

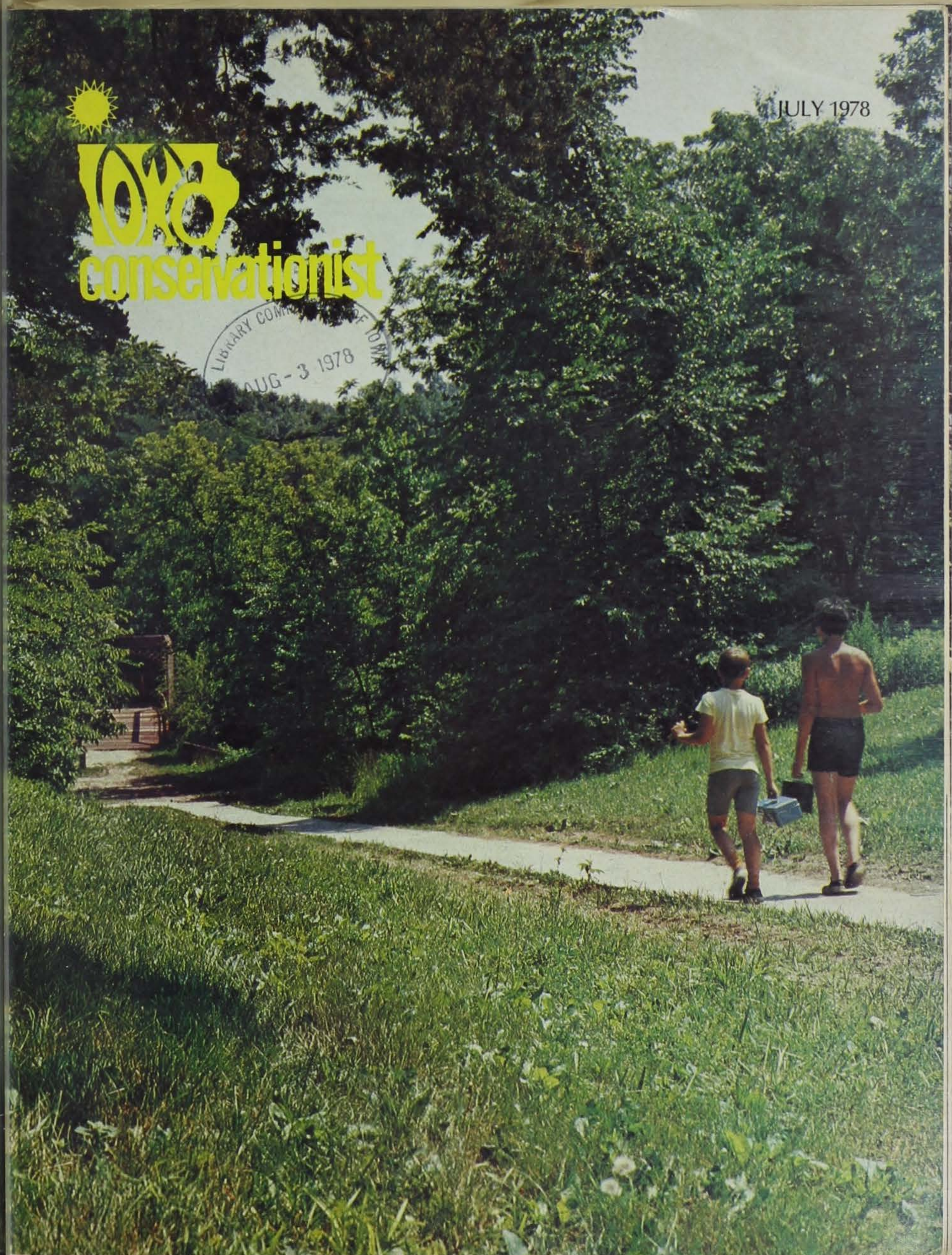
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# IOXO conservationist

JULY 1978

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# conservationist

MAGAZINE

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*All persons are entitled to full and equal enjoyment of the recreational opportunities, privileges and advantages available in Iowa's great outdoors.*

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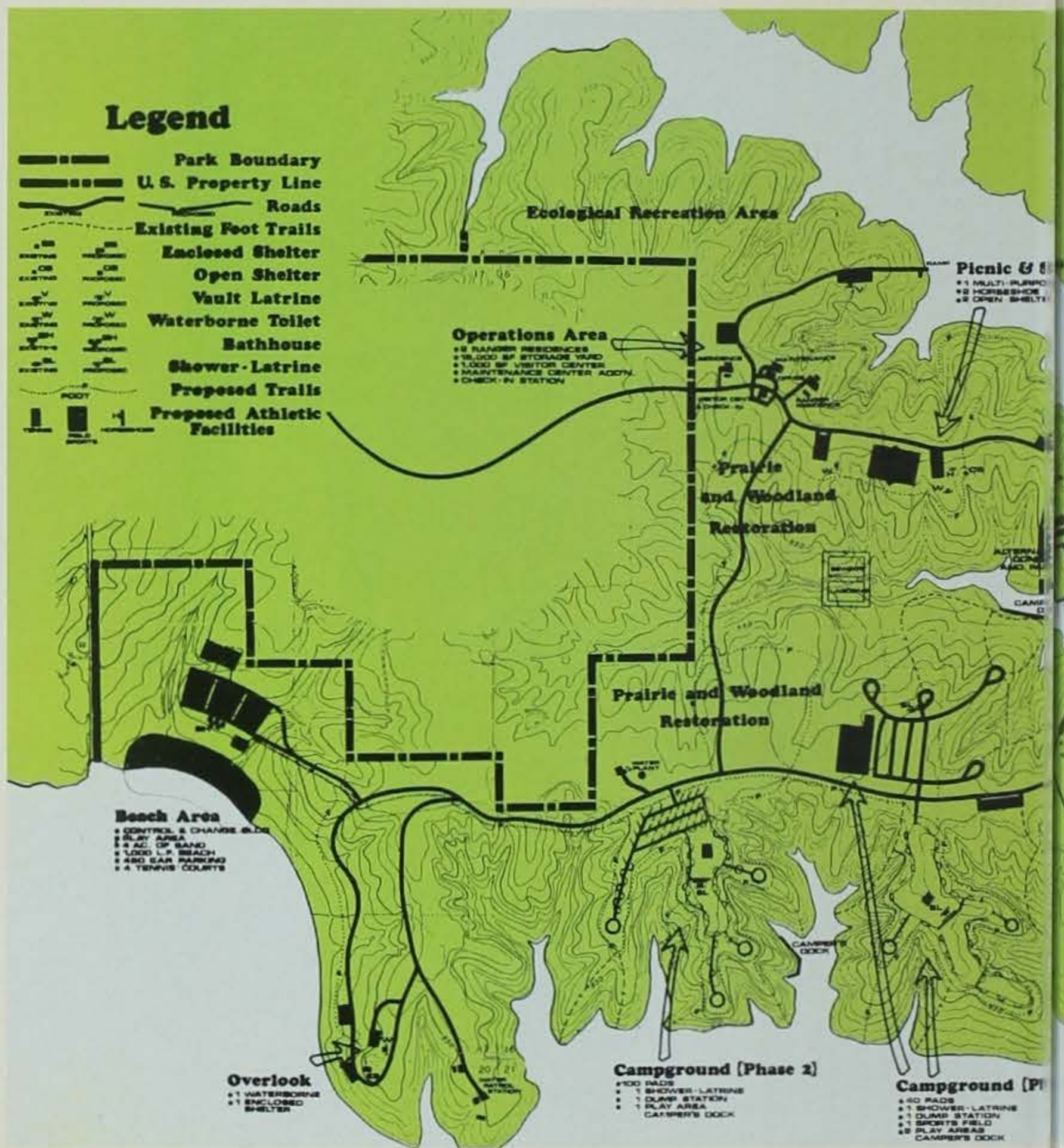
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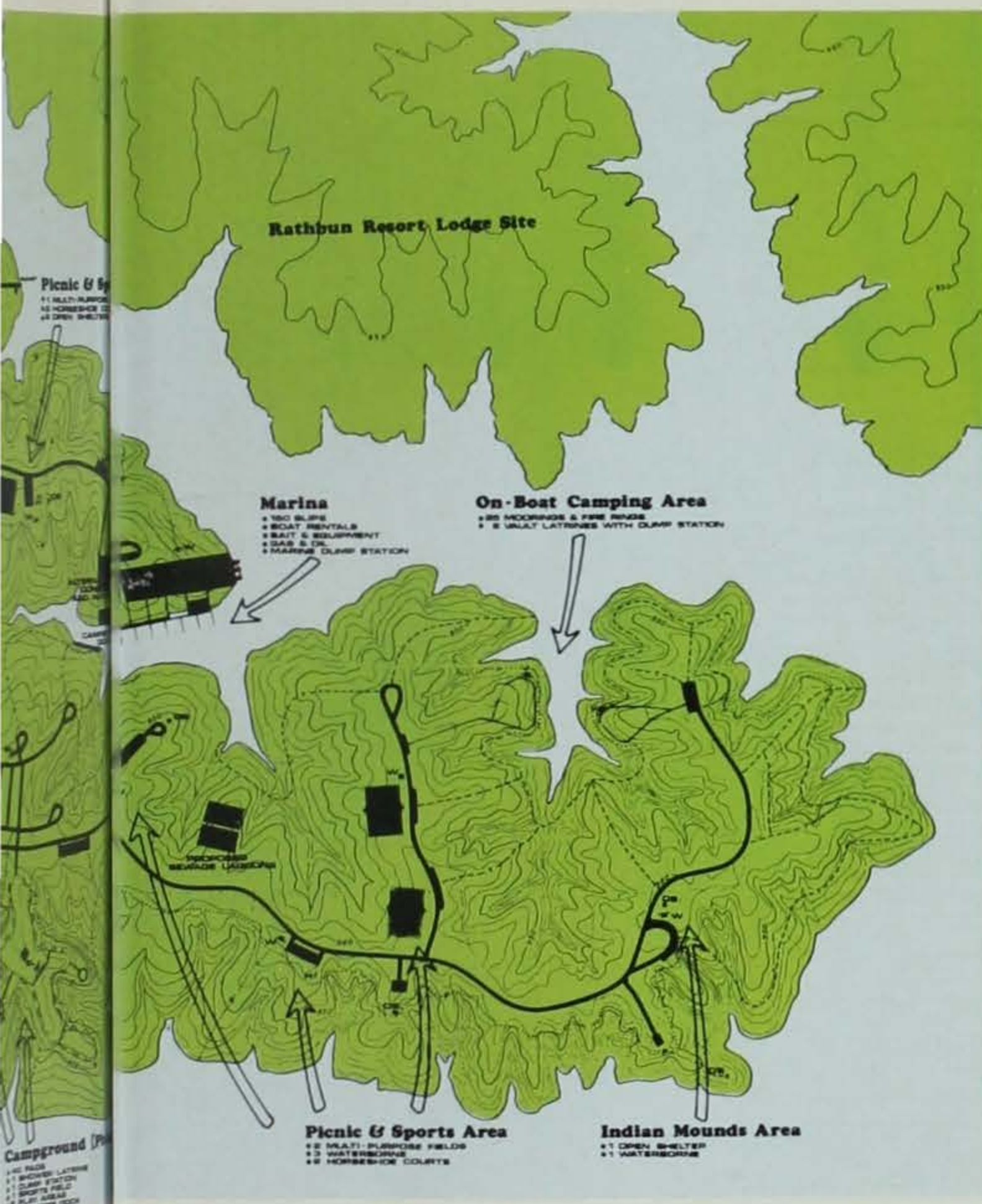
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# HONEY CREEK STATE PARK —

## Designing for Resource Enjoyment and Interpretation

by Fred Chabot,  
 LANDSCAPE ARCHITECT



**H**ONEY CREEK STATE PARK, located on Lake Rathbun in northwest Appanoose County is a 796-acre tract of federally-owned land leased to the State of Iowa. The park, as proposed in a recently-approved master plan, will provide a wide variety of recreational opportunities to complement other public and private facilities around the lake.

