



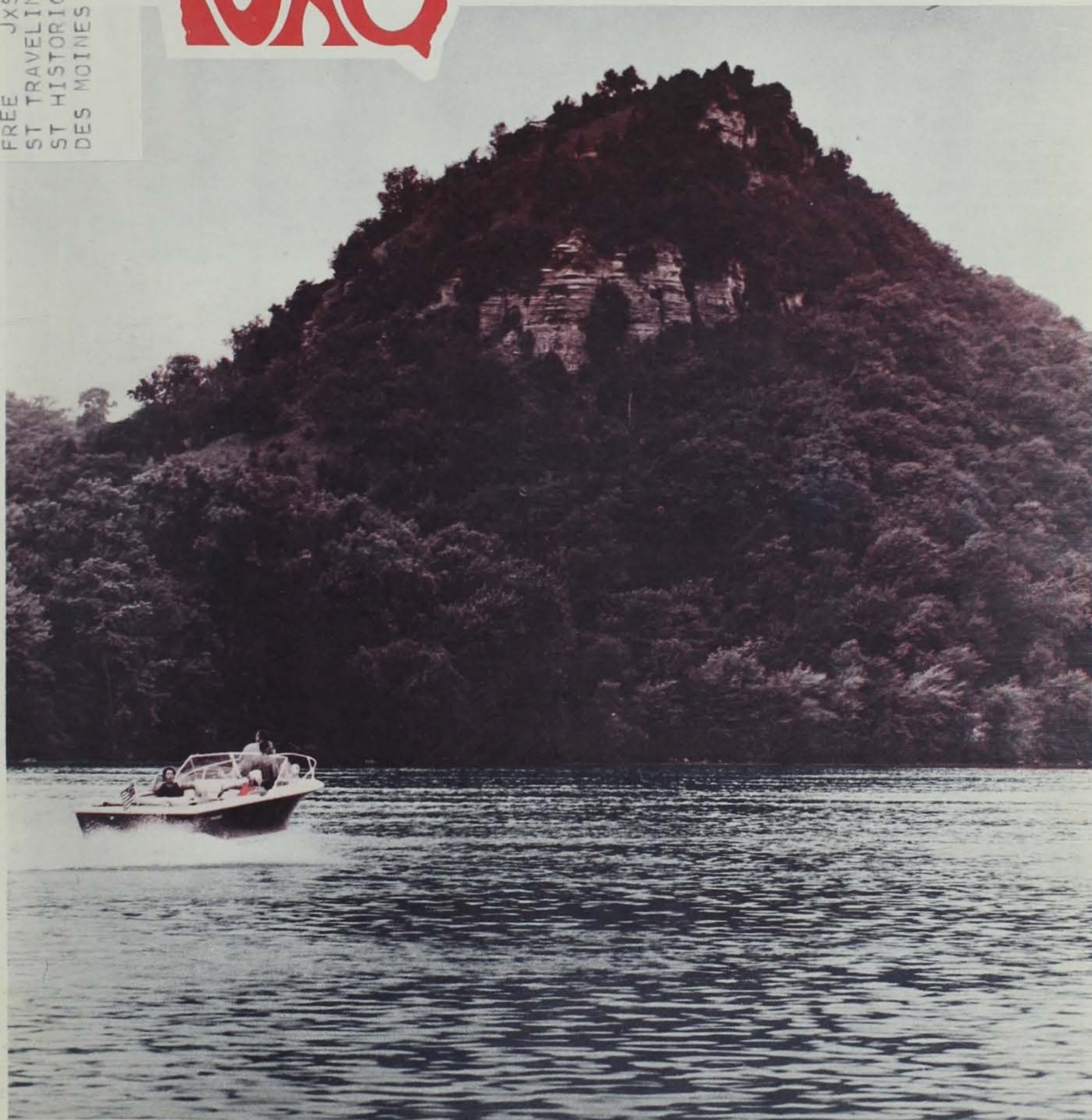
AUGUST, 1972



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# conservationist



AUGUST, 1972



# conservationist

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## Iowa Conservationist

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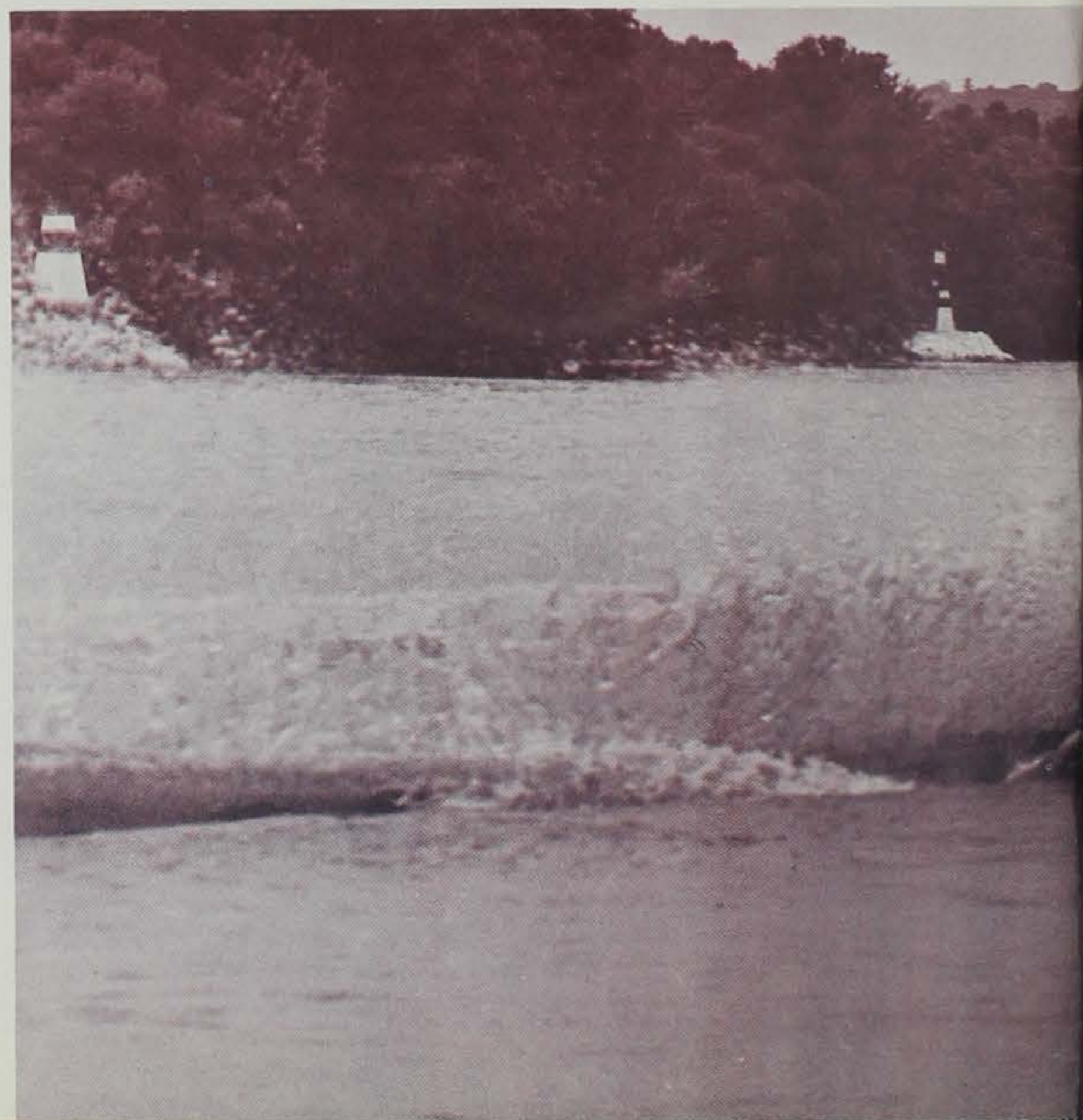
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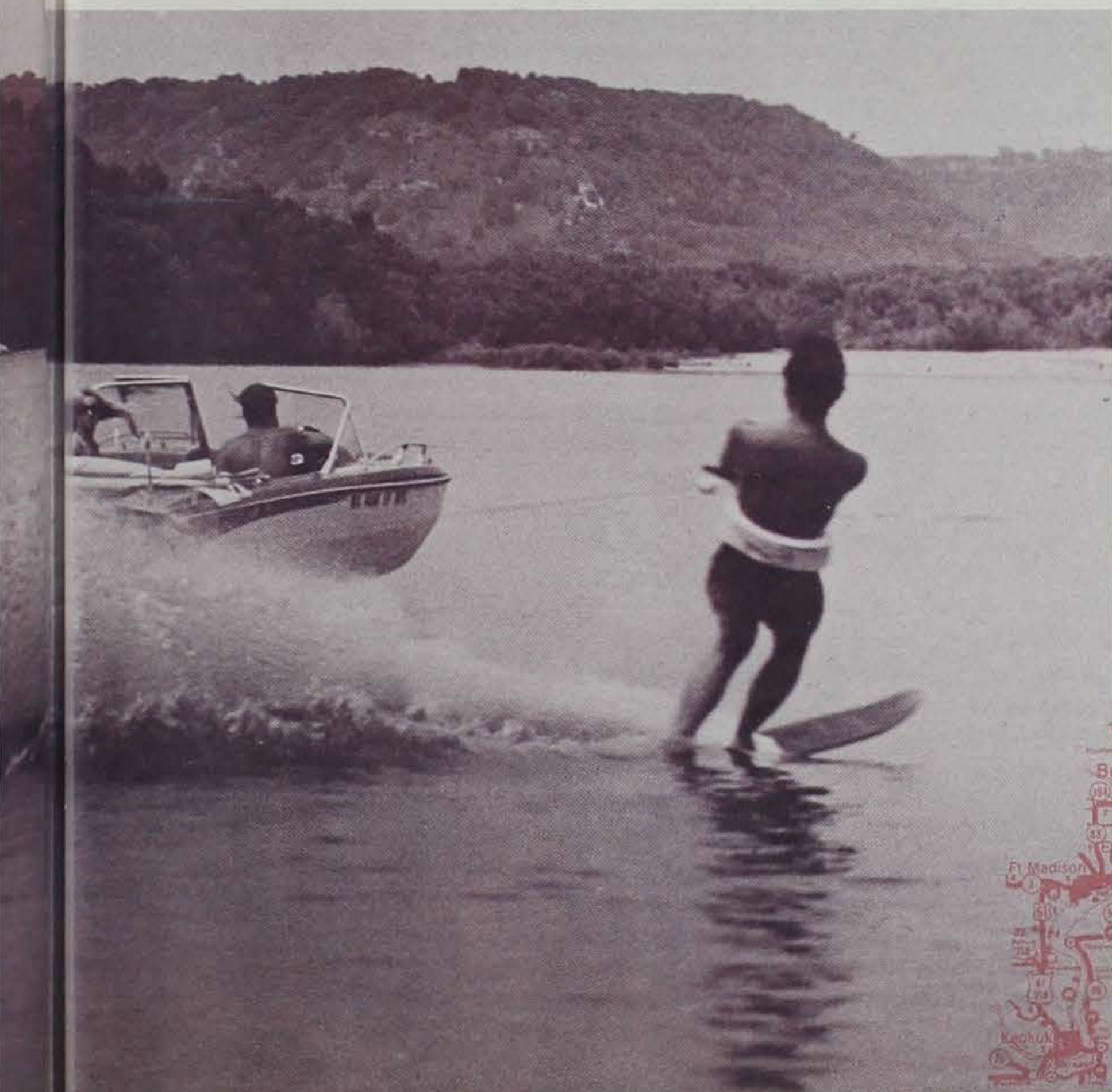
# Mississippi





