

Iowa

March/April 1995

CONSERVATIONIST

Department of Natural Resources

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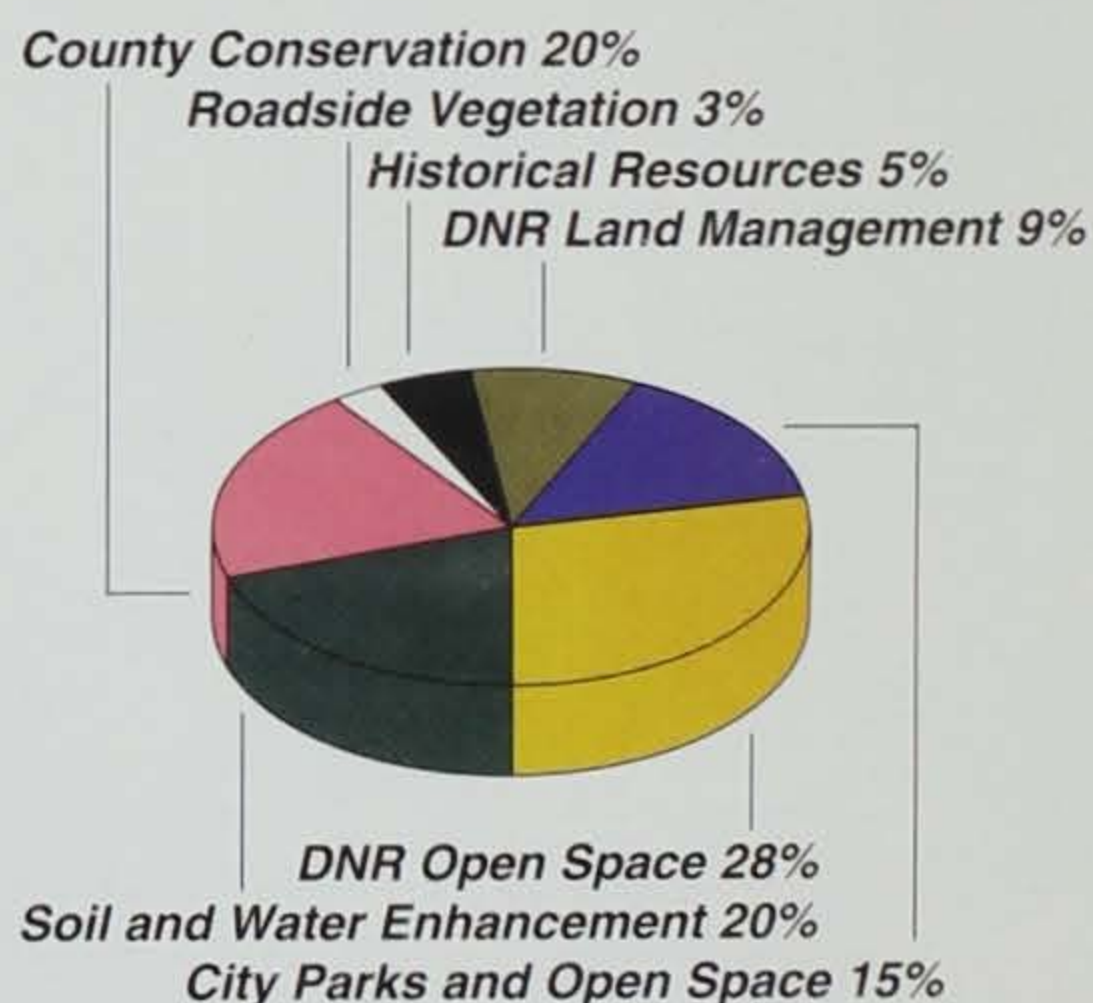
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Front -- *Indigo Bunting-Redbud* by Larry Zach. (See page 54 for details.)
Back -- Trout fishing at Bloody Run Creek just after ice-out, by Lowell Washburn.



EARTH DAY 25:

"What does Earth Day mean to you?"

As we approach the 25th anniversary of Earth Day, that's the question we asked environmental leaders from around the state. We wanted them to tell us if Earth Day is still relevant after 25 years and if this yearly celebration has a personal resonance with them. We wanted their words of wisdom about the state of the environment and where we as Iowans stand in relationship to it in 1995. And we wanted them to reflect on where we go from here, on Earth Days to come.

As you read these reflections, you'll see that these questions and more were answered. And, as you read, you can think about how you would answer the question yourself. What does Earth Day mean to you?

--Patricia Cale and Jennifer Campbell

Patti Cale is the DNR's Energy Information Coordinator and Jennifer Campbell is the Energy Information Intern.

● **Terry E. Branstad** *Governor*

It is important for Iowans to recognize the 25th anniversary of Earth Day as being very significant to our state. No-till farming, an increased recycling of many products, reforestation, the increased use of non-fossil fuels, and abandoned well plugging are just a few of the environmental protection measures in which Iowa has become a leader.

Like most Iowans, I believe we should observe Earth Day every day of the year. I encourage everyone to take a very active role in protecting our environment, thus providing an even brighter future for our children and grandchildren.

● **Bill Fink** *State Senator*

I am delighted to see that conservation and environmental issues have evolved into the mainstream of politics, and more importantly, the lifestyle of Iowans today. The average Iowan is concerned with our environment and is aware of everyone's responsibility to it. Earth Day is the 'Fourth of July' of the environmental movement, and its 25th anniversary is a good time to take pause, and celebrate our many environmental achievements, and strengthen our resolve to tackle the problems of today and the future.

● **Sandra Greiner** *State Representative*

As a farmer, and as a person concerned about our environment, I appreciate the significance Earth Day has for rural Iowa. Iowa farmers have become very aware of the need to protect our environment and have dramatically increased our protection of surface and groundwater, while reducing soil loss.

In agriculture, every day is Earth Day. Farmers were the original environmentalists. Iowa farmers lead the nation in reduction of commercial fertilizer use and rank second in the use of conservation tillage. Protecting Iowa's natural resources, while implementing a multiple-use philosophy, is the greatest legacy we, as farmers, can leave our children and grandchildren.



● **Joe Wilkinson, President** *Iowa Wildlife Federation*

I worry sometimes that Earth Day is treated by many people as a novelty--a once a year event. Plant a tree. Take a few milk jugs and newspapers back. Feel good about what you have done. If that is all you have done for the environment, you have done nothing.

If you plant a tree, plant more. Maintain them. Help somebody else do it. You say you recycle? Remember it is not recycled until you buy recycled. Change your consumer habits so you do not create as much garbage. Utilize renewable resources if you have any choice.

Earth Day shouldn't be a once-a-year celebration dusted off so you feel good. It should be a milestone to measure how far you have come. How far WE have come. And how far we have to go.

We affect our environment every day. For eternity. We should allow more than one day a year to fix what we've done to it.

Reflections from Iowans



DNR Photo

● Cindy Hildebrand *Iowa Audubon Council*

To the Iowa Audubon Council, Earth Day means an opportunity to see our planet, ourselves and our state in perspective. Iowa is a beautiful and fragile interweaving of air, land, water and life. Most of our original native landscape has already disappeared. We have a responsibility to take better care of our small part of the planet and protect its remaining natural resources and biodiversity.

● Dennis Keeney, Director *Leopold Center*

Earth Day for me is a time to reflect on past E-days and to evaluate the future. It is an important day for me personally. I was very involved with the first E-day program at U Wisconsin-Madison. That was during my early years as an assistant professor, just getting a career started. We had tremendous national and state environmental leaders then, charismatic people who saw the problems clearly and knew that science alone would not begin to solve the problems development had brought on to Wisconsin's landscape. Gaylord Nelson was probably my most

important figure, but there were many others on the Wisconsin campus that went on to national and international leadership in the environment.

The activities of the first Earth Day started me on a career in environmental research and now in management and administration of research and education in the environment. I look forward from this Earth Day to many more accomplishments from the nation's citizens, and am pleased and proud that Iowa can step to the front as one of the leaders.

● Tom Buckley, President *Iowa Association of Naturalists*

We've had a period of 25 years to look back on Earth Day, and I think there's been a change of what it was initially -- as an occasion to raise our awareness on what was happening with the environment, and reflect upon our own place in the world and what that means. It seems that we now have that basic awareness and need to move forward in order to develop a respect and co-existence with others we share our earth with. In the past we have scared people into doing the right thing, but the right thing is to educate people about a responsibility not only to ourselves, but for other things on the earth so that we can continue to live and provide for things.

● Jim Wooley *Pheasants Forever*

Earth Day is every day for Pheasants Forever and its volunteers. We

hope that Earth Day helps Iowans focus on wildlife and its habitat needs. Each day our 97 Iowa chapters and committees are raising funds and spending funds for wildlife habitat here in the state. Pheasants Forever has helped the DNR and county conservation boards purchase more than 18,000 acres for wildlife management areas. And we spend about three-quarters of a million dollars on private lands and habitat projects annually. We hope to be doing even more for Iowa wildlife as we mark future Earth Day celebrations.

● Mark Conway, President *Iowa Association for Energy Efficiency*

I am not a firm believer in Earth Day. It is not that I am against what Earth Day stands for. I believe that individuals should do what they can every day, not just once a year. In the 70s, we all learned about energy conservation.

Conservation was doing without and being uncomfortable. Today we talk about energy efficiency. I feel this means being smart on how we use energy while maintaining our comfort. It is difficult for most of us to remember about energy but every day each of us makes decisions that affect the amount of energy

that we use. What I feel we need is to educate individuals to make smart decisions every day to reduce energy usage, and not have one day of the year to become energy efficient.



Photo by Ron Johnson

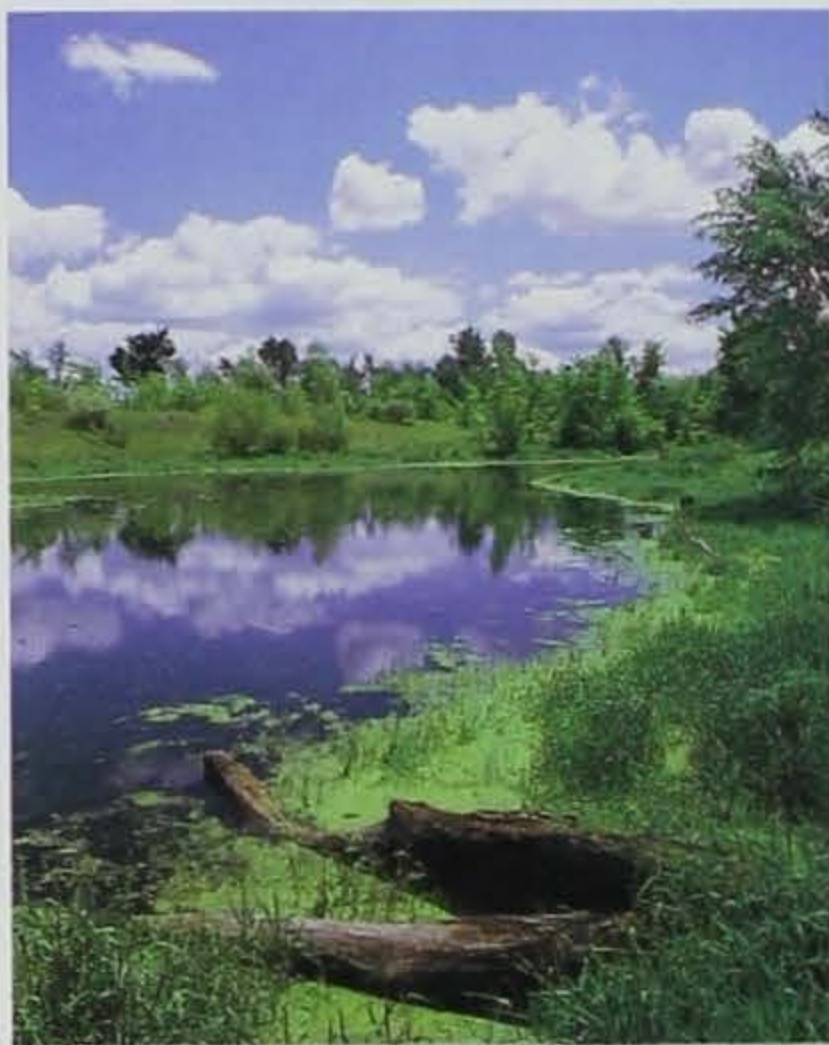


Photo by Roger A. Hill

● **Gloria Baker, President**
Iowa Women in Natural Resources

Earth Day is a great opportunity to draw everyone's attention to the environment. Unfortunately, a lot of the general public have not made enough changes in their lives to make the tremendous impact that is needed. At this one time of year we all have an opportunity to stand up and voice our issues and hopefully, we can make a few more changes in the way people live their lives to have less impact on the environment. Iowa Women in Natural Resources, like several other organizations working towards wise use of natural resources, wishes EVERY DAY was EARTH DAY.

● **Dorothy Paul, Executive Director**
Iowa Division, United Nations Association-USA

A one-time a year celebration of Earth Day is great, but it really doesn't cut the mustard. The difference is doing it -- working on planet earth issues 365 days a year. Our survival depends on it!

Scientific experts predict that no more than one or a few decades remain before the chance to avert the threats we now confront will be lost and the prospects for humanity immeasurably diminished.



DNR Photo

● **Julianna Johnston, Environmental Project Director**

Iowa Citizen Action Network

Earth Day began around my first birthday, so I guess you could say that as I have grown up over the years, so has Earth Day. Earth Day reaches more people in its adulthood, with a broader, more inclusive message. It's not all about one day a year. It's about our lives and choices every day of the year -- Earth Day reminds us of our daily task.

Hopefully, Earth Day will continue to mature, emphasizing the need for action in our everyday lives -- and so will we, as we reconfirm that organizing an event for one day a year will never be enough to protect our environment. Our commitment must be as dedicated as the tides, day in and day out.

● **Tom Deves, President**
I-RENEW, the Iowa Renewable Energy Association

I would say that Earth Day is a time of special awareness, to take stock of our lifestyle and resolve to be better stewards all year. It's very disappointing that after 25 years, progress is still painfully slow. Our appetite for energy has grown. We are still polluting our air with every kilowatt hour we use and every mile we drive. Sure, we're

getting better but we haven't crossed the line yet from net destruction to net reconstruction and sustainability. This is what the Iowa Renewable Energy Association is working towards. Earth Day is a wake-up call for all of us -- individuals, corporations, and government.

● **Gail Anderson, Board Member**

Iowa Recycling Association

When people celebrate Earth Day, they are usually seeking something they can do to make a difference in protecting our environment. Recycling allows people to make a difference. Since the 20th anniversary of Earth Day in 1990, many recycling programs have developed across the state of Iowa with much success. In addition, the celebration of Earth Day by youth has also generated a lot of enthusiasm for recycling and its importance to preserving natural resources, the environment and conserving landfill space.

For some people, Earth Day may be a once-a-year celebration. The Iowa Recycling Association believes that that one day brings an enthusiastic attitude toward recycling to Iowans 365 days a year.



Photo by Ron Johnson

● **Tom Neenan, Executive Director**

Iowa Trails Council

Earth is only a temporary dwelling place for mankind, before what many believe is a permanent heaven or hell. Earth Day is one day of 365 that is being set aside to help us understand that we can do better in making earth closer to our concept of heaven. With our earth's population increasing and the average length of life becoming greater it behooves us to contemplate how the things most essential to our livelihood are endangered.

Celebrating Earth Day surely requires us to become more aware of the dangers to our environment and the need to form a resolve to eliminate the activities that are so detrimental to our ecosystem. Each of us has the need to become more aware of what is happen-

ing around us, and to resolve to do what we can to change and reverse the catastrophic decline in the quality of our environment before it reaches an even greater crisis point.

● **Rich Patterson, Director**
Indian Creek Nature Center

Since the first Earth Day, Americans have been deluged by the whys and hows to live lightly on the earth and its resources. Many take this responsibility seriously. For them Earth Day occurs 365 days each year.

I hope the 25th anniversary of Earth Day will inspire others to ponder their personal relationship with an earth that gives both nourishment and beauty, and embrace a higher level of environmental stewardship.

● **Chris Adkins, Co-director**
Iowa Student Environmental Coalition

This 25th anniversary of Earth Day is for me a time to pay homage to Sylvan Runkle. In the song, "The Big Trees are Down," Doug Wood poses the question, "Who will hold the sky up now that the big trees are down?" The Big Trees of this song are Leopold, Thoreau, Carson and others. I would add Sylvan's name to this list of Big Trees. His life was an answer to this song's question. Sylvan held up our sky.

As I work with the students involved in the Iowa Student Environmental Coalition, I often study their faces and wonder which of them will one day be answers to this song's question. With the 25th Earth Day upon us,

I ponder the future of Iowa's sky and question the role of these young saplings in its support.

For me, these thoughts flow by into our state's future, carried by a current of hope, remembered as a Big Tree named Sylvan.

● **Gary Reiners, State Director**
Iowa Chapter, Nature Conservancy

Thirty-two years ago -- some seven years before the first Earth Day -- a small group of Iowans got together to work toward what they believed to be an important objective: acquiring land to preserve some of Iowa's unique plants, animals and natural communities. Since then, The Nature Conservancy has been at work every day to save thousands of acres in Iowa. Committed to the protection of biodiversity of life on Earth, The Nature Conservancy manages 28 preserves in Iowa.

This year, The Nature Conservancy will celebrate Earth Day in Iowa with a special field trip to Berry Woods. Berry Woods, the first Nature Conservancy preserve established in Iowa, is located about two miles northwest of Indianola. Guided nature tours of the 40-acre old white oak and hickory forest will feature rare vascular plants such as showy orchid (*Orchis spectabilis*) and Indian pipe (*Monotropa uniflora*), as well as migrating birds.

● **Mark Ackelson, Director**
Iowa Natural Heritage Foundation

Just as Presidents Day reminds us to honor our leaders, Earth Day reminds us to honor our resources. Earth Day gives the Iowa Natural Heritage Foundation a special opportunity to celebrate the actions of our members and volunteers and others across Iowa that have protected and restored

natural resources throughout the year. Earth Day also serves as an important reminder for all Iowans to plan for the future. We must continually refresh our efforts to protect and restore Iowa's natural heritage, and encourage others to do the same locally and throughout the world.

● **Shannon Ramsay, Director**
Trees Forever

At Trees Forever, we see the week between Earth Day and Arbor Day as Arbor Week and we often see it as an opportunity to celebrate the entire week. Thousands of celebrations take place that week across Iowa as people plant trees and mulch and care for existing trees. So both Earth Day and Arbor Day are an excellent time to reflect on the many benefits that trees provide. The one thing I want to emphasize is year after year we see more involvement of all ages. We're very pleased to see more and more older people sharing their wisdom and appreciation for the environment with younger people.

● **Adriene Koett-Cronn, Communications Specialist**
Iowa Energy Center

Like the founders of Earth Day, the Iowa Energy Center is working to effect positive change in the way energy is used in our state. This includes showing businesses, industries and homeowners how they can be more energy efficient. The Iowa Energy Center is trying to open people's eyes to the fact that energy efficiency is good business. Not only do people benefit financially, but they are making a wise investment in their community's environmental and social health. By increasing the state's energy efficiency, Iowa can extend its non-renewable resources and reduce the environmental impacts of burning fossil fuels.



Photo by Roger A. Hill

INTERIOR RIVER WALLEYES! A Well-Kept Secret

by Gary Siegwarth

... a secret, that is, for anglers who have never tried walleye fishing on one of Iowa's interior rivers. As with any good fishing hole, it's probably something most interior river walleye anglers would just as soon be kept a secret. However, interior rivers are fast becoming known for some close-to-home walleye action by local river anglers. Fishing for interior river walleyes also offers an excellent way to get back to the basics of fishing, by leaving behind most of that high-tech equipment. This article offers some basic information on where to go and what to look for as well as a few tips to help you unlock the secret of interior river walleyes.

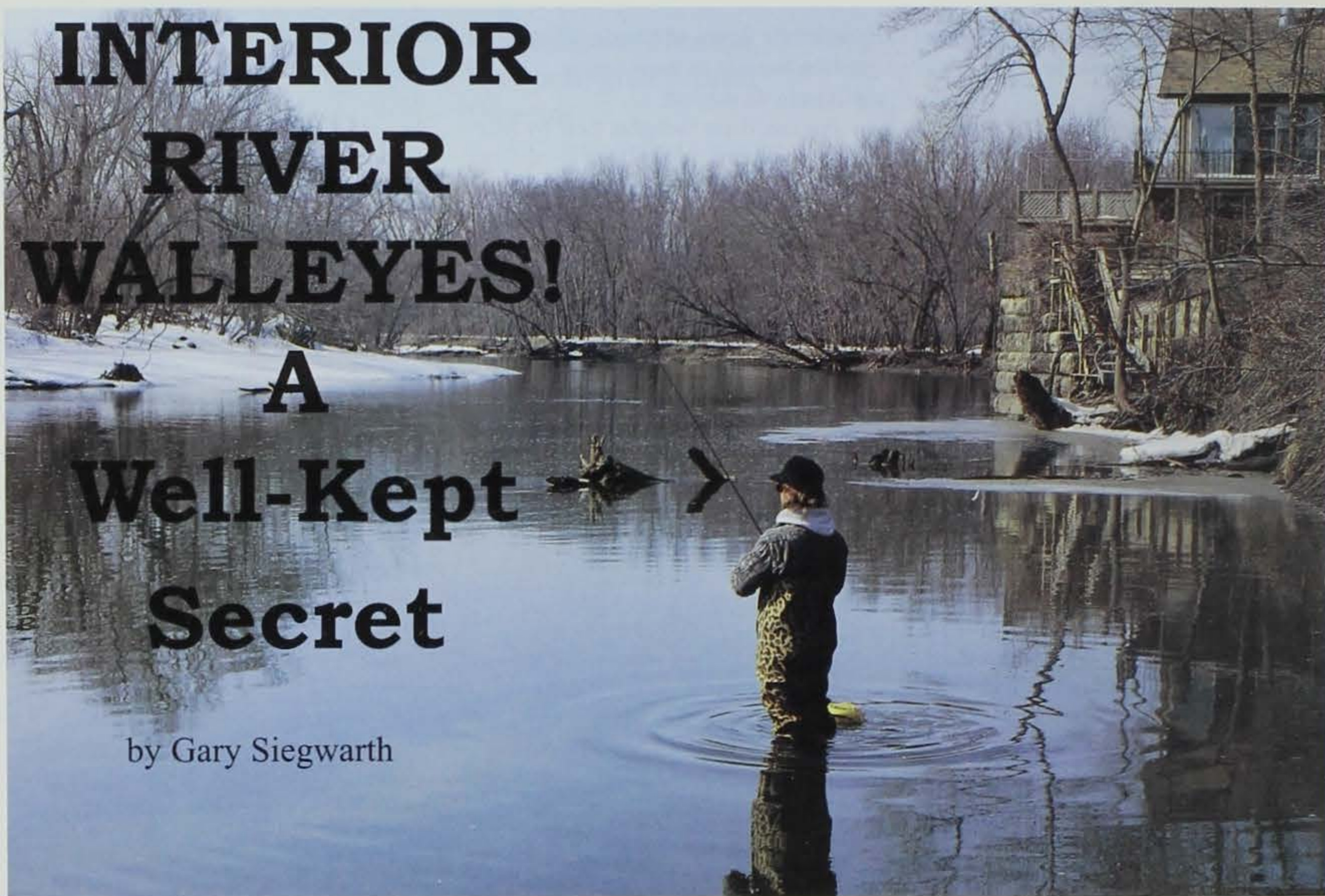
Interior rivers offer some fantastic fishing opportunities which are often overlooked by avid walleye anglers on their way to more traditional walleye hot spots

such as the Mississippi River or one of Iowa's larger artificial or natural lakes. Fishing interior rivers is also a perfect way to avoid the crowds and to locate a true "secret" fishing hole along one of the thousands of miles of Iowa rivers. It's also a pleasant surprise to anglers when they discover the trophy potential of these waters. Each year numerous walleyes in the 7- to 12-pound range are caught, with a few fish each fall and spring tipping the scale over 13 pounds! Partially responsible for these large fish are the rapid growth rates of river walleyes. This tremendous growth was documented as part of a fisheries research study, where individual walleyes were marked with coded tags. Most of the tagged walleyes in this study had one year growth rates in excess of one pound, with some fish gaining more than two pounds in just one year. During autumn and early winter, the

concentration of these fast-growing fish in deep holes and eddies makes your chances of catching a trophy-sized walleye as good or better than anywhere in the state.

Where to go

A big advantage of having interior river walleye populations is that fishing opportunities are spread out across the state because of the abundant number of rivers and streams in Iowa. This puts walleye fishing opportunities "close to home" for a large percent of Iowa anglers. Good walleye populations can be found in the Cedar, Wapsipinicon, Iowa and Des Moines rivers. However, other smaller rivers, such as the Raccoon River in western Iowa, and Maquoketa and Shell Rock rivers in the northeast portion of the state, support excellent numbers of walleyes and these streams should not be overlooked.



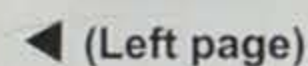
Rick Martens

What to look for

Habitat and structure are the keys to finding walleyes in these rivers. The specific areas or habitats the walleye prefer are fairly predictable. These areas are especially predictable during the spring, late fall and winter. During the spring period (March to May) walleyes move upstream prior to spawning and concentrate below any type of blockade, such as a low-head dam. Anglers can usually find walleyes concentrated in deeper pools (three to six feet) and eddies directly below these obstructions.



Chartreuse or white are two of the more common colors which are usually tipped on a 1/16- or 1/8-ounce jighead.



This angler located his "secret" fishing hole while winter fishing on the Shell Rock River.



Interior rivers offer some fantastic fishing opportunities which are often overlooked.

Lowell Washburn



Wanye Lonning



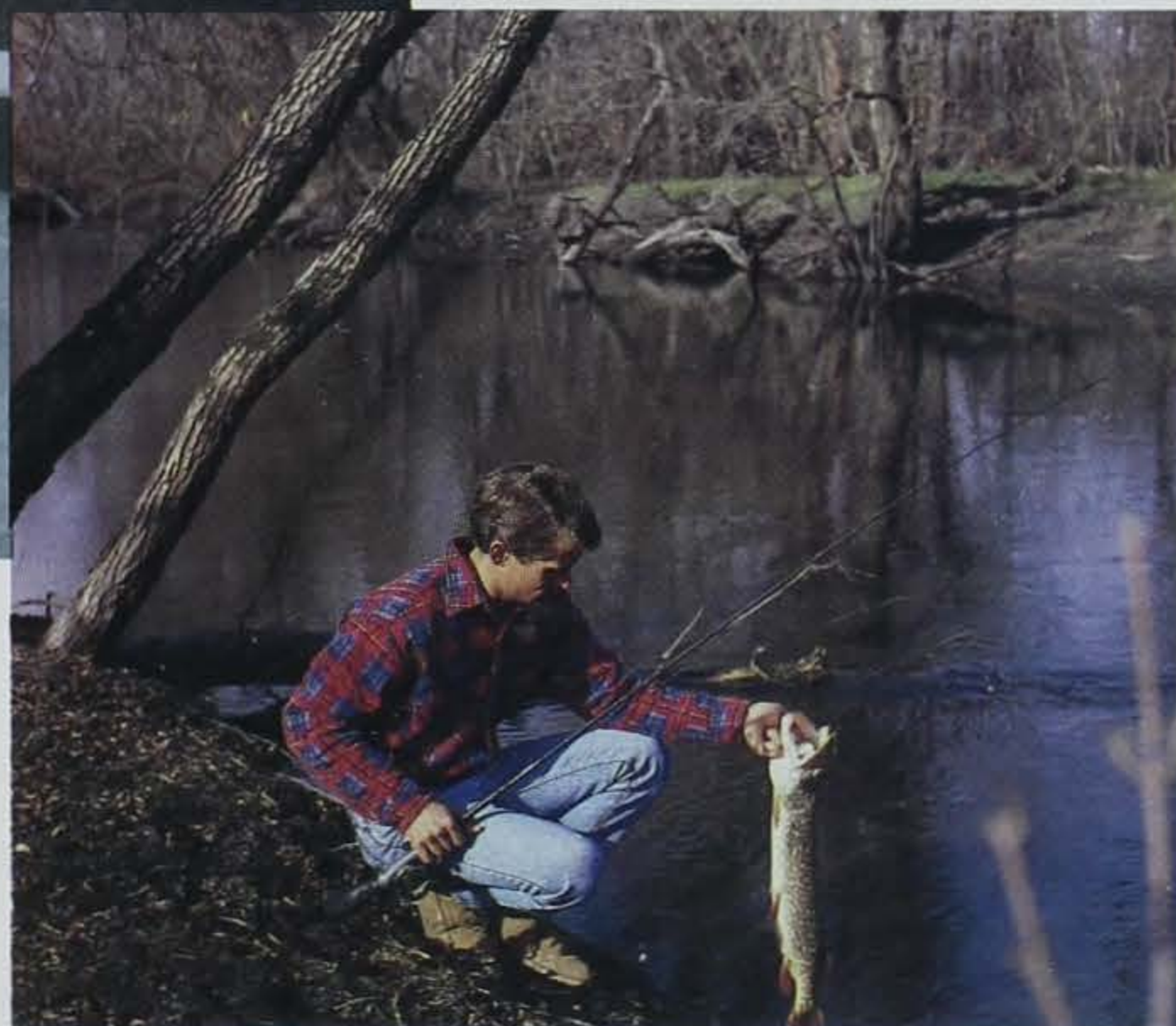
Rick Martens



The weather is brisk but this early March, winter angler is happy with a walleye on the line.



The specific areas or habitats the walleye prefer are fairly predictable during spring, late fall and winter. This fall angler on the Winnebago River in Cerro Gordo County got his walleye.



Lowell Washburn



The diagram below demonstrates examples of various interior river habitats where walleyes can be found. Walleyes can be located in any of these habitats throughout the summer and early fall. Locating deep pools will provide the best opportunity for catching walleyes from late fall through ice out.

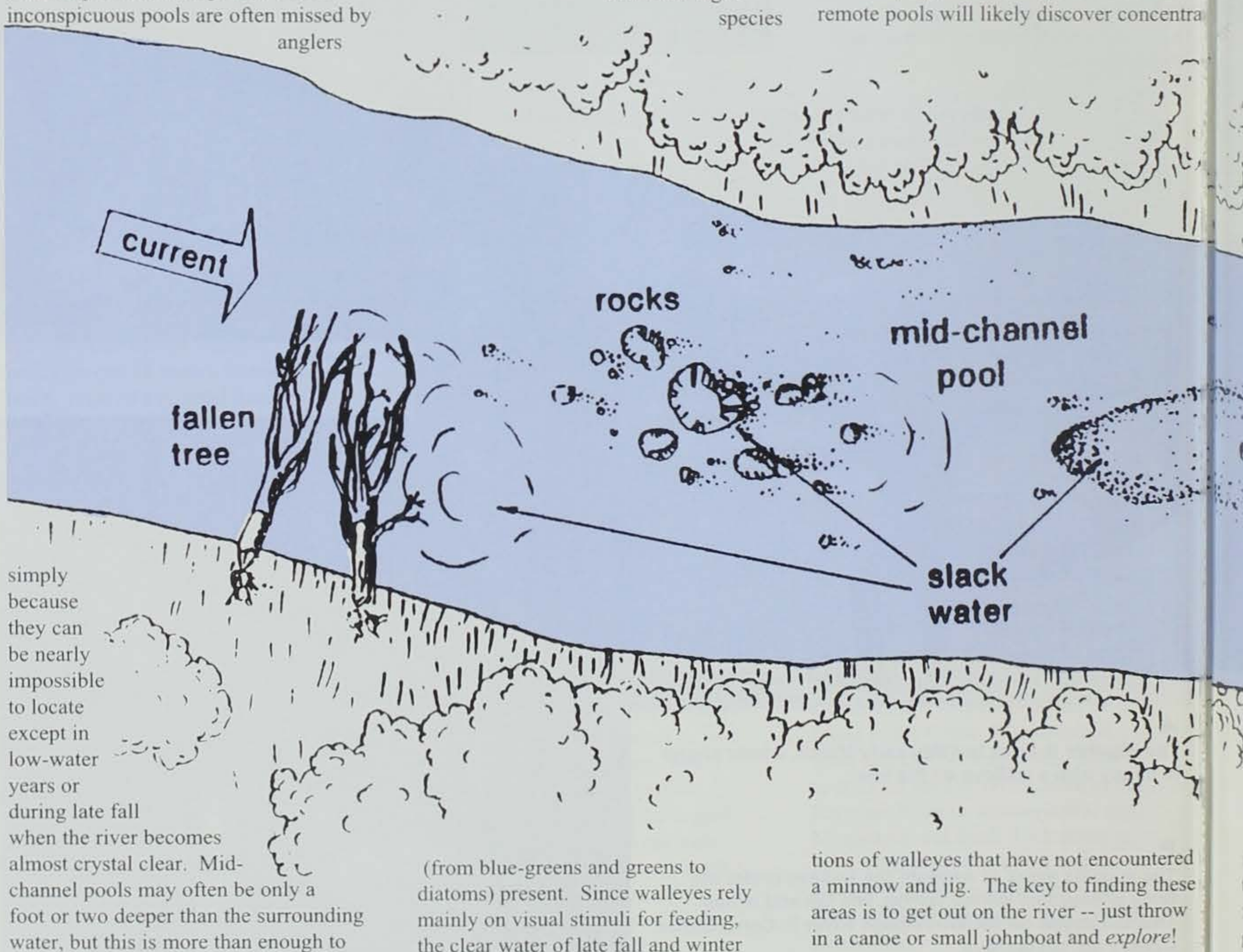
From late spring through the summer, walleyes frequent a variety of different habitats. Key walleye habitats during summer and early fall include any slack water near current or structure associated with deeper pools (see diagram). Walleyes relate to several types of current-breaking areas which can be caused by fallen trees, rocks or abrupt changes in the channel such as sharp river bends or rock outcroppings (see diagram). Walleyes use these areas for resting and the food provided by adjacent current. One of the most overlooked of these habitats, by anglers, are mid-channel pools (see diagram). These inconspicuous pools are often missed by anglers

hold walleyes. Once you've found these mid-channel honey holes you should be in for some long-term success.

Although spring, summer and early fall are just plain enjoyable times to be out on the rivers, the period from late fall until ice-over offers some premiere walleye fishing. During this period, walleye anglers have some tremendous advantages working in their favor. The first is simply water clarity. River anglers know firsthand how interior rivers and streams become almost transparent prior to winter. This is due to a reduction in sediment inputs from runoff and a shift in the dominant algae species

provides ideal angling conditions.

