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### Iowa CONSERVATIONIST



Volume 44 No. 4 
 April 1985 STAFF

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#### CONTENTS

- 2 Fishing Forecast
- 10 Don't Stock That Fish
- 12 Conservation Update
  - Leaders in Conservation
  - Calendar of Events
- 14 1984 Big Fish Awards
- 18 Classroom Corner
- 19 Warden's Diary
- 20 Nature Tale
- 22 Do Fish Scents Make Sense?
- 24 Fishing the Spawn
- 26 Fishing Lowhead Dams
- 28 Walleyes Are Bugged
- 30 Proper Fish Care

COVER: Photo by Ron Johnson.

#### THE IOWA CONSERVATION COMMISSION

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# **1985 Fishing Forecast**

It should be another banner year for anglers in Iowa this fishing season. "Best places to fish in 1985" information has been solicited from fisheries biologists to assist you in shortening the time between bites.

### Northwest

#### By Tom Gengerke

Tom Gengerke is a district fisheries supervisor located at Spirit Lake. He has worked for the commission for nine years. He has a M.S. degree from South Dakota State University.

#### Walleye

The best fishing will be found on Clear Lake (Cerro Gordo Co.), Big Spirit (Dickinson Co.) and Black Hawk (Sac Co.) where 12- to 16-inch fish are common and the opportunity to catch Emmet County and the Little Sioux River in Dickinson and Clay County should be especially good. River walleye fishing is usually best during the summer and fall months, after water levels have stabilized. Many fish in the 2- to 4-pound class have been taken using Rapalas, jigs and nightcrawlers.

#### Yellow Perch

Last year, as predicted, was a year to remember for yellow perch fishing. The return of normal water levels experienced during the early 1980's created the proper mix of conditions necessary for excellent recruitment and survival. Strong year class development during those years was manifested in excellent catches during 1984. This fishery will continue through 1985. The best fishing will be found on Big Spirit and West Okoboji (Dickinson Co.). Activity will start in July, around weed beds, and will proceed into fall. Large numbers of 9- to 11-inch perch were harvested from the north end of Big Spirit during October and November. Small jigs tipped with silver wigglers or waxworms are especially effective.

ton, Des Moines, William B. Ridout, Estherville; and Thomas E. Spahn, Dubuque.

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IOWA CONSERVATIONIST (USPS 268-780), is published monthly by the Iowa Conservation Commission, Wallace State Office Building, Des Moines, Iowa 50319 Second class postage paid in Des Moines, Iowa, and additional mailing offices. POST MASTER: Send changes of address to the Iowa Conservationist, Wallace State Office Building, Des Moines, Iowa 50319

Send subscriptions — one year; \$5.00, two years, \$8.00, or 3 years; \$10.00 — to the address above.

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larger fish, especially on Clear Lake and Big Spirit, is always present. The key to spring fishing on Big Spirit is a late ice out followed by steadily increasing water temperatures. A jig, either hair or plastic bodied, and minnow or just a plain minnow are old standbys and always worth trying. If water is flowing out of Big Spirit and into the north end of East Okoboji anglers would be well advised to try that area. This has been a good producer during the past two years. Silver Lake (Dickinson Co.) has a nice population of harvestable walleyes due to maintenance stocking and increased over-winter survival during the past three winters. Springtime hotspots will include the Island Area and Trapper's Bay Inlet. River fishing for walleyes has been excellent during the past three years and from all indications 1985 will also be a producer. The Raccoon River south of Sac City, the West Fork of the Des Moines River from Rutland to the Cornbelt Dam, the Des Moines River in

#### Bullhead

Little Wall Lake (Hamilton Co.). Crawford Creek (Ida Co.), Silver Lake (Dickinson Co.) and Clear Lake will provide excellent bullhead fishing during 1985. Little Wall Lake in particular has a very good population of 10- to 13inch bullheads and should not be overlooked by anglers in that area. Surveys conducted during 1984 indicated a large number of 7- to 10-inch bullheads in Crawford Creek and fishermen would be advised to harvest many of these fish from this 60-acre lake. Late May and early June are optimum periods for traditional spots like the North Grade, Buf[a]

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Yellow perch are back in big numbers at Spirit Lake.

falo Run, Templar Park and the outlet to Little Spirit on Big Spirit Lake. These areas may be especially productive after dark so bring your lanterns!

#### Channel Catfish

Rivers and catfish go hand-in-hand and excellent fishing will be available in virtually all Iowa rivers during 1985. The Little Sioux, Big Sioux, West Fork of the Des Moines, the Iowa River between Alden and Eldora, and the Raccoon River will offer some of the best opportunities for knowledgeable "river rats". The best fishing occurs from June through September. Most catfish are taken from deep holes or from around snags which are providing cover and escape from the sun. The bulk of these fish range from 10- to 20-inches, however, the chance at a real pole bender is always present. Top producing baits include dead minnows, prepared baits and crayfish. Excellent channel catfish angling is also available in many area lakes. County Conservation Boards with cooperative cage catfish programs are often the best. Oldham near Soldier, Nelson Park near Dow City, Moorehead near Ida Grove, Pahoja near Larchwood and Dog Creek in O'Brien County are among the best. Larger lakes are well worth sampling and it is in these areas that "trophy cat hunters" should concentrate their effort. East Okoboji and Storm Lake (Buena Vista Co.) may very well provide some of the best catfish fishing in the Midwest.

#### Muskellunge

It's the fish of a thousand casts — or maybe just one! Peak harvest usually occurs in late June, early July and again in late summer — with some die-hard fishermen experiencing good success again in late fall. Although Big Spirit has been a consistent producer over the past two years, West Okoboji coughed up many of last year's Upper Great Plains Musky Club tournament fish. The state record fish probably resides in this lake. A number of fish were taken from Clear Lake during 1984 and from all indications 1985 will be even better. The majority of these fish are between 8 and 15 pounds. Large fish are caught every year by both novice and seasoned angler alike using all types of gear and a variety of presentations but if you're really after a wall hanger, you'd better bring the heavy rod.

#### Northern Pike

Good to excellent fishing can be expected at Big Spirit and Tuttle Lake (Bennett Co.). Recruitment has been excellent during the past two years and many 2- to 5-pound fish are available. Concentrate your effort around the rushes in Anglers Bay and the weedline or isolated weed beds in the rest of Big Spirit. Flashy spoons are particularly effective on Tuttle Lake however Mepps spinners, Rapalas and live chubs also work well. The Winnebago River from

#### Northwest continued

Fertile to Mason City will also provide river anglers with stringers of nice-sized fish.

#### Smallmouth Bass

Plenty of "bronzebacks" will be taken this year. Lake fishermen would do well to start early, concentrate on rock piles or rocky points and use a minnow, preferably a shiner, and fish it slowly. West Okoboji and Big Spirit both produce quality fish, however, more consistent fishing will be experienced on West Okoboji. When water temperatures rise, switch to crankbaits. River fishing, once the rivers get back in their banks and begin to clear, usually produces more fish per trip, although they are seldom as large as those taken in lakes. The Iowa River from Alden to Steamboat Rock, the Boone River from Webster City to its confluence with the Des Moines and the Winnebago River from Fertile to its confluence with the Shell Rock all have nice fish. Knowledgeable anglers concentrate downstream from riffle areas. near submerged timber and in deep holes. A 12-inch length limit applies on all interior streams, and a 14-inch length limit is in effect for Big Spirit, West Okoboji, East Okoboji, Upper Gar, Lower Gar and Minnewashta Lakes.

#### Largemouth Bass

Upper Pine Lake, Briggs Wood and Beeds Lake (Franklin Co.), will offer excellent catches of bass this year. Shorelines, submerged timber and weedlines are your best bet. The canal areas of West Okoboji will produce fish early but these fish will move out when the water gets too warm. Crawford Creek Lake has a good bass population with the average bass weighing from one to two pounds. Two oxbow lakes, Browns Lake in Woodbury County and Blue Lake in Monona County have produced excellent bass fishing during the past two years. Most fish are 3 pounds or less. Plastic worms and spinner baits will receive the most action. Little Wall Lake contains a good number of 14- to 17-inch fish. Fishermen should concentrate on the fish attractors installed in that lake.

June when the fish move into shallow water to spawn. A dry fly or popper and a light fly rod is a deadly combination for collecting bluegill fillets. The ole standby of a number 8 hook, small bobber and a piece of crawler is skill effective. Beeds Lake, Upper Pine, Lower Pine, Lake Pahoja, Dog Creek, East Okoboji and West Okoboji will all provide plenty of action for 6- to 7-inch gills during 1985. West Okoboji has provided some excellent bluegill fishing during the past three years, and the catch should continue.

#### Crappie

The best crappie fishing will occur on Clear Lake, Little Wall, Crawford Creek, North Twin (Calhoun Co.), Storm Lake and Center Lake (Dickinson Co.). Fish from 8- to 10-inches will be common. The largest fish will come from Clear Lake and the fastest action will be on Crawford Creek and Center Lake. The marina area is the early season hotspot on Storm Lake while at Clear Lake the emerging rush beds on the west end will provide the best fishing. On Center Lake anglers should concentrate on the shallow water on the west and south shores. Two new stake bed structures in the southwest corner of North Twin should help concentrate fish in that lake. Small jigs, with or without minnows, are the preferred baits.

#### Yellow Bass and White Bass

Excellent yellow bass fishing is available in North Twin Lake. The action starts as soon as the ice goes out and continues until ice formation.Clear Lake will also offer good yellow bass fishing and the fish are slightly larger.

### Northeast

#### By David L. Moeller

David L. Moeller is the northeast district fisheries supervisor located at Manchester. He has been with the commission for 15 years and holds a B.S. degree from Iowa State University.

#### Largemouth Bass

The Mississippi River backwater lakes and sloughs will continue to be prime bassin' waters in 1985. Several inland lakes will also provide some fine bass angling as well.

The most successful bass fishing periods occur during May and early June when the water temperature ranges from 55 to 62°F and again in September and October when the water cools down below 68°F. The bass are then utilizing shallow water habitats and readily take a bait or lure.

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Bass almost always seek structure so concentrate your effort in those areas containing dead-fall trees, beds of vegetation, stumps, rocky points, or riprap banks. Work your bait or lure as close to the structure as possible; if you don't have a few hang-ups, you're not fishing close enough to the structure. Crank baits, spinner baits, plastic worms, pigand-jig, and spoons with a pork rind strip are proven bass lures. Crayfish, nitecrawlers and large shiners are effective baits. Good Mississippi River backwaters include the Lansing Bottoms in Pool 9; Harpers Slough, Sny Magill Bottoms, and Bagley Bottoms in Pool 10; and, Bertrum Lake and McCartney Lake in Pool 11. Anglers should note that effective this year there is a 12-inch minimum length limit on all black bass (largemouth and smallmouth) on the Iowa-Illinois boundary waters of the Mississippi. Research is being conducted to determine if the regulation will result in an increased average size of bass. Some of these better bass backwaters include Tippy's, Sunfish, and Frentress Lakes in Pool 12; Densmore and Blake's Lakes in the Green Island Area, Browns Lake, and the Sabula Bottoms in Pool 13; and Joyce's Slough and the lakes and sloughs in the Rock Creek area in Pool 14. Sweet Marsh (Bremer Co.) and Lake Meyer (Winnesheik Co.) contain a good number of largemouth bass up to 16 inches. Lake Hendricks (Howard Co.)

#### Bluegill

Crawford Creek is a bluegill angler's dream come true. Surveys conducted during 1984 indicated a tremendous number of 7- to 9-inch bluegill in this lake. The best time to catch these platesized gills is during late May and early White bass enthusiasts should look to Clear Lake for these speedsters. Fish will range from 10 to 16 inches.

#### Other Fish

The freshwater drum is available in numbers in West and East Okoboji. In fact, it is difficult to fish a jig in these lakes and not hook one, and a piece of crawdad on the jig virtually ensures success. These fish are the fourth most commonly caught fish on the Mississippi River and they are delicious when the dark meat is cut away and the firm white flesh is boiled, chilled and served with a shrimp sauce.

Tiger Musky (hybrid cross between northern pike and muskellunge) are available in Storm Lake, Black Hawk and North Twin. These lakes contain fish from 32 to 38 inches in length and should provide some angling excitement for the big fish enthusiast.



has an excellent bass population with some fish in the four pound class. George Wyth Lake (Black Hawk Co.) has many bass just under the 14-inch length limit, however, this lake will also yield a few real lunkers. better than a skillet full of catfish, rolled in commeal and flour, and fried to a golden brown.

#### Smallmouth Bass

The smallmouth bass is one of the most popular game fishes in Northeast Iowa and good populations are found in all the major inland rivers. Success in fishing for these sporty, hard-fighting fish depends on locating good smallmouth bass habitat — stream sections containing good areas of gravel, rock, and boulder. The rock and boulder not only provide structure which smallies prefer but also harbors one of their favorite food items - crayfish. Some of the best stream sections include the Cedar River from Otranto to St. Ansgar and from Mitchell to Floyd, the Upper Iowa River from Lime Springs to Kendallville and Decorah to Highway 76, the Yellow River below Volney, the Volga River below Fayette, and the Maquoketa River below Delhi. These streams produce good numbers of bass between 3/4 and 21/2 pounds with a few fish up to 41/2 pounds being caught each year.

More than 300,000 trout will be stocked this year in Northeast Iowa.

The streams are generally low and clear, and the bass are hungry as well. Smallmouths take a wide variety of lures with jigs, small crank baits, beetle-spins, injured-minnow plugs, and twister tails being the most popular.

#### Walleye and Sauger

Serious walleye anglers head to the Mississippi, Cedar, and Shellrock Rivers for some of the finest walleye fishing in the Midwest. The Mississippi ranks first in terms of numbers of walleyes caught, however, the Cedar and Shellrock also yield some excellent catches. The size of fish caught is also excellent with fish up to 12 pounds coming out of each of these rivers annually. Two additional streams - the West Fork Cedar River in Butler County and the Wapsipinicon in Buchanan County will also produce a few nice walleyes. Sauger - the smaller, mottled cousin of the walleye - are found only in the Mississippi, however, populations there are very strong. Sauger generally range from one to two pounds with occasional fish up to 31/2 pounds.

The fastest action and the largest fish are caught in the very early spring just after ice-out. Both walleye and sauger adults congregate in the tailwaters below dams just prior to spawning. Jigs tipped with a minnow, sonars, and twister tails worked slowly on the bottom, will put fish on your stringer. From early summer to fall, the walleye will frequently hang out on the rock wing dams and any other riprap areas. Nitecrawlers, crank baits, and twister tails bounced right on the rocks, will generally do the trick. Late fall and right through the winter, again, finds the walleye and sauger frequently in the tailwater areas and anglers willing to battle the cold, are often rewarded with a fine mess of great tasting walleye and sauger fillets.

#### Channel Catfish

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Channel catfish are probably the most underharvested species in Northeast's inland waters. The large inland rivers contain excellent populations of catfish up to six pounds. The Upper Iowa River below the Lower Dam, the Cedar River in Black Hawk and Bremer Counties, the Maquoketa River below Delhi, and the Wapsipinicon River in Buchanan County are excellent areas for pursuing Mr. Whiskers. Annual plants of large fingerling catfish maintain good populations in our lakes. Volga Lake, (Fayette Co.), Silver Lake (Delaware Co.), Meyers Lake (Black Hawk Co.), Casey Lake, (Tama Co.), Lake Hendricks, George Wyth (Black Hawk Co.), and Lake Meyer all contain good catfish populations.

The Mississippi River contains a fair number of catfish also. In the early spring, the mouths of the tributary rivers are often catfish hotspots. In the late summer fish the wing dams and running cuts and channels. There is just nothing

A leisurely float trip in a canoe is an excellent method for pursuing smallies. Late summer and early fall is a particularly productive time for bass fishing.

#### Trout

Iowa's trout anglers are expected to have another fine year in 1985. The action gets into full swing with the first stockings of rainbow and brown trout in the 47 catchable trout streams beginning in early April. Over 320,000 one-half pound trout will be distributed in these streams during 1985. To provide variety and give anglers a choice, some streams will be stocked solely with brown trout, others with rainbows, and the remainder a mixture of the two species. To provide

#### Northeast continued

additional rod-bending action and to test a few lucky anglers' skills, over 400 lunker-sized browns and rainbows ranging from 3 to over 15 pounds will also be scattered in these streams. All of the catchable streams are stocked through October. Late fall stockings have proved popular with anglers and 12 catchable streams will also be stocked during November. Some of the better catchable streams you will want to try this year include North and South Bear, Waterloo, Trout River, Coldwater, Trout Run, French, Sny Magill, Grannis, Bloody Run, Richmond Springs, Swiss Valley, and Bailey's Ford.

For the trout angler who wants to get away on a remote stream section and test his or her skills against a large brown trout, the put-and-grow or the special regulation streams, may be just the answer. These streams' brown trout populations are maintained with annual plants of small fingerlings. Iowa's waters, like her land, is very productive and the small trout grow rapidly, often to three and four pounds in just four or five years. There are no special regulations on the put-andgrow streams, however, most are on private property and landowner permission is required. The special regulation stream sections are mostly on public land, have a 14-inch minimum length limit on brown trout, and angling only with artificial lures is allowed. There is a regulation change on trout fishing that goes into effect in 1985. Resident anglers under 16 years of age and non-residents under 14 years of age must possess a valid trout stamp to possess trout or they must fish for trout with a licensed adult who possesses a valid trout stamp and limit their combined daily catch to five trout, and ten in possession.

backwaters, particularly near beds of vegetation. During the summer months drift fishing is excellent for locating them on the inland lakes. On the "Mighty Miss", look for them on the wing dams, along the edges of weed beds, and around fallen and submerged trees. Garden worms seem to work even better than nitecrawlers during these warm months.

#### Crappie

The Mississippi contains the only major crappie population in Northeast Iowa, however, their size is excellent, running between 9 and 11 inches. The first major crappie fishing period begins in late May. Small minnows or jigs fished in fallen trees and brush piles will fill many fish baskets with slab-sized crappies. A second major fishing period occurs in October and November when the water cools and the crappie school en masse. Fish the deeper, quiet water snags, submerged trees, and eddies below wing dams. Keep moving, don't spend too much time in one spot until you locate an actively feeding school.

#### Northern Pike

The Mississippi River north of Dubuque has a large population of northerns, many in the six to eight pound range with occasional fish over 12 pounds. Still fishing with large chubs in the backwaters during the hottest part of summer is particularly effective. Areas where coldwater streams feed into the Mississippi also hold concentrations of northerns during the hot months. The Wapsipinicon River boasts the largest northern pike population in the inland waters. Small pike are numerous with an occasional trophy-sized pike being taken. The Cedar River has an increasing northern population and is potential trophy water - individual fish up to 20 pounds are taken each year.



#### Bluegill

The Mississippi River is undoubtedly the biggest producer of bluegills for Northeast Iowans, however, several inland lakes will yield their share of "gills" also. Some of the better areas this year will be Sweet Marsh, Lake Meyer, Volga Lake, George Wyth Lake, Meyers Lake and virtually any of the many backwater lakes in the Mississippi River. Fishing for bluegills during the spring spawning season often means big fish, lots of fast action, and fillets that are unexcelled on the table. Look for these spawners in the shallow bays and Mississippi River

#### **Other Fish**

White bass anglers traditionally head for the Mississippi River from July through October to pursue the hardhitting and sporty striper. Look for them on the wing dams, spillway areas, and other riprap areas with flowing water.

Freshwater drum is another species that prefers rock and flowing waters. Fish for them with a nitecrawler, crawdad tail, or a small jig. Look for them in the tailwaters, dam spillways, wing dams, and along the main channel border. Those scrappy sheephead provide good tasting fillets for frying, and are also excellent for making fish chowder.



#### By Steve Waters

Steve Waters is a district fisheries supervisor located at Lake Darling. He has been with the commission for 12 years. He holds a M.S. degree from the University of Missouri.

