona on Hwy. 169	515/295-7275	"Hooked on Fishing Derby"
Ames	May 13	Ames Izaak Walton League Park	515/292-4027	Clinic
Exira	June 10	Littlefield Recreation Area, 6 mi. E. of Exira	712/563-4690	Clinic
Bloomfield	June 10	Lake Fisher, Bloomfield	515/664-2138	Clinic
Buffalo	June 18	Buffalo City Park	319/381-1651	Clinic and tourney, "Hooked on Fishing, Not on Drugs" program
Charles City	July 15	Smith's Pond, 1 mi. W. of Co. Rd. T64; 110th St.	515/257-6214	Clinic
Clarinda	June 10	Pioneer Park (tentative)	712/542-4587	Clinic
Clear Lake	June 10	Clear Lake City Park	515/357-3517	The Clear Lake Fishing Club will sponsor a youth fishing tournament after the clinic
Clinton	June 24	Lake Malone, between Clinton and DeWitt on Hwy. 30	319/847-7202	Tourney
Council Bluffs	June 3	301West Commanche	712/366-6620	Clinic
Council Bluffs	June 10	Lake Manawa	712/328-8852	Open to youth age 6-16
Council Bluffs	June 11	Arrowhead Park	712/328-5638	Derby
Council Bluffs	July 16	301 West Commanche	712/366-6620	Clinic
Davenport	June 3	West Lake Park	319/381-3589	Clinic
Denison	May 29	Nelson's Park	712/263-5901	Clinic and Tourney
Denison	July 4	Yellowsmoke Park	712/263-5901	Clinic and Tourney
Des Moines	June 10	Easter Lake, near beach	515/999-2557	Clinic instruction during first hour; Derby open to kids age 5-15, prizes
Dubuque	June 11	Mississippi River	319/582-9395	Clinic and Tourney, 9-11 year olds, prizes, trophies, picnic
Dubuque	July 9	Mississippi River	319/582-9395	10th year Clinic and 2 hour Tourney, 7-16 year olds, prizes and a picnic
Fayette	May 20	Volga River Rec. Area at Frog Hollow Lake	319/422-3883	Annual Derby for kids in gr. 3-6; prizes for largest and most fish caught; snacks
Fredericksburg	June 9	Split Rock Park, 6 mi. S. and 1 1/2 mi. W. of Fredericksburg	515/394-4714	Clinic for students having completed grades 3-8; prizes for largest fish and casting

CONSERVATION UPDATE

Clinics for youth continued . . .

City	Date	Location	Contact	Event Information
Greenfield	June 10	New Greenfield Lake	515/743-6665	Clinic
Grinnell	May 20	Lake Nyanza at Miller Park	515/236-7008	Clinic and Derby, prizes in 4 age groups, door prizes, casting contest, food
Hampton	June 10	Beed's Lake	515/456-4375	Clinic
Harlan	June 10	Prairie Rose State Park, Harlan	712/773-2701	Clinic
Indianola	June 10	Warren Co. Cons. Ctr., N. and E. of Lake Ahquabi camping	515/961-6169	Clinic and Derby, trophies, door prizes and a tagged fish
Jefferson	June 11	Spring Lake State Park	515/386-4629	Clinic and Tourney
Lewis	June 10	Cold Springs Park, 1 mi. S. of Lewis	712/243-3542	Clinic
Mt. Pleasant	June 10	Crane's Pond	515/986-5067	Clinic, 2-hour educational workshop and 2-hour Derby with prizes
Muscatine	June 3	Saulsbury Bridge Recreation Area, 3 mi. N. of Muscatine	319/649-3379	Clinic, free tackle packets, door prizes and t-shirts for first 156 registrants
Nashua	June 11	Cedar Park, Nashua; W. of Cedar Lake	515/394-4714	Clinic for students having completed grades 3-8; prizes for largest fish and casting
New Hampton	June 10	Airport Lake Park, 1 mi. W. and 1 mi. N. of New Hampton	515/394-4714	Clinic for students having completed grades 3-8; prizes for largest fish and casting
Newton	June 17	Newton - Emerson Hough Ikes	515/792-7781	Clinic
Panora	June 3	Lake Panorama Marina	515/755-3061	Clinic
Salix	June 4	Izaak Walton League, Brown's Lake	712/233-1513	Clinic and Tourney, 14th Annual Huck Finn Fishing Derby; age 15 and under
Sioux Rapids	June 10	Gabrielson Park, at Gustafson Lake	712/749-2563	Clinic and Derby, Prizes for largest stringer of 5 bluegill and largest fish age 10 and under accompanied by an adult
Solon	June 11	Lake MacBride, N. Shore ramp	319/644-3615	Clinic
Spencer	May 26	Stolley's Park	712/933-5532	Clinic
Vinton	June 10	Rodger's Park	319/472-4942	Clinic and Tourney
Waterloo	August 5	George Wyth State Park	319/232-5505	Clinic geared for under privileged and handcapped children
Winterset	June 10	Cedar Lake	515/462-3575	6th year Clinic in Madison County