The first master plan for Honey Creek State Park was prepared in 1969 and called for a small beach development, boat ramp and boat concession, amphitheater, several general-use areas, hiking trails, and heavy emphasis on camping.

Facilities built during the period 1970-1974 were constructed as proposed in this plan. During 1974-1975, the Conservation Commission detected problems of prohibitively high expense and excessive timber loss if this first plan were carried to completion. An updated master plan was called for.

The new master plan, prepared with a significant amount of public involvement, established the park objective of providing the maximum diversity in both active and passive recreational experiences allowable in a state park. Additionally, the park will have a unique program of interpretation of the local cultural heritage. The theme of Honey Creek State Park is to provide an atmosphere that is bright, exciting, and refreshing through harmony with the natural environment.

Facilities proposed in the new master plan will help meet deficiencies in camping, picnicking, and swimming which were determined to exist by the Conservation Commission's

1975 survey of Iowans' recreational habits and needs. It will also provide the full complement of recreational opportunities demanded by Iowa's park visitors.

There are currently 45 acres of picnicking area in the park. While this area is sufficient in size, the quality of the experience will be improved by adding four open shelters, five latrines, additional grills and tables, yard hydrants, trash receptacles, and yard lights. Two sports fields and four horseshoe courts will also be constructed.

A new beach will be developed on the shore of the main lake. It will feature a 1,000-foot shoreline, a concession offering food, first-aid, change areas and showers, a lawn and beach sunbathing area, and parking for 450 cars. There will also be a children's play area and four fenced tennis courts constructed near the beach complex.

Additional camping sites will be added in two phases bringing the current capacity of 140 units up to 280 units. The new areas will have all-weather surfaced roads and pads, children's play areas, utility hook-ups, latrine/shower buildings, trailer dump stations, laundromat, and other site amenities. This addition will not meet current demand and consequently future additions might be made if shortages are not met by private development.

A new marina will be constructed near the existing boat ramp in order to provide easy access for the boater/camper to those services required while visiting Honey Creek. The new concession, which is expected to be operational in 1981, will offer boat rental, slip rental, foods, bait and equipment, and gasoline. A total of 12.6 miles of trails will provide a system for hikers, bicyclists, handicapped persons, and snowmobilers with interconnecting access to many area facilities.

The park will provide opportunities for cross-country skiing, snowmobiling, sledding, skating, and ice fishing for those who enjoy these winter activities.

The master plan proposes to enlarge the park through the lease of an additional 75 acres of federal land north of the park entrance. This area will be an ecological recreation area in which preservation of mature timber, enhancement of wildlife habitat, and passive recreation (bird watching, nature study, etc.) will be emphasized. Management of this area by state park personnel will ensure compatibility of use of this area in relation to the park.

The operations area at the park entrance will be improved with the addition of a visitor center housing the park office, a check-in station, and resource interpretation displays and programs. A second park ranger residence, enlarged maintenance building, and storage yard for equipment and materials will also be built.

The new Honey Creek State Park master plan will be implemented in two phases. Phase one includes development of 40 camping units, picnic area improvements, the marina, the beach complex, operations area improvements, native prairie restoration and trails at a cost of \$1.9 million. Phase one is projected to begin in early 1980 and continue through 1981 with completion projected for fall of that year. Phase two includes 100 camping units, a west overlook shelter and latrine, on-boat camping area and trails. Phase two is projected to begin in early 1981 and be completed in early 1982 at a cost of \$600,000.

These proposals are the culmination of an effort by the Conservation Commission staff to include personal contacts with local residents and government agencies, general public meetings, and objective professional research in a master plan. The end result will be a far more enjoyable place for Iowans to visit for a day or an extended vacation.

State Parks Profile Series

**ROCK  
CREEK  
LAKE**

by John Klein  
PARK ASSISTANT



**R**OCK CREEK STATE PARK, located in Northeast Jasper County, is one of Iowa's major recreation areas. Being six miles North and three miles East of I 80 exit 45, Rock Creek is a major stopping point for Iowa travelers. The camp area lays on the east shore of the 640 acre Rock Creek Lake, with several camp sites next to the shore and the rest overlooking the lake which adds to its attraction. Rock Creek has 246 sites, 48 with electricity.

A privately operated marina and concession is only a short walk from the camp grounds and can fulfill most boating, fishing, camping and snack item needs.



A large supervised sand beach is available for swimming and sunbathing.

Many full stringers of fish are caught year around from the lake. From ice-out 'till early winter, bullhead and channelcat are waiting to be caught. Young and old alike can enjoy the fast action of pan fishing when the crappie and bluegill move to the rocky shores and bays for spawning. This period lasts about four weeks, beginning in early May.

There are nine fish shelters or brush piles at various points in the lake. These areas are marked with a sign or a bouy. Boat and shore fishermen have access to these areas which hold panfish as well as large bass. Northern pike, white bass and

walleye are found in the lake, providing a bonus to anglers.

Many types of wildlife and wildflowers may be found along the multiple use trail system. The trails reach far into the natural and undeveloped areas of the Park.

When ice conditions become adequate the ice fishing gets hot and heavy. As high as eighty ice fishing shacks have appeared on the frozen lake at one time.

When winter comes, snow is not far behind. As snow makes its appearance, so do the snowmobilers. Using the trail system and portions of the lake, a snowmobiler can enjoy an hour and a half ride around the perimeter of the area. Deer, pheasants, and rabbits are commonly seen along this ride. □



## AFFORDABLE FUN AT IOWA'S STATE PARKS

*Photos by Jerry Leonard*

**F**OR A VARIETY of things to do you just can't beat the great outdoors. And for enjoying the outdoors it's hard to top an Iowa State Park. Most of the fun to be had at a park is free, but there are nominal fees for other uses and facilities, as they appear below.

**CAMPING RATES:** Non-modern area — \$2.50 per night per basic unit, modern area (shower - flush toilet) — \$3.00 per night per basic unit and sites with electrical outlets — \$4.00 per night per basic unit. A reduced rate is offered to people over 62 years of age, to the handicapped and to the blind, during weekdays — Monday through Thursday. These fees are

\$1.00 per basic unit and \$2.00 with electricity. Any persons over the basic unit of six will be charged 25 cents per person. Tax is included on the above fees. (No refunds on camping fees). No Reservations are accepted — spaces are issued on a first-come, first-served basis. For chaperoned, organized youth groups, 25 cents per person is charged with a minimum charge of \$2.50 per night in a non-modern area and \$3.00 per night in a modern area.

Camping fees do not include the use of boat and beach facilities which are operated by concessionaires under contract with the commission.



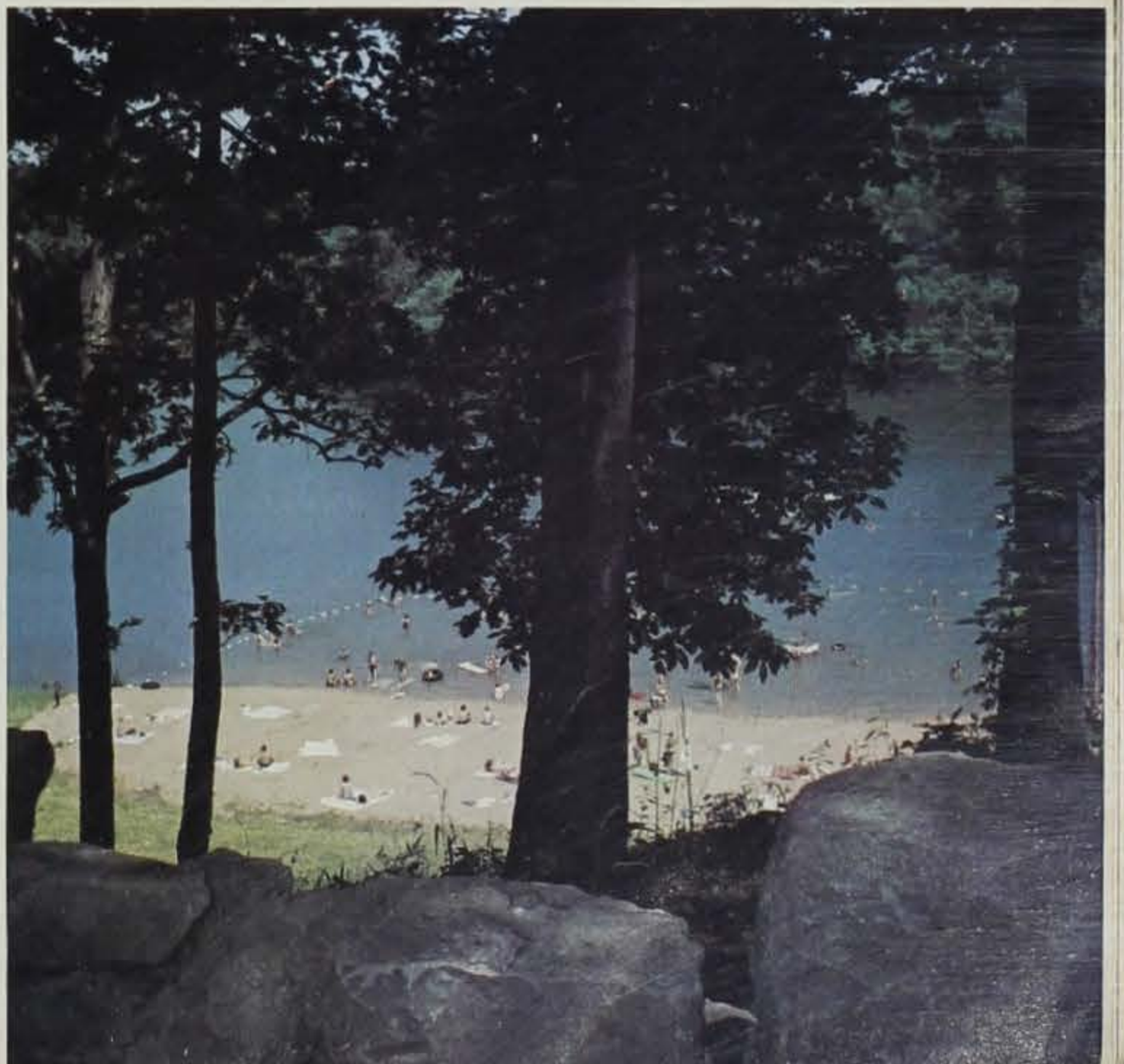
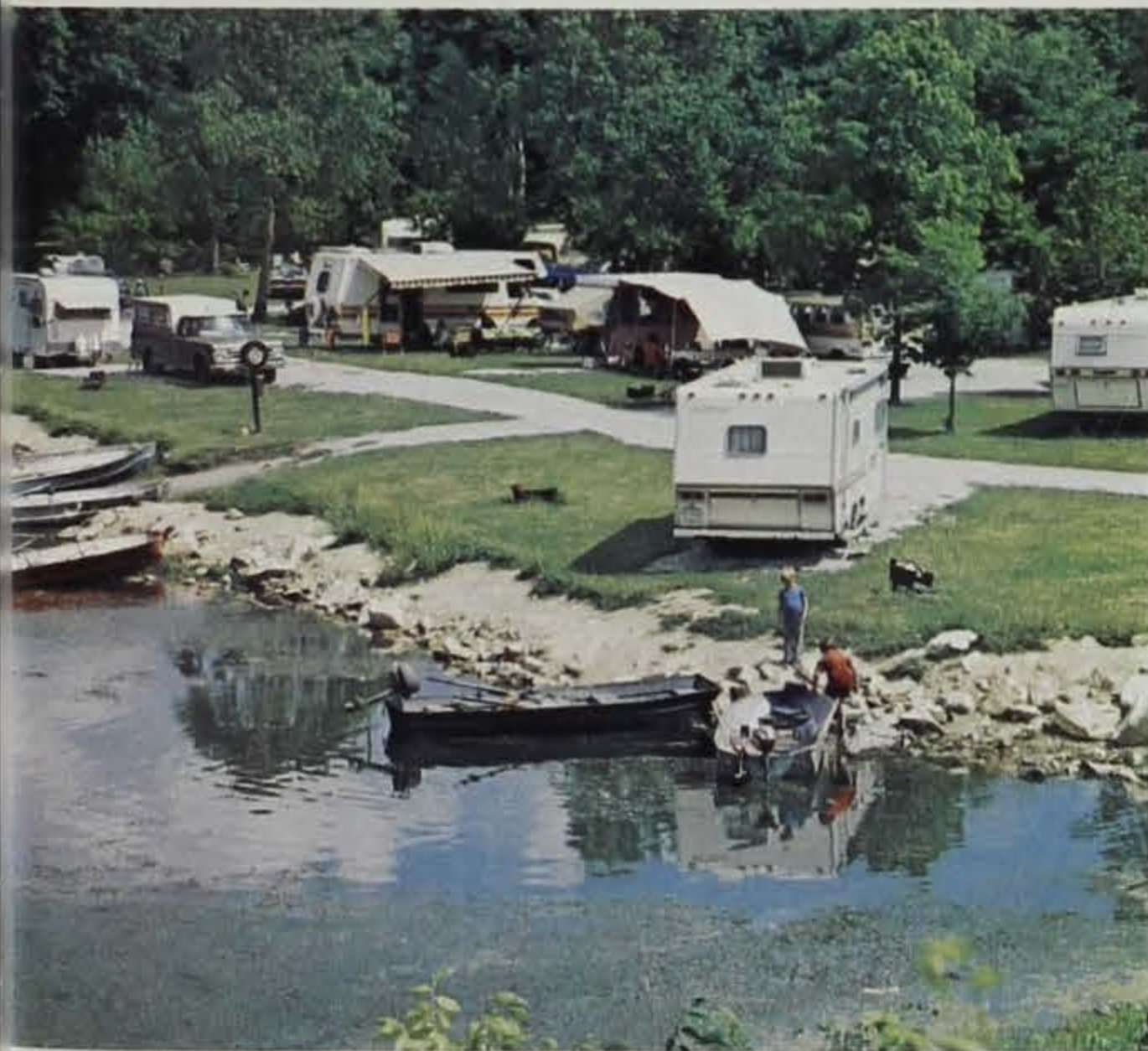
**MODERN FAMILY CABINS:** There are 56 cabins available for rental and each accommodates four comfortably. Renter must provide own bedding, pillows, bath towels and toiletry items. All other necessities such as electricity, water, dishes, cooking utensils, refrigerator and kitchen stove are provided. The number of cabins available in each area are as follows: Backbone - 18, Lacey-Keosauqua - 6, Lake of Three Fires - 6, Lake Wapello - 12, Pine Lake - 4, Palisades-Kepler - 4 and Springbrook - 6. In addition, Palisades-Kepler has two cabins which accommodate eight people each.