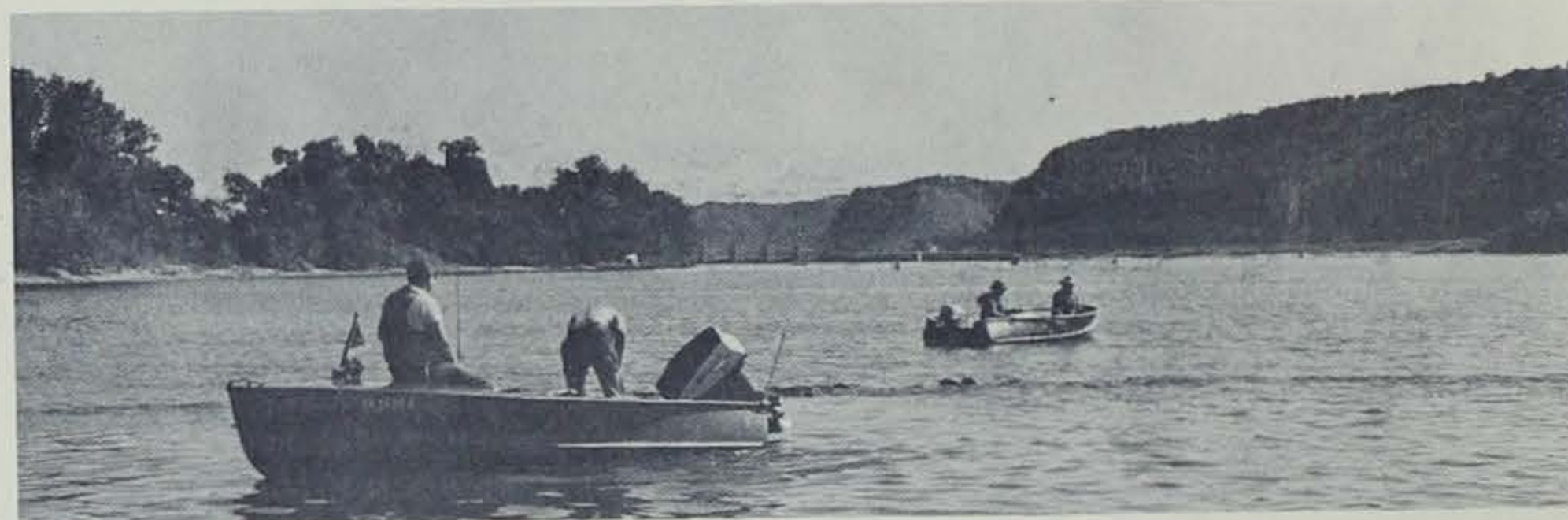
Sand bars make great natural playgrounds.

# Mississippi River Boating





Left: High overhead a bald eagle finds sanctuary in the densely timbered bluffs.  
Below: Boaters have no trouble "locking through".



Above: Wing dams hold walleyes, white bass (note wing dam between boats).  
Below: Houseboaters find the big river relaxing. Houseboats may be rented.