#### Largemouth Bass

Mississippi River anglers will see benefits in 1985 from the new 12-inch minimum length limit for black bass. Fall surveys showed a strong year class of 10- to 12-inch bass which will provide catch and release fun early in the year. These fish should reach 12 to 14 inches by fall when fishing conditions and catch rates are typically best. Top bass areas in the southern reaches of Ol' Miss are Big Timber, Cleveland Slough, Hidden



Southeast Iowa lakes will provide excellent fishing this year. The key to early success in these impoundments, from small lakes to Rathbun Reservoir, is water clarity.

#### Bluegill

Red Haw Lake (Lucas Co.) will top the list as a producer of big "gills" again this year. Most fish will average 8 inches with 10-inch trophies available to excite the angler. Catches of 6- to 7-inch Hawthorn Lake bluegill should approach last year's figure of 15,000 fish harvested. Lake Odessa (7-inch average), Miami (lots of 7-inchers) and Scott County Park lakes (6 to 7 inches) should be top producers. There should be plenty of 6-inch fish at Geode, Wapello, Hannen Lake (Benton Co.) and at the

Acres and Bogus Island backwaters in Pool 17; Huron Island and lower Burnt Pocket backwaters in Pool 18; and Burlington Island, rip-rap shores and stream mouths in Pool 19.

The 18-inch minimum size limit at Lake Wapello (Davis Co.) is a management tool used to control gizzard shad. A product of this regulation will be a good number of lunker bass for the angler to catch. Coralville Reservoir (Johnson Co.) is loaded with 12- to 16inch bass with many fish reaching 4 pounds. The best success is in bay areas and rock shorelines. Water turbidity conditions dictate the best times to fish this reservoir.

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Top bets for bigger bass are Rathbun Reservoir (Appanoose Co.) and Lakes Darling (Washington Co.), Hawthorn (Mahaska Co.) and Odessa (Louisa Co.). Additional top bass lakes include Miami (Monroe Co.), Iowa (Iowa Co.), and Pleasant Creek (Linn Co.). Lakes Geode (Henry Co.) and Keomah (Mahaska Co.) contain many sublegal bass under 14 inches, which means plenty of catch-and-release action.

#### Crappie

The top crappie lake in terms of numbers and size (8 to 11 inches) will be Lake Darling. The total catch of crappie was astounding last year and a repeat performance is expected this year. Although netting data indicates Rathbun crappie numbers may be down slightly the size isn't. The average size caught will be about 10 inches with some fish approaching 16 inches. Coralville Reservoir (8 to 12 inches) and Lakes Miami (8 to 9 inches), Odessa (9-inch average) and Hawthorn (8-inch average) should be good bets in 1985.

Crappie angling on the Mississippi River for 8- to 11-inch crappie should be good in the same backwaters where great bass fishing can be found. Fish tight to stumps, logs and brush in June, July and October. Crappie will be suspended in open water areas with deep holes in August and September. Shimek Forest ponds (Lee Co.).

Don't overlook the Mississippi River for great angling for 6- to 8-inch bluegills. Look to the same areas that good crappie and bass angling exists.

#### **Channel Catfish**

Southeast Iowa is a paradise for channel catfish anglers. The cage catfish and maintenance stocking programs have established excellent catfish populations in virtually every Iowa lake. The following lakes are guaranteed catfish havens: Rathbun (many lunker fish), Miami, Wapello, Hawthorn, Coralville, Macbride (Johnson Co.), Darling, Odessa, Geode, Otter Creek (Tama Co.), Iowa, Pollmiller (Lee Co.) and Belva Deer (Keokuk Co.).

A 1984 increase in the minimum commercial size for channel catfish on the Mississippi will mean more 13- to 16-inch fish on the stringer for sport fishermen. The fastest fishing will occur during the hot weather of August and September. Fish stinkbaits and nightcrawlers above wing dams and rip-

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#### Southeast continued

rapped islands for best results. The biggest fish are caught during the June spawning period in shallow rock areas and stump fields. Also, don't overlook the interior rivers. The Wapsi, Skunk, Cedar, Des Moines and Iowa are excellent rivers to find a secluded spot in which to fill a stringer and enjoy nature.

#### Walleye

A creel survey at Rathbun Reservoir showed that 50 percent of all walleye caught were over 3 pounds. Several state-record fish are haunting this trophy walleye lake. Trophy fish may not be common at Macbride but 1- to 3-pound walleye are. Crank baits and jig and minnow are killer baits at this scenic lake.

A walleye or sauger angler's idea of heaven would be fishing the Mississippi River. Peak fishing times are March and April, August and early September, and November and December. The best fishing areas are in the tailwaters and around wing dams.

#### Other Fish

Trophy tiger musky fishing is here to stay in Iowa. Although Hawthorn Lake (fish up to 44 inches) and Rathbun will lead the way, big fish can also be caught at Pleasant Creek, Macbride, and Lake Darling.

Bullhead enthusiasts will want to include trips to Hawthorn (10-inch average), Odessa (9 to 12 inches) and Darling (6 to 10 inches). Sluggish water of area rivers are also great places to find this cooperative fish. White bass angling should be great at Rathbun and the Mississippi River. Most fish will range from 10 to 15 inches and this spirited fish is often found in basket filling numbers. Paddlefish snagging is now permitted in all waters of the state. The tailwaters of the Mississippi River, the Oakland Mills Dam (Skunk River) and the dam at Ottumwa should be snagging hot spots.



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#### Farm Ponds

The numerous ponds in southeast Iowa produce fabulous angling for bass, bluegill and channel catfish. These minilakes produce more trophy-size fish than any other water area and are great places to begin the new fishing season. Keep in mind you will be fishing on private property, which requires owner's permission and the utmost respect is due the landowner and his property. Big Creek will be a steady producer of walleyes, catfish and panfish.

### Southwest

#### By Joe Schwartz

Joe Schwartz is a district fisheries supervisor located at Lewis. He has been with the commission for 14 years. He has an M.S. degree from Iowa State University.

#### Bluegill

Bluegills are moving toward the top of the popularity charts in southwest Iowa for several reasons. They are easily caught, take a great variety of baits and are not particularly wary. Bluegills are forgiving of a less than perfect fishing technique, fight very well for their size, are exceptionaly fine eating and are abundant in most ponds and lakes.

Spring and early summer are by far the best periods to catch bluegills because they congregate in shallows to spawn. Spawning activity peaks in southern Iowa around Memorial Day. Search water from 2- to 6-feet deep to locate spawning beds. Fish on spawning beds can be taken with live bait, small jigs or flys.

As the season progresses, big bluegills abandon the shallows and move to deeper water where they spend the summer. They can be found along the edges of weeds or in deep coves. Many times they are on humps or areas that break to old creek channels or other deep water areas. Summer bluegills are usually found in water 10- to 20-feet deep. They can often be taken by drifting a boat with the wind, allowing the bait or lure to be suspended at 10 to 15 feet.

Lake Anita (Cass Co.) has been the best lake in the region for jumbo bluegill up to 10 inches, and it will be again in 1985. Big Creek (Polk Co.) is not far behind Anita, though, and I look for catches of good bluegills to be taken there. Other lakes which will produce good catches of bluegill include Windmill (Taylor Co.), Wilson (Taylor Co.), Viking (Montgomery Co.), Meadow (Adair Co.), Nodaway (Adair Co.), Willow (Woodbury Co.) and Hickory Grove (Story Co.). Fish caught from these lakes will range from 6 to 9 inches with the average around 8 inches. Lake Icaria (Adams Co.) will produce good bluegill fishing again this year. Fishing was very slow there in 1984 due to the muddy water which plagued it all spring and summer. With moderate runoff this spring, this hotspot of southwest Iowa should bounce back to good fishing. Nine Eagles, a 56-acre lake in Decatur County, has a good bluegill population which is underfished. If you want to fish in a beautiful little lake located in a scenic, wooded park, try Nine Eagles. Fishing pressure is light and you may have the lake to yourself.

in mid-summer after the water has cleared. Saylorville Reservoir also is a good bass lake when water conditions are favorable.

#### Crappie

Crappie are southwest Iowa's meat fish. Many people take advantage of our excellent spring crappie fishing to stock their freezer with crappie fillets. May is the best month to catch crappies, although, they can be taken about any month of the year. Fish brushy or rocky areas near shore in the spring and follow the fish to deeper water as the season progresses. Drift fishing at depths of 12 to 15 feet in mid-summer works well. Ultralight gear with small white or yellow jigs are favorites. Minnows also work well.

Lake Anita will be back in the crappie business in 1985 after a lay off of several years. Crappies are cyclic at Anita and they will be at the top of their cycle this year when numerous nine-inch fish will be taken. Big Creek, which was good last year, will be down somewhat this year. There will be some 10- to 12-inch fish taken, but most will be about 6 inches. These smaller fish should make for good fishing at Big Creek in 1986. Some other good crappie lakes will be Viking, Meadow, Nodaway, Willow, Icaria, Thayer (Union Co.), Wilson, Windmill and Easter (Polk Co.). Fish in these lakes vary in size and you may have to toss back some smaller fish. Saylorville (Polk Co.), Red Rock (Marion Co.) and Robert's Creek (Marion Co.) all have excellent crappie populations, but good fishing depends on water conditions. Clean water with good water clarity at these reservoirs is essential if you are going to have luck. Fish will range up to 15 inches in these three reservoirs.

Green Valley, Viking, Icaria or Big Creek.

The Des Moines River is an exceptional catfish producer. Try at the upper end of Saylorville or Red Rock for some easy fish, although, anywhere on the Des Moines is good.

#### Walleye

Big Creek and Icaria are steady producers of walleye in Southwest Iowa with fish being taken up to 10 pounds at Big Creek and seven pounds at Icaria. Most fish are 1 to 2<sup>1</sup>/<sub>2</sub> pounders at both lakes. Saylorville Reservoir contains lots of walleyes, but they are difficult to find. and catch. Fish the face of the dam, points and along the old river channel.

The Des Moines River above Saylorville in Boone County can be good for walleye under the right conditions. Best areas are riffles, rocky holes and lowhead dams. The best lure is the lead head jig or jig and minnow combination. Below Saylorville and Red Rock dams are also excellent places to catch walleyes.

#### Bullheads

Three lakes should produce good bullhead fishing in 1985. Prairie Rose, Manteno (Shelby Co.) and Twelve Mile (Union Co.) Lakes all contain good populations of bullheads up to 10 inches. You will have to sort out the smaller ones to collect a mess of keepers. The bullhead is a cooperative fish and it can easily be taken by a hook baited with a worm fished on the bottom.

#### Largemouth Bass

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All of the public lakes and many farm ponds in the region have largemouth bass populations. Older lakes like Nine Eagles, Anita, Viking and Green Valley (Union Co.) have a few trophy fish in them which are taken occasionally by fishermen. These lakes contain many fish in the 1- to 3-pound category, however. Try fishing the points and underwater structure or marked stake beds and brush shelters. Other lakes with keeper bass include Hickory Grove, Big Creek and Greenfield Lake (Adair Co.). Prairie Rose in Shelby County was renovated in 1981 and the newly stocked fish have grown to acceptable size. Surveys in 1984 showed good numbers of bass greater than the 14-inch length limit. So far, few people have fished for those though. Lake of Three Fires is another lake where surveys show good bass populations, but few people fish for them. There are numerous fish in the 2to 4-pound category. Three Fires is frequently muddy so you may have to fish

#### **Channel Catfish**

I suppose I could list all of the lakes and streams in southwestern Iowa where you could catch catfish, but it's easier to just say fish anywhere. Virtually all of our larger streams, public lakes and many farm ponds contain channel catfish. Streams have naturally reproducing populations and all public lakes are stocked heavily each year.

Catfish can be caught just about any time of year, but the traditional time is during the hot part of summer. Prepared bait, chicken liver and nightcrawlers are some of the common baits used during this time and work well on both lakes and streams.

If you want a better-than-average chance of catching a lunker "cat" try

#### **Other Species**

The Raccoon River from Des Moines to Adel and the Des Moines River from Boone to the north county line will both be good producers of large flathead catfish this year. If you want to try on one of these large predators, use a live green sunfish or chub for bait and heavy tackle because they can become sizable.

Wipers, a hybrid between white bass and ocean striped bass, have been successfully established in Saylorville. They have shown a strong tendency to move and we see them in the creel from Red Rock all the way north to Fort Dodge. You could expect to catch one anywhere along the Des Moines River system, but best places are the first mile below Saylorville dam and below Scott Street and Center Street dams. I expect the state record, set in 1984, to be broken at least once in 1985.

If the weather cooperates and our water quality is good, I look for 1985 to be a banner fishing year in southwestern Iowa.

## Don't Stock That I



#### By Lannie Miller

Lannie Miller is a fisheries biologist located at Lake View. He has been with the commission for 11 years and holds a B.S. degree from Kansas State University.

Last month I was talking to a man who had a problem with stunted bullheads in his pond. "I don't know where those bullheads came from," he said. "Guess the eggs were brought in on the feet of some ducks." In my eleven years with the Iowa Conservation Commission I've probably heard this and similar comments a hundred times and I'm always amused. Instead of blaming the ducks or shorebirds, let's take a look at who's really responsible.

First, let's lay the old myth to rest once and for all. The probability that the unwanted fish in your pound were stocked by birds is about as likely as being killed by a falling meteor! The eggs would desiccate and fail to hatch. Small fish would suffer the same fate. Most ponds are ruined by unauthorized fish stocking by man, than by any other cause. I would also bet that the person who ruined the pond is a friend or neighbor and thinks he's doing the owner a big favor. Commission fisheries biologists recommend stocking particular species of fish in certain bodies of water. Bluegill, largemouth bass and channel catfish are the three species of fish that are recommended for Iowa farm ponds. Extensive investigations have indicated that these three species provide the best fishing and the most stable fish community for ponds in Iowa. When other species of fish are stocked, such as crappie or bullheads, the pond can become "out of balance," fish growth slows, condition deteriorates, size structure collapses and fishing is ruined. Both of these species are prolific spawners and can quickly overpopulate a pond. The person who knowingly stocks someone's pond with these species is in reality only damaging

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Lannie Miller



Private stocking of crappie in ponds (top) results in stunting. Likewise, large bluegill are eliminated from small lakes by unauthorized stocking of shad.

## Fish!

the pond. Once this dastardly deed is done, only expensive remedial stocking of predatory fish or complete chemical renovation remain as viable alternatives.

The problem of unauthorized fish stocking not only occurs in private ponds, but in publicly owned and managed lakes as well. Unauthorized stocking of fish causes the greatest problem if fish are introduced into a new or renovated lake prior to the establishment of desirable species. Gizzard shad and crappie are the two species that are generally stocked by the unknowing public.

Gizzard shad could be termed the "Jekyll and Hyde" species of the fish world. In large lakes and reservoirs, and especially where management objectives involve walleye, white bass, striped bass or channel catfish, shad may be an important component of the forage base. Small lakes, however, are a completely different situation and it is here where the gizzard shad causes all sorts of problems. Small lakes in Iowa, like farm ponds, are typically managed for bass and bluegill fishing. Research indicates that small gizzard shad compete directly with bluegill for food. The result is a lake with few, if any, bluegill and lots of shad, and obviously poor fishing. Initially, largemouth bass do well on a diet of gizzard shad; however, the small bass are also out-competed by the shad and their numbers also start to decline. Within a relatively short period of time we have a small lake loaded with gizzard shad and very few catchable sport fish. Crappies also have their good and bad sides in fisheries management. As one biologist said, "there's nothing better than a good crappie lake and nothing worse than a bad one." Crappie are piscivorous (fish consumers) and compete directly with bass for food. In lakes where the bluegill and bass populations are well established, crappie generally do not cause problems, grow rapidly and provide many hours of angling enjoyment. But if crappie are stocked prior to the largemouth bass, they will outcompete the bass and over-populate the lake in a very short time. Again, the result is poor fishing.

Two public lakes that were spuriously stocked are classic examples of how costly this practice can be. These examples are by no means isolated occurrences.

Lake Geode, a 187-acre lake located in southeast Iowa, provided excellent largemouth bass and bluegill fishing from the early 1950's until the mid 1970's. In 1974, gizzard shad were stocked in Lake Geode by fishermen intent on "improving" the bass fishery. By 1979, shad dominated the lake and destroyed the fishing. Creel surveys, conducted by the fisheries section, clearly dramatize this decline. In 1972, prior to the introduction of shad, 34,000 bluegill were harvested in Lake Geode by anglers. Only 7,400 were harvested in 1981, a reduction of 78 percent. The harvest of largemouth bass declined 55 percent during this same period, from 1400 in 1972 to 635 in 1981. Lake Geode was chemically renovated and restocked in 1981.

fisheries survey of Yellow Smoke indicated that the average-size crappie was a mere 6.4 inches long. These fish comprised 16 percent of the catch. Another introduced species, the bull-head, made up 79 percent of the catch. By 1984, the crappie had only grown three-tenths of an inch but now comprised 24 percent of the total catch. The average weight dropped from .24 pound in 1982 to .20 pound in 1984. The bluegill, bass and channel catfish all exhibited poor body condition and slow growth rates. A fish toxicant was applied, following lake drawdown, to remove the entire fish population. Yellow Smoke Lake was restocked in 1984 and will provide good fishing in two years if contaminant species are not added to the lake. Both of these problems could have been avoided, saving tens of thousands of dollars and many lost fishing opportunities. A lake's fish community is a complex relationship involving many factors. Habitat, food requirements, spawning site availability and predatorprey relationships are all evaluated by fisheries biologists to determine stocking suitability. Please don't take matters into your own hands when it comes to putting fish in either a private pond or a public lake. Instead of a helping hand, you may be signing the death warrant of your favorite fishing hole. If you have questions concerning fish stocking, consult your local fisheries biologist.

Yellow Smoke Park is a 40-acre lake located east of Denison in Crawford County. It was impounded in 1979 and stocked by the Conservation Commission with bluegill, largemouth bass and channel catfish. Unfortunately, an unauthorized stocking of stunted adult crappie occurred at this time. A 1982 CONSERVATION UPDATE

#### By Randy R. Edwards CHECK YOUR PFD's!

Most people go through boating seasons without taking time to carefully examine the most important piece of equipment on board their boat, their life preservers, or personal flotation devices (PFD's).

There is often a haze of confusion associated with the requirements of PFD's. Let's take a minute to clarify the subject, as it could save a life.

There are four basic types of PFD's:

#### TYPE I:

Is the "May West" military type of life preserver. (Not a common device)

#### TYPE II:

This is the bouyant vest, probably the most common type of PFD. This device ties in the front near the collar and around the waist. These are often orange in color.

#### TYPE III:

Is the new vest type, which zips up the front and contains puncture-proof buoyant foam.

#### TYPE IV:

These common devices in-

type IV. This would be a ring buoy or buoyant cushion.

The exception to this rule would be canoes and kayaks. Here, regardless of length, any of the four types of PFD's may be used, as long as each person has one.

Whichever type of PFD applies to you and your boating situation, the device must be U.S. Coast Guard approved.

To be sure the device is U.S. Coast Guard approved, it must have attached to it a tag or printed label stating "U.S. C. G. approved."

Regularly examine your PFD's. If they have any of the following faults the device is no longer considered to be legal or approved: "any PFD which has a torn or missing strap, punctured flotation bag, water logged flotation material, rotted material in straps or webbing or cover, missing laces, missing hardware, envelope torn or perforated, torn stitching or any other condition which impairs the operating efficiency, or any PFD on which the U.S. Coast Guard approval label is no longer easily legible, shall be deemed as not approved for use on board vessels as equipment required by law." All PFD's on board must be readily accessible, so keep them out in the open where they can be quickly and easily reached. Don't be complacent and believe an accident can't happen to you...because it can. When you go boating, have a good time but play safe.

#### **PRODUCTION FOR 1984 IOWA HATCHERIES**

	Number	Weight (lb)
COLD WATER SPECIES		
Rainbow Trout	289,113	154,561
Brown Trout	57,806	23,031
Subtotal	346,919	177,592
WARM WATER SPECIES		
Bluegill	1,424,250	712
Channel Catfish (Age 0)	1,444,108	9,966
Channel Catfish (Age I)	427,174	30,955
Channel Catfish (Age II)	92,041	6,670
Largemouth Bass (1.5")	1,057,150	1,343
Largemouth Bass (4")	178,087	6,209
Muskellunge (Fry)	1,020,800	unknown
Muskellunge (6")	4,600	102
Northern Pike (Fry)	5,500,000	unknown
Tiger Muskie (Fry)	413,735	unknown
Tiger Muskie (6")	26,862	550
Walleye (Fry)	142,843,225	unknown
Walleye (5")	140,183	4,241
White Amur (4")	27,740	231
White Amur (8")	17,636	3,527
Subtotal	154,617,591	64,506
TOTAL	154,964,510	242,098

Iowa has also negotiated trades involving species we have in abundance for those we want to release in Iowa. These trades are as follows:

Received from the state of Arkansas 200,000 white amur fry.

