



JULY 1975

# OKO conservationist





# OKO conservationist

Volume 34, No. 7

July, 1975

## STAFF

Roger Sparks, Editor  
 Robert Runge, Managing Editor  
 Kenneth Formanek, A-V Coordinator  
 Julius Satre, Contributing Editor  
 Wayne Lonning, Photographer  
 Jerry Leonard, Photographer

## CONTENTS

- 2 NINE EAGLES, SLIP BLUFF AND SOME BICYCLES**  
by Bob Runge
- 4 CATFISHING EAST OKOBOJI AND THE OUTLET CHAIN OF LAKES**  
by Jim Christianson
- 6 THE BAYS BRANCH WILDLIFE MANAGEMENT UNIT**  
by George Cox
- 8 BRONZEBACKS IN NORTHEAST IOWA'S STREAMS**  
by Don Degan
- 10 "EXPERIENCED" BOATERS STILL CAUSE ACCIDENTS!**  
by James E. Horan and Nancy Exline
- 12 LARGEMOUTH BASS CULTURE IN IOWA**  
by Vernon Spykerman
- 14 CLASSROOM CORNER CUT-AWAY BOAT DISPLAY**  
by Robert Rye
- 15 WARDEN'S DIARY**  
by Rex Emerson

## CORRECTION

The June issue contained an article entitled "I-29 Chain of Lakes". The author was listed as Kay R. Hill but the article was in fact written by Bruce Adair. The editors regret the error.

## COMMISSIONERS

Thomas Bates, *Bellevue*; John Link, *Burlington*; Carolyn T. Lumbard, *Des Moines*; Herbert T. Reed, *Winterset*; John C. Thompson, *Forest City*; John Brophy, *Lansing*; Marian Pike, *Whiting*

## DIRECTOR

Fred A. Piewert  
 William C. Brabham, *Deputy Director*

## DIVISION CHIEFS

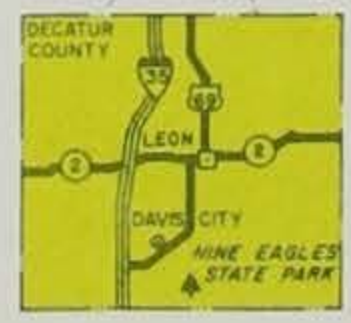
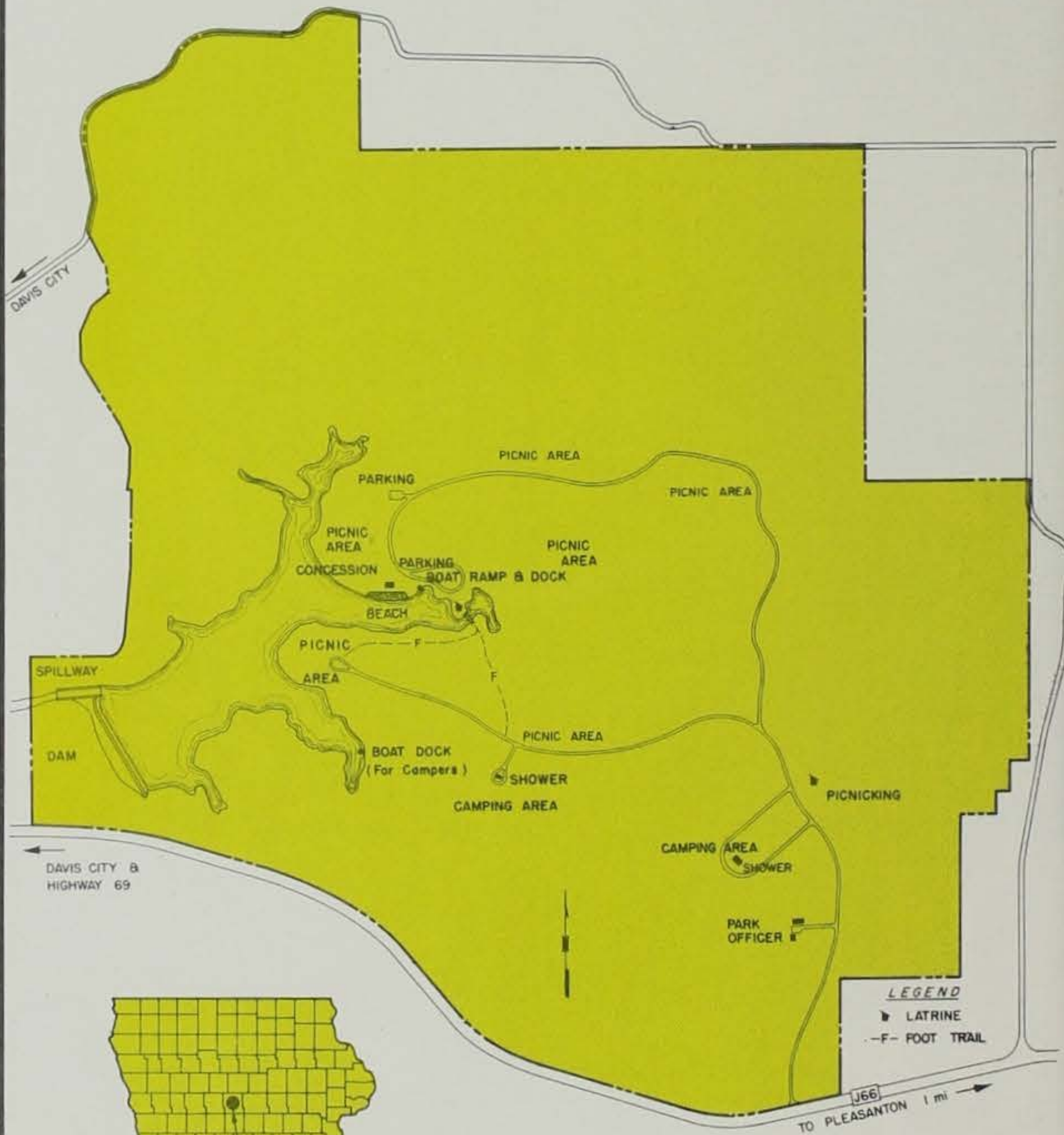
Harry M. Harrison, *Fish and Game*; Stanley C. Kuhn, *Division of Administration*; Gerry F. Schnepf, *Resource and Program Planning*; John M. Stokes, *Chief, Lands and Waters*

## SECTION SUPERINTENDENTS

Tom Albright, *Engineering*; Joe W. Brill, *Parks*; Robert Barratt, *Wildlife*; Jerry M. Conley, *Fisheries*; Roy Downing, *Waters*; Robert Fagerland, *Land Acquisition*; Lester Fleming, *Grants-In-Aid*; Gene Hertel, *State Forester*; Kenneth Kakac, *Law Enforcement*; Caryl Carstens, *License*; Larry Davis, *Information & Education*; Steve Brenton, *Planning*; Gene Geissinger, *Accounting*; Doyle Adams, *County Conservation Boards*.

Published monthly by the Iowa Conservation Commission, State Office Building, 300 4th Street, Des Moines, Iowa 50319. Address all mail (subscriptions, change of address, Form 3579, manuscripts, mail items) to the above address. Subscription price: one year at \$1.00; two years at \$2.00; four years at \$3.50. Second class postage paid at Des Moines, Iowa and other points. (No rights reserved)

# Nine Eagles, Slip Bluff and Some Bicycles



By Bob

FOR P offers of pay are in one w light on the would find The park leave a car it ride back th another for Southern Davis City t area named City below l the other is highway. Ca water, restt restrooms, e concession.