# NORTHERN PIKE in iowa

Gary L. Ackerman  
District Fisheries Manager  
&

John P. Spinner  
Fisheries Manager

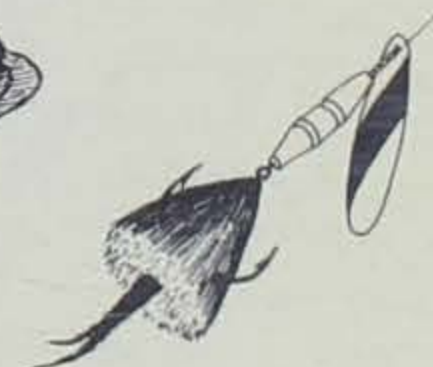
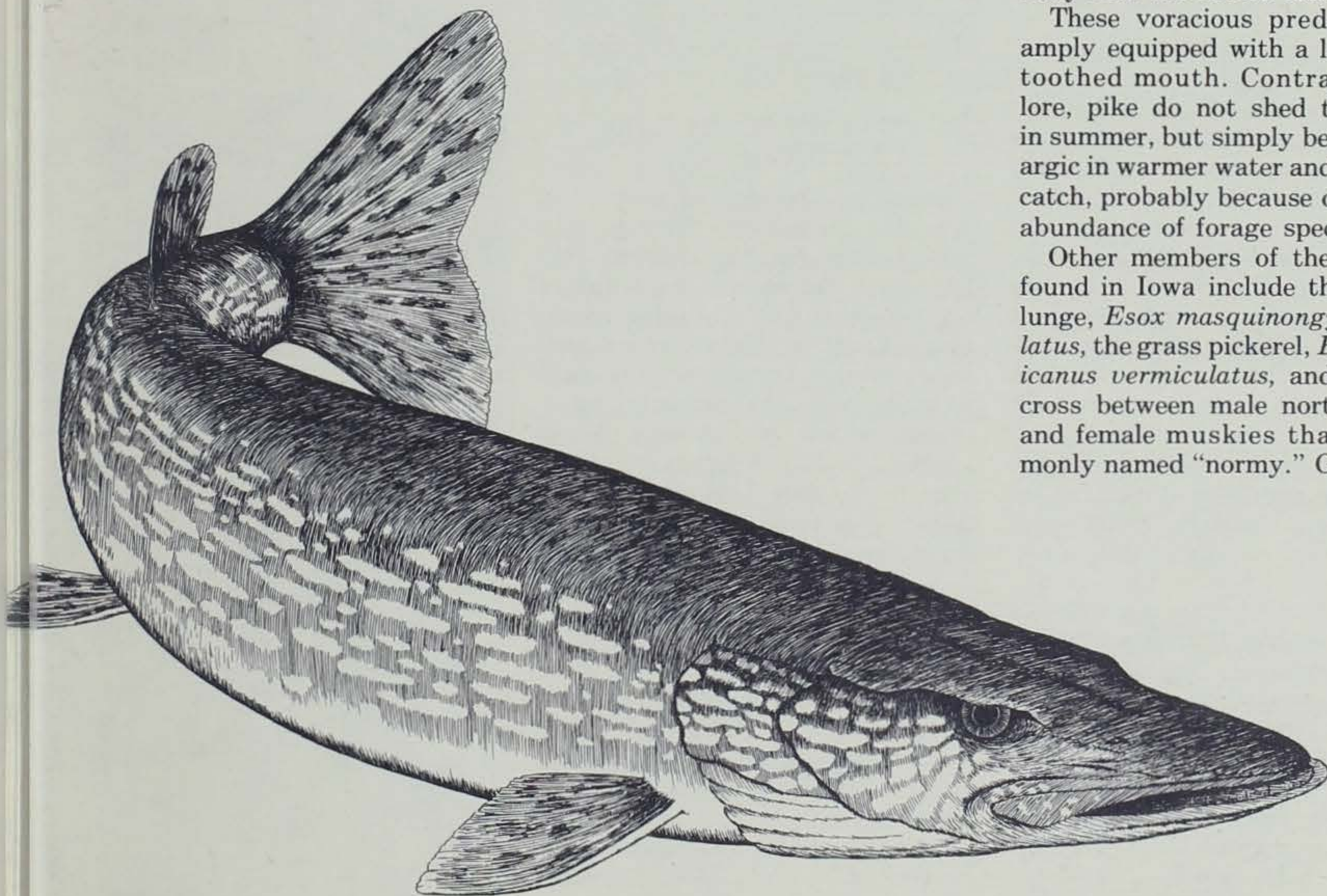
A sudden dash from a weed bed, a vicious strike at the bucktail spinner, a powerful lunge into deeper water, and then . . . snap! Oh well, there went another northern and a buck-fifty lure. This is an all too typical experience of unsuspecting Iowa anglers ill prepared for the savage predator — the northern pike.

Northern pike fishing to many means a trip to a secluded lake nestled deep in the Canadian wilderness. Although the setting differs, Iowa has a bountiful supply of these voracious critters where suitable habitat exists and often where no one would expect them.

Northern pike, *Esox lucius*, are members of the Esocidae family. Some of the common names are great northern pike, pickerel, snake, and jackfish. Whatever they are called, they are one of Iowa's most aggressive fish and they rate high among anglers. This family of fishes are characterized by a torpedo-like appearance, with soft rayed dorsal and anal fins set well back on the body near the forked tail.

These voracious predators are amply equipped with a large, well-toothed mouth. Contrary to folk lore, pike do not shed their teeth in summer, but simply become lethargic in warmer water and harder to catch, probably because of an overabundance of forage species.

Other members of the Esocidae found in Iowa include the muskellunge, *Esox masquinongy immaculatus*, the grass pickerel, *Esox americanus vermiculatus*, and a hybrid cross between male northern pike and female muskies that is commonly named "normy." Grass pick-



LARRY POOL  
"72"

erel are very small and unimportant, while muskies and normies are highly prized trophy fish rarely taken by Iowa anglers. The northern pike is by far the most important member of Esocidae in Iowa.

### DISTRIBUTION

In North America, northern pike range from Missouri in the Central United States, northwest through the prairie states to the Arctic Circle, and east through the Hudson River drainage in New York. Recent introductions have extended its range to many other states where suitable environment exists.

In Iowa, they are common to abundant in the upper Mississippi, upper Missouri, upper Des Moines, Wapsipinicon, Iowa, and Cedar Rivers and their watersheds. They vary from occasional to common in Iowa's natural lakes. They also vary from rare to common in man-made lakes and impoundments where stocked in southern Iowa.

### LIFE HISTORY OF NORTHERN PIKE

Reproduction of northern pike begins in Iowa in late March or early April when water temperatures warm to about 40° Fahrenheit. Their spawning period normally coincides with a period of peak run-off of snow cover in spring, a rise in the water stage, and the flooding of a shallow marshy area. The adhesive eggs are indiscriminately released over short submergent vegetation in very shallow water usually less than one foot deep. Consequently, northern pike spawning success depends on high and stable water levels during the 12-14 day egg incubation. The fry absorb the yolk sac in 6 to 10 days, wiggle to the surface to gulp a life-giving swim bladderful of air and begin feeding. The "swim-up" fry are very vulnerable. If huge quantities of zooplankton are not readily available, they will starve. They tend to school on the surface to crop the zooplankton, so they are easy prey for small green sunfish, yellow perch, bluegills, other fishes and predaceous invertebrates. But the fry grow very rapidly and within 45 days after swim-up, they will be 3 to 5 inch fingerlings already feeding on larger macroplankton such as minnow larvae, and sometimes,

the very species that were predating upon them. Again at this stage, cannibalism and starvation are common when ample quantities of a suitable forage species are not readily available.

Growth of northern pike is rapid in favorable environments. They commonly attain a length of 12 to 16 inches in the first year and 16 to 22 inches in the second year. Growth of male and female is similar the first two years, then as northern pike reach maturity, females grow faster. Males reach sexual maturity at age II and 16 to 18 inches, whereas females reach sexual maturity at age III and 18 to 22 inches. When mature, a difference of 2 to 3 inches between males and females is normal, and as they grow older, males seldom attain 30 inches, whereas females may exceed 40 inches.

In most Iowa waters, northern pike "age out" (die of old age) at age VII, but age XIII northers have been reported. Authorities suspect aging may be associated with rapid growth rather than longevity thus causing fast growing fish to age out sooner than expected.

### NORTHERN PIKE CULTURE IN IOWA

Adult northern pikes are netted from the Mississippi River in pool number 9 in Northeast Iowa. This large pool has extensive areas of backwaters and sloughs interspersed with emergent and submergent aquatic vegetation and vast bottomlands covered with hardwoods, willow, and grasses. These create a highly diversified habitat that makes this pool of the upper Mississippi River a very favorable ecosystem for northern pike.

Netting of brood fish begins as soon as ice cover disappears and as water warms to 35° to 38° Fahrenheit. Pound trap nets are set next to banks, in sloughs, at pond entrances, and over submergent vegetation. All brood northers are transported back to the hatchery for stripping.

At the Lansing fish hatchery, a battery of 145 jars has a capacity of 220 quarts of eggs or approximately 14 million northern pike eggs. Absolute temperature and flow control through each jar allows



precise control on incubation of eggs. The eggs "eye" on the 4th day, hatch on the 10th day, and young fry absorb the yolk on the 16th day.