Received from the state of Indiana 95,200 channel catfish fingerling.

Received from the state of Illinois 330,000 channel catfish try.

clude ring buoys and buoyant cushions.

Remember, each person on board your boat must have a PFD. All flotation devices must fit the wearer. PFD's are available in sizes for infants and children. A child should not wear an adult's flotation device and vice versa. These PFD's are designed to fit both size and weight of the wearer.

Now a word about boats and PFD requirements. If your boat is less than sixteen feet in length, each person on board may use any one of the four types of PFD's previously described.

However, if your boat is sixteen feet or longer, each person must have a *wearable* device of type I, II or III. In addition, you must have one throwable device on board, of

#### CORRECTION:

In the February Conservationist under the announcement of the State Park Mascot Poster Contest (page 14), the two honorable mention prizes appeared as \$75 each. They should have, however, appeared as two \$75 savings bonds.

Received from the state of Illinois 26,400 largemouth bass fingerling.

Received from the state of Kansas 735,000 largemouth bass fry.

Received from the state of Nebraska 300,000 largemouth bass fry.

Received from the state of Texas 750,000 hybrid striped bass fry.

Shipped to the state of Illinois 7.5 quart of muskellunge eggs (est. 174,000 fry).

#### TROUT STOCKING TO BEGIN

The first spring stocking of catchable-size trout is scheduled to begin April 1 in northeast Iowa. According to Iowa Conservation Commission fisheries officials, eight- to ten-inch rainbow and brown trout will be stocked in stream sections where road and field access conditions permit. Access for the hatchery trucks may be limited due to poor road conditions; therefore, an-

glers may want to contact the nearest trout hatchery.

For 24-hour trout stocking and stream condition informa tion, anglers may call the following trout hatchery numbers: Manchester Trou Hatchery, Manchester, 319 927-5736; Decorah Trou Hatchery, Decorah, 319/382 3315; Big Springs Trou Hatchery, Elkader, 319/245-1699.

### **Leaders in Conservation**

#### Homer Calkins

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Homer Calkins has been involved in environmental education and conservation activities throughout his life. He grew up in the Iowa Falls community and became acquainted with the unique beauties of the Iowa River valley. He farmed for several years and served during the 1950's as an instructor in the Agriculture Program for Veterans. This perhaps had much to do with his conviction that education is a vital key to conservation. His soil conservation activities have been numerous as exemplified by 4-H leadership, service as Hardin County Soil District Commissioner and involvement in the Standard Soil Survey of Hardin County. Involved in scouting as a boy, as an adult he successively was Cub Master, Explorer Advisor, Neighborhood Commissioner and for over 20 years has been Merit Badge Counselor to scouts in the community. During his 18 years of service as Executive Director of the Hardin County Conservation Board (retired 1976) Calkins became known and respected for his dedication and unsparing efforts to preserve the Iowa River Greenbelt. Through his leadership a Corps of Engineers dam across the Iowa River was successfully halted. The planned bisection of the Greenbelt in Hardin County by interstate highway 520 was brought to a standstill (at least to date) by an outstanding public relations effort that focused attention on the scenic, natural qualities of this area.

During his tenure some 1,200 acres of land were brought under the protection of the Hardin County Conservation Board.

His environmental education activities include: coordination of summer programs aimed at acquainting youngsters (and especially the underprivileged) with community resources available in county parks; conceiving and coordinating field days for 5th grade students - in which some 500 youngsters in Hardin County are annually taken to the Greenbelt for "hands on" experience with water, air, soil and wildlife; coordination of "Environmental Quality in the 70's," an adult education course; coordination of senior citizen trips to the Greenbelt; development of a program on local radio devoted to environmental activities; and involvement in teacher training workshops during two terms as Vice Chairman of the Iowa Conservation Education Council.

nity. Characteristically, Homer, though technically retired and physically disabled, has been the single hardest working member of the group associated with the nature center. The donation of the nature area and Homer's long-time interest in practical, professional training has sparked the development of a program for conservation technicians at Ellsworth College for students who wish to work in the conservation area.

Organizational skills are tested in any volunteer activity and again Homer has provided the "glue" to hold the nature center together. With heavier and heavier use, problems range from directing volunteer clean up crews, to creating Boy Scout projects; from meeting with and occasionally providing dinner for visiting consultants, to coordinating visits of busloads of school children, fraternal groups, clubs, and family groups. Visitors from 37 states, 130 Iowa communities and 14 foreign countries have signed the guest book at what has affectionately been dubbed "Calkins Campus." A self taught naturalist, Homer has long since established his expertise in respect to native plants and flowers. Some four years ago, with the aid of his wife, Ruth (a registered nurse), and his daughter Marilyn, he began rehabilitating orphaned or wounded birds and animals. Last year some 84 birds and animals were brought in to their animal "hospital" and over 40% were successfully returned to the wild. Others, including a bald eagle and white pelican, too severely injured to be successfully released, have become the nucleus of a live animal exhibit. In addition to the time dedicated to hand feeding, doctoring and caring for his "patients," Calkins has

begun a banding program for his released birds.

At his urging, the 22 acres of cropland that form part of the nature area have been converted this season from standard cultivation practices to a minimum tillage program. This, along with conservation practices such as terracing, contouring, grassed headlands and waterways, will provide one of the few field study areas where soil and water conservation practices and the facilities for basic nature studies exist.

Homer is one of the least parochial of natural scientists. He captivates and excites a class working on their science project. He is totally at home with a farmer donating grain for his "rehab patients," or a fisherman bringing in carp or suckers for the white pelican or blue heron. He is equally at ease and provocative as he exchanges ideas with recognized professionals and experts who visit the nature area.

This outstanding talent for communicating an excitement about nature to everyone around him is the core of his rapport with the public. In addition to his daily role as resident, unpaid naturalist and caretaker (at age 72) of the nature area, he contributes a weekly column, "Naturally," for the local newspaper. Additional articles, pictures and feature articles in a variety of publications have amassed a total of well over 2,000 inches of news copy devoted to the nature area and nature lore in two years. Radio coverage and a feature appearance on public television further illustrate the tremendous talent Homer has in spreading the conservation message. Homer Calkins has magnificent vision. He is a shining example of leadership in teaching environmental responsibility and fostering an appreciation of the beauty and worth of the natural world that surrounds us.

In 1976 Homer suffered a very serious accident resulting in injuries that mandated his retirement. Physical vexations, however, dimmed neither his enthusiasm nor the depth of his commitment.

In 1981, Homer and Ruth and their children donated their family property consisting of 76 acres of land, including 51 acres of native timber bordering the Iowa River to the Ellsworth College trustees with the stipulation that it be developed as the "Ellsworth College Nature Area" and devoted to environmental education for the whole commu-



### CALENDAR OF FUTENTE

							Lasger Chainty		Water G(x)
April 1-30	Iowa's Manishing	Central State Bank	April 21	Early Woodland	Swiss Valley Nature	T/#: 12.00.	Farm Pond	16-276	Annta A Gottin
6-11.20	Wetlands	Dublics Library		w panowers mike	Duboaue Counts	236-1241	Farm Pond	5115	David D. Springer
April 1-50	Iowa y with Places	Conrad			319/556-6745	100.00	Swiper County	1	Kellogg
April 1	Armehuir Adventures	1 ime Crock Nature Center	April 21	Locas Hills Hike	Five Ridge Prairie	2.00.17.00	Farm Frind, Farather Country	14(8)	West Union
April 1	Children's Night	Cerro Gordo County		2 p.m.	Plymouth County 712/947-4270	7.05 (1) 44	Farm Florad Harrison County	81.95	Mattari L. Dave Kogan
141001	Bin Creek Shinder	Thelk Country	April 21	Hunter Safety Course	Tri-State Gun Club	Tib-Ros.	Farm Ford	1-21	Todd Pulline Dataforem Sourcem
April 5	Range	Polk County.	and 27		Lee County	3.00.0044	farm Poul.	4.28	Im West
	Opens for the Season				319/463-7673	The Ave	Crawford Crawty	1.44	Deturn Asher
April 6	Full Moon/Program	McFarland Park	April 23-	Brown Bag Programs	Different Locations	( (m==1.57)	Monsponters County	-165	Rod (his
	9 p.m.	Story County	May 21	in the Parks	Weekly Manhall Country	7 Di -4 ou	Farm Posid	3.00	Mutant Dava
		515/232-2516		11.30 a.m. 1.00 p.m.	515/752-3150	The fire.	Form Ford	345	Terry Adams
April 6	The Seasons of a Marsh 2-4 p.m.	Lost Island Conser Office Palo Alto County	April 23	Sky Dance	Lime Creek Nature Center	7 In. 2 oz	Farm Pond	10-7	Ken Hattanii Climan
		712/837-4866		o p.m.	515/423-5309	7.05.1.00	Farm Pund	3.28	Tent Coaliny
April 6, 13,	Observing Space through	Ashton Wildwood Park	April 23	"Things That Go Burnp	Hartman Reserve Nature	10.1.	Calls County House To	4.94	Antz
20 and 27	telescopes	S15/797-9780	1.001000000	in the Night"	Center	CONT A MAL	Sac County	12044	Ealer View
Anril 7	The Seasons of	Linion Slough		night hike 8 p m	Black Hawk County	7.06	Farm Paul	0.30	Brad D. Genison Same Eller
comments.	Union Slough	National Wildlife		100 million - 100 million	319/277-1536	736	Farm Fond	7.18	Michael Darre
	2-4 p.m.	Refuge Office	April 26	Arbor Day Activities	Story County	1.	Harrison Counts		Light .
		Kossuth County	1000		515/232-2516	1.09	Crystal Lake Classes Course	0:27.	Canadiante
		515/295-2138	April 27	Arbor Day Celebration	Monona County 712/422, 2400	7.6	New Lagley	6-12	Harri, Mire
April 10	Kestrels Forever	Lime Creek Nature Center		11.30 a.m Mapleton	1127422-2400		DAUCTURE COMPANY		Per direction
	a su p m	515/423-5309		1.00 - 3.00 p.m. Moorhead		BASS, OCEAN S No emplex	TRIPED (Minimum 5 lbs.)		
April 12-14	Environmental Issues	Camp Wesley Woods	April 27	Plant-A-Tree	Swan Lake State Park	BASS, ROCK IM	linimum — 116.)		
	workshop	S15/961-6169		demonstration	Carroll County 712/792-4614	No entries			
April 13	Wildflower Walk	Onawa Arboretum	April 27	Prairie Burn 7 n m	Doolittle Prame	BASS, SMALLA	OLTH (Minimum 4 lbs.)	0.26	Advent Akin
	1.00 p.m.	Monona County	1.0000000	South States - Actual	Story County		Dickanson County		Speci Like
222492	ACCOUNTS ACCUSE	112423-24K			515/232-2516	3.94	Allowingpu River Allowinger Constitu	4096	Rom Materiality F
April 14	Contest Recention	Pisber Community Center Marshalltown	April 27	Wildflower Walk	Annett Woods	3.96	Wagnoption(con	5.15	Chilland L. Karol
	3:00-4:30 p.m.	Marshall County		10 a.m.	Warren County	(and (and))	Linn County-		Rourt Carb
		515/752-3150		Contract in the second second	315/961-6109	476 (17.00	Barnet Freedow	200	Shell Book
April 14	Hiking Varieties	Boone River	April 28	Arbor Day Celebration	Onawa Arboretum Monorea County		West Okoboji Dickarson Courto	sw.	Okoben
		Greenbelt		1.000 p.m. 00.4000 p.m.	712/423-24(8)	A 16-10 oz.	Cedar River		Times My gar
		Middleton Access	Annil 28	Haneine Boo Hike	Swiss Valley Nature	10.00	Fleyd Cosinty	735	Phil House
		515/532-3185	(16516-57)	A summarial state state.	Preserve	-4.10. II OZ.	Mighell County	5:01	Stary volu
April 15	Conservation Film Night	Iowa Lakes Comm.			Dubuque County	4.15 8.02	Burlet Coonts	4-33	Roger J. Clack Shell Rock
CONCERNING .	7:30-8:45 p.m.	Coll. Aud.	1217 101 222	and the set of	319/336-6743	416.8 mg	Hig Creek	(8.4)	Gary Gintsel
		Emmetsburg	April 28	Music in the Ravine	Hartman Reserve Nature	10.000	Polk County	0.10	Varia Handon
		Paio Alto County 712/837.4866		2389-2345 p.m.	Black Hawk County	- # JUL # 02	Bigmer County	. 924.90	Trigoti
		Ireat Walton Laurus			319/277-1536	4.19. 3 (10)	Spirit Lake	3.16	Smith Lake
		Across from Smith Lake	April 28	Natural Landscaping	E. B. Lyons Nature Center	4 lb Kor	Construction County		Malvin Hoist
		Kossuth County		1-4 p.m.	Dubuque County	dischar.	Ward Charles	9.78	Robert Fargenald
		515/295-2138			319/556-0620		Dicktoyeni County		Millert
April 20	Uncle Ikes Nature	Izaak Walton League	April 28	Spring Wildflower Walks	Marshall County	415.6 02	Gearci Pit Cerro Gordo County	14.54	Golg Easteries Salvidate
	Program 10/00 a m -12 Norm	Grounds		naturalist	313732-3130	419.3 ar	West Oasthop	1.17	Perry Furks
	The second and the passion	Marshall County.		2:00 p.m 4:00 p.m.		435.3.07	Digktown County Wire Disober	1.0	Cork Representation
		515/752-3150	April 28	Wildflower Walk	Lake Meyer Nature Center	1 Mar. 2 Mar.	Dickimon County		Sarburn
April 20	Wildflower Walk	Onawa Arboretum			Winneshiek County	4.15. 4.02	West Okloball Dickinson County	214	Milliord
	1 p.m.	Monona County	Second Sec		319/534-7144	4.10 2.02	Spirit Lake	4-29	Aligh N. Akin Securit and
100-100-00	No. Presson	(712) 423-2400	April 28	Wildflower Wilk	Robison's Acres	4.00.2.00	Dickinson County West Children	2518	Perrs Patks
April 21	Acid Kain	Swan Lake State Park		1.10.00	515/232-2516	in mars	Dickinson County		- Maillord
		712/792-4614	April 30	Brown Bag Hiles through	Fisher Commonity Center	4 Ht. 2 or.	West Okotkoji Dickinice Columni	340	Quite Samer
April 21	Birding with	Lake Red Rock	Colorin 200	parks	Marshalltown	4.16	West Okotsoj)	9.8	Richard E. Maribio
	Ciladys Black	515/961-6169		11:30 a.m1 p.m.	Marshall County	ALC: N	Chick Invices, Conservy	15.04	Some Merry
	1.00 p.m.				515/752-3150		Linn County	00000	Collin Ra(ab)

### 1984 **BIG FISH** AWARDS

1

庙

		EVE							
						Weight	Where Caughi	Date	Name and Address
						* New State Record			
		ADDT	r 1	007		HASS, LARGE M	H. TH (Minimum - 7 Ib.)		
				UX5		- 10 Dr 4.2 Mp	Davis Courts		Revention
			L/9 1	105		(A.B. 1118)	Gravel Per Polk County	. WON	Romald Samber Des Altours
						A.M. Hore	EasterLang	.8-10	Dennis Malani
						All Alex	Halles Pol	3-24	Reft Theirs
						TRUTHE	Nas. Constra.	10-71	Carell Man Staff
							Westillary County		Saver City
and the	In the second second second	Same Barris		and a second second	and the second	7.701,4.2,144,	Farm Frand Lasger Churty	10.29	Christ Hillingen Waters(w)
opni 1-30	Wetlands	State Center	April 21	Early Woodland Wildflowers Hike	Swiss Valley Nature Preserve	778: 12.00	Farm Fond Mise Barry, Country	16-276	Anita A Lintin
April 1-30	Iowa's Wild Places	Public Library		a providence a contra c	Dubuque County	736-1244	Farm Pond	5:15	David D. Springer
1986-1970 (1970)		Conrad			319/556-6745	198 13 ev.	Facin Frenk	49	Atars O. Tarah
April I	Armchair Adventures	Lime Creek Nature Center	April 21	Locsa Hills Hike	Five Ridge Prairie	NW/III-	Eastern Course	1.61	West Union
	Children's Night	Cerro Gordo County 515/423-5300		z p.m.	712/947-4270	100,1100	Harrison County		hogan .
Annil 3	Big Creek Shooting	Polk County	April 21	Hunter Safety Course	Th-State Gun Club	7.75-X or	Earns Pond Harrison County	1.31	Todd Pullion Cylifornia Innerona
California C.	Range	a solar containty.	and 27		Lee County	3.05.00.00	fam Pond.	\$-28	Im Were Tenner
	Opens for the Season		4	Dama and Dama Dimension	-319/403-7073	77h. 444	Farm Post	3.22	Jury Anton
April 6	Full Moon/Program	McFarland Park	May 21	in the Parks	Weekly	7.00 14.00	Minispinners Creating Farm Posid		Red One
	a b m.	515/232-2516		11:30 a.m. 1:00 p.m.	Marshall County	-	Harrison Courry		Logan
April 6	The Seasons of a Marsh	Lost Island Conser. Office	2004 B	AND THE COURT	515/752-3150	1/# (1/02)	Guttrie County	2012	Mento Mento
	2-4 p.m.	Palo Alto County	April 23	Sky Dance	Cerro Gordo County	7.8n. 2.92	Farm Pond Clinton County	10-7	Ken Harmon Climbon
And A 12	Observer French and	712/837-4806		and the second	515/423-5309	7 th, 1 au	Farm Pund	3.29	Tont Crisiney
April 6, 1.3, 20 and 27	Telescopes	Ashton Wildwood Park Jasper County	April 23	"Things That Go Burnp	Hartman Reserve Nature	the You	Planet Tu	5.25	MacCollins
	The second s	515/792-9780		in the Night"	Center Black Hank County	7.04	Sac County Farm Paul	10.30	Eally View Brud D. Remison-
April 7	The Seasons of	Union Slough		utility take. A b tu-	319/277-1536		Woodfray Courry		Same Car
	Union Slough	National Wildlife Refuse Office	April 26	Arbor Day Activities	Story County	178	Farm Fond Harrison Column	15.58	Michael Darris
	Sea baur	Kossuth County			515/232-2516	106	Crystal Lake Cannon Country	0-27.	Rek farye Canada be
		515/295/2138	April 27	Arbor Day Celebration	Monona County	7.6	None Eagles	6-12	Harri, Kope
April 10	Kestrels Forever 7.30 p.m.	Line Creek Nature Center Cerro Gordo County 515/423-5309		11.30 a.m Mapleton 1.00 - 3.00 p.m.	(12925-290)	BASS, OCEAN ST	RIPED (Minimum 5 lbs.)		Let Women
April 12-14	Environmental Issues	Camp Wesley Woods	10.000	Moornead	Course ( when Course (Dock )	have moved include	ALC: NOT THE REAL		
	Workshop	Warren County 515/961-6169	April X /	demonstration	Carroll County	No entries	umum — 116.)		
April 13	Wildflower Walk	Onawa Arboretum	1	D. D. D. D.	712/792-4614	BASS, SMALLMO	CTH (Minimum 4 lbs.)		al or All
	1.00 p.m.	Monona County	April 27	Prairie Burn 2 p.m.	Story County	3 10 3 Mc	Spirit Lake- Dickanson County	0.20	Specification Specification
1000	Account 6010	712/423-2400 Cohor Committe Control			515/232-2516	3.9	Mississappi River Allomaker County	10-8	Ron Halesland Reallyr
April 14	Contest Reception	Marshalltown	April 27	Wildflower Walk	Annett Woods	2.96	Wagesignerscore	5.15	Chillent L Kind
	3:00-4:30 p.m.	Marshall County		10 a.m.	Warren County 515/961-6169	1496(15)61	Bullet Courty	9-10	Roger J. Clark
		515/752-3150	April 28	Arbor Day Celebration	Onawa Arboretum	27.11.00	Wend Chathan	500	Mar Monde
April 14	Hiking Varieties	Greenbelt		1:00 p.m. to 4:00 p.m.	Monona County		Dickinson County		Okobest
		Middleton Access			712/423-24(8)	A Dr. 10 yr.	Cedar River Floyd County		Nigebus
		Wright County	April 28	Hanging Bog Hike	Swiss Valley Nature Preserve	-4.18. Noz.	Little Collar River Mitchell Collery	5.01	Phil Branners Starly volto
April 15	Conservation Film Night	Jowa Lakes Comm			Dubuque County	4.15 (0.02)		9-32	Roger J. Clath Shell Rock
Carriero -	7:30-8:45 p.m.	Coll. Aud.	101 W 400	and the second	319/556-6745	415.8 mg.	Hig Creek	3.4	Gary Goudsel
		Emmetsburg Palo Alto County	April 28	2:00-2:45 p.m.	Hartman Reserve Nature Center	-4 m 8.02	Polk County Wantguincon	9.19	Variation Variation
		712/837-4866		and a set print.	Black Hawk County		Burner County	1.16	Tripoli
		Izaak Walton League			319/277-1536	# 175. W 000	Duckinson Cenanty	210	Spirit Lake
		Across from Smith Lake Kossuth County	April 28	Natural Landscaping 1-4 p.m.	E. B. Lyons Nature Center Dubuque County	4 ib # or			Spirit Lake
		515/295-2138			319/556-0620	: 4067 oz.	West Okobaja Dicktrisem County	9-29	Robert Patraction Multimit
April 20	Uncle Ikes Nature	Izaak Walton League	April 28	Spring Wildflower Walks	Marshall County	415.6 02	Grand Pit	14.24	Geeg Easterings Salvedate
	Program 10.00 a.m. 12 Norm	Grounds Muschalltower		Judy Levings, naturalist	515/752-3150	4 m. 5 ar	West Oastboy	2017	Perrs Funks
	1010002000010-114-100001	Marshall County		2.00 p.m - 4:00 p.m		475.5 42	Digitationen Conanty Wirst Oktoberti	4-0	Cox Represent
_		515/752-3150	April 28	Wildflower Walk	Lake Meyer Nature Center	A MELANE	Dickimon County	NH-	Michael Lamb
April 20	Wildflower Walk	Onawa Arboretum Morrona County			Winneshiek County 319/534-7144	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Dickinson County	5335	Million2
	1 prints	(712) 423-2400	April 28	Wildflower Walk	Robison's Acres	410, 2100	Spirit Lake Dickinson County	14-29	Spara Lakz
April 21	Acid Rain	Swan Lake State Park	- Anna	1 p.m	Story County	4 Bi - 2 mi	West Okrabosi Dickinson County	2-18	Perrs Parks Millord
		Carroll County 712/792.4614		Design House and the second	515/232-2516 Ficher Common Com	4 (h. 2 oz.	West Okohoji	240	Dave Sander 4
April 21	Birding with	Lake Red Rock	other 20	parks	Marshalltown	4.15	West Okittei))	9.8	Richard E. Maetho
	Ciladys Black 1.00 p.m.	515/961-6169		11:30 a m -1 p m	Marshall County 515/752-3150		Bullalo Crink Lon Comp	5.24	ion Mowil Colar Rajidi