Clinics for all ages

City	Date	Location	Contact	Event Information
Anamosa	June 10	Wapsipinicon State Park	319/462-2761	Clinic and Tourney for all ages, prizes
Des Moines	June 9	Fort Des Moines Park	515/999-2557	Clinic for senior citizens - open to adults aged 60+
Elkader	June 10	Osborne Conservation Center, 5 mi. S. of Elkader on Hwy. 13	319/245-1516	Clinic instruction and a derby with prizes; bring a pre-washed cotton t-shirt
Forest City	July 8	Thorpe Park, 5 mi. W. of Forest City	515/565-3399	Clinic is free, food provided after, doorprizes, topics include; fish ID, management, equipment, cleaning
Gilmore City	May 13	Quarry	515/332-5447	Clinic free to all ages; prizes for first fish, most fish, largest fish, etc.
Guthrie Center	June 10	Springbrook State Rec. Area, 10 mi. N. of Guthrie Center	515/747-3591	Clinic
Hazleton	June 10	Fontana Park, 1883 125th St.	319/636-2617	Tourney
Ottumwa	June 10	Ottumwa Greater Park	515/682-3091	Clinic and Tourney
Ruthven	June 11	Lost Island Lake	712/837-4866	Clinic registration at nature center
Sigourney	June 10	Cassin's Pond, 1.5 mi. W. of Sigourney on Hwy. 92	515/622-3757	Tourney, 4 age categories; prizes for largest, smallest and most fish
Sioux City	July 8	Stone State Park	712/258-0838	Clinic
Woodbine	June 10	Willow Lake, parking lot near boat ramp and dock	712/647-2785	Clinic

Special Events

City	Date	Location	Contact	Event Information
Cherokee	June 10	Kozer - Spring Lake Park	712/225-2715	Outdoor Fun Fair
Davenport	May 20	Credit Island Park	319/263-5062	Take it to the River, family events, river awareness, and fun
Dubuque	May 20	Miller Riverview Park	319/872-4976	Take it to the River, family events, river awareness, and fun
Fort Dodge	June 10		515/955-4614	Kids Fish Day
Hartley	June 17	Mill Creek State Park, Paullina	712/728-2033	Seminar - All Ages
Hazleton	Week of June 12	Fontana Park, 1883 125th St.	319/636-2617	Camp - youth
Ladora	June 10	Lake Iowa Park, 15 mi. west of Williamsburg	319/655-8466	Fisheree - Families, young, novice, and experienced anglers invited for fishing and free food; prizes for all!
Monticello	July 16-21	Camp Courageous	319/465-5916	Camp, youth w/ disabilities, fishing fun

CONSERVATION UPDATE

Winner of the Water Safety Poster Contest

Emily Bacatan, a sixth-grade student at James Madison Middle School in Burlington, has won first place in the Water and Boating Safety Committee's 15th annual water safety poster contest. The theme of this year's contest was "Wear your PFD -- It can save your life."

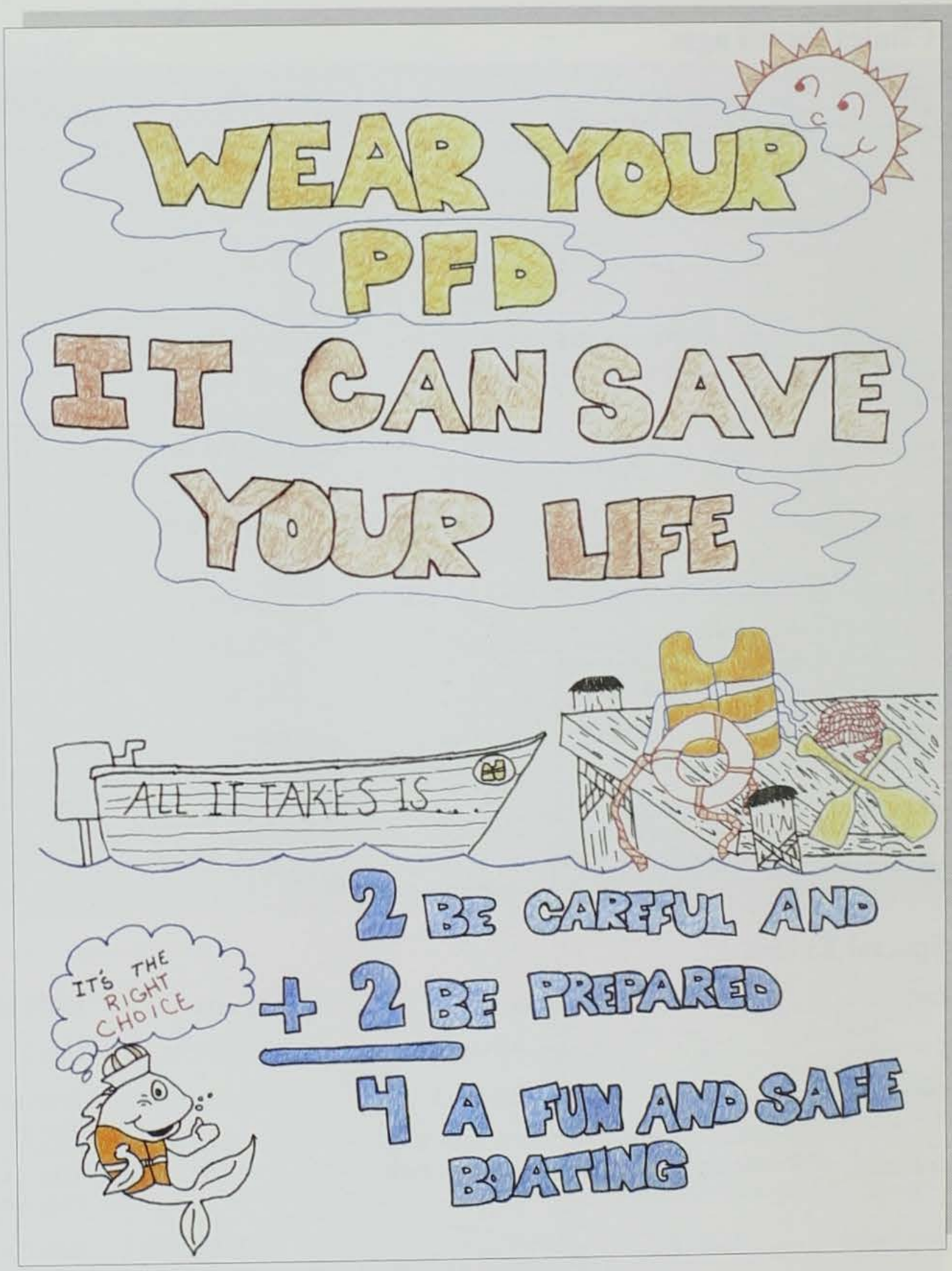
In addition to winning $100 provided by IMT Insurance and a certificate, Bacatan has been invited to meet Gov. Branstad and witness the signing of Iowa's Safe Boating Proclamation in May. IMT Insurance will print a quantity of the winning poster for distribution throughout the state.

