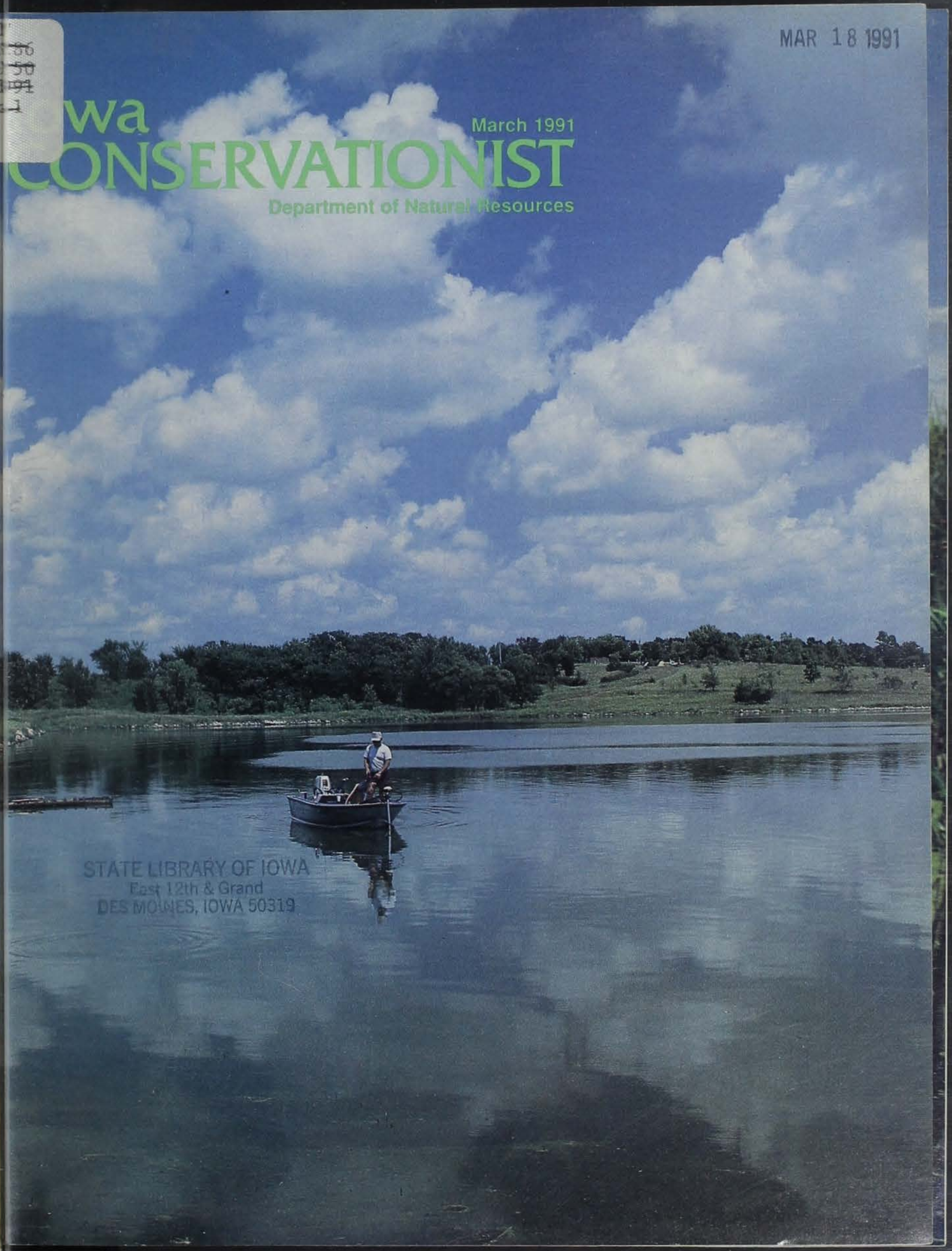
Iowa CONSERVATIONIST

March 1991

Department of Natural Resources



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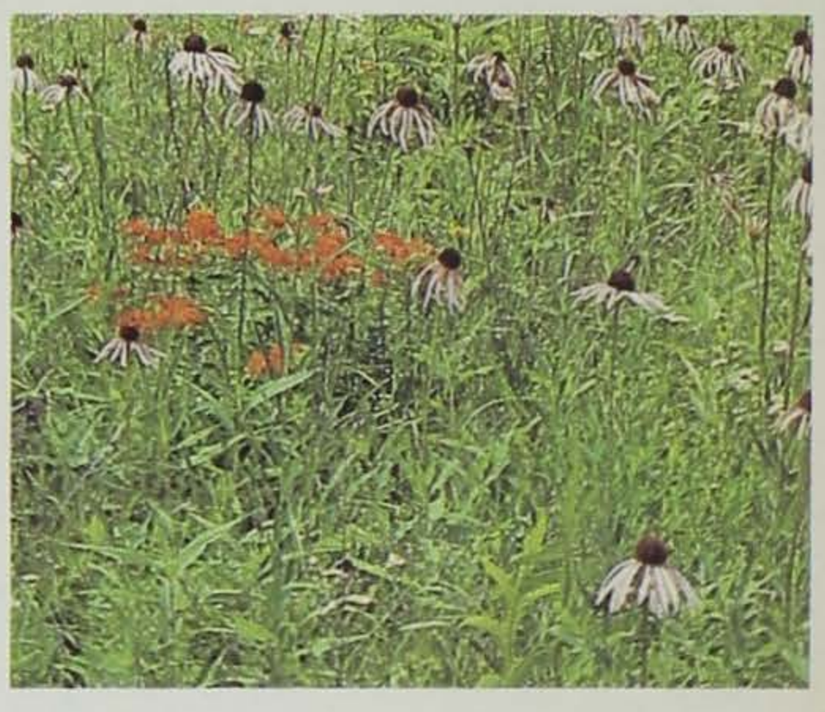

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FEATURES

DEPARTMENTS

FRONT COVER

Fishing on Lake Anita by Ron Johnson.

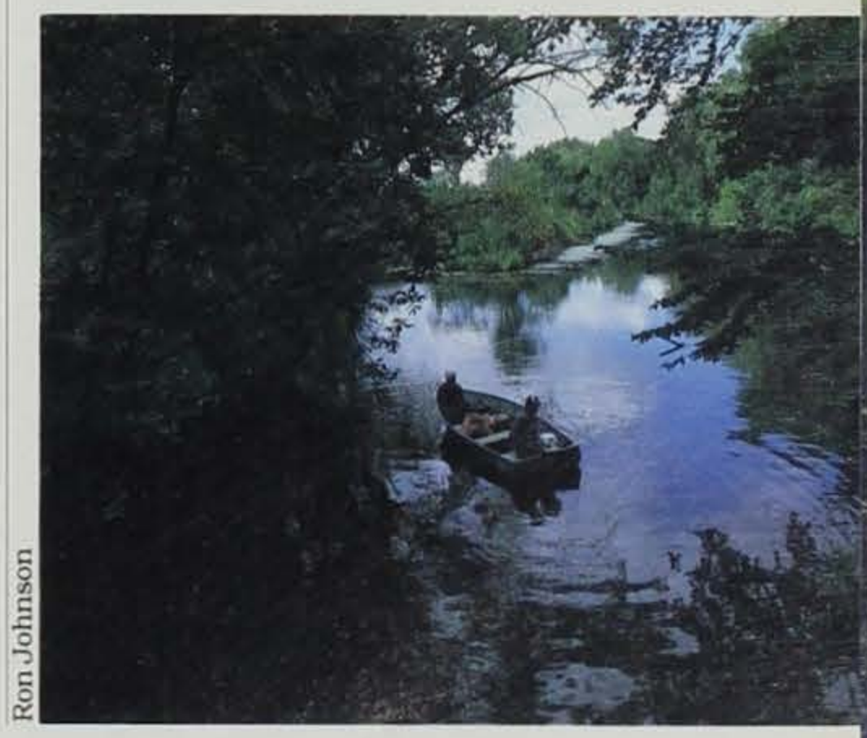
1991 FISHING FORECAST

by Thomas W. Gengerke, Regional Fisheries Supervisor

Species Location/*County*	*Comments*
Walleye	
Clear Lake, *Cerro Gordo*	*Three- to 5-pound fish common; don't expect limits. Average 1990 size was 3-1/4 pounds. New regulations 1991.*
East Okoboji, *Dickinson*	*Low water levels may change preferred locations. Southern one-third of lake, work the weeds.*
Five Island, *Palo Alto*	*Good winter fishing in southern portion of lake for 2- to 5-pound fish.*
Lost Island, *Palo Alto*	*Early spring and fall fishing will be best.*
Silver Lake, *Dickinson*	*Aeration plus good survival of young fish; good fishing for large walleyes 4 to 6 pounds.*
Spirit Lake, *Dickinson*	*Large number of smaller fish. Plenty of action. Length limit.*
Storm Lake, *Buena Vista*	*Excellent fishing during past 2 years; 13-pounder in 1989! New regulations in 1991.*
West Okoboji, *Dickinson*	*Weed lines offer excellent opportunity.*
Yellow Perch	
East Okoboji, *Dickinson*	*Weed beds are holding more fish. Harvest continues to be good.*
Spirit Lake, *Dickinson*	*Good number of 6- to 8-inchfish available.*
West Okoboji, *Dickinson*	*Improving. Fish may be in deeper water during warm months.*

Although northwest Iowa has a variety of water bodies that support fish populations, it is the natural lakes that make this area unique. Their basins were formed by the Wisconsin glacier which covered Iowa 20,000 years ago. As the glacier melted and retreated, the basins filled with water.

There are 31 major natural lakes within this region containing nearly 30,000 surface acres of water. Their importance to Iowa's sport fishery was reflected recently in a 1986 survey of Iowa anglers. Natural lake fishing ranked number one as the most preferred water body to fish statewide.



Ron Johnson

Within the natural lakes region, walleye reigns as king with 32 percent of the anglers seeking them. Walleye populations are maintained with annual stockings in those lakes that are best suited. Natural reproduction is very limited in Iowa's natural lakes making stocking a critical component in maintaining desired walleye populations.

Walleye may be the most popular fish in this region, but the large diversity of species make the natural lakes particularly attractive to a variety of anglers. No other resource, with the possible exception of the Mississippi River, supports such a wide diversity of sport fish. The natural lakes provide a variety of diverse habitats which support the high species diversity. Creel surveys conducted on the Spirit/Okoboji chain of lakes have resulted in 14 different species of fish caught throughout the year. These fish include top predators like walleye, muskie, northern pike and bass, or panfish such as yellow perch, bluegill, crappie and bullhead. Miscellaneous species like the channel catfish, white bass, freshwater drum and carp are also prevalent.

Ron Johnson

Bullhead

Black Hawk, *Sac*	*Eight- to 9-inch fish. Start at the inlet.*
Center Lake, *Dickinson*	*Large number. Good shoreline access.*
Clear Lake, *Cerro Gordo*	*Excellent density. Small size; 7-inch average.*
Cornelia, *Wright*	*Best bet in north-central Iowa. 8 to 10 inches.*
Crawford Creek, *Ida*	*Lots of fish in the 9- to 11-inch range.*
Ingham Lake, *Emmet*	*May and June are best months. Numbers down slightly.*
Silver Lake, *Dickinson*	*Consistently good.*
Spirit Lake, *Dickinson*	*Phenomenal in 1990. Don't forget night fishing.*
Spring Lake, *Cherokee*	*Good fishing for 10- to 14-inch fish.*

Channel Catfish

Big Sioux River, *Lyon & Sioux*	*Fish generally average 1/2 to 2 pounds. Large numbers are common.*
Black Hawk, *Sac*	*Shad entrails are excellent bait.*
Boone River, *Hamilton*	*Summer months offer the best fishing.*
Cornelia, *Wright*	*One to 1-1/2 pounds. Cage rearing program provides consistent stockings.*
Des Moines River, *Kossuth & Humboldt*	*Catfish factory. Good fishing year-in and year-out.*
East Okoboji, *Dickinson*	*Best bet for large fish. 2- to 6-pound fish common. Consistent producer during spring and early summer.*
Little Sioux River, *Clay & Cherokee*	*Water conditions, winter severity, drought effects will tell the story for 1991. Contact fishery biologist for current conditions.*
Pahoja, *Lyon*	*Excellent in 1990 for fish from 4 to 8 pounds. Crawlers and chicken livers good bait.*
Storm Lake, *Buena Vista*	*Large fish. Islands and submerged reef are good locations.*

Muskellunge

Clear Lake, *Cerro Gordo*	*May is a good time -- always produces fish. Fish range from 30 to 40 inches. Rock reefs and points and Berkley Fish Hab weed beds.*
East Okoboji, *Dickinson*	*Good population of sublegal fish (<30 inches). Fish are scattered. Work the weeds near rock structures.*
West Okoboji, *Dickinson*	*Most consistent producer. Late summer and fall.*

Bluegill

Briggs Woods, *Hamilton*	*Action. Fish range from 6 to 8 inches.*

Crystal Lake, *Hancock*	*Recent renovation has provided excellent fishing. Good winter fishery. Nice size — most fish 6 to 8 inches.*
East Okoboji, *Dickinson*	*Excellent harvest in 1990 for 7- to 9-inch fish.*
Gustafson, *Buena Vista*	*Improving fishery.*
Little Wall Lake, *Hamilton*	*Excellent numbers. Renovated in 1989.*
Minnewashta, *Dickinson*	*Excellent fishing in 1990. Weed beds holding fish.*
Pahoja, *Lyon*	*High density. Good size structure.*
Spring Lake, *Cherokee*	*Lots of fish in the 8- to 9-inch range.*
Swan Lake, *Carroll*	*Large number of 7- to 8-inch fish.*
Upper Gar, *Dickinson*	*Good fishing. Again, weed beds holding fish.*
Upper Pine, *Hardin*	*6- to 7-inch fish. Beautiful lake.*
West Okoboji, *Dickinson*	*Consistently excellent fishery.*
Yellow Smoke, *Crawford*	*Excellent size. Lots of action.*

Crappie

Black Hawk, *Sac*	*Fall fishing for 10- to 12-inch fish.*
Crystal Lake, *Hancock*	*Best crappie population in north-central Iowa. Fish range from 7 to 9 inches.*
Pahoja, *Lyon*	*Excellent number of 7- to 8-inch fish.*
Storm Lake, *Buena Vista*	*Real "slabs," -- 10 to 14 inches.*
Swan Lake, *Carroll*	*Population estimate -- 35,000. All size classes.*
Yellow Smoke, *Crawford*	*Fish range from 8 and 10 inches up to 14 inches.*

Northern Pike

Crystal Lake, *Hancock*	*Fish up to 8 pounds; 2- to 4-pound pike common — try near submergent weed beds.*
Spirit Lake, *Dickinson*	*Excellent. Spring. Fish developing weed beds.*
West Okoboji, *Dickinson*	*Consistent. Fish developing weed beds.*
Winnebago River, *Cerro Gordo*	*April and May, especially near tile outlets and feeder streams.*

Smallmouth Bass

Boone River, *Hamilton*	*Fish rocky substrate in slack water or eddy areas.*
Iowa River, *Hardin*	*1990 survey revealed good density of a variety of sizes.*
Spirit Lake, *Dickinson*	*Shallow-water rock structures. Practice catch and release.*

Resources which support a multi-species population offer fishing opportunities year-round. No matter what time of year, there are at least some active fish willing to bite. Early spring provides opportunities for northern pike and crappie. May and June are excellent months for bullhead, walleye and bass. July and August means warmer water temperatures and increased activity for bluegill and channel catfish. As water temperatures cool in the fall, perch dominate the catch. Perch fishing remains good during the winter ice fishery. Bluegill also readily bite through the ice and walleye provide an opportunity to catch a trophy-sized fish.

There are so many opportunities for so many different fish. If you have never experienced fishing the natural lakes region of northwest and north-central Iowa, it is time you try! For those who live in the region and utilize the lakes, it is time to appreciate what a true treasure you have "sitting in your own backyard."

Narrative prepared by Jim Wahl, fisheries management biologist at Clear Lake.