14



#### Patricia Zaerr, record largemouth

Weight	Where Caughi	Dute	Name and Addres
BASS, WHITE ()	Minimum - 21/2 lbs. (		
516	Spirit Lake Dickenson County	5.11	Dennis Lipp Spitti La
2.00.34.00	Dev Moines Rover Marion County	6-18	Monty Colli Sw
238 HAOC	Spirii Lake Dickinson Counts	214	Tishi Krug Sheld
296-12102	Spirit Lake Dickinion County	7.32	Todd Knug Sheld
2 Ph HOLDE	Speti Lake Dickinson County	7.4	Todd Krug Sheld
2 Ib 10 ng	Mississippi River Clayton County	9-24	Jeff Marza Dubug
2.1h; 10 kts.	fows River Johnsen County	5-17	Tracy Schrein Cedar Ram
2.00-3.07	Black Hawk Lake Sac County	6-24	Tom Dry d Cam
2.85, 5 cs	Mississippi Risier Scott County	5-20	Loyal Oh Davenp



James M. Engle Waukee

David S. Miles Des Momes Charles Parks Des Momes

Steven Matios Knowille Mike Steele Des Moines Layre Hawbaker Redfield

Steve Good Colfar

Bruce Sharp Polk City Lester Smith Des Moines

Thomas Reed Des Moines

Beest Emley Des Moines

weight	Where Caught	Date	Name and Address
BLAEGHLL (Mis	statum 1 Br.)	74	In Course
e mo	Black Hawk County		Wateries
1.02.12.04	Farm Frend Madison County	231	Kyl Odlespa EarlBan
1 m 14 oz.	Farm Fond Warren County	5-28	Dean Huy Indianali
1.05 1.3 mž	Farm Pond	68	Maan Rachmeters
r its. 12 cia	Farm Freid	94	lise Growigan
1 1b 12 ez	Black Mawk County Spirit Lake	Sec.	Waterio Rischefte Kraziow
1.00.10.00	Dickinism County Farm Food		Spirit Lake
	Marion County		Monto
1 35 . 9 out.	Montgomery County	**	Rodney Har Startor
175.944	Farm Found Genera County	16-10	Nuk Micphy Jufferson
Th.A.c.	Farm Ford	3.26	Jeff Knienbrini
1.10. 4 cit.	Spirit Lake	1,23	Heather Kramma
1 lb. 4 or	Dickinson County Farm Pond	6-4	Spirit Lake Robert Tree
1 IN STREET	Webster County	2.4	Fort Design
	Clayton County	100	Eartville
1 10, 3 007,	Lake Icaeta Adams Counts	N.(17	Roger V. Kinj Red Out
Eth: 3.001	Mississippi River Clayton County	10	Elvite Oberbroeckling Holy Crim
i B. J.m.	Farm Pond	3.39	David Pash
The dieze	Parm Pond	3.0	Rose Quigley
17b. 2 ml.	Boost County Farm Fund	3018	Michael P. Holesent
Ch. Lor	Warren Courty	-	Dev Mune
The states	Adams County	p.4.	Paysfie Junizaria
105 - 1 ct.	Manaappi River Clayon County	12.11	Clyde Oberteneckling Maly Case
1.99	Red How Lake	5.24	Les Brench
1.26	Farm Freid.	5-24	Jared Gillespie
in:	Madison County Farm Pond	12.4	Earthan Kal Gilleren
1.05	Madison Crounty	14	Eartham
	Marshall County		Marshalltown
25.	Badger Creek Marion County	- 58	Carol Smith Dybaulate
125	Clas Courts	8-28	William A. Yager Storm Lake
OWEN MINIS	mm 5 fbs.)		
-No entres			
REFFALO (Mink 18 (n = 4 n)	mum 20 the.) Scoul, Reen	34	John Millipsugh
15.16	Henry County Costal Marri	8.21	Laskridge Bo Pidere
	Linn Courts	500	Cedar Hapid
CALIFFIC IN 1998.	Dickinson County	and the	Arnolds Part
50 B. 8 oz	Spirit Lake Dickinson County	5-20	Terry Cor Spirit Lake
NO IN	Wapsapinic on River	4.14	Dale Miner
24 th 1 2 cu	Spon Lake	3.18	Marc Monk
	The Property Consults		Spenor
BULLHEAD M	inimum - 11/2 the.)	63	Date febrace
	Allamakee County		Monde on
CHELK PR	How and County		Creaci
13h 12 or.	Farmy Postd Warren County	3611	Call Schnathors Indianola
	1000		
ARP (Minimum 13 th: 9 of	Saytory die	6-19	Daniel Bergland
27.06	Pulls County West Okuteral	. 66	Anie Chris Lowin
16 Hz 1 Z Z	Dickinson County	-	Algenta
0.111.11.02	Davis Clounty	241	Otterries
ATFISH, BLUE	(Minimum 20 Ba.)		
ATFISH CHAS	NNEL (Minimum - 15 Pr.)		
1976 7.01	Diamend Head Lake Councils	3.14	Harold Alssander Destro
18.16 I oz.	Union Grove Lake	7528	Carson A. Mendenhall
7 m. 7 m.	Lake Icarta	7:21	Charles Shipe
5 Ib. I Low	Aslam: County Lake France	3.23	Red Oak Mikz Smeinunn
1 IN 1910	Adams County	1.54	Onisha, NE
13 IB: 0-07	Dickinson County	1991	Sheldon
15 th : 6 uz.	Clear Lake Cerro Gordo County	9510	Fred Lehmann Mason City
5 15 3 02	Farm Pond	-4-8	John S. Ford
ATTEND IN AT	HEAD (Minimum - 20 lbs )		( with
0 (b 1 or	Cedat River	D-14	Don Kaster, Jr
tith 3 m	Cestar River	6-14	Wyatt Parizek
(0.18)	Muscaline County Lake Darling	7.1	Lose free Eddie Belloe
	Washington County	1.7	Muncation
10 JUL 12 11	Dubuque County	Contraction of the	Dubuque
la le	Des Moines Rover Webster County	16.16	Ciayly Richard Letugh
17 16	Wapsaperacon Classical County	61	Dave & Carolyn Napier Returndent
H th	Wagnerproticien	(9130)/	Dave & Carolyn Napier
28 90	Codat River	6-24	Russell Lovelen
MIN For	Liner County Mexicurenti Rivert	2.7	Cedar Rapids David Whiteen
	Climion County		Chunon
5.98; 5.64	Calboun Ceanty		Carrol
516	Des Maines Kover Van Buren County-	1.9	Ken Martin Farmington
5.76	Wapelpinster	5-11	Ouve & Cambon Napier
	a second a second but here and		APC TO TAKE OF

Weight	Where Caught	Date	Name and Address		
24.5h 8.07.	lows River	9.7	Lonnie J. Kent		
23 lb R or	Wapupinicon River	8-10	Belle Plaine Jan Bartelo		
20 m 8 m	Climion County Wansamingen River	8.0	Joronio Charles W. Barro		
ALL CONTRACTOR	Jones County		Апалина		
2015	Line County	6-24	Cedar Rapids		
CRAPPIE (Min)	mum — 2 fbs.) Corning Reservoor	0.10	Emeral L. Deworks		
245715	Adams County	ic (m)	Creston		
	Marice Crusty	100	Knotville		
3.8.3.62	N (kong Lake Montgemery County	9129	John L. Magnuson Villinga		
218-14-01	Generalized Lake Adam Country	9-11	Maynard Heinbiach Fontane Dr		
748.)3m	Farry Pend Des Masteri Course	4.34	Tony Hand		
2.86-10 inc.	Shimek Forest Pond	612	Rick Tate		
2.18 9.vu	Farm Pond	10.14	Montrove Don Heath		
Sth Xor	Mommu County Fairty Pourt	4.71	Ida Grove		
A RECEIPTION	Warren County		Norwalk		
2 10. 1 10.	Black Hawk County	214	Ceitar Falls		
2.1b / b / a	Laker Mathban Appanishing County	6-4	Jim Svertagaard Hampton, IL,		
2.05.5.02	Farm Pond Jefferion Courts	5-10	John H. Millspaugh		
Th 4 ot.	Farm Fond	10-14	Dos Heath		
218 7 mr.	Say lorville	5.6	Ida Grove Paul Holeworth		
216	Polk County	100	Des Montes		
0.0	Daves County		Ottumie a		
£10.	Adams Cronty	6.6	David Leiser Corning		
2.04	Red Rock Lake Marcon County	子寺	Nerman Van Wyk.		
DRUM (Minimu	m - 15 lbs. )				
- No centes	1011-1				
- No entries	in the last				
MUSKIE (Mini	mam — 40° or 15 lbs.)				
451/2 released	West Okohori Dickipson County	9.10	Dware C Krogman Livesore, MN		
42" released	Spirit Lake Dickinium Cousty	7:39	Les Rotose Second Labo		
47.	Spint Lake	20-14	Den Sander		
41 2	West Okologi	F-23	Jerry Curry		
released	Dickinson County Special Lake	8.17	Des Montres fell Financia		
released	Dickinion County		Pine Island, MN		
en m	Dickinson County	1681	Worthington, MN		
16 16	West Okobo)) Dickinson County	7.10	Carol VanKley Sheldon		
15 lb, 6 oe.	West Okobeji Dickinson County	10.3	Art Paulien Sioux City		
MUSKIE, TIGE 16 lb. 8 oz.	R (Minimum — 40° or 15 lbs Pleasant Creek	7.30	Barbara Ancy		
	Tuni Codulà.		Devenport		
NORTHERN P	IKE (Minimum 10 lbs.) County Pil	7.08	Trun Kloster		
16/6 1	Palo Alto County		Cuties		
CP NY D NY	Black Hawk Cosmiy		Cedar Fulls		
17.18. Hoz	Five Island Lake Falo Alto County	10-30	Art Weiland Enumersburg		
1610.200	Des Moones Rocer Kennath County	2.39	David Anderson Dunnel, MN		
15-15-15-02	West Okobosi Dicksmon County	1:01	Fred Year		
14 lb 1 pz.	Five Island Like	6-11	Tonis & lindars		
13 lb 9 oz	Way(Cikoboj)	200	Clarkes Kirk Biameistar		
13 lb. 9 or	Dicklinion County West Okobalij	10	Millord Date Flarmond		
1210 10.00	Dickmont County	1000	Satibert		
11.00.9.02	Dickenson County	.9-1.0	Marine 15. Learnin Horyal		
1316:7:62	Cedar River Bremes County	11,25	Tommy L. Discopson Wavariy		
1.3 th, 6 mc.	West Okeboji Dackinson Coamis	)91	Mike Malisch		
15 fb. 1 or.	West Okoboji	1-15	Doug Carlson		
TYB: Los.	Laky Sherfield	5.9	Oregory Easterles		
1216 15 02	Frankfin County Five Island Lake	7.26	Swaledale Larry E. Porath		
Diff. Lifter	Palo Alto County	10.14	Emmetshuiy		
1210 1400	Bremer County	10.14	Waverly		
1210	West Okishoji Diskinson County	7-25	Tom Christensen Spirit Lake		
12.0	Lost Island Lake Palo alto Coupis	9:14	Owen Jackson Prestoretas		
12 lb	Swerts Marsh Browert County	1.7	Dan Niess		
1216	Cedar River	9-29	Gary S. Reeck		
11 Ib 15 02	West Fork	9-29	Charles E. Murray		
11.05 12.02	Black Hawk County, Mississoppi Roser	5-20	Waverb-		
1115 10	Clayton County West Dischart	1.11	Martin		
	Dickmion Coupry	1.14	Stike Mathem		
11.08.10.04	Renton Counts	2118	Denald Trachta Vinten		
1115. 6 04	Cylinder Creek Pale Alte County	11-77	Richard D. Krisch West Band		
IT Ib: S oz:	Wienebages River	12:23	Richard A. Krein		
1175.8 inc.	Farts Proul	4-17	Waydom Taylor		
11/6:4-02	Missingpi Rever	12-21	Coole Rapids Fred Bash		
11 lb: 3 eg	Clayton County Center Lake	16.10	Cole-sharp Dave Measure		
	Dickinson County,	1100	Hartley		

#### James Engle, record wiper

• 7 th. H. 178	Des Moutra Reser	4.78	
	Polk Cisairy		
the Kore	Saylorvitle Polk County	12-28	
IB. 3 10	Red Rock Lake Marion County	9415	
MR. LOW	Red Rock Lake Maron County	9.17	
Mr. Wards	Des Moines River Polk Courry	8.1	
the strain.	Say forwitte Polik County	5-22	
e the 3 Ave.	Red Rock Lake Marion County	5-20	
130. 4 mg	Des Moines River Pulk County	5.5	
t the 4 cy	Saylorville Polk Courts	8.1	
Citic 1 ave.	Saylorvilla Polk County	3.11	
4 th 1 or	Saykirville Polk County	5.5	
- No entron	(Minimum - 34 Rb.)		