Sophie Magill, a sixth-grader at Charter Oak-Ute Community School, received $50 for second place, and Chrisoula Mouzakis, a sixth-grader at Brody Middle School in Des Moines received $25 for third place. An additional 15 students received honorable mention certificates for their drawings.

"The contest was a big success," said Sonny Satre, recreational safety coordinator for the DNR. "We had more than 200 entries and choosing the best designs was a difficult task for the judges to complete."

"The project's objective is to develop water safety awareness among young Iowans," Satre said. "As each contestant's awareness of water safety is raised, they also influence their families and friends. Students, teachers and administrators who participate are making a very real contribution towards water safety in Iowa."

Cosponsors of the annual program are the DNR, U.S. Coast Guard Auxiliary, Des Moines Power Squadron and the Midwest Regional Water Safety Council.



▲ **Poster entry of winner Emily Bacatan, a sixth-grade student at James Madison Middle School in Burlington.**

by Don Sievers

Iowa: Land Between the Rivers

Background:

At the time of settlement, Iowa was an area rich in natural resources with vast acres of prairies, forests and marshes; all of which contained a variety of wildlife. The DNR is responsible for the sustainable management of Iowa's natural resources, including forests, wildlife and natural habitats such as lakes, prairies and streams.

▲ Historic pictures of Backbone (top) and Bellevue state parks

Age:

Grade 4-Adult

Objectives:

By studying an Iowa highway map, you will become familiar with the types of public land managed by the Iowa Department of Natural Resources, and some of the natural resources found in our state.

Materials:

Iowa highway map and a pencil

Key

1.
   a. Backbone State Park
   b. Tooleboro Indian Mounds
   c. Rathbun Fish Hatchery
   d. Preparation Canyon
   e. Hayden Prairie
   f. Shimek State Forest
   g. Guttenberg
   h. Prairie Rose State Park
   i. State Forest Nursery
   j. Fort Atkinson
   k. Springbrook State Recreation Area
   l. Lacey Keosaqua State Park

2. **Animals**
   a. Badger
   b. Swan
   c. Mallard, Plover or Curlew
   d. Buffalo
   e. Beaver

Trees
   f. Beech
   g. Bur Oak
   h. Cedar
   i. Walnut
   j. Red Oak

Habitats
   k. Prairie City
   l. Silver Lake

3. Missouri, Big Sioux
4. Mississippi
5. Iowa River

Extensions:

1. Have students choose a natural area that they would like to visit. They can write for more information about the area. Have students identify what there is to see and do at the area, and what the purpose of the area is.

2. Plan a field trip to a local DNR area.

Procedure:

1. Using an Iowa highway map, find the following areas managed by the Iowa DNR.

a. State park at I-5 which became Iowa's first state park in 1920.

b. State preserve at J-2 that has Native American burial mounds.

c. Lake at G-2 where the DNR has a large modern fish hatchery for raising catfish.

d. State park at B-4 which contained a town formed by Mormons that broke away from a wagon train to Utah.

e. State preserve at H-7 which is the largest single tract of prairie remaining in Iowa.

f. This state forest at I-1 received its start when the United States Forest Service purchased the land as potential national forest area.

g. City at J-6 where a DNR display of Iowa's fish can be seen.

h. State park at C-3 that bears the name of Iowa's state flower.

i. DNR area at F-4 where trees are grown for wildlife habitat plantings.

j. State preserve at H-7 where a frontier rendezvous or festival is held every year.

k. Recreation Area at D-4 where the DNR operates an Education Center that provides field trips for schools and teacher training in natural resource issues.

l. State park at H-1 where a forest craft festival is held every year.

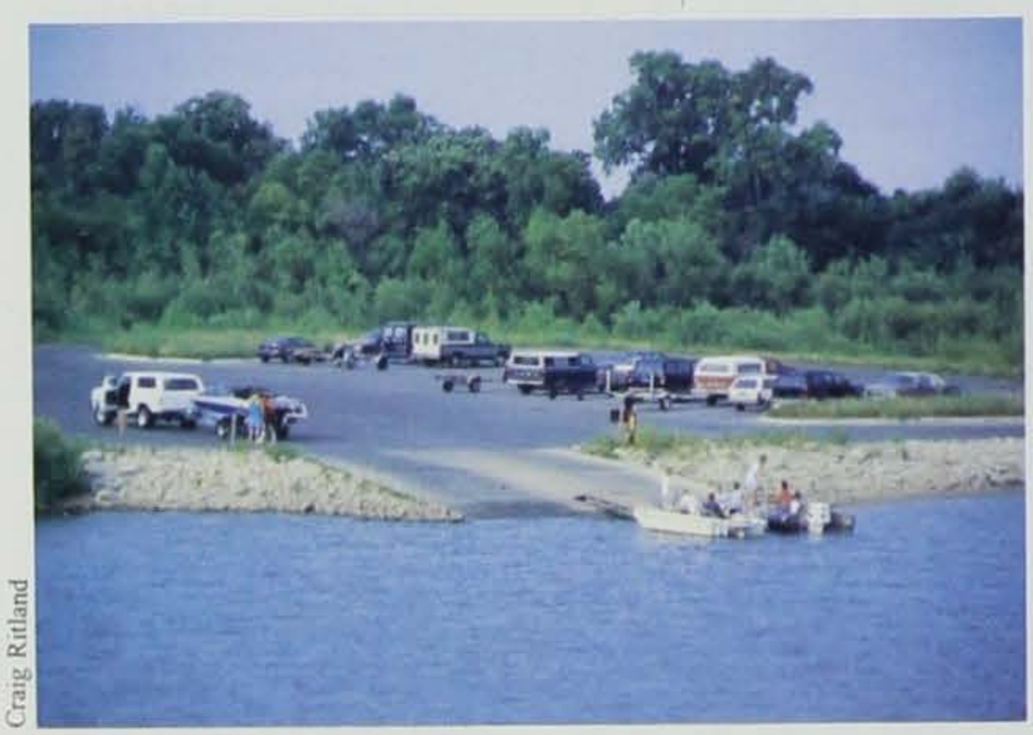
2. Iowa has several cities that are named after trees, animals, and habitats. Name the cities or towns located at these points on your highway map.