The second advantage of late-season fishing on the interior rivers is that walleyes are known to overwinter in deep pools. Radiotelemetry studies have shown that adult walleyes, from several miles of river, will concentrate in a few deep-water pools within that reach. Often, walleyes inhabiting several miles of river will concentrate in a single deep water pool. Avid river walleye anglers are well aware of this pattern, subsequently the majority of walleyes are pulled from deep-water pools and eddies. The more intensively fished pools are those most easily accessible, however, anglers wishing to seek out more remote pools will likely discover concentra-



Once you find these areas, you're in for some prime walleye angling until the river freezes over, and then again following the spring melt.

One final advantage anglers have going for them prior to winter is increased feeding activity by walleyes. Walleyes become very aggressive during middle to late fall in order to build up fat reserves prior to overwintering. This increased feeding activity will likely be directly reflected in your fishing success.

What to do

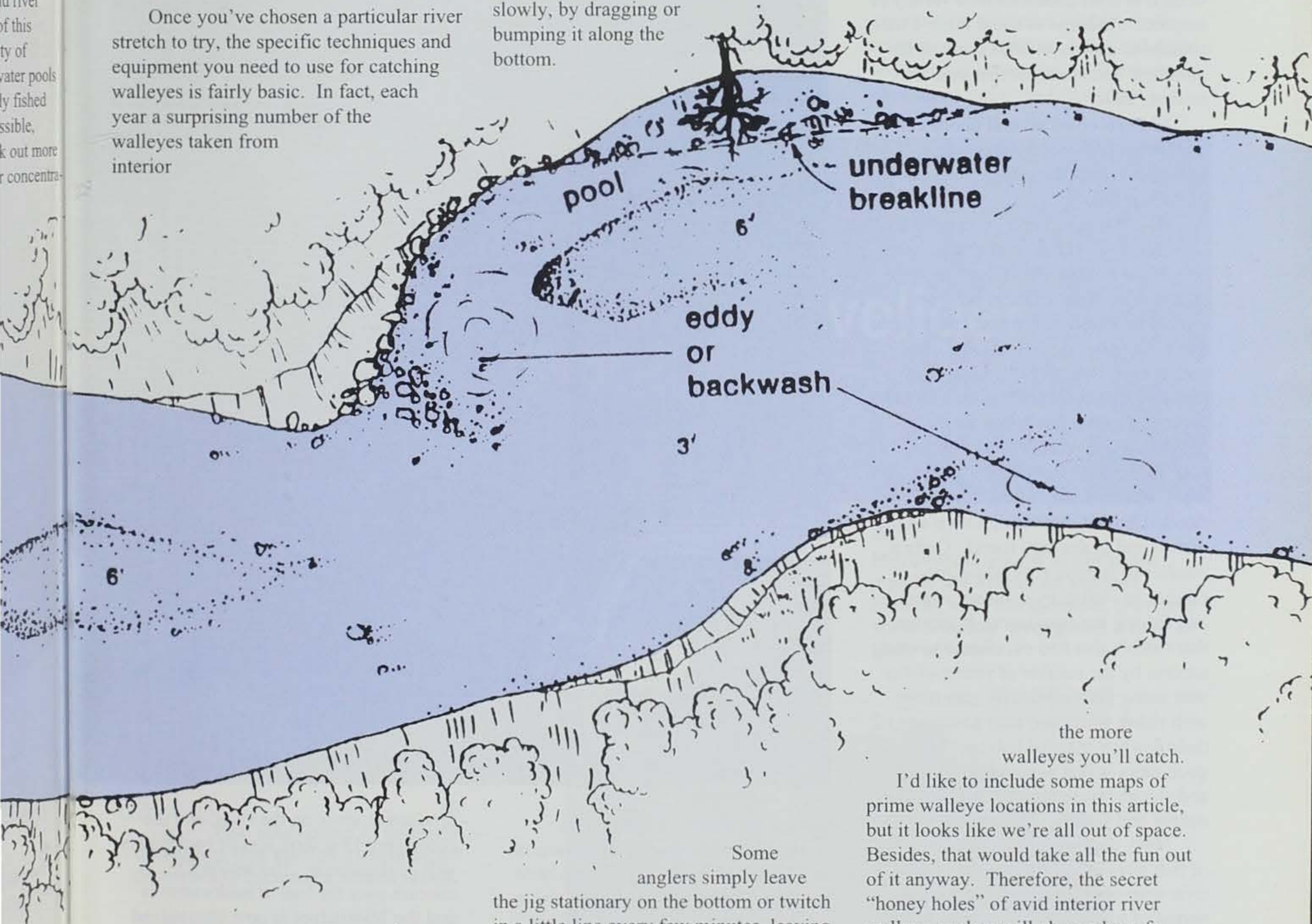
Once you've chosen a particular river stretch to try, the specific techniques and equipment you need to use for catching walleyes is fairly basic. In fact, each year a surprising number of the walleyes taken from interior

anglers fishing night crawlers in log piles located in pools or deep eddies adjacent to the current.

One of the most popular techniques among interior river walleye anglers are simply jig and minnow-type rigs and a sensitive graphite rod. Of the twister tails available for tipping your jig, chartreuse or white are two of the more common colors which are usually tipped on a 1/16- or 1/8-ounce jighead. In the late fall and winter months, minnows or other live bait are almost a must, because it allows you to work your jig very slowly, by dragging or bumping it along the bottom.

down river because each of these eddies only hold a limited number of big fish. In less than an hour of fishing effort anglers can usually determine whether walleyes are in a particular pool and actively feeding, before moving on to other river sites.

For those anglers who have never gone after walleyes on the interior rivers, the first step in discovering this secret is to get on the river. The more familiar you become with the stretch of river in your neck of the woods,



Some rivers are incidentally caught by anglers pitching twister tails or other crankbaits while fishing for smallmouth bass or other river game species. During the summer months, walleyes are frequently taken by catfish

Some anglers simply leave the jig stationary on the bottom or twitch in a little line every few minutes, leaving the minnow or chub to do the work. In late fall, other anglers pull in trophy-sized walleyes by still-fishing larger-sized chubs in river eddies. The key to this type of fishing is to keep moving

the more walleyes you'll catch.

I'd like to include some maps of prime walleye locations in this article, but it looks like we're all out of space. Besides, that would take all the fun out of it anyway. Therefore, the secret "honey holes" of avid interior river walleye anglers will always be safe with me!

Gary Siegwarth is a fisheries biologist at the department's fish hatchery in Manchester.

ASK BERNIE

by Bernard Schonhoff

THE BIOLOGIST

Well, a lot of nice folks have written in with questions on a variety of subjects. And true to usual form, I will attempt to answer at least some of the questions and concerns that you, the readers, have.

Q. I received several phone calls and letters last year from people concerned about the effect of the flood of '93 on fish.

A. This is rather a good news/bad news story. First the good news. The fish in the Mississippi River survived, and, in fact, some of them did quite well. For instance, channel catfish did more than just survive. As the flood waters rose, catfish moved into the shallows and continued moving as more and more of the floodplain was inundated. Catfish were seen in flooded corn fields and even in front yards, enjoying the bounty of the newly flooded habitat, becoming fat on all the worms and grubs they found. Quite a number of anglers took home good catches of catfish by donning waders and fishing the corn rows. It appears that catfish also had excellent spawning success by the number of young-of-the-year seen. Fish, obviously, can move with rising water and take advantage of their newly expanded habitat. More good news is that some side channels and sloughs were scoured out and made deeper and wider.

Now, the bad. It appears that a lot of fish were pushed farther down the river than usual, due to the extended period of high water. This may interrupt some of the upstream-downstream migration patterns that have developed, but it shouldn't be too serious. Some of the less flow-tolerant species such as largemouth bass and



bluegill (members of the sunfish family), may not have been as successful at reproducing as they would have been, had we experienced more stable water conditions. Although, it doesn't appear that it was a complete disaster. One other negative aspect is that some of the backwater received a large influx of sediment. Backwaters are particularly important since they are the most

productive areas on the river, and the continuing long-term loss of backwaters will be disastrous. The reason for concern over the loss of backwaters is that the Mississippi is now constrained by the locks and dams, used for the navigation system, which prevents the river from creating any new habitat. Before humans came along and reined in the force of the river, the river



Ken Formanek

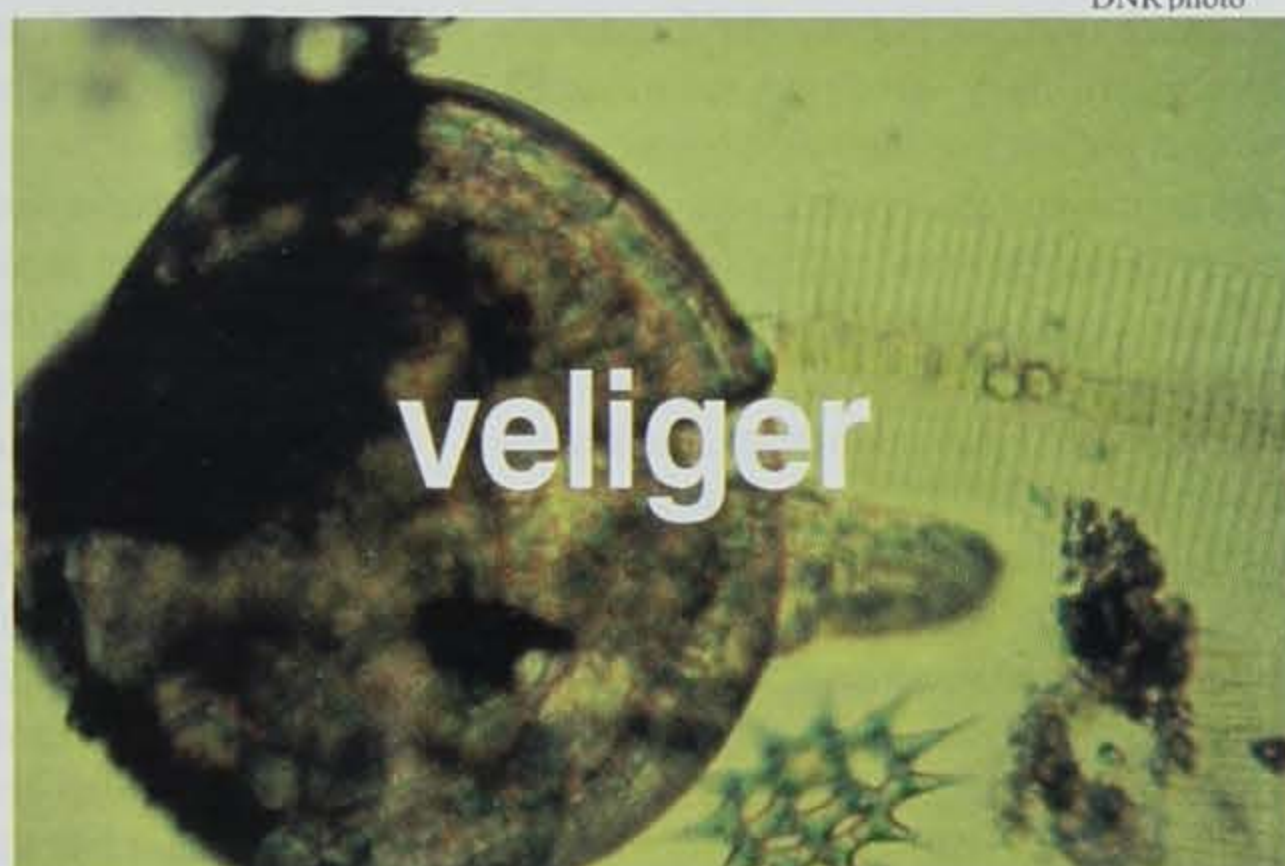
created and abandoned habitat all the time. A flood would come along and the river would cut a new channel and abandon an old one, leaving behind some sediment. That is what a

free flowing river does. It carries sediment from its source to its final destination. It might, temporarily, (in geologic time)

store the sediment somewhere in the floodplain to be reclaimed again at a later time. But, an unconstrained river always has the ability to interact with its

floodplain. This interaction between a river and its floodplain is important in maintaining a diverse, viable, river ecosystem. By putting locks and dams and training structures on the river we have taken away the Mississippi's

DNR photo



▲ Microscopic young of the zebra mussel are known as veligers. Floating with the currents, they may spread rapidly throughout a river or body of water.

▲ Fish attempting to navigate downtown Des Moines streets faced dramatically increased stress levels.

► Zebra mussels attach themselves to hard surfaces, including other animals, such as this clam.



DNR photo

ability to interact with its floodplain, except in extremes like the flood of 1993, when nature showed us how ineffective our controls can be.

Q. "I've heard a lot about zebra mussels and how terrible they can be. What is the status of zebra mussels in Iowa?"

A. Zebra mussels are small (1-1/2 to 2 inches) invaders from the Caspian Sea region. They were first introduced into this country in the ballast water of ships transiting the Great Lakes via the St. Lawrence Seaway. They spread throughout the Great lakes in fairly short order. They moved into the Illinois River via the Chicago Sanitary and Ship Canal that connects Lake Michigan with the river. Zebra mussels were then able to move down the Illinois River to the Mississippi River near Alton, Illinois.

Since invading the Illinois and Mississippi River systems, zebra mussels have hitchhiked on the hulls of commercial barges and recreational boats that move up and down the system. So far, they have been reported from all the states along the Upper Mississippi from St. Paul to St. Louis. The largest concentrations have been found in the lower portion of the Illinois River where up to 72,000 per square yard have been reported. This concentration is probably due to the large number of young (called veligers) coming from Lake Michigan. In the veliger stage, zebra mussels are very mobile since this stage is microscopic and they can drift with the currents in the river, or be drawn into a pump or inlet pipe in the river. Zebra mussels are very prolific. A single female can

release as many as one million veligers in one spawning season. Although zebra mussels have been reported all along the Mississippi bordering Iowa, they are currently in much smaller numbers, usually only a few per square yard.

Some of the concern with zebra mussels are their ability to reach such high numbers, like that reported for the Illinois River. Industries and utilities that use water from the Mississippi River, such as power plants or municipal water systems, are concerned about clogging of inlet pipes and equipment. One of the reasons this is such a concern is that zebra mussels attach to any hard surface with very tough structures called byssal threads. The zebra mussel secretes these byssal threads and uses them to attach to any available structure. One concern that biologists have is the evidence that native mussels can become so infected with zebra mussels that they may not survive. Biologists up and down the system are looking at ways to protect

the native mussel populations.

So, in Iowa, zebra mussels are present throughout the Mississippi River, but currently not in numbers that are causing significant impacts. However, zebra mussels are so prolific they can rapidly overwhelm a system. Whenever you fish or boat in the Mississippi, you should take precautions to prevent the spread of zebra mussels to other bodies of water. There are already reports from Wisconsin of zebra mussels being found in several inland lakes. Here are some of the things you should check to slow the spread of this newest invader.

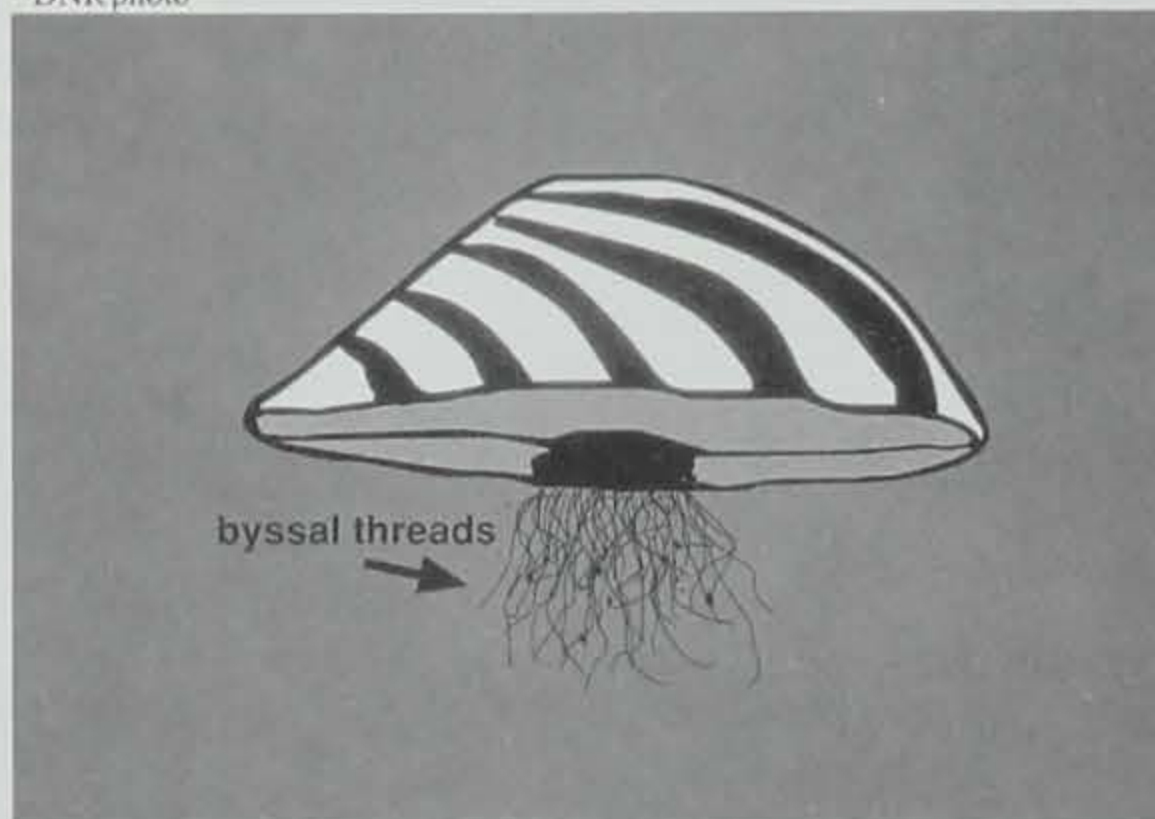
- Make sure that live wells and bilges are drained dry.
- Check the cooling system of your motor to make sure it drains dry.
- Don't transfer bait such as minnows or crayfish in bait buckets from one water body to another.
- Make sure there are no weed or aquatic plants on your boat or trailer, as they may contain veligers.

These steps will not only keep you from transferring zebra mussels into your favorite wet spot, but also prevent damage to the cooling system of your boat. Remember, zebra mussel veligers can become attached in side the water pump and cause damage as they grow larger.

Q. "What is the natural life span of a walleye? If an angler practicing catch-and-release fishing released a 10-pound walleye, how much longer will this walleye live? The same question for a seven-pound largemouth bass.

A. Well, here's a shot at the best answer I could come up with. Let's talk

DNR photo



▲ **Zebra mussels anchor themselves with strong byssal threads, making them tough to remove from pipes and equipment.**

about the walleye first, but almost everything said will also pertain to the largemouth bass. To get started, let's go back to fish biology 401 class for a couple of general principles on which to build our understanding. Longtime readers who have already received their BBB (Bachelors in Bass Biology) can skip this explanation, everyone else is required to read. Fish, unlike humans, exhibit what is known as indeterminate growth, which means we reach a certain height in our late teens and then don't grow any more. So, from a height measurement you could not tell a 20-year-old man from a 60-year-old man, while in general a bigger fish is older than a smaller fish. The natural life span for walleyes (most other fish, too) changes with latitude. In general, the farther north you go the longer the life span of a fish, to a point the reverse is also true. The growth rate is just the opposite — the farther north you go, the slower the growth rate. So a five- or six-year-old walleye from northern Canada may only be as long as a three-year-old walleye from Missouri.

The oldest walleye I could find reported was 26 years old. This fish was from a lake in the upper peninsula of Michigan. The oldest one I could find for Iowa was 18 years old. Let's use the 18-year-old as a basis for answering the next part of your question about releasing a 10-pound walleye. The age of a 10-pound walleye could vary quite a bit, not only over a large geographic region, but also within a small region, or even within a lake. Our research biologist in Spirit Lake has aged 14 fish in the 10-pound category. Those 14 fish ranged in age from 9 to 14 years old. That 10-pound fish you caught could be as young as 9 or as old 14 years. If it were only 9, it could live from 4 to 9 more years. If

we were talking farther north, your fish might be considered a youngster if only 9, compared to an old fogey of 26. The point is, if the fish is in good condition it could have many years left to live. And large, 10-pound walleye are valuable fish to the walleye population in a lake. Since walleye exhibit sexual dimorphic growth, which means males and females have different growth patterns — with females growing larger and faster than males, a large walleye has a greater possibility of being female. A female that large would produce a large number of eggs, somewhere in the thousands every year which could be a large percent of the reproductive potential of the walleye population.

For a seven-pound largemouth bass most of the information I've already provided would be true. Largemouth grow slower up north and also live longer. Largemouth bass, however, do not exhibit sexual dimorphic growth to the extent that walleye do. The oldest largemouth bass I could find was 23 years old from a lake in upstate New York. (As a personal note, I aged this fish when it was 13 years old and I was working in New York as an aspiring young biologist. It was caught and re-aged 10 years later.) To be 7 pounds, a bass would have to be at least 9 years old. So, a bass of 7 pounds could range from 9 to 23 years old. So again, if the fish were in good condition it could live for 10, 12 or more years.

Frequent readers of my drivel know I like to throw in at least one easy question in each article. This gives me a chance to catch my breath and provides a little something for everyone, from those only moderately interested in fishing (poor demented souls) to those having an intense interest in the ways of our finny friends. So, without

further adieu, I present the easy question, du jour:

Q. "How do you tell a black crappie from a white crappie?"

A. You can always tell a white crappie, but you can't tell it much. (I know, don't give up my day job, but it was just too easy a shot not to take.) Black crappie and white crappie as you might expect look very similar. I always tell everyone the easiest way to tell the difference is to remember that white crappies have black stripes. Both crappie species have dark spots on them, however, the ones on the white crappie are arranged in regularly spaced vertical bars or stripes, while the spots on black crappie are irregularly arranged in speckles and blotches. If this difference isn't readily evident or the fish are too small to be able to tell, the next best way is to count the dorsal fin spines. These are the sharp spines along the back of the fish. A white crappie will have 6 spines and a black crappie will have 7-8 spines. One final difference that might help in a side-by-side comparison is the distance from the tip of the snout to the front of the dorsal fin is greater in a white crappie than a black crappie of the same size.

Well, they say all good things must come to an end. After reading this some of you may be thinking mercifully all bad things must also end. To those of you who wrote, but did not see your question this time, don't give up hope. I might find that letter under a pile of papers on my desk some day. Thanks to everyone who has written in and good fishing.

Bernie Schonhoff is a fisheries biologist for the department at the Fairport River Biology station near Muscatine.



Don Poggensee

Bluffland 7 treasures

by Kathleen Gannon

The landscape of northeast Iowa is so different from the rest of the state that it is obvious to even the most casual observer. The spectacular, high-relief landscapes associated with the Mississippi River are actually the result of erosion through rock strata of the Paleozoic Age. This explains why the landforms we call bluffs are found inland from the river as well as along its edge.

Many people first become ac-

quainted with the bluffs area of Iowa, Wisconsin, Illinois and Minnesota on annual fall migrations to view the leaf color. This produces its own annual tourism boom for the entire region. Coupled with the autumn color watch, is the attraction of trout fishing in the cool, quiet pools along the numerous spring-fed streams. Collectors find abundant fossils in the exposed rock formations. Bird watchers find the bluffs the perfect spot to

view the fall migrations of hawks. Canoe enthusiasts can travel many miles along the rock-bound waterways and experience the same sense of exhilaration that early explorers must have felt when they viewed the bluffs. In 1835, George Catlin an artist and lawyer wrote that he "...stood with eyes transfixed in tireless admiration, upon the thousand bluffs which tower in majesty above the river on either side."

The Mississippi River is probably



one of the most recognized rivers in the world and certainly in the United States. Its importance to the survival and prosperity of early American settlers is undeniable. Trappers took their furs to the river and met traders who exchanged supplies for the furs. Native Americans so revered the bluffs that they chose the area as the final resting spot for their ancestors. The best-known of these areas is Effigy Mounds, now preserved as a national monument area, which is located in southeast Allamakee County.

The river provided the avenue for commerce to flow. The first settlements in Iowa were along the river's banks. Julien Dubuque became the first-known, permanent, non-Indian settler in 1785. Since then, human impact and changes to the river and the bluffs in 210 years of coexistence is far out of proportion to the thousands of years nature took to create them.

Recognizing the economic and aesthetic importance of the region, an alliance has been formed among the

four states bordering the Upper Mississippi -- Minnesota, Wisconsin, Illinois and Iowa. The Iowa Natural Heritage Foundation is the group leading Iowa's participation in the Blufflands Alliance. There is agreement among participants that the Mississippi blufflands are a treasure which should be preserved for future generations. There is recognition that economic development is as necessary as it is inevitable. There is concern that "willy-nilly" development may fragment the area and cause irreparable damage to fragile plant and animal communities and the scenic beauty.

The blufflands are home to unique prairie areas called goat prairies. These occur along steep, dry slopes above major valleys and derive their name from their inaccessibility. Prairie dropseed, porcupine grass, little bluestem, hairy grama and side-oats grama are prairie grasses found in the area. Heath, smooth and silky asters, and shooting stars are all found on goat prairies.

Listed among the endangered animals found in the blufflands are bobcats, the red-shouldered hawk, the Indiana bat and bald eagles. The problem for most of these animals is the loss of contiguous habitat as encroaching development dissects the bluffs into fragments of natural areas. To this end, the Bluffland Alliance is working for sensitive development of the area. For instance, there would be less encroachment from cluster development than there would be from individual homes being built, each with its own long, private lane.

Some of the most sensitive areas within the region are the algific, talus slopes. These talus slopes have formed over the years as limestone crumbled off the bluffs. This debris, known as talus, has often times landed at the exit to a cave. As a result, the loose, crumbled rock seals the cave, but the cool air of the cave still filters through to the open atmosphere. The rock is thereby cooled, causing a microclimate similar to the Ice Age. Many plant and animals from this era still inhabit this unique miniature Ice Age world. The most rare of these is the Iowa Pleistocene snail. Compaction and dislodging of the talus from careless hikers is especially harmful to these endangered snails which live in and on the talus.

The Iowa Pleistocene snail is neither visually appealing nor currently economically important. It is; however, the last of its kind, a holdover from the Ice Age. For this reason alone, it is worth preserving. It is found only here among the talus slopes of the Mississippi blufflands. The blufflands are huge and majestic; the Pleistocene snail seems small and insignificant, yet they are linked.

Each of the four states in the Blufflands Alliance has a lead organization responsible for communication to and with governmental entities among the four states and even more important, with individual landowners. Representatives from each of these lead organizations will be making one-on-one landowner contacts. The Iowa Natural Heritage Foundation will be making these contacts in Iowa; the Minnesota Land Trust will handle this duty in Minnesota; Illinois will be represented by the Natural Land Institute; and Wisconsin by the Wisconsin Farmland Conservancy.

The most important goal to be obtained from these landowner contacts is education: education of landowners about the possibilities and choices available to them in the care of their

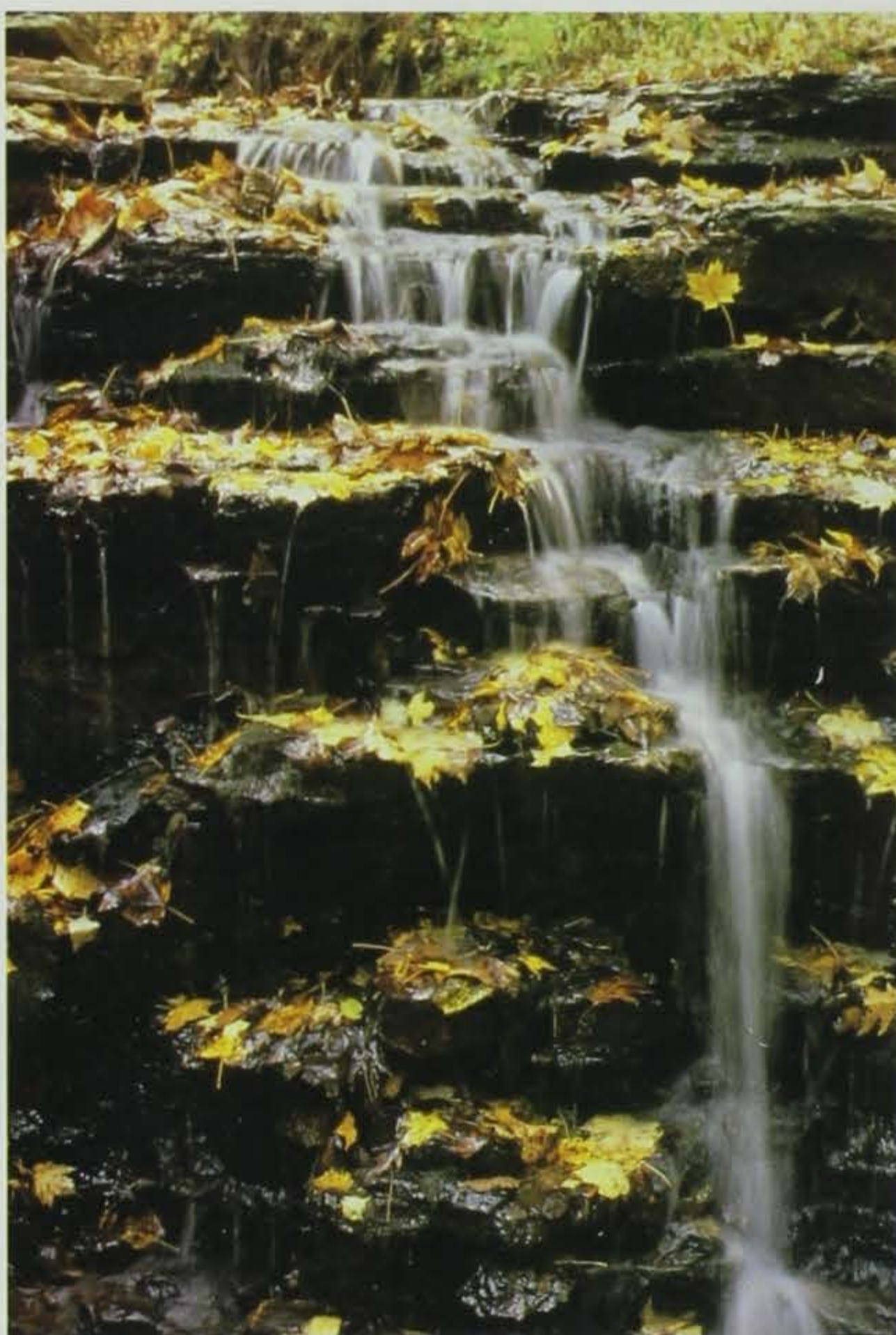
land; education of the Blufflands Alliance about the cares and concerns of area residents. From these conversations and surveys, the hope is that common goals can be found and that acceptable solutions for landowners interested in preserving an internationally significant area will be discovered.

It took foresight and vision for the people of Iowa to set aside the 960 acres of land at Pike's Peak State Park for public use 60 years ago. That same kind of prudence is required now if we are going to provide a like measure of enjoyment for future generations.

Pike's Peak was named by Zebulon Pike in 1805 while on a military mission to locate possible sites for future forts. It is said that he climbed the 500-foot bluff in Iowa but never made it to the top of his second namesake in Colorado. Today, Pikes Peak is one of the most popular state parks in Iowa and was once up for consideration as a national park. In 1994 there were 15,694 guest days (number of people x number of days stayed) at the popular camping site. It is estimated that there were nearly 220,000 visitors. Not surprisingly, the favorite time to use the park is in late September to early October when the foliage is at its most spectacular.

Another very popular area is Mines of Spain, a 1,300-acre state recreation area, with 3-1/2 miles of spectacular bluffs near Dubuque. Since the Iowa Natural Heritage Foundation helped the acquire this property in 1980, visitors have flocked there to enjoy the views, natural features and wildlife.

Not all of the parks located in the blufflands area are along the craggy peaks nor even in the valleys. Cold Water Cave in Winneshiek County boasts one of Iowa's largest cavern



Carl Kurtz



The progression of nature shown in a stair-stepping waterfall on the Arnold Lenth Farm near Clayton.

Areas of native growth known as goat prairie provide habitat for rare prairie grasses and flowers.



Carl Kurtz



Carl Kurtz

◀ Spectacular autumn foliage brings tourism and boosts local economies.

in cholesterol and fat. "It is a delicious meat, not at all like whitetail deer meat and it is not gamey in taste. Fallow deer do not interbreed with other deer species, and they are as different from a whitetail as a horse is from a cow," Buckmaster said.

The Blufflands Alliance is working to find a natural balance between human presence and nature preservation. The visual image of the majestic bluffs rising hundreds of feet from the river's edge is diminished for many by the imposition of artificial structures. Iowa's most valuable resource, its rich farmland, also provides the logical site for new homes and business as Iowa's population rebounds and its economy becomes more robust. Natural communities of plants and animals, the family farmer, and a burgeoning tourist industry all seek a means to coexist among the blufflands of Iowa, Illinois, Wisconsin and Minnesota. With help from the Blufflands Alliance, economic prosperity and a rich quality of life will be sought. A common sharing of concerns and goals, a dialogue among all interested parties, a search for the common thread among the differing viewpoints with an emphasis on volunteer stewardship all contribute to the theme of the alliance. The goals are at once ambitious and incredibly simple: a responsible move to the future while preserving what cannot be replaced from our past.

If you are interested in learning more about the goals and efforts of the Blufflands Alliance and how you can help, please call the Iowa Natural Heritage Foundation at 515/288-1846.

Kathleen Gannon is a program associate for the Iowa Natural Heritage Foundation, a private, non-profit environmental organization which is a founding member of the Blufflands Alliance.

farmlands. There is emphasis on voluntary means of protecting important natural resource lands and not necessarily public use.

Larry Madsen, owner of 33 acres of scenic bluffland in Dubuque County, chose a conservation easement as a means of protecting his land for future generations. The easement provides for restricted use by the public for enjoyment of the area's educational, historical, scientific and ecological significance. At the same time, it protects the property from the possibility of encroachment by future development. The Madsen property adjoins Four Mounds Preserve, a privately managed, public education and conservation area.