Wayne Lonning

DNR Photo

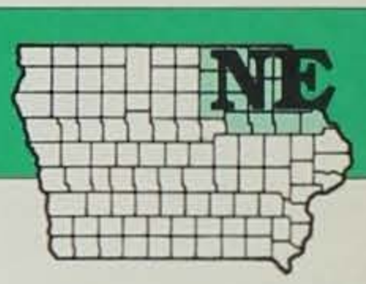
So you're all ready to go — tackle box fully restocked and in order, reels cleaned and lubed, new line on all the reels, hooks sharpened, and a 1991 fishing license in your wallet. Now let's take a look at some of the better "fishin' holes" in northeast Iowa you will want to try this year.

The accompanying tables list the better areas to pursue the major game fish species—bluegill, channel catfish, crappie, largemouth bass, northern pike, smallmouth bass, trout and walleye. The northeast also provides some fine angling and eating for several other less well-known species as well, and let's take a look at where to go for some of these.

Coming up soon is the annual spawning run of suckers in several inland rivers. This is a great way for mom, dad and the kids to release some of that pent-up fishing fever following a long winter. The Upper Iowa, Yellow, Turkey and Volga rivers are prime sucker streams. The tackle is simple — a half-ounce sinker and a #8 long-shanked hook baited with a gob of worms — and the action is often furious. Sucker meat is delicious, but bony. To solve the bone problem, most anglers either

West Okoboji, *Dickinson*	*Quality and quantity. Catch and release fishing very popular. State record in 1990!*
Winnebago River, *Cerro Gordo*	*Use artificial lures that mimic crayfish and small baitfish.*
Largemouth Bass	
Briggs Woods, *Hamilton*	*High density. Variety of size. Submerged timber and weed line.*
Dog Creek, *O'Brien*	*1990 surveys revealed good number of 15-inch fish. Practice catch and release on this small lake.*
Pahoja, *Lyon*	*Good numbers. Catch and release encouraged. Excellent fishing in 1990.*
Upper Pine, *Hardin*	*Produced several 5-pound plus fish in 1990.*
West Okoboji, *Dickinson*	*Excellent year class strength. Spring is best.*

by David L. Moeller, Regional Fisheries Supervisor



Species Location/*County*	*Comments*
Bluegill	
Casey Lake, *Tama*	*Large numbers in the 6- to 7-pound range.*
Greenbelt Lake, *Black Hawk*	*Fish up to 8 inches common in 8 to 10 feet of water.*
Hartwick Lake (Lake Delhi), *Delaware*	*Best fishing in embayment areas of lake.*
Lake Hendricks, *Howard*	*Fishing continued good in 1990; most fish from 6 to 7 inches.*
Mississippi River, *Pools 9 - 14*	*Size and numbers very good; best at spawning time in the backwaters on worms or crawlers.*
Volga Lake, *Fayette*	*Large numbers of 6- to 7-inch fish; drift old creek channels.*
Channel Catfish	
Cedar River, *Black Hawk, Bremer, Chickasaw & Floyd*	*Best population of catfish in the 3- to 8-pound class.*
Lake Hendricks, *Howard*	*Strong population resultingfrom cage rearing.*
Lake Meyer, *Winneshiek*	*Good population of cage-reared catfish.*
Maquoketa River, *Delaware, Jones & Jackson*	*Many "cats" in the 1- to 3-pound range with some up to 8 pounds.*
Mississippi River, *Pools 8 - 15*	*A very strong population of 12- to 18-inch fish; best along channel borders and on wing dams in summer andfall.*

Turkey River, *Clayton*	*Most fish between 1-1/2 and 2 pounds; best below Elkader.*
Upper Iowa River, *Allamakee*	*A strong population downstream of Lower Dam; fish up to 6 pounds.*
Volga Lake, *Fayette*	*Popular catfishing lake; fish up to 6 pounds.*
Wapsipinicon River, *Buchanan*	*Fish below Independence; a very strong catfish population.*

Crappie

Mississippi River, *Pools 9 - 15*	*Large numbers in 9- to 10-inch range; May and October best with minnows or small jigs.*
Hartwick Lake (Lake Delhi), *Delaware*	*Large population of 8- to 10-inch crappies.*
Volga Lake, *Fayette*	*Growing population of 7- to 8-inch fish.*

Largemouth Bass

Casey Lake, *Tama*	*Several fish just below the 18-inch size limit.*
George Wyth Lake, *Black Hawk*	*A few bass in 7- to 8-pound range caught every year.*
Greenbelt Lake, *Black Hawk*	*Good population of bass with best success during late May and early June.*
Lake Hendricks, *Howard*	*Majority of bass between 2 and 3-1/2 pounds, a few 5 to 6 pounds.*
Lake Meyer, *Winneshiek*	*Moderate population near the 15-inch size limit.*
Mississippi River, *Pools 9 - 14*	*The largest bass population in the state; best during pre-spawn and fall.*
Sweets Marsh Segment B, *Bremer*	*Large number of bass exceeding the 15-inch size limit.*
Volga Lake, *Fayette*	*Good catch-and-release action; many just under 15 inches.*

Northern Pike

Cedar River, *Black Hawk & Bremer*	*Moderate population size, good average size with a few large fish.*
Mississippi River, *Pools 9, 10, & 11*	*Very strong populations with many fish 5 to 8 pounds, some up to 15.*
Shell Rock River, *Bremer*	*Numerous fish in the 4- to 8-pound range.*
Wapsipinicon River & Tributaries, *Buchanan, Black Hawk & Bremer*	*Large population of small northerns, most under 5 pounds.*

Smallmouth Bass

Cedar River, *Mitchell & Floyd*	*Probably the best stream smallmouth fishery in the state; excellent sized fish.*

pickle them or grind the meat and deep fry it as thin patties. Either way, you're in for a real treat.

Also, early in the spring just after ice-out is a prime time for saugers in the "Mighty Mississippi." This close cousin of the walleye congregates in late March and early April in the tailwater areas just below the navigational locks and dams. The tailwaters of Dam #9 near Harper's Ferry, #10 at Guttenberg, #11 at Dubuque and #12 at Bellevue are prime sauger hotspots. Limits of 10 sauger are not uncommon during the peak of the run. Saugers disappear somewhat after spawning in April, but reappear in the tailwaters again in late fall and winter to provide additional action to those anglers willing to brave the cold. Their reward, however, is some of the best eating fillets found anywhere.

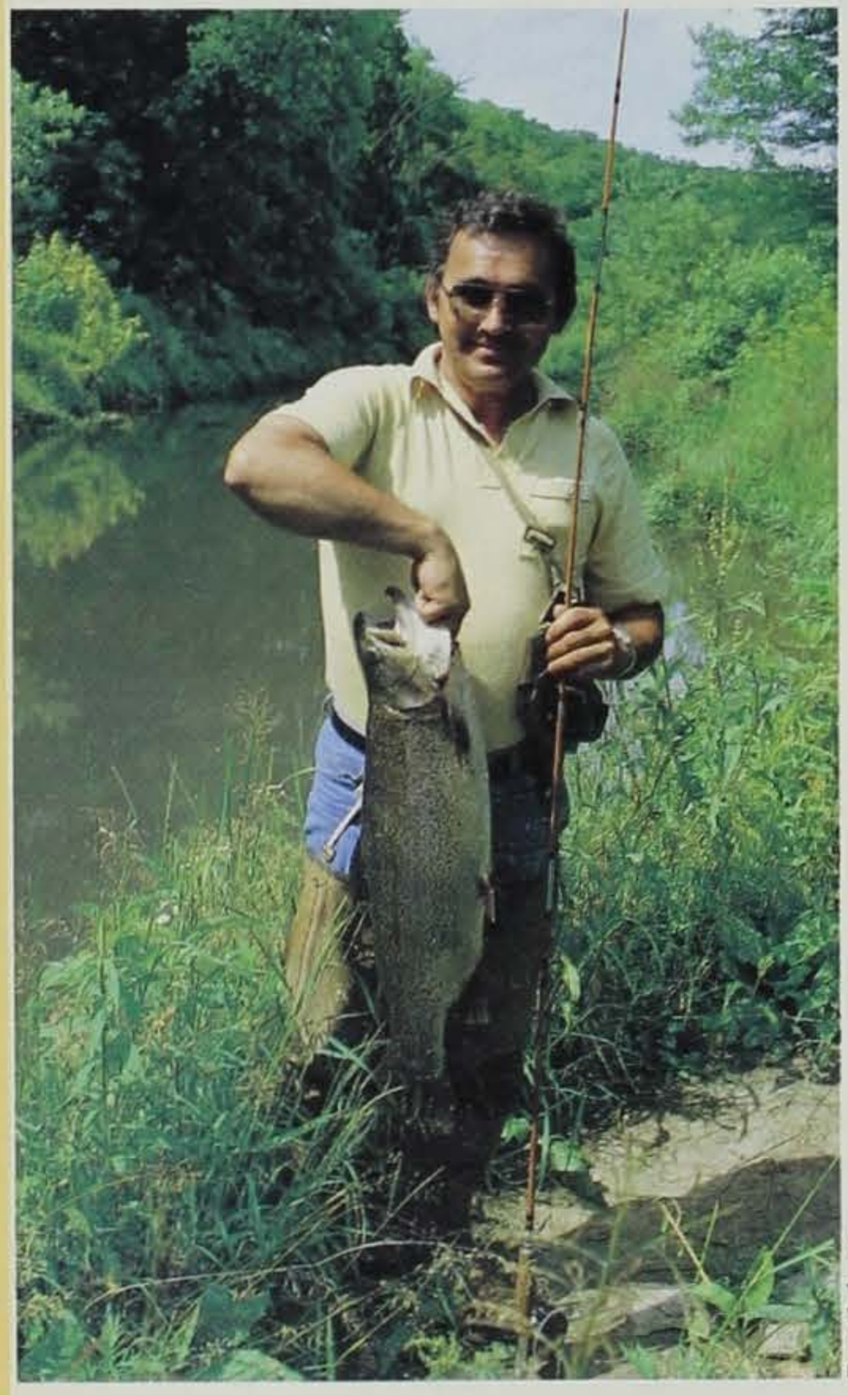
Ron Johnson

Another species that provides a lot of enjoyment to Mississippi River anglers is the freshwater drum, also known as sheepshead. This fish is so plentiful it supports a substantial commercial fishery as well as a significant sport fishery. The serious action begins in June and continues right on through the warm summer months. Drum are attracted to current, so look for them along the main channel borders, side channels and especially near

the wing dams. They love crawlers and crayfish presented on the bottom.

One of my personal favorites is the white bass, or striper. This fish loves to smack lures and will test the drag system on your reel. Look for this speedster primarily in the Mississippi River; however, Hartwick Lake near Delhi also supports a good striper population. White bass like a combination of current and rocks which makes the Mississippi wing dams a favored haunt. They love to run in schools, so be ready for some fast and furious action when you have them located.

As you can see, northeast Iowa offers a myriad of quality angling opportunities. Couple this with the natural beauty of the area, and you are sure to enjoy each fishing expedition. Tight lines to each of you this year!



Ron Johnson

Maquoketa River, *Delaware*	*Catch-and-release fishery below Delhi Dam; excellent habitat with good-sized fish.*
Mississippi River, *Pools 9, 10 and 11*	*Increasing population; best on rocks, riprap and wing dams in the fall.*
Turkey River, *Fayette*	*Expect good results in 1991 with more normal water stages.*
Upper Iowa River, *Howard, Winneshiek & Allamakee*	*Fishing was best in fall 1990 as water stages stabilized.*
Volga River, *Fayette*	*Expect good success in 1991.*
Wapsipinicon River, *Buchanan*	*Best bass fishing below Independence; numerous northern pike and walleye also.*
Yellow River, *Allamakee*	*Expect good results in 1991.*

Trout

Bailey's Ford, *Delaware*	*Stocked with catchable rainbow trout, April - October.*
Bloody Run, *Clayton*	*Stocked with catchable rainbows and browns, April - October.*
French Creek, *Allamakee*	*Stocked with catchable rainbows and browns, April - November.*
Little Turkey River, *Delaware*	*Stocked only with catchable browns; walk-in area.*
North & South Bear, *Winneshiek*	*Stocked with catchable rainbows and browns, April - November.*
Sny-Magill, *Clayton*	*Stocked with catchable rainbows and browns, April - November.*
Spring Branch, *Delaware*	*Fourteen-inch minimum on browns; artificial lure only; excellent insect hatches.*
Trout Run, Winneshiek	*Catchables stocked April - October.*
Waterloo Creek, *Allamakee*	*Stocked with catchable browns and rainbows, April - October.*

Walleye

Cedar River, *Black Hawk, Bremer, Chickasaw & Floyd*	*Best angling below dams in the spring; fish up to 10 poundsnot uncommon.*
Mississippi River Tailwaters, *Pools 9 - 15*	*Good November - April; best for lunkers just after ice-out.*
Mississippi River Wing Dams, *Pools 9 - 15*	*Best May - October at low flows; slow troll crawlers, leeches or plugs bumping the rocks.*
Shell Rock River, *Butler, Bremer & Floyd*	*Number of fish 1 to 2 pounds has increased from fingerling stockingsthe last few years.*
Wapsipinicon River, *Buchanan*	*Expanding population from walleye fingerling stockings; many fish 1 to 2 pounds.*
West Fork Cedar River, *Butler*	*Fish caught in pools near confluence with Shell Rock River summer and fall.*

by Stephen J. Waters, Regional Fisheries Supervisor

Species Location/*County*	*Comments*
Bluegill	
Mississippi River	*See narrative.*
Odessa, *Louisa*	*Average harvest size 7 to 8 inches.*
Farm Ponds	*Exceptional angling -- best chance for a trophy.*
Pleasant Creek, *Linn*	*Average harvest size 6 to 8 inches.*
Geode, *Henry*	*Average harvest size 6 to 8 inches.*
Miami, *Monroe*	*Average harvest size 6 to 7 inches.*
Hannen Lake, *Benton*	*Average harvest size 7 inches.*
Hawthorn Lake, *Mahaska*	*Average harvest size 6 to 7 inches.*
Kent Lake, *Johnson*	*Average harvest size 7 inches.*
Iowa Lake, *Iowa*	*Average harvest size 7 inches.*
Keomah, *Mahaska*	*Average harvest size 6 to 7 inches.*
Channel Catfish	
Mississippi & Inland Rivers	*See narrative.*
Rathbun, *Appanoose*	*Exceptional fishery -- all sizes available.*
Coralville, *Johnson*	*Exceptional fishery -- a variety of sizes.*
Otter Creek, *Tama*	*Lots of 2- to 7-pound fish.*
Iowa Lake, *Iowa*	*Average harvest size 11 to 13 inches.*
Kent Lake, *Johnson*	*Average harvest size 11 to 13 inches.*
Miami, *Johnson*	*Good for a variety of sizes.*
Macbride, *Johnson*	*Average harvest size 15 inches.*
Darling, *Washington*	*Good for a variety of sizes.*
Geode, *Henry*	*Average harvest size 14 to 16 inches.*
Crappie	
Rathbun, *Appanoose*	*Average harvest size 9 inches; trophy fish available.*
Mississippi River	*See narrative.*

Between the locks and dams that assist the movement of commercial barge traffic on the Mississippi River lies an exciting and exceptional angling resource. Largemouth bass, panfish, catfish, white bass, walleye and sauger are the more popular sport fish sought by this river's anglers.

Ron Johnson

The Mississippi River's protective minimum size limit on largemouth bass (now 14 inches) has meant a greater number and larger size of bass to interest the angler. Fall electrofishing surveys at the Big Timber Area showed excellent numbers of 12- to 15-inch fish. Other top-producing areas in Pool 17 include Cleveland Slough, Hidden Acres and Bogus Island.

Huron Island and lower Burnt Pocket backwaters in Pool 18, Burlington Island, riprap shorelines, and stream mouths in Pool 19 are also favorite hotspots of bass anglers. Radio tagging studies have shown that backwater bass love structure. Therefore, fish right on top of brush, logs and stumps.

Crappie and bluegill angling on the Mississippi River for quality-size fish will be good in the same backwaters where good bass fishing can be found. Fish tight to stumps, logs and brush. At areas where deep

holes exist, crappie can be caught suspended in open water during the summer months.

Perhaps the Mississippi River is the best catfish hole of all. This is reflected in the generous catch limits — all you can carry. "Mr. Whiskers" can be caught in nearly all parts of the river, but best bets are above and below wing dams and riprapped heads of islands where there is a strong current. Stump fields and riprapped shorelines are hotspots during the spawning period.