Iowa uses the "dry method" to culture northern pike. Brood fish are sexed and placed in adjacent holding tanks. Ripe females are selected for stripping and egg taking normally lasts from 4 to 7 days. Ripe females are first anesthetized, then stripped of eggs by applying hand pressure on the anterior abdomen and forcing posteriorly to the urogenital orifice. One pint of eggs are deposited in each dry pan, then a small amount of sperm is stripped from at least two males. The eggs are covered with a 10% salt solution which activates the sperm and fertilization occurs within 3 minutes. The eggs are then washed and allowed to harden in flowing water for two hours. The eggs are removed from the pans, measured to 1-1/2 quart lots, and placed in an incubation jar. Tubes are inserted into the egg mass to the jar bottom through which water slowly flows and evenly tumbles the eggs as they incubate. The eggs are not disturbed for five days; then, unfertilized eggs become white in color and covered with fungus, and are either siphoned off or float to the surface and are washed away.

Females that are not strippable are set aside for special attention. The pituitary of carp are dried, pulverized, and prepared into a solution that is injected into the pike ovaries. These female northern pikes are then strippable after 48 hours.

Six day old sac fry are distributed throughout Iowa in mid-April. One gallon of water is poured into a 24-

inch bag, 50,000 sac fry are measured into it, the bag is sealed and about one cubic foot of oxygen is injected into it. The bags are crated in cardboard boxes for statewide distribution by air-conditioned station wagons wherever they are needed for fisheries management.

### MANAGEMENT

Until recently, management of northern pike in Iowa consisted of mass plants of sac fry and limited plants of fingerlings without documented study and follow-up data to determine their impact on various ecosystems.

Presently, fishery scientists are reappraising the management potentials of this species in Iowa. A study is being made at Bays Branch to evaluate the success of sac fry versus fingerling plants with emphasis on the sustained yield and rate of exploitation by anglers. At Brown's Lake, a population dynamics study is being conducted to determine age-growth correlation, food habits, fecundity, and the interrelationships between the forage species. In southwestern Iowa, biologists are experimenting with new techniques to produce large fingerlings in large nursery ponds. In Ventura Marsh, there are experiments with the management of an area subject to large winter kills. A northern pike life history study and population dynamics study on Red Rock Reservoir is being conducted. Throughout Iowa, creel surveys are being made by commission personnel to determine exploitation rates and yields.

The guidelines for northern pike management must remain flexible as new techniques are being developed and more data is being made applicable. In the interim these are Iowa's general stocking policies for the management of northern pike:

1. *Sac Fry Plants* — Mass plants at 1,000 per surface acre are used to introduce or re-establish northern pike in *new* or *chemically renovated* waters — usually lakes or reservoirs over 50 acres in size or where suitable environments exist for the growth and reproduction of this species. Plants should be made at optimum conditions where the water is stable or slightly rising. Also,

where possible, plants are timed to match increasing zooplankton populations. Competitive factors and excessive predation upon subsequent plants of sportfish cannot be avoided entirely, but if planting sites are carefully selected many conflicts can be avoided.

Mass fry plants at 1,000 per surface acre are used for the management of winter kill lakes. The rapid growth potential and the ability to withstand low oxygen levels makes northern pike especially adapted to these unique ecosystems. Sport fisheries can be created in one or two years depending upon food availability. Northern pike stocking is also compatible with waterfowl marsh management. The usual summer drawdown may create a vulnerable concentration of forage species such as fathead minnows, thereby enhancing the growth of northern pike. Reflooding in fall and spring create very suitable habitat for northern pike whereas few other sportfish are well adapted to these environmental conditions.

2. *Small Fingerling* — Fingerling production is another useful type of management. Typically, sac fry are stocked in well fertilized ponds that contain an abundance of zooplankton. It is very important to rear the northern for 30-40 days until they are 3-5 inches long. It then becomes necessary to make available quantities of forage minnow larvae or they will starve or cannibalize. The ponds are then drained and the small fingerlings removed for stocking into competitive environments at rates of 20 per surface acre. Small fingerlings can be reared with good success in artificial and drainable marshes developed adjacent to suitable lakes, reservoirs, and streams. Future development of rearing marshes adjacent to large reservoirs such as Red Rock Reservoir, Rathbun Reservoir, and Saylorville Reservoir might be accomplished. Stocking small fingerling northern pike is successful only in lakes with no or little competition from other predator fish. This small fingerling plant is generally limited to new or recently renovated lakes.

3. *Large Fingerling Production* — Large northern pike fingerlings can successfully compete with other predatory species, and this could be

Northern Pike Production Record  
at Lansing Hatchery

Year	Quarts of Eggs	Number of Eggs	Sac Fry Production	Percent Hatch
1971	180	10,800,000	8,865,000	82
1970	200	12,800,000	8,575,000	67
1969	156	9,300,000	5,500,000	60
*1968	143	9,000,000	2,890,000	31
1967	160	10,400,000	8,360,000	80
1966	228	14,100,000	9,895,000	70
*1965	223	13,400,000	3,000,000	23
1964	265	17,200,000	12,185,000	70
1963	180	11,700,000	7,800,000	68
1962	200	12,400,000	9,000,000	72
1961	214	12,800,000	8,495,000	66
1960	132	7,900,000	3,720,000	47
1959	128	7,600,000	5,080,000	65
	185	11,490,000	7,179,000	62%

\* Well contamination due to flood in 1965 and 1968 on Mississippi River.

continued on page 15

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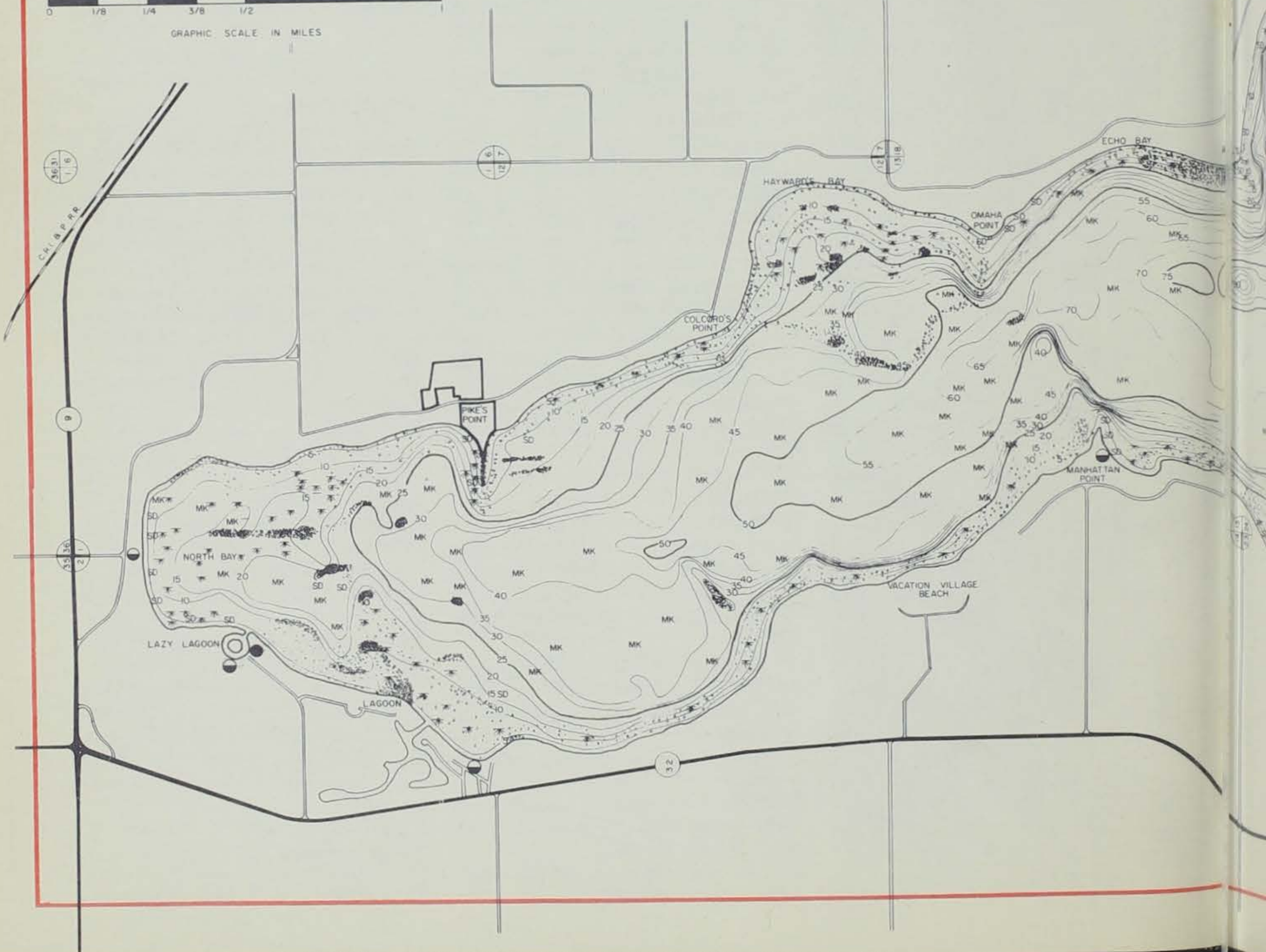
LEGEND	
	STATE OWNED LAND
	SECTION CORNER
	PUBLIC PARK
	PUBLIC ACCESS
	PUBLIC CAMPING
	BOAT LAUNCHING RAMP
	BOAT LIVERY
	ROCK REEF
	SCATTERED ROCK AND GRAVEL
	SUBMERGENT VEGETATION
	EMERGENT VEGETATION
	MK MUCK
	SD SAND
	BM BENCH MARK
NOTES	
SOUNDINGS BY RECORDING FATHOMETER ADJUSTED TO CREST ELEVATION— DONE BY E.T. ROSE 1972	
SHORELINE 19 MILES	
AREA 3690 ACRES	
MAX. DEPTH 134'	