Weight	Where Caught	Date	Name and Address	Watght	Where Caught	Date	Name and Address	Weight	Where Caught	Data	Name and Address
11 Ib 2 or.	Minamappi River	3.30	Katherine Rickert	1.06 (York) (4)	West Olighter)	145	inter Clark.	ANT DE NORM	WEI NOW CHINE	Sec. 1	
11.05	Alfamakee County Buccary Lake	12-30	Marien Date F. Meser	7 m. 3-ne -	Dickinston Crossing Measurings River	62	Mdar Lucrov	- No entries	UN EL. NUSA, INIMUMININ	-3.000.1	
	Claymin County	10.04	Genesitery	110-11-0	And Asper County	-2014	Wakenda II.	Salara and Sanata	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		
11.05	Clayton County	1998	Guttasherg	1.00.110	Atlaniation County	and the second	Harpers Frity	A In THE	Catlah Creek	-6-20	Bill Herbrack
30.0h; 10.0c	Clear Lake Orreo Gondo Counity	: 4:15	Dan Nichele (Clear Lake	1.10 Jaw.	Minister Courty	3.11	Harpers Ferry		Dubsque County		Distances
50 Ib. 8 eu.	Mianusoppi River	9-22	Dennis L. Mean	9.101.0.101	Spirit Lanz.	10-6	Litryd Strand Newri Lake	SUSFISH, GREE	N (Minimum - 1 Ho)		
10 lb 8 cz.	Cedar Novr	10.14	Desgias G. Hunemiller	1 m. 2.m.	Loss Island Laky	\$-25	Tracy Campioni	Phy Lens.	Earth Poind Wayner Country	9.2	Denna J., Arte Historia
10.2b 5 cz	West Okotics	6.8	Waterly B. (I. Types	1.06125001(2)	West Okobici	1.19	Rod Dooma				
10.00 4.00	Dickanion County	Sector	Reventor	(h.to)	Enclargement County	19.94	Call Fallers	1 m. 13 or	AR (Minimum — 1 Ib.) Lakz Grode	9.21.67	Dale Corners
No m. a uz	Clayton County	1871	Edgewood	1001000	Allamakes Course		Stewarrollin, MN		Henry County		Ratiepur
10 Ib.: 4 mi	Oravel Pit Pain Allo County	9-16	West West	138.2701.133	Cies Courses	3.4	Spence Hall	TROUT, BROOM	(Minimum - 11b.)		
10 m. 4 m	West Okoboyt Dicklinion County	10-30	Lloyd Strand Storid Lake	1.06-2.04	West Okoboy Disklassie Column	153	Doug Lachner Spencer	1.00. 4.00	Paryon Vallary Dubagae County		Car(F part Outnoor
10.15.2.04	Tarkey River	4.28	Due fill Turner	180.2.00	Mississippi Brens	3.56	Clyde Oterhoteching	10.44	North Cedar Classical Country	8-24	Rotald D, Ser 6
10.19. 1 cz.	Wesi Okobeji	1-22	Dan Marmellink	k 28, 2, 64,	Missinger Rives	2521	George A. Paulum	1.25	Swins Valley		CellF Sax
	Dickinnin County		Spirit Lake	(ib.2 m)	Attamates Course Transfed Lake	12-28	Harpert Ferry		Dubsiane Country		Debagen
				1.0000000	Clay County	LA D	Hattley From K. Balabalay	Diamenta S	1	<b>建設</b> 合行	The second second
PADDLEFISH (M	lialmum 25 lbs.)			1.00-3.00	Palo Alto County	PD.M.	Peraboniai	1 - 10 - S	A DECEMBER OF	Par art	Concession of the
51 lb 10 cz.	Missiaappi River Jacksen County	1/29	Cysig Giles Springesthi	116.2 at	Sport Lake Dickenson Cit	12-6	Der Godder Saum Lake	100.00	and - h	1 1 3	States of the second
49 b	Mesoari Rover	3-3	Guy Mempey Second Core	100.214	Trunchall Laks	1.12	Mike Bishe	1000	then )	S. 4.	Station and
48.75	Maaaaaippi Biteer	1.0	Laslie Boyley	171.2	West Okology	35	Mer Kiter	THE T	- Aller	12 19	COLUMN FREE
47 th	Jackson County Mississippi River	14	Rodors Ramo	18.24	Dala innois Charry West Charliest	2.14	Sprin Lake Record One	MTA -	Same -		A DESCRIPTION OF TAXABLE PARTY.
12.16	Jackson County		Officien a		Diskinsen County	P.100	Provptur	and the second second	and the second	. Spill	12
41.00	Jackwist Crunty		Springville	1.01.2.44	Dickinson Courts	3:40	Pat Seran Hartley	EZZ CAT			Across Street
42.lb	Miasonippi Roser Jackson County	2.14	David Kircher Centry Point	1.16.2.10.	Missillippi Kitary Alexandrea Country	1-23	Carrie Tops.	145	10 mg		
41 2h. 8 cz.:	Masanippi River	3-25	Al Birber	UN-Der	Sport Lake	(63)	Louis Benor	1 Jan 198			
41.05	Musissippi River	3/25	David Kitchie	Lib. Cor.	Water Checkell	1.24	Spirit Lake John Domite		1 3	11.00	
45.0	Jackvon County Museumers River	12-15	Center Prints	100.010	Dicksteine County	10.00	Prompton	1 Carl			· #
	Jackson County	2.000	Beilresar	1.281(3.899)	Dicksmool County	1634	Regal	1000	1000	3114-	
80 26.	Manasappi Rover Jackson-County	1923	Spring ville	1.16 1.00	Mixnospen Rozes Allamakar Cimary		Richard Paulisin Speciarts IIIe, MN	-		Sec. 1	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
40.75	Mississippi Rover Juckion County	1.5	Willard Krean Guthenberg	1.16.1.44	Minnappi Roces	42	Rach Rich			1.48	
40.15	Minnaippi River	C14	Donald Wilson	1.0.1.02	Advaranges Rover	411	Liego Sacfore		1400	< 120	
3928.8.14	Marashappi Raver	366	Gire Tedrimen	TRCOM.	California Coloria		William A. Yapes	- 1000		245	
39 Ib.	Jackson Cosatty Massaurra River	12-54	Cedat Rapids Todd Booles	11 hr	Clay County	12-24	Shorm Lake	Contraction of the local division of the loc			245 - 7 12-
10110	Jackson County	1.000	Center Power		Clay Country	10.41	Speaker	10000		14	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
34.00	Jackson County	10	Tarta	LBS	Manager Rengt	1-25	Chyde Oberbroecklaag Hols Crimi	1.1.1.1.6.0		and a	The state of the s
381638.020	Missenseppi Rover - Jackson County	3-15	Al Bieber Center Point	(160) (A)	Ministerry River	1.22	George A. Paul con			(t stol)	S. J. Tiller
18.01	Monthelpps River	3+3	Readoury Barton	1.09. (2)	Minamappi Rever	7.22	Treman Passoon	Engd Da	and manual h	C. And M.	a cont
38 D	Afiananippi River	1-28	A. Biches	1HMC	Allimakes County Web Okoball	3513	Hurbert Perry Cork Russboom	rred Da	ugs, record t	orown u	out
37.15	Jack on County Mississimi River	14-77	Canter Point. Cruig Otick	1.0	Dickinson Course	1010	Saelson	TROUT, BROWN	(Minimum - 3 lbs.)	1490	Total Davies
and the second sec	Jackson County		Springville	1.10	Allamakez Coorts	(98)	Andeperada nos	15.05.4.02	Allamakee County	4941	Minimpolia, MN
. 10 10	Jackson County	100	Manon					13 th. 9 mg.	Waterloss Creek Allamakee County	\$07	Duane E. Partin Manufisio
36 76	Ministrippe River- Jackson County	1-2	Matthew Beckst Urbana	SATURE Allering				13 Br. 4 or.	Joy Spronge	7.3	Handy J. Manufell
-36 Ib-	Ministerry Rover	1-30	AJ Bayber Center Point	A lit . 9 ex.	Misserrappi River	2-24.	Estward Helmo	12.10.916	Sory Magill	8-27:	Hold Prove:
36 Pa	Mississippe River	1.24	Louise Boyles	308-1120	Manual Krist	11118	Bolt Present	12th Sec.	French Crank	16-5	Wagnet Class
36.15	Minimippe River	102/1	Mike Griffin	Alla to me.	Monitory Courty	2.16	John Busings	Hills Aste	Altanakie Coarts	1.00	Sout LiGes
14.15	Jackson County Measurement River	8.54	Maquoleta Courian Klevber		Tack with Clinarity		Clignia	. 10 10. 4 102.	Cayron County		Wanter .
	Juckidas County		Camar Point	A 10, 12 4 5.	Dulhopat County	2641	Dahman	in the ware	Clayton County	6.M.	Caller Palle
30 (2)-	Jackorn County	2014	Crimer Point.	138.15 or	Klaynin Chunta	1.25	Genega Leenay We(theoryte)a)	10 m 4 or.	North Cestar Classical Control	63	Debuger
33.th	Mississippi River Jackson County	123	Al Birber Centor Point	10.1201-	Ministroppe River	2.85	Dale Wittenkn Plenslam Malles	5.9 (b), 7 est.	Richmond Springs	4.25	RemainED, Surp. Manipulster
35 /b	Missouri Rover	3-24	Gey Hempey Stores City	316/423EC	Mussuapps River	3.3	fator Phiry	9.00.00.00	Formian Springs	5/1	Marson V mil
35.97	Meansalppi Rover	3-25	David Kircher	3 20. 12 01	Missioslippi Reint	4(14)	Michael Killy	4 (b. 15 or.)	Delgoure Compy Balloy's Ford	6.28	Fearly Martine
3410	Jackson County Measurem River	4.1	Center Ford Charles Arri	Lincolory	Manzatile County Management Rever	14	Daveriport Oran Luciai	14.16° 175	Delawary County	621	Eedar, Rapph
2245 11000	Jackine Ceanty	124	Marine.	1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Cheynon Country		Guttenberg	3 (P. 13 of.	Clayton County	1000 C	Lidar Republic
1110-11-02	Jackson County	104	Bellevor	3.05-1.02	Claysie County	1.20	Guttraherg	.# 19: A2 ox.	Brush Creek Claster Contry	1. E	Ehevenpert
王王称	Missingpu Rever Jackson Crointy	ĿT	Craig (Hits Spring ville	3.05.8.07	Ministery Rever Woodflars Couldry	9.16	Brailey D. Buttom Socia City	. # 2h -5 m.	Richmonij Springs Ortheast County	94	Opergr Marian Other
32.1b. E3 or:	Measurapps Rever	12:15	Denny Wenn Beforeur	3.00 6.00	Mississippi River	4-2	Jame's Berrinel	8.0.2 (1)	Waterliver Creak	2-26	Dave Mayer -
32.16.3 ex.	Milasinippi River	1.2	Matthew Beckler	115. 6 est.	Massessippi Reest	2.19	Elnertlyland	8.05.4.04	Richenond Springs	6-1	Frank J. Direling
32.05	Mininyappi Rover	2/14	AlBeter	3 th 6 or	Missingpi Roser	101	Cierre Mand Ratch Lavingston	216-19-04	Delaware Cosinty Traintain Springer	1.25	Ereth Mudah
13.16	Jacknos County Musicarent River	1.79	Center Point	A De La Car	Chapters County	0.30	Contractive a		Delaware County		Marma Jeff Man
	Jackson County	1000	Springsille.	310 4.02	Clayton County		Pleasant Valley	TRU HARE.	Clayton Courry	Sent.	enderer.
32.35	Jackson County	5-10	Ceitar Rapids	(1.16) H oz.	Jackson County	11:6	Everen Koehler Clintor	7.06/13.022	Ensign Hollow Clayton County	5-13	Churlene & our de la
34.16.	Mississippi River Jackson County	141	Doug Middle Rock Valley	3.06.2.04	Mississippi River	25 ( 5)	Dale Winenke Pleasant Valley	7.06 3.2.04	South Bear Creek	4.1.4	Larry Turdenami Lewinon
30.05	Mississippi River.	211	Terry Benker	3.16.1.04.	Minsteappi River	21	For Nichols	7.7b. 4 oz.	Joy Springs	7-31	Mark Woether
30 fb	Mitimippi River	1.8	Dennis Mayne	3.16	Merensippi Rose	3-3	Maryin Landeran	-1 In 4 m	Cheyhon County Bardeshon Stream	6.3	lim Mutcall
30.000	Minister Elighty	17	Cestier Rapidi Denitri Werra	216.1504	Distance County Microsoft Reserve	523	Cedar Falls Inserth Backer	The local	Distance Country	14.76	Armini Rough
20.00	Jackson County	10	Bellevue		Claytice County	1.11	Dycryville	1000	Winneshink Cosons		Charles City
1877 (1971 A.M.M.) 2020 (1	Jackson County	100	Believoe		Jackson Church	Tenett.	Pleasart Valley	10.00-00.00	Orlewart Consty	201	Colar Kapala
29.70 8.05	Minamoppi River Jackson County	13	Williard Kress Guttenberg	218-13-04	Missennings River Many anna L'essery	24	Roger GuidenpSoning Betfals	16 10 Ward	Fountaity Springs. Delewart County	8-10	And Secon
28.0018.001	Missinsippi River	2-11	Mike Klima	2.26 10.04	Missiaappe River	11/22	David Group	16.75 (6.cor	Boost Cines	9.11	hobs A Personal
				2.16, 10 oz.	Missessippis Baver	10-2	Richard L. Kieffer	8.16- 4.07	Little Tarkey Room	8-26	Non Element - Dubuget
PERCH, YELL,	OW (Minimum 1 Bc) Low folged Lake	3-4	HILL River	2.15, 10.04	Michaelppi Room	11-28	Dathinget Mark Noodill	6.05	Clayion County Switz Miller	5.9	Maghart H. Ministral
0.063567	Dickinson County	2.31	Pocahiotras	2 Ho 14 U F	Jackson County	E OV	Description	100	Dubaque Creaty	4.28	Witcom Kiterial
A REAL PROPERTY.	Allamakre County	5.61/	Harpers Ferry	100 M 100	Clayton County	016	Disburgue	10.00	Jack son County	10.00	Pleasant Verity Escal Shimphory
1.16.16.46	Massissippi Bover Allamakee County	3-23	Beitige Topo Weiti Unite	2.10. 6.02	Jackson Courty	2:16:	Ed McCheight Oxford Janctics	3.96.12.02.	Ion Mile Creek Winnethack County	201	La Adre
0.10 4 int.	Spirit Lake Dickinson Course	12-28	John Ginis Royat	2.09, 8.02.	Mississippi River Domano County	3-3	Merle Värmt Dobuger	5 Ib 8 og	French Crimk Allamation County	12-1	Warthy
110.4 02	En Lais	3-18	Gene Hall	2.06 8.00	Mississippi River	(2:27	Rachard Willaming	5 Ib, 8 m.	Wexfield	11/14	Cedar Rapath
	Contral Construction		SINCES		· Para Mart Changes		1401-000 20120 202		(CONTRACTOR ALIGNMENT)		

Weight	Where Caught	Date	Name and Address
STURGEON, SH	OVELNOSE (Minimum	-Jihs.)	
- No entries			
SUCKER, MISC.	(Minimum 4 Brs.)		
Alb Tea.	Carlish Crivele Derbuque County	-4-20	Bill Herbrac Distriper
SUSFISH, GREE	N (Minumum		
I Ph. S. en.	Farm Pond Wayter County	9.2	Deemin Lo Arte Historiche
SUNFISH, REDE	AR (Minimum - 1 ID.)		
176.13-41	Lake Grode Henry County	9/31/87	Dele Cience Rallegran
TROUT, BROOK	(Minimum - 1 Ib.)		
1.05. 4.02	Parties Valley Dubuque County		Carteria
19.60	North Cedar Classica County	+24	Rosald D. See 6
1.25	Swins Valley		CallFlat
	Systematic County		Polarofac.
Mar I	1.21	1000	The second second
6 100 D	States and a	Para t	Concession of the local
STATISTICS.	10 0 - A	1. 1. The	Contraction of the
2000	the little	(And)	States and
FOR T	CEAL /	12 10 20	
and .	A NO SER	PRE	T OR DESCRIPTION
The shares	10 10 10	150	Contraction and the second
E CALL	2 34 CT-	18	And the Real Property lies, or other
22 CA	1.		ALC: NOT THE REAL
A48.	1 mil	200	
and the second		10 C / 100	All an all and a second
321 /	1	1.3	ALC: NOT THE OWNER.
12 1			A COLORES
and the second	A CONTRACTOR		A BELL
States of	2 Contraction	Mr. www.	
2 Martin Party	and the second s	1 1 1	A REAL PROPERTY OF
-5	the state of the second	1997	C. Contraction
and the second second	a realized	1	
Contraction of the	1 to See	× 131 V	
COLUMN STATES	and the second s	- 572	
State of Lot of		14	
ALC: NOT THE OWNER.		Part 1	and a mart

11 2 M

37.06	Mississippi River Jackson County	457	Springville.	T Ib.	Missessippe Royer	168	Roger, Varganon	*15.05.4.02	Fronth Creek	7-2)	Fred Daugs : Minimum MS
36.15	Mississippi River Jackson Crunty	+1	Charles Avis Marion				the point of a	13 Hz. 9 Lig	Waterlass Creek	\$07	Duane E. Perrin Skyter/100
36.00	Ministrappe River Jackson County	1-2	Matthew Beckst Urbana	SAUGER (Minimur				1316.4.02	Joy Sprongs Charless County	731	Handy J. Manufell
36 Ib-	Ministerpt Room- Jackson County	1-30	AJ Birber Center Point	4 16 · 9 cz.	Missercoppi River Athenskite County	2-24	Edward Helmos Harpers Ferry	12.009.ml.	Sory Magili	8-27.	tona Prese: Concrat
36 Pa	Mississippe River Jackhow County	3-24	Louise Boyles Center Point	34.06, 11.24	Mission River Woodbury County	11/18	Bolt Present Sama City	12 W 5 ex.	French Crank	2.5	Wayner Clam Chrympet
16.18	Minimippi River Jackson County	154	Mike Griffie Magazheta	4.(h. ee.	Measurappe Revers Tack with Conserve	3.16	John Busilian Climiter	13.06.4.02.	Loy Springs	7-20	Sport Labors Wanning
36.35	Mourrappi River Jacksim County	2.14	Cristian Kircher Center Point	·朱10、5(-14)	Ministratippi Rover Dichouser County	3-31	Chill Millerit Debugar	JUDIC KILL	Barbey River	0.31	Date L. Beams - Caller Falls
36 (8-	Maccountry Rever	(2514	Danies Kliena Casiner Point.	136-15 M	Mississpps River Klaynin Chunti	<u>5.25</u>	Georgia Leenaly Worthoughout	1076-4772	North Collar	4.3	Hatt Linghton Determine
35.th	Ministrappi River Jackson County	1:24	A/ Histor Center Print	316.13.04.	Mississeppe River Jackson County	2.15	Dale Winceson Phraciant Valley	5.9.26.7 ml	Richmond Springs. Detaward County	4-25	Romatol O, Sorge Mantheology
35 /b	Missouri River Woodbury Courty	3-24	Guy Hempey South City	3.16.12.862	Ministerppe River Dursapie Courry	33	faths Plary Datagar	0.06, 0.06,	Formian Springs Delaware County	5.1	March V mil Maschröfer
35.07	Meaningpr Rover Tackson County	3-25	David Kircher Center Point	3.36. 1.2 er.	Messiovalppi, Robrid Masse attilis, Conanty	8(18)	Michiel Kally Daveloped	\$ 10, 15,04.	Balley's Ford Driawart County	6-28	Frank J. Burling Cedar Ration
34.05	Meaningph River. Jackinst County	4.1	Charles Aver Marien	3-10-59-02	Minnenippi River Cheyton County	+3	Oran Lucas Guitenberg	\$15.13 or.	Hiords Ran Clayton County	621	Roger Hall Liedar Republ
333b 11 oz:	Mississippi River Jackson County	1-4	Rollo Sobutka Bellevor	3.05-7.04	Massasippi Roopr Claysin County	X-28	Brinn DeCook Gunninhern	.8 Th. 12 Gz.	Brush Creek Claster Courts	8.1	Gentif Solice Developent
33-76	Missimum River Jackson County	147	Craig Glick Spring ville	3.05.8.07	Missing River Weedlary County	9-16-	Bradby D. Bernson Stock City	. 0.25-15 int.	Richmonij Spring v Ortuwart County	9-5	Operge Manut Ope
32.1b. 13 (ar.	Measurapps Reser Jackson Cosmiy	(2-15	Denny Wessy Believen	3.16.6.64	Mississippi River Muscuine County	+7	Jame (Bertie) Muscation	8.0.2 m	Waterbay Crept. Allamakee Courts	2-26	Dave Meyer
32.16.3 ex.	Millinippi River Jackvon County	1.2	Matthew Brecker Urbana	115. 6 or.	Macroscoppi Rosen Inclusion Crossey	2 (#	Einser Eg)and Genere taland	8.15.4 oz	Richmond Springs Delaware Cosinty	6-2	Frank J. Barting
32 th	Ministrypp Rever Jackson Courty	2.14	Al Barber Center Point	3 th 6 or.	Maximum Room	1.11	Ralph Livingston Gattenberg	7.25 19.04	Fountain Spring- Octaware County	5.25	Frank Rodrift Marrie
32.16	Minissippi River Jackson County	1-29.5	Crarg Glick Springsalle.	3.16 4 or	Minaiacippi Bryer Clayton County	9-363	Charles J. Docries Pleasant Valley	7 B. 14 nz.	North Cedar Clayton Courty	9.10	ferf.Man. Headyres
32.lb	Missiosippi River Jackson County	3-10	Gary Wessels Cestar Ripats	3.16.94 oz.	Mississippe River Jackson County	(1-6	Everen Kochler Clintor	7.95: 13.0z;	Ensign Hollow Clayton County	5-13	Charlene A. McAlere Waterloo
34.16.	Mississippi River Jackson County	1-1	Doug Middle Rock Valley	3.0612.02	Mississippi River Jackson Contry	2:15	Dale Wincoke Pleasant Vallay	7.06, 12.04	South Bear Creek Winneshick County	4.1.4	Larry Tredemann
30.95	Mississappi River Jackson County	211	Terry Benker Urbana	3.16. 1.04.	Ministeeppt River Clayton County	0.1	for Nichols Rowies	7.76.4.02	Joy Springs Clayton County	7-31	Mark World Lake View
-30 lh	Minimippi River Jackson Citatry	1.8	Dennis Mayne Cestar Rapidi	3.15	Missioappi Rostr Diduque County	3-5	Marson Linderan Cedar Fulls	=2 Dr. Anna	Bankston Stream, Outroque County	6.3	Fail Dubitor 11
30.16.	Mississippi River Jackson County	177	Dentro Werro Bellevar	216.15 ce.	Massasippi River Claytee County	\$ 23	Joseph Backer Dyersville	73h: 3 ex	Trisut Run Winneshnen, Crosotty	5-10	Charges City
29 m # ssr	Mississippi River Jackson County	14	Maurice Anderson Bellevoe	.2 (6 · ) 7 or.	Mayaccoppi Rover Jackom County	12-28	Charles J. Docring Pleasant Malley	to The At car	Richmond Springs Delewart County	5.11	Colar Rando
29.70 N 111	Minutisippi River Jackson County	1.5	Willard Kress Guttenberg	2.185.1.3.04	Missingpo River Musicanne Coomy	24	Roger Guidenpfonung Bigtalo	6.15 R.od.	Fostinian Springs Octewart Crisiniy	8-10	Sec.
28.19.8.02.	Mississippi Riser Jackson County	2-11	Mike Klima Centur Point	2.26 10.00	Managing Room Dabaging County	11:22	David Green Dubispun	6.25 6.02	Bright Criek Jackson County	9.18	Jobs A Presentation
PERCH, YELLO	W (Alinimum 1 Ho.)			2.16; 10 ex.	Masaesseppi, Ricerr Dobsiqual Constra	10-2	Richard L. Kieffer Dubuqut	10.70× 14.07	Little Tarkey Room Clayton County	8-2R.	Dataget
1 lb. X iar.	Loss filled Lake Dickinson Correty	3-4	Hill Ries Posahiomo	2 Pr. 10 nc.	Michissippi River Jackson County	11-28	Mark Neulai Desemport	<u>6 0s.</u>	Swins Valley Dubuque County	5.9	Denoger
1.10.17.04	Meissessippi River Allamakre County	2-21	Trumon Paulson Harpers Ferry	2.16 9 erz	Mississippi River Clayton County	6.00	David Grive Dobiogod	6.05	Linie Mill Stream Jackson County	4.28	Pleasant Veiley
116.646	Mississippi Rover Allamakee County	3-23	Berne Topo West Union	2.10. # na.	Alievissippi Rover Jaikson Courry	2(16)	Ed McCaught Oxford Janctica	310,1201;	Ten Mile Creek Winneshick County	3-11	La Vitte
+ 10 4 inc.	Spirit Lake Dickinson Courry	12-28	John Griss Royal	2 Br. 8 oz.	Ministrippi Raver Dubuque County	33	Merle Vierrei Dobagor	575-8-04	French Crank Allanaakee Coonty	12-1	Want of the
110.4 02	Elk Lake Clay Goutzy	2-16	Gene Hull Spencer	2.15. 8.10	Mississippi Ravez Tackson County	12:27	Richard Wilkming Bettesdorf	5 lb, 8 m.	Wexfield Allamakee County	11/14	Cedar Rapids