An example of an economically feasible alternative for the blufflands is occurring at the Capoli Ranch. Raleigh and JoEllen Buckmaster own 760 acres in Allamakee County south of Lansing. Their ranch contains 400 acres of timber, 200 acres of pasture, 95 acres of tillable ground, and 17 effigy mounds which they have fenced to preserve from compaction by either cattle or vehicles. Working on the theory of "preserve, don't develop," they have pioneered a type of ranch-

ing that could hold great promise for farmers with rough land. They raise fallow deer which are grazers and are gentle on the land. "Fallow deer do not graze the grass down, they keep moving around," Dr. Buckmaster said. Fallow deer that are farm-raised are nutritionally equivalent to skinless chicken, very low

Effigy Mounds overview of the mighty Mississippi. ▼



Don Poggensee



Wells that are no longer used may fall into disrepair and become a direct path for pollution.

by
Michael K. Anderson

Since the passage of the Iowa Groundwater Protection Act in 1987, attention has been shifting toward prevention of pollution, rather than just cleaning up the problem once it has happened. For one thing, it is cheaper to avoid pollution problems than it is to rectify them. For another, prevention forces a higher consideration of the environment, and it makes us all work in a positive way to take care of it. And, very importantly, sometimes

Ken Formanek



DNR photo



DNR photo



DNR photo



pollution just can't be cleaned up, particularly in groundwater.

About 80 percent of Iowans rely on groundwater as their source of drinking water. Of course, your drinking water is treated to make it *safe*, but obviously needs more treatment. And, a more accurate word is "safer," not necessarily 100 percent "safe." Plugging wells that have been abandoned is a big pollution prevention tool that protects groundwater.

Any well constitutes a direct pathway to groundwater. A well is like a large open tube that leads directly into the aquifer. If bad stuff gets in the tube, it can potentially contaminate groundwater many, many yards beyond the well. It just depends on how much and what kind of pollutant it is. (Abandoned wells can also be a safety hazard for children, farm equipment and animals.)

Chances are better, if the well is in active use, its operators are doing what they should to keep it clean. But, if it is one of the 60,000 or more abandoned

wells in Iowa, the owner may not even know the well exists, much less take any positive action to assure that pollutants do not enter through it and into the groundwater. Some of these abandoned wells have been around since the turn of the century; some may have just recently been abandoned. Depending on their state of repair, their depth and their location, some wells are higher risks to pollute the groundwater than others.

Because of their importance in pollution prevention, there are state regulations pertaining to abandoned wells. And, for most well owners, there is money and technical assistance available to help meet those rules. The money comes from special taxes on pesticides and fertilizers, two large-scale, potential sources of groundwater pollution. The money is collected by the state and passed back to the counties in grants to give to well owners, both to test water from wells that are in use, and for plugging abandoned wells.

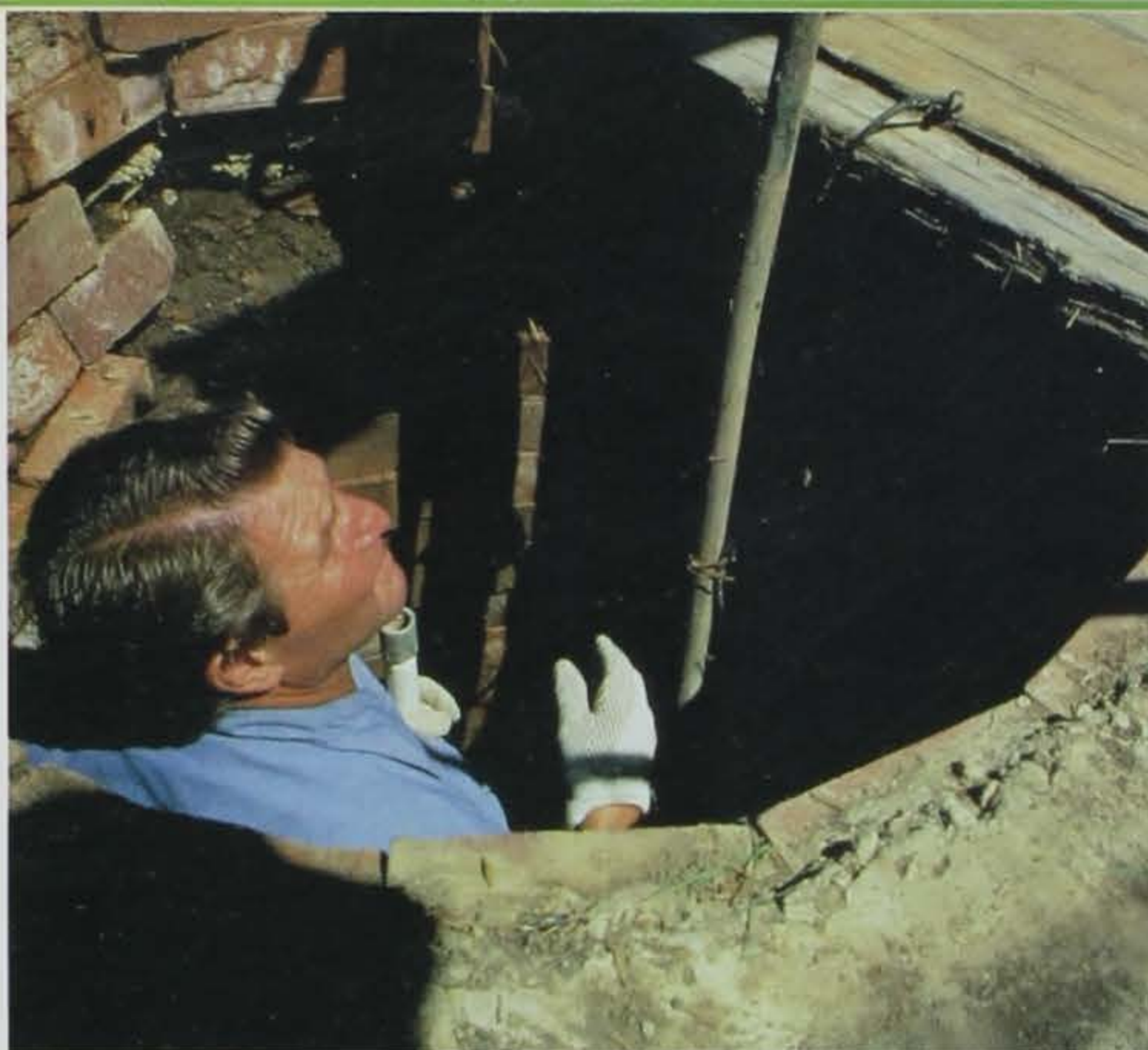
►
Repair and maintenance of wellheads and casings protects ground water by eliminating direct pathways for surface contaminants.



DNR photo

Well Grants

Of Iowa's 99 counties, all but five have active county sanitarians or engineers who have sanitary responsibilities. Only these 94 counties, who have a well-grant program in place, can receive grants from the DNR to pass on to well owners for water testing and/or plugging abandoned wells. The five counties who do not have an approved program include: Adams, Decatur, Fremont, Polk and Ringgold. Well owners in these counties may call Mike Anderson at the DNR for more information, 515-281-6599, or talk to their county extension agent. For well owners in the 94 counties with approved programs, call your county sanitarian at the county courthouse, or the county engineer if there is no sanitarian.



DNR photo

Large diameter, dug wells are filled with an inorganic rock material filling agent. A water-tight sealing material, like *neat cement* or *bentonite*, is finally used to prevent water and contaminants from entering.



Ken Formanek

Water testing gives an early warning of contamination and health risks.

Typically, well owners qualify for a \$200 reimbursement per plugged well. The costs for well water testing vary considerably and each county may work their grants a little differently. Since the grants to counties program began in 1989, \$4.3 million has been invested in plugging abandoned wells and \$4.8 million in well testing. With almost 17,000 wells plugged since 1989, the DNR's goal is to add about 100 more and 500 to the water testing list in each county in the next two years. The major

state rule involved is that all abandoned wells must be plugged by July 1, 2000.

Michael Anderson is the DNR's main staff person on the well grants to counties program. He says that state regulations are actually pretty complicated, with additional requirements for abandoned wells that are shallow or located in certain places. Some of these are to be plugged earlier than 2000, though that is the primary target year. State rules also cover the procedures to plug wells, city wells and privately

owned cisterns.

Well owners can get helpful brochures from their county offices or from the DNR, including detailed geology information from the Geological Survey Bureau, 319-335-1575, 109 Trowbridge Hall, Iowa City, IA 52442.

Michael Anderson is a civil engineer and an environmental specialist for the DNR



Ken Formanek

DNR photo



Proper well construction helps protect the quality of your drinking water.

After the well is sealed, the top four feet of the well casing is removed and filled with compacted soil in a mound formation to prevent water from collecting above the abandoned well.

FLOODS OF 93: IMPACTS ON OUR FORESTS

by John Walkowiak

People weren't the only ones stressed by the summer flooding of 1993. Iowa's trees and forests were, too. They could not race for higher ground when flood waters began to rise. The long-term flooding during the growing season put many of our trees in a struggle for survival that will take several years for us to know the outcome.

Flooding stresses trees, and it can drown them. Flooding changes soil aeration and increases insect and disease problems. Soil is a growing medium that is more than just dirt. It is composed of inorganic minerals (50 percent), organic matter (6 percent), and pore space (44 percent). This pore space is necessary for water and oxygen to reach the roots, both vital to tree growth. When too much water saturates the soil, photosynthesis and mineral uptake are greatly reduced. The longer the soil is saturated, the greater the damage.

As if being deprived of water and oxygen wasn't enough, tree roots must also contend with increases of toxic compounds like alcohol and hydrogen sulfide that build up in waterlogged soils. Strong flood currents also wash away soil, exposing roots, leaving trees vulnerable to high winds. Around Waterloo, alone, more than \$300,000 in wind-thrown tree damage occurred.

The tolerance of certain trees to flooding is dependent on the species and characteristics of the flood waters. Certain tree species have adapted to low oxygen soils, common along rivers and tightly compacted urban areas. Species such as silver maple, green ash, cottonwood and willow are often

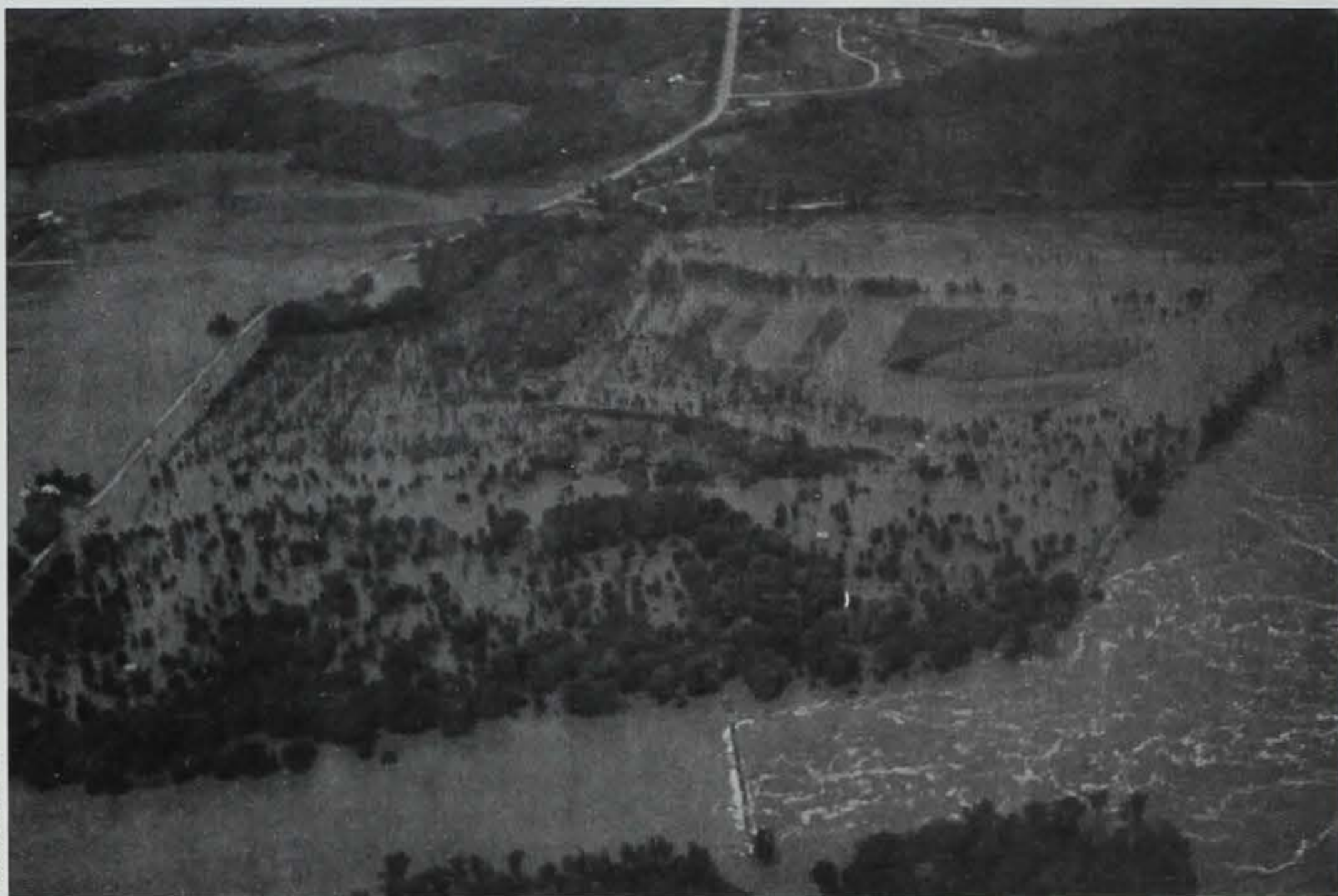


Ken Formanek

► The floods of 1993 made the normally tame Des Moines River a raging giant extending its flood 10 to 15 times the normal size of the river near Eddyville.

◀ (Facing Page) Long-term flooding like here at Ledges State Park, caused tree mortality of not only non-native trees, but also of natives such as Silver Maple, Cottonwood, Hackberry and Walnut.

John Walkowiak



considered "bottomland species" and should survive most flooding events. Several, non-native bottomland species such as linden, Norway maple and almost all conifers are susceptible to high tree mortality during a flood. The taller and larger a tree is, the less likely it will be completely covered by flood waters. But the timing of the floods of 1993 was different than any other recorded flood event in Iowa history. It occurred during the growing season when the trees were in full leaf and growth rather than during the spring when trees are often still dormant.

In addition, many areas of the state experienced long-term flooding or soil saturation (greater than two weeks) impacting both native and non-native trees. From the beginning of the flooding, the DNR's Forests and Forestry Division undertook efforts to map and record information

regarding the impacts to Iowa's forest resources in community and woodland settings.

Initial mapping during the fall of 1993, indicated that more than 97,000 acres of Iowa's forests were severely flooded, or covered with water for more than two weeks. In some cases, due to flood control reservoirs like Saylorville and Coralville, flood waters remained for even longer periods of time. Such sites as Ledges State Park in Boone County and City Park in Iowa City were flooded with water for more than three months. Flood water heights at Ledges State Park actually reached more than

30 feet. Urban trees in large and small communities across the state were also subjected to flood stress, from Des Moines and Davenport to Eddyville and Columbus Junction.

With the help of a phone survey by Trees Forever, it was determined that portions of more 75 Iowa communities had suffered severe flooding, impacting many different shade and ornamental tree species. Tree species such as little leaf linden, Norway maple, red oak and flowering crabapple had high mortality as the flood waters receded. Symptoms of yellowing foliage, wilting and premature leaf drop were observed



John Walkowiak

◀ Saturated soil conditions, even in areas not subject to direct flooding, caused many mature trees to be susceptible to wind throw, like here in Waterloo.



◀ Slow-moving waters along the Missouri River caused premature leaf drop of many trees, turning trees, such as this Hackberry, brown in color.

across the state in the falls of 1993 and 94 not only on flooded sites, but also on sites far away from the flood waters that had saturated soil.

In a cooperative effort between the DNR, the Missouri Department of Conservation and the USDA Forest Service, a quick aerial survey and ground checks were conducted of five major Iowa rivers: Mississippi, Missouri, Des Moines, Iowa, Cedar and Nishnabotna during the summer of 1994. The results of these aerial flights were surprising. We expected to see stressed trees with yellowing or browning foliage. What we did observe, however, were many dead trees, especially in the severely flooded areas. The fine, feeder root systems of these trees had been completely killed by the floods.

This high mortality occurred mainly at three locations: at the mouths of streams and rivers entering larger rivers, along bends in the meandering rivers and in areas behind flood control reservoirs. In each case there was a backing up of water for long period. The long-term flooding killed not only the non-native trees in urban sites, but native forest trees of black walnut, hackberry, cottonwood and silver maple. Results of the 1994 aerial flights indicated approximately 11,000 acres of Iowa forests (roughly the size of Stephens State Forest in south-central Iowa) were killed by the floods, excessive sedimentation and saturated soil

conditions.

Ground surveys by DNR foresters, municipal foresters and volunteers showed marked increases in several insect and disease problems. Insect pests such as ash plant bug and aphids were common on Iowa's green ash and sugar maples. Disease problems such as Dutch elm disease, oak wilt and numerous diseases of conifers were recorded.

Although these secondary problems were great in number, except for Dutch elm disease, additional tree death was not high, since the 1994 growing season was long and gentle in terms of temperature and moisture. But like the droughts of the 1980s, the impacts of the "500-year flood" will continue to be felt by our trees and forests for several years.

Many people may wonder what is the best way to reduce the flood or saturated soil stress on trees. The answer is to maintain vigorous growing conditions. Careful use of herbicides is important when controlling lawn or agricultural weeds. Also, the use of wood mulch around smaller trees to reduce damage from mowers and trimmers does wonders for urban shade trees. With extremely compacted soils, simple soil aeration once or twice a year will encourage development of new fine feeder roots.

If you need to replant a yard tree, establish trees capable of growing in areas subjected to periodic flooding, such as swamp white oak, river birch, thornless honeylocust and green ash.

Check with your local certified Iowa nurserymen or certified arborist in picking the right tree for your location.

Forested areas can be improved in vigor through good forestry practices -- thinning, careful timber harvesting and encouragement of natural, native tree species. Where adequate seed sources for natural regeneration are lacking, there are opportunities for reclaiming woody riparian areas along waterways by replanting native stands of cottonwood, silver maple, green ash and willow. DNR foresters can assist woodland owners with developing a planting or forest management plans which can include low-cost seedlings from the State Forest Nursery, or perhaps getting federal or state cost-sharing to reestablish a "bottomland" forest.

For some, a bottomland woodland may be a hot and humid place where mosquitoes and ticks rule, but these areas are one of our richest forest assets and the floods of '93 devastated several thousand acres of them. We know that the 11,000 acres of woodlands lost played a major part in protecting the homes, businesses and farms of Iowa from worse devastation.

The time is *now* to replant and improve the management of our woodlands for Iowa's future.

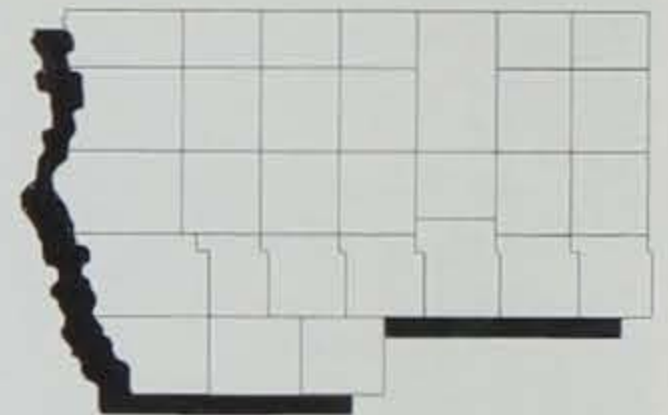
John Walkowiak is an urban forester with the forestry services bureau of the DNR in Des Moines.

1995 Fishing Forecast



Northwest Iowa

by Thomas W. Gengerke
regional fisheries supervisor,
northwest Iowa



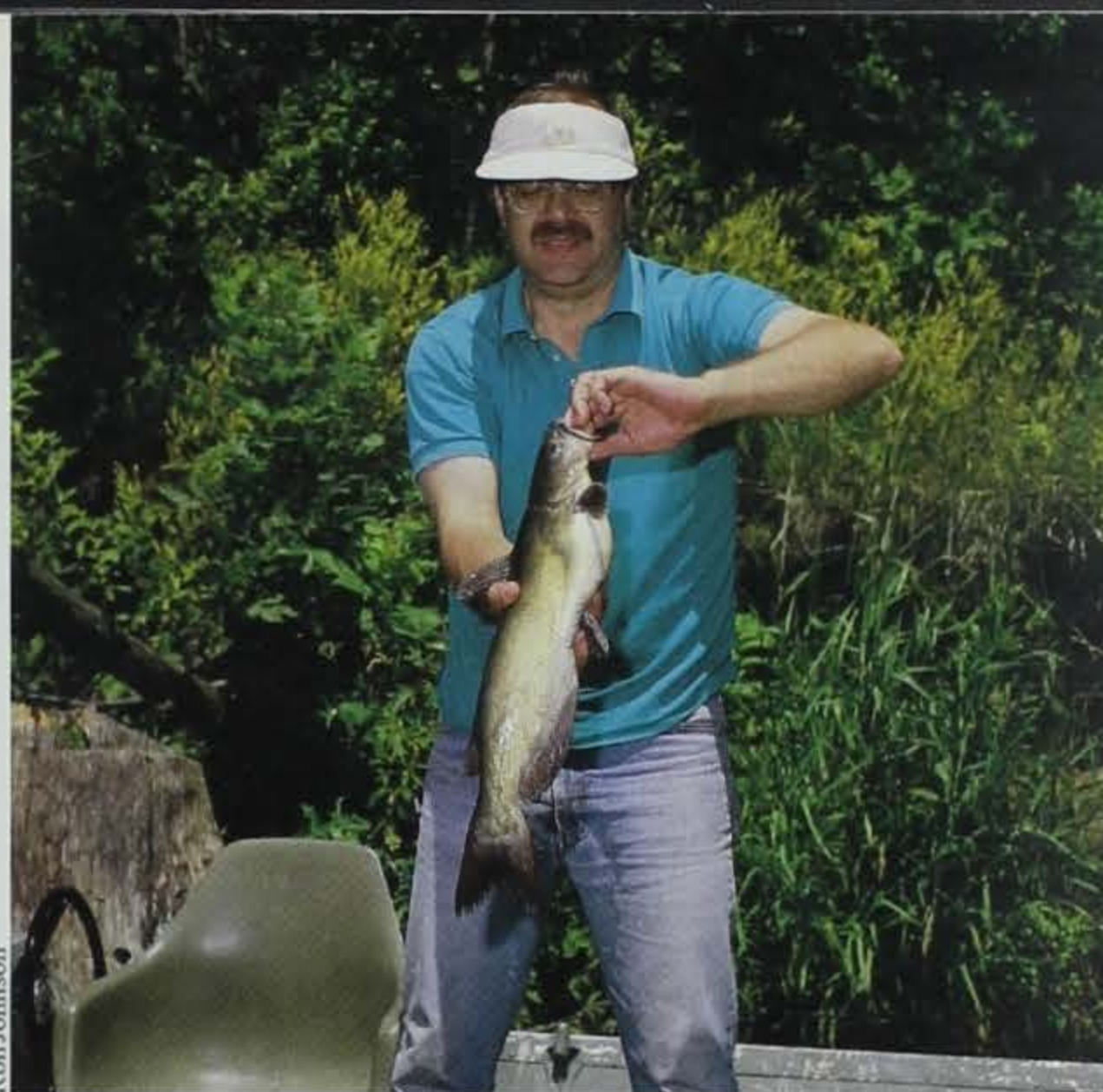
Northwest

Species	Lake or Stream, County	Comments
Walleye	Black Hawk, Sac	Excellent fishing for 15- to 19-inch walleye. Trolling crank baits in the spring along the dredge cuts should produce a number of 15-inch walleye during the 1995 season. (Remember the length limit!)
	Storm, Buena Vista	Spawning operations on Storm Lake revealed a good population of walleye. 1994 water conditions were relatively poor, and adversely affected the harvest during 1994. Look for increased catches of nice walleye in 1995.
	Spirit, Dickinson	Fishing should be good for 14-inch walleyes during 1995. The strong 1991 year class will be recruiting into the fishery throughout the year and these fish will provide plenty of action. Larger fish (18 to 20 inches) will also be available.
	Lost Island, Palo Alto	The 1995 season should produce some good fishing. The majority of fish will come from the 1992 year class. Some catch-and-release of this strong year class will be necessary.
	Clear, Cerro Gordo	Population is still skewed toward big fish -- 4 to 8 pounds. The future looks bright with two consecutive strong year classes beginning to reach the legal minimum length (14 inches in 1996).
	Cornelia, Wright	1994 survey revealed good numbers of 18- to 22-inch fish.
	West Fork-Des Moines River, Emmet & Humboldt	Excellent fishing in 1994. If water levels remain stable should be equally as good in 1995.
Yellow Perch	Little Sioux River, Dickinson & Clay	Good water has aided walleyes throughout this river reach and excellent fishing occurred during 1994. This should continue in 1995 - especially if good water conditions continue throughout the season.
	Spirit, Dickinson	Phenomenal perch fishing during 1994, should carry over to 1995.
	Cornelia, Wright	Extremely large 1992 year class will reach an angler-acceptable size (more than 7 inches) in 1995.
	Black Hawk, Sac	Yellow perch have really come on in Black Hawk. Good catches of 7- to 10-inch fish may be expected during the early spring and late fall.
	West Okoboji, Dickinson	Numbers are improving and should result in some very good angling for 1995.
	Trumbull, Clay	Surveys indicate good numbers of medium perch (7-1/2 to 9) inches. Winter fishing should be very good.
	Silver, Palo Alto	Good numbers and exceptional size of yellow perch should provide some tremendous angling in 1995 especially through the ice.

When anglers think of fishing in northwest and north-central Iowa the first fish that comes to mind is probably not the channel catfish. However, summer and catfish fishing go hand in hand all across Iowa, and rivers and streams represent your best opportunity. In fact, our large-to-moderate-sized streams are particularly underutilized. They support excellent self-sustaining populations. Riverine catfish typically average one to two pounds,

however, larger individuals exceeding 10 pounds are not uncommon!

Knowledgeable anglers look for brush piles and deep pools during the summer. Because catfish are omnivorous and opportunistic in their feeding, many different types of bait will work, however, prepared baits, chicken livers and crayfish are extremely popular with successful catfish anglers. If you fish in the evening, riffle areas can be productive. Fish often move from



Ron Johnson

Bullhead

Black Hawk, *Sac*

8- to 10-inch bullheads abound in Black Hawk. Early spring and shallow water are the keys to a mess of bullheads.

Crawford Creek, *Ida*
Brown's, *Woodbury*

Excellent numbers of 8- to 11-inch bullheads and underfished for bullheads. 1994 survey indicates a large number of huge yellow bullheads 6- to 13- inches.

Clear, *Cerro Gordo*
Rice, *Worth*
Center, *Dickinson*

Size has improved substantially. Should be excellent fishing for 3/4-pound fish. 1-pound -plus bullheads common in 1994. Fish in early spring -- April and May. Excellent population of 8- to 10-inch fish. Will produce some very good angling.

Silver, *Dickinson*
Lost Island, *Palo Alto*

Excellent numbers - consistently good. Numbers are tremendous and size will be 8- to 10-inches. Excellent angling will result in 1995.

East Okoboji, *Dickinson*

Spillway fishing will produce, if adequate flows are maintained throughout the spring and early summer.

Channel Catfish

Big Sioux River,
Lyon, Sioux, & Plymouth

Large number of small (1/2- to 2-pound) fish are abundant and if river conditions are good, some excellent catfishing will result in 1995.

Little Sioux River,
Dickinson & Clay

Traditionally good catfishing especially for the 1- to 3-pound fish and 1995 should be a banner year after two years of good water conditions.

Clear, *Cerro Gordo*
Cornelia, *Wright*
Boone River, *Hamilton*

Plenty of 1- to 2-pound fish. June through August are the best months. 1994 survey showed lots of 1/2- to 1-1/2 -pound fish available to anglers. 13- to 16-inch fish were the dominant size found in 1994 survey below Webster City.

Iowa River, *Hardin*
Des Moines River,
Kossuth & Humboldt
Storm, Buena Vista
Black Hawk, Sac
Snyder Bend, *Woodbury*
Little Sioux River,
Ida & Buena Vista
West Fork Des Moines
River, *Emmet & Palo Alto*
Pahojia, *Lyon*

Excellent habitat throughout the county, and lots of public access to the river.

Fish near snags, deep holes on outside bends, and in pools below riffle areas. 1994 was the best ever for catfish. Look for a repeat in 1995.

Shad forage base means excellent catfish growth. Lots of 1- to 5-pound fish. Lots of big fish 5- to 15-pounds.

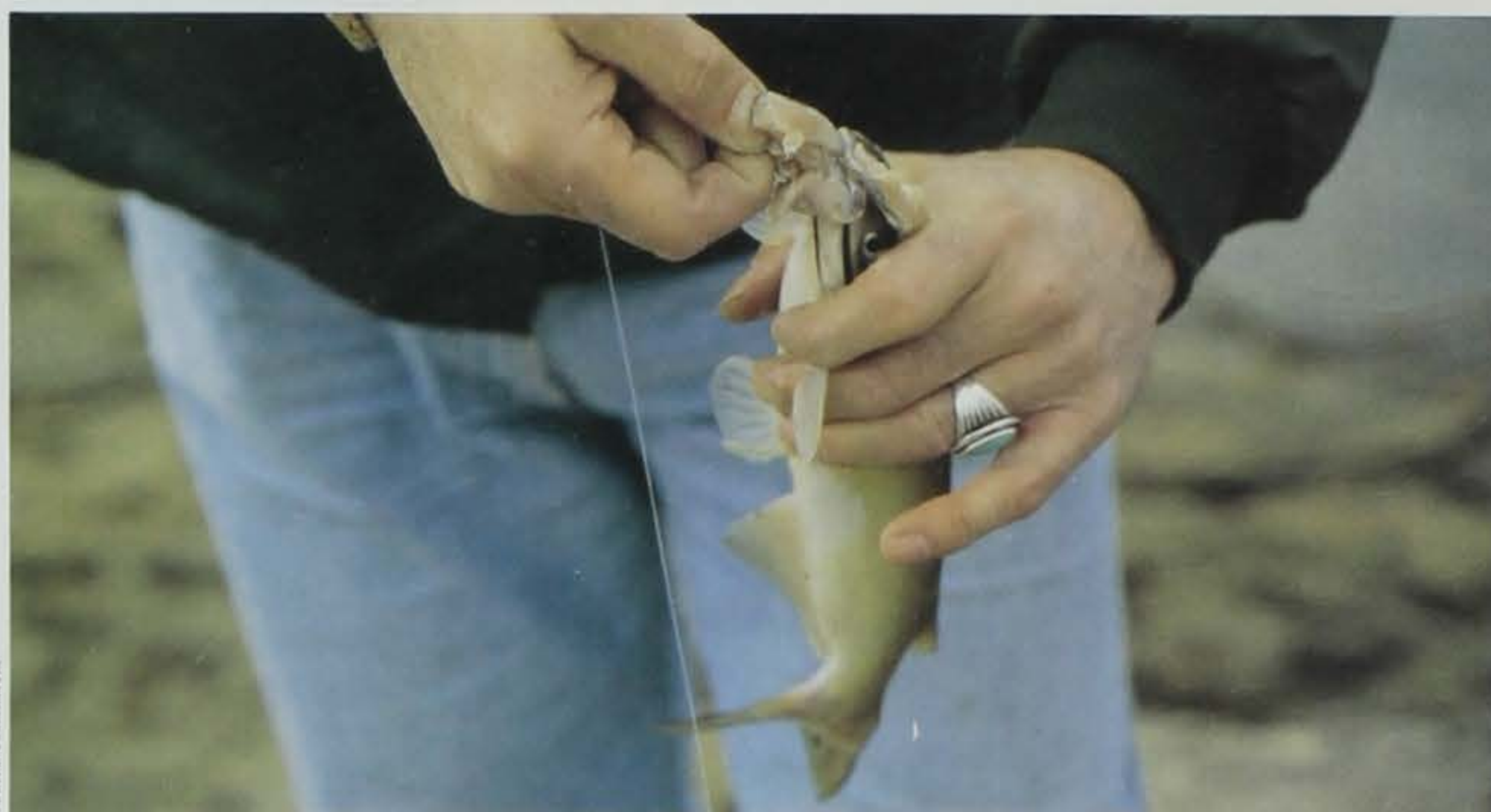
Excellent habitat makes for excellent channel catfish numbers.

Numbers are excellent and should provide some excellent angling in 1995. Surveys indicate large numbers of 3- to 6-pound cat present. Harvest has been excellent the last three years and will continue for '95.

the adjoining pools to the riffles to feed at this time of day.

Where are the best spots to find riverine channel catfish in our part of the state? Try the East and West Fork of the Des Moines River in Kossuth and Humboldt counties. Research completed in the 1980s found more than 400 pounds per acre of catfish in the Des Moines River near Algona! The area from Estherville north to the Iowa-Minnesota border,

Ken Formanek



Northwest

Muskellunge

Clear, *Cerro Gordo*

West Okobojo, *Dickinson*

A 50-incher was caught in 1994! May and September consistently produce the best chance for a Clear Lake muskie.

Most consistent producer. Late summer and fall. The numbers of sub-legal fish are increasing and should produce some good activity along with the legal fish (36 -inches plus) for 1995.

Bluegill

Spirit, *Dickinson*

West Okobojo, *Dickinson*

Pahoja, *Lyon*

Upper & Lower Pine, *Hardin*

The population is improving. The state record is out there.

The 1995 harvest will be good with some sorting required.

Weather conditions will dictate harvest -- good numbers of "gills" present.

Little Wall, *Hamilton*

Consistent producer of 6- to 8-inch fish. Good during the winter and open-water season.

Tremendous harvest of quality-size fish in 1994. A 1994 fall survey indicated plenty of fish remain for 1995.

Indian, *Hancock*

Nice-size fish -- plenty of 7- plus-inchers. Fish the edge of the weedline with waxworms or crawlers.

Crawford Creek, *Ida*

Lots of chunky 7- to 10-inch bluegill for open-water or ice fishing anglers.

Badger, *Webster*

1994 survey revealed a good population of 6-1/2- to 8-1/2-inch bluegills.

Blue, *Monona*

1995 should be a banner year for nice gills at Blue.

Crappie

Black Hawk, *Sac*

Early spring and late fall yield nice catches of 8- to 12-inch crappie.