**CABIN RESERVATIONS:** All reservations must be made through the park ranger. Only advance reservations for a minimum of a week are accepted. After receiving confirmation, a deposit of \$10 is requested. Cabins are rented for less than a week on a first-come, first-served basis.



**CABIN RATES:** The rate for cabins at Backbone, Lacey-Keosauqua, Lake Wapello, Palisades-Kepler and Pine Lake is \$15 per day and \$75 per week. The cabins at Springbrook and Lake of Three Fires which have not been modernized rent for \$12 per day and \$60 per week. Where available, cots are supplied for additional guests for 50¢ per day per cot. Week begins on Saturday. Check-out time is 2:00 p.m. and check-in time is 4:00 p.m.

**ORGANIZED GROUP CABINS:** All reservations must be made through the park ranger. Organized group cabins are located at DOLLIVER AND SPRINGBROOK State Parks. Renter is provided complete dining accommodations including all dishes and cooking utensils plus centrally located flush toilets and showers. Tenants must provide own bedding, pillows, bath towels and toiletry items. When rented to organized



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youth groups, the charge is 75 cents per person per day with a minimum charge of \$25 per day. Youth groups have priority on reservations. When rented to groups other than organized youth groups the cabin rate is a minimum of \$7 per day per cabin plus \$25 per group for the kitchen and dining facilities.

**ORGANIZED CAMPING — DINING FACILITY AT LAKE KEOMAH:** All reservations must be made through the park ranger. Electricity, water, flush toilet, cooking stove and refrigerator are furnished in facility. Organized groups must furnish their own camping gear and cooking utensils. For organized youth groups the rate is 50 cents per person per night with a \$10 minimum charge. For adult camp groups the fee is 50 cents per person per night plus \$25 for use of the kitchen and dining room.

**SWIMMING:** Parks with supervised swimming areas have a beach facility which includes bathhouse, dressing room and shower. The beach facility in most cases is operated by a private concessionaire under contract with the commission. Fee for swimming in a supervised area is 60 cents for age 12 or older — 25 cents under age 12.

**ENCLOSED SHELTERS:** All reservations must be made through the park ranger. There are 18 enclosed shelters available for rental which are ideal for family reunions. Facilities available include electricity, water, flush toilets, cooking stove and refrigerator. The shelters are for day use only. The following rates listed are for each 100 people per reservation.

A. A. Call .....	\$15	Lake Keomah .....	\$25
Bellevue (Nelson Unit) .....	\$25	Lake Wapello .....	\$15
Clear Lake .....	\$30	Lewis & Clark .....	\$20
Dolliver		Palisades-Kepler .....	\$30
(Central & South) .....	\$15	Pammel .....	\$12
Dolliver (North) .....	\$ 7	Pine Lake .....	\$20
Ft. Defiance .....	\$12	Stone .....	\$30
Gull Point .....	\$25	Walnut Woods	
Lacey-Keosauqua .....	\$15	Summer — \$30, Winter — \$50	
Lake Ahquabi .....	\$25	Wapsipinicon .....	\$12

Listed below are the addresses and phone numbers of Iowa's State Parks. For a free brochure (State Parks & Recreation Areas) outlining all the facilities and recreational opportunities offered at each, write to the Iowa Conservation Commission, Wallace Building, Des Moines, Iowa 50319.

State Parks and Recreation Areas	Mailing Address or County Location	Telephone
Ambrose A. Call	Algona 50511	515-295-3669
Backbone	Dundee 52038	319-924-2527
*Barkley	Boone County	
Beeds Lake	Hampton 50441	515-456-2047
Bellevue	Bellevue 52031	319-872-3243
Big Creek	Polk City 50226	515-685-3093
Black Hawk Lake	Lake View 51450	712-657-8712
Bob White	Allerton 50008	515-873-4670
Brushy Creek	Lehigh 50557	515-359-2501
Clear Lake	Clear Lake 50428	515-357-4212
Dolliver Memorial	Lehigh 50557	515-359-2539
Echo Valley	Fayette County	
Elk Rock (Red Rock)	Otley 50214	515-627-5434
Emerson Bay	R2, Milford 51351	712-337-3634
Fairport	R3, Muscatine 52761	319-263-2791
Fort Defiance	Estherville 51334	712-362-2078
*Galland School	Lee County	
*Gardner Sharp Cabin	Dickinson County	
Geode	Danville 52623	319-392-4601
Geo. Wyth Memorial	Rt. 2, Waterloo 50701	319-232-5505

\*State Park Preserves

State Parks and Recreation Areas	Mailing Address or County Location	Telephone
Geo. Wyth Memorial	Rt. 2, Waterloo 50701	319-232-5505
Green Valley	Creston 50801	515-782-5131
Gull Point	Milford 51351	712-337-3211
Honey Creek (Rathbun)	R2, Moravia 52571	515-724-3739
Isthmus Access	Dickinson County	
Lacey-Keosauqua	Keosauqua 52565	319-293-3502
Lake Ahquabi	Indianola 50125	515-961-7101
Lake Anita	Anita 50020	712-762-3564
Lake Darling	Brighton 52540	319-694-2323
Lake Keomah	Oskaloosa 52577	515-673-6975
Lake Macbride	Solon 52333	319-644-2200 319-644-2848
Lake Manawa	Council Bluffs 51501	712-366-0220
Lake of Three Fires	Bedford 50833	712-523-2700
Lake Wapello	Drakesville 52552	515-722-3371
Ledges	Madrid 50156	515-432-2730
Lewis and Clark	Onawa 51040	712-423-2829
Lower Gar Access	Dickinson County	
McGregor Heights	Clayton County	
McIntosh Woods	Ventura 50482	515-829-3847
Maquoketa Caves	Maquoketa 52060	319-676-3251
Marble Beach	Dickinson County	
Margo Frankel Woods	Polk County	
Mini-Wakan	Dickinson County	
Nine Eagles	Davis City 50065	515-442-3333
Okamanpedan	Emmet County	
Palisades-Kepler	Mount Vernon 52314	319-895-6039
Pammel	Winterset 50273	515-462-2188
Pikes Peak	McGregor 52157	319-873-2341
Pikes Point	Spirit Lake 51360	712-336-1677
Pillsbury Point	Dickinson County	
Pilot Knob	Forest City 50436	515-582-4835
Pine Lake	Eldora 50627	515-858-5832
Pleasant Creek	Palo 52324 Drawer C	319-851-4901
*Plum Grove	Johnson County	
Prairie Rose	Harlan 51537	712-773-2701
Preparation Canyon	Monona County	
Red Haw Lake	Chariton 50049	515-774-5632
Rice Lake	Winnebago County	
Rock Creek	Kellogg 50135	515-236-3722
Sharon Bluffs	Appanoose County	
Springbrook	R 1 Guthrie Center 50115	515-747-3591
Stone	R 3, Sioux City 51103	712-255-4698
Trappers Bay	Dickinson County	
Twin Lakes	Calhoun County	
Union Grove	Gladbrook 50635	515-473-2556
Viking Lake	Stanton 51573	712-829-2235
Volga River	Fayette 52142	319-425-4161
Walnut Woods	Box 133, Rt. 3 Des Moines 50321	515-285-4502
Wanata	Clay County	
Wapsipinicon	Anamosa 52205	319-462-2761
Waubonsie	Hamburg 51640	712-382-2786
Wildcat Den	Muscatine 52761	319-263-4337
Wilson Island	Mo. Valley 51555	712-642-2069



BY DEAN M. ROOSA  
STATE ECOLOGIST

# Endangered!

## Twilight of an Era or Dawn of a New Day?

Pink Ladyslipper.