*Biking through Nine Eagles State Park . . . a great way to enjoy southern Iowa scenery.*

**By Bob Runge** *Photos by Roger Sparks*

**F**OR PEOPLE WHO LOVE BICYCLING and camping, Iowa offers some terrific possibilities resulting from hundreds of miles of paved secondary highways. Many state parks or county parks are in one way or another linked by these roads. Traffic is relatively light on these farm-to-market stretches, a fact which most cyclists would find comforting.

The park to park bike trip can be done basically two ways. **One** - leave a car in one park, ride to another to spend the night camping and ride back the next day. **Two** - make camp in one park and ride to another for the day but return before dark.

Southern Iowa offers a fine example of a park to park bike trip. Near Davis City the Decatur County Conservation Board has a beautiful area named **Slip Bluff Park**. Directly the other direction from Davis City below Highway 69 lies **Nine Eagles State Park**. From one area to the other is approximately 11 peaceful and scenic miles of secondary highway. Camping is available in both parks. Slip Bluff has electricity, water, restrooms and picnicking. Nine Eagles offers showers, restrooms, electricity, picnicking, swimming, fishing, boat rentals and concession.

Let's say you drive to Nine Eagles and set up a campsite. Picturesque campgrounds are located in two different areas of the park. When you're all settled in, unload the bikes and ride back toward Davis City. (See map).

Slip Bluff is located approximately two miles northwest of Davis City. (There is a nice little restaurant in town where bikers can buy lunch.) True to its name, the park has a scenic overlook atop a high bluff. There are hiking trails around the area and some great shady spots to rest before the return trip. If you choose, you could backpack some gear and camp here a night before going back. Either way, it's a great trip.

All across Iowa there are many parks, both county and state, which could be routed for a trip such as Nine Eagles to Slip Bluff. If this type of outdoor fun interests you, obtain a State Park Folder, then contact the County Conservation Boards in those areas you wish to explore. They can give you just the information you need. Be sure to plan your trip on paved secondary roads. It would probably be best to scout the route by car first. For added interest you may want to stop in some of the small towns along the way to browse through the interesting stores and antique shops. Wherever and whenever you go - happy biking!!

# Catfishing East Okoboji and the Outlet Chain of Lakes



**By Jim Christianson**  
*Fisheries Biologist*

**H**EY JOE, where do you think "old forked tail" will be tonight? A typical response to this question might be under that brush pile or just below that eddy. But when fishing East Okoboji and the lower chain of lakes, a more likely response would be just below the high bank north of Camp Foster, at the rock pile dropoffs south of

Stoney Point or just off the public dock in Upper Gar Lake.

Because of location, fishing diversity and other recreational activities, the solitude experienced along the river bank usually will not be realized to the same degree on East Lake and the outlet chain of lakes, consisting of Upper and Lower Gar and Minnewashta. But when fishing on these lakes at night a relaxing and soul searching experience can be encountered along with the possibility of landing that once in a lifetime lunker.

*Photos by Jim Christianson*



East Ok  
Great Lake  
to 1/16 mi  
depth is 22  
provided a  
one at the  
approxima  
marinas, b  
Lakes a  
East La  
configurat  
Dropoffs a  
waiting for  
Among t  
the lake a  
buildups a  
The thre  
opportunit  
Gar, Minne  
surface acr  
shallow wi  
Minnewash  
sloping top  
Boat acc  
ramps, one  
public acces  
are located  
Lake bot  
mainly muc  
does provid  
dwelling org  
For more  
acquiring a  
of the Sta  
advantage  
available at  
Commission

The chan  
metal gray  
"whiskers"  
species to e  
supportive  
nocturnal c  
between th  
developed s  
versatile fee  
variety of li  
worms, fro  
living and  
becomes a  
Photo by Roger

## THE LAKES

East Okoboji Lake is one in a chain of lakes making up the "Iowa Great Lakes". The lake is approximately 7 miles long and varies from 1 to 1/16 miles wide consisting of about 1,800 surface acres. Maximum depth is 22 feet with an average depth of 10 feet. Public boat access is provided at three locations; 2 on the north one-third of the lake and one at the southern end. Public shoreline access is available on approximately 3 percent of the 16 miles of shoreline. Resorts, motels, marinas, bait shops and campgrounds are located around the Great Lakes area to provide goods and services for the angler.

East Lake does have some river likenesses in the general shoreline configurations ranging from cut banks to a gently sloping topography. Dropoffs are present resembling river type holes where the lunkers lie waiting for that tasty meal.

Among the major differences due mainly to the water flow rates in the lake and river environments is the lack of snag or limb drift buildups and riffle and eddy areas.

The three small lakes in the lower chain also offer some excellent opportunities to turn that fishing outing into a trophy reality. Upper Gar, Minnewashta, and Lower Gar Lakes consist of 37, 126, and 273 surface acres respectively. Upper and Lower Gar Lakes are quite shallow with maximum depths of about five and one-half feet. Minnewashta Lake has a maximum depth of 16.5 feet with a gradually sloping topography.

Boat access to this chain of small lakes is provided by two boat ramps, one located on Upper Gar and the other on Minnewashta. Four public access points are located within the chain and two campgrounds are located on Minnewashta, the other one on Lower Gar.

Lake bottom material in East Lake and the lower outlet chain is mainly muck, with some sand content. This type of bottom material does provide good habitat for food production in the form of bottom dwelling organisms such as insect larvae utilized by the channel catfish.

For more specific locations of facilities and the lake structure, acquiring a contour map available in letter or legal size copy from one of the State Conservation Commission field offices would be advantageous. Also larger maps approximately 22 x 30 inches are available at a \$1.00 fee from: I & E Section, State Conservation Commission, 300 - 4th Street, Des Moines, Iowa 50319.

## THE FISH

The channel catfish is a very distinctive looking fish with smooth metal gray skin, pectoral and dorsal spines, deeply forked tail, and "whiskers". Some of these evolutionary characteristics enable this species to adapt fairly well to most water environments where a supportive food supply is present. The channel catfish is primarily a nocturnal creature and for this reason most of the fishing is done between the hours of dark and daylight. Because of its highly developed sensory system, catfish feed by touch, taste and sight. This versatile feeding ability contributes to their omnivorous feeding on a variety of living and dead material. Some of their natural diet includes worms, frogs, crayfish, insects and their larvae, snails, and fish both living and dead. It is usually agreed that a 15-inch plus "channel cat" becomes a fairly active predator on small forage fish species. Being

*Photo by Roger Sparks*



opportunistic in feeding behavior, the catfish is not a very selective feeder and takes advantage of the food available. This non-selectivity is demonstrated when material found abundant in the stomach is also found abundant in the environment, for example, cotton from the cottonwood trees, or perennial seeds carried by the wind into the water.

The channel catfish is considered very selective in spawning habitat and prefers some type of depression for its nest site. Spawning activity takes place when the water temperature reaches approximately 75-80° F. The male catfish guards the nest after spawning and takes care of the house cleaning chores.

## FISHING

As the night wears on a light breeze ruffles the water and a few scattered clouds block out the quarter moon's glow. The mosquitos seem to lessen their relentless attacks but all goes unnoticed temporarily because the line has been tightened and moving through the water making a tiny vee wake at the surface of the water. Suddenly the time is right, resistance from the stiff-spined rod is applied and met with brief counter resistance from the depths. Then the line goes slack and another potential trophy eludes well planned tactics and techniques becoming mere speculation in the mind and conversation of the fisherman. This fishing experience can be told in many different ways with the cast of characters and props as different as the experiences. This is especially true of a catfish experience because of the omnivorous feeding characteristics of this species which makes them susceptible to many different baits both natural and artificial.