Smith, *Kossuth*

7- to 9-inch white crappie are abundant. Fish in the riprap on the dam in May.

Beeds, *Franklin*

Population increasing. 8- to 10-inch fish are common. Fish the stake beds, brush piles and riprap around the jetties.

Lower Pine, *Hardin*

Lots of 8- to 9-inch fish. Scenic lake with plenty of shoreline habitat.

Center, *Dickinson*

Excellent numbers of fish in the 8-1/2- to 9-inch range should provide some good open water and winter angling in 1995.

Ingham, *Emmet*

Surveys still indicate good numbers of medium-sized (7-inch) fish are present -- the trick is to locate the fish -- think shallow in late May and early June.

Northern Pike

Silver, *Worth*

Excellent northern fishing the past two years. 1995 should continue to be good. Fish of a variety of size up to 8 pounds.

Crystal, *Hancock*

Typical size -- 3 to 5 pounds; and a few over 10. Fish shortly after ice-out with chubs or suckers.

Beeds, *Franklin*

Fish the weed edge with spinner baits or crank baits.

Spirit, *Dickinson*

Consistent producer -- small to medium, 2- to 5-pound fish -- springtime above the developing weedbeds and emergent rushes in Anglers Bay.

Trumbull, *Clay*

The survey resulted in good numbers, try early spring in areas of running water.

as well as the Wallingford area and the Emmetsburg area are all excellent river reaches. The Little Sioux River from Buena Vista County to the Woodbury-Monona countyline and the reach just north of Spencer are all excellent. The abundant habitat in this river reach contributes to consecutive strong year classes as well as provides the angler with many, readily accessible, locations to harvest these

fish. As you move downstream on the Des Moines (Webster County), the river becomes wider and anglers should search out the deeper pools, particularly those on outside bends. A bonus in this section is the flathead catfish. Each year, flatheads in the 20- to 40-pound size class are caught from these locations. Anglers pursuing flatheads frequently use green sunfish, chubs and goldfish for bait.

The North Raccoon River in Sac, Calhoun and Carroll counties offers the angler a variety of habitats and plenty of fish. Anglers should not overlook the rock rubble fishing riffles or cutbanks in this river reach. Many of the fish found in the 'Coon are one to five pounds but the opportunity for a 10- to 20-pounder also exists!

Specific locations on the Big Sioux River include the reach from

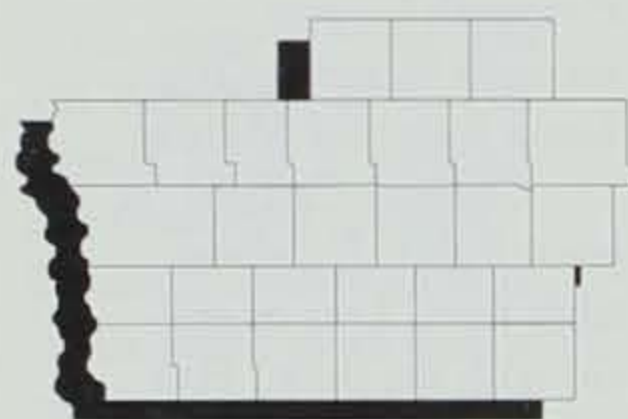
Gitchie Manitou to the Klondike Dam (Lyon County), the area from the Rock/Sioux access to Oak Grove State Park in Sioux County and the Plymouth County accesses located at Big Sioux Park and Millsite.

Channel Catfish! A good fight! Excellent table fare! Lots of em! Go with the flow. Fish our rivers and enjoy a great outdoor adventure.

	Silver, <i>Palo Alto</i>	Good numbers of 2- to 5-pound pike available for the open-water and winter angler.
	Tuttle, <i>Emmet</i>	Northern fishing has been a tradition on this border lake (IA-MN) and should produce some excellent catches during 1995.
Smallmouth Bass	Spirit, <i>Dickinson</i>	Spring and early summer fishing has been good the last couple of years -- '95 season should be good if weather conditions are stable.
	West Okoboji, <i>Dickinson</i>	Consistent producer throughout the spring and summer -- rock structures hold a variety of sizes with state record potential always present. Sub-legal bass catches in '94 indicate good numbers coming up, remember catch-and-release!
	Iowa River, <i>Hardin</i> Winnebago River, <i>Cerro Gordo</i> West Fork Des Moines River, <i>Humboldt</i>	Fish between dam at Alden to Eldora. Excellent riffle-pool habitat. Use crawdad imitation lures in the slack water associated with back eddies. 1994 survey revealed most fish were 12 to 16 inches. Best fishing is near Humboldt.
Largemouth Bass	Little Wall, <i>Hamilton</i>	Lots of bass. Dominant size 12 to 15 inches. Remember --18-inch min. length limit.
	Briggs Woods, <i>Hamilton</i>	Large population. 1994 survey showed fish of all sizes with many between 13 and 15 inches.
	Blue, <i>Monona</i>	Lots of largemouth bass with all size classes represented.
	Brown's, <i>Woodbury</i>	Bass up to 7 pounds in 1994 survey. Lots of pressure -- please practice catch-and-release.
	Yellow Smoke, <i>Crawford</i> Dog Creek, <i>O'Brien</i>	High density of bass 12- to 16-inches. The 1994 survey indicated moderate numbers of quality-size bass which should produce some good angling in 1995.
White Bass	Pahoja, <i>Lyon</i>	The 1994 survey indicated good numbers of bass. Practice catch-and-release!
	West Okoboji, <i>Dickinson</i> West Okoboji, <i>Dickinson</i>	Consistent producer for the knowledgeable angler -- spring through fall. Nice sized fish (1- to 3-pounds) -- try them through the ice in deep water (50- to 60-feet).
	East Okoboji, <i>Dickinson</i>	Feeding frenzy at north end if the spillway is running-- boat and wader anglers using plastic body jigs are very successful.
Freshwater Drum	West Okoboji, <i>Dickinson</i>	Rocky points and rock piles fished with a crawdad tail are dynamite for the sheep-of-the-deep!
Yellow Bass	Clear, <i>Cerro Gordo</i>	Excellent growth in 1994 has pushed Clear Lake "streakers" to an angler-acceptable size. Expect fast action for 8-1/2- to 10-inch fish in 1995.

Southwest Iowa

by Joe Schwartz
regional fisheries supervisor,
southwest Iowa



Last year proved to be one of the best in several years for fishing in southwest Iowa. It was especially good compared to 1993 when most of the fishing season was washed away by frequent rains.

1994 started out with good fishing immediately following ice-out. I heard of 50 plus bass being caught at Viking Lake by one angler several days following ice-out. Catfish were being taken at Icaria and Twelve Mile on cut shad. Northern and walleye were caught below Saylorville

and Red Rock in early spring. Good crappie catches started at many of our lakes in mid-April with Prairie Rose, Twelve Mile, Little River and Viking producing some of the best catches. A snow on April 30, followed by a week of cold weather, shut off fishing like someone flipped a switch. However, by mid-May crappies started again and all of our good crappie lakes provided many fish to satisfied anglers all season. Although crappies could be caught about anywhere, morning and evening

fishing were best at clear-water lakes like Twelve Mile and Little River.

Early June is the time to catch bluegills and last year was no exception. Area farm ponds, Lake Anita, Viking, Little River, Nine Eagles and many other produced good catches of tasty bluegills. Mid-summer tends to be slow fishing in southwest Iowa, but 1994 proved to be one of the best in many years of catfish fishing in our rivers. Infrequent rises and easy wading helped river anglers take

Southwest

Species	Lake or Stream, County	Comments
Bluegill	Anita, Cass	6- to 8-inch fish are frequently caught.
	Badger Creek, Dallas	7- to 8-inch fish plentiful.
	Badger Creek, Madison	Good for large numbers of 7-1/2 - to 8-1/2 -inch fish.
	Beaver, Dallas	6-1/2 - to 7-1/2 -inch fish are common.
	Big Creek, Polk	Large numbers of 6- to 7-inch fish.
	Hickory Grove, Story	7- to 10-inch fish. Lake will be drawn down through the summer. Won't be able to get a boat on the lake.
	Icaria, Adams	Nice looking 7- to 8-1/2 -inch fish with some up to 9-1/2 inches.
	Little River, Decatur	7- to 9-inch fish are common.
	Meadow, Adair	Good fish 6- to 9-inches. Redear are dandies.
	Nine Eagles, Decatur	Try marked fish reefs. Good redear are present.
	Prairie Rose, Shelby	Average 8 inches. Population increasing. Best looking bluegills in a long time.
	Twelve Mile, Union	8- to 9-inch fish are common. Try around flooded trees.
	Viking, Montgomery	8-inchers common. Best in spring and early summer.
Crappie	Anita, Cass	First crappie lake to start in the spring. Nice fish 8-1/2 - to 10-1/2 -inches. Numerous smaller fish moving into the fishery.
	Badger Creek, Madison	Nice fish 8- to 9-inches.
	Big Creek, Polk	Most fish will be 7- to 9-inches this year. A few 10-inch plus.
	Don Williams, Boone	Nice but inconsistent on catches.
	Easter, Polk	6- to 8-inches common, few fish up to 11 inches.
	Icaria, Adams	Fish are up to 1 pound; try fishing riprapped areas. Good number of 8- to 10-inch fish.
	Little River, Decatur	Try around flooded trees. Lots of 8- to 10-inch fish. Some 12-inchers.
	Manawa, Pottawattamie	Good early fishing in lagoons. Fish are smaller this year.
	Meadow, Adair	Strong year class of 9- to 10-inch fish.
	Orient, Adair	Always turbid water, but still good crappie fishing, 8- to 9-inches.
	Prairie Rose, Shelby	Fish are 8- to 9-inches. Good all summer.
	Red Rock, Marion	Big fish. Fish when water is clear, try feeder streams embayments.
	Saylorville, Polk	Excellent-sized fish.
	Slip Bluff, Decatur	8- to 9-inch fish.
	Twelve Mile, Union	7- to 12-inches and better numbers than in past.
	Viking, Montgomery	9- to 10-inch fish, best in spring.

advantage of our plentiful catfish populations. Bridge anglers also did well on "cats."

I look for 1995 to be a repeat of the fine fishing we had in '94 -- if the weather cooperates again. Cold fronts, typical during spring, will cause periodic slow-downs, but warm weather will bring a resurgence in catches. The table below lists the best places to go in 1995. Try a nice weekend in mid-May at one of the crappie lakes listed for a sure-fire place and time to catch fish.

DNR photo



Largemouth Bass

Anita, *Cass*
Beaver, *Dallas*
Big Creek, *Polk*
Easter, *Polk*
Farm Ponds
Green Valley, *Union*
Little River, *Decatur*

Mariposa, *Jasper*
Meadow, *Adair*
Nine Eagles, *Decatur*
Prairie Rose, *Shelby*
Red Rock, *Marion*
Rock Creek, *Jasper*
Saylorville, *Polk*

Twelve Mile, *Union*
Viking, *Montgomery*
West Lake Osceola,
Clarke

Perennial favorite. Bass up to 6 pounds.
Good catch-and-release fishery for less than 15-inches.
Great June of '94 bass fishing. Most fish below size limit.
Up to 5 pounds.
Many private ponds in southwest Iowa have good bass.
A 22-inch length limit here. Any keeper will be a real trophy.
Great fishing. Try fishing submerged brush and trees. Good numbers of 2- to 3-1/2 -pounders.
Good catch-and-release fishery.
Good bass lake.
Good numbers of small fish, an occasional large fish
Fish the stake beds and brush piles.
Fish drop-offs or other structure.
Good number of 2- to 3-pounders.
Lots of small bass - few legals. Fish face of dam, Big Creek outlet or any rocky area.
Excellent for 12- to 18-inch fish.
Good population of 12- to 15-inch fish.

Good summertime bass fishing.

Walleye/Saugeye

Des Moines River,
Polk & Boone
Icaria, *Adams*
Little River, *Decatur*
Manawa, *Pottawattamie*
Saylorville, *Polk*
Twelve Mile, *Union*

Fish below flood Corps dams, low-head dams and gravel riffles.
Fish are up to 10 pounds. Little slower than in past years.
Average fish are 14 to 18 inchse. 8-1/2 -pound fish -- biggest so far.
Was good in '94, looks good for '95.
Fish sandy points, old river channel.
Fish artificial reefs. Fish are 14- to 17-inches. Up to 4 pounds. Best walleye lake for numbers in southwest Iowa.

Bullheads

Beaver Lake, *Dallas*
Green Valley, *Union*
Little River, *Decatur*
Manawa, *Pottawattamie*
Prairie Rose, *Shelby*
Rock Creek, *Jasper*
Springbrook, *Guthrie*
Twelve Mile, *Union*

New lake, good growth, good catches.
11- to 13-inch fish. Numbers are down some.
Nice fish, big catches. 10- to 12-inches.
Nice size fish. Average 1 pound--12-inches.
Fish continue to grow. They now average 10 inches. A lot fewer numbers.
Fish are definitely keepers.
Medium-sized, but lots of them.
Nice fish, slowing down some but still good.



Ken Formanek

Southwest

Channel Catfish

Big Creek, *Polk*
Easter, *Polk*
Green Valley, *Union*
Icaria, *Adams*
Little River, *Decatur*

Littlefield, *Audubon*
Manawa, *Pottawattamie*
Meadow, *Adair*
Mormon Trail, *Adair*
Orient, *Adair*
Red Rock, *Marion*
Saylorville, *Polk*
Slip Bluff, *Decatur*
Southwest Rivers
Twelve Mile, *Union*
Viking, *Montgomery*
Willow, *Harrison*

Really nice fish, lots of them and not many catfish anglers.
Excellent for fish 12- to 17-inches.
Starting to see 3- to 5-pounders again
All sizes up to 5 pounds, occasional 15-pounder.
Fish small bays in mid-summer. Area biologist was really impressed with catfish seed in '94 survey. Many 3- to 10-pounders.
Fish north shore on strong south wind.
Good numbers, most 2- to 6-pounds. Up to 12 pounds.
Fish are 2- to 6-pounds.
Good numbers.
Stocked every year.
12- to 20-inches - best from Mile-Long bridge.
Excellent channel and flathead fishing. Lots of 2- to 4-pound fish.
1-1/2 to 2-1/2 pounds common.
Catfish are abundant in all of our rivers.
Cats 2- to 3-pounds common, good early.
All sizes to 6 pounds. A few big ones.
Abundant 12- to 14-inch cage-reared fish.

Yellow Perch

Anita, *Cass*

Abundant 8- to 9-inches easily caught on worms.

Yellow Bass

Carter Lake,
Pottawattamie
Icaria, *Adams*
Manawa, *Pottawattamie*

Lots of small fish.
6-to 9-inch fish. Hard hitters, good eating.
Lots of small fish, but an occasional pounder.

White Bass

Red Rock, *Marion*

Fish mid-summer, off of dam towards beach or towards marina.

Fish 1994 Awards

The listing below includes the top 10 entries and released of each species taken during 1994.
Current state records are highlighted.

WEIGHT/LENGTH	DATE	ANGLER/HOMETOWN	LOCATION/COUNTY
BASS, LARGEMOUTH (MINIMUM — 7 LBS. OR 22")			
10 lbs. 12 ozs. 23-1/2"	5/1984	Patricia Zaerr, Davenport	Lake Fisher, Davis
9 lbs.	4/16	Matt Somers, Creston	Twelve Mile Lake, Union
8 lbs. 9 ozs.	4/8	Jeremy Johnson, Bussey	Pond, Marion
8 lbs. 4 ozs.	5/13	Edwin H. Jensen Jr, Atlantic	Pond, Cass
8 lbs. 3 ozs.	4/13	Michael L. Philby, Red Oak	Pond, Page
8 lbs. 2 ozs.	10/21	John W. Draayer, Ireton	Pond, Plymouth
8 lbs. 1 ozs.	4/1	Benjie Harper, Clarinda	Pond, Page
8 lbs.	5/24	Kurtis M. Grubb, Oskaloosa	Edmonson Pond, Mahaska
7 lbs. 13 ozs.	10/1	Justin Remaly, Ames	Hahn Sand Pits, Muscatine
7 lbs. 12 ozs.	5/9	Steve Walker, Red Oak	Pond, Montgomery
7 lbs. 12 ozs.	4/23	Ken R. Tjaden, Sibley	Ocheyedan Pit, Osceola
7 lbs. 12 ozs.	5/13	Michael L. Davis, Logan	Willow Lake, Harrison
Released -- 23"	4/18	Dave Kitt, Dedham	Daniel Davis Timber, Carroll
Released -- 24"	6/15	Duane Burchett, Mount Ayr	Pond, Ringgold
Released -- 22"	3/31	Douglas Foote, Red Oak	Pond, Montgomery
Released -- 24"	4/13	Charlie Allen, Crescent	Pond, Pottawatamie
Released -- 23-1/2"	5/22	Arlie Vander Hoch, Pella	Quarry, Marion
Released -- 23"	5/15	John McAllister, Oyens	Dog Creek, Cherokee
Released -- 22-1/2"	5/17	Thad Harker, Des Moines	Pond, Polk
Released -- 22-1/4"	4/9	Robert J. Hime, King Lake	Oldham Rec. Area, Monona
Released -- 22"	6/13	Douglas P. Knox, Marshalltown	Pond, Marshall
Released -- 22"	8/6	Jerry L. Long Sr, Tingley	Pond, Ringgold
Released -- 23"	5/13	Gary W. Burns, Mount Pleasant	Lake Geode, Henry
Released -- 24"	5/21	John H. Stacey, Des Moines	Pond, Dallas
Released -- 22-1/2"	5/8	Gary F. Elgan, Council Bluffs	Pond, Fremont
Released -- 22"	6/19	Dennis A. Carbaugh, Red Oak	Pond, Montgomery
Released -- 22-1/4"	10/3	Edward S. Kast, Council Bluffs	Sawmill Hollow, Harrison
Released -- 22-1/2"	5/28	Judy De Maris, Mason City	Sand Pit, Cerro Gordo
Released -- 23"		Craig A. Murray, Audubon	Pond, Audubon
Released -- 22-1/4"	10/17	Bob Barber, Spencer	Gravel Pit, Dickinson
Released -- 25"	3/23	Bob Sauvain, Woodbine	Pond, Harrison
Released -- 23"	10/16	Chris Wilkinson, Waterloo	Lake Ponderosa, Poweshiek
Released -- 22-1/4"	4/13	Steve Philby, Red Oak	Pond, Page
Released -- 22-3/4"	6/13	Michael C. Miller, Farmington	Butternut Lake, Van Buren

Released -- 22-3/4"	4/24	Tom Preston, Omaha	Lenox Lake, Taylor
Released -- 22-1/2"	5/27	Dan Putz, Dyersville	Quarry, Delaware
Released -- 22"	6/29	Jeffery Rhinehart, Brooklyn	Diamond Lake, Poweshiek
Released -- 22-1/2"	8/8	Paul Rhinehart, Brooklyn	Diamond Lake, Poweshiek

BASS, OCEAN-STRIPED (MINIMUM — 5 LBS.)

9 lbs. 4 ozs. 29"	7/1983	Richard Pauley, Mystic	Lake Rathbun, Appanoose
No 1994 entries			

BASS, ROCK (MINIMUM — 1 LB.)

1 lb. 8 ozs. 10-1/2"	6/1973	Jim Driscoll, Dubuque	Mississippi River, Dubuque
1 lb.	10/10	Carl Hutchens, Mason City	Shellrock River, Floyd

BASS, SMALLMOUTH (MINIMUM — 4 LBS. OR 20")

7 lbs. 12 ozs. 22-3/4"	9/1990	Rick Gray, Dickinson	West Okoboji Lake, Dickinson
5 lbs. 8 ozs.	5/7	Steve Martin, Jackson	Spirit Lake, Dickinson
5 lbs. 2 ozs.	4/9	Benhardt Hennings, Hartley	West Okoboji Lake, Dickinson
4 lbs. 9 ozs.	6/3	Jerold Dorman, Council Bluffs	Spirit Lake, Dickinson
4 lbs. 8 ozs.	5/29	Matt Meyer, Bettendorf	West Okoboji Lake, Dickinson
4 lbs. 7 ozs.	8/21	Jerry Fowler, Pocahontas	West Okoboji Lake, Dickinson
4 lbs. 4 ozs.	7/15	Bryan Baker, Abingdon	West Okoboji Lake, Dickinson
4 lbs. 4 ozs.	8/17	Dwight Moats, Marcus	West Okoboji Lake, Dickinson
4 lbs. 3 ozs.	5/1	Jeff Reardon, Arnolds Park	West Okoboji Lake, Dickinson
4 lbs.	6/1	Dennis L. Miller, Vinton	Cedar River, Benton
Released -- 20-1/2"	5/1	Jeff Lenz, Milford	West Okoboji Lake, Dickinson
Released -- 21-3/4"	5/17	Jeff D. Cusick, Winthrop	Wapsipinicon River, Buchanan
Released -- 20-1/2"	8/9	Robert Fitzgerald, Milford	West Okoboji Lake, Dickinson
Released -- 21-1/2"	4/24	Duane Krogman, Lismore, MN	West Okoboji Lake, Dickinson
Released -- 22"	8/14	Mark Mitchell, Estherville	West Okoboji Lake, Dickinson
Released -- 22"	8/1	Michael H. Sketch, Milford	West Okoboji Lake, Dickinson
Released -- 20-1/4"	4/14	Bob Goff, Ruthven	Spirit Lake, Dickinson
Released -- 20-1/4"	4/29	Erwin Wackerbarth Jr, Orleans	Spirit Lake, Dickinson
Released -- 21"	5/15	Mike Wiese, Milford	West Okoboji Lake, Dickinson
Released -- 21"	4/13	Bob Livasy, Spencer	West Okoboji Lake, Dickinson
Released -- 20-1/2"	7/24	Matt Knier, Ames	West Okoboji Lake, Dickinson
Released -- 21"	9/15	Mark Beltz, Cedar Rapids	Maquoketa River, Delaware
Released -- 21"	8/8	Raymond Ferber, Omaha, NE	West Okoboji Lake, Dickinson
Released -- 20-1/4"	7/29	Zach Dice, Omaha, NE	Spirit Lake, Dickinson
Released -- 20"	9/4	Frank G. Martinez, Sibley	West Okoboji Lake, Dickinson
Released -- 20-1/4"	4/13	Charlie Shuck, Milford	Spirit Lake, Dickinson
Released -- 20-1/2"	6/14	Bernard C. Dheere, Lake View	West Okoboji Lake, Dickinson
Released -- 20"	8/11	Dick Pautvein, West Des Moines	West Okoboji Lake, Dickinson
Released -- 20"	3/25	Ken Krier, Cedar Falls	Cedar River, Black Hawk
Released -- 21-1/4"	10/30	Gary Engelkes, Sibley	West Okoboji Lake, Dickinson
Released -- 20-1/2"	11/15	Bob Fitzgerald, Milford	West Okoboji Lake, Dickinson
Released -- 21"	9/21	Jim Grave, Sibley	West Okoboji Lake, Dickinson

BASS, SPOTTED (MINIMUM — 3 LBS. OR 17")

3 lbs. 3 ozs.	10/23	Carl Hutchens, Mason City	Lake Macbride, Johnson
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BASS, WHITE (MINIMUM — 2-1/2 LBS.)

3 lbs. 14 ozs. 20"	5/1972	Bill Born, Milford	West Okoboji Lake, Dickinson
3 lbs. 8 ozs.	6/21	Doug Tomlinson, Oskaloosa	Des Moines River, Marion
3 lbs. 6 ozs.	4/18	Matt Truman, Lacona	Red Rock Lake, Marion

3 lbs. 2 ozs.	9/15	Brian Bristow, Terril	Spirit Lake, Dickinson
3 lbs.	5/25	Joshua Peterka, Swisher	Lake Macbride, Johnson
2 lbs. 13 ozs.	7/11	Roy T. Fuller, Iowa City	Lake Macbride, Johnson
2 lbs. 13 ozs.	11/7	Irv Schnell, Milford	East Okoboji Lake, Dickinson
2 lbs. 12 ozs.	6/19	Truman A. Paulson, Harpers Ferry	Coralville Discharge, Johnson
2 lbs. 10 ozs.	10/21	Barry J. Andersen, Arnolds Park	Upper Gar Lake, Dickinson
2 lbs. 8 ozs.	12/14	Del Gowder, Spirit Lake	East Okoboji Lake, Dickinson

BASS, WIPER (MINIMUM — 4 LBS.)

17 lbs. 5 ozs. 30-1/2"	11/1993	Joseph F. Kafer, Des Moines	Des Moines River, Polk
13 lbs. 8 ozs.	4/25	Jack Lancaster, Des Moines	Des Moines River, Polk
8 lbs. 8 ozs.	4/30	Kory Krebs, Maxwell	Saylorville Lake, Polk
6 lbs.	8/20	George L. Bishop, Oskaloosa	Des Moines River, Marion
5 lbs. 13 ozs.		Guy Powell, Des Moines	Des Moines River, Polk
5 lbs. 6 ozs.		Richard Blood, Keokuk	Mississippi River, Lee
4 lbs.	3/1	Brett K. Monteleone, Newton	Red Rock Lake, Marion

BASS, YELLOW (MINIMUM — 3/4 LB.)

1 lb. 9 ozs. 14-1/2"	4/1991	Bill Campbell, Council Bluffs	Lake Manawa, Pottawattamie
15 ozs.	8/24	Scott Steenblock, Mason City	Clear Lake, Cerro Gordo
14 ozs.	5/24	Carl Hutchens, Mason City	Clear Lake, Cerro Gordo
13 ozs.	7/10	Bill Hot, Lake View	Arrowhead, Sac
13 ozs.	8/22	Amielynn Billick, Mason City	Clear Lake, Cerro Gordo
13 ozs.	5/25	Judy DeMaris, Mason City	Clear Lake, Cerro Gordo
12 ozs.	8/22	Eric DeMaris, Mason City	Clear Lake, Cerro Gordo

BLUEGILL (MINIMUM — 1 LB.)

3 lbs. 2 ozs. 12-7/8"	7/1986	Phil Algreen, Earlham	Pond, Madison
2 lbs. 4 ozs.	7/3	David Padget, Swisher	Pond, Davis
2 lbs. 1 ozs.	6/5	Joshua Bunnell, Corydon	Pond, Wayne
2 lbs.	6/5	Scott Bunnell, Corydon	Pond, Wayne
1 lb. 14 ozs.	5/29	Debbie Wall, Stuart	Pond, Decatur
1 lb. 12 ozs.	9/25	Robert Lang, Coralville	Pond, Johnson
1 lb. 11 ozs.	6/7	Jeff Rea, Adel	Pond, Madison
1 lb. 10 ozs.	5/5	Brian Moore, New Market	Pond, Taylor
1 lb. 9 ozs.	4/24	Emily Schwartz, Donnellson	Shagbark, Lee
1 lb. 8 ozs.	5/22	Douglas J. Lee, Swisher	Pond, Johnson
1 lb. 8 ozs.		Walter J. Privia Jr, West Point	Pond, Lee
1 lb. 8 ozs.	4/4	Ron Sandvig, Atlantic	Lake Anita, Cass
1 lb. 8 ozs.	8/9	Theo F. Clark, Ames	Silver Lake, Worth
1 lb. 8 ozs.	5/15	Mike Weikert, Muscatine	Indian Lake, Lee

BOWFIN/DOGFISH (MINIMUM — 5 LBS.)

11 lbs. 8 ozs. 31"	5/19	Bill Gretten, Blue Grass	Mississippi River, Clayton
9 lbs. 1 ozs.		Scott Miller, Fort Madison	Mississippi River, Lee
6 lbs. 6 ozs.	9/5	Josh Peterka, Swisher	Mississippi River, Clayton

BUFFALO (MINIMUM — 20 LBS.)

51 lbs. 45"	4/1986	Jeff Duis, Sibley	East Okoboji Lake, Dickinson
43 lbs. 11 ozs.	8/28	Judy DeMaris, Mason City	Clear Lake, Cerro Gordo
43 lbs. 3 ozs.	8/28	Bonny Gallup, Mason City	Clear Lake, Cerro Gordo
40 lbs. 3 ozs.	8/28	Carl Hutchens, Mason City	Clear Lake, Cerro Gordo
25 lbs. 4 ozs.	4/3	Bob Unga, Manchester	Maquoketa River, Delaware
23 lbs. 12 ozs.	4/3	Mark McCauley, Algona	Rutland Dam, Humboldt
23 lbs. 8 ozs.	5/15	Brad Duis, Ocheyedan	Silver Lake, Dickinson

21 lbs. 5 ozs.	10/15	Richard Stivers, Anamosa	Wapsipinicon River, Jones
20 lbs. 5 ozs.	5/30	Matt Helmers, Melvin	Lower Gar Lake, Dickinson

BULLHEAD (MINIMUM — 2-1/2 LBS.)

5 lbs. 8 ozs. 22"	1989	Michael Hurd, Elsworth	Pond, Hamilton
4 lbs. 4 ozs.	8/24	Carl Hutchens, Mason City	Pit, Worth
3 lbs. 3 ozs.	5/29	Diane R. Mohr, Davenport	Pond, Van Buren
3 lbs. 1 ozs.	8/27	Terri J. Rekemeyer, Des Moines	Pond, Monroe
3 lbs. 1 ozs.	8/21	Judy L. DeMaris, Mason City	Blue Pit, Cerro Gordo
2 lbs. 15 ozs.	8/21	Julius DeMaris, Mason City	Pit, Cerro Gordo
2 lbs. 8 ozs.	6/30	Brian Bistricky, Swisher	Pond, Johnson

CARP (MINIMUM — 25 LBS.)

50 lbs. 44"	5/1969	Fred Houghland, Glenwood	Glenwood Lake, Mills
31 lbs. 12 ozs.	3/17	Dale Heizelman, Mapleton	Pond, Crawford

CATFISH, BLUE (MINIMUM — 20 LBS.)

46 lbs.	5/5	Bob Dowson, Des Moines	Big Creek, Polk
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CATFISH, CHANNEL (MINIMUM — 15 LBS.)

36 lbs. 8 ozs. 40-1/2"	8/1993	Ronald D. Godwin, Earlham	Middle Raccoon River, Dallas
23 lbs. 12 ozs.	6/5	Alan R. Hanson, Waterloo	Meyer Lake, Black Hawk
21 lbs. 10 ozs.	7/25	Paul Demuth, Milford	West Okoboji Lake, Dickinson
21 lbs. 4 ozs.	4/28	Mike Smith, Slater	Nine Eagles Park, Decatur
20 lbs. 8 ozs.	7/5	Alan R. Hanson, Waterloo	Meyer Lake, Black Hawk
20 lbs. 8 ozs.	6/27	Gregg E. Sampson, Palo	Pleasant Creek Lake, Linn
18 lbs. 12 ozs.	9/17	Tim Lucky, Red Oak	Viking Lake, Montgomery
18 lbs. 4 ozs.	3/8	John McGrath, Eagle Grove	Des Moines River, Humboldt
18 lbs. 4 ozs.	5/2	Robert Killeen, Audubon	Pond, Audubon
18 lbs.	7/16	Rod A. Cronkhite, Logan	Rock Quarry, Harrison
18 lbs.	7/11	Carl Hutchens, Mason City	Clear Lake, Cerro Gordo

CATFISH, FLATHEAD (MINIMUM — 20 LBS.)

81 lbs. 52"	6/1958	Joe Baze, Chariton	Lake Ellis, Lucas
56 lbs. 4 ozs.	6/7	Nile L. Mischke, Jefferson	Raccoon River, Greene
52 lbs.	6/3	Calvin J. Brown, Des Moines	Saylorville Outlet, Polk
48 lbs.	5/28	Jerry Merschman, Wever	Skunk River, Henry
45 lbs.	6/12	Joshua J. Sebben, Abingdon	Mississippi River, Des Moines
43 lbs. 8 ozs.	7/23	Larry Schlueter, Dubuque	Mississippi River, Dubuque
40 lbs.	6/27	Joshua J. Evans, Council Bluffs	Missouri River, Harrison
37 lbs.		Kenneth L. Clark, Sioux City	Missouri River, Woodbury
35 lbs.	5/21	Jacob L. Smith, Jefferson	Raccoon River, Greene
34 lbs. 8 ozs.	7/17	Duane Forkner, Gowrie	Raccoon River, Greene
33 lbs.	6/20	Michael D. Moeller, Toronto	Wapsipinicon River, Clinton

CRAPPIE (MINIMUM — 2 LBS.)

4 lbs. 9 ozs. 21-1/4"	5/1981	Ted Trowridge, Marshalltown	Green Castle Lake, Marshall
3 lbs. 4 ozs.	1/22	David Kramer, Neola	Arrowhead Lake, Pottawattamie
3 lbs. 3 ozs.	5/8	Jeannie Montgomery, Albia	Lake Rathbun, Appanoose
3 lbs. 1 ozs.	5/21	Dale N. Farrell, Council Bluffs	Pond, Mills
2 lbs. 12 ozs.	9/6	Kenneth Murray Jr., Graettinger	Gravel Pit, Palo Alto
2 lbs. 10 ozs.	5/25	Connie Lavalley, Madrid	Viking Lake, Montgomery
2 lbs. 8 ozs.	6/11	Mike Anderson, Cedar Falls	Coralville Reservoir, Johnson
2 lbs. 8 ozs.	5/5	Sean Eric Fisher, Glenwood	Pond, Mills
2 lbs. 8 ozs.	5/8	Steve Walker, Red Oak	Pond, Montgomery
2 lbs. 8 ozs.	5/8	Steve Philby, Red Oak	Pond, Page

2 lbs. 8 ozs.	5/18	Jeremy Ruehle, Ruthven	Gravel Pit, Clay
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FRESHWATER DRUM (MINIMUM — 15 LBS.)

46 lbs. 38-1/2"	10/1962	R.F. Farra, Clarion	Spirit Lake, Dickinson
18 lbs.	10/9	Doug Lenton, Marengo	Mississippi River, Clayton
16 lbs. 1 ozs.	2/7	Tom McGinn, Council Bluffs	East Okoboji Lake, Dickinson
15 lbs.	7/4	Fred Steffen, Bettendorf	Mississippi River, Scott

GAR, LONGNOSE (MINIMUM — 6 LBS.)

17 lbs. 8 ozs. 51"	9/1992	Kevin Patrick Riley, Cedar Rapids	Mississippi River, Van Buren
9 lbs. 5 ozs.	9/9	Jeffrey L. Jones, Davenport	Mississippi River, Scott

GAR, SHORTNOSE (MINIMUM — 2 LBS.)