Neight	Where Caught	Data	Name and Address	Weight	Where Caughi	Date	Name and Address	Weight	Where Caught	Date	Name and Address
B. Sue.	Big Mill	-34	John A. Frederick	10 lb. 23 oz.	South Bear	5-25	Fired Daugs	5 (b. 14 oz.)	South Cedar River	5-12	Terry Manders
the first	Jackson County Manufata River	12.9	Climon herry Watt	10 18 12 02	Wonneshiek County Footnam Storings	4.18	Minneapolio Dan Melsha	5 m 13 m	Clayton Gounty Say Magili	5.5	Vernon Bird
rae di seri	Delaware County		Waterfoor	17 No. 14 M.	Delaware County		Cedar Rapids	2010 C 2010	Clayton Coulty		Daveoport
996 1996	Bankston River Dubugar County	.6-27	Randy Hess Dumagae	E0.7h. 10 cz.	Trout Run. Winneshiek County	4.25	Prggy Onley Decorah	3.16.11 inc	South Bear Allamaker County	-3-2	Sorman Postusta Spillville
(PL	Richmond Springs	4-14	Glen R. Sears	10 m. # oz.	Paint Creek	3.16	Arden Hansen	535.11.02	Bailey's Ford	413	Bryan Wedenberg
E.T.	North Bear	3-37	Kenerth Krazeninski	10 lb . 8 ms.	South Bear	6-29	Jona Lindquist	516, 10 or.	Hickory Crock	3-11	Stan Gabel
1	Winneshink County		Orland Park, IL	4444	Winneshirk County	100	Gilmore Coy	1000	Allamakee Courty		Dubuque William Shaffar
498. F. 88.	Dubuque Coutry	2-39	Dubaque	10.96. 8.02	Clayton County	8-3	Lyie F Mogers Des Moines	210.8.02	Clayton County	3.3	Orlygin
436:538	South Bear	4.14	Norman Morn, Jr.	10 lb. # oz	Bankston	4-13	Mark Tickes	510.6.02	Rechmond Springs	5-10	Donald P. Whiteseve
19:316	Bear Crock	4-14	In Kail	10 lb 7 ox.	Salo Valley	10-3	Naticy Welu	538/6 ez	Twin Springs	6.5	Tony Zenner
10.16	Fayene County	-	Cedar Rapids	and down	Dubique County	1.00	Dubuque	4 Th. 6 are	Dubuque County	8.30	Dubuque Rundu Ven Buler
120.106.	Dichuque County	2-41	Dubuque	10.10.4.01	Allamaker County	10.21	Lawler	C 2 10 - 2 104	Allamakee County	200	Waukon
ADS FAIL	Switz Valley	6.14	Steve Ports	10.05.3 mz	Bloody Run Creek	<u>8</u> .77	Rodney L. Stevens	5.1b. 4 oz.	Bankston Dobume County	5.34	Mschael Schiesl Duboque
4.16	Wannios Creek	4.10	Troy Engan	10 /b. 2 oz.	Coldwater Creek	3.30	Chuck Eash	-516	Mink Creek	5.10	Michael Sion
-	Aliamakee County	4.34	Dorybester	10.00 - 2 - 4	Winneshiek County		Grinnell Bool Externel	4 Th 10 or	Clayton County Burck Creek	5.33	Cedar Rapids
140.12.02	Clayton County		Dybuque	10 10. 2 01	Waneshiek County	0-13	Burr Oak	1.10. 1.1 0.2.	Clayton County		Guttenberg
53b H mi	Bloody Hun Claston County	3-16	Marty Cubbage Davenport	10.16	North Bear Winneshick County	6-13	Mark T. Lee Nevada	4 lb. 10 oz.	Bloody Run Clayton County	9-30	James L. Eberhardt Marion
MERINE	Swiss Valley	3.18	Jeff Haas	9 ib. it oz.	North Dear	4-21	Clien R. Sears	4 lb 7 oz	Ensign Hollow	6-20	Layne Martin
1 Martin	Dubuque County		Dubuque Frank Barthan	0.0.8	Winneshiek County Tintle County	3632	Waterioo Elmer Clausen	435 4 m	Clayton County	6-25	Robert Michael
1100 1100	Delaware County	10	Cedar Rapids	410, 9 02	Mitchell County		St Ansgar	1000	Clayton County	1.1.1.1	Oskaloosa
)H:-Bop	Big Mill	9-23	Dan Scott Allowers	9 lb 8 oz.	South Bear Wanter-thirk County	-4.15	Gary Secrist Red Wing, MN	4 lb. 3 oz	French Creek Allamakee County	P-8	William Holland Davenport
A DECEMBER	Swint Valley	1641	Gary E. Kruse	918.7 mz.	South Bear	6-28	Ronald J. Altan	1436	Teour. Run	2-15	Walt Mauer
112 Fame	Dubuque County	100	Dubuque Chest Duter	Alls Ant	Winneshiek County	12.20	George D. Given	Vib 15 or	Winneshiek County Railey's Ford	8-16	Robby Chapman
7 891, 2 1041	Winneshiek County	154	Charles City	A 10 ' 4 05"	Clayton County	(19:2017)	Dubaque	Carlo Proven	Delaware County		Davenport
118-2 <i>in</i>	Mississippi River	4-29	Orville Zittergruen	916-3-0z	Swizz Valley Debugger Course	10:12	Steve Maters Disborar	376. 10 ac.	North Bear Winneshiek County	-7-8	Robert Bergt Carbondale, H.
in.	North Bdar	10-10	Som Murray	91b 2 nr.	Spring Creek	5.30	Jerry Steffen	3 (h. 8 az	Turtle Creek	34	Larry B. Poster
	Winteshiek County		Pennington, NJ		Machell County	1.5	Orchard Third J. Allen	12.80	Mitchell County	9.67	Northwood Lorin Schemer
A 15 - 10	and the second second	344 5	1. · · · · · · · · · · · · · · · · · · ·	¥.0.	Defugue Civery	0.01	Duboque	2,20, 0,04	Winneshiek County		Charles City
1 1 1 25	Alleria			#2b, 14 oz.	Biresly Ran	6.5	MaryLou Cochran	3 18: 6-04	Triur Rus Winnethick Courts	4-16	Jason Moen Decorati
100	A	1000	Sec. Sec. 27	With 14 nt	Big Streams	6-22	Sarah Faultuber	318.4 m	Sny Magil	43	Ralph Livingson
1 40	A State and		100 100		Clayton County		Dubuque	10.70	Clayton County		Guttenberg
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	111 - C	2	A State	8 fb 12 or	Theat Run	5.28	Kun Miese	Mith. Yest.	Waterlas	7.12	Bill Bandleman
and the second	- HOUSE	al at a	A ALS	8 20. 9 111	Winegedora County	(\$310)	Ross Bellinger	3 18. 2.02	Dahtin Lake	3.11	William Noel, Jr.
and?	A 23		P. Vanne	2012/01/20	Winneutiek County		Muscaime		Clinica County	2014	Devenport
No. dr.	all the second	1 3000	And Andrews	8 lb. 9 cr.	Richmond Springs Delaware County	w-ia)	Strawberry Print	3-111 - 2 453	Winneshiek County	1114	Clear Lake
ALC: NO	Nell'		200	8 lb. 8 cz.	Bohemiai	6-19	Tikið Bortosig	3 lb	Dahon Lake	3511	William Noel, Jr.
1000	ALL		Contraction of the local division of the loc	416 X.or.	Wangshiek County -	6.16	Lerry Newman		Compare Costada		antiventices.
	25	1	1-	10 M 10 M	Allamakee County	1000	Rochester, MN				
	10 million (1990)	2	Contraction of the second	8 lh: 8 oz.	Turtle Crock Mischell County	5:30	Dan Smith Rock Fally	WALLEYE (Min)	mum - 8 lbs.)		
Contractor of	1000		A CALLER	8 lb. 8 cz.	Little Paint	6-26	Michael A. Stolfas	20 lb. 6 oz	Farm Pond	5-6	Jim Logue
	The second second		South States	20.2.	Altamakee County	1000	Lawler	1135 13 02	Cedar River	11-24	Allen Weston
1. Sec. 1.	and the	-10	15-50 TH 19-50		Dubuque County	serve.	towa City	1110 4	Black Hawk County	1.11	Cedar Falls
Contraction of	A Republic and	11		8 lb, 3 oz.	South Bear Winneshiek County	6.2	Raymond S. Spores Downlester	11 10. 8 02.	Appanoose County	14169	New Sharon
The state	AREAR			8 lb. 2 or.	Watedoo	3.5	Freid Daug's	1135-4 oz.	Wapsipinicon	10-14	Eddie Scheffen
and the second	CONTRACT 1		The Constant of the	10 M 10 10	Winneshiek County	2.2	Robbinsdale, MN	10 fb. 4 oz.	Spirit Lake	12-9	Garry Culbertson
	12-52.00		07 S. 19 S. 19	8.1b. 2 oz	Jackson County	~	Long Grove	Same a	Dickinson County	160000	Estherville
Jack Rei	nner record	rainboy	v trout	\$ 15. 2 or.	South Rear	6-7	Liafin Schermer Charles City	10.19 2.02	Dickinson County	11010	Extherville
o mont astor	mer, record	i annoo	, trout	81b.1 rz.	Ensigh Hollow	7.41	Jerry M. Talbor	10 lb. 2 cz	Lake Wapello	5-20	Paul Harrington
TROUT, RAINED	OW (Minimum - 3 Ibs.)	12/1	100000		Clayton County	964	Rapid City, SD Thomas D. Florence	10.75	Lake Rathbon	3.4	Jeff Albright
Sam alle	Altamaker County	7.6	Tack Rennet Wateriou		Delawate County	121	Cedar Rapida		Appanoose County		Waterloo
EA 190: 100 core :	. Tatkey Witter	75.30	Pete Daley	8 lb	Bohemian	1.18	Stanley Shevik	10.16	Webster County	1-21	Bill Gatewood Belmond
15 (61.5.1)	Grantos Creek	13	Mayor and a second	2.06.3.5 ext.	South Bear	5.16	Don C. Alexander	10 16	Miniskippi River	4.5	Charles Steffen
14 m 10	Fayette Courry	1.0	Delwent		Winneshick County		Ogden Bullerer M. Derecter	10 (b)	Magaoketa River	16-11	Craig Wilson
MIN, MIL	Little Mill Bickwee County	8.0	Exeren W. Godies Cemanche	7 86. 82 00.	Wenterback Courts		Charles City		Delaware County		Washinim
(100/HSI))	Bear Cyres	8-6	Mike McDonald	7 m. 10 m	Spring Creek	5-14	Jerry Stuffan	925 14 02	Missiskippi Rever Jackson County	88	Brett Thomas Elgin, IL
XON MAR	Figure County Total Run	640	Summer Reuben State	7 15 10 oz	North Beal	4.15	Steve Vari Hove	916.10.02	West Okoboji	12/15	Rod Douma
in the second	Winnestor's County		Decurah		Winneshiek County	2.67	Leland Chinate Miller	915 10 of	Big Spirit Lake	101-4	Sleven D. Trei
DOB THE	Back Crock	5.4	Cirry Junk Amer	7 Bt. 8 62	Winneshiek County	4.20	Cedar Falls	1000	Dickinson County		Spirit Lake
FX18.2 m	Links Mill	3-6	Eidon Lamer	7 (b. # cz.	Codelwaters	6-20	Arnold A. Rolph	910, 8 01,	West Okoboji Dickinson County	1.1	Accolds Park
11 m. Ter	Jackson County Trinci Blass	1.11	LaMone Keith D. Rick	Tin Ser	los Springs	3.29	Benyy Jacom	97b.8 oz.	Lake Rathburn	4-20	Wilbsir Hayes
The base of	Winneshick Courty	810	Center Pitati		Clayton County		Clarksville	915 8 oz.	Appanoose County Watsitymicon	3:31	Dean Wood
1.90.216	Westerd Allander Conto	6-3%	Errin Mon Sprecken	7 In 4 m	Joy Springs Clayton County	301	Lakeview	The second s	Linn County	120446	Central City
(All Linz	Waterios Crock	5-26	Steve Johnson	T 15. 2 cu	Spring Branch	64	Geralil Berbenck	9 (6.6.0)	Dickinson County	013/14	Milford
13.86 Law	Allamakee County	4166	Parkersburg	716 1.07	Balley's Ford	6.29	Jack Neuzil	916.6 oz.	Lake Raihbun	4-1	Fred Warren
	Delaware County	9500	Cedar Rapids		Delaware County		Solon	9th Sor	Appanoose County Mississippi River	12.11	W.N. Lechner
13.18	French Creek	7.26	Scott Manning Weekon	7.1b. 1.0z	Bloody Run Clayton County	10-22	Monona		Louisa County		Washington
1316	Grannis	5-10	Clark Russell	7.15	Bohrmian	4-28	Stanley Shevik	916.4 02	Clayton County	0-1	Guttenberg
12.16/14.55	Fayerle County	-	Delwein	616 12 00	South Bear	4-22	Steven Bakker	916.4 oz.	West Okoboji	12-11	Cark Rozeboom
A STATE OF THE OWNER	Clayton County	9147	Cedar Rapids	1 M M M M M M M M M M M M M M M M M M M	Winneshiek Courry		Allison	Oth Anne	West Okoboli	12.31	Don Sander
14.00.	Richmond Springs	8-25	Jeff Lauer	676.11 02	Clayton County	161	Cedar Rapids	100000	Dickinson Co.	18.21	Arnolds Park
11 30 14 14	North Beat	5-20	Douglas Marsh	616.11 oz.	Wexford	6-30	Gary Young Form Ranida	916.4 of	Missusippi River Clayton County	3-27	Jim Whitman Manchester
(Ene Line	Winneshiek County		Waverly	615 10 07	South Bear	4-20	Jim Morris	918, 4 oz.	Wagssipiniscon	10-6	Ed Wilson
12-2	Winneshiek County	844	Marshallnow n		Winneshiek County	122	Wankee	915 2 02	Line County	10.4	Cedar Rapids
1130 12 02	Itenit Ran Winner dass	6-22	Todd H Borlines	6.16 10 02	Winneshiek County	CHR	LaValle		Appanoose County	11/2	Ostumwea
11 lin 12 int	West Canne	6.5	A T. Schnutz	710-210	Spring Creek	9-30	Chad Kruse	915	Minassappi River Jackson County	5.28	Larry Dever Broats
Date in or	Winneshiek County		New Hampson	1616-1116	Bank shut	3.4	Elmer Pickel	-91b	Missusippi Rever	11-10	Art Lehrman, Jr.
11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Allamaker County	3413	Charles City	100 100	Dubnique Citizenty		Dubuque	9.5	Atlamakee County Codat River	5.23	Duboqui John Ranfor
1.0.14	Smith Bear Creek	15-2A	Trayss J. Glidder	16.16	Worneyback Crumy	5(15	Des Moines		Black Hawk Country	1.20	Waterline
11 m A.es.	Bloody Ram	7-10	TixLd 5 Hall	6 15	Coldwaltz Creek	5.10	Fred Daugt	915	West Okoboji Dickinico Ca	12.28	Dave Sunders Multiced
Hills 4 co	Clayton County	19194	Marson	6.15	Briesh Critek	221	Wittiam Novi . It	818.13 or.	West Okoboji	12-23	Perry Parks
11-12-12-12	Clayton County	1631	Cotat Falls		Jack son County	10000	Duvenport.	875-1301	Dickinson Co	7.14	Lorra L. Turning of
1100.200.	Little Mill	8-30	Ciat Engelman Bellevin	6 lh	Disofy Man Clayton Coulity	3-20	Wattylow		Appaniose County	and a second second	South English
Hill Fax	and the second sec	5-30	Cartin Gaberty	5 in 4.5 or	Swiss Valley	4.36	Steven Kirsch Dubsing	8 lb. 12 of.	Saylorville Polk County	10-1	Joe Schwartz Grinwold
10 ltt: 15 au	Duthique County	636	Dubuque	526 (5.07	Lower Swiss Valley	4-20	Sieve Schoenauer	8 jb. 11 est.	West Okoboji	10-30	Irvingham Schnell
a possible and	Allamaker County	1.00.00	LaCrosse, WI		Dubuque Courty		Dubuque		Dickinson Co.		Melford

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Weight	Where Caught	Date	Name and Address		
KIN. S oz.	Minimippi River	4-20	Mary Albert		
\$ 26 . R cu.	Sport Courty Sport Lake	1.3	E L. Jevit		
# 1h: # cz.	Minimippi River Scott County	2-11	Brian Morgai Princente		
8.16 A cir.	Ministrapps River Jackson County	3-22	William Pokorny Bryani		
¥ 76. 6 oz.	West Okoboji Dickieson County	5.13	Cliff Cunninghan Spencer		
8 lb. 6 cz.	Big Creck Polk County	3.9	Mike DeCarlo, Ir Des Moren		
878.5 oz-	Wapnipinicon Linn County	10-20	Kurt Maar Detend City		
8 th. 4 te.	Mississippi River Scott Courty	2-)	Daniel Devlie Pleasant Valley		
870: 4-ct.	Big Creek Polk Creaty	10.3	Larry Hacer Soleda		
8 th. 4 cz.	West Okobeyi Dickonsen Co.	10-1	Rick Martie Spirit Lake		
8 Ib. 3 or	Sport Lake Dickinson County	3.5	Bruce Herryke Lakvia		
# 1b. 2 oz.	Hig Critek Polk County	7-22	Iteme E. Addy Des Monte		
# lb. 2 or.	Des Maines River Polk County	4-8	Billy Chin Des Moines		
8 lb. 2 oz.	Lake Icaria Adams County	5-28	Don Coll Prescot		
8 10. 2 mz.	Summit Lake Union County	11.5	Randy Govidrich Cristian		
#Ib 2 er.	Lake Rathitson Appanesise County	9-6	Chris Hand Maxwell		
8 lb. 2 m.	West Okohoja Dickinisce Courty	1-22	Don later Millers		
4.15.	Linke Hathban Appanense County	8.3	Jeff Altright Walertee		
8.25	Warrent County	10-23	Mathew S. Territory Des Moines		