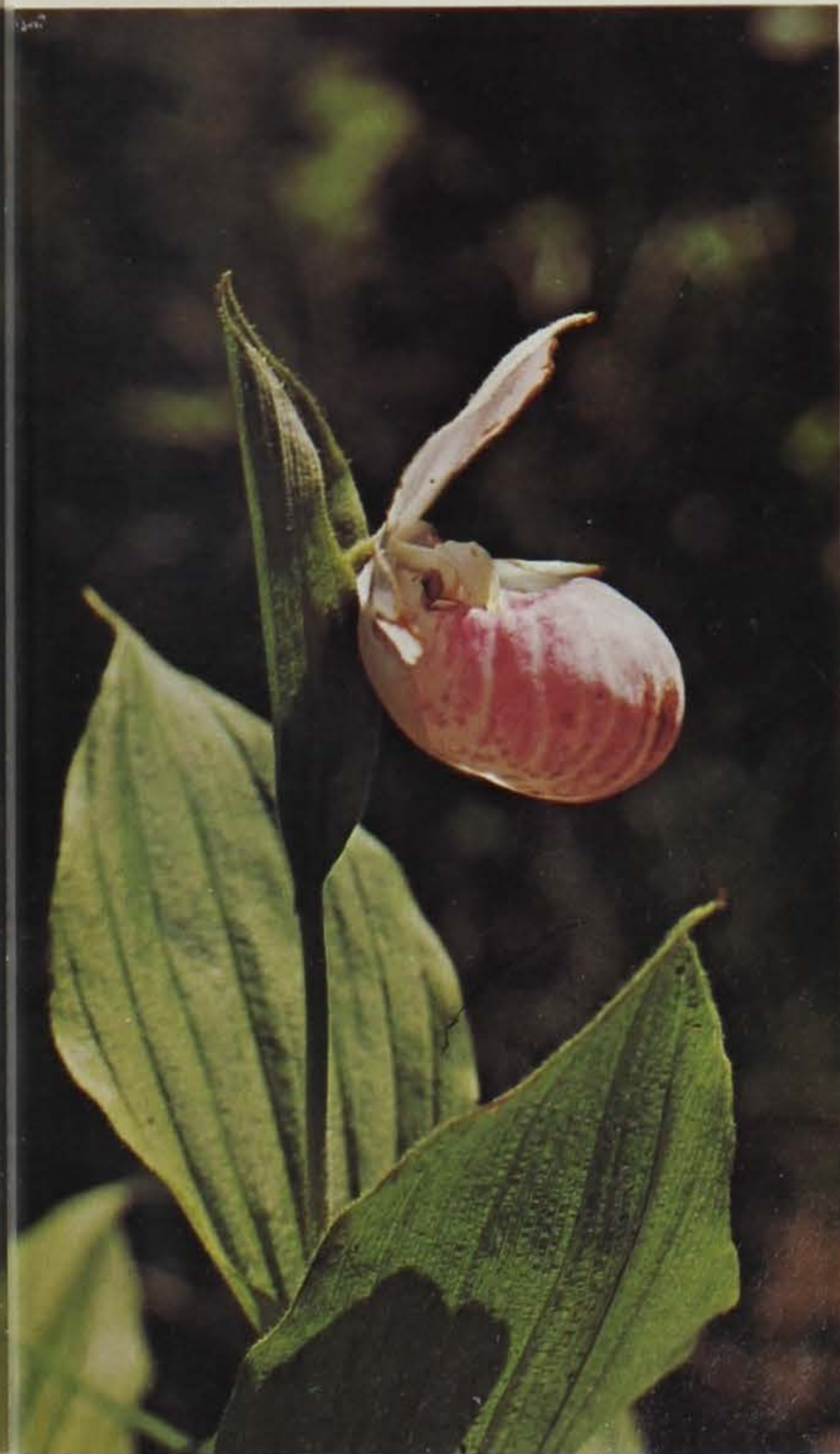


PHOTO BY THE AUTHOR

**H**A VE WE LEARNED to care in time to save our endangered species? In late 1977, the State Conservation Commission adopted a list of plants and animals considered to be endangered or threatened in Iowa. This was the state's first attempt to identify and actively manage rare forms of wildlife and plants. Let's look at the importance of preserving these rare organisms, what type of organism becomes endangered, why one species and not another becomes endangered and what a private citizen can do.

Many species have vanished from Iowa in the past 100 years; the large herbivores, the buffalo and elk, were first to go, followed soon by the large carnivores, the black bear, gray wolf and mountain lion. Some, like the deer and beaver, were extirpated but have been reestablished and now flourish as a result of good wildlife management. The trend continues as evidenced by the near disappearance of the Red-shouldered Hawk in the early 1960's, the near loss of the spotted skunk in the past two decades, the near depletion of the Upland Sandpiper, Least Tern and Peregrine Falcon and by the almost total loss of the lovely Pink Ladyslipper. Many people are concerned; others feel it not important, saying that species become extinct naturally. This latter is true, but consider the following: extinction in the 'natural' world occurred at a rate of about one species per 1,000 years; by 1950, this rate was a species every 10 years and now it is a species each year. Natural extinction is a process for culling the species which cannot adapt to natural changes; man has so drastically altered the planet that today's extinctions are those species which cannot adapt to man's technology.

Many of the surviving species have been forced into small refuges almost like islands in a hostile environment, or have been forced from their 'niche' altogether. A 'niche' is the habitat which supplies the requirements of a species; some species have narrow, specialized niches, others have broad, general niches. The latter have adapted well and thrive; the former have vanished or have become greatly reduced in number. Animals or plants which become endangered, in addition to having specialized niches and being unable to adapt, may have some of the following characteristics: they compete with humans for space or food; have low numbers of offspring and a long juvenile period; exist at the top of a food chain; are prized for their beauty or the beauty of their pelt.

We must relate the species to their environment; each species is part of an ecosystem which contains an exceedingly large number of different kinds of organisms. This is called diversity and helps to provide stability for natural ecosystems, a balancing of nature's forces. This large number of organisms exhibit a nearly infinite range of sensitivity; a few cannot tolerate even subtle changes in their environment and when such changes do occur, the more tolerant organisms increase in response to decreased competition. Increases in the populations of House Sparrows,

Starlings and certain blackbirds are easily observed examples. Each time an organism is removed, the ecosystem or community becomes less stable, less complex and more vulnerable to disease and disorder. In this way, sensitive species may act as an 'early warning system', heralding changes not yet felt by human populations. For example, our first indication that certain pesticides were disruptive to metabolic activities was from the effect on falcons and eagles. Consider the consequences if we had been obliged to wait until changes began occurring in humans!

Less obvious reasons compel our commitment to saving rare species. Each species has a unique genetic complement. Once a species is destroyed, man has no means of recreating it, despite our marvelous technology. We have no way of knowing what the future needs of man may be and this genetic resource may be of inestimable value to mankind. Many people, out of strong moral conviction, simply respect the right to existence of all living things. They feel a deep appreciation for the wild and rare treasures of nature and feel a grave sense of responsibility for the preservation of the richness of our natural heritage for future generations. Who can put a price tag on the sight of a Northern Harrier coursing the fields, the call of an Upland Sandpiper, the beauty of a Pink Lady-slipper or the knowledge that Iowa yet has places wild enough to harbor Prairie Rattlesnakes and Bobcats?

Some people take an emotional approach to saving rare species. Emotion alone, however sincere, will not save rare species; it must be coupled with research to learn the ecological parameters of each species and the translation of this knowledge into management. This management may range from leaving the species alone to propagating it in captivity, as in the case of the successful captive-raising of peregrine falcons at Cornell University. Some will defy at-

tempts to learn their secrets; some will yield their secrets easily. A few, whose problems are complex, subtle and tied to the entire community, may never be fathomed or may take world-wide implications as in the case of the Bald Eagle and the DDT ban. Our goal in learning the secrets of their ecological needs is to apply this knowledge to their well-being and hopefully remove them from the 'endangered species' list.

Realism must be present in an endangered species program — the realism that we cannot save everything, that we must have priorities and that extinctions and extirpations will occur in spite of our best efforts. A goal of a well-conceived endangered species program is to prevent needless, premature extirpations and extinctions.

It is futile to speak of endangered species without centering on endangered habitats; only by protecting buffered tracts which include a rare species habitat can we insure adequate space and long-term survival. Frequently this preserved habitat is suitable for many of our native wildlife species including game and other species known to be directly beneficial to man. These areas, or parts of them, may be compatible with other uses such as hiking, photography, educational purposes, hunting, or simply as wild places for man's comfort and appreciation — a refuge for a rare and fragile species may also provide respite for city-weary mankind. This is where the private citizen can help. Only about two percent of Iowa's land is publicly owned. This is not enough to provide space for recreation and protection of rare species; it is certainly not enough land to adequately minister to the needs of future generations. Only by public support for increased appropriations for land acquisition in the next few years can the Conservation Commission locate and acquire sufficient land to provide safe habitat for our endangered co-inhabitants of Earth. We hope you will help.

PHOTO BY THE AUTHOR



*"Like winds and sunsets, wild things  
were taken for granted until progress  
began to do away with them. Now we  
face the question whether a still higher  
standard of living is worth its cost in  
things natural, wild and free."*

— Aldo Leopold

## *Iowa's Endangered Vertebrates*

WHAT IS the impact of the disappearance of an animal from the state or from the world? Unimportant? Unfortunate? A tragedy? Your answer will depend on your job, your past training and your ecological education. "We're doing all right without the dinosaurs, aren't we?" is a trite retort and scarcely relevant. Because we evolved as a race in the company of natural systems and a full array of wild species, perhaps we are closer to them than we may think. Many people believe we simply do not have the moral right to consciously cause the extinction of a species. Do you believe any species have been extirpated (gone from our state) in our history? Many. A few are the Whooping Crane, Long-billed Curlew, Elk, Gray Wolf, Gilt Darter and River Redhorse. Do you think any species have become extinct in your lifetime? Yes. Since settlement of this country, the Carolina Paroquet, Passenger Pigeon and Bison (as a wild species) have disappeared; they all once called Iowa their home. At this very minute, two other species are teetering on the brink of the void of extinction and may well already be over the edge; these are the Ivory-billed Woodpecker, and, closer to home, the Black-footed Ferret of the Great Plains just west of Iowa. Unimportant? Perhaps. But one thing is for sure — once a species is gone, we have no way of recreating it, despite our sophisticated technology.

What is being done to protect the very rare animals in Iowa? In 1977, the Conservation Commission adopted a list of threatened and endangered vertebrates; it is cooperating with nearby states to determine the status of animals that

occur in both states; it is re-introducing certain animals that are very rare or extirpated; hopefully, a joint venture with nearby states and the federal government will be initiated this year to learn as much as possible about the biology of the Indiana Bat and the Peregrine Falcon, both on the federal endangered species list. Attempts are being made to determine what endangered or threatened species occur on state-owned land so their welfare can be considered in management decisions. We are working with scientists throughout Iowa to learn the location of the most important sites of endangered and threatened species. Our goal is to prevent needless, premature extirpations.

Following is a listing of vertebrates which the Conservation Commission, acting in conjunction with specialists throughout Iowa, considers to be in jeopardy. Terminology used in compiling the lists is as follows:

**Extinct** — *no longer found on this planet.*

**Extirpated** — *no longer found in the state as a breeding population.*

**Endangered** — *in danger of becoming extirpated if its habitat worsens or no management steps are taken.*

**Threatened** — *in danger of becoming endangered if its habitat worsens or no management steps are taken.*

**Undetermined** — *known to exist in low numbers, but of which insufficient information is available to make judgment on its status.*

## Mammals

IOWA is a meeting ground for mammals whose ranges center in other parts of the country. The Red Squirrel, Woodland Vole, Grasshopper Mouse, Pygmy Shrew and Meadow Jumping Mouse are examples of mammals whose normal ranges are more northern; the Big Free-tailed Bat and Cotton Rat are examples of animals with a southern distribution; a number of species from the eastern deciduous woodland terminate their ranges in Iowa; relict species, like the Red-backed Vole, are hold-overs from an earlier age. Some, like the Pronghorn and Prairie Dog, were restricted and nearly prevented from becoming part of the Iowa fauna by the barrier effect of the Missouri River. These factors combine to make Iowa an interesting place to study mammals.

Large-scale conversion of the tall-grass prairie to agricultural use, draining of most wetlands and grazing or logging of most woodlands has had an adverse effect on Iowa mammals; however, 60 of the 72 native species yet occur in the state, though some are sporadic visitors and others are very rare. The status of the very rare is given in the following list.