3 lbs. 8 ozs.	7/1993	Mark D. Sprouse, Beacon	Des Moines River, Mahaska
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No 1994 entries.

GOLDEYE/MOONEYE (MINIMUM — 1-1/4 LBS.)

2 lbs. 4 ozs.	4/1992	Mark Ekle, Farmington	Des Moines River, Van Buren
1 lb. 7 ozs.	9/24	Carl Hutchens, Mason City	Woodbury
1 lb. 5 ozs.	10/5	Judy De Maris, Mason City	Iowa River, Louisa

MUSKELLUNGE (MINIMUM — 15 LBS. OR 40")

40 lbs. 5 ozs. 50-1/2"	6/1991	Dennis D. Heidebrink, Rushmore, MN	West Okoboji Lake, Dickinson
35 lbs. 14 ozs.	9/11	Steve Olson, Marcus	West Okoboji Lake, Dickinson
34 lbs.	7/16	Frank Staskiewicz Jr, Omaha, NE	West Okoboji Lake, Dickinson
33 lbs. 12 ozs.	4/16	Randy J. Burke, Garner	Clear Lake, Cerro Gordo
30 lbs. 2 ozs.	7/29	Shannon Green, Spencer	West Okoboji Lake, Dickinson
26 lbs. 12 ozs.	4/1	Mike Wilbur, Storm Lake	Storm Lake, Buena Vista
25 lbs. 8 ozs.	4/23	Pat Herman, Mason City	Clear Lake, Cerro Gordo
25 lbs. 8 ozs.	4/24	Wayne R. Schmitt, Sheffield	Clear Lake, Cerro Gordo
20 lbs. 4 ozs.	2/17	Don Cruikshank, Johnston	Des Moines River, Polk
17 lbs. 7 ozs.	11/9	Dan Miller, Spirit Lake	West Okoboji Lake, Dickinson
Released -- 46"	10/26	Ron Creswell, Spencer	East Okoboji Lake, Dickinson
Released -- 40"	9/23	Randy Meyer, Sibley	West Okoboji Lake, Dickinson
Released -- 51-1/2"	8/29	Mark D. Mitchell, Estherville	West Okoboji Lake, Dickinson
Released -- 47"	9/10	Dick Crail, Algona	Spirit Lake, Dickinson
Released -- 42"	8/17	John Osler, Council Bluffs	West Okoboji Lake, Dickinson
Released -- 41"	8/13	Mark Mitchell, Estherville	West Okoboji Lake, Dickinson

MUSKELLUNGE, TIGER (MINIMUM — 15 LBS. OR 40")

27 lbs. 2 ozs. 47"	8/1989	Shannon Green, Spencer	West Okoboji Lake, Dickinson
19 lbs. 3 ozs.	5/1	David Pair, Ankeny	Big Creek, Polk

NORTHERN PIKE (MINIMUM — 10 LBS. OR 34")

25 lbs. 5 ozs. 45"	2/1977	Allen Forsberg, Albert City	West Okoboji Lake, Dickinson
22 lbs. 11 ozs.	2/20	Brian L. Bunn, Des Moines	Des Moines River, Polk
21 lbs.	10/1	Larry Edward Gosch, Newell	Storm Lake, Buena Vista
19 lbs. 6 ozs.	3/5	Joe Trecker, Coon Rapids	Saylorville Lake, Polk
17 lbs. 8 ozs.	2/27	Brett K. Monteleone, Newton	Red Rock Lake, Marion
16 lbs. 11 ozs.	1/11	Cecil Ackerman, Sibley	West Okoboji Lake, Dickinson
16 lbs. 10 ozs.	4/2	Robert K. Baugh, Bellevue	Mississippi River, Jackson
16 lbs. 8 ozs.	9/10	Michael Lopata, Walker	Wapsipinicon River, Buchanan
16 lbs. 8 ozs.	3/1	Gary Maki, Newton	Red Rock Lake, Marion
16 lbs. 6 ozs.		Chuck Leinen, Spencer	West Okoboji Lake, Dickinson
16 lbs.	4/20	Ulrich Russell Braun, Dows	Iowa River, Wright
Released -- 36-1/2"	4/3	Dean A. Bodnar, Clinton	Mississippi River, Clinton

Released -- 36-1/4"	4/9	Kevin F. Brown, Fort Dodge	Des Moines River, Webster
Released -- 33-1/2"	5/21	Steve W. Doering, Davenport	Wapsipinicon River, Scott
Released -- 35-1/4"	5/23	Darcey Johnson, Ruthven	Trumbull Lake, Clay
Released -- 37"	6/22	Douglas P. Knox, Marshalltown	Pond, Marshall
Released -- 34-1/2"	5/21	Jim Summers, Ida Grove	Hallett's Gravel Pit, Sac

PADDLEFISH (MINIMUM — 25 LBS.)

107 lbs. 69-1/2"	3/1981	Robert Pranshke, Onawa	Missouri River, Monona
66 lbs. 4 ozs.	3/6	Bill Baldwin, Keokuk	Mississippi River, Lee
66 lbs.	3/6	Kenny Lovell, Keokuk	Mississippi River, Lee
60 lbs. 3 ozs.	3/6	Dennis Robinson, Kahoka, MO	Mississippi River, Lee
28 lbs.	3/13	Chris Wolfe, Keokuk	Mississippi River, Lee

PERCH, YELLOW (MINIMUM — 1 LB.)

2 lbs. 3 ozs. 14-3/4"	3/10	Daniel J. Borchardt, Mason City	Morse Lake, Wright
2 lbs.	3/12	Reggie Stoppelmoore, Hampton	Morse Lake, Wright
1 lb. 13 ozs.	2/3	Larry Lindstrom, Clarion	Morse Lake, Wright
1 lb. 12 ozs.	2/26	Bob Bellows, Pocahontas	Silver Lake, Palo Alto
1 lb. 12 ozs.	3/4	Wayne Beeson, Storm Lake	Silver Lake, Palo Alto
1 lb. 10 ozs.	3/6	Tom Peterson, Eagle Grove	Morse Lake, Wright
1 lb. 9 ozs.	6/10	Scott Echelberger, Otho	Quarry Pond, Webster
1 lb. 9 ozs.	9/7	Carl Hutchens, Mason City	Ventura Marsh, Cerro Gordo
1 lb. 8 ozs.	3/5	Marty Newgard, Laurens	Silver Lake, Palo Alto
1 lb. 8 ozs.	2/21	Scott D. Johnson, Albert City	Silver Lake, Palo Alto
1 lb. 7 ozs.	3/2	Frank Hiner	Silver Lake, Palo Alto

SAUGER (MINIMUM — 2-1/2 LBS. OR 18")

6 lbs. 8 ozs. 25"	10/1976	Mrs. W. Buser, Sloan	Missouri River, Woodbury
4 lbs. 4 ozs.	12/3	Edward Fox, Silvis, IL	Mississippi River, Jackson
4 lbs. 3 ozs.	4/12	Larry Coon, Oxford Junction	Mississippi River, Jackson
4 lbs. 2 ozs.	12/4	Stan Erickson, Bettendorf	Mississippi River, Scott
4 lbs.	11/7	Mark Kane, Hawarden	Big Sioux River, Sioux
3 lbs. 14 ozs.	10/19	Robert Cregan, Freeport	Mississippi River,
3 lbs. 10 ozs.	10/27	Dennis J. Donovan, Sioux City	Missouri River, Woodbury
3 lbs. 9 ozs.	2/13	Tom Fisher Jr, Keokuk	Mississippi River, Lee
3 lbs. 9 ozs.	10/11	Lurlin Schermer, Charles City	Mississippi River, Allamakee
3 lbs. 8 ozs.		Melvin H. Glesne, Elkader	Mississippi River, Allamakee
3 lbs. 8 ozs.	3/31	Ken Vanous Jr, Cedar Rapids	Mississippi River, Clayton
3 lbs. 8 ozs.		David Alan Tipton, Sioux City	Missouri River, Woodbury
3 lbs. 8 ozs.	11/6	James Lee Wolf, Brandon	Mississippi River, Clayton
Released -- 22"	11/19	Roy Gilcrease, Chicago, IL	Mississippi River, Jackson
Released -- 19"	10/23	Steven L. Baumgartel, Cedar Rapids	Mississippi River, Jackson
Released -- 18"	11/5	Dave Gross, Dubuque	Mississippi River, Jackson
Released -- 20"	11/7	Greg Buckendahl, Manchester	Mississippi River, Clayton

SAUGEYE (MINIMUM — 6 LBS. OR 25")

8 lbs. 5 ozs. 25"	1/23	Chelsea Hunt Jr, Newton	Big Creek Lake, Polk
8 lbs. 2 ozs.	3/29	Mike Wilson, Cedar Rapids	Iowa River, Johnson
7 lbs. 12 ozs.	3/20	Daryl Bazal, Vining	Iowa River, Johnson
7 lbs. 6 ozs.	3/10	Kevin C. Grant, Cedar Rapids	Coralville Reservoir, Johnson
7 lbs. 4 ozs.	2/4	William "Butch" Grover, Cedar Falls	Iowa River, Johnson
7 lbs. 2 ozs.	3/19	Nelson Smalley, Cedar Rapids	Iowa River, Johnson
7 lbs. 1 ozs.	4/20	Mark Beltz, Cedar Rapids	Coralville Reservoir, Johnson
7 lbs.	4/5	Frank Beminio, Coralville	Coralville Outlet, Johnson
6 lbs. 14 ozs.	3/6	Jamie J. Stolba, Cedar Rapids	Iowa River, Johnson
6 lbs. 14 ozs.		Jefferey Awe, Council Bluffs	Des Moines River, Polk

6 lbs. 8 ozs.	4/17	Mark E. Woldruff, Cedar Rapids	Coralville Reservoir, Johnson
Released -- 25"	12/6	Randy Thelen, Creston	Twelve Mile Lake, Union

STURGEON, SHOVELNOSE (MINIMUM — 3 LBS.)

12 lbs. 33"	4/1974	Randy Hemm, Douds	Des Moines River, Van Buren
6 lbs.	4/14	Kevin James, Keokuk	Des Moines River, Lee
5 lbs. 3 ozs.	5/13	Jerry E. Ferrie, Cedar Rapids	Cedar River, Linn
3 lbs. 8 ozs.	3/31	Larry Estabrook, Keokuk	Des Moines River, Lee

SUCKER (MINIMUM — 4 LBS.)

15 lbs. 1 oz. 32-1/4"	9/1983	Glen E. Dittman, Onawa	Missouri River, Monona
13 lbs. 5 ozs.	5/28	Kelly Mulvihill, Sloan	Missouri River, Monona
5 lbs. 15 ozs.	7/22	Amie Billick, Mason City	Shell Rock River, Floyd
4 lbs. 3 ozs.	7/21	Carl Hutchens, Mason City	Shell Rock River, Floyd

SUNFISH (MINIMUM — 1 LB.)

1 lb. 13 ozs. 10-1/4"	9/1967	Dale Cornick, Burlington	Lake Geode, Henry
1 lb. 2 ozs.	5/23	Steve Walker, Red Oak	Pond, Montgomery
1 lb. 1 ozs.	6/3	Carl Hutchens, Mason City	Pit, Cerro Gordo
1 lb.	8/22	Judy DeMaris, Mason City	Blue Pit, Cerro Gordo

TROUT, BROOK (MINIMUM — 1 LB. OR 13")

3 lbs. 3 ozs. 19-1/2"	7/1993	Melvin Yerkas, Greene	Lake Despair, Butler
2 lbs. 4 ozs.	7/15	Mike Salmon, Cedar Rapids	Joy Springs, Clayton
1 lb. 5 ozs.	3/22	Gary E. Henry, Decorah	Trout Run, Winneshiek
1 lb.		Randy Fairchild, Decorah	Upper Iowa River, Winneshiek
15 ozs.	3/14	Brent L. Brown, Central City	Twin Bridges, Delaware
14 ozs.	7/14	Ed Singer, Independence	Joy Springs, Clayton

TROUT, BROWN (MINIMUM — 3 LBS. OR 18")

15 lbs. 4 ozs. 31"	7/1984	Fred Daus, Minneapolis, MN	French Creek, Allamakee
11 lbs. 8 ozs.	11/22	Bryan Timmerman, Waterloo	North Prairie Lake, Black Hawk
10 lbs. 10 ozs.	11/28	Mike Amundson, Waterloo	North Prairie Lake, Black Hawk
9 lbs. 8 ozs.	8/7	Brian Scheidel, Decorah	Trout Run, Winneshiek
9 lbs. 6 ozs.	5/16	Robert D. Schadle, Garrison	Trout Run, Winneshiek
8 lbs. 8 ozs.	5/15	Hugh E. Strong, Mason City	Pond, Clayton
8 lbs. 5 ozs.	6/9	Roger D. Vargason, Independence	Joy Springs, Clayton
8 lbs.	5/29	Robert W. Sewick, Hudson	Bear Creek, Fayette
7 lbs. 1 ozs.	3/13	Gerald E. Schultz, Chaseburg, WI	Village, Allamakee
7 lbs.	6/11	Lyle Sindt, Montpelier	Bloody Run Creek, Clayton
6 lbs. 14 ozs.	12/2	Daniel J. Koenig, Dubuque	Heritage Pond, Dubuque
Released -- 24"	11/23	Patricia Boeck, Janesville	North Prairie Lake, Black Hawk

TROUT, RAINBOW (MINIMUM — 3 LBS. OR 18")

19 lbs. 8 ozs. 35"	7/1984	Jack Renner, Waterloo	French Creek, Allamakee
9 lbs. 12 ozs.	5/11	Delmar Champion, Monmouth	Sny Magill, Clayton
9 lbs. 5 ozs.	5/28	George W. Halstead, West Union	Turkey River, Clayton
8 lbs. 13 ozs.	6/9	William L. Jackson, Cedar Rapids	Bear Creek, Fayette
5 lbs. 8 ozs.	5/21	Dennis Reeder, Northwood	South Bear, Winneshiek
5 lbs. 1 ozs.	5/7	Gretchen Cottrell, Kensett	Turtle Creek, Mitchell
4 lbs. 8 ozs.	5/16	Bob Unga, Manchester	Richmond Springs, Delaware
4 lbs. 2 ozs.	5/2	Jay Wheelock, Decorah	Twin Springs, Winneshiek
3 lbs. 14 ozs.	5/17	Dan Sullivan, Shell Rock	Grannis Creek, Fayette
3 lbs. 12 ozs.	4/2	Jeff Renner, Denison	Village Creek, Allamakee
3 lbs. 10 ozs.	5/18	Fred Amundson, Waterloo	South Cedar Creek, Clayton
Released -- 20"	5/17	Randy Cummings, Waterloo	Joy Springs, Clayton

Released -- 18-1/2"	5/12	Patricia A. Boeck, Janesville	Joy Springs, Clayton
Released -- 18-1/4"	9/8	Dennis Myhre, Decorah	Canoe Creek, Winneshiek

WALLEYE (MINIMUM — 8 LBS. OR 28")

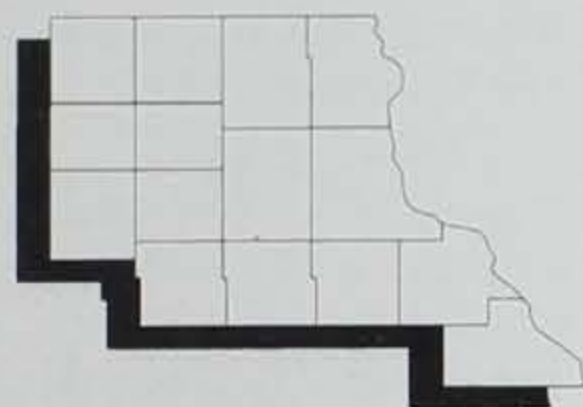
14 lbs. 8 ozs. 30-1/2"	9/1986	Gloria Eoriatti, Ankeny	Des Moines River, Polk
12 lbs. 3 ozs.	11/8	Andy Robert Gates, Brandon	Wapsipinicon River, Buchanan
11 lbs. 9 ozs.	3/23	Robert Spitz, Osage	Cedar River, Mitchell
11 lbs. 8 ozs.	3/13	Ricky D. Bergloff, Smithville, MO	Saylorville, Polk
11 lbs. 8 ozs.	4/14	Tom Dryden, Carroll	Little Sioux River, Buena Vista
11 lbs. 6 ozs.	3/23	Fred Wagner, Waverly	Cedar River, Bremer
10 lbs. 14 ozs.	3/5	Dale R. Billingsley, Ottumwa	Rathbun Lake, Appanoose
10 lbs. 12 ozs.	10/24	Tom Mc Grath, Estherville	Spirit Lake, Dickinson
10 lbs. 8 ozs.	5/18	Aaron Roemig, Amana	Iowa River, Iowa
10 lbs. 7 ozs.	5/1	Roger Hough, Algona	Lost Island Lake, Palo Alto
10 lbs. 6 ozs.	4/2	Todd Sampson, Ruthven	Lost Island Lake, Palo Alto
Released -- 29-1/4"	4/8	Kenneth E. Eastman, Cedar Falls	Cedar River, Black Hawk
Released -- 29-1/4"	4/6	Wilbur C. Fessler, Boone	Des Moines River, Boone
Released -- 28-1/2"	5/19	Maury Glesne, Elkader	Mississippi River, Allamakee
Released -- 28"	5/8	Randy Meyer, Sibley	West Okoboji Lake, Dickinson
Released -- 29-1/4"	5/7	Steve Nieben, Papillion, NE	West Okoboji Lake, Dickinson
Released -- 28-1/2"	5/8	Tim Stellmach, Milford	West Okoboji Lake, Dickinson
Released -- 28"	8/17	Wayne Sawyer, Waukon	Mississippi River, Allamakee
Released -- 28"	10/21	Darrell Harms, Spencer	Spirit Lake, Dickinson
Released -- 28"	10/21	Dale Brandt, Spencer	Spirit Lake, Dickinson
Released -- 28-1/2"	8/20	Richard D. Fiebelkorn, Austin, TX	Spirit Lake, Dickinson

WHITE AMUR (MINIMUM — 25 LBS.)

51 lbs.	9/1988	Leon Allen, Omaha, NE	Viking Lake, Montgomery
30 lbs. 3 ozs.	6/1	Steve Philby, Red Oak	Viking Lake, Montgomery
27 lbs. 6 ozs.	5/29	Bill Pierson, Manson	Cooper Cover, Pocahontas
26 lbs. 12 ozs.	7/30	Benjamin Hoffman, West Des Moines	Lake Anita, Cass

Northeast Iowa

by Dave Moeller
regional fisheries supervisor,
northeast Iowa



Finally, nature is beginning to relax its wintry grip and the long-awaited open-water fishing season is just around the corner. Of course you will want to fish some of those waters in northeast Iowa that contain the best fish populations in the region, and to guide you, the accompanying table identifies, by species, those waters where angling should be good in 1995. Equally important to fishing success is coinciding your fishing efforts with those periods

and conditions when the species you are pursuing are particularly susceptible or vulnerable to angling. Let's take a look and see when we should concentrate our fishing efforts.

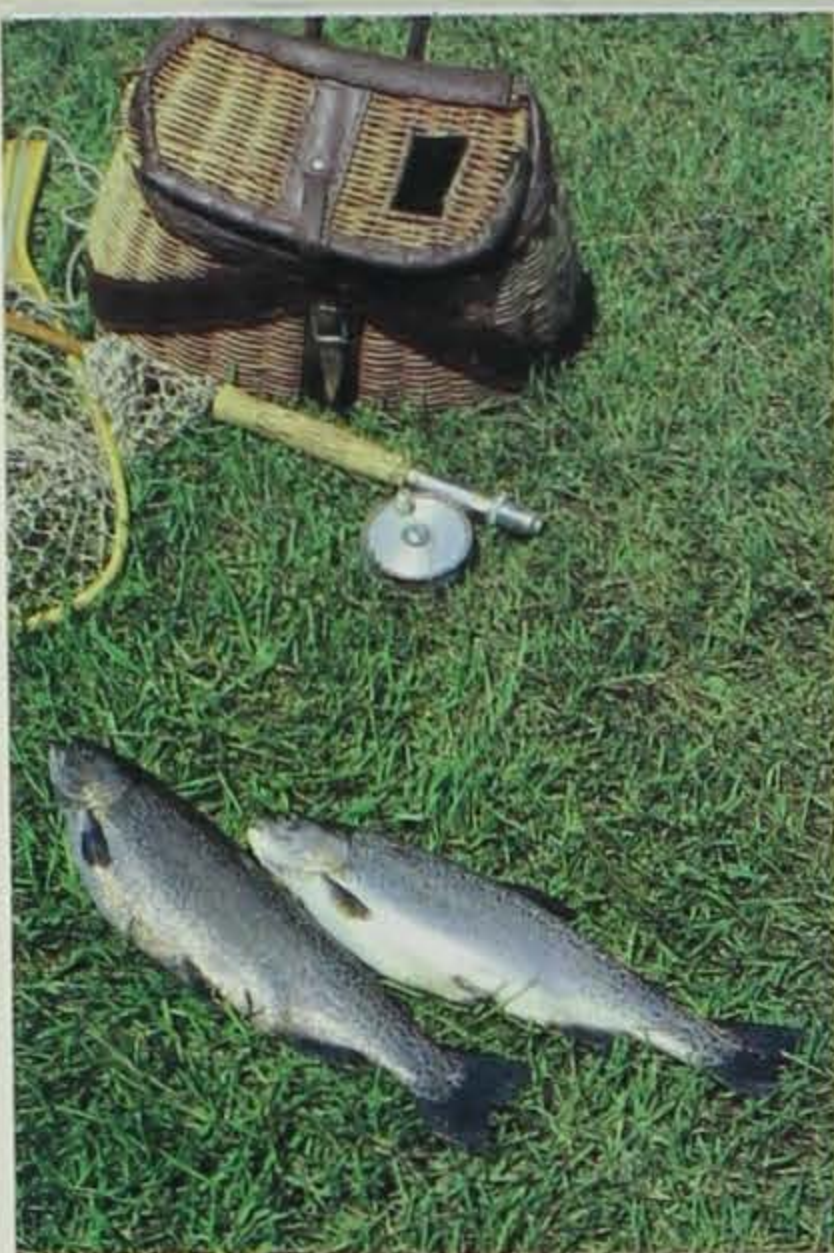
Walleye -- The pre-spawn period from just after ice-out to when the water temperature reaches about 48°F is an excellent time to fish below the navigation dams on the Mississippi River and the low-head dams on the interior rivers. Late spring and summer

often finds them on the wing dams and along riprap areas on the Mississippi when the river flow is not too strong. Late fall and winter on the "Big River" again finds the walleye, and the smaller sauger, in the dam tailwaters areas.

Channel Catfish -- As soon as the ice goes out, catfish go on a feeding binge on fish that have died over the winter. Consequently, fishing with cut-bait or dead minnows is often excellent. Catfishing also is frequently

Northeast

Species	Lake or Stream, County	Comments
Bluegill	Casey, Tama	Fish tend to scatter throughout the lake but are usually near the bottom.
	George Wyth, Black Hawk	Maps showing habitat locations available; 6- to 8-inch fish can be found here.
	Sweet Marsh Segment B (Martin's Lake), Bremer Volga, Fayette	Deep water next to the dikes can be productive for 6- to 7-inch fish. Good numbers of moderate-sized bluegills; try drifting the deep water over the old creek channels in the north and west bays.
Channel Catfish	Casey, Black Hawk Cedar River, Black Hawk, Bremer, Chickasaw & Floyd	Good survival of stocked fingerlings; spring and early summer are best. High numbers in all of this reach; mostly channels but an occasional flathead is caught; many in the 3- to 8-pound range.
	George Wyth, Black Hawk Meyer, Winneshiek Maquoketa River, Delaware, Jones and Jackson	Fish of all sizes are available. Cage program has built up an excellent population of catfish in this lake. Good numbers of all sizes of cats.
	Mississippi River, Pools 9 through 15	Tremendous populations; best fishing is during hot weather during summer; fish atop wing dams, in chutes, in channels and along the channel borders and along snag piles; plastic worms baited with stink bait best when fished with a sliding sinker; no limits on this species.
	Shell Rock River, Butler Turkey River, Clayton Upper Iowa River, Allamakee	Most abundant size is 1 to 3 pounds; try fishing shallow riffles in the fall. Rocky shorelines and below snags will both be good bets below Elkader.
	Volga, Fayette	Many good-sized fish from below the lower dam to Hwy. 76 bridge; try along rocky shorelines or below riffles for moderate-sized fish. Annual fingerling plants have established an excellent catfish population; very large cats are occasionally taken from this lake.
	Wapsipinicon River, Buchanan	Large population below Independence; fish of all sizes with 2- to 3-pounders most common.



Ron Johnson

excellent on a "rising river" and success poor on a "falling river." The summer and early fall period of low and stable river flows is also a favored time for "cats."

Bluegill -- The weeks just before and after the spawn (around 75°F) are the best. The males are aggressive in guarding their nests and will attack small baits and lures entering "their space." Mid-summer months are also productive, but in the deeper water areas with structure. During

summer low-flow conditions, the Mississippi River wing dams frequently produce good-sized "gills." The first few weeks after ice-up is another peak time for bluegill fishing.

Largemouth Bass -- By far the most productive period is the pre-spawn period when the water temperature ranges from 55 to 62°F, and the fish are very actively feeding in shallow water. The fall months from mid-September to when the water cools to about 50°F are also good

when the bass are shallow and stocking up on forage for the winter months.

Trout -- The trout streams are generally good throughout the April to November stocking season. The fall months are particularly good as angling pressure and streamside disturbance are reduced. An excellent time to fish the stream-reared trout populations (the put-and-grow streams and the special regulation streams) is just after a moderate rain when

Northeast

Crappie

Casey, *Tama*
George Wyth,
Black Hawk
Mississippi River,
Pools 9 through 15

Check the sunken and submerged tree tops for fish up to 1 pound.

Average size and numbers; fish the structure.

Numbers of large fish increased over the last year; May and October best; shiner minnows or small jigs are the most productive baits; fish in snags in slow moving current or dead water.

High numbers of quality fish; 18-inch size limit.

Try for trophy-sized lunkers along steep shores or riprap.

Many moderate-sized bass along the steep shores and face of dam.

Largemouth Bass

Casey, *Tama*
Hendricks, *Howard*
Meyer, *Winneshiek*
Mississippi River,
Pools 9 through 14

Still the largest bass population in the state; best during the pre-spawn in May and the fall months near backwater structure; 14-inch length limit.

Numbers of 15- to 20-inch fish remain high.

Many sub-legal-sized bass along steeper shorelines and the dam riprap.

Northern Pike

Sweets Marsh Segment B
(Martin's Lake), *Bremer*
Volga, *Fayette*
Cedar River,
Black Hawk & Bremer

High water in 1993 was beneficial for spawning; these fish are now over 20 inches.

Mississippi River,
Pools 9 through 11

May be our most under-utilized sport fish on the Mississippi River; very strong populations with many fish 5 to 8 pounds, some up to 15; fish the shallow backwaters in spring -- the mouths of cool-water tributaries, deeper holes in summer.

Sweet Marsh Segment B
(Martin's Lake), *Bremer*

Annual fingerling stockings have resulted in good numbers of 5- to 10- pounders. Wapsipinicon River,

Buchanan, Black Hawk
and *Bremer*

Excellent spawning conditions in 1993 will result in very abundant 20- to 25-inch fish; pike over 10 pounds present.

Smallmouth Bass

Cedar River, *Bremer* &
Black Hawk
Cedar River, *Mitchell* and
Floyd

Excellent habitat is present downstream from Waverly and Waterloo.

Best habitat upstream of Charles City to state line; try the catch-and-release area from Otranto Dam to St. Ansgar.

Maquoketa River,
Delaware

Catch-and-release area below Lake Delhi Dam is best bet for large smallmouth.



Ron Johnson

the normally crystal clear water has a slight color tinge. During this brief period, the angler has a distinct advantage.

Crappie -- Like their cousin the bluegill, male crappie become very aggressive during the pre-spawn and spawning period (58 to 68°F), normally in May. The cooler fall months can also be very good. Again, like the bluegill, the early ice fishing period is an excellent time for crappie as well.

Northern Pike -- The hot months of July and August are

the best. Big bobber fishing with a live chub in the deeper backwater areas is very effective. During these hot months, also seek out areas where cooler spring flows or a trout stream enters larger, pike-holding rivers. These cooler waters act like a magnet on northerns at this time.

Smallmouth Bass -- When the streams are clear enough, the pre-spawn period from 50 to 60°F is an excellent time for "smallies." The clear and

Trout

Mississippi River,
Pools 9 through 11

This species is expanding their range and populations; fish current along riprap, wing dams, rocks, cut banks and in snag piles; late summer and fall are most productive periods when fishing with live minnows or crayfish.

Shell Rock River,
Butler & Floyd
best locations.
Turkey River, *Fayette*

Good areas scattered throughout this reach; try a canoe float to pinpoint

River is in better shape since high water a year ago; stay in deep water areas or along rocky shorelines; best chances from Eldora through Elgin and below Elkader to Garber

Upper Iowa River,
Howard, Winneshiek and Allamakee

Best canoeing and smallmouth bass stream in Iowa; fishing better below Decorah; canoe traffic heavy above town.

Volga River, *Fayette*

Small, scenic stream with excellent population of bass; shallow in many areas so be prepared to wade.

Wapsipinicon River,
Buchanan

Concentrate below Independence and in areas that have high-quality rock bottoms.

Bloody Run, *Clayton*

Stocked with catchable rainbows and browns from April through October; one of Iowa's largest trout streams; contains a special regulations segment with a 14-inch length limit on browns and artificial lure only restriction.

Clear Creek, *Allamakee*

Stocked twice per month, April through October with catchable browns and rainbows; improved fishing area on lower segment with handicap access.

Ensign Hollow, *Clayton*
French Creek, *Allamakee*

Catch-and-release stream; excellent habitat and quality-sized brown trout. Lower segment stocked with catchable rainbows and browns from April through November; upper segment has reproducing browns; entire stream has excellent habitat and walk-in access.

Joy Springs, *Clayton*

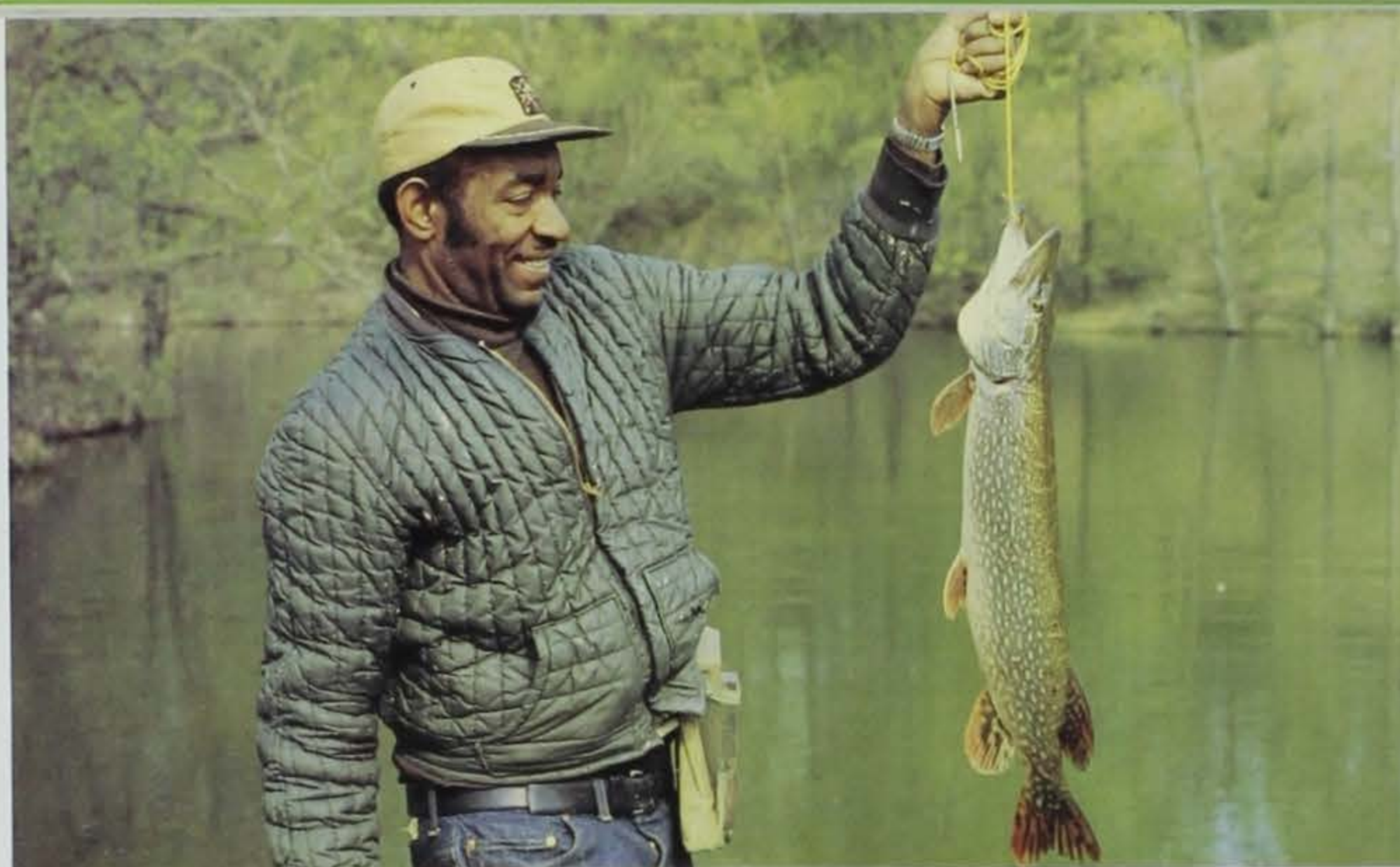
Stocked with rainbow trout from April through October; excellent retention of stocked trout.

Little Mill Creek,
Jackson

Major habitat improvements completed in 1994; stocked with catchable and fingerling brown trout.

Pine Creek, *Allamakee and Winneshiek*

Stocked with catchable brown trout twice per month from April through November; walk-in access in a very scenic and wild area.



Wayne Lonning

stable water conditions of fall also result in good smallmouth angling, often with good action continuing right into November.

Armed with the location of the best "fishin' holes" and the best times to pursue those species, the only thing left is the fun part -- the doing. I sincerely hope that your angling enjoyment in 1995 is surpassed only by the beauty of the waters and the countryside of northeast Iowa.