Fantastic walleye and sauger angling also exist on the "Big River." The navigation lock and dam habitat produces great catches in late winter, early spring and late fall. Wing dam fishing during summer and early fall will also produce stimulating action. A 15-inch size limit is in effect for walleye. White bass anglers should look to the same walleye/sauger habitats to catch this numerous and spirited fish.

Rivers in southeast Iowa are great places to catch catfish. The Wapsi, Skunk, Cedar, Des Moines and Iowa rivers all produce excellent numbers and a variety of sizes of catfish. Float fishing from one access to another, checking brush piles, lower ends of sandbars, and rocky riffles will produce lots of fish and lots of fun.

Early spring, soon after ice-out, anglers should take note of some fabulous channel cat fishing. When water temperatures reach about 50°F, these fish go on a feeding spree, feeding on fish that have died during the winter. Plan to use a sour fish bait, such as cut shad, and fish in the shallower portion of the lake or river. The best areas for early-spring catfish angling are Rathbun, Coralville and Darling lakes and all river systems.

Coralville, *Johnson*	*Average harvest size 9 to 10 inches.*
Odessa, *Louisa*	*Average harvest size 8 to 10 inches.*
Geode, *Henry*	*Average harvest size 8 to 9 inches.*
Iowa Lake, *Iowa*	*Average harvest size 8 to 9 inches.*
Pleasant Creek, *Linn*	*Average harvest size 8 inches.*
Darling, *Washington*	*Average harvest size 8 inches; trophy fish available.*
Miami, *Monroe*	*Average harvest size 8 inches.*

Largemouth Bass

Mississippi River	*See narrative.*
Farm Ponds	*Best chance for a trophy.*
Odessa, *Louisa*	*Variety of sizes.*
Miami, *Monroe*	*High population numbers.*
Pleasant Creek, *Linn*	*Known for its bigger fish.*
Iowa Lake, *Iowa*	*Slot size limit of 12 to 16 inches.*
Hawthorn Lake, *Mahaska*	*Slot size limit of 12 to 16 inches; bigger fish available.*
Geode, *Henry*	*Good catch-and-release fishery.*

Walleye

Mississippi River	*See narrative.*
Rathbun, *Appanoose*	*Boat angling late spring and summer.*
Macbride, *Johnson*	*Average harvest size of 14 to 18 inches.*
Des Moines River, *Wapello*	*Hot action below the Ottumwa hydropower dam.*

White Bass

Mississippi River	*See narrative.*
Rathbun, *Appanoose*	*Lots of 12- to 13-inch fish.*
Coralville, *Johnson*	*Lots of 11- to 12-inch fish.*
Macbride, *Johnson*	*Average harvest size 14 to 15 inches.*
Des Moines River, *Wapello*	*Hot action below the Ottumwa hydropower dam.*

Wipers

Coralville & Iowa River, *Johnson*	*4- to 6-pound fish taken in reservoir and below lowhead dams in Iowa City.*

by Joe Schwartz, Regional Fisheries Supervisor

Species Location/*County*	*Comments*
Bluegill	
Lake Anita, *Cass*	*Jumbos! Ten-inch fish are frequently caught.*
Big Creek, *Polk*	*Try the edges of weed beds.*
Greenfield Lake, *Adair*	*Medium-sized fish are abundant; fish are larger than in 1989.*
Hickory Grove, *Story*	*Not fast, but big.*
Lake Icaria, *Adams*	*Nice looking 6- to 8-inch fish with some up to 9-1/2 inches.*
Little River, *Decatur*	*Nine- to 10-inch fish are common.*
Twelve Mile, *Union*	*Nine- to 10-inch fish are common. Try around flooded trees.*
Viking Lake, *Montgomery*	*Eight-inch fish common. Try mid-summer drift fishing. Fish are larger than in 1990.*
Crappie	
Lake Anita, *Cass*	*First crappie lake to start in the spring.*
Badger Creek, *Madison*	*Nice fish, 8 to 9-1/2 inches.*
Big Creek, *Polk*	*Fish will be 8 to 9 inches this year.*
Green Valley, *Union*	*Super abundant 7- to 9-inch fish.*
Greenfield Lake, *Adair*	*Try the face of the dam in spring.*
Lake Icaria, *Adams*	*Fish are up to 1pound; try fishing newly riprapped areas.*
Manawa, *Pottawattamie*	*Best crappies in several years. Some 8 to 10 inches.*
Red Rock, *Marion*	*Big fish. Fish when water is clear, try feeder streams.*
Saylorville, *Polk*	*Not as many slabs, but still excellent fish.*
Largemouth Bass	
Lake Anita, *Cass*	*Perennial favorite.*
Farm Ponds	*Many private ponds in SW Iowa have good bass.*
Green Valley, *Union*	*The 18-inch length limit has produced an abundance of big bass.*
Hickory Grove, *Story*	*Lots of small ones, extra clear water.*
Lake Icaria, *Adams*	*Best and most bass for several years. Lots of 10-to 14-inchers.*
Little River, *Decatur*	*Good fish. Try fishing submerged brush.*

Last year's fishing proved to be the worst we have had for a good many seasons in southwest Iowa. May is usually the best fishing month for us, but 1990 was a bust at most of our lakes. Below-normal temperatures and frequent cold rains combined to discourage many of our anglers and produce poorer catches of crappie, bluegill and bass at most lakes. Big Creek, a favorite of Des Moines-area anglers, proved to be the exception to the rule, however. Good fishing held up when most other lakes were terrible. Hopefully, adverse weather conditions typical of 1990 won't occur again this year.

I anticipate fishing in 1991 to be the best it has ever been if we receive good weather in the southwest part of the state. I am willing to make such a statement because of several important factors which have occurred.

Two years of drought in 1988 and 1989 will have the most significant effect on 1991 fishing. Those years produced several environmental conditions that will give positive results in our fishing this year. First, we had two years of exceptionally clear, clean water in our lakes because no run-off occurred. All fish species do better in clear water. Predators, such as bass and walleye, are able to see their prey easily, feed successfully and grow at a much-faster rate in clear water. Slowly declining water levels and shrinking water volumes in those two years also had a positive effect. Reduced water volumes force all fish into a smaller area where predators are able to more effectively prey on small fish. Prey species grow better because there are fewer of them competing for the same food and predators grow better

Ron Johnson

because of the abundance of prey. All of our lakes had lower water levels throughout the drought, yet contained sufficient water to easily over-winter fish. Fish managers use drawdowns as a management technique in several southwest lakes where swimming or other activities will not be affected by such practices.

The drought appears to be over and all of our lakes filled last year. Biologists surveyed most of the lakes in 1990, and the reports wereunanimous. Fish numbers, growth, condition and reproduction are exceptional at most public lakes in southwest Iowa. Refilled lakes evidently produced an abundance of natural food for the fish remaining because all species show excellent body condition. When you fish southwestern lakes this year, I think you will be pleased with the size of fish you catch. That prediction includes both predators, like bass and walleye, and panfish, like bluegill, crappie and bullheads. I will make one final prediction. Fisheries surveys in 1990 showed many of our lakes had excellent reproduction of bass. Growth of these young-of-the-year fish was also much above average. In about three or four years, we are going to have super bass fishing as these little fish grow to be keepers!

Nine Eagles, *Decatur*	*Good numbers of small fish, an occasional large fish.*
Rock Creek, *Jasper*	*Good numbers of 2- to 4- pounders.*
Twelve Mile, *Union*	*Tough fishing, excellent for 10- to 15-inch fish.*
Viking Lake, *Montgomery*	*Best in years.*
Walleye/Saugeye	
Big Creek, *Polk*	*Four-pounders common.*
Des Moines River, *Polk & Boone*	*Fish below flood Corps dams, lowhead dams and gravel riffles.*
Lake Icaria, *Adams*	*Fish are up to 10 pounds. Large group of smaller keepers coming on.*
Little River, *Decatur*	*Average fish are 13 to 16 inches.*
Twelve Mile, *Union*	*Fish artificial reefs. Fish are 13 to 16 inches.*
Bullheads	
Green Valley, *Union*	*Nine- to 10-inch fish.*
Little River, *Decatur*	*Nice fish, big catches.*
Prairie Rose, *Shelby*	*Fish are bigger this year. Average fish are 8 inches.*
Rock Creek, *Jasper*	*Fish are definitely keepers.*
Twelve Mile, *Union*	*Nice fish, big catches.*
Channel Catfish	
Big Creek, *Polk*	*Fish north end of west arm in summer.*
Easter Lake, *Polk*	*Very good.*
Lake Icaria, *Adams*	*All sizes up to 5 pounds, occasional 15 pounder.*
Little River, *Decatur*	*Fish small bays in mid-summer. Biologist was impressed with catfish seen in 1990 survey. Many 3- to 5-pounders.*
Littlefield Lake, *Audubon*	*Fish north shore on strong south wind.*
Mormon Trail, *Adair*	*Good numbers.*
SW Rivers	*Catfish are abundant in all of our rivers.*
Twelve Mile, *Union*	*Cats up to 10 pounds, good early.*
Willow Lake, *Harrison*	*Abundant 12- to 14-inch cage-reared fish.*
Yellow Perch	
Lake Anita, *Cass*	*Abundant 8 -to 9-inchers easily caught on worms.*
Big Creek, *Polk*	*Perch are now frequently caught in Big Creek.*
Lake Icaria, *Adams*	*Seven- to 8-inchers.*

First in a Three-Part Series

Wonder Chemicals:

Not So Wonderful After All

They're called the "wonder chemicals"— chlorofluorocarbons, or CFCs for short, and some related compounds known as halons. As chemicals go, they are truly wonderful; they're nontoxic, nonflammable, extremely stable and quite inexpensive. Since their invention in the 1930s, CFCs and halons have lent their miraculous qualities to every aspect of American life.

Look at a day in the life of a typical American:

◆ Waking up on a summer morning, she has enjoyed a comfortable night's sleep because of central air conditioning, cooled by CFCs. If it was winter, she would have stayed equally comfortable because of her house's foam insulation blown in with CFCs.

◆ Padding downstairs to the kitchen, she congratulates herself again for buying an energy efficient refrigerator — efficient because of its CFC-blown insulation and CFC coolant. She also notes with satisfaction the fire extinguisher hanging on the wall making her kitchen safer — and containing halons.

◆ Getting ready for work, she uses a roll-on deodorant (she switched from an aerosol after CFCs were banned for use as propellants in the U.S.).

◆ Driving to work, she sits on a car seat full of polyurethane foam made with CFCs. Like 9 out of 10 new American vehicles, her car has an air conditioner which, because of its design, tends to leak its CFC coolant.

◆ Her computer at work was produced using CFCs as a solvent to clean the tiny microchips that make up its "brain." The office building is air conditioned with a large commercial CFC-cooled unit.

◆ On the way home, she stops to pick up some groceries — produce that has been trucked to the store in a refrigerated trailer and frozen food out of the row of freezers, kept cold by CFCs.

◆ Being environmentally conscious, though, our typical American avoids buying anything made of styrofoam. She doesn't want to contribute to the depletion of the ozone layer!

Americans and others began to be aware that CFCs might not be so wonderful after all in the 1970s when it was reported the chemicals might be damaging the earth's protective ozone layer. The response in the U.S. and Canada was to ban CFCs in aerosol sprays. However, the other uses of CFCs and halons — as foaming agents, coolants, solvents, sterilizers and fire extinguishers — have continued to grow throughout the world.

The CFC market is now worth $2 billion worldwide. A handful of companies produce the approximately two billion pounds sold annually, but almost every American and more than 375,000 U.S. businesses — including some major Iowa employers — depend on CFCs in some way.

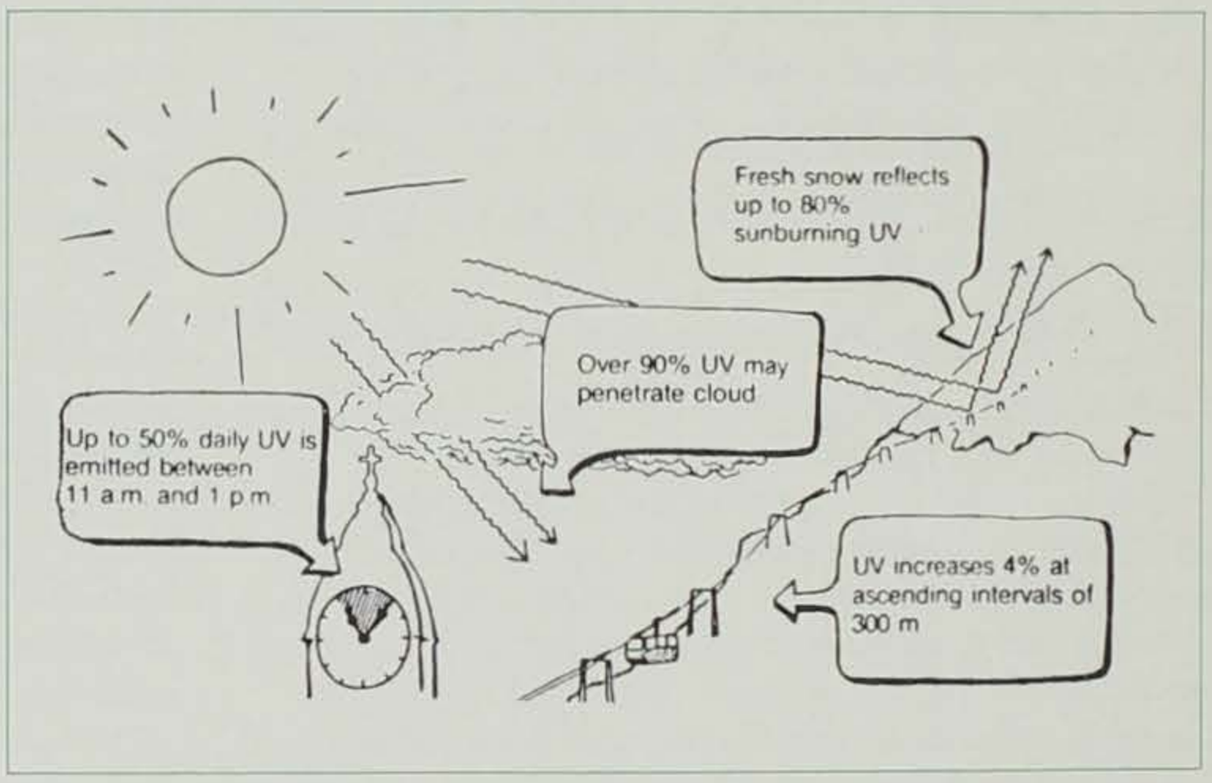
It wasn't until 1985, when British scientists, doing routine atmospheric tests in Antarctica, made a startling discovery, that the world community started taking a second look at CFCs. As is now apparent, the very qualities that make CFCs so useful also make them very destructive when they come into contact with ozone. CFCs are the wonder chemicals gone wrong.

by Patricia S. Cale

Discovery of the Ozone "Hole"

During the summer of 1985, British satellite data showed a loss of 40 percent of the ozone over the Antarctic. NASA confirmed the data and further noted that this "hole" in the ozone covered an area the size of North America. Not only that, according to NASA, ozone over the whole globe had dwindled by about three percent between 1978 and 1984.

Why did these findings cause international alarm? Because ozone, a molecule made up of three oxygen atoms, is what stands between the earth's surface and radiation from the sun. Ozone screens the ultraviolet rays that constantly bombard the earth. Each one percent decrease in ozone allows two percent more UV radiation to reach the earth. The effects on human health of ozone depletion could be significant, with increases in skin cancers and eye disorders.



Once the decline in ozone had been detected, the search for explanations began. Was it sunspot activity? After all, ozone is both created and destroyed by ultraviolet radiation. Had gases from volcanic eruptions changed the composition of the stratosphere? Were shifts in wind patterns responsible?

A NASA expedition to Antarctica in 1987 absolved from blame any natural causes for the ozone hole and pointed the finger at human activity. In daring and dangerous flights over the South Pole, NASA pilots were able for the first time to measure chlorine at 500 times its normal levels. That much chlorine could only come from one source — CFCs. The NASA scientists had found the "smoking gun" that linked CFCs and ozone depletion.