Indiana Bat

PHOTO COURTESY OF U.S. FISH AND WILDLIFE SERVICE

### Insectivora — Insect-eating animals

Pygmy Shrew ( <i>Microsorex hoyi</i> )	undetermined
Least Shrew ( <i>Cryptotis parva</i> )	undetermined

### Chiroptera — Bats

Keene's Myotis ( <i>Myotis keenii</i> )	threatened
Indiana Bat ( <i>Myotis sodalis</i> )	endangered
Evening Bat ( <i>Nycticeius humeralis</i> )	threatened
Big Free-tailed Bat ( <i>Tadarida macrotis</i> )	extirpated

### Rodentia — Rodents

Plains Pocket Mouse ( <i>Perognathus flavescens</i> )	endangered
Grasshopper Mouse ( <i>Onychomys leucogaster</i> )	endangered
Red-backed Vole ( <i>Clethrionomys gapperi</i> )	endangered
Woodland Vole ( <i>Microtis pinetorum</i> )	endangered
Porcupine ( <i>Erethizon dorsatum</i> )	extirpated

### Carnivora — Flesh-eating Animals

Gray Wolf ( <i>Canis lupus</i> )	extirpated
Black Bear ( <i>Ursa americana</i> )	endangered
Fisher ( <i>Martes pennanti</i> )	extirpated
Ermine ( <i>Mustela erminea</i> )	undetermined
Long-tailed Weasel ( <i>Mustela frenata</i> )	undetermined
Wolverine ( <i>Gulo gulo</i> )	extirpated
Spotted Skunk ( <i>Spilogale putorius</i> )	undetermined
River Otter ( <i>Lutra canadensis</i> )	threatened
Mountain Lion ( <i>Felis concolor</i> )	extirpated
Lynx ( <i>Lynx canadensis</i> )	extirpated
Bobcat ( <i>Lynx rufus</i> )	endangered

### Artiodactyla — Hoofed Animals

American Elk ( <i>Cervus elaphus</i> )	extirpated
Bison ( <i>Bison bison</i> )	extirpated
Pronghorn ( <i>Antilocarpa americana</i> )	extirpated

## Birds

THERE IS good documentation of historical trends in Iowa's bird populations. R. M. Anderson wrote a state-wide review of the status of birds in 1907; Phil DuMont wrote a similar report in 1933 and in 1970, Woodward Brown published a status update. These works, along with information from the members of the Iowa Ornithologists' Union and field biologists of the State Conservation Commission, were utilized in compiling a list of rare birds for Iowa. One Iowa bird appears on the federal endangered species list. This is the Peregrine Falcon, which migrates through Iowa and nested in northeast Iowa in years past and still may do so. The Bald Eagle is on the federal list, but it has not been known to nest in Iowa since about the turn of the century.

Following is a list of the status of Iowa's rarest birds. It pertains only to nesting populations.

### Podicipedidae — Grebes

Eared Grebe ( <i>Podiceps caspicus</i> )	threatened
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### Anatidae — Ducks and Swans

Trumpeter Swan ( <i>Olor buccinator</i> )	extirpated
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### Accipitridae — Kites, Hawks and Eagles

Swallow-tailed Kite ( <i>Elanoides forficatus</i> )	extirpated
Sharp-shinned Hawk ( <i>Accipiter striatus</i> )	extirpated
Cooper's Hawk ( <i>Accipiter cooperi</i> )	threatened
Red-shouldered Hawk ( <i>Buteo lineatus</i> )	endangered
Broad-winged Hawk ( <i>Buteo platypterus</i> )	threatened
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	extirpated
Northern Harrier ( <i>Circus cyaneus</i> )	endangered
Peregrine Falcon ( <i>Falco peregrinus</i> )	endangered

### Tetraonidae — Grouse

Greater Prairie Chicken ( <i>Tympanuchus cupido</i> )	extirpated
Sharp-tailed Grouse ( <i>Pedioetes phasianellus</i> )	extirpated

### Gruidae — Cranes

Whooping Crane ( <i>Grus americana</i> )	extirpated
Sandhill Crane ( <i>Grus canadensis</i> )	extirpated

### Charadriidae — Plovers

Piping Plover ( <i>Charadrius melodus</i> )	endangered
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### Scolopacidae — Sandpipers

Long-billed Curlew ( <i>Numenius americanus</i> )	extirpated
Upland Sandpiper ( <i>Bartramia longicauda</i> )	endangered

### Laridae — Terns

Least Tern ( <i>Sterna albifrons</i> )	endangered
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### Columbidae — Pigeons and Doves

Passenger Pigeon ( <i>Ectopistes migratorius</i> )	extinct
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### Psittacidae — Parrots and Paroquets

Carolina parakeet ( <i>Conuropsis carolinensis</i> )	extinct
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### Cuculidae — Cuckoos

Black-billed Cuckoo ( <i>Coccyzus erythrophthalmus</i> )	undetermined
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### Tytonidae — Barn Owls

Barn Owl ( <i>Tyto abla</i> )	endangered
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### Strigidae — Owls

Burrowing Owl ( <i>Speotyto cunicularia</i> )	endangered
Long-eared Owl ( <i>Asio otus</i> )	threatened
Short-eared Owl ( <i>Asio flammeus</i> )	extirpated

### Tyrannidae — Tyrant Flycatchers

Say's Phoebe ( <i>Sayornis saya</i> )	threatened
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### Laniidae — Shrikes

Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	threatened
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### Vireonidae — Vireos

Bell's Vireo ( <i>Vireo bellii</i> )	undetermined
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### Parulidae — Wood Warblers

Blue-winged Warbler ( <i>Vermivora pinus</i> )	threatened
Yellow Warbler ( <i>Dendroica petechia</i> )	undetermined

Birds seem to be accurate and sensitive indicators of the general condition of the environment; hawks are on the top of a food chain and reflect the general health of their prey; certain warblers need quite specific sites for nesting. When a species disappears from the state, as in the case of at least ten Iowa birds, we should be moved to action.

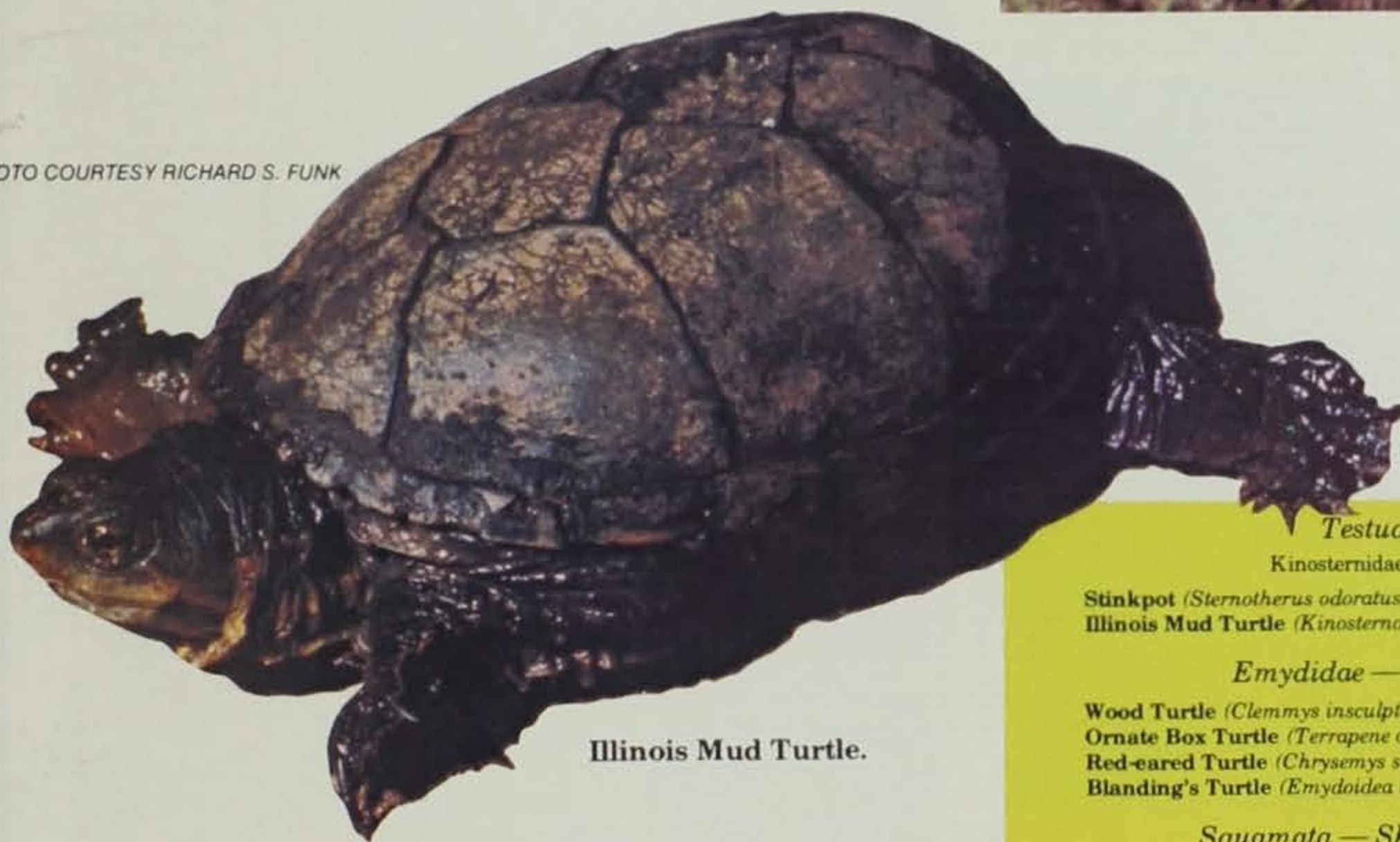
## Reptiles and Amphibians

PHOTO BY BRUCE MENZEL



Blue-spotted Salamander

PHOTO COURTESY RICHARD S. FUNK



Illinois Mud Turtle.

IOWA'S herpetofauna includes over 70 species or subspecies. These reptiles and amphibians constitute an interesting and important part of the state's fauna. There are no known extirpations in Iowa, although the Wood Turtle, Speckled Kingsnake, Western Slender Glass Lizard and Great Plains Skink exist in very low numbers and may well soon disappear from the state. Habitat destruction, largely through degradation of streams and draining of marshes, has forced these animals into smaller and smaller areas; for example, the Massasauga once occurred widely across the state, but is now found in a very few widely scattered locations.

Iowa occupies an important position in reptile and amphibian protection; it is located on the fringe of many species' ranges and thus can act as a sentinel for changes in population shifts or declines. What happens on the edge of an animal's range may be a forecast for the future of its entire range. These organisms can be useful in making inferences about our past environmental conditions. They are slow to migrate, adapt poorly and have narrow environmental tolerances. Thus, relict populations can give a clue to what conditions existed during postglacial times. With a fairly static human population in Iowa and with the concern shown in recent years for rare species, perhaps we can protect our remaining populations so they will always be part of the Iowa landscape.