Northeast

Sny Magill & North
Cedar Creek, *Clayton*

Sny Magill is a long stream with good flows; stocked with catchable rainbows and browns from April through November; excellent access. North Cedar is a small tributary stocked with browns from May through November with walk-in access; brook trout stocked in the upper end.

Spring Branch, *Delaware*

Major habitat renovation planned for 1995; 14-inch length limit on all trout species including brook trout.

Trout Run, *Winneshiek*

Stocked with catchable-size trout from April through October; located on grounds of Decorah Trout Rearing Station where there is excellent angler access.

Walleye

Cedar River,
*Black Hawk, Bremer,
Chickasaw & Floyd*

Best angling below dams in the spring, fish up to 10 pounds not uncommon; population has been enhanced by fingerling stocking the last five years.

Mississippi River
Tailwaters,
Pools 9 through 15

Strong populations exist upriver; strong year class in 1992 will result in excellent fishing this year; tailraces of navigation dams are most productive in fall and winter with excellent wing dam and riprap fishing occurring during spring, summer and fall; daily possession limit is six fish per angler and the length limit for walleye is 15 inches.

Mississippi River
Wing Dams,
Pools 9 through 15

Best from May through October at low flows; slow troll crawlers, leeches or plugs bumping the rocks; 15-inch length limit.

Wapsipinicon River,
Buchanan

The stocking of fingerling fish has resulted in a very good population; 13 pounder caught in 1994.

Freshwater Drum

Mississippi River,
Pools 9 through 15

Super abundant in the Mississippi River; bottom-feeding and schooling species most vulnerable during summer and fall; best baits are garden worms, nightcrawlers, live minnows or crayfish; monster drum more than 30 pounds are taken on large crayfish in deeper pools or behind wing dams during late summer; excellent for table fare when properly filleted and cared for in the field.

Southeast Iowa

by Stephen J. Waters
regional fisheries supervisor,
southeast Iowa



I cannot think of a more delightful way to start the fishing year than by chasing channel catfish soon after ice-out.

When water temperatures reach about 50°F catfish go on a feeding spree, feeding on fish that have died during the winter. Fish your bait in the shallower (two- to six-foot), warmer portion of a lake or river with the wind blowing across or toward you. Use an egg-type sinker to lighten the bait and set the hook after a short run. The best areas for

early spring catfish angling are lakes Rathbun, Coralville, Darling, Pleasant Creek, Kent, Macbride, and the Mississippi River and all inland rivers.

The Mississippi is Iowa's most diverse fishing hole! "Mr. Mississippi Whiskers" can be caught in nearly all parts of the river using a variety of baits, but best bets are above and below wingdams and riprapped heads of islands where there is a current. Stumpfields and riprapped shorelines are

hotspots during the spawning period.

The Great River's walleye and sauger angling is what legends are made of. The navigation lock-and-dam habitat produces great catches in late winter, early spring and late fall. Jigging sonars or jig and minnow combinations are highly effective. Wingdam fishing during summer and early fall will also produce stimulating action. Try backtrolling crankbaits or three-way nightcrawler rigs on the

Southeast

Species	Lake or Stream County, Comments	
Bluegill	Mississippi River	Pool 16 -- Andalusia backwaters, Credit Island Slough, Wyoming Island Slough. Pool 17 -- Big Timber, Cleveland Slough, Hidden Acres, Bogus Island, Blanchard Slough, and Eagle Fill. Pool 18 -- Huron Island, Burnt Pocket, Johnson Slough and Dasher Chute. Pool 19 -- Burlington Island, Turkey Chute, Blackhawk Bottoms, Lead Island Chute, Niota weedbeds, Rabbit Island riprap, Devils Creek weedbed, and Gray's Bay. Good fishery if sufficient water levels.
	Odessa, Louisa	Exceptional angling -- best chance for a trophy.
	Farm Ponds throughout southeast Iowa	Good quality, 7- to 8-inches, low numbers.
	Pleasant Creek, Linn	Average harvest size 7- to 8+inches.
	Geode, Henry	Average harvest size 6- to 7-inches.
	Miami, Monroe	Good numbers, 6- to 8-inches.
	Hannen, Benton	Average harvest size 8 inches, but low numbers.
	Hawthorn, Mahaska	All sizes; easy shoreline access.
	Kent, Johnson	Good for 6- to 8-inch fish.
	Iowa, Iowa	Average harvest size 6- to 9-inches; low numbers.
	Keomah, Mahaska	Average harvest size 6- to 7-inches.
	Diamond, Poweshiek	Average harvest size 6- to 8-inches; low water levels due to spillway repair.
	Red Haw, Lucas	Good numbers of 9- to 10-inch fish.
	Union Grove, Tama	All pools excellent.
Channel Catfish	Mississippi River	Good to excellent.
	Inland Rivers	Exceptional fishery; all sizes.
	Rathbun, Appanoose	Exceptional fishery; all sizes.
	Coralville, Johnson	Lots of 14- to 18-inch fish.
	Otter Creek, Tama	Good for 1- to 3-pounders.
	Diamond, Poweshiek	Excellent fishery; 12- to 16-inches average.
	Kent, Johnson	Good for a variety of sizes.
	Miami, Monroe	Good for a variety of sizes.
	Macbride, Johnson	Good for a variety of sizes.
	Darling, Washington	Good for a variety of sizes.

upstream side of the wingdams and on't forget, the 15-inch size limit.

The Mississippi River also produces excellent catches of white bass, drum, carp, crappie, bluegill and largemouth bass. White bass frequent similar habitats of walleye and sauger, and serve as a great bonus fish.

Look for crappie, bluegill and largemouth bass in the rivers backwaters near stumpfields, brush and vegetation. Remember, there is a 14-inch length limit on

largemouth bass.

Interest in flathead catfish seems to have reached a new high in southeast Iowa due primarily to great fishing for these "big ones." Bank pole or rod and reel, using green sunfish or bluegill for bait, is the preferred technique. Fish deep holes in summer and fall, and around bridge pilings in interior rivers and in side channels, eddy areas and below locks and dams on the Mississippi River.

For bluegill and crappie traditional baits and tech-

niques are highly successful, but why not try a new angling technique or two. Don't put your ice-fishing equipment away when the warm season arrives. Keep your ice flies, waxworms and small bobbers handy because these baits often will out produce the traditional bluegill baits. And, why not try fly fishing for spring crappie and bluegill? What could be more fun for a bluegill angler than fly fishing with small surface poppers during the morning

and evening hours of summer for big bluegill. Have you tried drift fishing for bluegills and crappie during the summer when they have moved away from shore and are suspended about 8 to 12 feet below the surface? Lower your baits to this level, and let the wind or trolling motor push you around the lake. Note where you catch fish and return for a similar drift pattern. I believe you'll find new techniques, bait and equipment can revitalize one's interest in angling, and

Southeast

Crappie

Geode, *Henry*
Bob White, *Wayne*
Iowa, *Iowa*
Rathbun, *Appanoose*

Average harvest size 15- to 18-inches.
Average harvest size 12- to 10-inches.
Average harvest size 15- to 18-inches.
Superb crappie lake; average harvest size 9- to 10-inches; trophy fish available.

Largemouth Bass

Mississippi River
Coralville, *Johnson*
Odessa, *Louisa*
Geode, *Henry*
Iowa, *Iowa*
Darling, *Washington*
Miami, *Monroe*
Diamond, *Poweshiek*
Macbride, *Johnson*
Union Grove, *Tama*
Mississippi River
Farm ponds throughout
SE Iowa

Same areas as in bluegill section.
Excellent for 8- to 10-inch fish; 13- to 15-inches common.
Average harvest size 8- to 10-inches - open to Mississippi River
Average harvest size 8- to 10-inches
Good numbers from 8- to 10-inches.
Average harvest size 8-inches; trophy fish available.
Average harvest size 8-inches.
Strong year class of 10- to 11-inch fish.
Average harvest size 7- to 10-inches.
Average harvest size 9- to 10-inches.
Same areas as bluegill section.

Walleye

Odessa, *Louisa*
Miami, *Monroe*
Pleasant Creek, *Linn*
Iowa, *Iowa*
Darling, *Washington*
Geode, *Henry*
Macbride, *Johnson*
Coralville, *Johnson*
Union Grove, *Tama*
Sugema, *Van Buren*
Diamond, *Powershiek*
Wapello, *Davis*
Hawthorn, *Mahaska*
Mississippi River
Rathbun, *Appanoose*
Macbride, *Johnson*
Des Moines River,
Wapello
Coralville, *Johnson*

Best chance for a trophy -- great fishing.
Variety of sizes -- open to river.
Good numbers; various sizes.
New 18-inch size limit; excellent catch and release.
Good numbers; various sizes
Variety of sizes; lots of structure.
Good catch-and-release -- some trophy fish.
Getting better every year; lots of 1- to 3-pounders.
Average size 14- to 16-inches; excellent in spring.
Good catch-and-release.
18-inch size limit; good catch-and-release.
Good numbers of 1- to 3-pound fish with trophy sizes present.
No-kill regulation; lots of 10- to 13-inch fish; lots of structure.
Good numbers of slot (12- to 16-inch) fish.
Seek locks and dams and wingdams; excellent for sauger, too.
Best angling late spring to summer.
Good numbers of 12- to 14-inch fish; trophy fish available.

Hot action below the Ottumwa hydropower dam.
Good in spring and late fall in upper end.

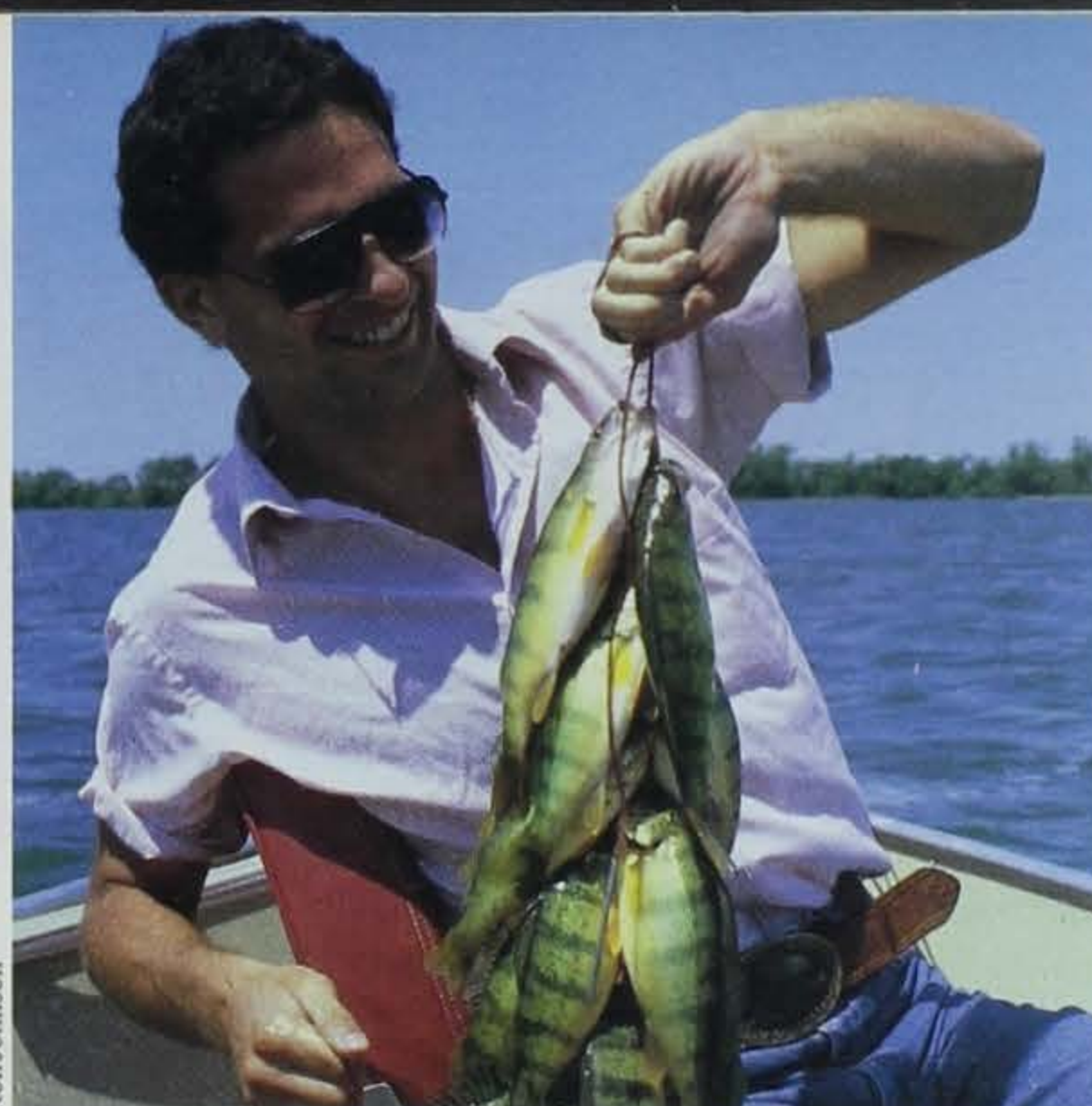
enhance your fishing experiences.

A no-kill regulation for largemouth bass has been implemented at Lake Wapello to produce high bass catch rates and protect the lake's big bass for catch-and-release trophy bass fishing opportunities. This year's bass will be on the small size (10 to 13 inches), but the angling will be fun.

Effective bass size regulations are a benefit to all anglers. With an excellent bass population, these important predators can whittle away at

the panfish, improving their size for positive angler benefits. Give size limits a chance, release a bass and do as the bass does -- eat the panfish and enjoy the best of both worlds.

Don't forget about the great bass and bluegill fishing in the numerous ponds throughout southeast Iowa. Because of their small size, they are the first impoundments to warm up and excellent places to start your fishing year. Plus, they are the best fishing holes to hang a lunker.



Ron Johnson

White Bass

Mississippi River
Rathbun, *Appanoose*
Coralville, *Johnson*
Macbride, *Johnson*
Des Moines River,
Wapello
Mississippi River
Inland Rivers
Rathbun, *Appanoose*
Coralville, *Johnson*
Odessa, *Louisa*
Darling, *Washington*
Macbride, *Johnson*

Seek locks and dams and wingdams
Lots of 12- to 15-inch fish.
Lost of 12- to 16-inch fish; best in late summer.
Variety of sizes.

Hot action below the Ottumwa hydropower dam.
Good angling in all pools.
Good angling in major rivers.
High number of smaller sizes.
Lots of smaller sizes.
A variety of sizes available.
Lots of 2-pounders.
Lots of 2- to 4-pound fish.

Flathead Catfish

Mississippi River
Skunk, and lower Iowa,
Des Moines and
Wapsipinicon Rivers

Best below locks and dams, wingdams, and side channels.

Big fish in deep holes during summer and around bridge pilings.

Wipers

Iowa River, *Johnson*
Coralville, *Johnson*

Strong year class of 14-inch fish, all sizes available.
Tailwaters best; fish to 10 pounds.

Saugeye

Iowa River, *Johnson*
Coralville, *Johnson*

Exceptional fishery; lots of 2- to 4-pound fish with 10 pound fish available.
Best in spring and late fall above Mehaffey Bridge.

Redear Sunfish

Hawthorn, *Mahaska*
Iowa, *Iowa*
Geode, *Henry*
Diamond, *Poweshiek*

Average harvest size 8+ inches.
Average harvest size 7- to 10-inches.
Average harvest size 8+ inches.
Average harvest size 8 inches.

Bullhead

River backwater areas
Darling, *Washington*
Odessa, *Louisa*
Keomah, *Mahaska*
Macbride, *Johnson*
Otter Creek, *Tama*

7- to 12-inch fish.
8- to 10-inch fish.
8- to 11-inch fish, open to Mississippi River.
10-inch average fish.
Best east of causeway in May and June.
Lots of 10-inch fish.

DNR's Role In Asbestos Removal

by Kathryn A. Stangl

Until about 25 years ago, asbestos was the "miracle mineral." Its physical properties made it one of the most useful and widespread materials in consumer and building products in homes, schools, and factories -- virtually everywhere. But in 1971, asbestos became one of the first targets of the new Clean Air Act and was classified as a hazardous air pollutant.

Numerous studies have shown that asbestos can cause cancer, in addition to permanent lung damage. Breathing the light, airborne asbestos fibers poses deadly health risks and the diseases caused by asbestos are rarely curable. The very characteristics that made asbestos the miracle mineral make it one of our more dangerous air contaminants. It is only when the asbestos fibers get into the air we breath that this once cure-all becomes a true menace.

All Around Us

Across the state, everything from schools, youth clubs, shopping malls, motels, post offices, utility tunnels, American Legion halls, auto shops, private residences and remodeled health care facilities have all been recent asbestos removal sites.

Asbestos is the common name for a group of materials -- natural minerals known as silicates -- that separate into thin but strong fibers. When these fibers are present in the air they are usually invisible to the naked eye. A single fiber magnified 1000 times is barely the size of a human hair. These fibers are much smaller and more buoyant than ordinary dust particles and float almost indefinitely in the air. This makes it very easy for them to be inhaled or swallowed and once the fibers enter the body they can cause a number of serious diseases. (See the box on page 41.)

Because these fibers can be woven, are not affected by heat or chemicals and do not conduct electricity, they were widely used in many industries, especially

What and Why



photos -- Brad Azeltine

▲ Asbestos can be found in many areas such as the wrapping around this boiler. It must be properly removed to protect public health.

since World War II. Asbestos has been used for strengthening cement and plastic, in heat insulation, fireproofing, sound absorption, electrical switchboards, fire-resistant building materials and brake linings. It is estimated that patents have been issued for more than 5,000 different asbestos containing-products. Asbestos

fibers have been mixed into more than 3,500 building materials and consumer products. Many building and decorating products -- everything from roofing materials to theater curtains and from floor tile and paint to ceiling tile and gaskets -- have asbestos. (See the kinds of asbestos on page 41.)

Health Risk

While asbestos was once considered a health risk only for asbestos workers we now know that it is a health threat to millions of other people who are exposed to asbestos fibers in the air they breathe. Unless it is completely sealed into a product, asbestos can easily break into a dust of tiny fibers.

Once asbestos gets into the body, it remains there almost indefinitely and can move from the lungs to almost all other parts of the body, including the brain and sex organs. No safe level of asbestos has been found. Any exposure to asbestos carries some level of health risk and people exposed to low levels for a very brief period have later contracted the otherwise relatively rare cancer, mesothelioma. (See "diseases" box below.) Anyone who smokes cigarettes and has asbestos exposure has a five times greater chance of contracting lung cancer than a cigarette smoker who has not been exposed to asbestos.

Asbestos exposure is especially dangerous for children. If they are exposed early in life, they have more time for asbestos-induced cancer to develop. Because the particles are so small, buoyant and invisible, it can be easy for one family member exposed at a site to carry home fibers on their skin, hair, shoes, clothes or other belongings, and expose other family members.

Airborne

Asbestos becomes a health hazard only when the fibers are released into the air. Asbestos material that can be

Types of asbestos

Chrysotile, or white asbestos has, fine, silky, white fibers that can be spun into yarn. In the past, this material was used for protective clothing and heat insulation.

Amosite asbestos has straight, brittle fibers that are light gray to pale brown. Amosite is widely used for products such as fire-resistant insulation board.

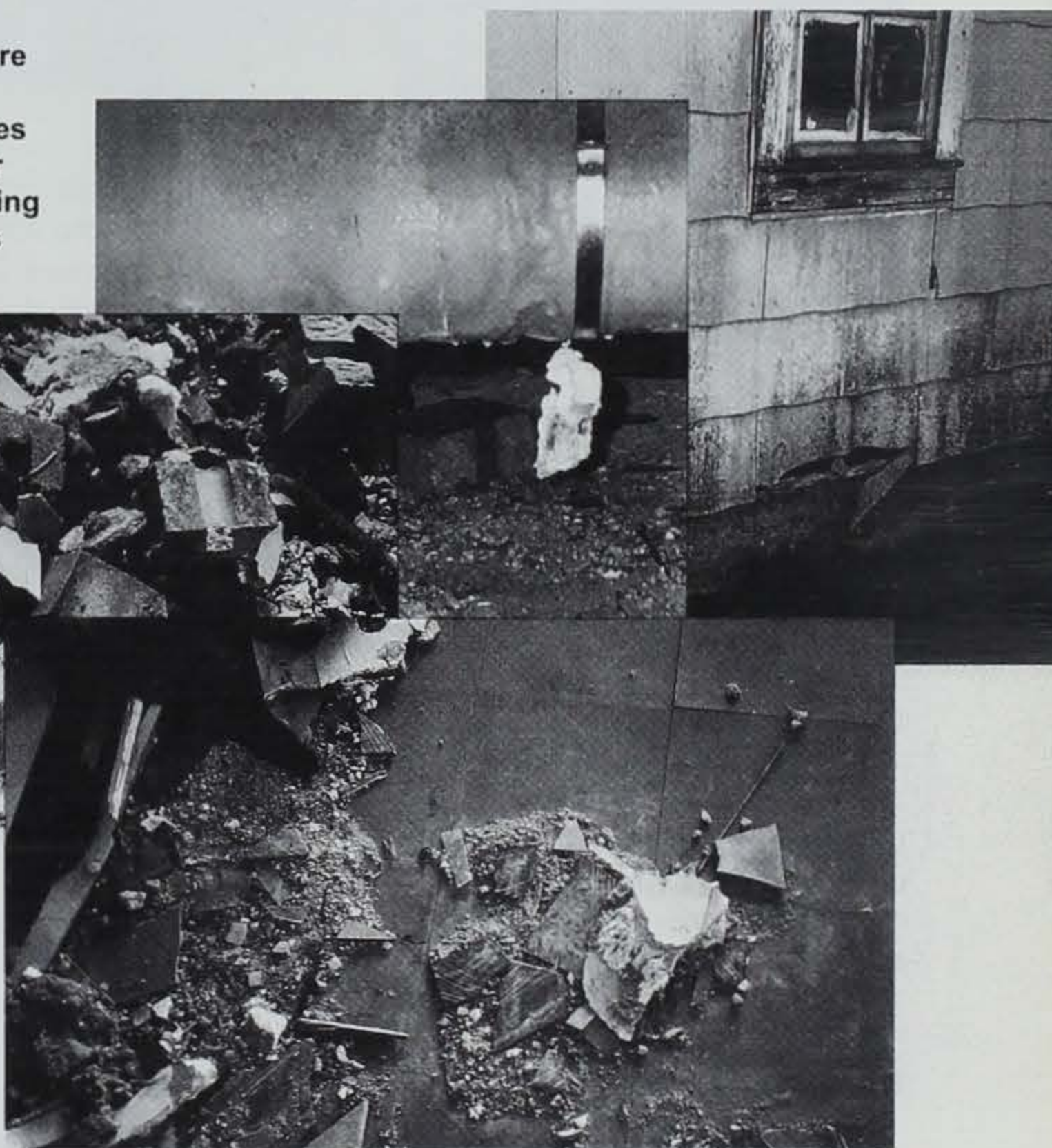
Crocidolite or blue asbestos has straight blue fibers. It is the strongest of the fibers and has resistance to rupture and chemicals. It is often used to make asbestos cement pipes.

▶ Asbestos fibers are released when siding (right), pipes (center) and other asbestos-containing building products are destroyed.



photos -- Brad Azeltine

▶ The asbestos fibers in floor tiles can be released when the tiles are broken, gouged or sanded.



Diseases Caused By Asbestos

Asbestosis -- a chronic disease of the lungs which causes scarring, makes breathing more difficult, causes shortness of breath, permanent lung damage and increased risk of dangerous lung infections. It can cause death.

Cancer -- breathing asbestos fibers can cause lung cancer. Since some of the fibers are rejected by the lungs, move up the throat and are swallowed, breathing asbestos can also cause cancer of the larynx, esophagus, stomach, intestines and rectum.

Mesothelioma -- a cancer of the thin membranes that line the chest and abdomen. It almost never occurs in people who have not been exposed to asbestos. It is always fatal.

EPA only requires asbestos removal to prevent significant public exposure to airborne asbestos fibers during building renovation or demolition activities.

crumbled in the hand -- that is, "friable" -- releases these fibers. Asbestos insulation sprayed on a ceiling is an example of friable material. Vinyl asbestos floor tile, commonly found in many older buildings, including residences, schools, offices and public buildings, is not generally friable. The asbestos fibers are firmly bound or sealed into the tile and are released only when the tile is cut, ground or sanded. Those conditions usually only exist when a building is being renovated or demolished.

As with other hazardous air pollutants regulated under the Clean Air Act, the

► Improper worker protection and inadequate protection equipment are potential OSHA violations but are not covered under DNR inspections.

▼ Negative air pressure containments that seal off the renovation or asbestos removal areas are necessary for public safety.



EPA developed regulations to protect the general public. These regulations protect the public by minimizing the release of asbestos fibers during activities involved in the processing, handling and disposal of asbestos-containing materials and specify work practices to be followed during renovations and demolitions. The regulations are contained in the National Emission Standards for Hazardous Air Pollutants (NESHAP).

Renovation/Demolition

The DNR administers these regulations in Iowa and must be notified by the owner of the building or the construction business operator before the start of renovation or demolition at a "covered facility." Covered facilities include any commercial, public, industrial or residential structure, installation or building or any ship or active or inactive waste disposal site. Residential buildings with four or fewer dwelling units are exempt unless they are being renovated or demolished as part of a commercial, public, industrial or institutional project. For example a house knocked down to build a road or a convenience store or a single-family



home demolished as part of an urban renewal project are covered facilities. Failure to notify the department can result in fines and ultimately in referral to the attorney generals office.

Fiber Containment

The point of the regulations is keeping asbestos fibers out of the air. What would you see at an asbestos removal site? You might see the DNR inspector wearing full protective gear and a respirator and following strict decontamination procedures. While the inspector may be dressed like someone ready to "walk in space" the precautions are extremely important and make clear the danger of any exposure to asbestos fibers. There might be building areas sealed off with plastic (and with negative air pressure so that particles remain in the enclosure) and sealed bags with very wet material.

If the inspector finds regulated asbestos containing material (RACM) at the site these specific safety practices must be followed:

- removal of all RACM before they are disturbed or before access to the material is not possible;
- keeping RACM "adequately wet" before, during and after removal (this means mixing/soaking the material with water so no particles can get into the air);
- conducting all renovation /demolition activities in a way that produces no visible emission to the outside air; and
- safe handling and disposing of all RACM.

Dry, friable asbestos on the ground outside a removal job is a violation as is not keeping the material "adequately wet," faulty containment procedures or improper disposal.

Safety Through Compliance

Since the DNR began its phase of the program in 1992 the department has conducted 240 inspections. One-third of these were based on complaints from the public and the rest were routine compliance inspections.

Sanctions against violators vary and can range from written notices to large fines. Notices of violations are issued to owners or operators who violate notification requirements. However, depending on the offences, EPA can recommend fines up to \$25,000 per day per violation. Violators of the work practice or disposal standards can be subject to either written warnings, administrative orders or civil penalties, depending on the seriousness of the violation.

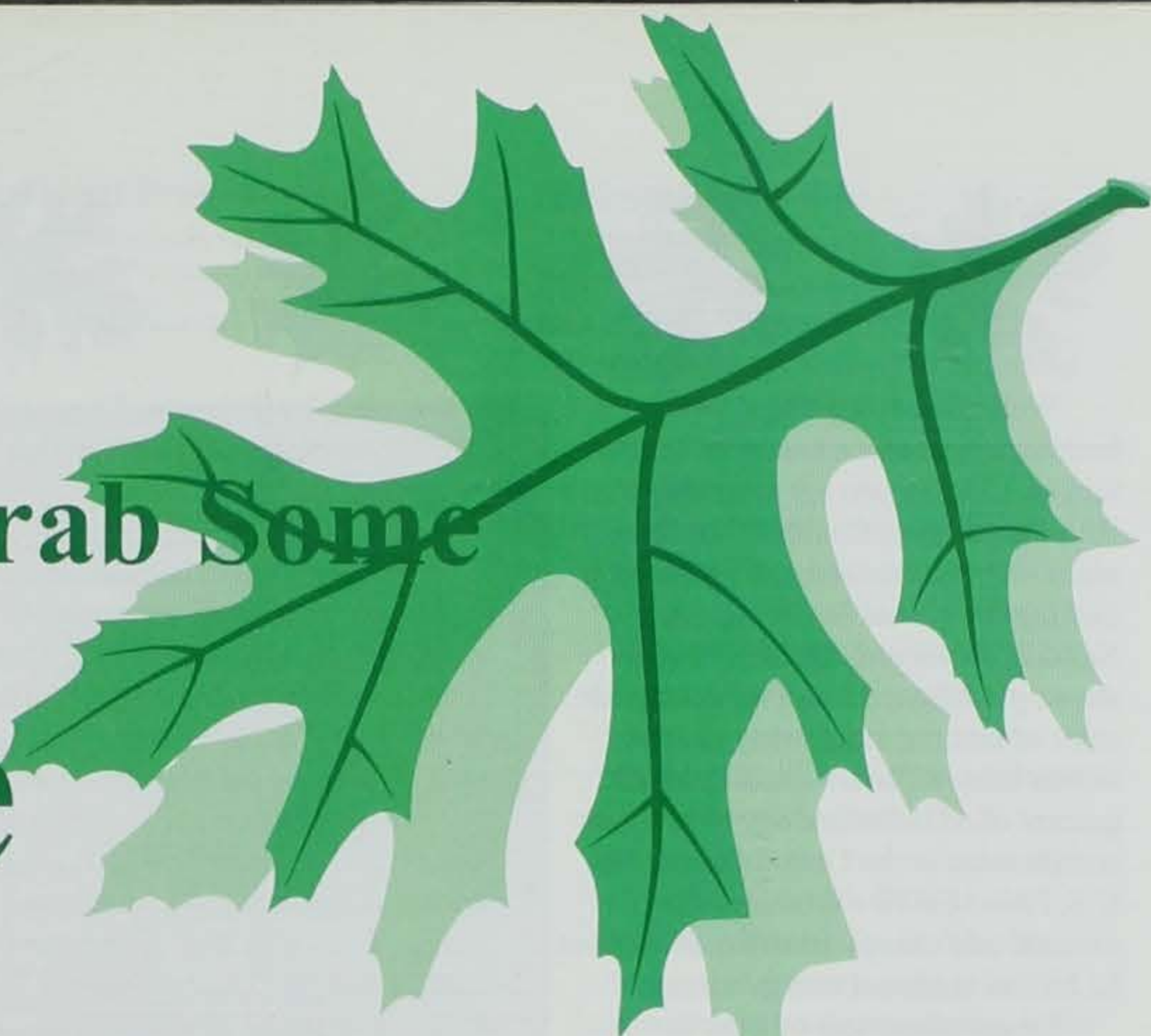
Brad Azeltine, an Environmental Specialist II at the DNR's central office in Des Moines has been instrumental in the success of the DNR's asbestos removal program. He developed and implemented the department's asbestos NESHAP program. The program has gotten special recognition from EPA for its effectiveness. Azeltine's "one person show" has greatly contributed to the protection of the health of citizens across the state.

If you want additional information about asbestos contact the EPA at (913)551-7020 or EPA, Asbestos Control Section, 726 Minnesota Ave. Kansas City Kansas 66101 or call Azeltine at (515)281-8443.

Asbestos is still all around us, exposure is a healthrisk, the danger is in airborne particles, and protection is afforded through specific work practices at renovation/demolition sites that keep particles out of the air. The "what" is safe work practices and the "why" is your continuing good health.

Kathryn A. Stangl is an information specialist with the department's Information and Education Bureau in Des Moines.

Plant a Tree and Grab Some Shade



by Craig Stark

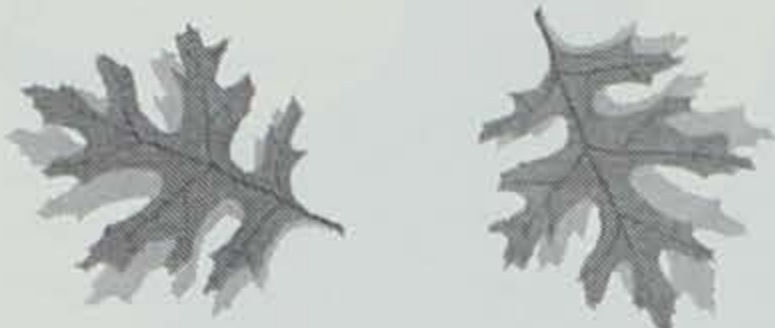
Celebrate Earth Day, Arbor Day, and improve the environment -- plant trees! Trees save energy, provide wildlife habitat, reduce soil and wind erosion, conserve water and create noise buffer zones. Additionally, trees can increase property values by 10 to 15 percent. They enhance and beautify the landscape, reduce glare, provide privacy, screen harsh scenery and create feelings of general well-being.

Earth Day was founded on April 22, 1970. A Schwedler maple tree was planted at Des Moines' Drake University campus in recognition of the event. Arbor Day's roots were planted in 1872 -- its objective was to celebrate the planting and care of trees. It is annually recognized on the last Friday of April.

Trees Are Cool -- Literally!

Studies show that summer temperatures in cities have risen two to four degrees F during the last 40 years. About three to eight percent of the current electricity demand in cities is used to offset this temperature increase. The U.S. Environmental Protection Agency (EPA), the U.S. Department of Energy (DOE) and the U.S. Forest Service established a Federal Cool Communities Program to help solve this problem.

DNR photo



Well-placed vegetation around buildings can reduce energy consumption by 15 to 35 percent according to the EPA Publication, *Cooling Our Communities -- A Guidebook on Tree Planting and Light-Colored Surfacing*. A National Academy of Sciences study shows planting trees and lightening the color of urban surfaces may save 50 billion kilowatt hours annually or 25 percent of all the electricity used for air conditioning in the United States. The U.S. Forest Service estimates the national tree canopy contributes to about \$2 billion in annual energy savings.

Proper placement of trees in relationship to window locations can significantly reduce energy used for air conditioning. Deciduous trees shading west, east and southwest facing windows provide the greatest cooling savings in homes by providing shade in summer. These trees will, in turn, lose leaves in the fall, allowing the winter sun to warm homes.

How do trees save energy? Shade from trees can save energy by shielding buildings from the scorching summer sun. Effective shading can lower indoor temperatures by as much as 20 degrees F. Transpiration, which provides the cooling of surrounding air through the evaporation of water from leaves, is a significant energy saver. One tree can transpire enough water in a day to equal the cooling effect of five air condition-



DNR photo



ers running for 20 hours. Temperatures can decrease nine degrees F within the immediate vicinity of trees.