Animal	Trees	Habitats
a. E-5	**f.** F-3	**k.** F-3
b. F-3	**g.** H-7	**l.** F-7
c. D-6	**h.** G-2	
d. J-3	**i.** C-3	
e. E-4	**j.** C-2	

3. What are the names of the two rivers that form the western boundary of Iowa?

4. What river forms the eastern boundary of Iowa?

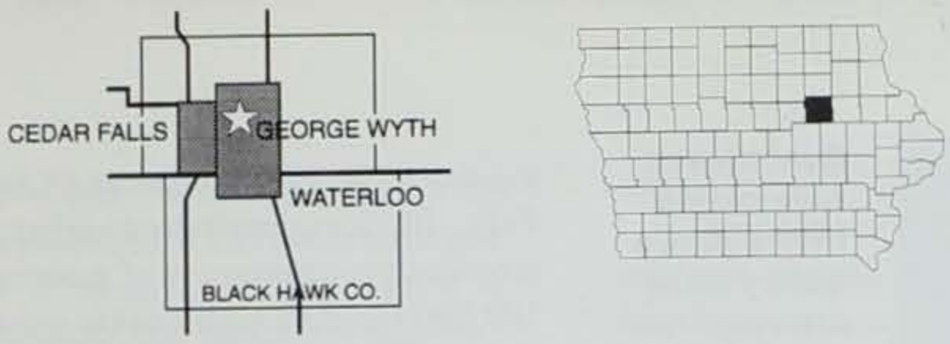
5. What river was dammed to create Coralville Reservoir?