### Testudinata — Turtles

#### Kinosternidae — Musk and Mud Turtles

Stinkpot ( <i>Sternotherus odoratus</i> )	threatened
Illinois Mud Turtle ( <i>Kinosternon flavescens spooneri</i> )	endangered

#### Emydidae — Box and Water Turtles

Wood Turtle ( <i>Clemmys insculpta</i> )	endangered
Ornate Box Turtle ( <i>Terrapene ornata</i> )	threatened
Red-eared Turtle ( <i>Chrysemys scripta</i> )	threatened
Blanding's Turtle ( <i>Emydoidea blandingi</i> )	threatened

### Squamata — Skinks, Lizards and Snakes

#### Scincidae — Skinks

Five-lined Skink ( <i>Eumeces fasciatus</i> )	threatened
Great Plains Skink ( <i>Eumeces obsoletus</i> )	endangered

#### Anguidae — Glass Lizards

Western Slender Glass Lizard ( <i>Ophirosaurus attenuatus</i> )	endangered
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#### Colubridae — Water, Earth and Rat Snakes

Diamondback Water Snake ( <i>Natrix rhombifera</i> )	threatened
Yellow-bellied Water Snake ( <i>Natrix erythrogaster</i> )	threatened
Graham's Water Snake ( <i>Natrix grahami</i> )	threatened
Western Earth Snake ( <i>Virginia valeriae</i> )	threatened
Black Rat Snake ( <i>Elaphe obsoleta</i> )	threatened
Speckled Kingsnake ( <i>Lampropeltis getulus</i> )	endangered

#### Viperidae — Pit Vipers and Rattlesnakes

Northern Copperhead ( <i>Agkistrodon contortrix</i> )	endangered
Prairie Rattlesnake ( <i>Crotalus viridis</i> )	endangered
Massasauga ( <i>Sistrurus catenatus</i> )	threatened

### Caudata — Salamanders and Newts

#### Ambystomatidae — Mole Salamanders

Small-mouthed Salamander ( <i>Ambystoma texanum</i> )	threatened
Blue-spotted Salamander ( <i>Ambystoma laterale</i> )	endangered

#### Salamandridae — Newts

Central Newt ( <i>Notophthalmus viridescens</i> )	endangered
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### Anura — Frogs and Toads

#### Pelobatidae — Spadefoot Toads

Plains Spadefoot ( <i>Scaphiopus bombifrons</i> )	threatened
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### Hylidae — Tree frogs and Allise

Spring Peeper ( <i>Hyla crucifer</i> )	threatened
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## Fish

PERHAPS members of Iowa's aquatic communities have been most seriously affected by human activities, particularly pollution, stream channelization and agricultural intensification. The fish populations in the state have not been intensively studied for over twenty years, but it appears that a number of species are either gone from Iowa's waters or in some danger of disappearing. Fortunately Seth Meek and Ellsworth Call did considerable collecting just before the turn of the century so we have some idea of what species were present then. Later workers did follow-up studies in some of the areas to determine what species were still present and it appears that at least seven species have disappeared from Iowa. Following is a report on the status of Iowa's rarest species of fish:



Orangethroat Darter

PHOTO COURTESY MISSOURI DEPARTMENT OF CONSERVATION

### Petromyzontidae — Lampreys

Chestnut Lamprey ( <i>Ichthyomyzon castaneus</i> )	threatened
American Brook Lamprey ( <i>Lampetra lamottei</i> )	threatened

### Acipenseridae — Sturgeons

Lake Sturgeon ( <i>Acipenser fulvescens</i> )	endangered
Pallid Sturgeon ( <i>Scaphirhynchus albus</i> )	endangered

### Clupidae — Herrings

Alabama Shad ( <i>Alosa alabamae</i> )	extirpated
Skipjack Herring ( <i>Alosa chrysochloris</i> )	threatened

### Esocidae — Pikes

Grass Pickerel ( <i>Esox americanus</i> )	threatened
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### Cyprinidae — Minnows

Redside Dace ( <i>Clinostomus elongatus</i> )	extirpated
Southern Redbelly Dace ( <i>Chrosomus erythrogaster</i> )	threatened
Sturgeon Chub ( <i>Hybopsis gelida</i> )	extirpated
Sickelfin Chub ( <i>Hybopsis meeki</i> )	endangered
Lake Chub ( <i>Couesius plumbeus</i> )	endangered
Gravel Chub ( <i>Hybopsis x-punctata</i> )	threatened
Pugnose Shiner ( <i>Notropis anogenus</i> )	threatened
Ironcolor Shiner ( <i>Notropis chalybaeus</i> )	extirpated
Blacknose Shiner ( <i>Notropis heterolepis</i> )	endangered
Weed Shiner ( <i>Notropis texanus</i> )	threatened
Silverband Shiner ( <i>Notropis shumardi</i> )	endangered
Topeka Shiner ( <i>Notropis topeka</i> )	threatened
Pugnose Minnow ( <i>Notropis emiliae</i> )	undetermined
Pearl Dace ( <i>Semotilus margarita</i> )	endangered

### Catostomidae — Suckers

Lake Chubsucker ( <i>Erimyzon sucetta</i> )	extirpated
River Redhorse ( <i>Moxostoma carinatum</i> )	extirpated
Black Redhorse ( <i>Moxostoma dugesnei</i> )	endangered

### Cyprinodontidae — Killifishes

Starhead Topminnow ( <i>Fundulus notti</i> )	endangered
Plains Topminnow ( <i>Fundulus sciadicus</i> )	endangered

### Centrarchidae — Sunfishes

Longear Sunfish ( <i>Lepomis megalotis</i> )	endangered
Crystal Darter ( <i>Ammocrypta asprella</i> )	undetermined
Western Sand Darter ( <i>Ammocrypta clara</i> )	threatened
Mud Darter ( <i>Etheostoma asprigene</i> )	threatened
Bluntnose Darter ( <i>Etheostoma chlorosomum</i> )	threatened
Least Darter ( <i>Etheostoma microperca</i> )	endangered
Orangethroat Darter ( <i>Etheostoma spectabile</i> )	endangered
Gilt Darter ( <i>Percins evides</i> )	extirpated

### Aphredoderidae — Pirate Perch

Pirate Perch ( <i>Aphredoderus sayanus</i> )	undetermined
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## Iowa's Endangered Plants

CONTRARY TO the impression many people have that Iowa has little to offer except agricultural crops, it is an interesting place to study and appreciate native wild plants. The diversity of plant life is a result of the state's physical location; it is a meeting ground for plants from the Great Plains, the boreal region and the eastern deciduous woodland. The dissected topography of northeast Iowa, especially in the 'driftless area', provides habitats reminiscent of those normally found in northern Minnesota or northern Wisconsin and here are found such rare plants as Bunchberry, Bearberry, Dwarf Scouring Rush, Shinleaf, Blueberry and Twinflower. The dry, west-facing loess hills in western Iowa along the Missouri River provide habitat similar to that of the Great Plains and here are found many species characteristic of western United States. Careful looking may turn up rare plants such as Buffalo Grass, Buffalo Berry, Tumble Grass, Western Beard-tongue and Prickly-pear Cactus. In the dry woodlands of southern Iowa, habitats similar to those in the Ozarks harbor trees like Pawpaw, Persimmon, Sassafras and Blue Ash. The dissected, moist woodlands of eastern Iowa, where elements of the eastern deciduous woodland end, may disclose such beautiful, delicate and rare plants as Pink Ladyslipper, Monkshood, Muskroot and Twinleaf.

Iowa has some very unusual habitats where some of the rarest plants of the state are found. In northwest Iowa a number of 'fens' are found; these are springy areas on hillsides with upwelling, calcareous water where one may find rare plants like Arrow-grass, Grass of Parnassus, Northern Green Orchid and Beaked Rush. The only true bog in Iowa is in the northern part of the state and contains some very rare plants such as Cotton grass and the insect-eating Sundew. Because so many of Iowa's marshes and prairie potholes have been drained, some marsh or aquatic plants are having trouble existing in the state. Some of the rarest are Bogbean, Mare's tail, Water Horsetail, Wild Rice, Water Marigold and Water Shield. Aspen bogs in northern Iowa still harbor Adder's tongue fern, White Lady-slipper, and Swamp Birch. Growing around ice caves in northeast Iowa are plants that normally are found in boreal America. Sandy areas in Iowa furnish some exceedingly rare plants like the curious lower vascular plant Meadow Spike-moss, Erect Dayflower, Royal Fern, Cinnamon Fern and Golden Corydalis.

Travelling around Iowa, poking into the remote corners, may pay dividends like seeing a plant so rare that it occurs in only one place in the state, or you may see over 90% of the world's population of a certain species. These are experiences to be savored; they may not be possible in tomorrow's world.

While some Iowa plants are very rare, others have not been so lucky as to survive; because most of our state has been plowed, drained or grazed, and because many of our streams have been channelized, many plants lost their prime habitat and have disappeared. Over 80 plants which formerly grew here can no longer be found and at least 35 others are now known from a single location in Iowa. Many of these rarities require special habitats and specific conditions; in many cases, the less human visitation, the better; in other cases, a form of management is needed.

Only recently has the government begun to think about the problem of protecting rare species of plants. In December of 1973, passage of the U. S. Endangered Species Act (Public Law 93-205) supplied the needed impetus for the protection



From top to bottom, left to right: Bearberry; Marginal Shield Fern; Monkshood; Bunchberry; Golden Saxifrage; and Bearberry.



PHOTO BY THE AUTHOR

PHOTO BY RANDALL MAAS

PHOTO BY THE AUTHOR

of endangered and threatened plants as well as animals. In January, 1975, the Secretary of the Smithsonian Institution presented to Congress House Document No. 94-51, "A Report on Endangered and Threatened Plant species of the United States", which listed 2,099 species, or approximately 10% of the native flora. Three plants which occur in Iowa appeared on this list; they are Monkshood (*Aconitum noveboracense*), Mead's Milkweed (*Asclepias meadii*) and Prairie Bushclover (*Lespedeza leptostachya*). Considerable field checking has occurred to determine the status of these plants in Iowa. They are proposed for inclusion on the federal endangered and threatened species list; at present, only Monkshood appears on the federal list and is termed 'threatened'.

We have identified the plants considered endangered or threatened; they deserve our utmost caution and loving care if they are to be a part of our children's world. We are attempting to locate all sites in Iowa of plants termed 'endangered'; when found, the site should be protected — acquired by the state, if possible. This is where public support of the Commission's acquisition program is essential. We will need your help.

Following is a list of the plants thought to be in the most danger of not surviving in Iowa; they are termed 'endangered'. Because of space limitations, only the endangered plants are listed below, but a complete list of endangered, threatened, extirpated (gone from Iowa) or 'status undetermined' plants may be obtained from the Conservation Commission.



Erect Dayflower.

PHOTO BY THE AUTHOR

**Lower Vascular Plants**

**Adiantaceae (Maidenhair Fern Family)**

Purple Cliffbrake *Pellaea atropurpurea*

**Aspleniaceae (Spleenwort Family)**

Glandular Wood Fern *Dryopteris intermedia*  
Marginal Shield Fern *Dryopteris marginalis*  
Limestone Oak Fern *Gymnocarpium robertianum*  
Rusty Cliff Fern *Woodsia ilvensis*  
Western Cliff Fern *Woodsia oregana*

**Equisetaceae (Horsetail Family)**

Dwarf Scouring Rush *Equisetum scirpoides*  
Woodland Horsetail *Equisetum sylvaticum*

**Ophioglossaceae (Adder's-tongue Family)**

Leather Grape Fern *Botrychium multifidum*  
Least Grape Fern *Botrychium simplex*  
Adder's-tongue Fern *Ophioglossum vulgatum*

**Osmundaceae (Flowering Fern Family)**

Cinnamon Fern *Osmunda cinnomomea*

**Selaginellaceae (Spikemoss Family)**

Meadow Spike-moss *Selaginella eclipes*

**Lycopodiaceae (Clubmoss Family)**

Running Clubmoss *Lycopodium clavatum*  
Round-branched Clubmoss *Lycopodium dendroideum*  
Crowfoot Clubmoss *Lycopodium flabelliforme*  
Rock Clubmoss *Lycopodium porophyllum*

**Dicots**

**Acanthaceae (Acanthus Family)**

Water Willow *Justicia americana*

**Asclepiadaceae (Milkweed Family)**

Eared Milkweed *Asclepias auriculata*  
Woolly Milkweed *Asclepias lanuginosa*  
Mead's Milkweed *Asclepias meadii*

**Asteraceae (Aster Family)**

Forked Aster *Aster furcatus*  
Water Marigold *Bidens beckii*  
Spreading Goldenrod *Solidago patula*