- No mittes

#### IOWA ALL-TIME RECORD FISH

Weight	Length	Where Caught	Date	Ängler
BASS, LARI	GEMOUTH			
10 lb. 12 oz	23-02"	Lake Fisher Davis County	5.64	Patricia Zan Davenpo
BASS, OCE	AN STRIPE	D July Rolling	1.44	Without Paula
9.10.4.112.		Appanoose County	1-0.0	My11
8A55, 551A 6 Ib. 6 m	21-16	Spirit Lake	3.79	Rick Pentlar
		Dickinson County		Esthervil
15. 8 oz.	10/2	Mississippi River Dahuque County	6-73	Tim Drines Debogs
BASS, WHI	201	West Okobosi Dickinson County	5-72	Bull Bo Miller
BASS, WIPI 7 lb 8 oz.	22 <sup>3</sup> 41	Dev Moines River Polk County	9-84	James Eng Wauk
BASS, YEL) 1.15. 5 oz	LOW 121/2*	Clear Lake	5-78	Loweril Washbu
1 m. 5 m. 13"		Sand Pir	15-78	Timothy Dol
REFECTE		Black Hawk Connty		Waterle
210.6.02	topt.	Farm Poud Henry County	5-83	Chris Jay Mt. Pirma
BULLHEAD	167	Farm Pund	5.81	Herschel Bross
RUFFALO		Harrison County		Missouri Valle
191h, 15 m	41	Cherry Lake Tama Courry	4-80	James D. Schm Toley
CARP. 50.28.	441	Glenwood Lake	5-69	Fred Hoogla
CATFISH, J	M.UE	MutaCounty		SOCION OF
30 1b 8 of.	40"	Lake Manawa Postawastamie Co	6-79	Fred Doursch Council Blat
CATFISH, 0 30 lb 4 of	CHANNEL 397	Viking Lake	8-74	Glenn Harr
CATFISH,	FLATHEAD	Montgomery County		Stenandos
62 lb	465	Johnson County	7-63	Roger Fainchi Coralvil
CRAPPIE 4 1b. 9 mz.	2159-	Green Castle Lake Marshall County	5-81	Ted Investig
46 lb.	381/21	Spirit Lake	10-62	R.F.Fam
MUSKELL	UNGE	PREMINOR COURTY		100 100 100
38 th. 4 or.	48*	Lake Rathbun Appanoose County	4-83	Charles L. Mo Pleasantvil
TIGER MU 24 h 1 oz.	SKY 40 <sup>3</sup> 4'	Went Okoboji	9-83	Bryan Stev
NORTHER	N PIKE	Disking County	× 45	Aller Darks
45 (h 3 M.	92	Dickinion County	2011	Albert Ci
PADDLEF1 107.15	691/2'	Missouri Rover Monona County	3-81	Robert Pranich Onay
PERCH, YI	ELLOW	Society Labor	0.74	John Ma
5 4 1 5 5 F	103.03707	Dickinson County	10.55	Eathervi
6 % Roz	25'	Missouri River Woodhurs County	10-76	Mrs. William Bus Slo
STURGEO 12.15:	N, SHOVEL	NOSE Des Monnes River Van Barren Cosento	4,74	Randy Herri Dou
SUCKERS. 1536 Loz	MISC. 32 <sup>1</sup> /4	Missouri Rissre	9-53	Glen E: Deus
SUNFISH.	REDEAR	Lake Goode	9.67	Dale Comi
TROUT	ROOK	Henry County		Burlings
2 lb 14 oz	17	Cance Creek Winneshiek County	3-81	Lyle Brown Devor
TROUT, B	ROWN J1'	French Creek	7-84	Fred Dau Minor archiv, M
TROUT, R	AINBOW	French Creek	7.84	Jack Rene
Water		Allamakee County	0.650	Waters
1416 2 03.	11/2:	Spirit Lake Dickinism County	10-68	Herben Aldod Spirit La
		the state of the s		18 control of

### **Classroom Corner**

By Robert Rye

Fishing is a sport that you can participate in throughout your life and any hour of the day. It can be done in streams, rivers, ponds or lakes.

Have you ever looked at the fish you catch? What do they do? How do they eat? How can you tell one fish from another?

Try the questions below, if you miss several you may have to go fishing in the near future and study the fish first hand.

#### FISH QUIZ

- 1. Fish secure life-giving oxygen through their:
  - a) fins b) gills c) nostrils d) skin
- Fish can automatically lift, lower, or remain stationary in the water by regulating the size of their:
  - a) gills b) lungs c) stomach d) swim bladder
- 3. Fish's chief organ of locomotion is the:
  - a) caudal fin b) pectoral fin c) dorsal fin d) pelvic fin
- 4. Fish stop forward movement by using the:
  - a) anal fin b) caudal fin c) dorsal fin d) pectoral and pelvic fins
- 5. Fish can be aged by determining the number of:

a) gill filaments b) rings on scales c) inches in length d) teeth

- 6. How do fish get small items off their gills:a) cough b) scrape c) with tongue d) other fish
- 7. Characteristics that are not used to age a fish:
   a) O'Dalis b) spines c) scales d) eyes
- Characteristic that is least accurate in identifying fish:
   a) scales b) fins c) size d) color
- 9. What is the number of eggs a bass will lay in a year:
   a) 100
   b) 1,000
   c) 10,000
   d) 100,000
- 10. The percentage of fish that will not survive in a farm pond in a normal year:
   a) 5 b) 40 c) 60 d) 90

10.10 (c) (c) (c) (d) (d)
11. The only genuine fish in this group is the:
a) devilfish b) shellfish c) starfish d) sunfish
12. A species introduced in the 1890's from Europe:
a) carp b) lake trout c) sturgeon d) white bass
te-Z1 ip-11 iq-01 ib-6 ip-8 ip-L it-9 iq-5 ip+ it-5 ip-7 iq-1 is Jamsuv

### Warden's Diary

#### By Jerry Hoilien

The phone rang early in the morning as usual. "Hey, Warden. What are you going to do about all those untagged commercial fishing nets in the river?" That's a cheerful way to start out your day.

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"What are you talking about?" I asked him. "How do you know they're untagged and where are they?"

"I'll show you this morning, if you'll get out of bed!" he said. This guy I could get to dislike, but I made arrangements to meet him at the boat harbor in an hour. He didn't look anymore agreeable than he sounded on the phone, as we started out on the river in my boat. He was going to have to prove this to me. I'd spent a lot of time checking commercial fishing gear in the Fort Madison area and I never found *a lot* of untagged (unlicensed) nets.

All commercial fishing gear is required to have a metal license tag attached to it so the officer knows the owner's name and whether the license has been bought for that year. Commercial fishing is a big business in Iowa, but it's hard work and you don't get rich at it. Commercial fishermen can only take certain species, like carp, buffalo, quillback, gar, sheephead, dogfish and catfish (which have a minimum size limit). They can use a variety of nets, but all are regulated as to size and type. In addition, they must report their catch in pounds to the commission. It's all pretty well regulated and most commercial fishermen do a good job. The gentleman I met this morning was directing me up the river and telling me that he always tags his nets and was looking for a lost net when he found all these without tags. If he was going to buy licenses so was everyone else. I couldn't argue with that! "Keep going," he said, "they're way over there!" "Hey - that's Illinois over there," I tried to explain. Sure I've got authority from bank to bank, but I'm busy enough on the Iowa side, and I leave that side to the Illinois warden. That explanation wouldn't do, we had to check out his accusations. Sure enough, the first three or four nets were untagged. "I'll contact the Illinois warden, Jim Twitchell and we'll go to work on it," I promised. I called Jim, and his supervisor Clyde Wheeler, plus a couple other wardens. "Can you bring your big john-boat Jerry?" Jim asked. "It's bigger than any of ours."

They met me the next morning and by noon they piled my boat so full of untagged boxes and nets I was concerned about crossing the main channel. "Let's just park the boats and gear under the bridge on our side," said Clyde. "We'll drive over to Fort Madison and I'll buy Jerry's lunch. This is the biggest haul we've ever gotten."

I had my doubts about leaving the nets and gear there, but we all piled in the cars and went to lunch. Lunch was good, but not as good as what happened while we were gone. The local commercial fishermen "liberated" all their nets and traps leaving us one old anchor and the gear that actually belonged to us.

Clyde, Jim and the rest of the Illinois crew were a little upset, but when I started to laugh they couldn't help but grin and laugh, too. I talked with the original caller several weeks later, he said he didn't know what I'd done, but I sure must have put the fear into 'em, 'cause they sure got a lot of shiny new tags over there now!

Such is life.

#### **Butch's Baked Fish**

The owner of the fishing float just below Lock and Dam 9 near Harpers Ferry, let me in on his baked fish recipe.

Use a 9 X 13 glass oven-proof pan. Cover the bottom with finely minced onion and lay in a few fresh sage leaves. If you don't have fresh sage, omit. Sprinkle walleye fillets with Cavender's Greek Seasoning (thicker fillets are best). Lay fillets in pan. Sprinkle with paprika and dot fillets with butter. Pour a dry white wine approximately 1/2 inch deep in the pan. Place in a hot oven (475°) and bake until fish flakes. Do not over cook. Drain juices into small saucepan. Thicken with one tablespoon cornstarch dissolved in four tablespoons water. Pour over fillets in pan and place under broiler until it just begins to brown.

Stir dry ingredients together. Add oil, stirring until it forms a ball. Add water gradually, beating until thick batter forms. Stir in minced green onions. Dip pieces of fish that have been dried well on toweling. Lower into deep fat, frying until golden brown. Serve with homemade tarter sauce:

1 C mayonnaise (not salad dressing)

1 T De Jon style mustard

1 t lemon juice

1/4 C finely minced pickles or 1/4 C pickle relish

2 T finely minced onion (optional)

Stir together.

No wonder he runs a fishing float.



Jerry Hoilien, Iowa Conservation Officer assigned to Allamakee County, re-

#### **Battered Fish and Tarter Sauce**

For those who like battered fish, Butch's wife suggests this recipe:

 cup flour
 T baking powder
 4 t salt
 T salad oil
 C cold water
 C cold water
 C finely minced green onion (optional) cently received special recognition from the Association of Midwest Fish and Game Law Enforcement Officers for his outstanding contributions to wildlife law enforcement. Jerry has been instrumental in developing techniques designed to aid conservation officers during investigations of poaching activity.

Jerry has, on several occasions, traveled great distances on his own time and at his own expense in order to share his research findings with wildlife enforcement personnel of other states and Canada. For a number of varied reasons, Jerry Hoilien has become a well recognized conservation officer. Through the Midwest, he is recognized for his efforts towards wildlife enforcement research. Throughout the state of Iowa, he is known for his contributions to the Warden's Diary. Throughout Allamakee County, he is undoubtedly recognized by many for his conservation officer responsibilities. Regardless of the role, he consistently demonstrates the same degree of dedication to duty.

### Nature Tale for Kids

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Pandio — The Wandering Osprey

By Dean M. Roosa



Ospreys, known by the Latin name *Pandion haliaetus*, are among the most stately of the birds of prey. They are a rich, chocolate brown, with a mostly white head, and achieve a length of about two feet. Their food is almost exclusively fish, which they capture by plunging into the water feet first. They

are often known by the common name fish hawk. Ospreys are about two feet long, with a wingspan of up to six feet, yet they weigh only about three to four pounds. Numerous ospreys pass through Iowa in the spring and fall, but there are no verified records of them ever having nested in our state. They nest in northern Minnesota, near large bodies of water. That is where our story begins.

#### . . .

Some of the most peaceful country in North America is in the lake country of northern Minnesota. There, on the shore

of fictional Lake Isle de Flambe, was a huge mass of sticks in the top of a dead red pine. Natives had watched family after family of ospreys leave this nest and the site had become locally famous. Occasionally people would watch from a distant road as the parents plunged into the clear water in the quest of fish for the youngsters in the nest. It was news early each spring in the nearby small town when the old birds showed up and began to repair the ancient nest. Fishermen would occasionally jest about the birds taking all of their fish, but they knew that no real damage was done by the osprey family. One spring, like every spring for as long as the natives could remember, youngsters could be seen bobbing around in the nest in early June. This spring, two young were visible in the huge stick nest by the large lake in the peaceful pine woods of Minnesota. The parents were proud; the natives were proud; all was well.

Usually one of the nestmates of large raptors is more agressive than the other; this was the case in the nest by Lake Isle de Flambe. Pandio was the aggressive one, peering over the edge of the nest, hopping to the nest edge and wingflapping while the other was content to sit on the nest-bottom and watch. A sudden gust of wind caught the young female osprey off balance and she went tumbling to the soft earth on the lakeshore below. Stunned but unhurt, she soon regained her composure and began to make a peeping noise. This got the attention of her parents who fed her for several days. It also got the attention of two fishermen. Afraid the young bird would starve, they threw a coat over her and carried her to the small town where they took her to a tavern. She was an immediate hit with the townsfolk who flocked to get a close look at their fish hawk. People tried to feed her hamburger, bread, dog food and celery; people tried to pet her; people offered all kinds of advice. She hated all of this and refused to eat anything; soon word spread to a nearby high school, then on to a distant college. A biology professor came immediately and took her to his laboratory where the bird was fed fish, checked for injury and banded. A bander who specialized in banding eagles was contacted and, with special climbing gear, took the young osprey back to the huge nest on the shore of Lake Isle de Flambe; again all was well and Pandio was much wiser.

Suddenly, in late summer, the lake was vacant; the natives settled down to wait for the birds' return the next spring.

. . .

Pandio and her family gradually worked their way south, following streams through southern Minnesota into Iowa, stopping to fish every day. The family gradually got separated and now Pandio was completely on her own. This was a bit unnerving, but in a few days she was enjoying her independence. She stayed for a week around a lake in eastern Iowa and was a hit with the townsfolk who drove to the lake to watch her hover over the water and plunge in to capture a fish. The weather turned suddenly cold and Pandio again resumed her southward migration. A week was spent at the Lake of the Ozarks, where she learned a useful lesson about fishing ---she plunged into the water and grabbed a huge pike. Her talons were imbedded and the fish was too heavy to lift; when the fish dove, Pandio was drug beneath the water. Her talons finally loosened and she struggled to the surface where she lay with wings outspread on the water, gasping and coughing. She finally recovered enough to laboriously struggle to the shore where she sat on a stump and glared out over the lake, wondering what went wrong. A day of recuperating restored her enthusiasm for fishing and she fed on several small fish from shallow water near the shore.

Pandio kept giving in to the urge to move farther south, so Louisiana beof an adult bird. She returned to the same swamp where she had so enjoyed life the previous winter. This year there were several rather evil-tempered bald eagles on the swamp so she took refuge in a cove that she shared with an osprey from North Carolina.

The following spring she again migrated northward and arrived at Chesapeake Bay in late April and began to patrol the lakeshore. Her fishing skills were superb, she was large for an osprey, and ready to build her first nest, select her first mate, raise her first family - all here on the famous Chesapeake Bay. But, it was not to be. She hadn't reckoned with hurricane Bella, now starting to batter the east seacoast. A day later, the hurricane was at full force, toppling trees, eroding the lake shore, inundating the coastline. Pandio was perched in what seemed to be a safe spot in a cove in a huge pine tree. But, the winds buffeted the tree for several hours, weakening it, finally toppling it. Pandio escaped and began to fight the fierce winds. It was a losing battle and she was carried aloft and inland by the hurricane. When the winds subsided to a point where she could control her flight again, it was night. She finally crashlanded in a scrub forest many miles from her home. Disoriented, stunned and in an unfamiliar country, she began to search the countryside for some familiar guidepost. She found none, but something told her to start flying in a southern and westward direction. Soon she found a lake and fed, then on to her undefined destination. Slowly, the countryside began to become familiar. She wandered steadily for two days, stopping only to rest at night and fish in the lakes which were becoming more and more numerous. Suddenly, the landscape became very familiar. There! There it was... the giant red pine with the huge cluster of sticks, there was the small town with the tavern where she was on display, there were her parents! She was back at the lake of her birth. Lake Isle de Flambe! She didn't recognize her parents and they didn't recognize her, so they flew out to challenge her when she came into their territory. She left readily and headed up the lake to a quiet cove where she found a handsome male osprey that had already established a territory and started to repair a nest. Pandio followed her instincts and began the unfamiliar placing of sticks to form the nest where she placed three buffcolored eggs with chocolate markings. With that done, she began the long incubation - a new generation of fish hawks was on the way.

Pandio and her nestmate fledged and the natives watched the young birds learn to fish throughout the summer.

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came her fishing ground for two weeks, but the urge in her caused a southward flight that took her to a large swamp in Florida, where she spent a pleasant winter with a half dozen young ospreys from Chesapeake Bay.

#### . . .

In mid-March, the changing daylength caused her to again succumb to the migration urge. Although ospreys do not mate and nest the first year, she felt the instinctual urge to migrate and she followed the Chesapeake Bay birds north. Gradually the landscape changed and began to resemble the cool north woods of her babyhood and she felt at home. So, she spent the summer on the shore of Chesapeake Bay, fishing, perching in the warm sun, and avoiding the nesting ospreys who considered her an intruder. Fish were plentiful, the bay was peaceful, life was good. Late that summer she began to molt, losing her immature plumage. By the time she arrived in Florida for the winter, she had a rich, beautiful coat of feathers characteristic



fom Putnam

Are manufacturers' claims about commercial fish scents factual or just so much



# Do Fishs

absence, spawning salmon are able to retrace the journey to the site where they were first hatched or stocked.

Smell is also important to members of the catfish family. The old timer catfisherman doesn't need any research to, convince him that, at certain times of the year, the stronger the bait smells, the better his catfishing will be. The old fellow has learned through trial and error that using smelly bait during the summer can draw catfish like a magnet.

Most other freshwater fish also use the sense of smell at some point during the approach to a suspected meal. Water is drawn into the forward nare of each nostril into an olfactory chamber, across the olfactory organ and expelled from the posterior nare. The olfactory organ, made up of millions of receptor cells, is able to distinguish dozens of odors. These odors help to determine whether or not a fish will strike.

Use of the sense of smell in predators such as bass, walleye and northern pike, usually takes place after the fish has already located its prey. Predators use sensory nerve endings located along the lateral line to pick up vibrations given off by movement of a potential target. The direction to the prey, its size and shape can be detected in this way. Predators also use a keen sense of hearing to help locate food. Sound transmits better in water than in air and these vibrations are carried through the bones of the head to the fish's inner ear. As the approach to a prey begins, the sense of sight comes into play. In turbid water conditions, as can often be found in Iowa, sight 15 hampered and the sense of smell becomes more important, especially at close range. Tackle manufacturers have, for years. attempted to deceive fish into striking by making lures mimicking the shape. size and color of their favorite food. Lures have been made that rattle in an attempt to draw fish from farther distances to the lure. Baits have been impregnated with masking scents to cover human and gasoline odors left on a lure while handling. Ardent bass anglers have suspected the presence of these odors decreased their fishing success. To combat the problem, Rod Kent, an avid

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Fish Formula, Dr. Juice Elixir, Pro Formula...these names are becoming familiar terminology as the "chemical revolution" invades the fishing tackle industry. But do these additives work in helping to fool a fish to strike a lure? And, if so, are they worth the added expense?

It has long been common knowledge in the angling world that some fish species have an acute sense of smell. Research has shown, for instance, that a salmon is capable of distinguishing its stream of origin by the particular smell of that stream. Even after several years

hype? A growing number of anglers believe the products really do work.

## Scents Make Sense? By Tom Putnam

bass angler from Des Moines, mixed up a concoction of oil of anise and lake water. Kent originally used this mixture to wash his hands prior to handling live pait. When he got more into bass fishing, ne began to dip his lures into a jar containing about one pint of lake water and one capful of anise oil. The anise was obtained at a local pharmacy. Says Kent, "It's a confidence factor. The anise oil helps take away the human scent and gives me extra confidence that the lure on the end of my line will work."