East Okoboji fishermen use a wide variety of baits ranging from crawdads to crickets. Some of the more common natural baits are nightcrawlers, chubs and minnows, both alive and dead, crawdad meat, chicken and carp entrails, chicken and beef liver, meat scraps, smelt, shrimp, and cut baits of carp, buffalo, and freshwater drum. The commercially prepared artificial baits play on the "cat" sense of smell and/or taste and usually includes some type of fish product, cheese, blood and meal. There are also a host of home concocted secret recipes containing ingredients from vanilla extract to garlic toast again dependent on the fish's sense of smell and taste. Combination baits may be devised with a leadhead and minnow or some type of spinner combination which seems to work fairly well soon after ice out at the highway bridge overpasses on East Lake.

These various baits are fished with a variety of gear ranging from a limber fly rod to a short five foot metal rod. These rods have reels ranging from single action fly reel to bait casting and come in all sizes and varieties. These reels are equipped with line from 4 to 30 pounds plus test. The most versatile equipment to use on the lakes consists of a moderate size spin cast or spinning reel would with 10-12 pound test line and attached to a moderate to heavy spined 8 to 9 foot slow taper rod with a medium butt end for ease of operation.

The majority of fishing is done from shore at most access points around the lakes particularly the highway #9 bridge in Spirit Lake, East Okoboji Beach area, the Narrows vicinity, Twin Hills area, the highway #71 bridge and access area in Okoboji, Hinshaw bridge, Orr bridge and Lower Gar access.

Boat fishermen take advantage of their mobility to fish the east banks of East Okoboji from above the Narrows south to the Camp Foster area, the rock formation dropoffs from Stoney Point southwest onto the rock piles in the lower chain of lakes. The majority of fish and fishermen activity is from dusk till dawn peaking in the midsummer months.

## MANAGEMENT

Past management by the Iowa Conservation Commission to improve the catfish fishery has been maintenance stocking and habitat development. The habitat work was aimed primarily at the spawning habitat selectivity of the catfish. During low water years, tile structures were placed into the lake bottom at a depth of about 30 inches of water to hopefully increase spawning activity and success. In a lake environment a number of interrelated environmental limiting factors occur influencing the fishery resources. One of the main factors is the biological temperature time clock involved in triggering spawning of the channel catfish at a time when particularly young-of-the-year and also other individuals of a particular species, for example, bluegill, yellow perch, crappie, etc. are actively searching for food. This late spawn and fry become an available and very vulnerable meal for others resulting in a limited survival. For this reason, the Conservation Commission has and will continue a maintenance stocking program to improve this fishery. □

# BAYS BRANCH WILDLIFE MANAGEMENT UNIT

by George Cox,  
Wildlife Management Biologist



Conservation Commission Photo

Bays Branch Wildlife Area in Guthrie County is managed by the Iowa Conservation Commission

**P**LACING WILDLIFE MANAGEMENT in proper perspective with current economic troubles can be very difficult. Agriculturists should realize that wildlife production is but one of many uses of the land. However, not until the landowner can consider wildlife a legitimate cash crop can we expect him to stop converting his wildlife habitat into croplands. Getting the money from the sportsman who uses the natural resource to the farmer on whose land the wildlife is produced is a problem. It would be naive to believe that "wall to wall" rowcrop land was part of the plan to produce viable wildlife populations. A common ground in between all-out crop or wildlife production is where a realistic answer lies.

Another problem confronting the professional wildlifer is emotionally motivated protectionism. In forming human associations with wild creatures, false conclusions can be reached if we do not possess a knowledge of wildlife in their natural habitat. "In truth, we can love wildlife to death. Total protection for wildlife today is a

near impossibility. Man has, in one form or another, altered nature's program everywhere so that protection now must be translated into management and management has to be the godchild of scientific knowledge of wildlife biology."

The look of the land, the characteristics of the six counties that make up the Bays Branch Unit, is the product of time and the forces of a physical world. Relatively recent glaciation had the greatest affect on the land relief in west central Iowa. The last of these glaciers, the Wisconsin, with its numerous advances and disappearances reached as far south as Des Moines touching the eastern half of the Bays Branch Unit.

From Audubon County southeastward to Madison County, an upland divide follows what was the western edge of the glacier. To the north and east, the terrain is nearly level to gently rolling with few natural drainage ways and many enclosed depressions. In this area, the former bed of the glacier, permafrost stabilized the soil and the constant cold temperatures kept melting to a minimum. The

valleys of the Raccoon River and its tributaries are generally shallow and flow southeast to meet the Des Moines River and finally the Mississippi. Along the perimeter of the glacier, the upland divide, melting was continuous. The river valleys become progressively deeper and broader. The gentle rolling flatland of the northeast gives way to sharply sloping, much more rugged terrain. Level land is confined to the valleys of the larger rivers. To the south and west of the divide, the Nodaway and the Nishnabotna Rivers flow towards a convergence with the Missouri.

From our discussion of land relief in the unit, it follows that the best agricultural land is in the northeastern part. Portions of Guthrie, Adair, and Madison and nearly all of Dallas Counties are intensively row cropped. Along either side of the divide for some distance, timbered pasture, woodlands, haylands and occasional row crops are the rule. In western Guthrie County, Audubon and Cass Counties and southern Madison and Adair Counties, permanent pasture, contour row cropping,

hayfields,  
common.  
Conservation  
within the  
Counties.

In the  
glaciers, the  
vegetation  
nearly all of  
10,000 to  
occurred  
conifers to  
continued  
decline in the  
and herbac  
About 3,000  
climate chan  
climate that  
of recent tim

When the  
central low  
the major ri  
between co  
association.  
and the prot  
woods is go  
erosion is a  
still mark th  
Along the st  
where farm  
tracts of tim  
maple, can  
individual fa  
is converted  
pasture. Al  
not significa  
clearing and  
year. A few  
planting of  
protection a  
throughout  
of the wood  
is under a w

Estimates  
reservoirs ha  
over fifty ye  
is necessary  
surface and  
Unquestion  
beneficial  
However, it  
wildlife num  
wildlife habi  
production  
drained of su  
surface wate  
year. The  
approximat  
impoundme  
Meadow I  
represent th  
Cold Spring  
Nodaway re  
state, county  
lake in the u  
Panorama b  
Panora. W  
remains esse  
by the Cons  
All of the  
mentioned  
natural lake  
are, howeve  
Pond, Laki  
third of B

hayfields, terraces and farm ponds are common. Five of the seven active Soil Conservation Service watershed programs within the unit are in Audubon and Cass Counties.

In the periods directly following the glaciers, the climate was cool and the vegetation was predominately conifers over nearly all of Iowa. During the period from 10,000 to 8,000 years ago, a warming trend occurred and the vegetation changed from conifers to a mixed forest of hardwoods, continued warmer and drier periods saw a decline in the hardwoods on the upper slopes and herbaceous prairie became dominant. About 3,000 years ago the relatively dry climate changed again to a more humid, moist climate that resulted in the taller grass prairies of recent times.