Using less electricity for air conditioning reduces carbon dioxide emissions from coal used to generate electricity for air conditioning. Coal is used to generate more than 80 percent of all electricity used in Iowa. Tree shading and the cooling effects of transpiration help reduce adverse global warming climate changes that stem from carbon dioxide -- one of the greenhouse gases. Trees also lock up and store carbon dioxide. The average city tree locks up about 13 pounds of carbon annually. City trees average about 12 tons of carbon storage per acre based on a 28 percent tree canopy cover.

Evergreen tree windbreaks planted close together on the north and west sides of homes, with two or more rows perpendicular to the prevailing winter winds, can save energy by reducing cold air leakage into homes. Windbreaks can reduce space heating of a typical home by 5 to 15 percent or more. Results from a Chicago Urban Forestry Study estimated annual heating savings of about \$50 per tree for large, old three-story apartment buildings. Results from this study also show that three correctly placed trees could save a Chicago homeowner \$50 to \$90 a year.

Trees are economically desirable. Planting and maintaining a green ash tree for 30 years in Chicago is reported to have a net benefit of \$402. According to the U.S. Forest Service, benefits from trees are two or three times greater than the costs of planting and proper care.

In addition to saving energy, trees have terrific potential as a renewable energy resource. Half the world uses wood as an energy resource. Wood currently accounts for only about four percent of the total U.S. energy resources, but could supply up to 20 to 30 percent of the total national fuel resources. A wood waste business-



heating videotape, *Wood Energy Works in the Midwest*, is available from the Department of Natural Resources. Fast-growing trees like cottonwoods, hybrid poplars and silver maples could be harvested in five to seven years as a viable Iowa renewable energy crop.

Selection, Placement and Proper Care

To achieve optimum energy savings, select the proper tree and planting location, and take good care of it. Slow- to moderate-growing trees are usually better than fast-growing trees which are more susceptible to disease and damage from ice storms, winds and heavy snows. Trees grow to different sizes, so you should select a tree that will fit the site at its maturity. Plant trees so they will not interfere with foundations, sidewalks, and underground and overhead utility lines. Before planting trees in public places, check local ordinances to see if any restrictions apply.

Tree growth and mortality rates significantly influence energy savings and carbon storage. Correct tree and proper site selection, and good care are critical to achieving maximum energy savings. Excellent educational brochures are available about tree species, selecting the right planting site, and proper watering, pruning and fertilizing from the DNR, Iowa State University



DNR photo

Cooperative Extension Service, utility companies, Trees Forever and the National Arbor Day Foundation.

Community Tree Planting Programs

Trees Forever, an Iowa non-profit organization, was founded in 1989 on the belief that people working together can and do make a difference. Trees Forever has shown that partnerships between utilities, communities, the DNR and others are successful in implementing tree planting programs. Trees Forever helps Iowa utilities comply with tree planting legislation found in the 1990 Iowa Energy Efficiency Act.

In 1994, six Iowa investor-owned utilities contributed approximately \$1.1 million which was matched by local community contributions to fund the Trees Forever planting programs. IES Utilities, Interstate Power, Iowa-Illinois Gas & Electric, Midwest Gas, Midwest Power and Peoples Natural Gas cooperated with Trees Forever in establishing the programs in 243 communities.

Seventy-nine Iowa municipal utilities are initiating tree planting programs in 1995. The American Public Power Association is a national organization of municipal utilities. Their Tree Power program goal is to plant one tree for each municipal utility customer.

The Iowa Urban and Community Forestry Council publishes a quarterly newsletter, *Community Trees*. The DNR, Iowa State Cooperative Extension Service, Trees Forever and many others are members of this council.

You, too, could participate in a tree planting program or encourage your community to sponsor a tree planting program.

Educational Programs

You may be interested in Trees for Kids (TFK) and Trees for Teens (TFT). These DNR educational programs are



DNR photo

designed to teach students about the value of trees and encourage students to plant landscape-sized trees at schools and other public places. Program sponsors along with the DNR include the Iowa Nursery and Landscape Association, the Iowa Bankers Association, Peoples Natural Gas, Midwest Gas, the Iowa Wood Industries Association and Trees Forever. In 1993, these programs involved 3,300 teachers and 300,000 students. More than 64,000 trees were planted. The DNR has published two educational bulletins on Trees for Kids and Trees for Teens programs.


National Programs

Federal tree planting programs have been encouraged by the U.S. government. In 1990, President Bush announced the America the Beautiful Tree Planting Program. He described trees as a compact between generations.

President Clinton and Vice-President Gore have pledged to reduce greenhouse gas emissions to 1990 levels by the year 2000. The Climate Challenge Foundation Action Program has been established by the U.S. DOE to promote public-private partnerships in energy-efficiency technologies and activities. The U.S. DOE is also working with utilities developing cooperative forestry and carbon management programs similar to the Iowa Trees Forever programs.

The federal government's goal is to address accelerated tree planting with an objective of increasing national tree planting by 233 thousand acres (10 percent) per year within five years. The U.S. Department of Agriculture's Forest Service Stewardship Incentive Program (SIP) in the 1990 Farm Bill also encourages tree planting.

Joyce Kilmer wrote, "I think that I shall never see a poem as lovely as a tree." Trees do contribute to making Iowa beautiful, but can also be used to save energy.

So, include tree planting in your spring activities this year! Potential energy savings and desirable environmental effects are excellent reasons. Participate in state, federal or community programs that encourage tree planting, or make it your own "home improvement" project. Plenty of resources are available to help make the task an easy one. 

Craig Stark is a program planner for the department's energy bureau in Des Moines.





Learning and Living: Quality Recycled & S

It has been said that we live two lives: The life we learn with, and the life we live with afterward. Early on in our consumer lives, many of us learned to always buy *new* products. And, when a particular product was no longer wanted or used, the garbage can was our first -- and too frequently -- our only disposal consideration and/or option for resourceful products, their parts and packaging. It's been one of life's well-learned and long-lived lessons . . . until now.

Purchasing products made with recycled materials isn't new. For one example, today -- as in the past -- quality products such as ski jackets and sleeping bags continue to be stuffed with recycled plastic polyfill. But the emphasis on "buying recycled" is new, as manufacturers and consumers alike recognize the value of using reclaimed resources.

More recently, consumers are finding everyday goods such as beautiful, 100 percent cotton stationery made from blue jean manufacturing scrap, and natural patina picture frames fashioned from recycled timbers, fencing and

dilapidated homes. The consumer movement to buy recycled papers, environmental gifts, household goods and less toxic products has manufacturers retooling factories to allow for the wise use of recycling waste resources. This movement has resulted largely because consumer demand and economical technology have been at the forefront for producing quality and safe recycled products. It has been this movement that has brought the variety of recycled and less toxic products of today's market from the small specialty companies and mail-order catalogs to the aisles of local grocery and retail stores nationwide.

If you're wondering if you've recently purchased anything made with recycled materials, congratulations; you have! The *Conservationist* is printed on a minimum 10 percent post-consumer paper, and has been since 1990. Many newspapers, magazines, newsletters, stationery, gift cards and product packaging are also printed on post-consumer paper stocks. In fact, it's becoming hard *not* to buy recycled paper products.

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Sustainable Products

by Julie Kjolhede Photos by Ken Formanek

■ **Get the hang of it.** Just as fashions cycle with the times, the next sweat suit you purchase will likely be made from ketchup bottles. (Yes, really). But this cycle is not a fad. There's a shift taking place in the garment industry toward more environmentally sensitive raw materials and processing techniques. And this shift is the foundation from which many new fashions will be created.

Already, polyester t-shirts and sweatshirts made with 100 percent recycled PET #1 resins (like soda bottles) are being sold around the country. Other recycled textiles are being made by researchers at North Carolina State University and the Burlington Industries' denim division. This team has developed a way to recycle denim scrap back into yarn that's strong enough to be woven into jeans. Called "reused denim," this new line of jeans and garments is already being introduced by The Gap kids division and Levi Silver Tab. And

to further resourceful fashion statements, a franchise of stores is setting a new standard in the world of eco-fashion by redesigning salvageable used clothing into common sense, affordable -- yet stylish -- apparel.

■ **Walk your talk.** The Environmental Footwear Company produces the Deja™ Shoe. Made from recycled products and sustainable harvested materials from the rain forest, these

shoes are assembled using nontoxic, water-based adhesives. What's more, when you're finished with your Deja™ Shoes, return them to the company for recycling! Other shoe manufacturers producing shoes with recycled content (mostly recycled rubber used in the shoe's soles) include Nike, Reebok and Bass.

■ **Ecology begins at home.** We put so much time, energy and money into our living spaces. As the center of our well-being, a home's environmental characteristics often portray people's life habits and styles. Transforming your home into a more environmentally friendly, less toxic living space doesn't have to happen overnight. You can be on your way toward a smarter, healthier and safer habitat with small actions:

Replace a burned-out incandescent light bulb with a longer-lasting compact fluorescent bulbs. These energy savers can be found at most supermarkets.

Low-polluting, water-based paints and stains are



► Her hand tool, pot and rug all contain recycled material -- so do her shoes, socks and T-shirt!

available anywhere paint is sold. Some specialty paint companies focus on natural paints and stains made from organic plant oils, tree resins, beeswax, clays, chalk, essential oils, and plant and earth pigments. The manufacture, and use of natural paints is designed to have low impact on both the environment and the user.

Materials ranging from vinyl flooring to wood products containing little or no formaldehyde resins are available at many home centers and lumberyards. Consumer complaints about the toxic effects of the formaldehyde emissions from the glues in particleboard have manufacturers reformulating processes to include less toxic resins.

Carpet manufacturers are touting recycled polyester carpets. (It takes

only 36 PET #1 soda bottles to manufacture one square yard of polyester carpet!) Just ask your carpet distributor for carpeting made with recycled fibers, and also for those carpet brands carrying certification related to limited toxic fumes.

■ **NIMBY.** Not In My Back Yard? Maybe it should be! Some of the best products available on today's market are construction, landscape and recreational products made with recycled materials. If you're considering an addition to your home, remodeling or redecorating a room, purchasing new patio or deck furniture, updating your landscaping with timbers and mulch, or enhancing your plants and gardening with effective, organic compost, consider tried and successfully tested products made with recycled materials. The *Buy Recycled, Iowa!* product guide lists more than 200

companies that manufacture or distribute recycled products, and provides information on where and how to buy many of the previously mentioned products -- most of which are made right here in Iowa! To obtain a copy of this guide, refer to the Resources sidebar.

■ **Green giving.** Gift giving is the ideal opportunity to share your environmental awareness with others, while supporting businesses that are making sustainable quality products. If local businesses you patronize aren't already offering recycled or safer alternative products, ask retail managers to stock these types of merchandise, and then show your support with your resourceful dollars.

■ **Learn and live.** For additional information on a variety of recycled and environmentally sustainable products, call or write the sampling of product and

Resources*

While many recycled products are now available from local grocery and retail stores, the following list offers just some of these products available via mail order.

Buy Recycled, Iowa!

Waste Management Assistance
Division
Iowa Department of Natural Resources
900 East Grand Avenue
Des Moines, IA 50319
800/367-1025

A recycled content products guide introducing more than 200 manufacturers and distributors — mostly from Iowa — of recycled and reused sources for animal bedding, construction/renovation products, metal and miscellaneous products, pallets, drums, paper and plastic products, re-refined oil, tire and rubber products, and wood products.

BUILDING & CONSTRUCTION Center for Resourceful Building Technology

P.O. Box 100
Missoula, MT 59806
406/549-7678
Resource-efficient materials.

Environmental Construction Outfitters

44 Crosby Street
New York, NY 10012
800/238-5008
Environmentally conscious construction products and consultation services.

RECYCLED PAPERS, ENVIRONMENTAL GIFTS, HOUSEHOLD GOODS Real Goods

966 Mazzoni Street
Ukiah, CA 95482-3471
800/762-7325
Natural cleaners, recycled products for gifts and home, home energy and water-saving ideas.

Eco Design Company The Natural Choice

1365 Rufina Circle
Santa Fe, NM 87502
505/438-3448
Natural paints, stains and healthy home products.

Seventh Generation

155 Hercules Drive
Colchester, VT 05446-1672
800/456-1177
Mail-order catalog featuring 100 percent recycled paper products; organic and FoxFiber cotton jersey fabrics and clothing, and natural dyes.

The Green Toy Store

P.O. Box 982
Eureka, MT 59917
800/532-0420
Produces children's building toys made from 100 percent post-consumer plastic (HDPE #2 milk jugs). These Noch-Blox™ building kits include cabins, sand boxes and bird houses.

William Morrow and Company, Inc.

1350 Avenue of the Americas
New York, NY 10019
(book) Dadd, Debra-Redalia, "Sustaining the Earth: Choosing Consumer Products That Are Safe For You, Your Family and the Earth"
Covers the gamut of product categories from energy efficient to biodegradable, and assists consumers in finding



Put your work load on recycled-content office products, and not on the environment. The calendar, binder, pencils and paper all boast high levels of recycled material.

information sources (left), or contact the Waste Management Assistance Division, at 1-800-367-1025.

And please, learn about recycling. Whenever you can, buy recycled, and enjoy what will become one of life's well-learned and long-lived, resourceful lessons.

Julie Kjolhede is a planner with the department's Waste Management Assistance Division.

nontoxic, environmentally friendly products. May also be available from your local public library.

Earth Care

Ukiah, CA 95482-8507
800/347-0070

Recycled papers, household goods and environmental gifts.

Groves and Pringle (USA) Inc.

1172 East 130th Place
Thornton, CO 80241
303/252-1245

Traditional photo frames made from recycled Australian timbers.

RECYCLED MATERIALS

Alchemy Wearable Arts

P.O. Box 1007, 24 South Street
Lyndonville, VT 05851
802/626-9057

Jewelry made from rusted roadside refuse.

Deja Shoes

7165 Firloop, #200
Tigard, OR 97223
503/624-7443

Sneakers and shoes made from recycled materials.

Extredz

P.O. Box 3172
Buffalo, NY 14240-3172
800/665-9182

Recycled rubber vests, skirts and accessories.

Resource Revival, Inc.

800/866-8823
2342 Northwest Marshall
Portland, OR 97210
Produces belts, straps and dog collars made from 100 percent post-consumer recycled bicycle inner tubes.

Lion's Pride

2002 North French Road
Little Chute, WI 54140
414/731-4242
Recycled cotton and wool sweaters.

Patagonia Mail Order, Inc.

1609 Babcock Street
P.O. Box 8900
Bozeman, MT 59715
800/638-6464
"Synchilla" pullovers made with recycled PET (soda bottles) plastic.

Transistor Sister

3016 60th Avenue Southwest

Seattle, WA 98116-2807
206/938-5373

Jewelry made from scrap circuit board parts.

VB Recycled Raggs

320B Laskin Road
Virginia Beach, VA 23451
804/428-3801
Reconstructed secondhand clothes.

Recycle Revolution

212 West 10th Street
Bowling Green, KY 42101
502/842-9446
Clothes and accessories constructed with recycled parts.

**Every effort has been made to verify the resources provided. No warranty, expressed or implied, and no endorsement of any business, organization or individual is suggested by inclusion or exclusion in this buy recycled resource reference.*

THE PRACTICAL CONSERVATIONIST

PFDs --

Wearability and Comfort Equal Safety and Value

While it seems obvious, most boating accidents are sudden and unexpected. No one plans to be in the water, dazed, injured or even unconscious. Wearing your life jacket, especially when boating in cold water (that means 70 degrees or lower) is your best defense against drowning. In cold water it takes very little time to suffer hypothermia which leads to unconsciousness. Even when your fingers are not numbed by cold, it is difficult to put a life jacket on once in the water. (Try it sometime when you are doing the recommended test-fit discussed later.)

What is the very best value in a Personal Flotation Device? For most of us *comfort* is the key to value in PFDs. PFDs that fit well, are comfortable, and allow for freedom of movement *and* are suited to the type of water recreation we enjoy are more likely to be worn instead of being tossed aside. PFDs need to be worn at all times by every person on board who cannot swim and should be worn by everyone -- swimmer or not. A properly fitted PFD, in good condition, is the best insurance against drowning but does no good if it is not worn.

One PFD note that cannot be stressed enough is that each child must have a *properly fitting* life jacket. This piece of clothing may be the most cost-effective, yet priceless piece of clothing or equipment the child may ever own. Children are extremely vulnerable in boating accidents, and even if they can swim may be injured or knocked unconscious. Remember -- when an accident happens you cannot count on being in a position or even physically able to rescue the children in your party. The money spent on a PFD is minimal, yet children's life jackets are frequently the oldest and most ill-fitting of any on-board. If you boat with small children

and cost or convenience is a concern take advantage of the free Tot-Loan Lifepreserver Program. (See where to get further information later in this article.)

Under federal and Iowa regulations all boats less than 16 feet in length and all canoes and kayaks must have a U. S. Coast Guard approved Type I, II, III or V PFD for each person on board. Boats 16 feet or longer must meet the above requirement and have at least one Type IV (throwable device) on board.

Type I -- offshore life jackets -- have the most buoyancy and are designed to turn an unconscious person face-up in the water. While Type Is are the least comfortable to wear they are the best kind to wear in large areas of water where rescue may be delayed, such as when offshore cruising, racing and fishing.

Type II -- near-shore buoyant vests -- are the yoke-type vest pictured by many people when they hear the words "life jacket."

The vests will turn most unconscious wearers face-up in the water. Newer types have several layers of foam and provide good value for your money. These vests are often

bright orange in color which aids in visibility in a rescue situation. This type comes in infant, child-small, child-medium and adult sizes.

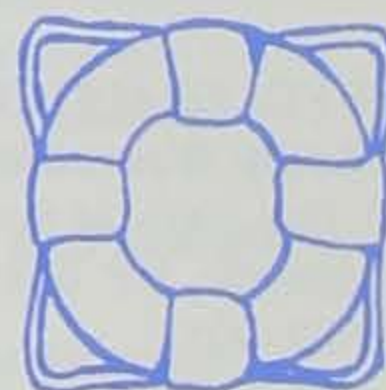
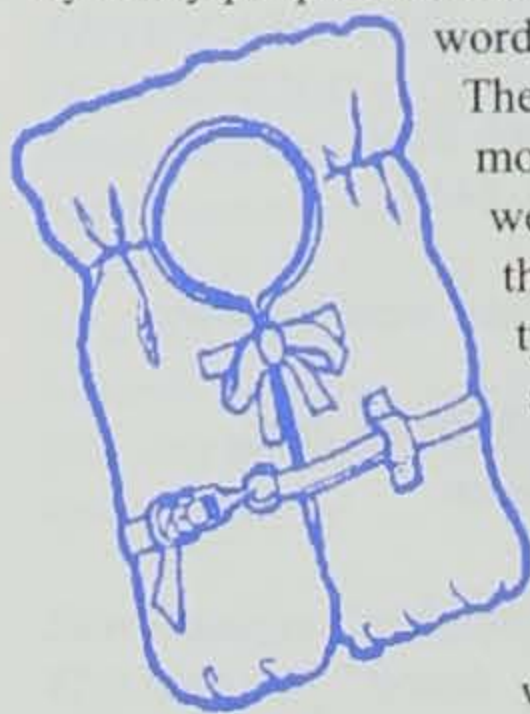
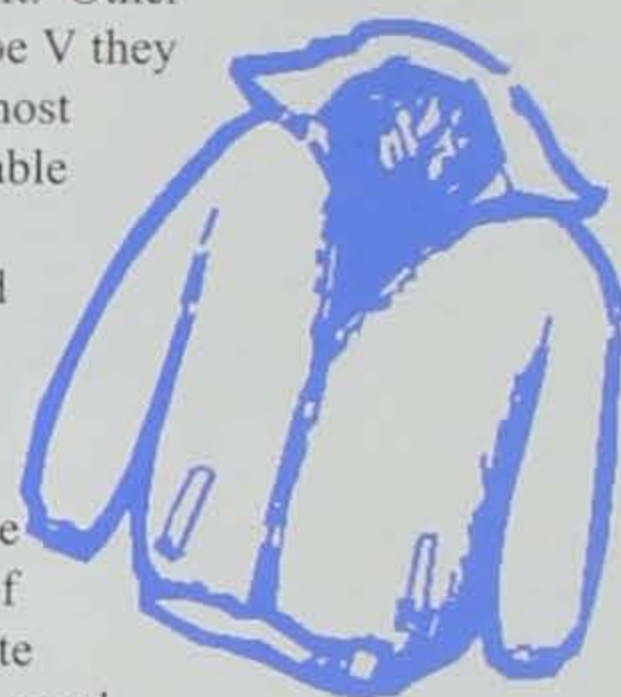
Type III -- flotation aids -- are

specialized for supervised activities such as sailing, waterskiing, canoeing, kayaking and operating other personal watercraft. Other

than Type V they are the most comfortable PFDs to wear and provide protection where the chance of immediate rescue is good.

While an excellent choice for most active, supervised situations, they are less buoyant than Type Is and the wearer must tilt their head back to avoid a face-down position in the water. You have probably seen Type IIIs such as the common "fishing vests" or "waterskiing vests" and these PFDs come in a variety of materials and colors and in many individual sizes from child-small to adult.

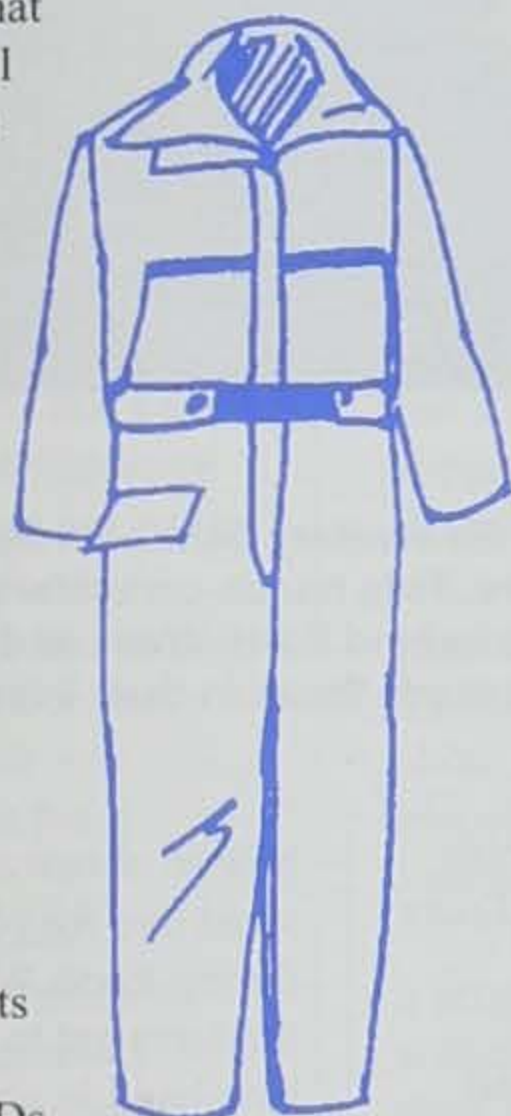
Type IV -- throwable devices -- are not to be worn and are used to throw to an overboard victim or to supplement the buoyancy of an overboard person. Type IVs can be a cushion, ring, or horseshoe-shaped



device mounted on the deck. These devices should never be worn on the back as they can push your head underwater. Practice throwing your Type IV PFD. Cushions throw best underhanded.

Type V -- special use devices -- are restricted to the use for which each is designed and that designation will be listed on the label. They range from float coats for waterfowlers and other hunters made from green, camo and even blaze orange materials, to sailboard harnesses, commercial whitewater vests and deck suits. All Type V PFDs *must be worn* to meet Coast Guard requirements.

There are **Type V "hybrids"** that have 7.5 pounds of built-in foam buoyancy which can be inflated to 22 pounds by activating a CO₂ cartridge. These hybrids may be the most comfortable to wear. Hybrids perform like a Type I, II or III PFD as listed on their label but are more comfortable than Type I or II. They are popular among anglers and hunters (like waterfowl hunters) for their stylish comfort, pockets and added



warmth in cold weather. There are even "snowmobiling" Type V hybrids which look and feel like a regular snowmobile suit while providing extra warmth (as well as buoyancy) if the wearer does enter the water. These can be a real boon to someone who snowmobiles on ice. Type V hybrids perform equal to a Type I, II or III as noted on their label but require active use and care of the inflation chamber. If you spend a great deal of time in a particular type of water recreation a Type V or a Type V hybrid will probably be the most comfortable for you to wear and thus may be your best value.

What do you need to know about PFDs

- Buy only U. S. Coast Guard approved PFDs. Always check the label.
- Make sure your vest fits and is for your size and weight. Do **not** alter your PFD. An altered PFD may not save your life.
- Try your PFD on over the clothes you will usually have on when wearing it. If you will be wearing a swimming suit, shorts and a light shirt or hunting clothes try the PFD on over those clothes to see how comfortable it will be in a real situation.
- Preferably, put on your vest, adjust it and then test it in shallow water so that you will know how it feels. Knowing what to expect and how the vest will "feel" when you are in the water in a rescue situation can help prevent panic. Do this for all family members, *especially* all the children.
- PFDs need to be unwrapped and accessible. The best place to carry a life jacket is on your body.
- Inspect your PFDs frequently. Check for leaks, mildew, oil or grease saturation of the fabric and for lumpy or hardened buoyancy material. If the flotation material is kapok (frequently found on older vests) this material becomes solid when wet and loses

buoyancy.

Any PFDs that have very worn fabric, or loose, torn or missing straps should be discarded.

• Do not use your PFD as a kneeling pad, place heavy objects on it or use it as a boat fender. PFDs lose buoyancy when crushed.

• Do not use harsh detergents, or gasoline or other solvents to clean your PFD.

• Reflective materials or bright colors can make you more visible to other boaters. Type IIIs for children come in a variety of bright colors and designs. Whether it is little mermaids, sunfish, sailboats or action figures these colorful designs make it easier to convince little water recreationists to wear their PFDs. Of course it helps if they can follow adults' examples in always wearing their PFDs.

• If your PFD is wet allow it to air dry thoroughly before storing. Do not dry it in front of a direct heat source such as a radiator or dry it in a dryer. Direct heat will destroy its buoyancy.

• If weather conditions are threatening or if the water is rough make sure everyone puts on and securely fastens their PFDs. Remember that water does not have to be icy, just colder than you are to cause hypothermia. Even if you are a strong swimmer, you may involuntarily gasp and drown if you fall without a life jacket into water cooler than your body.

• Play it safe. Buy a vest that fits, is comfortable, is well-designed and suited to the type of water recreation you enjoy. Then **WEAR IT!**

For more information on PFDs talk to your local recreational safety officer or your local conservation officer. Recreational safety officers can also present programs on PFD selection and other water safety issues for interested groups. For information on the Tot-Loan Lifepreserver Program contact the DNR at (515)281-8652 for information on the program and on participating marinas.

CONSERVATION UPDATE

Statewide and Local Partnerships Benefit Kids Through *Trees For Kids/Teens* Programs

by Maggie Knight

Kids go to school and attend classes to learn about our world. In science class they study biology and ecology. They also learn about Earth Week, what it means and how it got started. When they cover these topics, many Iowa students are also exposed to *TFK* and *TFT* as they discuss trees and how they provide shade, and homes for birds, and how they add to the scenery around the town.

What are *TFK* and *TFT*? Established in 1990 to celebrate the 20th anniversary of Earth Day,

the *Trees for Kids* and *Trees for Teens* programs are funded by a cooperative partnership between the DNR, the Iowa Nursery and Landscape Association (INLA), Iowa Bankers Association (IBA), Iowa Telephone Pioneers, Peoples Natural Gas, Midwest Gas, the Iowa Wood Industry Association and most recently Trees Forever. The programs are free to interested schools.

This unique partnership of business, community, teacher and student gives an opportunity for kids to make their education come alive through a hands-on understanding of their world. *Trees for Kids/Teens* brings home the ideas behind Earth Week and help kids to understand and adopt those ideas in their lives. Teachers can make learning fun for their



DNR photo

▲ Students at Johnston Elementary School in Spencer take turns planting their tree. This hands-on understanding brings home the ideas behind Earth Week and help kids to understand and adopt those ideas in their lives.

students through the *Trees for Kids* and *Trees for Teens* programs.

Teachers receive a packet full of educational materials and activities for their students about trees along with instructions on

how to obtain a landscape-sized tree for planting during Earth Week. Students get to participate first-hand in understanding how the environment works, and help to shape it themselves. More than 3,500 packets were distributed between the two programs in 1994, reaching more than 300,000 students.

The teacher packets are designed and distributed by DNR, Iowa Nursery and Landscape Association nurseries, in conjunction with Iowa Bankers Association bankers, and others help provide the landscape-size trees to participating teachers. In 1994, 3,672 teachers participated in the program, and with their students, planted more than 100,000 trees. Trees donated in 1994 were



DNR photo

◀ Students benefit from local and statewide partnerships as they plant one of the more than 100,000 trees distributed through *Trees for Kids* and *Trees for Teens* in 1994.

valued at \$606,686. Pete Click of Johnston, president of the INLA, says, "INLA has supported *Trees for Kids* from the start. We see education in trees as a great way to reach Iowa's youth."

Trees for Kids was honored with the Education Award in 1993 from the National Arbor Day Foundation. Shelly Jorgensen, vice-president of First Bank and Trust in Spirit Lake, feels that kids are Iowa's most important resource and says her bank supports *Trees for Kids* because it wants their local kids to learn how important trees are and how much fun it is to plant them.

Trees for Kids/Teens'95 gives students and teachers a great opportunity to celebrate Iowa's history with the *Trees for Kids* theme "Iowa's History Is In Its Trees," and to understand the biology of trees and leaves. Understanding both human's and earth's history is a fundamental theme behind Earth Day, which celebrates its 25th anniversary this year. Jerry Davenport, a counselor at Woodrow Wilson School in Cedar Rapids, found that tree planting through *Trees for Kids* was "a wonderful way for students to gain ownership in the trees and feel good about their school." Kids are given a stake in their future and that of their environment.

He says that students thought planting trees was just plain "fun."

Since 1992 funding for the printing and distribution of the educational materials has come from Peoples Natural Gas. In 1994, Midwest Gas, the Iowa Nursery and Landscape Association and the Iowa Wood Industry Association joined Peoples Natural Gas in program funding. This group of associations and businesses, in addition to supporting the *Trees for Kids/Teens* programs, has allowed the DNR to produce a video tape called "Young People Caring about Trees" which was placed in school libraries statewide.

Trees for Kids/Teens is a program which allows students to participate in their future and to gain hands on understanding of their environment. "Planting trees at Lucas Elemen-

tary is a privilege that all students want," said Principal Sandy O'Brien.

Many local volunteer tree planting committees in Iowa have supplemented their local education efforts with *Trees for Kids/Teens* materials, and still others have informed local teachers about *Trees for Kids/Teens* opportunities.

Join in and celebrate Earth Day's 25th anniversary with Iowa's *Trees for Kids* and *Trees for Teens* programs. For more information on *Trees for Kids* or *Trees for Teens* contact John Walkowiak at 515-242-5966, or Maggie Knight, Coordinator of *Trees for Kids/Teens*, Forestry Division, IDNR, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Maggie Knight is the DNR's 1995 Trees For Kids/Teens intern.



▲ Students at Jefferson Junior High School in Dubuque with their tree. INLA nurseries, in conjunction with IBA bankers and others help provide the landscape-size trees to participating teachers.



Iowa Pheasants Forever chapters are working with farmers and landowners to establish wildlife habitat.

The goal of **Pheasants Forever** is to restore pheasant populations through quality habitat. PF is paying landowners to plant food plots, nesting cover, shelterbelts and other habitat, for game and nongame wildlife.

Iowa currently has 97 chapters throughout the state looking to work with local farmers and landowners for the benefit of all upland and wetland wildlife.

For help planting wildlife habitat or more information about **Pheasants Forever**, contact Jim Wooley (S. Iowa) at 515/774-2238 or Matt O'Connor (N. Iowa) at 319/352-0318, or write to 1205 Ilion Ave, Chariton, Iowa 50049

Think Habitat!

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:

- March 9, Des Moines
- No April meeting
- May 11, Council Bluffs

Environmental Protection Commission:

- March 20, Des Moines
- April 17, Des Moines
- May 15, Des Moines
- June 19, Des Moines

State Preserves Advisory Board:

- March 1995

Spring '95 Toxic Cleanup Days

Toxic Cleanup Days (TCD) allow Iowans to dispose of their household hazardous wastes and provide an opportunity for education on alternatives to disposal, or in some cases, proper disposal management in the home. If you are stumped about what to do with unusable chemicals in your home, call the DNR Waste Management Hotline at (800)367-1025.

The spring '95 toxic cleanup days (TCDs) counties and dates are listed below. Watch local newspapers for phone numbers to call for appointments.

- ❖ **May 6**
Dubuque County,
Dubuque Metro
Area Solid Waste
Landfill
- ❖ **May 6**
Kossuth County,
Kossuth County
Fairgrounds
- ❖ **May 6**
Pocahontas
County,
Pocahontas
County Fair
grounds
- ❖ **May 13**
Carroll County,
Recycling Center
- ❖ **May 13**
Crawford County,
Crawford County
Fairgrounds
- ❖ **May 13**
Greene County,
Greene County
Fairgrounds

- ❖ **May 13**
Union County,
Union County
Maintenance Shop
- ❖ **May 20**
Johnson County,
Johnson County
4-H grounds
- ❖ **May 20**
Poweshiek County,
Poweshiek County
Maintenance Shop

Cover Print

This month's cover is from a painting titled *Indigo Bunting-Redbud* by Larry Zach.

To obtain a limited edition print of this painting contact your authorized White Oak Publishing dealer or call White Oak Publishing at (515)964-1570 for more information.

▼
***Indigo Bunting-Redbud* by Larry Zach**
Edition size 1,250, SN, \$55 each.
Image size 12" x 6 1/2".





Help Rebuild Our Forest Resource

To order by phone call 515/233-1161

**DNR 1995
ORDER FORM**

Twenty percent down for orders more than \$500

1. Fill in the number-wanted column.

PLANTS AVAILABLE

Wildlife and songbird packets can be ordered separately.