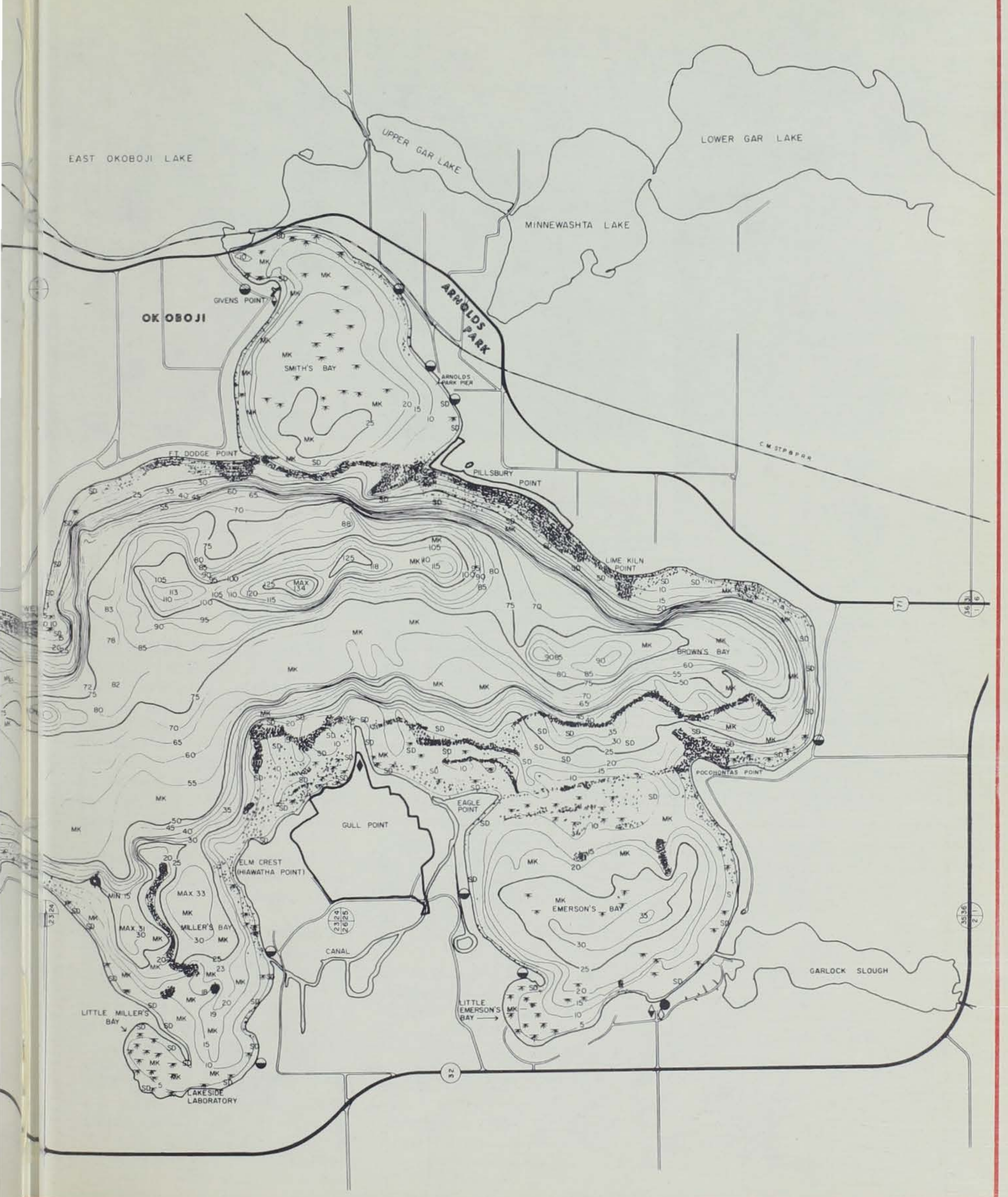


## WEST OKOBOJI LAKE

DICKINSON COUNTY

iowa  
akes  
charted







# Public Hunting 0

*By Roger Sparks*

Many of the public hunting areas managed by County Conservation Boards rank with the best in the state. Some were established solely for public hunting; while in many others hunting is permitted incidental to other primary uses.

Doyle Adams, County Conservation Administrator for the Iowa Conservation Commission comments on the subject of public hunting on county areas, "We make every effort to encourage boards to allow hunting on suitable or undeveloped areas — especially when the hunting season does not conflict with other uses. Some boards allow hunting on multi-use areas only from October to March when other uses are at a minimum."

A few counties have acquired areas primarily as wildlife refuges, but this is not recommended for management of small game.

County areas vary greatly in size and types of habitat. Many are from one to ten acres and include only a small stand of squirrel timber. Others are over 1,000 acres and provide excellent hunting for waterfowl, upland game and deer.