Recently, commercial fish-attracting scents have become commonplace on the shelves of sporting goods stores. Several brands are now available and some can be purchased in different formulations depending on the species fished for. Fish Formula, for instance, comes in No. I for catfish; No. II for gamefish such as bass, crappie, bluegill and walleye; Crawfish, to attract gamefish feeding on crawfish; Shad for gamefish when feeding on shad; and Saltwater. Each formulation, when sprayed on a lure or bait, reportedly gives off amino acids that resemble those emitted by the gamefish's natural food. Another concoction, only recently introduced to Des Moines, is Pro Formula. This product consists of a waxy substance, a colloidal suspension, that clings to the lure. This suspension reportedly produces chemical signals called pheromones which, when coming in contact with a fish's hypothalamus gland, stimulate its hunger center to strike almost immediately. A third commercial scent, until re-· cently used mainly on Lake Superior and the West Coast, is Dr. Juice's Amazing Elixir. This formulation reportedly combines both amino acids and pheromones to attract the fish and induce it to strike. The product is advertised as responsible for setting a state salmon record in Minnesota and winning several fishing contests on Lake Superior. A scent made especially for soft plastic lures is Mister Twister's Poc'it Potion. This product is advertized as making lures more attractive to fish resulting in more strikes more often. Another feature is a conditioner contained in the scent helping to soften plastic lures.

No matter which product you pick, many fishermen swear by them. Woody Clapham, a bass tournament angler from Ankeny, for instance, is convinced Fish Formula gives him the angling edge. "I've consistently outfished my partner in the boat when I used the formula and he didn't. Then I'd trade and let him use it, and he'd outfish me!"

Are the fish scents really worth the purchase price? If fish are biting like crazy, probably not. But if they are acting finnicky and you are not getting many hard strikes, one of these concoctions might just be what's needed to put them in a feeding frenzy. At any rate, there is only one way to convince yourself.

Tom Putnam is a fisheries biologist located at Boone. He has been with the commission for 14 years and holds a B.S. degree from Iowa State University.



# Fishing the Spawn

By Jim Wahl

"One period when fish congregate is during spawning. Anglers who understand the specific spawning requirements of individual species can use that knowledge to increase their fishing success."

Jim Wahl is a fisheries biologist located at Clear Lake. He has been with the commission for three years. He has an M.S. degree from South Dakota State Knowledge of fish behavior can provide valuable information to anglers. Frequently fish will locate within a particular habitat type during a specific time of year. One period when fish congregate is during spawning. Anglers who understand the specific spawning requirements of individual species can use that knowledge to increase their fishing success.

Timing of the spawning period is activated by two key factors — water temperature and length of day. Once these criteria are met, each species will select the appropriate habitat.

Iowa sport fish utilize two distinct spawning methods — nest building and random scattering of eggs. Nest builders provide some form of parental care. Frequently these fish will strike at an artificial lure or bait in defense of their nest or young. Although random spawners exhibit no parental care, they will concentrate in specific areas for an extended period, which also increases their catchability.

#### **Timing of Spawning**

proach the high 30's spawning will begin and continue until water temperatures reach 45° F. Northern pike are random spawners and prefer to spawn over vege-, tation. In lakes, northerns will move into small inlet streams in search of flooded grassy areas or other marshy conditions. River populations will utilize similar habitat in flooded backwaters or adjoining marshes.

Walleyes begin spawning shortly after northern pike, when water temperatures range from 42° to 50° F. Walleyes are also random spawners, but unlike northerns, they prefer to spawn over rocky reefs, sand or gravel areas. Because male fish move into spawning grounds earlier and exhibit a tendency to stay longer, they generally dominate the angler's creel. In Iowa lakes, walleye populations are maintained through intensive stocking programs. Under these conditions fishermen will not harm the walleye population by taking females, however many fishermen prefer to release these potential trophy fish for another day. Walleyes and northern pike are protected during the spawning season (February 15 to the first weekend in May) in Spirit, East Okoboji and West Okoboji Lakes in order to prevent in-

#### University.

Immediately following ice-out, northern pike begin moving into their spawning grounds. As water temperatures ap-

#### SPAWNING REQUIREMENTS OF POPULAR SPORT FISH IN IOWA

SPECIES	TIME	WATER TEMP. °F	SUBSTRATE	ТҮРЕ
Northern Pike	late March- early April	39-45	over vegetation	random
Valleye late March- mid April		42-50	gravel, rock, occasionally vegetation	random
Smallmouth Bass	May	60-65	coarse sand, gravel, or rock	nest
Crappie	May	60-68	gravel, sand, or muck	nest
Largemouth Bass	May-June	60-70	sand or mud, near vegetation	nest
Bluegill	June-early August	65-75	sand or gravel	nest
Channel Catfish	July	70-80	hollow cavity type objects or banks	cavity





One of Iowa's most valuable and treasured resources is its abundance of small rivers and streams. Nearly every town or municipality in the state has a meandering stream, either running through it, or passing nearby. Most of these rivers have been dammed to some extent and while dams may range from antiquated fishing weirs to major flood control projects; most fall somewhere in between, and are called low-head dams. By definition, a low-head dam must be less than 30 feet high. The first dams in Iowa were built to provide power for mills and most of these were built in the eastern two thirds of the state where streams tend to have a greater slope and a correspondingly higher average velocity. These dams are particularly common in the extreme northeast corner of Iowa. Often built of logs, stone and brush, mill dams are characterized by high quality construction. Many of these structures are still intact, while dams built in a more haphazard manner, consisting of piles of rock or rubble, are in varying stages of disrepair. In the early twentieth century more permanent dams, used to produce small amounts of electricity, were constructed with reinforced concrete and steel. No matter what the intended purpose, these dams and their impoundments and tailwaters have acted as a magnet for fish and fishermen alike.

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#### Fishing the Spawn continued

terference with hatchery brood stock collections.

As the calendar year progresses the next fish to spawn are smallmouth bass and crappies. Both species generally spawn sometime during May. Smallmouth will spawn at water temperatures ranging from 60° to 65° F. Bass construct nests over coarse sand, gravel or rock bottoms. In rivers, smallies will frequently move into the smaller tributary streams to select a nesting site. During the spawn, adult fish will zealously guard the nest, making them vulnerable to fishermen. Because smallmouth populations are self-sustaining, anglers may wish to release adult female fish.

Crappies spawn at water temperatures ranging from 60° to 68° F. Nests are constructed over gravel, sand or even muck in shallow water. Frequently spawning will take place near vegetation, so look for areas of emerging vegetation such as bulrush or cattails. Like other members of the sunfish family, males guard the nest and can be easily enticed with artificial baits.

The final spring spawner in Iowa is the largemouth bass. Largemouth generally spawn during May and early June when water temperatures range from 60° to 70° F Although largemouth construct nests, they are generally much less elaborate than those of smallmouth bass and are located over a softer bottom. Ole bucketmouth frequently deposits her eggs on rootlets of submerged vegetation, emergent plants, or sand and mud bottoms.

The warmer and longer days of summer trigger the spawning of bluegill and channel catfish, the last sport fish to spawn. Bluegills reproduce over a considerable period of time beginning in June and often extending into early August, when water is 65° to 75° F Males construct nests in very shallow water over sand or gravel substrates. Large stringers of bluegill are frequently taken each year from these spawning beds.

Channel catfish spawn in July at water temperatures ranging from 70° to 80° F. Natural reproduction in Iowa lakes is very limited; however, stream populations are self-perpetuating. Catfish are selective in their breeding habits, depositing their eggs within hidden cavities. These areas include overhanging rock ledges, deeply undercut banks, hollow logs, underwater muskrat runs, tile and other objects. Catfish protecting these hollow hideouts are particularly vulnerable to fishermen.

Anglers can help themselves by keeping a diary of their fishing trips. Simple documentation of date, water temperature noting bottom substrate and location, can greatly aid in fishing the spawn and ensuring successful trips in future years.



Male walleyes, although smaller than females, are particularly aggressive during the spawning season.



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Every dam, regardless of size, forms two distinct fishable bodies of water, an impoundment and a tailwater. The impoundment is usually characterized by increased depth, a severely curtailed flow, and a correspondingly high deposition of silt. The tailwater is characterized by greater current velocity and a well-scoured bottom. This area, except for a substantial hole at the base of the dam spillway, also tends to be much shallower than the impoundment. Immediately after ice-out, the tailwaters will provide the finest river walleye fishing of the year. In fact, in rivers with very small walleye populations, this period may provide the only walleye fishing of the year. Any dam that hinders fish movement will concentrate walleyes in early spring. Areas to fish first and hardest are backwash areas just off the tailwater. A backwash is any area where the current reverses itself and gouges an indentation in the bank and bottom. The most productive holes are just off the tailwater where walleye rest and feed. Cast into those areas where the current changes direction; that's where the actively feeding fish are usually positioned. The best lure to use is a brightly colored leadhead Jig tipped with a minnow. A favorite trick of early season walleye fishermen is to trim most of the feathers or hair from the lure so it will not be affected by current.

Removing this excess material can also keep you from missing some bites by short striking walleye. The key to early season walleye fishing is to move the lure slowly. In cold water a walleye may not actively pursue a lure and often will barely move from its original position to capture its prey. Food must be properly presented, by either the current or the fisherman, before a response reaction is triggered. Another deadly method is to use a large minnow and fish it on the bottom. During the summer months you may catch walleye in the impoundment. Not every impoundment will draw and hold walleyes; it must have a moderate amount of rock along the shoreline and bottom. Extremely silty or stagnant water will restrict walleye use. During the summer, lure speed is not as critical and various speeds and types of retrieves should be tried. Spinners, twister tails, nightcrawlers and many minnowimitating lures are good for walleyes under summer conditions. Fishing opportunities for channel catfish begin shortly after ice-out, and are usually centered on the impoundment side of the dam. There is a surge of good catfish angling at this time because these fish are feeding on water-killed organisms. This habit can be exploited by using the readily available bait items picked up on the river shoreline. Shad A low-head dam is not only a productive place to fish but is also a beautiful spot to spend some time.

and carp sides, dead minnows and fish entrails are excellent choices for the early season catfisherman.

In the summer months, excellent catfish angling exists in the tailwater. Fishing the tailwater can be especially effective at night, when catfish move out of the deeper holes to feed in the shallower more productive water.

Smallmouth bass can be taken in both the tailwater and impoundment of a lowhead dam. This gamefish requires a moderate amount of rock to inhabit an area for any length of time. The rocks harbor prey species and serve as a resting location for the smallmouth. Smallmouth fishing does not begin in earnest until early May. Through the first month of fishing a leadhead tipped with a minnow or a minnow and bobber are the most effective baits. Later in the season spinners, twister tails, or live crayfish will catch fish. Fishermen should be aware of the twelve-inch minimum length limit on smallmouth bass on all inland streams and rivers. Another fish that can be taken in the early spring near the tailwater is the northern pike. They should be sought in backwashes similar to, but further downstream, than those fished for walleye. Any marsh backwater areas connected to the tailwater are especially productive areas during early spring. The best bait is a creek chub or small sucker. Since northerns have a mouthful of sharp teeth, don't forget to use a metal leader. Spoons and spinners are excellent lures during warmwater months. Fish these backwashes systematically, trying all areas of the hole or backwater.

Regardless of the species or time of year a low-head dam is indeed a worthwhile spot to fish!

Don Herrig is a fisheries technician located at Lake View. He has been with the commission for six years and holds a B.S. degree from Iowa State University.

# Walleyes Are "Bugged"

#### By John Pitlo, Jr.

For the last two years, fisheries biologists on the Mississippi River have been following the movements of radiotagged walleyes. Radio transmitters were surgically placed in the body cavity of the fish caught from the river. The fish were then released back to the river near the same area they were captured.

The tiny radios transmit radio waves that allow a tracker to pin-point the location of the fish. These locations or observations are made with the aid of a small radio receiver and antenna. Locations indicate the type of habitat the fish is using and how the fish responds to changing environmental conditions such as current flows, light and water temperature. These tracking techniques, called telemetry, help the biologist understand daily and seasonal fish movements, determine fish swimming speeds and distances fish move. More sophisticated transmitters also indicate the water temperature near the fish, the fish's heart rate and the rate of gill movements. Walleyes are tracked with the aid of a large antenna mounted on a telescopic pole on the boat. The large antenna shows locations of the fish at greater distances. If the fish is in six feet of water or less, the tiny radio transmitter can be heard one mile away. Deep water severely limits the transmission distance and if the fish is in 30 feet of water the observer will need to be within one-quarter mile of the fish to pick up the signal. This presents little problem in an open lake but the Mississippi River is a different story. The pool is 30 miles long and up to two miles wide, with side channels and islands interlaced with numerous sloughs and backwater lakes. Under

these conditions location of a radiotagged fish can be like looking for the proverbial needle in a haystack.

Because of the large antenna, many fishermen come up and ask what television program is on. I usually tell then "As the World Turns," before telling them our even more exciting story o "Bugging Mississippi River Walleye." I've had fishermen ask if I can see an



Keeping track of "bugged" walleyes helps biologists understand seasonal movements of fish, and ultimately helps anglers catch them. fish with that sophisticated underwater sonar. I usually let them carry on a little before telling them it's a radio antenna used to follow large fish, and that there is a five-pound walleye under their boat. The usual response is to stop the kidding and get back to some serious fishing rather quickly.

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During the second week of the project while tracking fish in the tailwater area of Lock and Dam 12, a signal was detected from shore. The tracking boat was beached and I methodically tracked the signal into a restaurant owned by the local bait shop operator. I accused him of having one of the transmitters and wanted to know how he obtained it. Imagine my embarrassment when I learned that the "fish" was actually a scanner that emitted a signal on the same frequency as one of the tagged walleye.

The telemetry project on the Mississippi River provided some excellent and valuable information about walleye. Exact spawning locations for walleye were unknown before the telemetry project, but now we know of two spawning sites in Pool 13. These sites can be protected from future development and, knowing the physical characteristics of those sites, other pools can be searched to locate additional spawning areas.

Walleye movement information shows that these fish move into tailwater areas in late winter and stay through the latter part of April. Some move through the lock and dam system into the next pool upstream. Once spawning is completed, the majority of the fish move back downstream into areas protected from river currents. This is a period of recuperation and fish are found primarily in backwater lakes and flooded timber.

As summer begins and water levels drop, walleyes move back to the main channel and can be found on wing and closing dams. This is one of the best times of the year to catch them. The fish are hungry and concentrated on or near the dam. Walleyes will stay in wing dam areas into the fall period. In the late fall and early winter, they move to deeper water, primarily the main channel border areas and the deep holes behind wing dams. If higher river stages occur during any of the above mentioned periods, walleyes are forced into flooded timber of side channels. Fishing when they are widely scattered is difficult or nearly impossible.



Some of the oddities we have learned or that happened during the study are as follows:

One fish that was tagged in September, 1982 was caught by a fisherman in October, 1984. The fish carried the transmitter over two years and provided us with 350 days of tracking information before the battery died.

A fish that was tagged in October and tracked through March suddenly disappeared. The entire pool was searched and several airplane flights were made but the fish was not found. On May 30 of the same year, the fish was relocated in the general area from which it disappeared. We assumed the fish made a spawning movement to an unknown location and then returned to its home area.

During the spawning period, walleyes are capable of rapid, long distance upstream movements and can go from Lock and Dam 12 to Lock and Dam 11 (a distance of 26 miles) in two days. During periods of recuperation, immediately after the spawning period, fish have stayed in one spot for two weeks. We actually thought one fish had died because of lack of movement.

A fish that was tagged in October and tracked for a week suddenly disappeared. The following summer the transmitter was returned. The fish had been caught by an angler in Pool 10. The fish had gone through three locks and dams and although Pool 10 had been searched, the fish was never relocated.

Several fish died from unknown

causes after having been at large over 200 days. When this happened, attempts were made to retrieve the transmitter. Every time a transmitter was recovered, it was buried under 4 to 6 inches of muck and sand.

One incident which was not funny at the time but provided a good laugh later occurred when we were flying a small airplane looking for lost fish. I had asked the pilot to fly over the main channel and maintain an altitude of 3200-3500 feet. After about an hour of flying, I noticed we were banking away from the main channel. Turning to the pilot to say something, I discovered him catching 40 winks. Needless to say, he awakened quickly. In retrospect, it didn't frighten me too much — I figured anyone *that* relaxed must have a tremendous amount of confidence.

John Pitlo is a fisheries research biologist located at Bellevue. He holds a B.S. degree and an M.S. degree from Iowa State and has been with the commission for six years.



#### By Robert Middendorf

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Fish are too good a food supply and too precious a resource to be wasted because of some improper care before eating. Fish are delicious and nutritious, but have a delicate flavor that will be lost if you ignore a few basic rules that will keep them firm and fresh. Their soft flesh will deteriorate rapidly after being caught, so proper care begins immediately. Primary culprits robbing fish of flavor are heat and dryness.

During warm weather angling trips, under no circumstances should fish be tossed in the bottom of a boat or on bank to die in the sun. Keep your catch alive or cold. Methods for keeping fish alive or cold will depend on individual angler preference and fishing conditions.

The most convenient and widely used gear for containing fish, while angling, are collapsible wire baskets and stringers. Collapsible baskets are ideal for panfish and other small species. Handling is kept to a minimum and fish are allowed to swim freely in the basket. Locate the baskets in a shaded area and avoid crowding of fish.

A majority of anglers use stringers to keep their catch. Far too often fish die on stringers and are rendered either unsuitable for eating or at least in poor condition by the end of a fishing trip. Do not hook the fish through the gills and mouth. This will cause sure death in a short time by damaging the gills, and forcing the mouth open will cause drowning. Recommended hooking is by using safety-pin stringers which have clasps that swivel to prevent fish from twisting off; rope stringers should be avoided. Attach the fish through the thin membrane just behind the lower lip or through both lips. This will permit closing of the mouth and allows gills to extract oxygen. Many boats are now equipped for holding fish in water circulation or aerated live-wells. Like the use of wire baskets it is best to limit numbers of fish being held. For all types of devices that hold fish in water it is a good policy to check the catch often. Dead fish will spoil rapidly in the water and the slower a fish dies the faster their flesh will deteriorate after death. If your fish die look for the following signs to determine if the flesh is still fresh:

For weak or dying fish it is best to kill, gut and put them on ice at once. Conscientious anglers make sure their catch gets home in a good fresh condition by carrying ice filled chests with them. The fish are field dressed by removing guts and gills, placed in plastic bags and set on top of ice in a cooler. Make sure the bags and fish stay on top of ice, for if they fall into melted ice water the flesh will become mushy. Periodically draining water out of a container or adding a false floor will eliminate this.

Stream anglers sometimes use canvas or wicker creels to carry their catch in. Canvas creels work as long as they are occasionally immersed in cool water. With wicker creels fish should be field dressed, placed in layers of damp moss, leaves, ferns or paper. This provides ventilation and evaporation of moisture, and enhances coolness. In creels fish will keep for a short time, but they should be iced or refrigerated as soon as possible.

If the catch has been kept alive on the water and returned home fresh and in good condition, clean them immediately to ensure peak natural flavor. Next, cover and keep them cool. Fish previously field dressed should be cleaned thoroughly and kept cool also.

Top eating flavor will result if fish are kept alive, cleaned and cooked shortly after catching. This is seldom done and most catches are cold stored for a period of time ranging from a day to over a year. Storage temperature and type of packaging will determine the length of time of the commission for 36 years. effective storage.

If handled properly and cleaned thoroughly, fish can be stored in a refrigerator for 24 hours with very little loss of flavor. If kept longer the flesh will start to dry out. To prepare for storage, rinse fish in cold water and pat dry with a cloth or paper towels. Place them on a paper plate and seal them tightly with plastic wrap or aluminum foil; then put them in the refrigerator.

Fish that will be frozen for a long period should be frozen as soon as possible after cleaning. The result will be a better tasting fish when they are thawed and eaten. Air will cause freezer burn, a condition resulting from moisture being drawn out of the flesh. Therefore, it is important to keep air from getting to a frozen fish.

Freezing fish in water is the best method for holding them a long time. Ideal holding containers are milk cartons, pop-top plastic containers and ziplock plastic bags. Place fish in the containers loosely to about 11/2 inches from the top. Next add cold water within 11/4 inches of the top (this allows space for freezing water expansion). Flesh should not be exposed above the water level. Seal the container top and place it in the coldest area of the freezer.

Simple fish-saving precautions should be taken soon after a fish is caught and during the freezing process. The reward will be fantastic tasting fish.

Robert Middendorf is a fisheries biologist located at Solon. He has been with

- 1. Full, clear and bright eyes
- 2. Bright red gills that are free of slime
- Firm flesh
- 4. Moist flesh, free of discoloration



Chain stringer, properly used, keeps fish in good shape until cleaning time.