The free chlorine atoms are the link in a chain of destruction that takes place when CFCs released at the earth's surface migrate to the stratosphere. The very stability that makes CFCs helpful in so many applications on earth also allows them to travel the 15 to 20 miles to the stratosphere without breaking up. Once in the stratosphere, however, the UV rays are strong enough to break their chemical bonds and free their chlorine atoms.

When a chlorine atom contacts ozone, it pulls off one of the three oxygen atoms, creating two new compounds, pure oxygen (O2) and chlorine monoxide (ClO). The unique screening qualities of the ozone molecule are lost. In addition, the chlorine atom quickly sheds its oxygen rider and is free to attack another molecule of ozone. It has been estimated that each atom of chlorine released from a CFC in the stratosphere can break up as many as 100 molecules of ozone.

The ozone "hole" over Antarctica is a seasonal phenomena. During the winter the weather over the South Pole is dominated by the polar vortex, a whirlpool of winds that prevents outside air from entering the region. The reactions that create the ozone hole are thought to occur on the ice particles contained in the extremely cold vortex. When the vortex breaks up in the spring, ozone-rich air from outside rushes in and the hole disappears.

The extent of the thinning has varied each year since the hole was discovered. The 1987 study found that the area over Antarctica contained only half the ozone over the equator. In 1988 the ozone loss was less severe, but the ozone hole was back again in 1989.

According to Robert Watson of NASA, chlorine concentrations in the atmosphere have increased from 0.6 parts per billion (ppb) 100 years ago to more than three ppb now. If chlorine increases to five ppb, we could expect to see a decline in ozone of four to six percent in the higher latitudes and up to two percent closer to the equator.

Efforts are underway to phase out CFCs and halons worldwide. But even if we stopped all emissions by the year 2000, an optimistic scenario, chlorine levels would still peak at five ppb because of the residual effects of CFCs. It would be 80 years before chlorine levels would decline to the point of restoring the ozone layer.

Concern for Human Health Effects

Medical authorities are concerned about possible increases in skin cancers and eye disorders as a result of ozone depletion. Exposure to ultraviolet radiation has been identified as a major factor in both carcinomas and the more lethal melanomas as well as in cataracts and retinal degeneration.

Long-term exposure to the sun is the primary cause of carcinoma. Tumors occur on exposed skin, their frequency increases with age and they are seen more often on light-skinned people who sunburn easily. An increase in carcinoma is expected with depletion of ozone; however, it is relatively easy to treat. Therefore, doctors and researchers are focusing their concern on the often fatal form of skin cancer — melanoma.

The incidence of melanoma has doubled since 1980 and is rising faster than any other form of cancer. Malignant melanoma is now the number 1 form of cancer for women aged 25 to 29. Melanoma is indirectly linked to sun exposure in light-skinned people, according to Marianne Berwick, a cancer researcher at Yale University, although the causal relation is not well understood by doctors.

Some researchers speculate that UV radiation may suppress the body's immune system, allowing cancer cells to circulate freely through the body. This would help to explain why some melanomas are found on parts of the body that have not been exposed to the sun.

Another theory holds that melanoma is related to short periods of intense exposure to burning rays, rather than gradual tanning. If this is true, ozone depletion allowing stronger UV radiation to reach the earth could make melanoma more likely and any sun exposure more dangerous.

The U.S. Environmental Protection Agency projects that as ozone is depleted, light-skinned people will experience greater incidences of skin cancer. With every one percent decrease in stratospheric ozone, we could expect to see a one to three percent increase in carcinomas and up to a one and a half percent increase in melanomas.

The possibility of eye disorders resulting from ozone depletion also concerns doctors. Cumulative exposure to UV rays is one factor causing cataracts, a clouding of the lens of the eye that causes loss of vision. According to the American Medical Association, more than 3.5 million Americans have visual defects due to cataracts.

The retina is especially sensitive to light and can be damaged by exposure to UV radiation, according to Dr. Jose Pulido of the University of Iowa Department of Opthamology. For example, UV exposure may be a strong factor in macular degeneration, the leading cause of blindness in the elderly. This disease affects 28 percent of the population aged 75 to 85.

These light-related eye disorders are linked to cumulative exposure, occurring in older people after a lifetime of exposure to the sun. However, with ozone depletion, according to Dr. Pulido, these diseases could occur at earlier ages as the intensity of UV radiation increases.

Much of the concern about health effects of ozone depletion is that many people are not taking precautions even now to protect themselves against UV radiation. The best way to treat skin cancers and eye disorders is to not get them. Wearing strong sunscreen, avoiding the sun during the middle of the day and wearing sunglasses can go a long way toward preventing sun-related diseases. If that lesson is not learned now, ozone depletion could make people learn it the hard way in the future.

Not just CFCs

Another chemical, bromine, is to halons as chlorine is to CFCs. Halons, used in fire extinguishers, also migrate to the stratosphere and once there, release their bromine atoms. Bromine is responsible for about 10 to 30 percent of the current depletion of ozone, with chlorine accounting for the remainder.

To further complicate matters, two other non-CFC solvents also contribute chlorine to the stratosphere -- carbon tetrachloride and methyl chloroform.

Weaning Ourselves from CFCs

CFCs (and halons) have become a pervasive part of life in the United States and in many other developed countries. We depend on them to keep our food safe and our homes and businesses heated and cooled, to produce electronics, extinguish fires and sterilize medical equipment.

With the recognition that these "wonder" chemicals are not having such wondrous effects on the environment, have come actions by the companies that use them, by governments and by international agencies to, in effect, wean ourselves from our dependence.

-- *Reprinted from the* Iowa Energy Bulletin, *September 1990.*

Patricia S. Cale is an energy information specialist with the DNR in Des Moines.

FILLETING FISH FAST

Article and photos by John Pitlo

Fishing is a favorite outdoor sport for more than one million Iowans. The state has many good places to fish in its creeks, rivers, ponds, lakes and reservoirs.

Fishing is a fun outdoor activity, but your angling trips can be even more enjoyable when you can sit down to a meal of delicious freshly caught fish. By knowing a few simple tips and tricks on how to handle your fish from the water to the frying pan, you will be able to enjoy some tasty fish fillets.

Keeping Your Catch Fresh

Nothing beats the flavor of fresh fish. However, fish is a very perishable food, and you should plan ahead for their proper care. If you plan to bring some fish home from a fishing trip, keep your catch alive as long as possible. A good stringer, basket, bucket or live well works for short periods when the water is cool in the spring and fall. But for longer trips and during the warm water of summer, the best way to keep fish fresh is to put them directly on some ice in a cooler.

Filleting Your Catch

Filleting is a popular and easy method of preparing fish for the frying pan. A good fillet knife has a long, thin, flexible blade; however, for the last several years I have used an electric carving knife. I've found that an electric knife is faster and more efficient than a hand fillet knife. To fillet a fish, you simply cut the flesh away from the bones and skin. The end product is a boneless, skinless piece of fish ready to be cooked, with no hassle or worry about bones.

John Pitlo is a fisheries biologist for the department at Bellevue.

Panfried Fish

Fish fillets
1 cup flour with salt and pepper to taste
2 eggs, beaten
2 teaspoons milk (add to eggs)
1 cup saltine crackers, crumbled (corn meal or crushed bread crumbs may be substituted)

Flour each piece of fish and shake to remove the excess. Dip floured fish in egg and milk mixture and allow excess to drip back into the pan. Roll fish pieces in cracker crumbs to give them a nice even coating. Place prepared fish directly into a frying pan filled with 1/8- to 1/4-inch hot cooking oil. The oil should be hot enough so that when the fish are placed in the pan, the oil foams. Cook on both sides to a crispy golden brown. Do not overcook, as this causes fish to be rubbery and tough. Fish are completely cooked when the flesh flakes at the touch of a fork.

-- *John Pitlo*

1990 FISH AWARDS

New state records are highlighted.

WEIGHT	LOCATION/COUNTY	DATE	NAME/ADDRESS
BASS, LARGEMOUTH (MINIMUM -- 7 LBS. OR 22")			
10 lbs. 4 ozs.	Private Pond, Pottawattamie	09/27/90	Chris Sullivan, Honey Creek
9 lbs. 2 ozs.	Farm Pond, Crawford	04/04/90	William Neumann, Denison
9 lbs.	Lake Hawthorn, Mahaska	09/01/90	James A. Wahner, Cedar Falls
8 lbs. 8 ozs.	Old Sand Pit, Jones	05/20/90	John D. Spores, Wyoming
8 lbs. 6 ozs.	Farm Pond, Jefferson	09/09/90	Ron Carter, Fairfield
8 lbs. 4 ozs.	Willow Lake, Harrison	05/19/90	Richard E. Werner, Omaha, NE
8 lbs. 2 ozs.	Farm Pond, Chickasaw	05/06/90	Mike Schermer, Charles City
8 lbs. 1 oz.	Farm Pond, Mills	06/20/90	Rick S. Gilland, Council Bluffs
8 lbs.	Pella Area, Marion	04/26/90	Joe Snyder, Pella
7 lbs. 14 ozs.	Farm Pond, Johnson	05/06/90	Eric Barta, Solon
7 lbs. 14 ozs.	Farm Pond, Fremont	09/22/90	Ken Bird, Omaha, NE
7 lbs. 14 ozs.	Farm Pond, Monona	09/23/90	Jeff Renner, Denison
Released--22-1/4"	Sand Pit, Carroll	05/10/90	Mark Gleason, Rockwell City
Released--22-1/2"	Sand Pit, Carroll	10/21/90	Mark E. Kraft, Columbus
Released--22"	Farm Pond, Pottawattamie	06/20/90	Mitch Rew, Council Bluffs
Released--22-1/2"	Farm Pond, Poweshiek	04/30/90	Donald W. Barth, Waterloo
Released--22-1/4"	Pond, Montgomery	08/18/90	Steve Philby, Red Oak
Released--22-1/2"	Pond, Montgomery	08/16/90	Steve Walker, Red Oak
Released--22-1/4"	Pond, Montgomery	07/05/90	Steve Walker, Red Oak
Released--22"	Crawford Creek, Ida	06/16/90	Barry Kruse, Alta
Released--22"	Pond, Montgomery	08/02/90	Steve Walker, Red Oak
Released--22-1/4"	Pond, Montgomery	04/14/90	Steve Philby, Red Oak
Released--24"	Farm Pond, Cherokee	04/15/90	Dave Sitzmann, Norfolk, NE
BASS, OCEAN-STRIPED (MINIMUM -- 5 LBS.)			
No Entries			
BASS, ROCK (MINIMUM -- 1 LB.)			
No Entries			
BASS, SMALLMOUTH (MINIMUM -- 4 LBS. OR 20")			
7 lbs. 12 ozs.	West Okoboji, Dickinson	09/28/90	Rick Gray, Dickens
5 lbs. 8 ozs.	Spirit Lake, Dickinson	07/03/90	John H. Tonsfeldt, Ft. Meade, MD
5 lbs. 2 ozs.	West Okoboji, Dickinson	10/06/90	Bernie Egenberger, Omaha, NE
5 lbs.	Maquoketa, Delaware	11/10/90	Kurt Martin, Manchester
4 lbs. 15 ozs.	West Okoboji, Dickinson	05/12/90	Dwane Krogman, Lismore, MN
4 lbs. 15 ozs.	West Okoboji, Dickinson	11/12/90	Jim Dietrich, Rodman
4 lbs. 12 ozs.	West Okoboji, Dickinson	04/22/90	Mark Doyle, Sleepy Eye, MN
4 lbs. 10 ozs.	West Okoboji, Dickinson	02/04/90	Ervil Dotson, Milford
4 lbs. 10 ozs.	West Okoboji, Dickinson	01/28/90	Merilyn Passow, Pomeroy
4 lbs. 10 ozs.	West Okoboji, Dickinson	05/04/90	Dwane Krogman, Lismore, MN
4 lbs. 10 ozs.	West Okoboji, Dickinson	10/19/90	Randy Pritts, Cherokee
BASS, WHITE (MINIMUM -- 2-1/2 LBS.)			
3 lbs. 5 ozs.	Iowa River, Johnson	08/22/90	Lavern Stahmer, Iowa City
2 lbs. 12 ozs.	West Okoboji, Dickinson	02/03/90	Mike Lindsay, Arnolds Park
2 lbs. 12 ozs.	Des Moines River, Marion	10/10/90	Norman W. Van Wyk, Pella
2 lbs. 8 ozs.	Cedar River, Linn	10/09/90	Fritz Geers, Marion
2 lbs. 8 ozs.	Mississippi River, Guttenberg	09/09/90	Dan Putz, Manchester
BASS, WIPER (MINIMUM -- 4 LBS.)			
14 lbs. 11 ozs.	Des Moines River, Polk	10/15/90	Bart Perrigo, Des Moines
13 lbs. 10 ozs.	Des Moines River, Polk	08/02/90	Jeff Brown, Colfax
10 lbs.	Des Moines River, Polk	05/25/90	Jesse Nichols, Des Moines
7 lbs. 8 ozs.	Des Moines River, Wapello	10/18/90	George L. Bishop, Oskaloosa
5 lbs. 12 ozs.	Mississippi River, Clinton	11/08/90	Ben Jess, Clinton
4 lbs. 12 ozs.	Des Moines River, Marion	02/16/90	Gary Snyder, Pella
BASS, YELLOW (MINIMUM -- 3/4 LB.)			
1 lb. 2 ozs.	Black Hawk Lake, Sac	05/23/90	Mark Woeste, Lake View
1 lb.	Black Hawk Lake, Sac	04/14/90	Charles Clausen, Robbinsdale, MN
1 lb.	Black Hawk Lake, Sac	05/16/90	Mark Woeste, Lake View