When the earliest settlers came to west central Iowa, stands of hardwoods bordered the major rivers and streams with the areas in between covered with the tall grass prairie association. Today, most of the land is farmed and the protective mantle of native grasses and woods is gone. Soil loss from water and wind erosion is a major problem. Stands of timber still mark the paths of the major waterways. Along the steeper slopes of the upland divide where farming is not possible, some larger tracts of timber, mainly oak and hickory and maple, can be found. But as the size of the individual farms increase, more and more soil is converted from woodland to cropland or pasture. Although the acreage of timber has not significantly changed in recent years, some clearing and land conversion is carried on each year. A few farms have small woodlots and the planting of trees and shrubs for wind protection and aesthetic values is common throughout the unit. Only a small percentage of the woodland within the Bays Branch Unit is under a wildlife management program.

Estimates indicate that Iowa's ground water reservoirs have not declined substantially for over fifty years. Land drainage for agriculture is necessary where the water table is near the surface and interferes with plant development. Unquestionably, land drainage has been beneficial to the Iowa farming system. However, it has resulted in a great reduction in wildlife numbers because of the destruction of wildlife habitat. Once an important waterfowl production area, Iowa has been essentially drained of surface water. The demands on our surface water that remains are increasing each year. The Bays Branch Unit contains approximately 2,000 acres of surface water in impoundments. Bays Branch, Lake Anita, Meadow Lake and Springbrook Lake represent the efforts of the State of Iowa. Cold Springs, Lake Orient, Morman Trail and Nodaway represent the combined efforts of state, county and local institutions. The largest lake in the unit is a private development. Lake Panorama backs up the Middle Raccoon near Panora. While accessible to the public, it remains essentially private and is not managed by the Conservation Commission.

All of the water impoundments previously mentioned are man-made. There are no large natural lakes in the Bays Branch Unit. There are, however, some natural marshes. McCord Pond, Lakin Slough and the northern one third of Bays Branch are natural marshes

under management by the Conservation Commission. Long Pond, just north and east of Lakin Slough, is a private natural marsh that receives heavy waterfowl use at various times of the year.

The six counties of the Bays Branch Wildlife Unit provide some of the best pheasant, deer, rabbit, squirrel, raccoon, fox and coyote hunting in the state. Pheasant and rabbit hunting opportunities are fairly equal throughout the unit while deer, squirrel, coon, fox and coyote hunting are best along the timber lined rivers and streams. Western Guthrie and southern Madison Counties contain larger, more continuous stands of timber and provide the best deer and squirrel hunting away from the river valleys. Northern Guthrie County with its natural marshes provides the best opportunities for waterfowl hunting within the unit. The numerous rivers and streams can also produce excellent wood duck hunting early in the season. Quail hunting is best along the brushy draws of southern Cass, Adair and Madison Counties. Coyote and raccoon hunting have become a tradition in most of the unit counties. The popular sport of coyote hunting occurs mostly in the winter months since the animals are much easier to sight or track with snow cover. The numerous rivers and streams and the private ponds within the unit provide some excellent opportunities for trapping a variety of furbearers.

To quote the well known wildlife artist, Larry Toschik, "to the rancher and farmer, to outdoorsman, and to all those whose paths in life merge at some point with nature and who know the sight and sound of wildlife, the

preservation of this priceless gift is an absolute must." Sound wildlife management guided by scientific knowledge is the key to continued wildlife presence and utilization. This then is the mandate of all professional wildlife managers. Charged with the promotion, development and maintenance of sound management principals on both public and private lands, the administrative boundaries of the Bays Branch Management unit include Dallas, Madison, Guthrie, Adair, Audubon and Cass Counties. The unit personnel includes a wildlife biologist with an office in the ASCS building in Guthrie Center, a conservation technician and a conservation worker assigned to the unit headquarters at the Bays Branch Wildlife area. From these centralized locations, unit personnel travel nearly 50,000 miles a year pursuant to their management goals and responsibilities.

The Commission personnel assist the private landowners with such things as farm pond stocking, suggestions for food and cover plantings, for land use practices beneficial to wildlife and present programs to interested groups on a variety of wildlife related topics. Just as important, is the expression of opposition to programs not in the best interest of wildlife. Perhaps our most elusive goal is that of developing a public trust. One improperly timed management proposal and the professional wildlifer is immediately branded as the enemy of all wildlife. Our management recommendations are made to protect, preserve and utilize the natural resource. If not, we will soon be out of business. For like wildlife, wildlife managers are also subject to the possibility of extinction. □

Photo by Roger Sparks Bays Branch Wildlife Unit provides some of the best pheasant hunting in the state.



# BRONZEBACKS in Northeast Iowa Streams

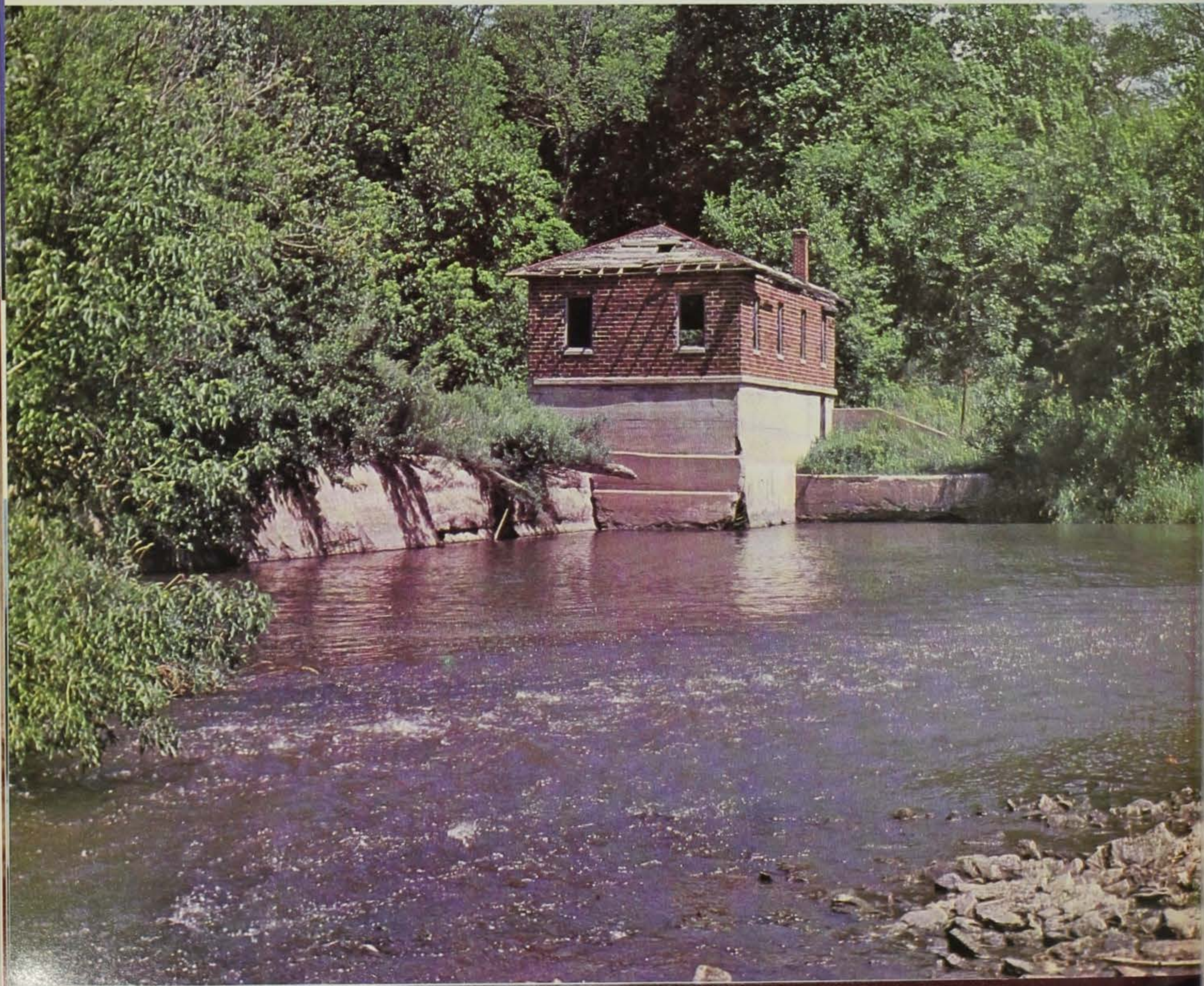
by Don Degan,  
Fisheries Management Biologist



Photo by Ken Formanek

Photo by Roger Sparks

Rocky riffles followed by deep pools make the Cedar one of Iowa's top smallmouth streams.