**Berberidaceae (Barberry Family)**

Twinleaf *Jeffersonia diphylla*

**Betulaceae (Birch Family)**

Swamp Birch *Betula pumila*

**Boraginaceae (Borage Family)**

Northern Lungwort *Mertensia paniculata*

**Caprifoliaceae (Honeysuckle Family)**

Twinflower *Linnaea borealis*

**Capparidaceae (Caper Family)**

James' Cristatella *Cristatella jamesii*

**Caryophyllaceae (Pink Family)**

Field Chickweed *Cerastium arvense*

**Cistaceae (Rockrose Family)**

Poverty Grass *Hudsonia tomentosa*  
Pinweed *Lechia intermedia*

**Cornaceae (Dogwood Family)**

Bunchberry *Cornus canadensis*

**Droseraceae (Sundew Family)**

Sundew *Drosera rotundifolia*

**Elatinaceae (Waterwort Family)**

Waterwort *Elatine triandra*

**Ericaceae (Health Family)**

Bearberry *Arctostaphylos uva-ursi*  
Prince's Pine *Chimaphila umbellata*  
Huckleberry *Gaylussacia baccata*  
Shinleaf *Pyrola secunda*  
Low Sweet Blueberry *Vaccinium angustifolium*  
Velvet-leaf Blueberry *Vaccinium myrtilloides*

**Fabaceae (Leguminosae) (Pea Family)**

Fragrant False Indigo *Amorpha nana*  
Rattle Vetch *Astragalus striatus*  
Prairie Bush Clover *Lespedeza leptostachya*  
Silky Prairie Clover *Petalostemon villosus*

**Haloragaceae (Water-milfoil Family)**

Rough Water Milfoil *Myriophyllum pinnatum*  
Mermaid Weed *Proserpinaca palustris*

**Hippuridaceae (Mare's-tail Family)**

Mare's-tail *Hippurus vulgaris*

**Hypericaceae (St. John's-wort Family)**

Northern St. John's-wort *Hypericum boreale*

**Lamiaceae (Mint Family)**

Blue Giant Hyssop *Agastache foeniculum*

**Lentibulariaceae (Bladderwort Family)**

Humped Bladderwort *Utricularia gibba*  
Flat-leaved Bladderwort *Utricularia intermedia*  
Small Bladderwort *Utricularia minor*

**Lythraceae (Loosestrife Family)**

Water Willow *Decodon verticillatus*

**Melastomataceae (Melastoma Family)**

Meadow Beauty *Rhexia virginica*

**Menyanthaceae (Buckbean Family)**

Bogbean *Menyanthes trifoliata*

**Nymphaeaceae (Water-lily Family)**

Water Shield *Brasenia schreberi*

**Papaveraceae (Poppy Family)**

Golden Corydalis *Corydalis aurea*

**Polygalaceae (Milkwort Family)**

Pink Milkwort *Polygala incarnata*

**Portulacaceae (Purslane Family)**

Fameflower *Talinum parviflorum*  
Rough-seeded Fameflower *Talinum rugospermum*

**Ranunculaceae (Crowfoot Family)**

Monkshood *Aconitum noveboracense*

**Rubiaceae (Madder Family)**

Partridge Berry *Mitchella repens*

**Salicaceae (Willow Family)**

Shining Willow *Salix lucida*  
Bog Willow *Salix pedicellaris*

**Saxifragaceae (Saxifrage Family)**

Golden Saxifrage *Chrysosplenium ioense*  
Northern Currant *Ribes hudsonianum*

**Scrophulariaceae (Figwort Family)**

Round-stemmed False Foxglove *Gerardia gattereri*  
Pale False Foxglove *Gerardia skinneriana*  
American Brookline *Veronica americana*  
Kitten-tails *Wulfenia bullii*

**Violaceae (Violet Family)**

Green Violet *Hybanthus concolor*

**Vitaceae (Vine Family)**

Summer Grape *Vitis aestivalis*

**Monocots**

**Cyperaceae (Sedge Family)**

Clustered Sedge *Carex aggregata*  
Crawford's Sedge *Carex crawfordii*  
Slender Sedge *Carex leptalea*  
Intermediate Sedge *Carex media*  
Rocky Mountain Sedge *Carex saximontana*  
Deep Green Sedge *Carex tonsa*  
Purple Spike-rush *Eleocharis atropurpurea*  
Dwarf Spike-rush *Eleocharis coloradoensis*  
Tall Cotton-grass *Eriophorum angustifolium*  
Slender Cotton-grass *Eriophorum gracile*  
Slender Fimbristylis *Fimbristylis autumnalis*  
Prairie Bulrush *Scirpus paludosus*

**Hydrocharitaceae (Frog's-bit Family)**

Tapegrass *Vallisneria americana*

**Juncaceae**

Alpine rush *Juncus alpinus*  
Green's rush *Juncus greenii*

**Liliaceae (Lily Family)**

Nodding Wild Onion *Allium cernuum*

**Orchidaceae (Orchid Family)**

Pink Ladyslipper *Cypripedium reginae*  
Pale Green Orchid *Habenaria flava*  
Prairie-fringed Orchid *Habenaria leucophaea*  
Hooded Lady's Tresses *Spiranthes romanzoffiana*

**Poaceae (Graminae) (Grass Family)**

Buffalo Grass *Buchloe dactyloides*  
Rice Grass *Oryzopsis pungens*  
Slim-leaved Panicum *Panicum linearifolium*  
Weak Bluegrass *Poa languida*  
Tumble Grass *Schedonnardus paniculatus*  
Spear Grass *Stipa comata*

**Pontederiaceae (Pickerel Weed Family)**

Mud Plantain *Heteranthera limosa*



# YUCCA — one of Iowa's wildflowers

by Dale Brumm

YUCCA GLAUCA NUTT (small soapweed) is a unique plant found from the Rocky Mountains to the Mississippi river and southward into Mexico. It grows well in sandy soils, but thrives in the "loess" soil of Western Iowa.

The Yucca is a member of the Lilly family and has sharp spiked simple leaves that radiate upward from a woody stem. Towards the end of May

into the beginning of June the plant puts forth an inflorescence that stands above the leaves. The flower pods are three sectioned with each one divided into six rows of tightly packed black, triangular seeds.

The blossoms are pollinated by the female Pronuba Moth which is so specialized she can pollinate only the Yucca. By moonlight the moth collects the pollen from several

blossoms and rolls it into a ball. She then thrusts this ball into the ovules of the flower with some of her eggs. The pollen fertilizes the ovules so they become seeds and the eggs hatch into larvae which eat some of the seeds on their way out of the pods to become Yucca Moths.

The seed pods dry and become very hard but stay attached to the stalk. In the fall

they break open and scatter hundreds of seeds nearby. Some of these seeds germinate thereby propagating the plant. They become thick where they are not molested but in areas like Stone State Park near Sioux City they are often picked in violation of state law. Iowans who visit Stone State Park should remember to take nothing but pictures.

PHOTO BY SYLVAN T. RUNKEL



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JULY, 1978

## FISHING IOWA'S SOUTHERN REACH OF THE MISSISSIPPI RIVER

by Steve Waters

FISHERIES BIOLOGIST

**T**HE MISSISSIPPI RIVER is Iowa's largest and most complex "fishing hole". There are over 160 river miles and 81,000 acres of water to pursue your favorite fish and fishing method in the Fairport Fish Management District (Clinton to Keokuk).

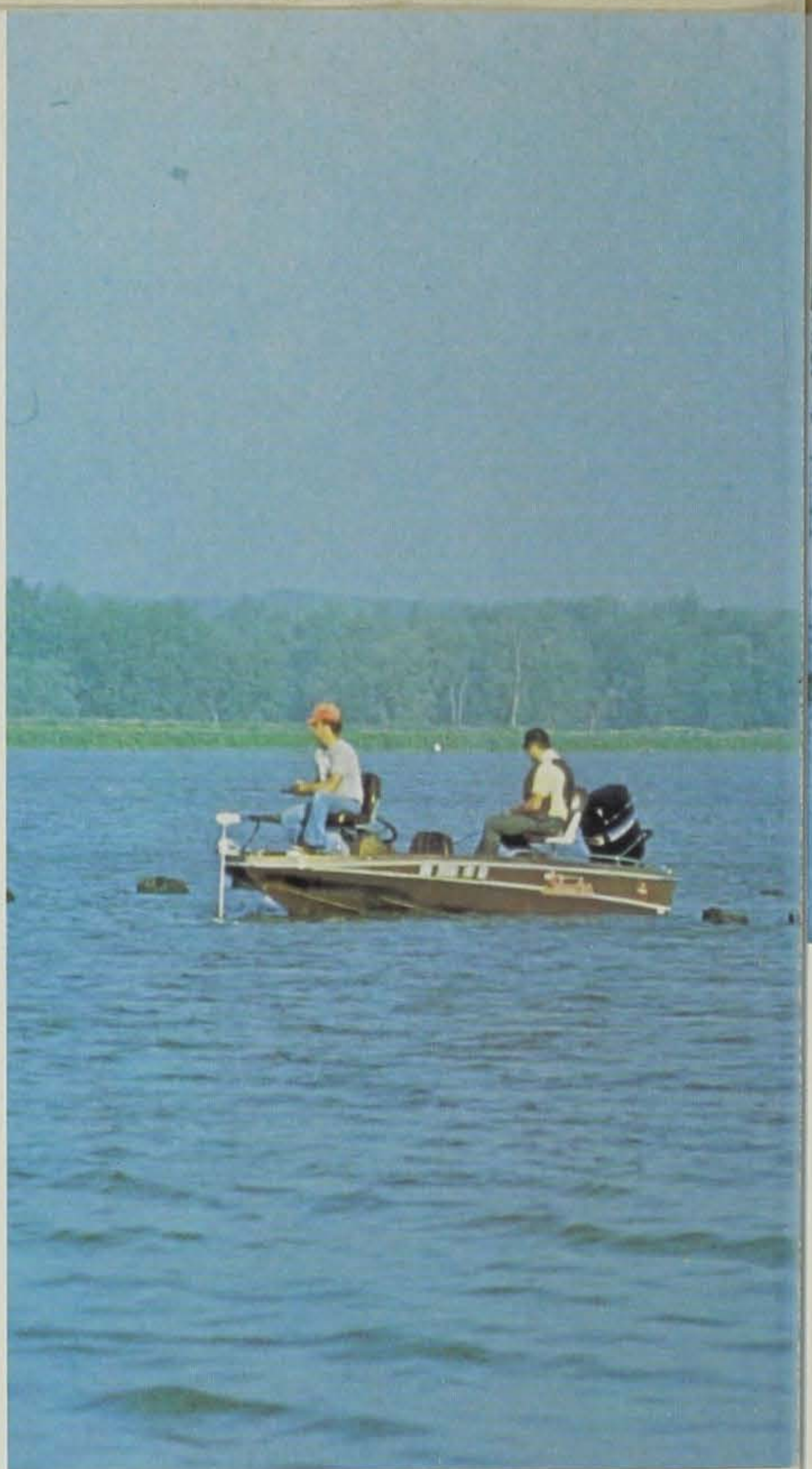
The diversity of fish habitats is the key to the Mississippi's great fishing. Tailwater areas, wing dams, stump fields, side channel and backwater habitats are all different types of habitat that produce some of the Midwest's finest fishing.

Although Walleye and sauger fishing below the Locks and Dams (tailwaters) is generally best during spring and fall, they can be taken during any part of the year. For those hearty anglers who tackle the winter's cold or the summer night fisherman a fine limit of walleye and sauger is often the reward. Many anglers jig sonars or other jiggling type lures with great success while others rely on minnows to take fish.

During late spring, early summer and again during the fall, white bass fishing is at its peak. The tailwaters and wing dams are the hot spots. When a school of white bass is located, the angler is in for some fast and furious action, often catching a fish on every cast. White bass can be spotted hitting the surface while feeding on gizzard shad. They are often located by casting flashing spinner baits or trolling around wing dams; this method will also produce some fine walleye.

Don't overlook snagging for paddlefish in the rough water below the navigation dams. The best fishing is in the winter and spring months. Fish in the 20 to 30 pound class are not uncommon and some 50-60 pound monsters are taken. Although fishing below all Locks and Dams will produce catches of paddlefish, Locks and Dams 16 (Muscatine), 19 (Keokuk) and 17 (New Boston, Illinois) are the best in the Fairport Fish Management District.