1 lb.	Cedar River, Black Hawk	10/06/90	Kevin J. Bley, Waterloo
15 ozs.	Black Hawk Lake, Sac	05/17/90	Robert W. Kurth, Glidden
14 ozs.	Arrowhead, Sac	08/12/90	Phillip G. Hott, Storm Lake
14 ozs.	Lake Icaria, Adams	12/27/90	Leona Templeton, Red Oak
13 ozs.	Black Hawk Lake, Sac	05/14/90	Mark Woeste, Lake View
13 ozs.	Arrowhead, Sac	08/08/90	Bill Hott, Lake View
13 ozs.	Black Hawk Lake, Sac	05/14/90	Mark Woeste, Lake View
12 ozs	Lake Icaria, Adams	09/21/90	Jack Bowen, Malvern
12 ozs.	Shell Rock River, Butler	10/12/90	Louie J. Staudt, Shell Rock
BLUEGILL (MINIMUM -- 1 LB.)			
2 lbs. 6 ozs.	Farm Pond, Cass	07/30/90	Joe Snyder, Pella
1 lb. 13 ozs.	Farm Pond, Madison	06/13/90	Kenny Bauge, Huxley
1 lb. 13 ozs.	Farm Pond, Woodbury	01/10/90	Chuck Hackett, Kingsley
1 lb. 12 ozs.	Farm Pond, Davis	04/23/90	Carroll Olmstead, Cedar Rapids
1 lb. 11 ozs.	Farm Pond, Davis	05/30/90	Rev. George White, Cedar Rapids
1 lb. 10 ozs.	Benny Davis Lake, Wayne	04/22/90	Norman Riekens, Corydon
1 lb. 10 ozs.	Farm Pond, Marion	05/29/90	Norman Nieuwsma, Pella
1 lb. 8 ozs.	Farm Pond, Jasper	05/28/90	Dale Pretzer, Newton
1 lb. 8 ozs.	Private Pond, Johnson	06/23/90	Thomas D. Fleming, Cedar Rapids
1 lb. 8 ozs.	Sand Pit, Muscatine	06/05/90	John R. Kelly, Davenport
BOWFIN/DOGFISH (MINIMUM -- 5 LBS.)			
7 lbs. 8 ozs.	Mississippi River, Louisa	09/09/90	John H. Ihle, Muscatine
7 lbs. 8 ozs.	Green Island, Jackson	08/12/90	James F. Kruse, Clinton
6 lbs. 9 ozs.	Green Island, Jackson	08/12/90	Dean A. Bodnar, Clinton
BUFFALO (MINIMUM -- 20 LBS.)			
41 lbs.	Mississippi River, Dubuque	05/26/90	Don Lenstra, Dubuque
32 lbs. 6 ozs.	Lost Island, Clay	05/22/90	Chuck Hackett, Kingsley
30 lbs.	Des Moines River, Webster	11/16/90	Darwin Brand, Webster
22 lbs.	Lake Manawa, Pottawattamie	05/02/90	Shane Palmer, Council Bluffs
BULLHEAD (MINIMUM -- 2-1/2 LBS.)			
5 lbs. 10-1/2 ozs.	Farm Pond, Madison	11/02/90	David J. Abels, Grundy Center
4 lbs. 8 ozs.	Wapsipinicon, Linn	07/21/90	Greg S. Henderson, Central City
3 lbs. 14 ozs.	Farm Pond, Taylor	07/05/90	Carole Larsen, Clearfield
2 lbs. 9 ozs.	Blood Run Creek	05/30/90	William R. Pins, Dubuque
CARP (MINIMUM -- 25 LBS.)			
39 lbs. 12 ozs.	Gravel Pit, Pottawattamie	08/17/90	Sherman Harrill, Carson
29 lbs. 6 ozs.	Lake Manawa, Pottawattamie	06/09/90	Dusty Dougherty, Council Bluffs
25 lbs. 12 ozs.	Lake Manawa, Pottawattamie	07/24/90	Vernon L. Harness, Omaha, NE
CATFISH, BLUE (MINIMUM -- 20 LBS.)			
20 lbs. 3 ozs.	Des Moines River, Van Buren	07/09/90	William V. Marsh, Farmington
CATFISH, CHANNEL (MINIMUM -- 15 LBS.)			
23 lbs.	Farm Pond, Jasper	08/07/90	Robert Kreager, Newton
20 lbs.	Farm Pond, Union	09/29/90	Jay Bochart, Creston
16 lbs. 8 ozs.	Wapsipinicon River, Clinton	06/03/90	Chad Christensen, Calamys
16 lbs. 8 ozs.	Wapsipinicon River, Clinton	06/03/90	Bill Woeber, Calamys
16 lbs. 8 ozs.	East Okoboji, Dickinson	09/20/90	Ken Duis, Ocheyedan
16 lbs.	West Okoboji, Dickinson	06/19/90	Bob Gee, Estherville
15 lbs.	Lake Anita, Cass	01/22/90	Tom Drydew, Carroll
CATFISH, FLATHEAD (MINIMUM -- 20 LBS.)			
58 lbs. 2 ozs.	Missouri River, Fremont	06/18/90	Phil Creek, Council Bluffs
51 lbs.	Iowa River, Johnson	06/09/90	Steve Bergstrom, Coralville
46 lbs.	Des Moines River, Marion	06/09/90	Marion Onthank, Grinnell
40 lbs.	Des Moines River, Boone	11/14/90	Charles G. Stotts, Boone
38 lbs. 5 ozs.	Wapsipinicon River, Clinton	07/13/90	Kevin Knoche, Wheatland
37 lbs.	Wapsipinicon River, Clinton	05/28/90	Jan Bartels, Toronto
37 lbs.	Wapsipinicon River, Clinton	05/28/90	Larry Gottschalk, Lowden
34 lbs. 8 ozs.	Missouri River, Pottawattamie	09/03/90	Sid Erickson, Bellevue, NE
34 lbs.	Des Moines River, Boone	05/13/90	Ron Sealock, Boone
32 lbs. 8 ozs.	Missouri River, Mills	1990	Ben Collins, Hamburg
CRAPPIE (MINIMUM -- 2 LBS.)			
3 lbs. 12 ozs.	Farm Pond, Polk	04/08/90	Cassi Weatherly, Greenfield
3 lbs.	Viking Lake, Montgomery	05/26/90	John M. Blay, Red Oak
2 lbs. 12 ozs.	Viking Lake, Montgomery	04/09/90	Jim Etheridge, Omaha, NE
2 lbs. 12 ozs.	Saylorville Lake, Polk	05/06/90	Jim and Nicholas Cline, Des Moines
2 lbs. 9 ozs.	Sand Pit, Pottawattamie	05/06/90	Terry L. Troutner, Sr., Hancock
2 lbs. 9 ozs.	Chain Lakes, Linn	03/12/90	John O'Dell, Jr., Cedar Rapids
2 lbs. 7 ozs.	Farm Pond, Clark	01/01/90	Paul F. Johnson, Murray

2 lbs. 7 ozs.	Farm Pond, Polk	04/08/90	Staci Weatherly, Greenfield
2 lbs. 6 ozs.	Farm Pond, Tama	04/29/90	Randy Dishinger, Waterloo
2 lbs. 6 ozs.	Saylorville Lake, Polk	05/09/90	Martha W. Holzworth, Des Moines

DRUM, FRESHWATER (MINIMUM -- 15 LBS.)

16 lbs. 8 ozs.	Mississippi River, Dubuque	05/21/90	Rev. John Horstman, Epworth

GAR (MINIMUM -- 10 LBS.)

No Entries

MUSKELLUNGE (MINIMUM -- 15 LBS. OR 40")

32 lbs. 2 ozs.	West Okoboji, Dickinson	11/18/90	Bob Bendlin, Spencer
27 lbs.	West Okoboji, Dickinson	08/12/90	Jerry A. Sehman, Milford
27 lbs.	Clear Lake, Cerro Gordo	06/09/90	Virgil Davis, Mason City
23 lbs. 8 ozs.	Silver Lake, Dickinson	08/18/90	Delbert Kruger, Allendorf
21 lbs. 8 ozs.	West Okoboji, Dickinson	10/30/90	Eldon Olson, Manly
15 lbs. 15 ozs.	Silver Lake, Dickinson	08/28/90	Mitchell Watters, Ocheyedan
15 lbs. 6 ozs.	West Okoboji, Dickinson	10/04/90	Roger Fairchild, Spencer
Released--43"	West Okoboji, Dickinson	10/13/90	Jerry L. Curry, Mitchellville

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

15 lbs.	Storm Lake, Buena Vista	03/21/90	Tim Heuton, Albert City

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

16 lbs. 10 ozs.	West Okoboji, Dickinson	12/28/90	Kent Hrbek, Bloomington, MN
15 lbs. 8 ozs.	West Okoboji, Dickinson		
15 lbs. 4 ozs.	Mississippi River, Allamakee	07/07/90	Kevin Dale Johnson, Waterville
15 lbs. 3 ozs.	West Okoboji, Dickinson	11/25/90	Marlin Gustin, Royal
15 lbs. 2 ozs.	Des Moines River, Humboldt	08/06/90	Troy Rosendahl, Eagle Grove
14 lbs. 12 ozs.	Mitchell Lake, Black Hawk	07/20/90	Mike Kroeger, Waterloo
14 lbs. 12 ozs.	West Okoboji, Dickinson	09/17/90	Shannon Green, Spencer
14 lbs. 12 ozs.	Mitchell Lake, Black Hawk	07/20/90	Mike Kroeger, Waterloo
14 lbs. 12 ozs.	West Okoboji, Dickinson	09/17/90	Shannon Green, Spencer
14 lbs. 6 ozs.	Mississippi River	08/08/90	David Boyles, Urbana
14 lbs. 4 ozs.	West Okoboji, Dickinson	09/18/90	Joe Morocco, Spirit Lake
Released--36"	Mississippi River, Jackson	07/31/90	Barbara Strathman, Maquoketa
Released--38"	West Okoboji, Dickinson	10/13/90	Mark Mitchell, Estherville
Released--35"	West Okoboji, Dickinson	09/16/90	James Dunn, Omaha, NE
Released--38"	West Okoboji, Dickinson	10/14/90	Maury Muhm, Spirit Lake

PADDLEFISH (MINIMUM -- 25 LBS.)

75 lbs.	Cedar River, Cedar	05/13/90	Les Proctor, Tipton
66 lbs.	Mississippi River, Jackson	01/15/90	Philip Riffey, Urbana
53 lbs. 8 ozs.	Mississippi River, Jackson	01/01/90	Ron Clemann, Keystone
51 lbs.	Mississippi River, Jackson	01/01/90	Bill Carlson, Tama
47 lbs. 8 ozs.	Mississippi River, Des Moines	05/27/90	Steven Scott Parks, Burlington
47 lbs.	Mississippi River, Jackson	01/13/90	Inez Scott, Brooklyn
46 lbs.	Mississippi River, Jackson	01/01/90	Ron Clemonn, Keystone
43 lbs.	Mississippi River, Jackson	01/01/90	John Sotyn, Tama

PERCH (MINIMUM -- 1 LB.)

1 lb. 2 ozs.	Big Spirit, Dickinson	03/02/90	Bill Roberts, Cherokee
1 lb. 2 ozs.	Mississippi River, Allamakee	05/28/90	Glenn R. Fecht, Waterloo
1 lb. 2 ozs.	Lost Island, Palo Alto	11/01/90	Jackie Dryden, Spencer
1 lb. 1 oz.	Big Spirit, Dickinson	02/21/90	Harold Helle, Estherville
1 lb. 1 oz.	West Okoboji, Dickinson	01/25/90	Gary Simpson, Milford
1 lb. 1 oz.	Big Spirit, Dickinson	02/11/90	Barry Andersen, Arnolds Park
1 lb. 1 oz.	West Okoboji, Dickinson	02/02/90	Cork Rozenboom, Sanborn
1 lb.	Big Spirit, Dickinson	02/27/90	Dean Dodds, Spirit Lake
1 lb.	Big Spirit, Dickinson	02/11/90	Rod Douma, Sanborn
1 lb.	Big Spirit, Dickinson	08/25/90	Bruce Mitchell, Estherville
1 lb.	West Okoboji, Dickinson	01/19/90	Ollie Vogt, Spencer

SAUGER (MINIMUM -- 2-1/2 LBS. OR 18")

4 lbs. 12 ozs.	Mississippi River, Jackson	03/02/90	Mike Bideaux, Cedar Rapids
4 lbs. 7 ozs.	Mississippi River, Clayton	04/08/90	John Aarni, Marion
4 lbs. 6 ozs.	Mississippi River, Clinton	11/18/90	Edward Fox, Silvis, IL
4 lbs. 4 ozs.	Mississippi River, Louisa	01/13/90	Jeff Wendell, Eldridge
4 lbs. 4 ozs.	Mississippi River, Dubuque	04/29/90	Clifford D. Volkart, Dubuque
4 lbs. 2 ozs.	Mississippi River, Clayton	03/06/90	Jeff Palmer, Guttenberg
3 lbs. 14 ozs.	Mississippi River, Jackson	03/05/90	Harry L. Rupe, Cedar Rapids
3 lbs. 12 ozs.	Mississippi River, Clayton	03/26/90	Harley Akers, Guttenberg
3 lbs. 12 ozs.	Mississippi River, Clayton	06/01/90	Amy L. Matz, Dubuque
3 lbs. 12 ozs.	Mississippi River, Jackson	04/13/90	Shane Davis, Maquoketa
Released--19"	Mississippi River	04/17/90	John Dirks, Anamosa

Released--18"	Mississippi River, Louisa	10/28/90	Marcus J. Current, New Sharon
Released--19-1/2"	Mississippi River, Dubuque	09/03/90	Michael Johannes, Dubuque

STURGEON, SHOVELNOSE (MINIMUM -- 3 LBS.)

5 lbs. 2 ozs.	Mississippi River, Muscatine	01/14/90	Paul Bermel, Muscatine

SUCKER (MINIMUM -- 4 LBS.)

4 lbs. 12 ozs.	Big Sioux River, Woodbury	03/21/90	Lonnie Rossow, Sioux City

SUNFISH (MINIMUM -- 1 LB.)

1 lb. 4 ozs.	Farm Pond, Madison	07/05/90	Paul L. Bertini, Madrid
1 lb.	Farm Pond, Keokuk	04/16/90	Wes Snakenberg, Sigourney

TROUT, BROOK (MINIMUM -- 1 LB. OR 13")

No Entries

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

8 lbs. 5 ozs.	Joy Springs, Clayton	05/03/90	Rebecca M. Linville, Bettendorf
6 lbs. 4 ozs.	Silver Creek, Allamakee	10/19/90	Bryan Timmerman, Waterloo
5 lbs. 12 ozs.	Bankston, Dubuque	02/27/90	Darrell Edwin Wiley, Jr., Dubuque
5 lbs. 9 ozs.	West Canoe, Winneshiek	06/06/90	Donald L. Moen, Mason City
5 lbs. 8 ozs.	Little Turkey, Delaware	05/02/90	Anthony Puccio, Farley
5 lbs. 4 ozs.	North Bear Creek, Winneshiek	04/22/90	William Kilbourn, Cedar Rapids
5 lbs. 1 oz.	Richmond Springs, Delaware	08/24/90	Tom Fuller, Springville
4 lbs. 8 ozs.	Twin Springs, Winneshiek	1990	Jerry McCumber, Waverly
4 lbs. 7 ozs.	Hickory Creek, Allamakee	09/02/90	Bob Schroeder, Postville
4 lbs. 6 ozs.	Bear Creek	04/28/90	Roxanne Zmolek, Victor
Released--25"	Upper Swiss Valley Creek, Dubuque	03/31/90	Roger Scholbrock, Cuba City

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

15 lbs. 14 ozs.	Joy Springs, Clayton	04/14/90	Kory L. Tersinar, Marion
13 lbs. 8 ozs.	Trout River, Winneshiek	05/18/90	Ron Leibold, Lawler
13 lbs. 4 ozs.	Silver Creek, Allamakee	1990	Mike Amundson, Waterloo
12 lbs. 12 ozs.	Trout River, Winneshiek	06/04/90	Johnny Levendusky, Waterloo
12 lbs.	Turkey River, Clayton	05/07/90	Ralph Repstien, Marion
11 lbs. 15 ozs.	Sny Magill, Clayton	04/16/90	J.E. Arthur, Waterloo
11 lbs. 11 ozs.	French Creek, Allamakee	06/06/90	Troy Petsche, Monona
11 lbs. 9 ozs.	Big Paint, Allamakee	05/02/90	Dennis Sanbard, Davenport
11 lbs. 4 ozs.	Bloody Run, Clayton	05/25/90	Robert N. McDaniel, Des Moines
11 lbs. 3 ozs.	Village Creek, Allamakee	05/26/90	Jamie Cahalan, Waterville
11 lbs. 3 ozs.	Village Creek, Allamakee	05/31/90	Scott Schutte, Monona
Released--27-1/2"	Village Creek, Alamakee	04/12/90	Brian Prochaska, Waterloo
Released--20-1/2"	Spring Branch Creek, Delaware	06/16/90	Rick Eastep, Cedar Rapids

WALLEYE (MINIMUM -- 8 LBS. OR 28")

11 lbs. 8 ozs.	Saylorville Lake, Polk	03/17/90	James Skinner, Des Moines
11 lbs. 8 ozs.	Spirit Lake, Dickinson	01/08/90	Dave Brunsvold, Estherville
11 lbs. 8 ozs.	Mississippi River, Allamakee	10/27/90	Tom Power, Tripoli
11 lbs. 2 ozs.	Big Spirit, Dickinson	01/08/90	Dave Brunsvold, Estherville
11 lbs. 2 ozs.	Des Moines River, Webster	09/08/90	Richard J. Klinger, Ft. Dodge
11 lbs.	Mississippi River, Dubuque	04/14/90	Darren R. DeMoss, Dubuque
11 lbs.	Mississippi River, Allamakee	10/12/90	Amy Kramme, Spillville
10 lbs. 14 ozs.	Lost Island, Palo Alto	03/13/90	Craig Merlyn Johnson, Ruthven
10 lbs. 8 ozs.	Mississippi River, Clayton	04/01/90	Chad Andrews, Waterloo
10 lbs. 4 ozs.	Clear Lake, Cerro Gordo	02/19/90	Robert Logan, Manly
Released--29"	West Okoboji, Dickinson	05/12/90	Dwane Krogman, Lismore
Released--29"	Lost Island Lake, Palo Alto	05/03/90	Darcy Johnson, Ruthven
Released--28-1/2"	West Okoboji, Dickinson	01/13/90	Maury Muhm, Spirit Lake

WHITE AMUR (MINIMUM -- 25 LBS.)