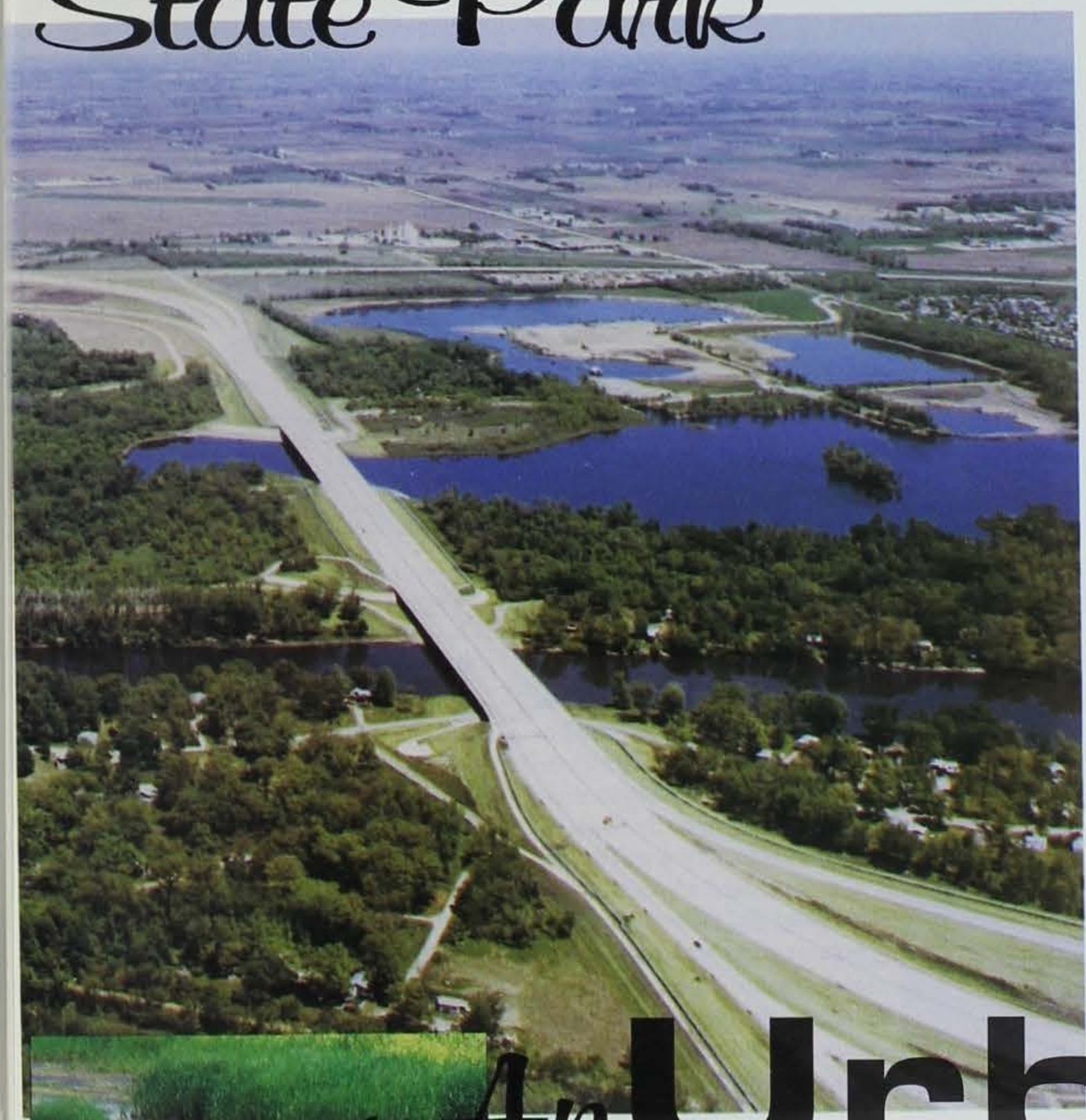
Craig Ritland

▲ **George Wyth State Park is near Cedar Falls/Waterloo in north central Iowa. Find it on the map and then read more about the park in the article on pages 59-61 of this issue.**

Don Sievers is a training officer at the department's Springbrook Conservation Education Center in Guthrie County.



George Wyth State Park

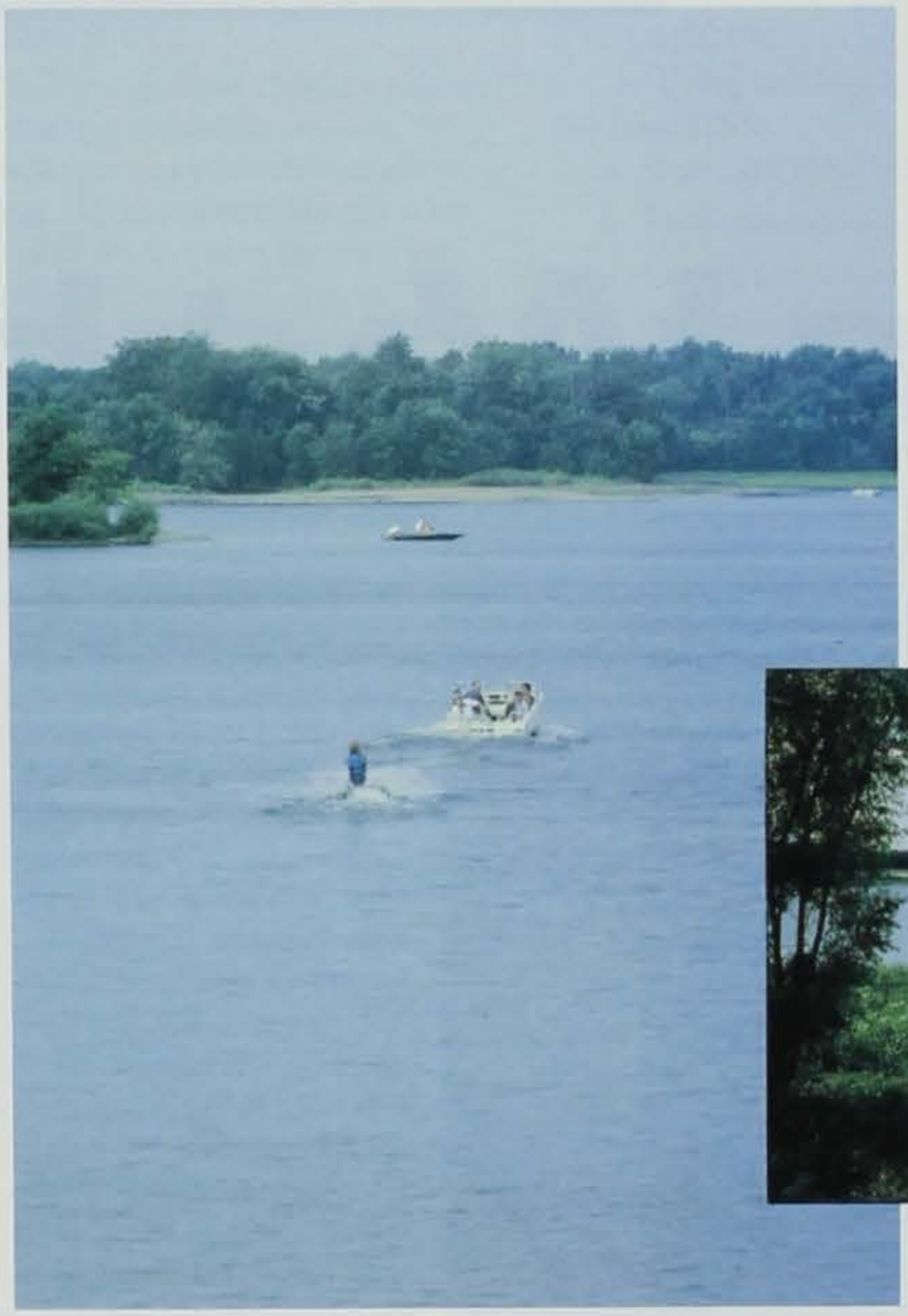


An Urban Island Refuge

Over five decades ago, a man had the vision and wherewithal to purchase a small corridor of land along the Cedar River in Black Hawk County near Waterloo and Cedar Falls. His name was George Wyth. A city park commissioner, Riverfront Commissioner, founder of Viking Pump, Inc. and dedicated conservationist, his vision was to have a scenic parkway for his community to enjoy. Despite a fair amount of opposition from those who didn't share his enthusiasm, his

by Tim Gedler

photos by Craig Ritland



Boating and waterskiing on the park's quarry lakes are very popular, but some visitors may choose a leisurely dip instead.