ONE OF  
yet overlooked  
Iowa smallmouth  
glacier by-pass  
streams to  
through the  
and rocky riffles  
Upper Iowa  
Cedar, and  
for Iowa's  
bass.

Smallmouth  
bass, crappie  
of the sunfish  
largemouth  
distinguished  
mouth. The  
does not extend  
jaw of the large  
eye.

Smallmouth  
short section  
feeder stream  
usually mature  
about 9 inches  
summer as the  
60°F. The male  
out a saucer-  
diameter. He  
her to the nest  
eggs are deposited  
smallmouth  
respawn, instead  
young smallmouth  
eggs are deposited  
assumes the

Tall bluffs shade



ONE OF IOWA'S MOST PRECIOUS, yet overlooked assets is its beautiful Northeast Iowa smallmouth bass streams. The last glacier by-passed this area, allowing "old" streams to form deep valleys by cutting through the limestone bedrock. Deep holes and rocky riffles in the cool clear waters of the Upper Iowa, Yellow, Turkey, Maquoketa, Cedar, and Shellrock Rivers provide homes for Iowa's "sportiest" fish, the smallmouth bass.

Smallmouth bass, along with largemouth bass, crappies, and the bluegill, are members of the sunfish family. The smallmouth and largemouth bass are similar but can be distinguished by careful observation of the mouth. The lower jawbone of the smallmouth does not extend beyond the eye, whereas the jaw of the largemouth extends well beyond the eye.

Smallmouths spend most of their life in a short section of stream, but may move up feeder streams to spawn. Male and female bass usually mature at three years and at a length of about 9 inches. Housekeeping begins in early summer as the water temperatures approach 60°F. The male constructs a nest by fanning out a saucer-shaped depression 15-30 inches in diameter. He then selects a female and lures her to the nest. Approximately 2,000 to 10,000 eggs are deposited in each nest, and smallmouth bass frequently reneest and respawn, insuring an adequate population of young smallmouths in most streams. After the eggs are deposited and fertilized, the male assumes the duty of protecting the nest and

eggs from predators and fans the eggs to prevent their suffocation from silt. The eggs hatch in three to five days and the male accompanies the fry as they search for plankton and other small food organisms. Bass grow three to four inches during their first year of life by feeding on plankton and then small aquatic insects. The second and third year of life they average seven inches, and ten inches, respectively.

Smallmouth bass grow to 12 pounds in some southern states, but the record Iowa bronzeback is six pounds, four ounces. Adult smallmouth bass feed on small fish, crayfish, and aquatic insects. Bass are dependent on sight to find food, therefore turbid or dirty water directly affects their growth. Smallmouth bass go into a period of decreased activity when water temperatures fall below 50°F. and growth ceases until spring.

Smallmouth bass prefer cool, moderately swift-flowing streams with gravel or rocky bottoms and deep pools. A stream must provide spawning habitat, food, protective cover, and cool, clear water for smallmouth bass to thrive. Unfortunately, most of Iowa's streams are lacking in one or more of these life requirements for the smallmouth, and this results in poor populations of bass in these streams. Streams in northeast Iowa still support good populations of smallmouth bass, but the single-most limiting factor for smallmouth bass in these streams is cover, or in-stream protective habitat for adult fish. Large smallmouth are solitary fish, their abundance limited by the protective habitat (deep holes, overhanging trees, undercut banks, and midstream boulders).

Poor soil conservation has resulted in loss of much of Iowa's good smallmouth bass habitat. Silt and sand washed into a stream covers spawning beds, prevents smallmouths from feeding, and fills the once numerous deep holes. Better land use practices including terracing, contour planting, grass waterways, reforestation, and stabilization of stream banks is essential to smallmouth bass and all of Iowa's other stream fisheries.

Fishing for stream bronzebacks in Iowa is dependent on stream conditions because smallmouths are sight feeders. Best fishing is usually from July through October, although fishing can be very fast in May and June if the streams are clear. Live bait including worms, soft-shelled crayfish, and small minnows are good bait throughout the summer. Spinners, bulsa wood minnows, and poppers generally work best in the fall. In May and June the bass will be in shallow tributary streams spawning and guarding their nests. Once the males move off their nests into deeper holes they will hit almost anything. After the water warms above 75°F. in July and August, soft-shelled crayfish worked slowly in mornings and evenings generally work best, although spinners also work well. The larger smallmouths congregate in deep holes in late fall and for this reason fishing can be very productive.

Wading is a very productive method of pursuing smallmouth bass and adds another dimension to smallmouth bass angling. Canoeing the Cedar, Upper Iowa, Turkey, and Maquoketa Rivers is a very peaceful, relaxing experience and a great method of getting back into that seldom fished hole containing that trophy smallmouth bass. □

Tall bluffs shade a good stretch of the Upper Iowa.

Photo by Jim Ripple



# 'Experienced' Boaters Still Cause Accidents

by **JAMES E. HORAN**, Boating Safety Coordinator  
and **NANCY EXLINE**, Secretary, Waters Section

**C**ONTRARY TO POPULAR NOTIONS the inexperienced boater is not necessarily the cause of or involved in any more than his share of boating accidents.

According to a nationwide survey conducted recently by the U.S. Coast Guard, slightly more than one-third of all boaters have less than 100 hours boating experience. And a review of Iowa's boating accident reports indicates that this inexperienced group is involved in no more than one-third of the accidents—just about their share! What this means to you as a boater is that any person can cause or be involved in a boating accident regardless of how much experience they have in boat operation.

Last year in Iowa we had 68 accidents involving 83 boats. Most of these occurred during the hours of 12 noon to 9 p.m. (75%). Operator age ranged from 12 years to more than 50 years of age with the 21-30 year olds having the most accidents (30%). All other age groups, however, had their share of accidents, too. The boating accident reports also show that 80% were open motorboats (fishing boats, duck

boats, runabouts) and 50% were powered by outboard motors.

Interpreting the data is difficult because the accident report does not always show the extent to which human error was a factor. *A few people are still unaware that accident reports are for the confidential use of the Conservation Commission and can in no way affect insurance or any civil suit. (See Iowa Boating Regulations Pamphlet)* Because a few people did not file accident reports within the required time period following the accident the details were not clear. The information gained from accident reports therefore, is supplemented with personal observation by the Waters Officers. Iowa's 14 Waters Officers and their summer employees collectively comprise many years of experience and help to provide a balance to the boating accident reports.