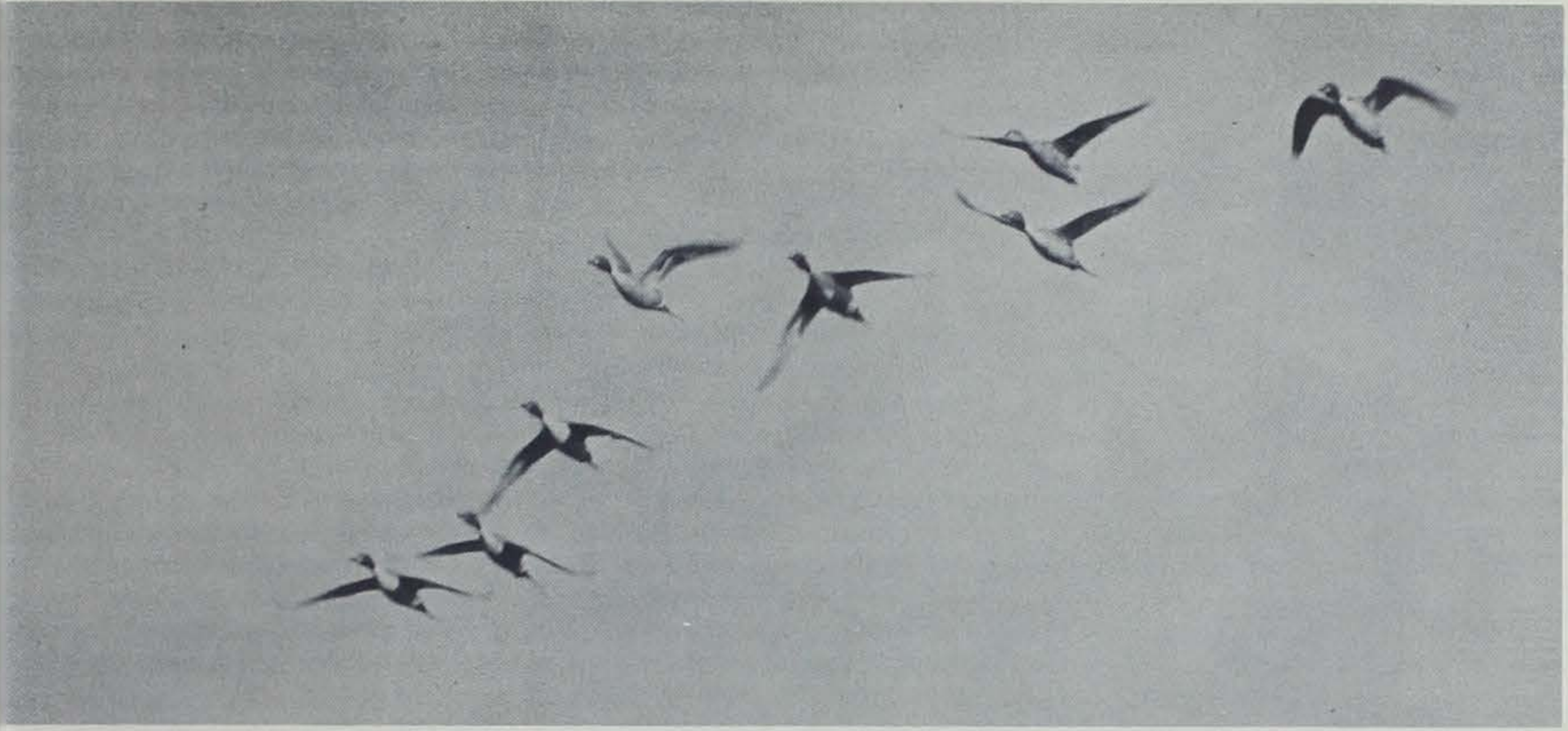
The following list does not mention all the county managed hunt-

ing areas in Iowa, but notes a representative few and briefly describes them.

The Chichaqua Wildlife Habitat Area covers 1,161 acres and is certainly one of Central Iowa's top public hunting areas. Its large acreage encompasses the oxbows, potholes and the bottom land, which was formerly the old Skunk River channel before it was straightened. This area offers excellent duck hunting with a small refuge. There is some possibility of improving the waterfowl hunting by additional development in the future. The Chichaqua Area is located about five miles east of Elkhart in Polk County.

Crop fields and edge cover within the boundaries offer top notch pheasant, rabbit and quail shooting, as well as squirrel and deer hunting in the timbered area. Fox and raccoon are also available rounding out a full bill of huntable species.

Another good combination hunting area is the Matsell Game Management area in Linn County. Located 2 and 1/2 miles north of Viola, this 1,072 acre area was purchased for hunting and provides good upland game and some waterfowl shooting along the Wapsipinicon



## on County Areas

River which flows through the tract, plus fine squirrel, deer and raccoon hunting.

For serious waterfowl hunting, 113-acre Palo Marsh in Linn County is a better bet.

Some of the finest deer and squirrel habitat in Iowa lies along the Iowa River in Hardin County. That county conservation board has purchased some 885 acres of land along that stream. These areas are not con-

tigious but nearly all are accessible from county roads. Future plans are to buy all the land adjacent to the Iowa River between Iowa Falls and Eldora. The areas are called the Iowa Green Belt and also offer pot-hole waterfowling and some good edges for pheasants and rabbits.

Another plan aimed to provide public access to excellent deer (and other timber species) habitat is being carried out by the Worth County

Conservation Board. Their plan is to purchase a series of timber blocks forming a patterned travel lane for deer. So far over 500 acres have been procured with plans for more acquisition. Two big areas near Northwood are Stime Forest, 165 acres and Ochee Yahola Recreation Area, 160 acres.

In Poweshiek County, the 230 acre Fox Forest, about one mile west of Montezuma, has some game bird

### RAIL SEASON SET

#### VIRGINIA RAIL

(*Rallus limicola*)

REDDISH BODY

WHITE

GRAY CHEEKS

LONG BILL

ADULT



Iowa hunters will have the opportunity to hunt Virginia and Sora rails during the 1972 season. The season on these small marsh birds opens September 2 and will run

through November 5. Shooting hours are sunrise to sunset with bag and possession limits at 25 in aggregate of both species.

#### SORA

(*Porzana carolina*)

WHITE PATCH

GRAY-BROWN BODY

SHORT YELLOW BILL

BLACK FACIAL AND THROAT PATCH

ADULT



habitat but is basically a fine deer and squirrel timber. Ninety-eight acre Ashton Wild-wood Recreation area near Baxter in Jasper County also provides central Iowans access to good timber hunting. Timmons Grove (198 acres) along the Iowa River at Albion in Marshall County supports good populations of squirrels as does the 80-acre Marshall County Forest Preserve about five miles upstream although deer hunting and rifles are not permitted.

The main part of Hickory Grove Park in Story County is closed to hunting but the area east of the county blacktop is open. This consists of about 15 acres of the upper reaches of the lake which provides good waterfowl hunting. The adjoining land has excellent upland game habitat.

Carroll County has several good areas along the Middle Raccoon River. Dickson Timber near Glidden (155 acres) and the Middle Raccoon access (92 acres) near Dedham are two good deer and squirrel areas.

Walker Slough in Wright County consists of 25 acres (12 acres of marsh) and is a popular waterfowl area. Ducks off Lake Cornelia, about 1/2 mile south, use this pothole and late in the season pheasants are attracted to the edges.

The edge cover of the West Fork Access in Franklin County is another late season pheasant spot. The area borders the West Fork of the Cedar River and is mainly a 123 acre squirrel and deer timber.

Fairly good waterfowl hunting, particularly for geese, is available around little Wall Lake in Hamilton County. About 60 acres of the land adjacent to this natural lake-marsh is county managed.

The Kossuth County Conservation Board manages a nice little area called Michealsen Slough near Titonka. During a wet year, this natural marsh offers some waterfowl shooting, but usually the majority of the hunting is for upland game. The 32 acre virgin Stinson Prairie 4 miles west of Algona also provides some excellent pheasant and Hun-

garian Partridge habitat.

Marion County offers a fine all-around hunting area at Roberts Creek Park, just north of Lake Red Rock. The north end of Roberts Creek Lake provides a combination of brush, timber and marsh, with planted food patches which benefit wildlife. The public hunting area encompasses over 400 acres of the upper reaches of this county lake and surrounding country side. North of the now flooded county road, hunting is excellent for pheasant, quail, rabbits, waterfowl, deer, squirrels and raccoon.

Six-hundred acre Wilcox Wildlife Area provides good rabbit and quail habitat in an old strip mine area four miles southeast of Pershing in Marion County.

The Cherokee County Conservation Board has purchased some deer habitat delux along the Little Sioux River, both north and south of Cherokee.

The Cerro Gordo County Conservation Board is wildlife management oriented as is evidenced by Mallard Marsh, a 100-acre artificial marsh near Fertile with 127 acres of surrounding public hunting land. Zirble Slough, southeast of Clear Lake, was developed with water level controls to allow for draining and planting, a waterfowl management practice.

Seventy-eight acre Kuhn Wildlife Area offers pheasant and Hungarian partridge hunting five miles north of Ventura.

The Buchanan and Howard County Conservation Boards are two more counties outstanding in developing wildlife and hunting areas. The 140-acre Lylahs Marsh in Howard County, near Elma, offers fair waterfowling with excellent fox and pheasant hunting on the area. The Turkey River access offers some beautiful, heavily timbered hills — excellent deer habitat — just south of Cresco.