◀▼

Improved fishing on the park's lakes brings anglers out in numbers.

▼

dream became reality when, in 1939, he purchased and donated the land himself. Originally named the Josh Higgins Parkway after a fictional character on a local radio show, the State Conservation Commission (now the Iowa DNR) eventually acquired additional land adjacent to the parkway and the whole area became part of the Iowa state park system. In 1956, a dedication was held and the park was renamed George Wyth Memorial State Park to honor the man's vision and accomplishments. In the years to follow, the park would grow to become one of Iowa's most visited state parks.

In a manner of speaking, George Wyth State Park has developed into an "urban island refuge." All the state property lines fall within the city limits of Waterloo and Cedar Falls. Its close proximity to urban life provides the community of more than 100,000 people a high quality recreation area just minutes from home. Three major highways intersect near the park, and its modern facilities and campground attract vacationers from all over the United States, Canada, and elsewhere.

The park has five miles of paved trails that link it to Waterloo and Cedar Falls. Many visitors bicycle, in-line skate, jog, or walk from their homes to the park. The trail offers a scenic view as it winds along the banks of the Cedar River. It then connects to a network of metro-area paved trails. Plans are underway in the city of Waterloo to pave the trail to the Cedar Valley Nature Trail at nearby Evansdale. This popular trail makes its way fifty plus miles to Cedar Rapids.

The park also has six miles of unpaved trails that wind through cedar groves, bottomland forest, and prairie areas. The trails are groomed in winter for cross country skiing. One trail features a bird feeding and observation station. More than 250 species of birds have been seen and documented, including a pair of nesting Swainson's Hawks (a rare breeder in Iowa).

Recent highway construction projects on the north, east and west borders of George Wyth have been advantageous to the park. A new lake was created and two existing lakes were enlarged as fill material was pumped out to construct new Highways 57, 58 and 218. As segments of these highways were completed, excess right-of-way and borrow sites purchased by the D.O.T surrounding the lakes have been deeded to the DNR to become part of Park.

Of the two lakes expanded by this development, East Lake was enlarged by 120 acres and continues to grow as local construction projects create the need for sand. It is one of few lakes available for powerboating in Black Hawk, Bremer, Butler and other counties in the area. George Wyth Lake was expanded from 40 acres to 76 acres, and a new park entrance road was constructed around it. A 25-acre portion of this entrance roadside was restored with native Iowa prairie grasses and flowers.

A completely new, 60-acre lake was created on the west end of the park and named Alice Wyth Lake in memory of the wife of George Wyth. A paved access road to it is scheduled for construction this spring, and a small boat ramp and parking lot will be constructed for use by non-power boaters. When all highway construction is completed, the park will have more than doubled in size from 500 acres to more than 1,100 acres.

In accordance with D.O.T. highway contracts, piles of stumps, brush, and trees were loaded on a large barge and sunk in George Wyth and Alice Wyth lakes for sport fish habitat. In addition, DNR fisheries personnel have been placing hundreds of Christmas trees and stake bed structures in the lakes. About one-quarter mile of shoreline rip rap was also placed on George Wyth Lake. All these efforts have produced consistent bass, northern pike, crappie, channel catfish, and bluegill fishing. The state record largemouth bass in 1992 was taken from George Wyth Lake.

Over the years, structural improvements have kept pace with the changing park. New boat ramps were constructed on George Wyth and East lakes. Modern restrooms, beachhouse, and a handicap accessible fishing dock were built on George Wyth Lake. The park has four open shelter facilities and an enclosed lodge facility. Boasting a fireplace and modern restrooms, this popular building is available to the public simply by making reservations with the park attendant. A 48-site campground is located near the Cedar River and sites fill up quickly on many weekends throughout the camping season.

The park is a valuable natural resource, possessing prairie, wetlands, marsh, riparian, and woodland habitats all surrounded by urban developments. A population of blue-spotted salamanders, found in only one other site in Iowa, is known to inhabit this area. The park is a haven for birdwatchers and is used by professors and students from the University of Northern Iowa and other schools. In 1992, George Wyth was the second state park in Iowa to be designated a National Urban Wildlife Sanctuary by the Institute for Urban Wildlife.

A growing population of white-tailed deer in George Wyth and nearby Hartman Reserve is pressuring the urban boundaries. Car/deer collisions have increased, and a 10-foot-high fence was erected in the highway right-of-way along much of the park's boundaries to reduce these accidents. Deer browsing on neighborhood shrubs and trees, especially during winter months, has been causing some concern..

The Black Hawk County Deer Task Force formed in 1991, and is researching the deer issue and making recommendations to resolve it. The task force outlined a deer management zone and reviewed all available options for controlling the rising population of deer.

Public hearings on the deer issue were held by the DNR, and a special deer bowhunting season at George Wyth was later approved. The Waterloo City Council also approved the special bow season on Hartman Reserve and private land within the urban deer management zone. The special hunt ran from December 19, 1994 to January 10, 1995, and a total of 19 antlerless deer were taken. The objective remains to address the urban deer problem before it worsens. The study is the first of its kind in Iowa; however, Des Moines and Cedar Rapids are now beginning to address similar situations. Despite this current dilemma with deer, park activities at George Wyth continue as usual. Deer are recognized as a highly desirable resource in the park, and such management efforts will help ensure visitors the opportunity to view deer up close.