Accordingly we feel that boating accidents are not exclusive to any particular group and are everybody's responsibility. Standing near a boat ramp watching a novice boater take 20 minutes to launch his boat can give you the impression that he is quite inexperienced and may be a hazard on the water. But how about the guy pulling a skier right next to those people fishing near shore. He may have plenty of experience but his irresponsibility could cause tragedy.

The new boater, though usually less knowledgeable about safety regulations, is often more cautious when confronted with a situation

Photo courtesy of The Dubuque Telegraph-Herald.



he's not sure of  
no agreement  
that has spe  
guy who boug  
boater. And the  
who've taken a  
probably feel th  
a novice and o

On the other  
course from the  
Iowa Conservat  
years may feel c  
man who has b  
accidents as the

Experience, th  
knowledge gain  
your own prepar  
After a time so  
their safety. The  
court for violat  
little or no cons  
and possible inj

Photo courtesy of

# Accidents!

he's not sure of. As for the experienced boater—well, there's probably no agreement on what constitutes "experience". Certainly the family that has spent the last 30 summers boating at Lake Okoboji regards the guy who bought his boat just last year or maybe two years ago as a new boater. And the commercial fisherman on the Mississippi or the folks who've taken a boat trip to Minnesota every year for the last 30 years probably feel that everybody with less than 10 or 20 years experience is a novice and ought to have a license.

On the other hand, those of you who have taken a boating safety course from the U. S. Power Squadron, Coast Guard Auxiliary, or Iowa Conservation Commission and have been boating for a couple years may feel comfortable in most situations. Reports show that the man who has boated for 30 years may be just as prone to boating accidents as the "novice".

Experience, then is really more than just time on the water. Its the knowledge gained that environmental conditions, other boaters, and your own preparation will influence the outcome of each boating trip. After a time some boaters become less cautious, less concerned with their safety. The consequence of course, can be a summons to appear in court for violation of navigation safety regulations. Or even worse, little or no consideration for boating safety can result in an accident and possible injury or death.

Not all accidents are a result of violations of navigation rules. Environmental conditions can change rapidly producing 3-4 foot waves where two hours ago there were none. Water levels may fluctuate enough to completely cover wing dams making an extra hazard to the unwary boater. Muddy river waters can easily hide submerged debris floating down from an overnight storm many miles away.

The victim of an accident or the family of a boater who drowned could surely remind us all that preparation before you go boating is half of boating safety and helps to ensure the fun of boating. Knowledge of the required equipment is a must. Personal flotation devices and fire extinguishers are not part of the boat and must be purchased separately. Furthermore, these items must be Coast Guard approved and kept in a serviceable condition. Registration, buoys, lighting, right-of-way and speed and distance rules should be understood and followed closely. A safety course in boating offered by the Coast Guard Auxiliary or U. S. Power Squadron is very interesting and helpful in preparing yourself for the boating season. Even for the experienced boater taking one of these courses, there's a lot to learn.

After preparation comes practice and the fun of boating. But remember, whether river or lake, reservoir or stream, boaters are only as safe as the one who cares least about safety.

Boating is recreation. It's fun relaxing—a way for the farmer to get away from his work or the city dweller to get out in the open. More people are boating today than in past years. Fishing boats, sailboats, canoes, power boats—they all use the water. It means we have to be more courteous and concerned. Regardless of age or experience we must all be aware of the responsibilities of safe boating. □

*Photo courtesy of The Spirit Lake Beacon.*





Photos by Jerry Leonard

Fry ready for stocking in Iowa lakes and ponds.

# Largemouth Bass Culture in Iowa

by Vernon Spykerman

**T**HE LARGEMOUTH BASS, *Micropeterus salmoides*, is a popular game fish in Iowa. Its voracious feeding habits and acrobatic fighting abilities are well known by many Iowa anglers. The importance of the largemouth bass as a sport fish is especially noticeable in the southern regions of the state where many farm ponds and small impoundments are located. When construction of farm ponds became popular, much research was directed toward determining what species of fish were best suited for these bodies of water. As it turned out, the largemouth bass was found to be the most suitable predatory fish for stocking in ponds. This trend has continued up to the present time and each spring many largemouth bass fingerlings are produced by the Iowa Conservation Commission for stocking in farm ponds.

The largemouth bass has been propagated artificially for many years and most of the cultural techniques now in use were developed over thirty years ago. Probably one of the main reasons for its long history as a hatchery fish is the fact that the largemouth bass is very adaptable to environmental conditions. These fish may be found in environments quite different from those they are usually associated with and for this reason they are very satisfactory fish for raising in hatcheries. Basically there are four areas to consider in the artificial propagation of largemouth bass; brood stock, fry production, fingerling production, and artificial feeding.

As with any li  
stock is critical.  
from the wild b  
year a number  
adults. In Iowa  
dependable egg  
satisfactorily fo  
they are replac  
continually bein  
each year with

After the es  
becomes most i  
brood fish have  
Largemouth bas  
year preceding  
have plenty of f  
for the brood st  
commonly used  
and golden shir  
culturists and i  
stocked in the h  
Because goldfis  
continuous sup  
addition, goldfis  
to the bass as n

In April, wh  
sudden drops in  
from the holdin  
are stocked per  
males and fema  
stocked for ever  
spawn, are stock  
can be expected

The male bas  
first cleans an a  
with his fins an  
female to depos  
her eggs, the m  
eggs are depos  
complete respor  
the nest. Usual  
nest and later d

Bass eggs are  
when deposited  
depending upon  
temperature the  
about 1/4 inch lo  
days after hatch  
about the nest. A  
nest and away.  
schools, and swi  
pond water. At t  
length.

As the schools  
they are capture  
either transport  
larger bass, they

Before the fry  
be taken to insu  
pond. Preparati  
brood bass are fi  
are filled with cle  
and superphosph  
food chain in  
organisms to gro  
zooplankton. Th  
bass.

At the time the  
and graded for  
stocked together.  
if large fry are s  
reduce this pro

## BROOD STOCK

As with any livestock production, selection and care of the breeding stock is critical. In the past, breeding stock was commonly obtained from the wild but now all brood stock is raised in the hatchery. Each year a number of young bass are kept at the hatchery for rearing to adults. In Iowa, it generally takes two years for the bass to become dependable egg producers and they then can be expected to spawn satisfactorily for three or four seasons. After about four spawnings they are replaced by two-year-old fish. Thus, the brood stock is continually being rotated, with a portion of the stock being replaced each year with younger fish.

After the establishment of good breeding stock, care of these fish becomes most important. Of primary concern here is insuring that the brood fish have an ample supply of food at particular times of the year. Largemouth bass start forming eggs in the late summer and fall of the year preceding spawning so throughout the summer the bass should have plenty of food available to them. The most suitable type of food for the brood stock is some type of forage fish. Species of forage fish commonly used for bass food include goldfish, carp, fathead minnows, and golden shiners. The goldfish seems to be preferred by many fish culturists and is used by our hatcheries. These goldfish are merely stocked in the holding ponds with the adult bass and left to reproduce. Because goldfish are so prolific and fast growing, there is usually a continuous supply of young goldfish for the bass to feed on. In addition, goldfish may be raised in a separate pond, harvested and fed to the bass as needed.

## FRY PRODUCTION

In April, when the weather warms and there is little danger of sudden drops in water temperature, the brood bass are transferred from the holding ponds to spawning ponds. From 30 to 50 adult bass are stocked per acre of water in the spawning ponds. Of this number, males and females are equally represented or three males may be stocked for every two females. If ripe fish, or fish that are ready to spawn, are stocked in water of 65° F temperature or higher, spawning can be expected to take place within 72 hours.