Buchanan County manages 300 acre Jakeway Forest near Aurora mainly for deer and squirrels; and is in the process of acquiring a number of tracts along the Wapsie River and Buffalo Creek — all open to hunting.

The Idlewild Area in Floyd Coun-

*continued on page 16*



## OYSTER

*By Sonny Satre*

Many Iowa mushroom hunters call it quits after the popular morel or sponge mushroom season is over. If you enjoy the "sport" of mushroom hunting, this isn't the appropriate time to abandon this popular form of outdoor recreation. There are several edible varieties of these tasty fungi available throughout the summer till October's first frosts. One important point to remember is, if you are not familiar with other species of mushrooms, you should go with someone who can readily identify the edible varieties.

One of the most common and easiest to identify is the oyster mushroom — *pleurotus ostreatus*. Oyster shell mushrooms are infallible to identify — no other Iowa mushroom which is unsafe to eat is similar in appearance. It is one of the few fool-proof mushrooms.

Oyster shell mushrooms grow on decaying logs, stumps and dead trees. Dead elm, cottonwood, hickory and willow are likely sources to search for "Iowa oysters." They grow overlapping each other with



## R SHELL - the all summer mushroom

sizes ranging from 3-8 inches in width, occasionally even larger. The stem is on the side of the mushroom and is attached to the decaying wood. Colors of the cap and gills range from white, tan to ash. The mushrooms can be easily spotted from a distance as they protrude 3-5 inches outward from the tree or stump. Oyster shells are also commonly called "elephant ear" mushrooms because of their large size and shape.

Unlike morels, oyster shell mushrooms are found from May through October. The time to hunt them is immediately after or during rainy weather. Try to find and pick the freshest "elephant ears" possible. Certain insects (beetles) with voracious appetites like them too, so it is important to find the fresher mushrooms unless you prefer some additional protein. Tender, moist, white oysters make the best eating and are normally insect free. Many oyster shell seekers claim September or October are the best two months to hunt these mushrooms as the insect

problem is minimal at this time, but they're abundant in the spring and summer following rains. Timing is the key — these delicate morsels deteriorate quite rapidly, usually within two to three sunny days.

Keen eyesight and patience are not required to hunt these large, abundant mushrooms. It's not uncommon to find all the oyster shells you can carry in a very short period when they start popping out. Incidentally, oyster shell mushrooms can be cultivated in your own back yard. Simply find a known mushroom producing log and provided it isn't too large, bring it home and place it in the shade outside or in your basement. Water the log frequently and it should produce some fresh, choice mushrooms.

After you find them the next question is how to prepare oyster shell mushrooms for serving. First cut the core and stem from the softer fleshy portion of the mushroom and throw it away. Cut to preferred sizes. After this is done soak them in salt water for about one half hour

to cleanse the mushrooms.

Oyster shell mushrooms can be prepared in various ways for the dinner table. No matter what recipe you follow you will find that they taste delicious, somewhat similar to morels. Probably the most popular way to serve them is simply to lightly roll the mushrooms in flour (shake off the excess) and fry in butter or margarine. Keep turning the mushrooms until they are a golden brown. Frying time usually takes from 15 to 20 minutes per serving.

Try it . . . you'll like it!





## Campfire Cookery

By Dick Ranney

Who would have guessed "Iowa, a place to sail?" For many years the Iowa Great Lakes, Lake Manawa, Clear Lake and Storm Lake, to name a few, have been dotted with billowed sails of all classes of sailing boats. Many Iowans have, in recent years, become apt mariners due to the boom of power boating and the establishment of new water areas. Iowans of all ages waterski, swim and make use of our fine waters. It is only natural sailing should come into its own. What a surprise is in store for the old salt who has rowed the rivers, sped up the lake or challenged a stream. Sailing is a different ball game and many old salts will get their pepper wet trying to master the art of keeping the boat upright, tacking and swinging the boom.

A story comes to mind of the sailboat skipper who asked an old powerboat salt to be his guest on a trip across the lake. As they knifed quietly through the water on a gentle breeze, they cleared the sheltered bay rounding a point where a gust of wind upset the sailboat. As a matter of fact, later it was stated by several people on the bank, the boat was completely upside down with the dagger board pointed straight up. Little did they know the powerboat salt was hanging onto the mast underwater. Both men surfaced, and under direction of the skipper, tried to righten the overturned sailboat. This was done with much laughter as both men wore life jackets and were good swimmers. The skipper would slide on board and each time the old salt would climb aboard, much like a water buffalo crawling out of a mud bog, he would overbalance the boat and over she would go.

By this time the people on the shore are rolling on the ground holding their sides. The skipper mus-

tered the crew and gave updated instructions on boarding procedures. It was decided the skipper would board and he would then assist his number one deckhand. It worked like a top until the skipper reached out and gave the water logged crewman a hand. As he pulled him on board, the skipper lost his balance in the rocking boat and over the side he went, leaving the surprised guests on board. As it happened, a gust of wind caught the sail and the one man craft was underway.

The new skipper felt like he needed eight hands, one to run the rudder, two more to handle the rigging, one to swing the mast, and four to hang on to the boat. Regardless of what he tried, his friend looked smaller and smaller as the boat moved away. Calling upon his seamanship and knowledge, he spilled the sail, tied the rudder amidship, pulled the dagger board and rowed the crazy thing back to pick up his grateful friend. Both men got safely aboard and set sail for home. As they sailed gracefully into the dock, it was evident their trip had been a success for at the very top of the mast, proudly blowing in the breeze, was a tremendous gob of seaweed.

Sailing is great fun, an excellent way to get the sun, and a fine escape from the thunder of the herd. Sailboats are not too expensive, but you must buy with care. Don't shop price alone, after all, this is a water craft with people on board and it must be of sound construction. Stay away from novelty crafts and unsupported styrofoam.

Although sailboats are exempt from registration, there are regulations covering lifejackets, equipment, lights, operation and owner's responsibility. It is the policy of the Iowa Conservation Commission to promote safety for persons and property in and connected with the use, operation and equipment of all types of vessels used on water. A copy of Iowa Boating Regulations may be obtained by writing the Iowa Conservation Commission, State Office Building, 300 Fourth Street, Des Moines, Iowa, 50319.

Find a sailboat enthusiast and ask him to aid you in selecting a craft to fit your needs. He can give you excellent instructions on handling

and care. It's great fun and a booming sport. When you get home here is something your family will sail through.

Into a skillet place a half pound of cut up ham, add chopped onions, green peppers and celery. Brown until the vegetables are cooked, add enough eggs blended with a little milk to feed the crew. Place on toasted bread, add lettuce, mayonnaise or mustard, and pickles. Serve with homemade malts or milk. You may find after trying to get that crazy sailboat upright in the water, your family and friends may not want much to drink.

## Forum

Dear Sir:

No doubt this should be addressed to the Editor of the "IOWA CONSERVATIONIST", however, I presume a criticism of the publication would not be popular there.

For several months the magazine has used those ridiculous pictures like the one attached. A picture is to show something! Not to represent someone's idea of modernity. In the picture enclosed you cannot tell much about the background, what kind of tackle is being used (spinning, casting etc.) nor what type of bait.

Also, on pages 8 and 9 of the March Issue, you use a page and a half to show a contour map of Silver Lake. I doubt that 30 people in Iowa are interested in a contour study showing a depth variance of 0 to 10 feet. It simply isn't worth 1-1/2 pages! Some one must feel that bigness equates with excellence.

Why not cut down on the use of paper and use recycled paper? That's genuine conservation. —Sincerely, C.H.M. Bellevue.

ANSWER—

Your criticism of the IOWA CONSERVATIONIST magazine, its photos and its layout is welcome as it is an important measure of our efforts.

The techniques used in the photo layout are intended in part, to "modernize" the publication.

The contour map of Silver Lake is one of a series of maps to be published. Not all of the natural lakes have been charted to date and as this work is completed the maps arrive here in the office on an unpredictable schedule. It is difficult to plan which map will appear in which issue. So, when the magazine is being prepared, space must be allocated to accommodate our larger lakes.