Much of the shoreline of the area's lakes is very young, evidence of the park's rapid expansion.
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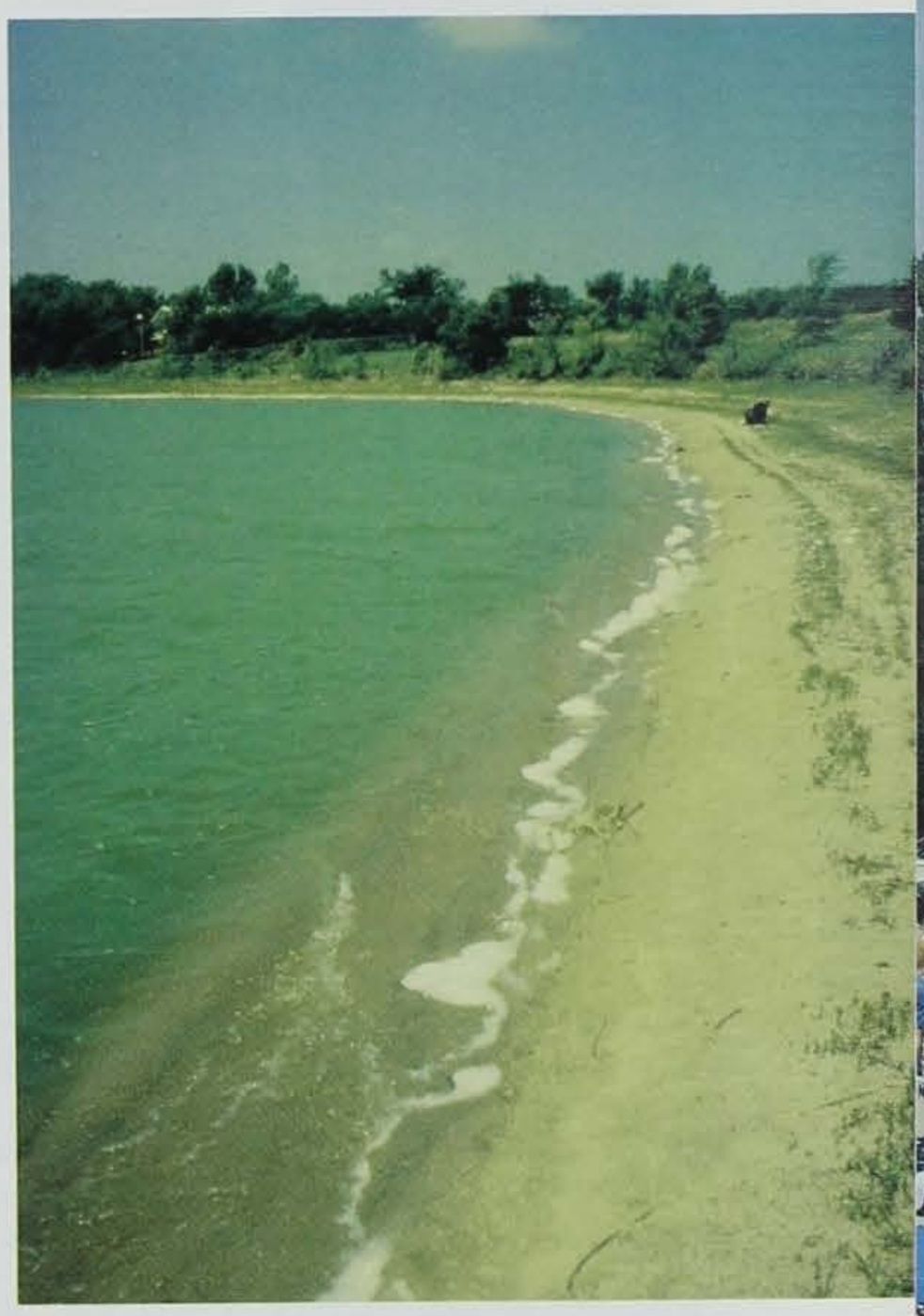


The park's popularity is increasing every year, with more than 625,000 visitors coming through the gates in 1994. The increase in usage is mostly due to the trail and lake developments which are providing a place for water recreation that was much needed in the Black Hawk County and surrounding area. If you're planning a visit to the Waterloo-Cedar Falls area, spend some time at George Wyth State Park -- truly an urban island sanctuary of the Iowa state park system.

Tim Gedler is the park attendant at George Wyth State Park.

WARDEN'S DIARY

by Chuck Humeston

"The Amphibious Blazer"

One of the most anticipated moments in an officer's life is being issued that first squad car -- the one with the decal on the side. You know, there's red lights, siren, radio, speed, power -- lot's of "stuff."

Probably many people don't realize our officers didn't always drive state-owned cars. Not all that long ago they provided their own cars for work, so the issuance of that first squad car was quite a deal. Since then we've had *memorable* vehicles.

Many of the "salts" still speak of the American Motors Ambassador. We're talking back in the days of cubic inches and horsepower here.

I've heard the legendary stories of how officers added chains over the engine because the torque of those disguised race cars would constantly break engine mounts.

Many of them also speak of the Jeeps which leaked so much dust you almost had to be on oxygen to drive on gravel roads.

I entered law enforcement working for a county conservation board. My first vehicle was a green, stepside, short box, Chevy pickup, six cylinder, three on the column. It had one "cherry" on the roof with a big wooden sign on each side of the light indicating "park ranger." It even had a remote control spotlight (which almost never worked) on the fender.

Well, when I went to work for the state I figured I'd be issued some sort of high-tech, high-speed pursuit vehicle. Yep, you guessed it, I got a 1980 Plymouth Volare with a slant six engine. It barely had power to pull a boat trailer. It got stuck in four-inch snow drifts.

One time a pickup load of deer hunters sat and laughed as I dug the high-centered Plymouth out of some snow in the middle of the road that every other car in creation had been traveling with no problem. High speed pursuit? Let's just say I got to look at lots of taillights when anyone wanted to run. When new officers complain about their cars, I always say they should be issued a 1980 Plymouth Volare. We should have saved some.