The male bass assumes the major role in the spawning activity. He first cleans an area, or nest, on the pond bottom by a fanning action with his fins and tail. After completing the nest, the male coaxes a female to deposit her eggs in the nest. While the female is depositing her eggs, the male lies beside her and fertilizes them. As soon as the eggs are deposited, the female leaves the nest and the male takes complete responsibility for caring for the eggs and fry until they leave the nest. Usually the female spawns only a portion of her eggs in one nest and later deposits the remainder in another male's nest.

Bass eggs are relatively small, averaging about 1/10 inch in diameter when deposited. The eggs will hatch 48 to 96 hours after spawning, depending upon the water temperature. The warmer the water temperature the sooner the eggs will hatch. Newly hatched fry are about 1/4 inch long, nearly colorless, and quite inactive. Five to seven days after hatching the fry acquire pigmentation and begin swimming about the nest. About ten days after hatching the fry swim up from the nest and away. After leaving the nest the fry congregate in groups, or schools, and swim along the shoreline feeding on tiny organisms in the pond water. At this time the young bass are approximately 1/2 inch in length.

As the schools of bass fry move along the edge of the spawning pond they are captured quite easily with a small net. At this time the fry are either transported to lakes for stocking, or if stocking requests call for larger bass, they are transferred to rearing ponds.

Before the fry are transferred to the rearing ponds, special care must be taken to insure that an adequate food supply is available in the pond. Preparation of the rearing ponds begins at about the time the brood bass are first stocked in the spawning ponds. The rearing ponds are filled with clean, fish-free water and heavily fertilized with nitrogen and superphosphate. This fertilization is the first step in developing a food chain in the pond. The fertilizer induces minute aquatic organisms to grow which in turn are fed on by larger organisms called zooplankton. The zooplankton are then the main food of the young bass.

At the time the rearing ponds are stocked, the bass fry are counted and graded for size uniformity. Only bass of comparable size are stocked together. Young bass can become very cannibalistic, especially if large fry are stocked with much smaller ones, and grading helps reduce this problem. Fry are stocked in the rearing ponds at

approximately 100,000 per acre for growth to a size of two inches. A period of about three weeks is required for the fry to grow to this size. After the fry have reached two inches in length, they are harvested and the majority are stocked in small impoundments and farm ponds. However, some may be held back for growth to a larger size of four to six inches.

## ARTIFICIAL FEEDING

In recent years, more requests have been made for large fingerling bass in the size range of four to six inches. This increase in demand for large fingerlings is due for the most part to fisheries management programs of corrective restocking in ponds and lakes with overpopulated stunted forage species. Stocking two inch bass fingerlings is adequate for ponds void of fish but a larger fingerling is needed if it is expected to compete with fish already established in the pond.

In the past, growth of four to six inch fingerlings depended entirely on forage fish and large insects for food as fish this large can no longer subsist on zooplankton alone. This process often led to unpredictable results because of unstable food supplies and cannibalism. The problem of cannibalism becomes especially acute when rearing large bass. Recently however, new innovations have led to the practice of training largemouth bass fingerlings to accept artificial feed. The artificial feed is a commercially manufactured feed ration much like that fed to trout and catfish.

The initial step in training bass to accept artificial food is moving the small fingerlings from the rearing pond to a more confined space such as a small concrete tank. Here the fish are again graded for size uniformity, treated for any disease, and allowed to rest for a day or more. Artificial feed is offered to the fish after the rest period, every one to two hours five or more times a day. Gradually the bass become trained to accept the food and after approximately two weeks the majority of the fish in the tank will take the offered food.

From the tank, the bass are moved back to a rearing pond. At first the bass are confined to only part of the pond and continually fed the artificial feed. In about two days the bass will become familiar with the pond environment and learn that artificial feed will be supplied to them in the pond. They are then released to the entire pond and fed throughout the remainder of the growing season, which usually ends in September.

The practice of training largemouth bass to accept artificial feed requires much patience and long working hours of the hatchery personnel. However, the end result is a predictable production of uniform sized bass at a comparable cost to old methods. Also, the threat of cannibalism is reduced because the fish always have plenty of food available to them.

At the present time, all of the largemouth bass for Iowa's stocking programs are raised at Fairport State Fish Hatchery near Muscatine. Spawning of the bass and fry production usually occurs in April. Fingerling rearing and harvest takes place during the month of June. If you would like to see where and how many of those lunker farm pond bass got their start in life, stop and visit the Fairport Hatchery. Hatchery personnel are on duty from 7:30 A.M. to 4:00 P.M. each day and would be happy to answer any questions you may have. □

*Capturing small bass from rearing ponds.*





Photo by Rod Parker

## CUT-AWAY BOAT NOW ON DISPLAY

No, this is not the result of another great white shark attack. The boat pictured above was never meant to be launched, at least in the water. It is, however, "sailing" around Iowa, exhibiting safety equipment at boat shows and display areas near major boat ramps.

The cut-away boat is an actual half-hull, contributed to the Iowa Conservation

Commission Water Section by the makers of Larson Boats for promoting boating safety. The boat not only displays the required safety equipment such as personal flotation devices, fire extinguishers and lights, but also includes proper placement of these items and suggests other safety features.

When the cut-away boat is on display, U.S.

Coast Guard Auxiliary personnel or a state waters officer will usually be there to answer boating safety questions. The boat will also be used, on request, as a life-size visual aid at schools teaching the state's boating safety education course.

Watch for the cut-away boat near your favorite boating area.

# CLASSROOM CORNER

by Robert Rye

How do birds soar? Airplanes fly? Clouds move? Did you ever stop to think about why an air balloon rises?

Air makes up the atmosphere and this is only one aspect of conservation studied at the Conservation Education Center.

The National Hot Air Balloon Races are in August. The attention given this event causes many Iowans to wonder why the balloons rise. Balloons rise because of a certain property of air. The property we are concerned with here is common to most materials. Air expands when heated.

To set up and attempt a simple demonstration, you will need the following:

A bottle or can - any size which has a small mouth or neck (a vinegar or pop bottle will do fine).

A balloon - one that will fit over the mouth of the bottle.

A source of heat - the sun is an excellent choice in view of the energy shortage.

Place the balloon over the mouth of the container. Observe its shape and size. It should be hanging limp, having very little air in it.

Set your container in the sun (about 15 minutes in a hot sun should be enough time to get some results). Heat causes the air to expand. Some of the air will move from your container into the balloon which will then cause the balloon to expand slightly. Your container will now weigh less than it did before because it has less air—some of the air is now in the balloon.

What does this have to do with the balloon races? The same law works for the balloons used in the races. They are like the container in your experiment—they weigh less. This is because they hold hot expanded air. (The air around them is cooler and heavier.) The lighter material (hot air inside the balloon) rises and causes the balloon to rise. This is the same reason a blimp filled with helium rises. Helium is lighter than air.

If it is hard to observe your results, try placing your container and balloon in a freezer. This should cause the balloon to collapse. If you then apply heat again the difference in balloon size will be easier to observe.

Conservation is the study of many elements of nature. It is the wise use of what we have. School will be starting again in a very short time. Many groups will be wanting to use the Conservation Education Center again this fall. If you are planning to use the facilities, now is the time to get your reservations to us.