Packet	Cost/Packet	Code	Packets Ordered
Wildlife Contains 200 plants	\$35.00	96	
Songbird Contains 20 plants	\$15.00	95	

Height Cost/Hundred Code Plants Ordered

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

White Pine	8-14"	\$ 14.00	30
Scotch Pine	8-14"	14.00	20
Red Pine	8-14"	14.00	17
Ponderosa Pine	6-12"	14.00	15
Jack Pine	8-14"	14.00	10
White Spruce	8-14"	14.00	43
Norway Spruce	SOLD OUT	14.00	13
Black Walnut	10-18"	22.00	24
Green Ash	8-18"	22.00	08
White Ash	8-18"	22.00	28
Cottonwood	SOLD OUT	22.00	83
Silver Maple	8-18"	22.00	21
Red Oak	8-14"	22.00	41
Bur Oak	6-14"	22.00	04
White Oak	6-14"	22.00	29
Swamp White Oak	SOLD OUT	22.00	33
Pin Oak	6-14"	22.00	54
Mixed Oak	6-14"	22.00	51
Wild Plum	8-18"	22.00	31
Nanking Cherry	6-12"	22.00	11
Amur Honeysuckle	8-16"	22.00	01
Ninebark		22.00	12
Gray Dogwood	6-12"	22.00	07
Common Lilac	6-12"	22.00	47
Common Chokecherry	8-16"	22.00	39
Hybrid Poplar (rooted cutting)	SOLD OUT	22.00	53
Highbush Cranberry	SOLD OUT	22.00	80
Siberian Crab	6-12"	22.00	55

2. Address (Please Print)

(Landowner Name - Please Print)

(Mailing Address)

(City) (State) (Zip)

(Area Code) (Phone Number)

3. Check One Box

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

☐ Delivery to a drop-off point by refrigerated state truck. List county where seedlings are to be delivered.

County

4. Please Answer Each Question

1. These trees are to be planted in

County.

2. Did you purchase plants from the Nursery last year?

☐ Yes ☐ No

**To order by phone
call**

515/233-1161

**To FAX your order
call**

515/233-1131

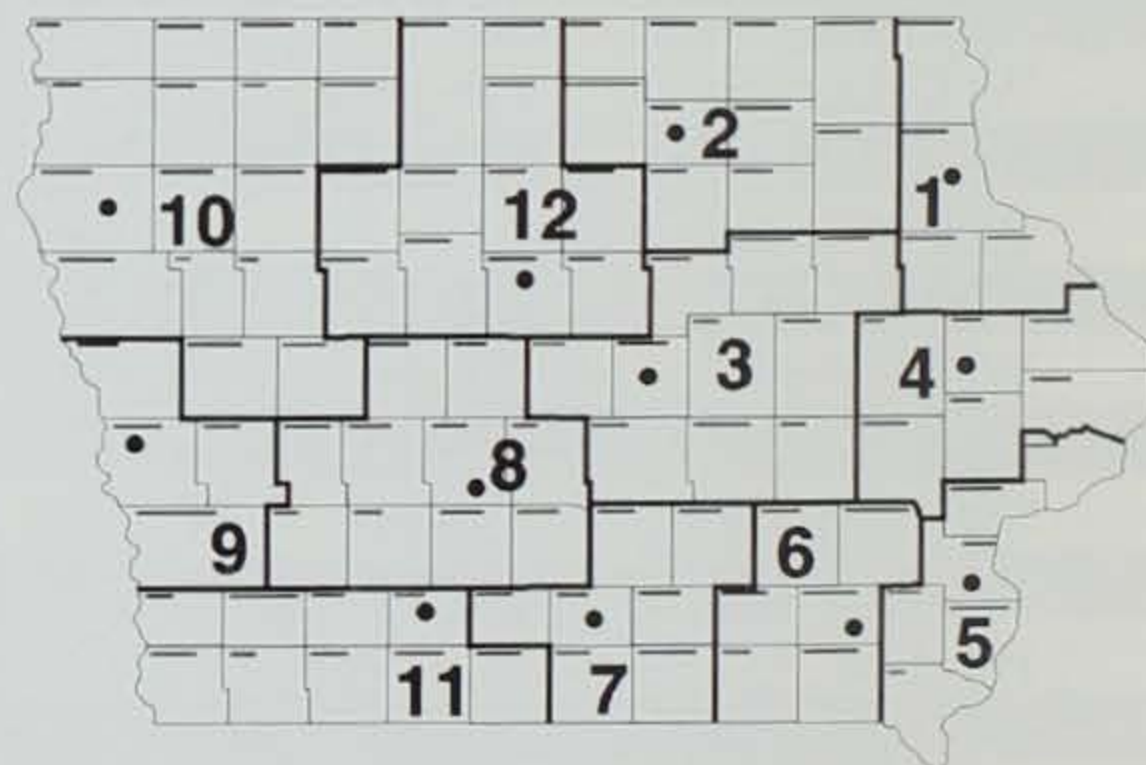
**MasterCard/Visa
accepted**

To Help You Order

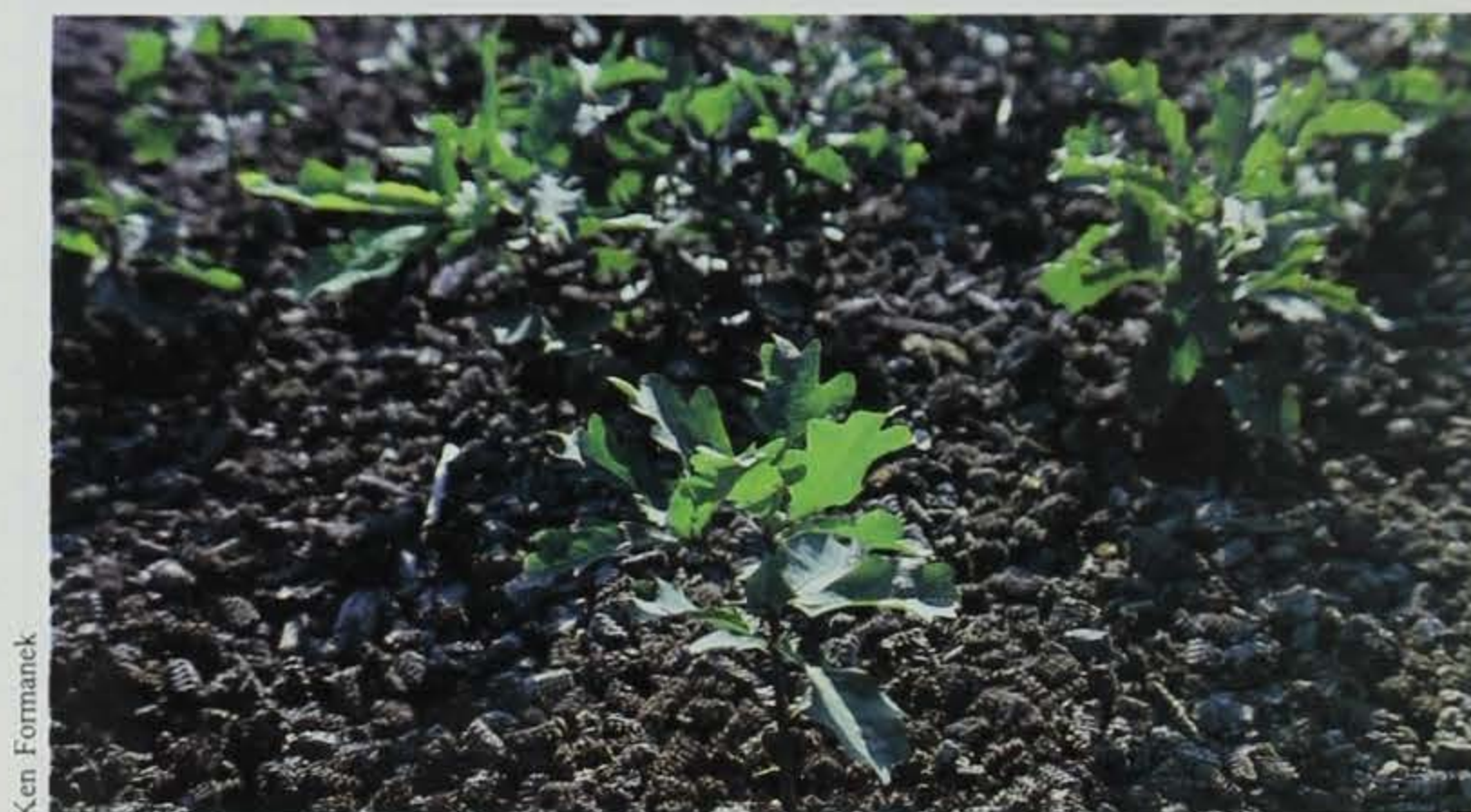
- Phone Orders** For your convenience use our phone order system to order your plants. Just call the State Forest Nursery at 515/233-1161 to place your order. To FAX your order call 515/233-1131.
- Mail Orders** To mail, send your order to State Forest Nursery, 2404 S. Duff, Ames, IA 50010.
- Payment** For orders more than \$500, the nursery will bill you for 20 percent of the cost with the remainder to be paid by March 1. **DO NOT** send money with your order. MasterCard or Visa are also accepted.
- Spring Delivery** Orders are shipped via a state refrigerated truck to a drop-off point in each county in April.
- Claims** Claims for any cause must be made within 10 days after receipt of plants. We give no warranty, expressed or implied, as to the productiveness or life of the material, and we will not be in any way responsible for results or economic losses incurred or claimed by the customer.
- Restrictions** The nursery stock must be planted and used for establishing or improving existing forest, erosion control, game or water conservation. These restrictions apply: Nursery stock cannot be resold or given away with roots attached, to any person, firm, corporation or agency or planted for new windbreak, shade or ornamental purposes. All plantings must be protected from fire and domestic livestock grazing. All trees planted or used in violation of the above restrictions are subject to forfeit for destruction.
- Refunds** No refunds after March 1.
- Suggested Spacing** Conifers -- rows 8 feet apart; plants within rows 6 feet apart = 908 plants per acre
Walnuts and other hardwoods -- rows 8 feet apart; plants within rows 8 feet apart = 681 plants per acre
Shrubs -- rows 8 feet apart; plants within rows 3-5 feet apart

District Forester Addresses

- | | | |
|----------------------------|----------------------------------|----------------|
| 1. Elkader | Box 662, 52043 | (319) 245-1891 |
| 2. Charles City | Box 4, 50616 | (515) 228-6611 |
| 3. Marshalltown | 2501 S. Center St. Ste I, 50158 | (515) 752-3352 |
| 4. Anamosa | Box 46, 52205 | (319) 462-2768 |
| 5. Wapello | 515 Townsend Ave., 52653 | (319) 523-8319 |
| 6. Fairfield | Box 568, 52556 | (515) 472-2370 |
| 7. Chariton | Box 119AA, Ste 4, Route 5, 50049 | (515) 774-8733 |
| 8. Adel | 1918 Greene St., 50003 | (515) 993-4133 |
| 9. Pisgah | Box 158, 51564 | (712) 456-2924 |
| 10. Le Mars | 1100A 12th St., S.W., 51031 | (712) 546-5161 |
| 11. Creston | 500 E. Taylor, 50801 | (515) 782-6761 |
| 12. Webster City | Box 232, 50595 | (515) 832-3585 |
| State Forest Nursery | | (515) 233-1161 |



**Help rebuild
our forest
resource by
ordering your
spring seedlings
today!**



Ken Formanek

CLASSROOM CORNER

by Barb Gigar

Plant a Tree

The following activity is adapted from *Project Learning Tree* (PLT) and *An Iowa Supplement to Project Learning Tree, K-8*. PLT is a multidisciplinary activity manual for use with K-8 students that is provided to educators free of charge through workshops conducted by the DNR or the Department of Education. PLT materials are purchased with a grant from the U. S. Forest Service. Some PLT workshops are funded by a REAP conservation education grant.

Background:

Burning fossil fuels (gasoline, oil, coal, natural gas) releases enormous amounts of carbon into the air. On the average, every person in the U.S. is responsible for 2.3 tons of atmospheric carbon each year. Some scientists believe these emissions can cause climatic changes that, in turn, could lead to severe storms, droughts, floods and times of famine. Tree planting is an important strategy for reducing this potential threat. An average young tree stores about 25 pounds of atmospheric carbon a year.

Trees provide many other benefits. Tree products include items from furniture to toothpicks to some colognes. One cord (a stack 4 x 4 by 8 feet) of hardwood has the heating value of one ton of coal or 200 gallons of fuel oil. Trees along stream banks can greatly reduce erosion. Stream-side forests filter runoff -- removing silt, fertilizer and some chemicals -- which improves water quality. A well-designed shelterbelt (strategically placed planting of trees and shrubs) can reduce home heating bills by as much as 30 percent and shade trees can also reduce cooling costs. Foods such as maple syrup, nuts and some fruits come from trees. Wildlife often use trees for shelter and the foods they provide. Trees in urban areas also help muffle traffic noise.

To Plant a Tree:

1. Dig a hole as big as the tree roots.
2. Place the tree roots in the hole. Have someone hold the tree straight.
3. Gently add soil to the hole, stop often to gently pack the soil around the roots to get rid of air pockets.
4. When the hole is filled and the soil packed, put wood chips around the tree to protect it and hold moisture. Water the tree with five to eight gallons of water.
5. Water the tree every 10 days when it is dry.

Age:

Grades 1-8

Objectives:

Students will be able to:

1. identify ways that trees enrich our lives;
2. determine how people care for trees;
3. identify areas in their community that would benefit from having more trees; and
4. organize and execute a class tree-planting project in a local area.

Materials:

Paper and pencils

Additional Resources:

National Arbor Day Foundation
100 Arbor Avenue
Nebraska City, NE 68410
402/474-5655

Iowa Dept. of Natural Resources
Wallace State Office Bldg.
Des Moines IA 50319-0034
515/281-5145
(Call to find the name and number of the district forester in your area.)

Cooperative Extension Service --
Forestry
Iowa State University
251 Bessey Hall
Ames, IA 50011
515/294-1168
(Request: *Planting Landscape Trees* - PM-422.)

Extensions:

1. Plan a planting event (trees, bushes, flowers) for your group, school or community. Such an event would work well as an Arbor Day or Earth Day celebration. Use this opportunity to publicize all the benefits that trees and other plants provide for us.

2. Students need to plant and maintain about 65 trees each year to absorb the carbon they put into the atmosphere in their lifetime. Ask students to list all the opportunities they have to plant trees throughout the year. What is the total number of trees they could plant if they took advantage of all those opportunities? Is the total close to 65? If not, what other actions could they take to keep carbon out of the atmosphere? (For example they could reduce their energy consumption.)



Jerry D. Leonard

▲ Sugar maple leaves

Barb Gigar is the aquatic education coordinator located at the department's Springbrook Conservation Education Center in Guthrie County.

Procedure:

Find out which agencies/organizations are responsible for tree planting and maintenance in your community. The DNR, parks departments, urban forestry departments and independent garden clubs are possibilities. Students can write to those agencies or organizations for tree-planting information.

Ask students to name some areas in the community where trees have been planted. Have them work in small groups to list the benefits trees provide to people and wildlife in those areas. Use the groups' lists to develop a class list and add any other benefits you can think of (*see Background*). Have everyone make a copy of the list.

Tell the students that planting trees is a great way to do something good for the community and for planet Earth. Then have them work in small groups over the next week or so to identify areas in the community, or on the school grounds, that would be improved by the presence of more trees. Remind students to refer to their lists of tree benefits as they consider planting sites.

If you are working with younger students, take them on a walk around the school to locate an area(s) that would be improved by planting a tree. After the students have identified possible sites, students should decide which site(s) should be the focus of their tree-planting campaign. With the proper supervision, teams can work on different sites.

If you are working with older students, ask them who they think they should contact to get permission to plant in the area(s) they have chosen. Help them compose a letter to the appropriate people, agencies or organizations. You might suggest that the letter include several general questions about tree planting in the community, such as:

- How much money is spent annually on tree care in the community? How many trees are planted, and where?
- Which species are most often chosen for planting?
- Do any criteria exist for selecting the species that are planted? If so, what are they? If such criteria do not exist, you may want to suggest to students that they talk to the local DNR forester about selecting trees for certain areas.
- How can citizens become involved in planting and maintaining trees on public property?
- If trees are being planted in an urban area, what are some of the hardships that urban trees face? What is the average life span of an urban tree?

Have students research programs such as Timber Reserve, Conservation Reserve Program (CRP), Stewardship Incentives Program (SIP) and Resource Enhancement and Protection (REAP) through the county Consolidated Farm Services Agency (formerly ASCS) and Natural Resource Conservation Service (formerly SCS) offices. Check the phone book under "U.S. Government" for offices in your county. (You may also contact the DNR district forester for information.) What is the purpose of each of these programs? How do they impact tree planting in Iowa?

After students have received replies to their inquiries, have them detail plans for their tree-planting campaign. For instance, they may decide to raise money to buy trees, or they may solicit donations. (See page 52 in this issue for information about *Trees For Kids*.) They will need to schedule the planting in the spring or fall and make arrangements to water the trees for at least a few months after they are planted. They should also plan for long-term maintenance of the trees.

Have students plant trees and take care of them. Follow the general directions on the previous page, or contact the DNR forester or a local nursery for more specific instructions for different types of trees.



Ron Johnson

LACEY/KEOSAUQUA State Park

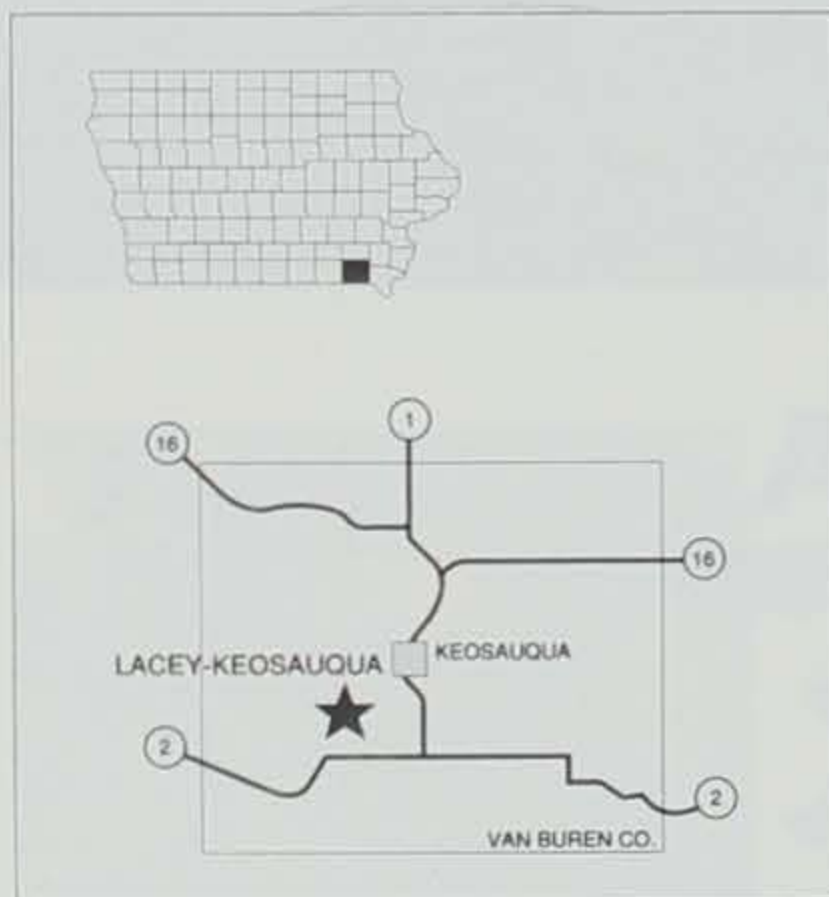
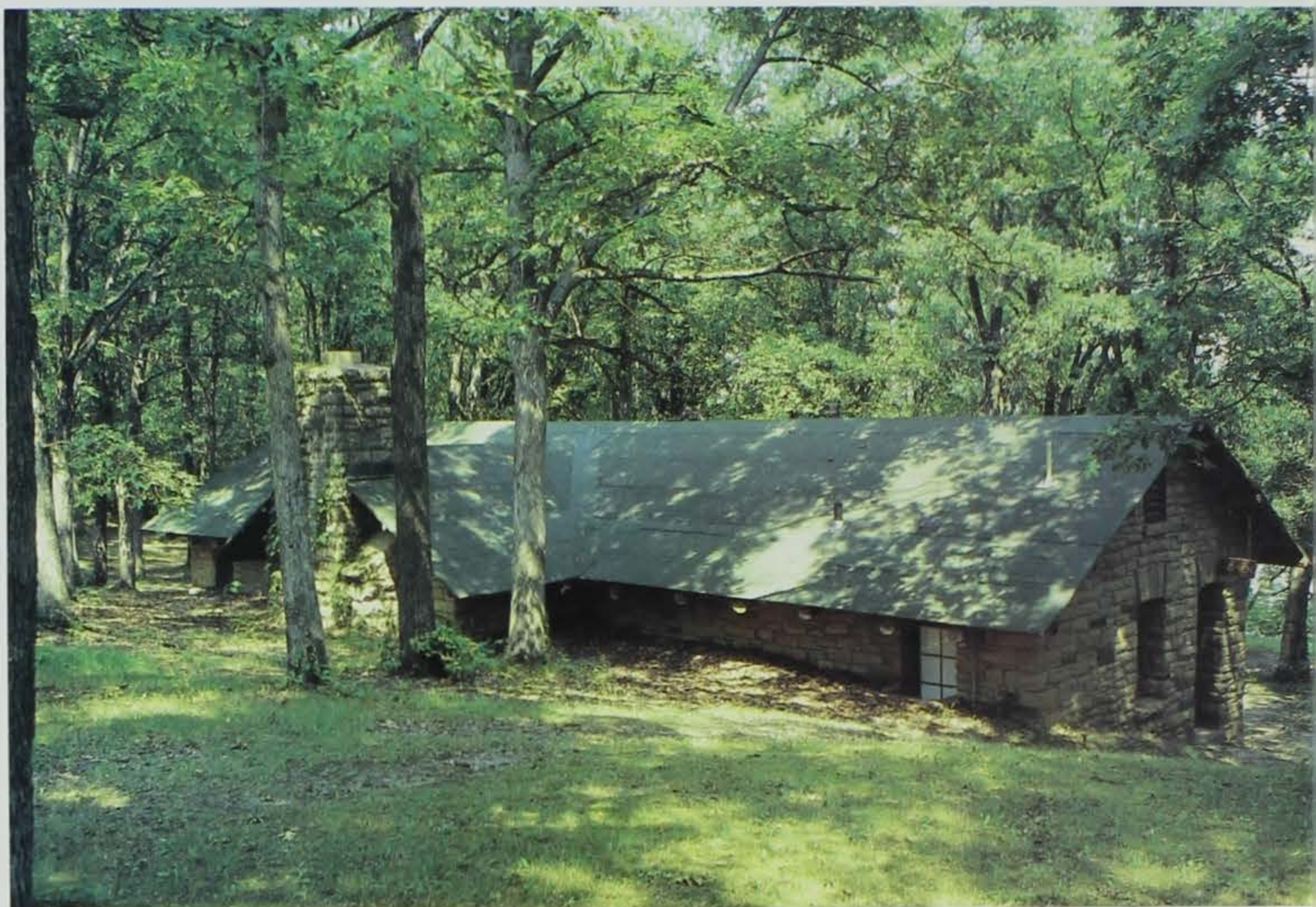
by Wayne Buzzard

Tree-covered hills, limestone ledges, deep gorges and a lake -- this is beautiful Lacey-Keosauqua State Park in Van Buren County in southeast Iowa. The park entrance is just outside the town of Keosauqua off Highway 1 located on the great horseshoe bend of the Des Moines River, which borders the park for four and a half miles.

Lacey-Keosauqua was one of the "charter" group of state parks. The tract of rugged woodland and bluffs along the Des Moines River had been early

identified early on as a potential state park. Edgar Harlan, secretary of the new State Board of Conservation, had done a study of the lower Des Moines River and was a major force in establishing the park near Keosauqua. The first tract of 160 acres was presented to the State of Iowa by the citizens of Keosauqua. It was followed by additional purchases, bringing the park to 1,222 acres and making it, for a number of years, Iowa's largest. Today, Lacey-Keosauqua totals 1,653 acres.

The formal opening and dedication



of the park was October 26 and 27, 1920 at Keosauqua with Dr. L.H. Pammel, president of the Iowa State Board of Conservation presenting the park and the Honorable William J. Harding, Governor of Iowa, accepting it.

The park was called Keosauqua State Park until 1926 when the name was changed to Lacey-Keosauqua State Park to honor Major John Fletcher Lacey. A plaque commemorating

Major Lacey's outstanding abilities as a lawyer, statesman, soldier and conservationist stands in the park today. Lacey was a congressman and was instrumental in the development of the national parks system. A golf course was opened in the park in 1924 and was in use until 1969 when a new course was opened in the town of Keosauqua.

The beautiful old lodge, shelters, bridges, the old park ranger's house, the bath house, retaining walls and steps (110 of them!) to the beach are all made of cut limestone, much of it coming from the quarry in the park. The construction was done by the Civilian Conservation Corps, with prison labor also used to build roads and trails throughout the park.

Six seasonal-use cabins were added to the park in 1940 as the park's popularity grew. A welcome addition then, these structures have

▲ One of Lacey-Keosauqua's six seasonal-use cabins designed for overnight visitors who prefer a roof over their heads.

▼ The annual Forest Crafts Festival, held every October in the park, showcases woodcrafters who exhibit and sell their wares.



Photo by Ron Johnson

remained popular, especially with young families. For camping closer to the earth, the park has a nice, shady modern campground. In 1990, a new split-faced block shower building was opened for even more convenience.

The park has a small, 22-acre lake which was drained in 1992 and restocked with bass, bluegill, red ear and channel catfish. The concessionaire has canoes, paddle boats and row boats for rent. There is an attractive beach area just a short distance from the cabins that is within easy walking distance of the campground.

For those who like to hike, there are more than 15 miles of trails. In spring, there is an abundance of wild flowers and, of course, the elusive morel

"The park abounds with deer and turkey, which can be seen feeding along the roadsides most any evening or early morning."

Just south of the park lies Lake Sugema. One of Iowa's newest state areas, Sugema offers 574 acres of water recreation opportunities.

mushroom.

The park abounds with deer and turkey, which can be seen feeding along the roadsides most any evening or early morning.

In July, 1981, the first Forest Crafts Festival was held in the park with wood crafters working, exhibiting and selling their wares. It was a hit and is now an annual event, scheduled on the second full weekend in October. The festival is held in conjunction with the Van Buren County Fall Festival of Colors,

DNR Photo



Sunbathers will enjoy the park's beach, while others may linger in the long, cool shadows of the forest canopy.

and in recent years, includes colorful buckskinners.

Just a stone's throw beyond the south boundary of the park is the new 574-acre Lake Sugema, fast becoming a popular fishing spot. A hiking trail connecting the park with Lake Sugema is being planned.

Whatever the season, you can be sure you will find something to enjoy in one of Iowa's most beautiful state parks.

Wayne Buzzard is the park ranger for Lacey-Keosauqua State Park.



Jerry D. Leonard

WARDEN'S DIARY

by Chuck Humeston

"Simple Things"

I have a lot of people tell me they want to do what I do for a living and ask how to get a job.

Sometimes I'm asked, "Why did you get into this sort of work? Did you hunt and fish a lot while you were growing up? Did you live in the country or grow up on a farm? Did you have relatives in law enforcement?"

Well, no, no, no and yes. My grandfather was the county sheriff, but I don't know that I really considered that in making my choice.

Not too long ago I went to my "deep thinking place" along the Iowa River and asked myself, "Why did I get into this and why do I *really* do it day after day?"

For me, getting into this profession was a long process, and looking back on it, I had someone to inspire me. He's been my best friend for many years. He gave me an ethic.

It started out with small things. He put a fly-rod in my hand and taught me how to catch bluegills. He would take me on pilgrimages to Spirit Lake and, cane pole in hand, would pursue the venerable bull-head. Simple things.

He would take me to the timber where we would pick up walnuts. He would drive me to the local lake when a storm would come up, to watch the thunderheads build. We'd watch the flash of lightning and count the seconds until the boom.

He would take me along as he helped my brother on the land and pond he had bought. I was little and in the way . . . but he took me anyway. While we were doing all these day-to-day things he would tell me how important land was, and what a big effect we could have on it if we weren't wise. Simple things.

No, he didn't take me hunting and fishing a lot. He was busy making a living and there wasn't a lot of extra time. But when he did, the lesson was the same -- simple respect.

One day I took it upon myself to walk into his office, open the cash register, and take out a few coins to treat me and my friends to a soda at the local hangout. I only made it across the street when I heard his voice boom. He grabbed me by the wrist and marched me back to the office. It was a simple message. If you don't earn it, then it's not worth having, there is no substitute for work and there are no short-cuts.

You know, a real friend always supports you no matter what. I played on a high-school football team where we lost every game I played as a senior. He never once criticized me like the other "Saturday morning critics" on the street. He encouraged me. When I came home from college with some ridiculous ideas and opinions he never laughed at me, but instead listened to me. Simple things, but the issues were becoming more complex.

I got married and began to raise a family of my own. I learned it's *really* complex. Sometimes life plays hardball. I would go to my friend for advice. I valued his experience. He wouldn't solve my problems, but he would encourage me.

When I went into law enforcement, I wanted to be part of the best there is. I have tremendous respect for the people I work with. I honestly think they are the best. Other departments may dispute me, and I would be surprised if they did not. But, I wanted to work with the best. Someone encouraged me to work for it and simply give it my best, win or lose.

So, I guess I do this job because of simple things. I was shown how beautiful this state is. I learned how important this land and its resources are. I saw first-hand with an older (but just as awe-struck) teacher at my side how fascinating and complex nature is, but how simple the gift it gives us through appreciation of its beauty and bounty. He gave me this ethic and respect for the natural world. I valued it and wanted to protect it and I was willing to work at it. I keep remembering those simple messages -- there is no substitute for work and there are no short-cuts.

Not too long ago, I got a phone call. The voice on the other end of the line told me my friend has cancer. He would need surgery. He would need chemotherapy. He never complained. Not once. He chose to fight and not give up. No short-cuts again, right?

You know, in law enforcement we give awards and other knick-knacks for courage. I've found in a crisis, most people do what it is they have to do, cops included. But, I admire those people who fight something bigger than themselves every day. Every day when they get up, it's waiting for them, yet they don't complain. Sometimes when the obvious question is, "Why me?" some like my friend answer, "Why not me?" and go on with life. Maybe that's the acid test. The simple and very real lesson life has for us. I don't know . . .

All I know is sometimes it takes the loyalty and instruction of a real friend to help us along the way. In that I've been blessed. His lessons are a big reason I do what I do and will keep on doing it.

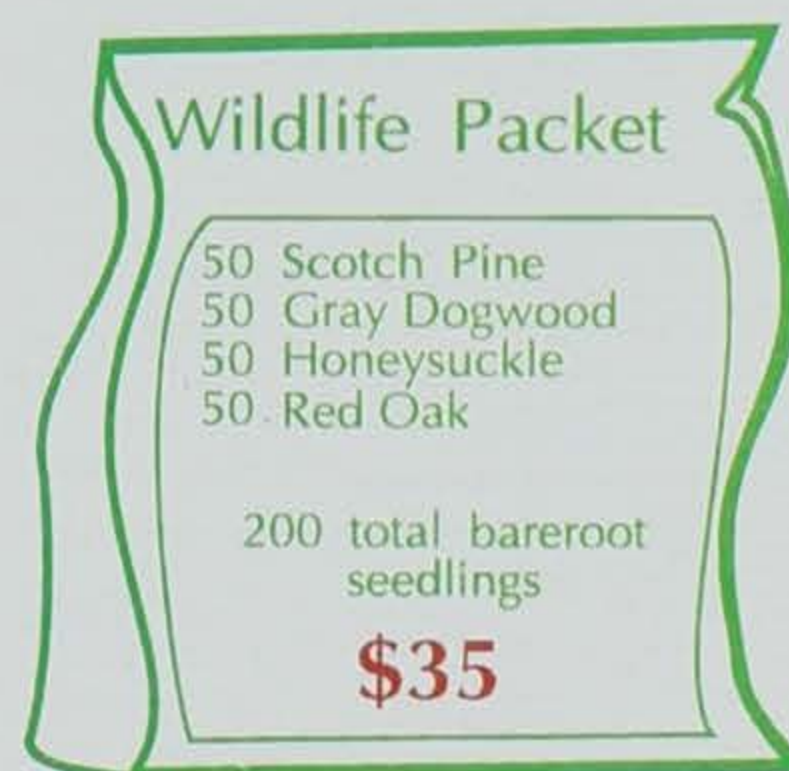
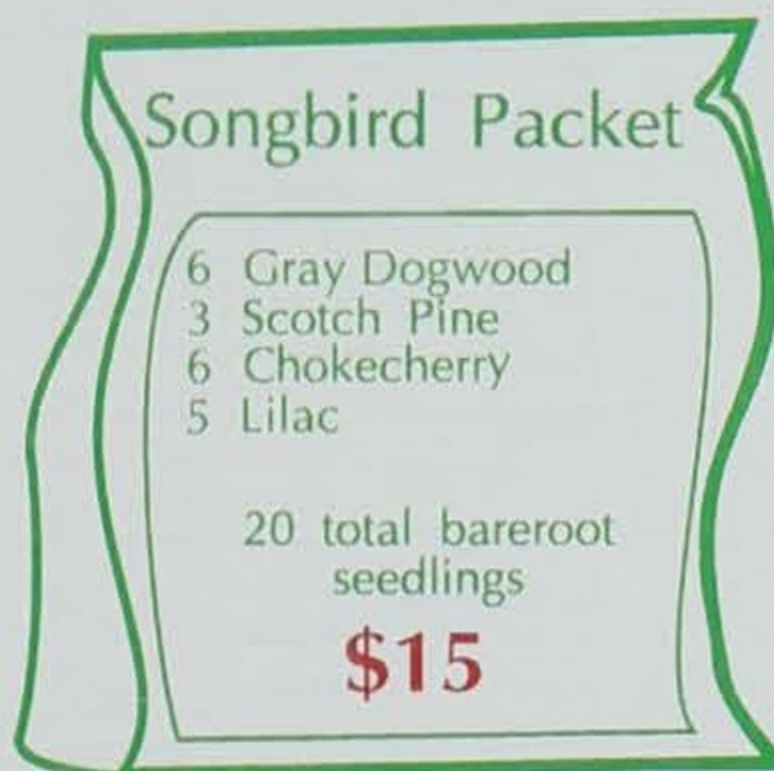
Lessons taught and learned with love are simple things and the most priceless.

Thanks Dad.



HABITAT HELPER

Help provide valuable wildlife habitat by ordering your spring seedlings today!



To order these and other individual seedlings, see page 55 for an order form. MasterCard/VISA are accepted and orders may be FAXed or phoned.