But I *was* proud of it. I waxed it if it needed it or not. I "Armor All"ed the vinyl seats until you had to wear the seat belt just to stay on the seat at a stop sign.

Maybe that started my reputation. I was training a new officer who was looking at the air conditioner vents in my car. "What are you doing?" I asked.

"I just wondered if it's true," he answered.

"What?"

"Well, one of the other training officers said your car is so clean you even clean the air conditioner vents with a toothbrush," he said.

"That's **NOT** true! Who told you *that*?" I shot back.

(It was a good idea though. I tried it later, and it works great!)

After the Volare, I had 1984 and 1986 Crown Victorias and a 1989 Chevrolet Caprice. All were excellent cars, but then I was issued the vehicle which would take me places I had never been before. A 1992 Chevrolet Blazer, four-wheel drive -- a tank, the *ultimate vehicle*. Which brings me to the night of the marsh.

I had been sent down to southern Iowa to work. We were doing a lot of night work looking for deer jack-lighters.

One night, my "neighbor" from Marshalltown, officer Dave Tierney, who I call "Super D" because he never stops, was riding with me. We drove to an area near the Missouri border and found a hill overlooking a curve in a gravel road, next to lots of timber and a creek. We entered a field planning to drive up to the top of the hill where we would watch the whole area. It seemed simple enough.

We started across a field at the base of the hill and suddenly the Blazer started to rock side to side a little. I put it in four-wheel-drive and continued. I could hear the weirdest sound and so could Dave. It sounded familiar but what in the world . . . ? Dave looked out the window and then down and said, "Hum, there's water coming over the running boards."

The Blazer quit rocking, but there was still the weirdest feeling . We looked at each other. "AAARRRGGH!!! We're sinking!!!"

Unknowingly we had driven into the middle of a marsh. I floored the accelerator.

Dave rocked back and forth trying to help the Blazer and yelling, "Go! Go! Go! Don't stop!"

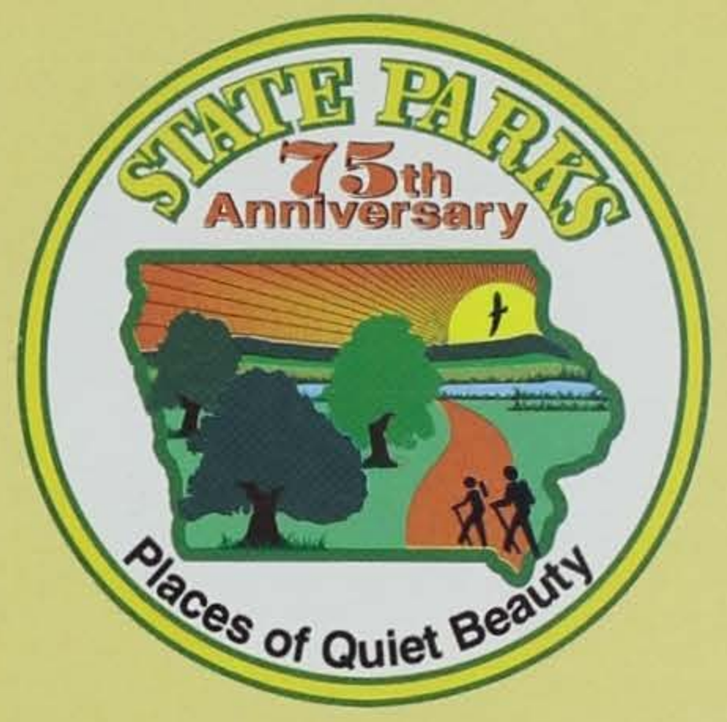
Water was flying everywhere. Ducks were escaping. The Blazer was sinking and sliding, but we were moving. It would have been the ultimate Chevy Truck commercial.

Suddenly the nose climbed and we shot up the hill. We turned around at the top and stopped.

Looking down under the full moon we could see tracks in, moonlight shining on water, and tracks out. If I had stopped it would have taken a Sikorsky helicopter to get us out of there.

The Blazer has performed equally amazing feats since then. I've still got it. I'll hate to see it go, but this spring while in Colorado, I noticed the Colorado State Patrol has some Chevy Camaro IROC-Z's. If I'd write a letter of request I wonder if . . .

State Parks 1995 Calendar



MAY

1-6 State St. Park Open Houses

7-13 Northern St. Park Open Houses

20 Stone & Lewis and Clark Volkssport Walk

21 Wilson Island Volkssport Walk

28 Rededication of Back-bone State Park

JUNE

9-11 Free Fishing Days

9-11 Lewis and Clark festival

10-12 Frontier days -Elk Rock State Park

10-17 State park Week

10 Annual Pigman Triathlon-pleasant Creek

JULY

4 Fireworks display-Lake Manawa

4 Antique Car Show & Fireworks-Lake Of Three Fires

8 Maquoketa Caves-Volkssport Walk

8 & 9 John Henry Weber Rendezvous-Bellevue State Park

AUGUST

12 Whaletown Triathlon-Lake Anita

19 Lake Anita & Springbrook Volkssport Walk

19 15th Annual Big Creek Triathlon

SEPTEMBER

16 Lake Of Three Fires Nine Eagles Volkssport Walk

23/24 Fort Atkinson Rendez-vous

29 Nishna Valley Bike Trail Ride-Lake Anita

30 Brushy Creek & Dolliver Volkssport Walk

OCTOBER

7 Annual Great River Road Race-Pikes Peak

13/14, 20/21, 26-30 Haunted Forest Walk-Walnut Woods

14/15 Forest Crafts Festival-Lacey-Keosauqua

STATE PARKS
75th Anniversary
Places of Quiet Beauty