TWO shock  
We had rec  
an electric s  
morning at 5:3  
off on a tree c  
He took the b  
mie and pul  
About this tim  
the healthiest c  
had a bag w  
binoculars, ca  
and of course  
The river  
sounds of na  
peewee starte  
many other bir  
a woodpecker

FROM THE

# Warden's diary

By Rex Emerson,  
*Law Enforcement Supervisor*



## TWO shocking cases!

We had received a tip about two men using an electric shocker to take fish. So this morning at 5:30 one of the officers dropped me off on a tree covered island in the Cedar River. He took the boat on down the river about a mile and pulled it in behind a fallen tree. About this time I discovered I was located in the healthiest crop of poison ivy I'd ever seen. I had a bag with me containing a raincoat, binoculars, camera, notebook, portable radio, and of course a thermos of black coffee.

The river was quietly flowing by. The sounds of nature were all around me. A peewee started singing his song, as well as many other birds that I couldn't identify, while a woodpecker kept time to their music by

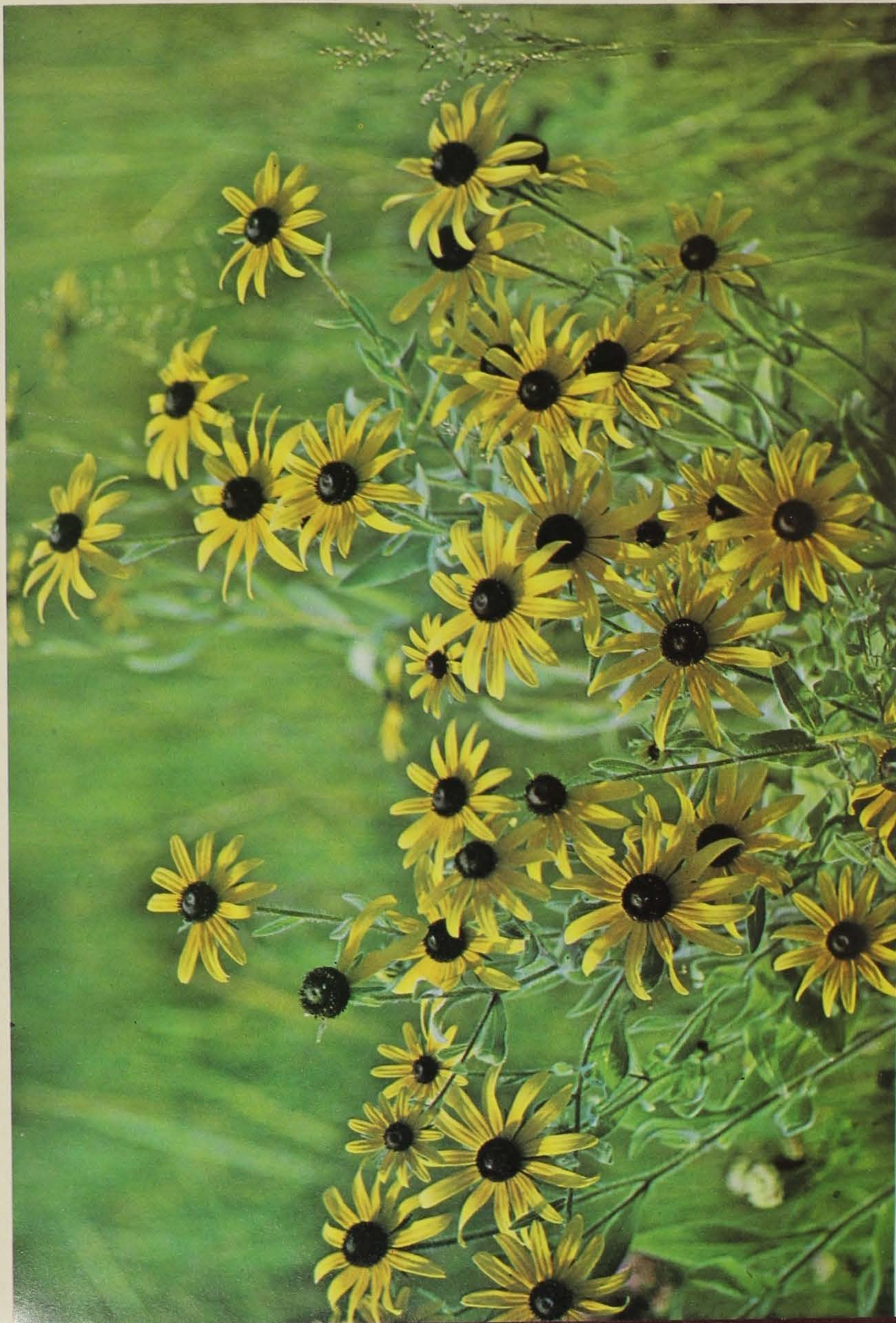
pecking on a dead tree trunk. Crows called to each other from both sides of the river. Occasionally a carp would flop on the surface of the water. Nature's inhabitants were waking up. Surely these were better sounds on this Fourth of July than hearing firecrackers. A few drops of rain started to fall, but the leafy umbrella of the maple trees kept me dry, at least for a while. Then the umbrella started to leak and it was time to get the raincoat out and have another cup of coffee. A muskrat left the main bank and swam over to the island. He had to fight the current all the way but he made it. I believe the mosquitoes on the Skunk River are bigger, but the ones here on the Cedar River evidently haven't been fed for some time!

At 6:15 the sound of an outboard motor made me forget all other sounds around me. The rain had stopped. I could see a boat coming up the river rounding a bend about a quarter mile from me. This was a lonely stretch of river with no cabins or public access. Watching through the binoculars I got out my notebook. It was noted at 6:19 there were two men in the boat, one with a green cap and tan shirt running the motor and the other, without any hat, wearing a white tee shirt, the latter was on his knees in the bottom of the boat. At 6:34 I jotted down the boat number. At 6:36 the man with the white tee shirt stopped whatever he was doing, grabbed a long handled dip net and quickly dipped it into the water, but didn't get anything. At 6:37, he blew his nose and got back on his knees. They headed right toward my island and soon I could now see right down into their boat. The man on his knees was turning the crank on a shocker made from an old telephone. He acted like he was trying to call long distance. Two wires ran from it into the water. Just as they passed I snapped a picture.

Over the portable two-way radio I informed the officer in the boat what we had, including a description of the men and the boat number. At 6:59 I heard them open up the throttle on the motor and head back down the river. As soon as they saw the other officer coming toward them, they pitched the shocker into the river. There was no way they could outrun him so they stopped. Of course they denied everything until they were brought back up the river to the island. When I stepped out of the poison ivy with my camera around my neck and told them to smile the next time they were on candid camera, they didn't have much to say. After I took a quick glance at the notebook and told the man in the white tee shirt exactly what time he blew his nose, they were really quiet while the summons were made out.

We got rid of one shocker and when the judge looks at them over the top of his glasses and says, "That will be \$100 each for attempting to take fish with an illegal device", I doubt very much if they will be interested in trying to get another one.

We took our boat out of the river and spent the rest of the day checking fishermen on Lake Macbride. That is where I ran into the second "shocking" case of the day. Only this one was a little different. Two young ladies dressed only in bikinis, were fishing from a bridge. When asked for fishing licenses they smiled and said they didn't have them. Then I asked if they had identification with them. Now that was probably the dumbest question of the year. Neither one of them had on enough clothes to flag a handcar; if they had any identification it would have to have been tattooed on them some place. Back at their car they each had a driver's license for identification, and a court citation was made out. I'm sure I was more embarrassed than they were.



The Black-eyed Susan, or Woodland Sunflower, is commonly seen throughout Iowa in July. Iowa Conservation Commission photo.