36 lbs.	Lake Anita, Cass	08/26/90	Michael L. Craig, Des Moines
34 lbs.	Hickory Grove Park, Story	07/09/90	Albert Augustin, Colo
28 lbs.	Farm Pond, Butler	03/31/90	Ryan J. Clark, Shell Rock

Iowa Department of Natural Resources
Wallace State Office Building
Des Moines, Iowa 50319-0034

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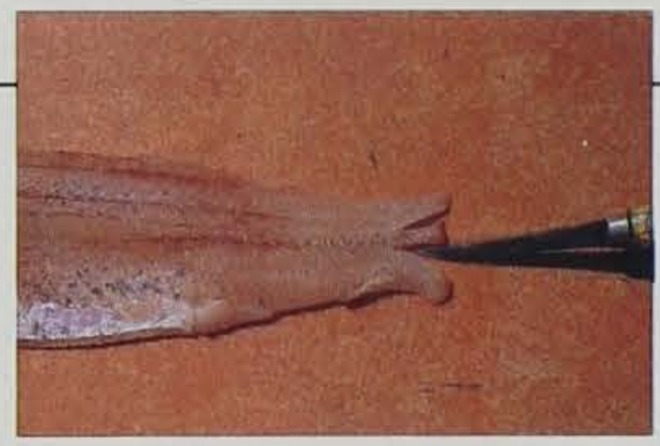
HOW TO FILLET
The two most important items are a good electric knife and a solid cutting board.

1 Begin by making the first cut directly behind the gill cover and pectoral fin. Be careful to cut only until the knife touches the backbone. Do not cut through the backbone, as this will cause most of the problems encountered when filleting fish.

2 Turn the cutting edge of the knife toward the tail. Skim the knife along the backbone, cutting the ribcage bones where they meet the backbone. A slight 10-20 degree angle works well in keeping the blade in contact with the backbone. Continue cutting until you reach the tail, but be sure to leave the fillet attached near the tail with a small strip of skin.

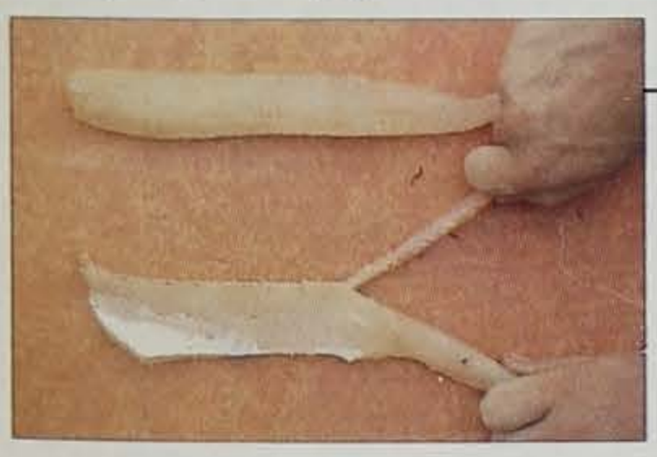
3 Now flip the fillet away from the body of the fish so the meat and the ribcage are exposed. Remove the skin from the fillet with the electric knife, using the same 10-20 degree angle as before. Having the skin attached at the tail allows for a nice handle while removing the fillet. Now repeat the same steps on the opposite side of the fish. Keep the fillets cool by placing them in cold water.

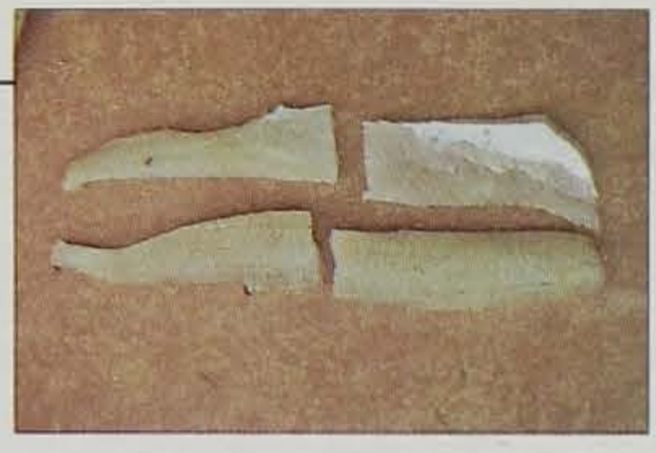


4 Remove the ribcage by placing the knife edge next to and under the ribcage bones where they attach to the backbone. Cut the meat from the ribcage, following the contour of the ribcage by rolling your wrist.

5 For larger fish, such as walleye or bass, make one-inch cuts next to and on either side of the lateral line (the red-colored line that runs down the middle of the fillet) at the tail end of the fillet.

6 Now grab the fillet on either side of the one-inch cut with the thumb and forefinger and gently tear the fillet in half along the lateral line.



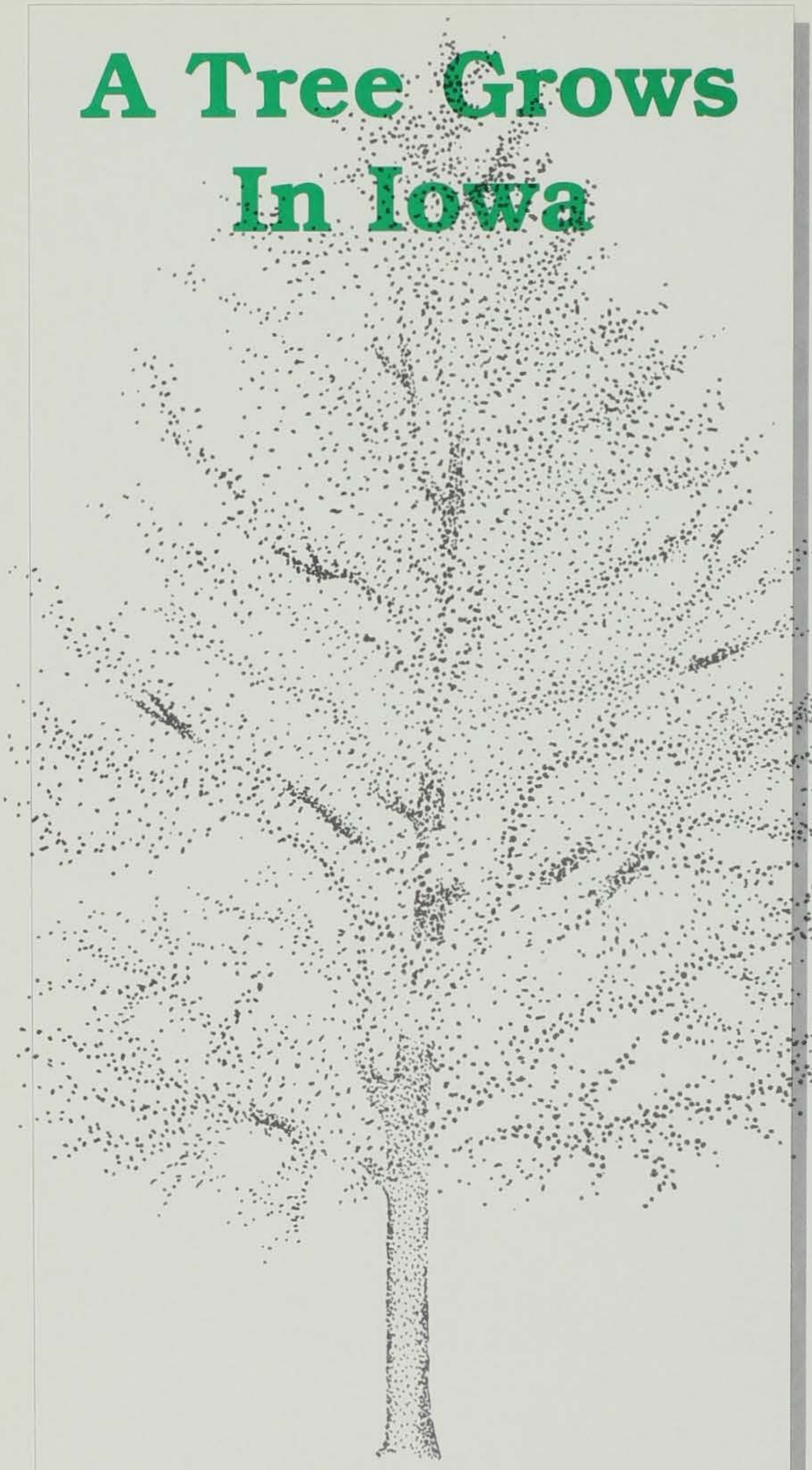


7 Repeat step six with the other half of the fillet so the entire lateral line is removed from the fillet (about 1/8-inch thick and it contains the bones left over from the ribcage removal).

8 The fillet should now be in three pieces, the upper and lower half and the thin long lateral line strip. Discard the lateral line strip.

9 The fillets can now be cut in half again to give four pieces of fresh, boneless fillets, ready for the frying pan.

A Tree Grows In Iowa



by John Walkowiak

Most people believe that planting trees in Iowa is a long-term project that only benefits future generations. But did you realize planting trees will provide benefits right away and as they grow will provide even more? Planting trees around your home or on your land can increase property values up to 15 percent, provide needed wildlife habitat, reduce heating and cooling costs up to 50 percent, hold our precious soil, and help to reduce the impacts of the greenhouse effect.

According to forestry experts, there are six keys to successful tree planting. Determine --

(1) planting objectives,
(2) planting location,
(3) species selection,
(4) costs,
(5) planting techniques, and
(6) after-planting care.

Although trees provide multiple benefits, most people have one or two main objectives in mind when they plant trees. Whether your objectives are summer shade or providing winter cover for wildlife, a list of written objectives will help you choose the right tree for the right location.

The location of your tree planting is important to realize long-term benefits. Trees that are adaptable to our climate in Iowa need a site that possesses decent soils, room to grow and adequate moisture. Sketch out your planting on a piece of paper to make sure what you plan occurs on the ground. Consider existing and planned physical obstacles (utility wires and other trees) that can and will affect your tree's growth. Finally, examine the condition of the site -- determine whether it needs some form of site preparation to eliminate unwanted vegetation or to store moisture for the growing season.

Deciding what to plant is often the most difficult decision for most people because there are so many different varieties of trees to choose from. In Iowa, a critical consideration in species selection is winter hardiness. For the northern half of Iowa, species selected should be capable of handling winter temperatures between -30° to -20°F (Zone 4) and the southern half of the state -20° to -10°F (Zone 5). In deciding what to plant, consider your objectives and site conditions; check with your local forester, nursery or extension agent; walk around your neighborhood and see what others have successfully established; and use plant material native to Iowa.

The costs are usually the biggest stumbling block to planting trees. For large reforestation or conservation plantings greater than one acre in size, it is recommended that seedlings be used. Cost-effective seedlings are available from $12.50 per hundred plants to $18 per hundred plants from the state forest nursery at Ames (515/233-1161). For ornamental tree plantings, larger landscape trees that are a minimum of four to eight feet tall and 1.5 inches in diameter should be used. Bareroot, containerized and balled and burlapped are the types of trees available from Iowa nurseries. Prices for landscape trees range from $25 to $200 depending on the species, size and type desired.

Spring is generally the best time to plant trees in Iowa, although containerized and balled and burlapped trees can be planted anytime conditions allow. When planting a bareroot tree, excavate a hole deep enough so the roots lay straight out and down in the hole (see Figure 1). Gently cover the roots with soil and press the soil down firm to eliminate any air pockets. With containerized or balled and burlapped trees, place the tree in the center of an excavated hole one foot wider and six inches deeper than the mass of the root system (see Figures 2 and 3). Remove all containers or burlap, and then cover the roots with soil. Again, tamp down the soil to release any air pockets. The larger landscape trees should be watered thoroughly immediately after they are planted.

Tree care for large reforestation plantings should be in the form of weed control through mulching, mowing or the judicious use of herbicides. Generally, if you do the site preparation prior to planting and control weeds during the growing season, large reforestation plantings should not need to be watered. For landscape trees, mulch around the trees' drip line with two to six inches of wood chips, composted sawdust or bark. Thoroughly water new landscape trees on a 10- to 14-day basis with five to 10 gallons of water to encourage the development of deep roots.

For more information about tree planting or a list of what trees to plant in Iowa, contact the Forests and Forestry Division of the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

John Walkowiak is an urban and community forester for the department in Des Moines.

Figure 1.

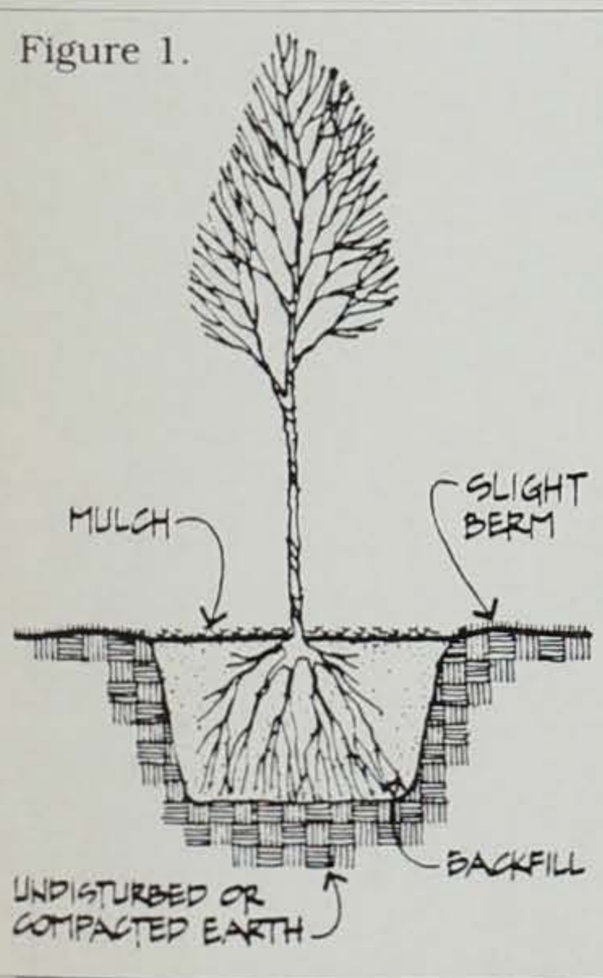


Figure 2.

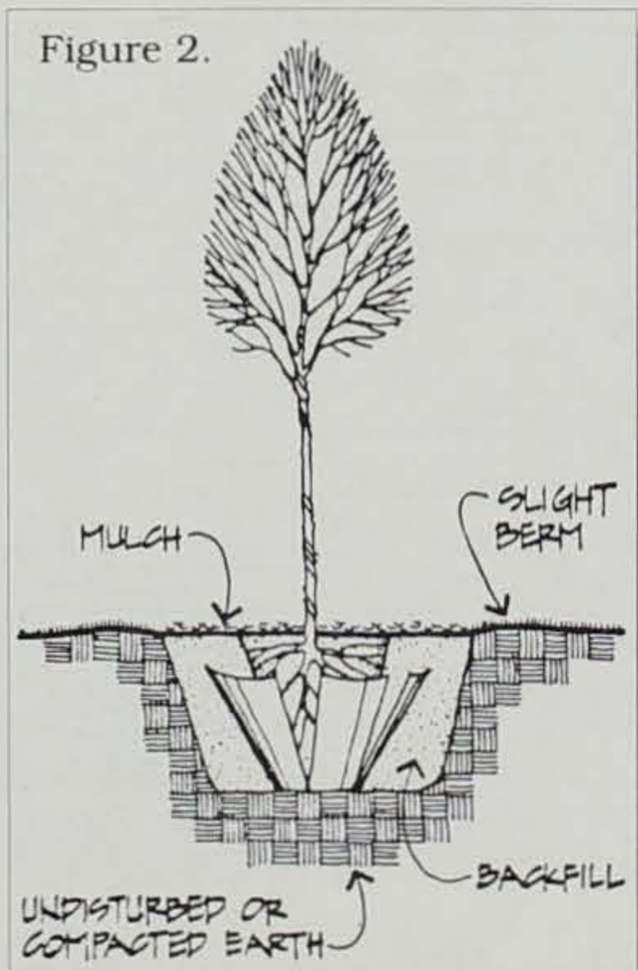
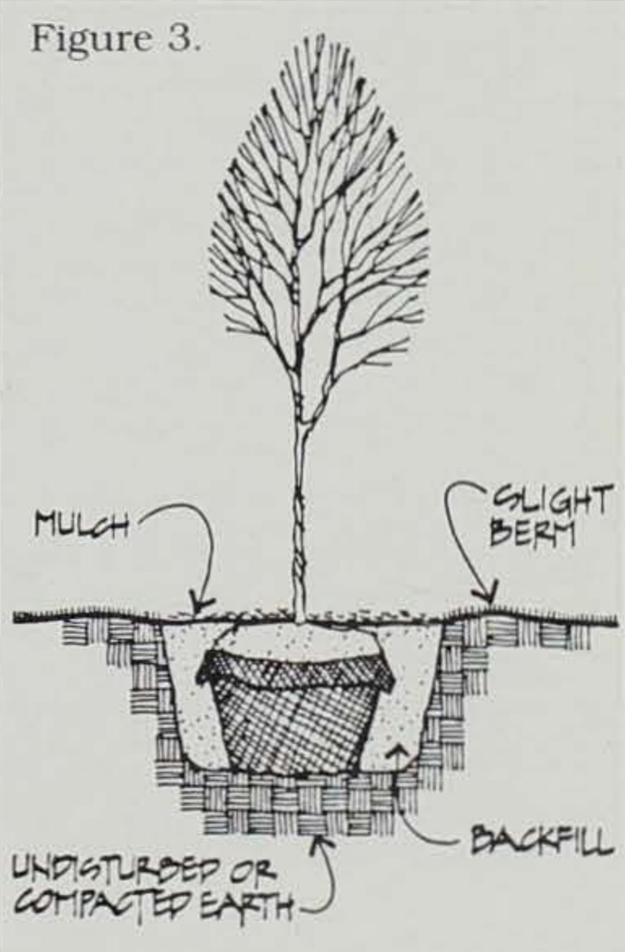


Figure 3.