As to the question of recycled paper, it is used in an increasing number of commission publications and has been used in the CONSERVATIONIST for several months. A note generally appears on the inside cover verifying this fact.

Thanks for your interest. —Editor.

## NORTHERN PIKE

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introduced into lakes already containing other predatory fish. The problem is rearing them to the larger sizes. Minnesota has successfully produced fingerlings with a mean length of 12.9 inches in quantity through careful management of large, winterkill lakes. Certain lakes lose the oxygen necessary to support fish during the winter months but provide good habitat for rearing northerns during the other seasons. A unique method of removing the fish for stocking is used since the lake size and vegetation eliminates mechanical or chemical removal of the large fingerlings when dissolved oxygen concentrations become too low, water is pumped from the lake, aerated, and returned through weir traps. The northerns, attracted by the oxygenated waters and current, become trapped in the weirs, and are restocked into other lakes. Without such a method of producing large fingerlings, competitive stocking of pike in Iowa is not practical.

### NORTHERN PIKE REGULATIONS

Management has to take into account means to control or to encourage the harvest of northern pike. Our regulations are liberal in that no size limits are imposed. On the natural lakes the season is closed from February 15 to April 29 to theoretically protect brood northern pike, and the daily limit is 3 with 6 in possession. The Mississippi River boundary waters are an exception and have a continuous open season with a daily limit of 5 and possession limit of 10. Northern pike are underharvested on the upper Mississippi River. In this area, northerns rank low in preference among anglers; consequently, this resource is available but unutilized.

The northern pike in the creel is one of our final products made possible by the continued effort by the Iowa Conservation Commission through your purchase of hunting and fishing licenses. It starts its life as a dependent and feeble animal and rapidly grows to a savage predator. With new emphasis placed on managing and stocking northern pike, Iowa fishermen can look forward to tangling with this trophy-sized tackle buster in a nearby lake or stream.

# Classroom Corner

*By Curt Powell*

Administrator  
Conservation Education Center

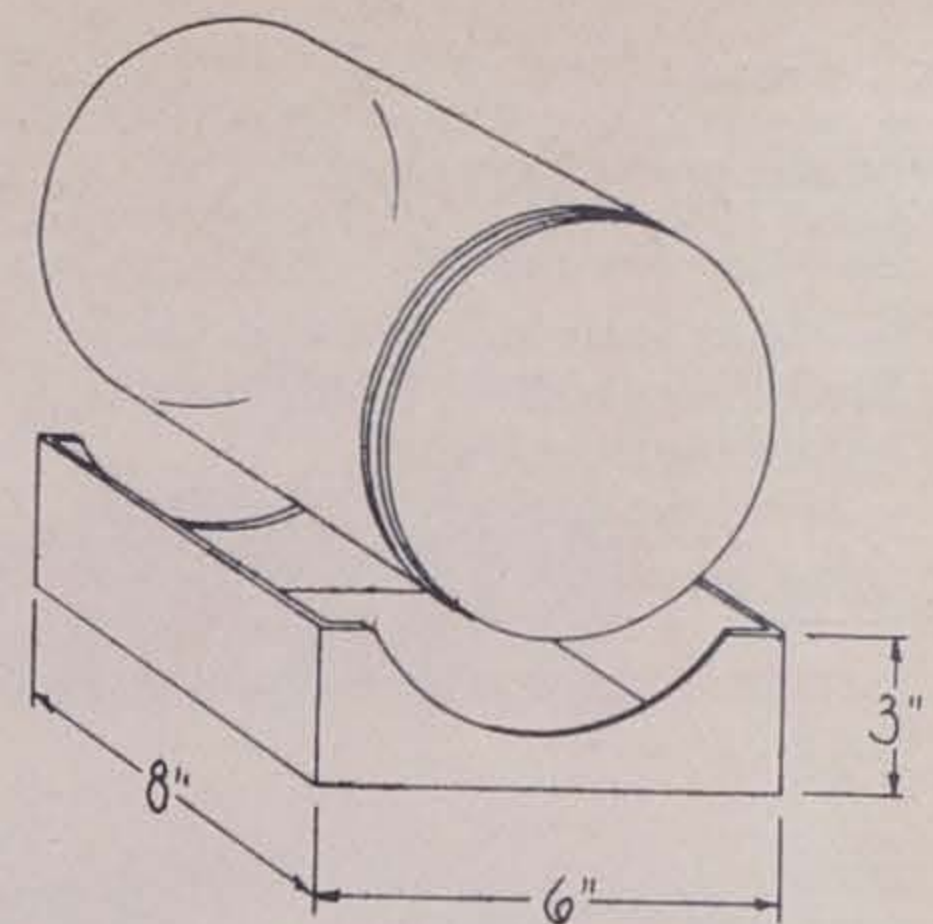
School starts pretty soon for most of us. For some, the school bell has already rung and classes have begun. During the summer vacation, it was a pleasure to be out in the Iowa Outdoors. It's certain that all of us miss being able to ramble about and enjoy the various plant and animal communities.

How about bringing in a plant and animal community so you may observe it in the classroom? If you could do that, would it give you a great deal of information concerning life cycles and how plants and animals live together?

This month we're going to visit about building a plant and animal community that you can observe in your classroom or in your home. The project is called a terrarium. Perhaps this is a new word for you. A terrarium is like an aquarium only without water and fish.

Terrariums can be one of three types: a bog terrarium, a woodland terrarium and a desert terrarium. Although we will be most concerned with building a woodland terrarium, we will describe the other two types so that you might compare them and then observe how the different communities live in their environment.

To build our woodland terrarium, we need one one-gallon wide mouth glass jar with lid and we also need to construct a stand for the jar. The illustration shows how the stand should look when completed. You need 2 boards 3" high and 6" long. Cut a crescent shape in each board to fit the shape of the jar. Then, to complete your stand nail a 3" high by 8" long board to opposite sides of your crescent shaped board. You may use this same type of structure and other gallon jars to construct



the other two terrariums.

Now, to fill your terrarium, place it on the stand as shown in the illustration. Put one inch of coarse gravel in the bottom of the jar, then 1/2 inch of sand, and finally on top of that, 3 inches of forest soil. Water it to make it damp, but not muddy. Place mosses, ferns, and other small forest plants in the terrarium and put the lid on it. Snails, frogs or salamanders can be placed inside. Place the terrarium in a slightly shaded part of your room.

Following are directions for the other two terrariums:

#### *Desert*

1. 1 inch gravel in the bottom.
2. 3 inch sand on top of gravel.
3. Cactus, plants and desert plants may be grown.
4. keep watered well until roots are established.
5. lizards and toads can be placed inside.

#### *Bog*

1. 1 inch of sand.
2. bog soil from 4 inches at one end to 1 inch at the other.
3. keep the shallow end quite wet (plant liver warts and ferns in this end).
4. on the higher end, ferns, club mosses may be planted.
5. small turtles and frogs can be placed in.

What different types of environment do each of these terrariums have? Can you see any relationship between the plants and animals in the terrariums? What would happen if you allowed the bog terrarium to dry out? Or if you would flood the desert terrarium with water? What would happen to the life in these two environments? Can you see why you and I must be concerned with conservation?

## PUBLIC HUNTING

*continued from page 12*

ty along both sides of the Cedar River offer excellent deer and squirrel hunting (near Floyd).

Fountain Spring (176 acres) lies along Elk Creek in Delaware County. This is rugged bluff country — excellent for deer, squirrels and raccoon.

Hunts Woods, southwest of Burlington, in Des Moines County is 58 acres of heavy deer and squirrel timber, with some upland game edges.

Many other counties have fine county-farmer cooperative agreements. Hancock and Calhoun are two of the best. These agreements generally are a 10-year lease on from

one to ten acres of land for the purpose of planting wildlife cover. Nearly all are open to hunting by permission from the landowner.

Other counties not mentioned have many areas open to hunting. For information, contact the County Conservation Board's executive officer or chairman through the local county courthouse or the Iowa Conservation Commission.