Illustrations courtesy of the U.S. Forest Service

CONSERVATION UPDATE

WHEN DOES IT PAY TO TURN OFF THE LIGHTS?

Does a fluorescent light have to be turned off for a half-hour before the energy saved equals the energy used in initially energizing the light? Many people think so, but this is a misconception. Fluorescent lights only have to be turned off for one second in order to save the amount of energy that will be expended when the lights are initially turned on again.

Fluorescent lamp life is dependent on the filament electron emissive coating. The coating slowly evaporates during lamp operation. Usually more important is that each time the lamp is started, some of the coating erodes. When fluorescent lamps first became popular in the 1940s, lamp life was substantially reduced if the lamps were operated for short periods of time.

While this was true years ago, advances in the construction of fluorescent lamps have increased their life. Lamp life is still reduced if they are operated for short periods of time, but this is not as detrimental as it once was.

It must be remembered that while switching lamps on and off reduces lamp life, it also reduces the operating time. Fated fluorescent lamp life is normally based on a three-hour operating cycle. This assumes the lamp will be switched on and off several times during the day. Under these conditions a standard four-foot F40 fluorescent lamp is rated at 22,000 hours. For a 40-hour work week, the lamp would last about 10 years based on rated life. In fact, detailed economic studies of trade offs between fluorescent lamp replacement and electric costs have shown that any time a room is to be vacated for more than a couple of minutes, the fluorescent lights should be turned off. Therefore, turning off lights as you leave a room is a good habit to develop.

What about other types of lamps? Since short operating periods have little effect on the life of incandescent lamps, they should always be turned off when leaving a room. High intensity discharge lamps, such as mercury vapor, sodium vapor and metal halide, require several minutes to warm up. In addition, when they are turned off, they need several minutes to cool off before the ballast will restart them. Consequently, high density discharge lamps should not be turned off unless the shut-off period is longer than 20 minutes.

--Reprinted from the Navy TechData Sheet 80-01 produced by the Civil Engineering Laboratory, Naval Construction Battalion Center, Ft. Hueneme, CA 93043.

Fluorescent lights only have to be turned off for one second in order to save the amount of energy that will be expended when the lights are initially turned on again. ▼

Iowa All-Time Record Fish (*New State Record)

Species/Weight	Length	Location/County	Date	Angler/City
Bass, Largemouth				
10 lbs. 12 ozs.	23-1/2"	Lake Fisher, Davis	5-84	Patricia Zaerr, Davenport
Bass, Ocean-Striped				
9 lbs. 4 ozs.	29"	Lake Rathbun, Appanoose	7-83	Richard Pauley, Mystic
Bass, Rock				
1 lb. 8 ozs.	10-1/2"	Mississippi River, Dubuque	6-73	Jim Driscoll, Dubuque
Bass, Smallmouth				
*7 lbs. 12 ozs.	22-3/4"	West Okoboji, Dickinson	9-90	Rick Gray, Dickens
Bass, White				
3 lbs. 14 ozs.	20"	West Okoboji, Dickinson	5-72	Bill Born, Milford
Bass, Wiper				
*14 lbs. 11 ozs.	29-1/2"	Des Moines River, Polk	10-90	Bart Perrigo, Des Moines
Bass, Yellow				
1 lb. 8 ozs.	13-1/2"	Cedar River, Black Hawk	9-86	Timothy Dolan, Waterloo
Bluegill				
3 lbs. 2 ozs.	12-7/8"	Farm Pond, Madison	7-86	Phil Algreen, Earlham
Bowfin (Dogfish)				
10 lbs. 2 ozs.	30-1/2"	Mississippi River, Allamakee	5-87	Joel Morgan, Dike
Bullhead				
*5 lbs. 10-1/2 ozs.	25-1/2"	Farm Pond, Madison	11-90	David J. Abels, Grundy Center
Buffalo				
51 lbs.	45"	East Okoboji, Dickinson	4-86	Jeff Duis, Sibley
Carp				
50 lbs.	44"	Glenwood Lake, Mills	5-69	Fred Houghland, Glenwood
Catfish, Blue				
40 lbs.		Missouri River, Harrison	6-89	John DeLong, Jr., Missouri Valley
Catfish, Channel				
31 lbs.	37"	Gravel Pit, Cedar	6-86	Kyle Gettschalk, Lowden
Catfish, Flathead				
62 lbs.	46"	Iowa River, Johnson	7-65	Roger Fairchild, Coralville
Crappie				
4 lbs. 9 ozs.	21-1/4"	Green Castle Lake, Marshall	5-81	Ted Trowbridge, Marshalltown
Freshwater Drum				
46 lbs.	38-1/2"	Spirit Lake, Dickinson	10-62	R. F. Farra, Clarion
Muskellunge				
38 lbs. 5 ozs.	48"	West Okoboji, Dickinson	12-86	Dan Dickinson, Spirit Lake
Muskellunge, Tiger				
27 lbs. 2 ozs.	46-1/2"	West Okoboji, Dickinson	8-89	Shannon Green, Spencer
Northern Pike				
25 lbs. 5 ozs.	45"	West Okoboji, Dickinson	2-77	Allen Forsberg, Albert City
Paddlefish				
107 lbs.	69-1/2"	Missouri River, Monona	3-81	Robert Pranschke, Onawa
Perch, Yellow				
1 lb. 15 ozs.	14-3/4"	Spirit Lake, Dickinson	9-74	John Walz, Estherville
Sauger				
6 lbs. 8 ozs.	25"	Missouri River, Woodbury	10-76	Mrs. William Buser, Sloan
Sturgeon (Shovelnose)				
12 lbs.	33"	Des Moines River, Van Buren	4-74	Randy Hemm, Douds
Suckers (Misc.)				
15 lbs. 1 oz.	32-1/4"	Missouri River, Monona	9-83	Glen E. Dittman, Onawa
Sunfish (Misc.)				
1 lb. 13 ozs.	10-1/4"	Lake Geode, Henry	9-67	Dale Cornick, Burlington
Trout, Brook				
2 lbs. 14 ozs.	17"	Canoe Creek, Winneshiek	3-81	Lyle Brown, Jr., Decorah
Trout, Brown				
15 lbs. 4 ozs.	31"	French Creek, Allamakee	7-84	Fred Daugs, Minneapolis, MN
Trout, Rainbow				
19 lbs. 8 ozs.	35"	French Creek, Allamakee	7-84	Jack Renner, Waterloo
Walleye				
14 lbs. 8 ozs.	30-1/2"	Des Moines River, Polk	9-86	Gloria Eoriatti, Ankeny
White Amur				
51 lbs.		Viking Lake, Montgomery	9-88	Leon Allen, Omaha, NE

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 Commision:
--April 4, Council Bluffs
--May 2, Rock Rapids
--June 6, Fort Dodge

Environmental Protection Commission:
--March 18-19, Des Moines
--April 15-16, Des Moines
--May 20-21, Des Moines

State Preserves Advisory Board:
--March 12, Des Moines

Wildlife Farmer of the Year Award

The Hintze brothers (Tim, Perry, Jeff and Stanley) of Davenport have been selected as winners of the 1990 Iowa Department of Natural Resources' "Wildlife Farmer of the Year" competition.

The Hintze brothers have implemented a number of wildlife conservation practices on their farm unit in recent years that include: development of several farm ponds and 15 acres of wetlands; providing 65 acres of unmowed grassland for wildlife nesting cover and 170 acres of ungrazed woodlands for wildlife habitat; establishing 20 acres of conifer and hardwood tree plantings for wildlife shelter; planting six acres of wildlife food plots; erecting 29 waterfowl and songbird nest structures; and seeding 35 acres of warm season native prairie grasses.

The brothers have been very active in Pheasants Forever and are "master conservationists" in the Soil Conservation Service's Earth Team Volunteer program.

From left: Larry Wilson, DNR director; Perry Hintze, Tim Hintze, farmers of the year from Davenport; and John Field, NRC commissioner.

Nominees were solicited from throughout the state by the wildlife bureau of the DNR, with county, regional and statewide levels of competition. Winning entries were determined by the DNR's wildlife bureau.

The goal of the competition is to recognize contributions made by farmers in providing wildlife habitat. Runners-up in the competition include Bill F. Kuntz of Brooklyn, Howard McMinimee of Denison and Don Savery of Rolfe.

Majority of TIP Cases Deer-related

Nearly 60 percent of cases settled under Iowa's Turn-In-Poachers (TIP) program in 1990 were deer-related, according to Department of Natural Resources' officials.

A total of 536 calls resulted in 128 citations being issued in 53 cases. The citations were issued for illegal taking and possession of deer; falsifying deer license; illegal sale of deer meat; and use of citizen-band radios and vehicles to pursue deer.

Other citations issued included shooting of hen pheasants; hunting after hours; illegal possession of furbearers; taking of fish under the minimum length limits.

and exceeding possession limits for fish.

During 1990, a total of $5,125 was approved for reward payments.

Since the program began in 1985, 3,890 TIP calls have been processed, more than 950 citations have been issued and more than $49,500 in reward money has been approved.

A minimum of $25 is paid as a reward for information leading to an actual arrest. Payments of up to $1,000 have been made to anonymous TIP callers on cases dealing with commercial poachers, threatened and endangered species or other more severe cases. All TIP information is confidential and anyone reporting a poaching incident is guaranteed anonymity. Persons witnessing or having knowledge of violations against fish and wildlife can call the toll-free TIP hotline number 1-800-532-2020. The TIP number is monitored 24 hours a day.

According to Steve Dermand, TIP coordinator for the DNR, all funds used to pay rewards are raised by the TIP of Iowa organization, a group comprised of outdoor sports and conservation organizations, corporate members and individuals. During 1990, TIP produced a made-for-TV public service announcement featuring Iowa State University basketball coach Johnny Orr. Other TIP promotional projects included milk carton panels by Swiss Valley Farms Dairy, grocery sacks by Super Value Grocery Stores, and filler ads by Farm and Home Publishers of Belmond.

For more information on becoming a supporting member of TIP, contact Craig Karr, Box 872, Waterloo, Iowa 50704.

Fishing Report Available

For the latest update on fishing hotspots across the state, call (515) 281-3307 for a recorded message. The recording is updated each Wednesday morning and is available April 3 through July 31.

CLASSROOM CORNER

by Robert P. Rye

National Wildlife Week is featuring Fragile Frontiers: The Ends of the Earth. Consider the lichens that exist in areas such as the Arctic Circle. These exist in Iowa. Would you know one when you saw one? Check your knowledge and learn new information about these plants through the following true/false statements.

Class activities for lichens include naming and making identification keys, growing the algae and fungus separately, boiling one and testing the effect on yarn, or measuring the growth rate over the school year using a picture with a ruler.

1. Lichens are found where other plants do not furnish competition.
2. Lichens are composed of green or blue-green algae and a colorless fungal hyphae.
3. Lichens serve as food for reindeer and caribou.
4. Lichens are grouped or classified by color.
5. Foliose lichens are leaf-like where margins are free and often lobed and are attached in spots to the surface.
6. Fructose lichens are shrubby appearing with margins unlobed and almost impossible to remove from substrate.
7. Crustose lichens are crusty appearing with margins unlobed and almost impossible to remove from substrate.
8. Lichens are fast-growing, long-lived, sun-loving plants that survive cold, dry climates, in forests and on mountains.
9. Lichens have various colors yet these haven't been used for products.
10. Lichens are able to survive many types of air pollution.

ANSWERS:

1. True 2. True 3. True 4. False. They are classified by growth form and shape. 5. True 6. True 7. True 8. False. Lichens are slow-growing. The rest are true. 9. False. The lichen's most famous use is dye for Herringbone tweeds. 10. False. Lichens are very sensitive.

NATURE ON WHEELS

by Larry W. Totton and Lori Foresman-Kirpes

The next time you are driving through a Polk County park, be careful not to misread signs for a nature trail or the Nature Trailer. The Polk County Conservation Board's newest interpretive tool is a mini-nature center on wheels. The 20-foot Nature Trailer is gaining in popularity as word gets out about the new mobile unit. On some days, more than 200 people have gone through the exhibit.

The Nature Trailer provides an opportunity for better environmental understanding to campers and park visitors. It enhances outdoor experiences by showing the variety of wildlife, plants and other features which can be found in the park they are visiting. It is rewarding to see visitors really studying the displays, asking questions, discovering resources and locations for further exploration. Of course, there are also the few kids, at each site, who return many times during a weekend just to swap a few more tales with the ranger or naturalist on duty.

Ron Johnson

The individual who investigates the natural history displays of the Nature Trailer is rewarded in numerous ways. The Nature Trailer contains taxidermy of past, present and migrating wildlife typical of Polk County. Many visitors are surprised to find that pelicans migrate through Iowa and can be viewed, especially in September, at Jester Park along the Saylorville Reservoir and on Easter Lake in Des Moines. Other animal mounts have been donated or salvaged from road kills with a special permit from the Department of Natural Resources. A pair of prairie chickens and a spotted skunk represent some of Polk County's lost species. A beaver and a coyote represent the area's larger mammals.

There are enough activities

Larry Totton

The Nature Center is updated during the winter months to interpret a new theme each year. In the past, the mobile unit has included natural history displays, outdoor exhibits, Indian artifacts, and animal pelts and hides. The 1991 theme is scheduled to include information on monarch migration.

▼

Ken Formanek

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The Nature Trailer, operated by the Polk County Conservation Board, is a mini-nature center on wheels.

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Several animal mounts, including the prairie chicken, have been included with a display devoted to some of Polk County's lost species.

to keep any age of visitor busy in the trailer for up to half an hour. Visitors are encouraged to learn by handling objects on the lower display shelves. They can compare the softness of a skunk pelt to the coarseness of a deer hide; contrast a large paper wasp nest with the structure of an oriole's nest. There is also an opportunity to try one's skills at piecing together a natural resource puzzle. Visitors may flip through articles from various conservation magazines or test their knowledge by answering question cards or electronic matching games. Other items include Indian artifacts, conservation posters, insect homes and background sounds or recorded messages from the trailer's speaker system.

There are not only displays on the inside but also outside the Nature Trailer. Some of the external exhibits last year included a live turtle and salamander, tagged monarchs and examples of bird feeders. There is always a naturalist on duty to answer questions and help interpret the displays. Inside lies a bounty of fun and information, hopefully a new awareness of the world, encouraging you to step out of the Nature Trailer and onto the nature trails.

You can visit the Nature Trailer this year to learn about roadside prairie management, peregrine falcon reintroductions, monarch migration or just to swap tales (or tails) with the naturalist. The Nature Trailer is open weekends, April through October. Groups may schedule a special program at the trailer on any date, spring through fall. The mobile unit is updated during the winter months to interpret a new theme each year. For dates and details, contact the Polk County Conservation Board's main office at (515) 999-2557.

Larry W. Totton and Lori Foresman-Kirpes are naturalists with the Polk County Conservation Board.

Finding the Right Solutions

When the windows are so dirty that your can write your "to do" list on them and you don't have to pull the shades down to block out the sun, a message shouts out loud and clear -- "It's time to clean the windows."

But what do you do when the glass cleaner runs out in the middle of the project? It's time to phase out one hazardous product and phase in a safer alternative. For example, in the case of window cleaner, just mix one-quarter cup of vinegar in one quart of warm water and put it in the empty glass cleaner container . . . and as simple as that, you have started doing your part in making changes to protect the environment. The time and energy involved to do this is negligible. In fact, the glass cleaner solution you made yourself is cheaper than store-bought window cleaner and just as effective. Now, grab some old newspapers and crumble them up to wipe off the cleaning solution and you are reusing a material -- another responsible environmental activity.

When that next bottle of household cleaner runs dry, it's time to come up with a safer alternative.

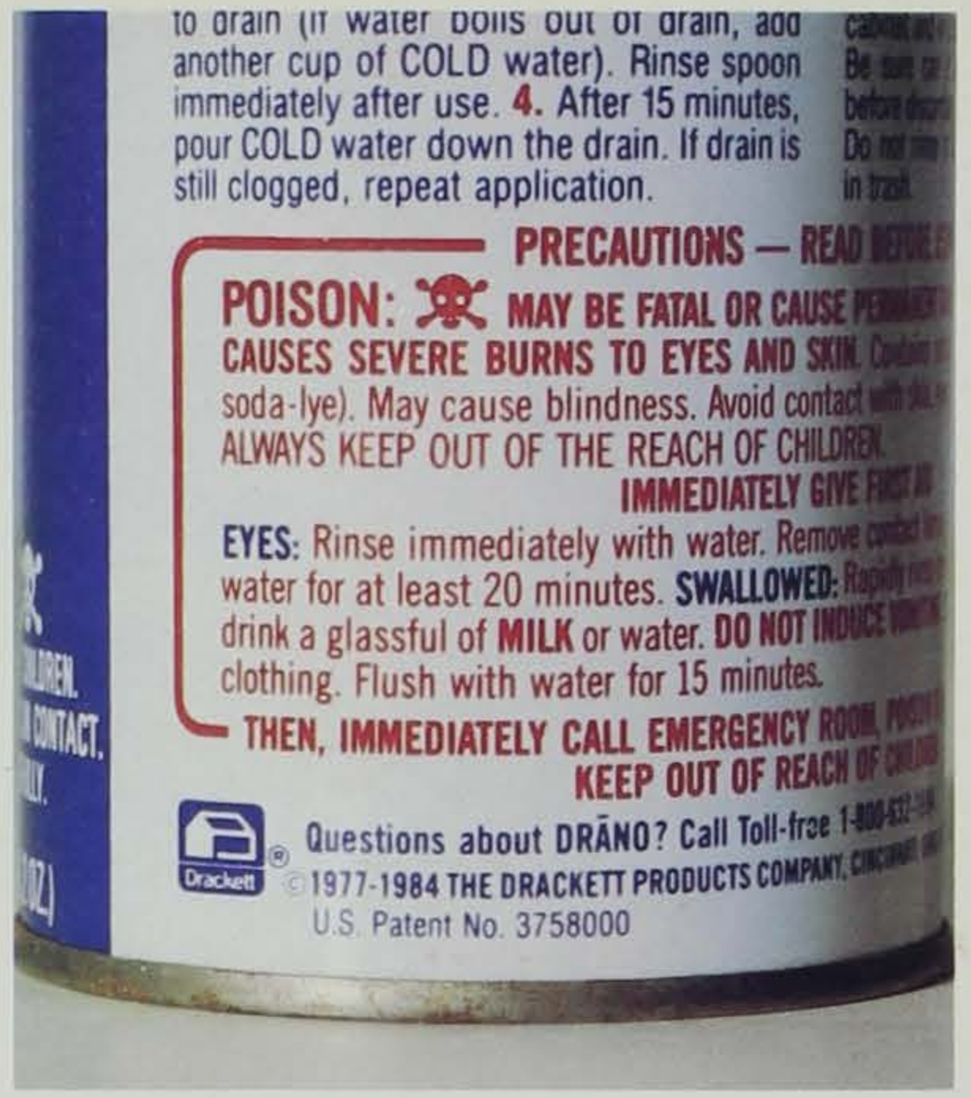
Cupboards full of cleaning products do not appear overnight, and in most cases they should not be discarded overnight either. Gradually use up household hazardous materials. Then, for replacements, purchase products which are healthier choices and better for the environment, or better yet, make your own safer alternatives.

A cleaning kit with a few safer and economical products is all that is needed to start making your own cleaning products. Most of them are household items already found in most homes -- baking soda, vinegar, borax, nonclorinated scouring powder. Some sample recipes for alternative cleaners are found on page 28.

If you still prefer to buy safer products for cleaning rather than making your own, some words to look for on labels include: non-toxic; non-caustic; natural ingredients; safe for children and pets;

Article by Marilyn Krogulski
Photos by Ron Johnson


IMPROVED!
Windex
GLASS CLEANER with AMMONIA
Shines
Soft Scrub
Wood Plus
Spic Span Pine
CLEANER
POISON:
NET WT. 19 OZ. (1 LB. 2 OZ.)



Be wary as you read labels, and be sure to read them thoroughly. As a rule of thumb, the more precautions on a label, the more hazardous the product.

◆ All-Purpose Household Cleaner

1 quart warm water
1 tsp. liquid soap
1 tsp. borax
squeeze of lemon or splash of vinegar

This solution can be used for a multitude of cleaning jobs including countertops, floors, walls, rugs and upholstery.

◆ Glass Cleaner

1/4 cup of vinegar in one quart warm water. (Do not use this as a windshield wiper solution as it may damage the pump -- use plain water for this purpose.)

◆ Spot Removers

All-purpose: 1/4 cup borax in 2 cups cold water; soak the stain prior to washing as usual.
Blood: Pour 3 percent hydrogen peroxide solution directly on the stain, rinse with water and wash as usual.
Ink: Apply a paste of lemon juice and cream of tartar; allow it to dry, then wash as usual.

◆ Furniture Polish

1 pint mineral oil with a few drops of lemon juice.

Some products that are better choices and more gentle on the environment may still be powerful enough that they post "Keep away from children" on the label. Be sure to store them in a safe spot.

Call the Groundwater Protection Hotline, 1-800-532-1114, for a free "cleaning products" fact sheet containing the above alternative cleaning solutions and others. Tape it on the back of a cupboard door as a handy reference.

no phosphates; biodegradable; no lye; no caustic fumes.

Be wary as you read labels, and be sure to read them thoroughly. As more focus has been placed on safer environmental products, more advertising "hype" is occurring. The big "environmentally safe" banner across the front of a product may be touting a recyclable container and not pertain to the product's ingredients. In stores, watch for the black and gold household hazardous materials symbol on the cleaning products' shelves. Watch for words and phrases like: danger, poison, warning, caution, use gloves, store away from heat, do not mix with other products, flammable, vapor harmful, keep away from children and pets, corrosive, causes burns to skin and eyes, may be absorbed through skin, contents under pressure. Steer clear of products containing chlorine, ammonia, petroleum derivatives or other highly toxic ingredients.

As a rule of thumb, the more precautions on a label, the more hazardous the product.

Unfortunately, only a few products will be found for each cleaning purpose. But, by purchasing these and supporting these products, a message is being sent to retailers and manufacturers -- we, as consumers, desire environmentally safer products. Many manufacturers have a toll-free number on their products -- so give them a call and express your concern.

Phasing in safer cleaning products is just like losing weight. It may take a little while, but it's worth it.

Marilyn Krogulski is a program planner for the department's Waste Management Authority Division in Des Moines.

MANAGING PRAIRIES IN IOWA'S STATE PARKS

by John Pearson

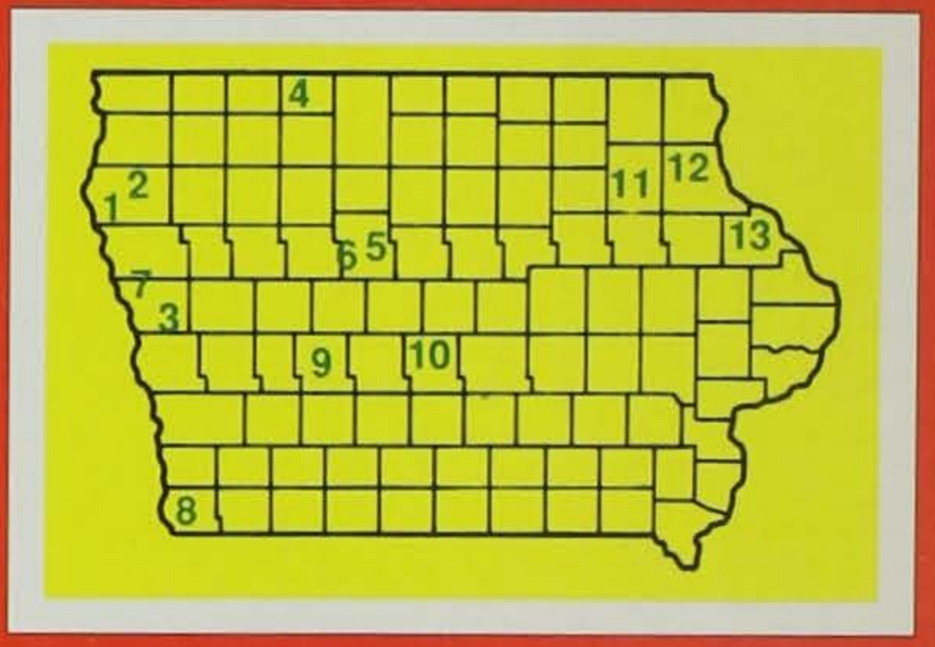
Iowa's state parks serve a dual mission of preserving natural areas and providing outdoor recreation for people. Preservation of natural areas in parks has traditionally been carried out under the philosophy of "benign neglect," reflecting until recently a general consensus among scientists, park managers and park visitors that stewardship of natural areas was best accomplished by protecting them from disturbances and generally "letting nature take its course."

This philosophy was very appealing to conservationists during the 1930s, when many of Iowa's state parks were founded, because it symbolized the opposite of excessive manipulation of the land by people, which at that time had precipitated the envi-

The Brushy Creek State Recreation Area in Webster County two months after prairie burn. Photo by John Pearson.

Where are Iowa's prairie remnants?

To help visitors locate the prairie remnants in Iowa state parks, brief descriptions are provided below. This guide should provide a respectful and informed contact between people and prairies.



NORTHWEST IOWA -- ***(1) Stone State Park*** contains more than 200 acres of loess hills prairie as linear strips on ridgetops of rugged hills; the best examples are located in the ***(2) Mt. Talbot State Preserve*** in the extreme northern part of the park. A small loess hills prairie is located in the northeast corner of ***(3) Preparation Canyon State Park***; it is severly encroached with Eastern red cedar, but recent burns have restored much of its original openness. ***(4) Fort Defiance State Park*** contains a small prairie on a scenic, north-facing hillside near the east entrance. ***(5) Brushy Creek State Recreation Area*** contains several small prairies, mostly on steep hillsides; the most accessible one is behind the shooting range near the southeast entrance. ***(6) Dolliver State Park*** also contains numerous small prairies on steep hillsides; the largest ones are located along the east-west hiking trail that traverses the ridge north of Prairie Creek. An unusual "sand prairie" is found west of the campground in ***(7) Lewis and Clark State Park***; it is a remnant of the prairies which used to form on sandbars in the Missouri River floodplain before channelization.

SOUTHWEST IOWA -- Long and very narrow prairies are found on steep upper slopes in ***(8) Waubonsie State Park***, especially along the Sunset Ridge Trail. ***(9) Springbrook State Park*** contains a unique "sandstone prairie" on a rocky escarpment along the west entrance. A wet prairie surrounding a small pothole marsh is located in the southeastern part of ***(10) Big Creek State Recreation Area***. One of Iowa's southern-most prairies is located in the southwest corner of ***Nine Eagles State Park***.

NORTHEAST IOWA -- A sand prairie in Frog Hollow and a hill prairie along the Lima Trail may be found in ***(11) Volga River State Recreation Area***. Tiny hillside prairies are also contained in the northern part of ***(12) Pikes Peak State Park*** on a ridgetop separating Schrade Glen from the Mississippi River. The ***(13) Mines of Spain State Recreation Area*** also contains several small hill prairies, the most visible of which are associated with the Julien Dubuque monument and the west slope of the old quarry.

ronmental disaster of the Dust Bowl.

The writings of American ecologists Frederick Clements and Lucy Braun during the 1940s and 1950s extolled the scientific value of undisturbed, mature "climax" forests and inadvertently promoted the value judgment that the climax stage of vegetation was always the most desirable one. Benign neglect also appealed to over-worked park managers because it called for little management attention to natural resources other than the enforcement of park rules concerning visitor use. Today's presence of extensive, mature forests in Iowa state parks such as Backbone, Palisades-Kepler, Waubonsie and Stone is due in large to the protection they received under benign neglect since the 1930s.

Although certain types of natural vegetation, particularly old-growth forests, were clearly favored by excluding disturbances such as burning, cutting and grazing, others began to disappear. At first, the gradual disappearance of prairies and open woodlands (savannas) due to the increase of trees and shrubs did not alarm conservationists, who either claimed drought would prevent woody vegetation from completely encroaching upon non-forested communities or stated, in rather circular reasoning, that these communities were not truly desirable because

John Pearson

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Preparation Canyon State Park was severly encroached with Eastern red cedar, but recent burns have restored much of its original openness.

Mt. Talbot State Preserve in Stone State Park. Controlled prairie fire is a beneficial tool for managing prairies. Regular burning restores vitality and diversity to prairie vegetation.
▼

Daryl Howell

they were not climax in nature. By 1970, however, scientists had studied the effects of fire on prairie ecology and had documented numerous benefits to plant diversity and animal habitats.

In Iowa, the studies of Dr. John Aikman, Iowa State University, Dr. William Platt, then of the University of Iowa and Dr. Paul Christiansen, Cornell College, on the effects of fire on Cayler Prairie and Hayden Prairie were especially influential. In a partial reversal of previous philosophy, land managers began to "disturb" prairies with fire in an effort to restore vitality and diversity to prairie vegetation. Regular burning programs were initiated for large prairies in the state preserves system during the 1970s, but application of prescribed fire to prairies in the state parks generally lagged until the 1980s. Stone Park, for example, containing the largest amount of native prairie of the 60-plus state parks in Iowa, was not the scene of prescribed burning until 1989.

In 1986, the DNR's preserves and ecological services bureau began to inventory the prairies remaining in Iowa's state parks, to write restoration plans and to coordinate management activities. Much remains to be done, but results of this effort to date have been both encouraging and challenging. Although tiny patches of prairie plants may be encountered in almost any state park in Iowa, significant prairie remnants were documented in 13 state parks, mostly (but not entirely) in the western part of the state. Although approximately half of the park prairies had been burned once or more by 1986, brush encroachment was a severe problem in almost all cases.

In addition to introducing prescribed fire to park prairies (or increasing its frequency of application), this initiative has also incorporated a broader array of management tools than had been widely used in the past. Manual cutting and removing of brush and herbicides (generally in the form of "stump painting" with a non-persistent herbicide) are now among the standard practices used in Iowa's state parks management. The most common woody invaders include smooth sumac, gray dogwood and elm plants -- desirable, indigenous prairie shrubs such as leadplant, prairie rose, prairie willow and New Jersey tea are deliberately saved. In some cases, especially where the presettlement vegetation was probably savanna instead of true prairie, scattered individuals of bur oak and other tree species are also retained.

Special attention is also given to the needs of small, sedentary animals such as butterflies. Although burning generally enhances prairie plants and ultimately maintains habitat for prairie animals, fire may destroy the eggs and larvae of litter-dwelling insects. If survivors from unburned or lightly burned areas can recolonize the burned area, then damage to the overall population is short-term. However, fires which are too big, too intense or otherwise prevent recolonization could conceivably cause long-term depression or even local elimination of prairie butterfly populations. Concern for these and similar organisms is changing our concept of a "good" burn from a large, uniformly blackened area to a mosaic of burned and unburned patches.

John Pearson is a plant ecologist with the DNR's preserves and ecological services bureau.

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