A typical outfit for snagging paddlefish includes: 20 pound-test monofilament line, around four ounces of weight and a number six treble hook tied into the line about two feet above the weight. The reel is the bait casting type and the rod action should be stiff. Trolling perpendicular to the current is the most productive technique used.



Catfish is king in the summer time in Iowa's southern reach of the Mississippi River. Areas along the main channel and side channels are most productive. Wing dams, cut banks and stump fields (especially during spawning time) are favorite fishing areas. A wide variety of home-brewed prepared baits and natural baits are used to take catfish.

The backwater lake and slough habitats not only provide some exciting fishing, but also produce picturesque scenery. There is little or no current in these areas, as opposed to main channel and side channel habitats. Slab crappies, handsized bluegills, scrappy largemouth bass and all species of bullheads are taken most frequently from these areas. Stumps, fallen trees and vegetation beds are excellent places to dunk natural baits or cast artificials. Some of the best catches of panfish occur during winter by ice fishing Mississippi River backwaters.

All backwater areas will produce fine catches of fish. However, some of the more popular areas are listed in the table below.



### Selected Mississippi River Backwater Fishing Areas

River Mile	Pool	Area	Nearest Town	Facilities
517-513	14	Beaver Island	Clinton/Camanche	Boat ramps at both towns. Camping on islands.
510-507	14	Rock Creek Area	Camanche/Princeton	Boat ramps and public campground.
506-503	14	Steamboat Slough	Princeton	Boat ramp at Princeton Island camping.
472-464	16	Andalusia Slough	Buffalo	Ramps at Buffalo, Montpelier and Fairport. 2 public camping areas with ramps. Island camping.
462-458	16	Wyoming Slough	Fairport	Public camping and ramp at Fairport.
446-443	17	Big Timber Area	Muscatine	Ramp at area.
439-438	17	Turkey Chute Area	Lake Odessa	Ramp at river mile 441-Port Louisa access.
425-421	18	Huron Island	Oakville	Ramp at Putney's Landing, Illinois
409-407	19	Otter Island	Burlington	Ramps in Burlington. Island camping.
407-405	19	O'Connell Island	Burlington	Ramps in Burlington. Island camping.
402-397	19	Burlington Island	Burlington	Ramps in Burlington

Side channels associated with backwater areas usually produce fine stringers of fish. Channel catfish, white bass, crappie, carp and drum are normally taken in these areas. Stump fields, fallen trees, cut banks and submergent wing dams at the head of side channels are hot spots.

The carp angler is in for a treat when fishing the Mississippi River. An infinite number of prepared and natural baits can be successfully used to catch this fish in a variety of habitats. When carp are feeding it is not difficult to catch a truck load of two to five pounders.

A multitude of fishing methods will take Mississippi River fish, but "stump bumping" in stump fields can be deadly. Simply arm yourself with a long cane pole and a bait that will attract the species you're after. All you do is quietly plunk the bait from stump to stump trying to find the fish. This method works best for channel catfish, largemouth bass, crappie and bluegill.

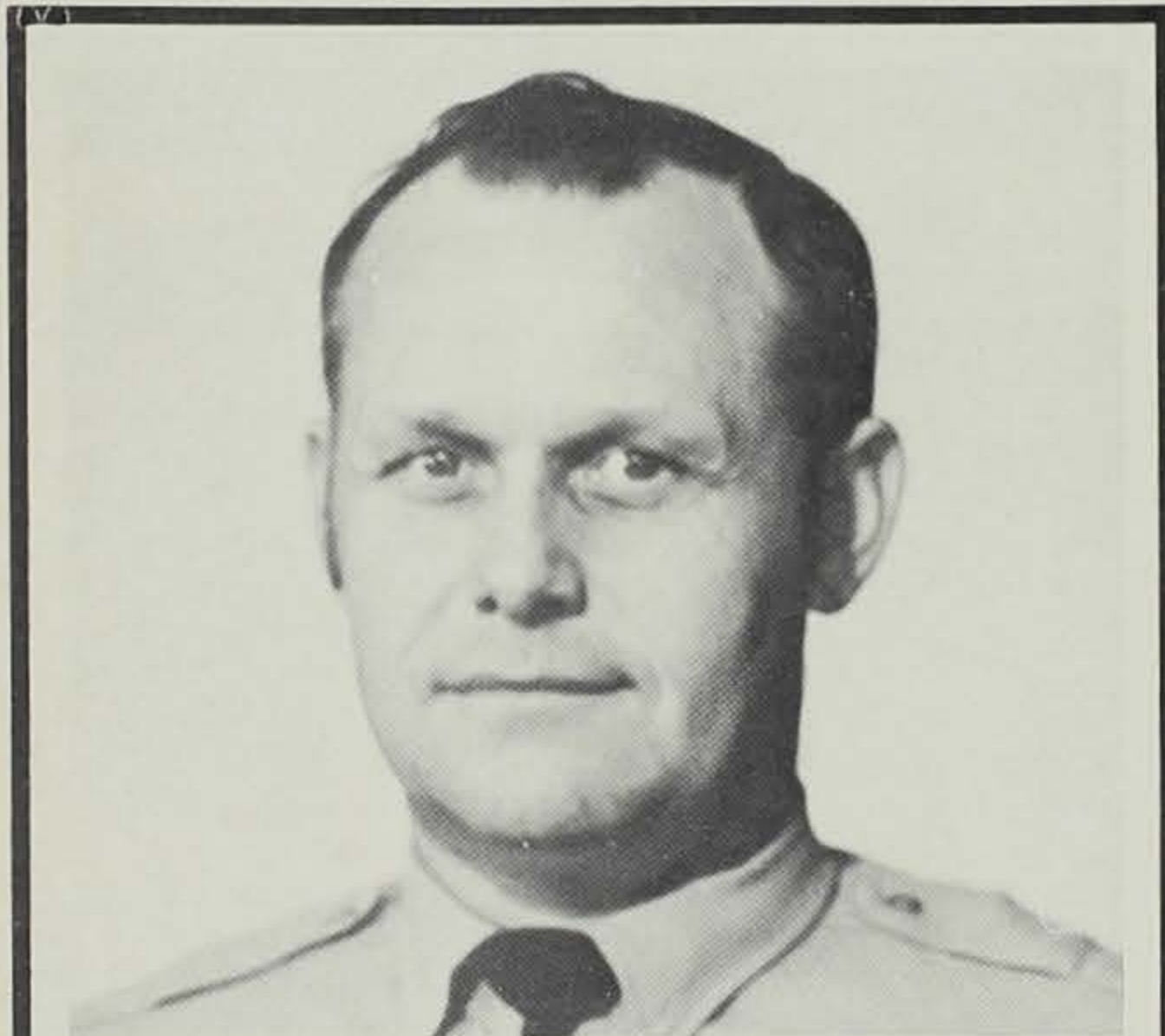
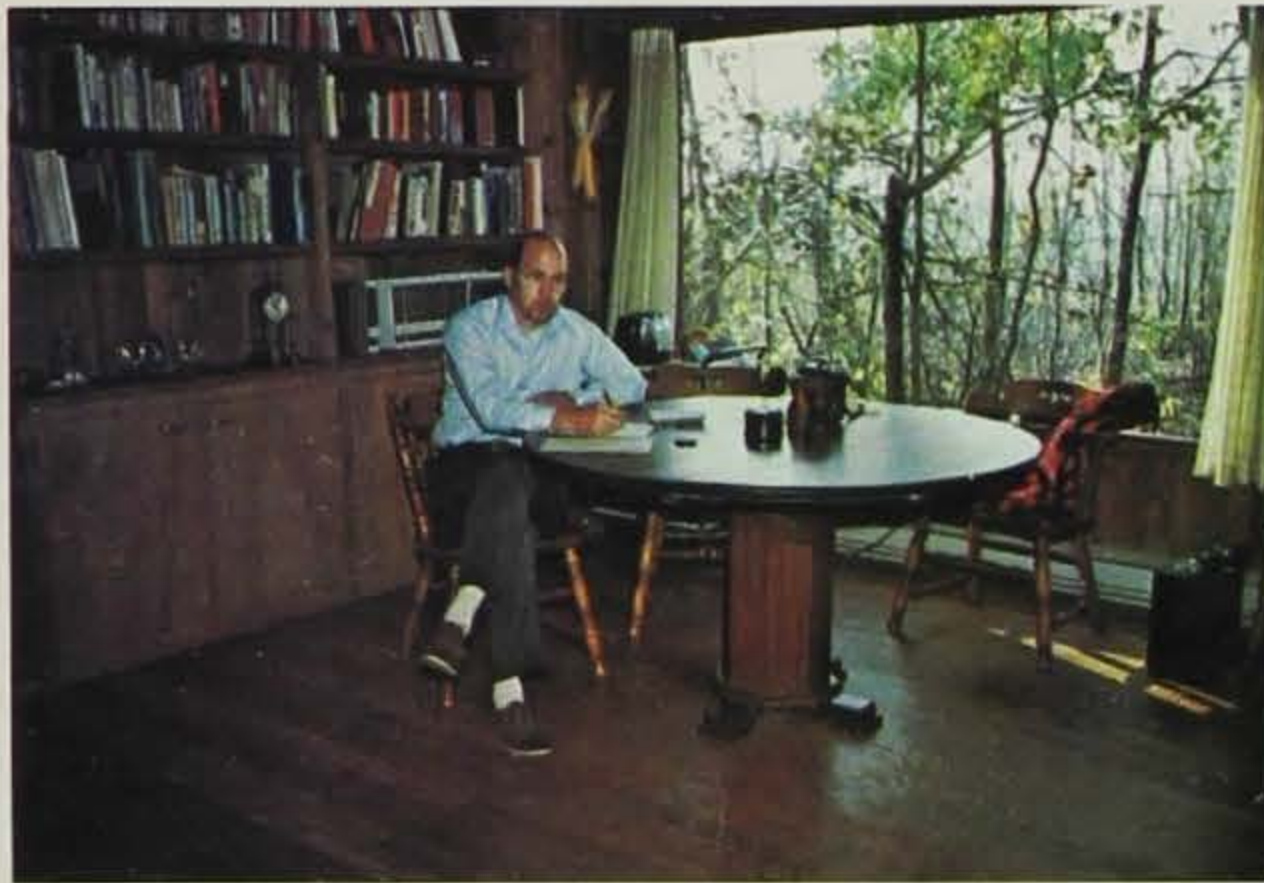
Iowa has a reciprocal agreement with Illinois in regard to fishing. When bordering Illinois, an Iowa fishing license is valid as long as you do not attach any device or equipment to the main bank on the Illinois side.

There are several publications available to assist the Mississippi River fisherman. The Iowa Conservation Commission's "Guide to Mississippi River Boating Facilities", lists boating access sites; a recreational facility inventory for the Mississippi River will be available this summer. The U.S. Army Corps of Engineers sells navigational maps by river pool which show wing dams, Locks and Dams, islands, side channels, backwater areas and access sites. For information concerning these maps write: *Army Corps of Engineers, Rock Island District, Clock Tower Building, Rock Island, Illinois 61201.*

Whatever species you prefer fishing for can most likely be found in the Mississippi River in stringer filling numbers. Like fishing in any area, it is helpful to become familiar with the territory. Let your Iowa Conservation Commission assist you. Simply call or write the *Fairport Fish Management Station, R.R. 3, Box 434, Muscatine, Iowa 52761 (319-263-5062)* and we will talk Mississippi River Fishing. □



## WOODLAND OWNER-OF-THE-YEAR AWARD TO DR. BERNER



**ORLAN L. HANDELAND**, a resident of Central City for the past eighteen years, passed away 6 A.M. Thursday, June 1, 1978 in a Cedar Rapids hospital following a lingering illness. He was born the son of Clarence and Amanda Roe Handeland on October 1, 1928 near Radcliffe, Iowa. On July 26, 1950 at Lamoni, Iowa he was married to Carol Hinds. Mr. Handeland was a State Conservation Officer in Linn County for the past twenty years, and a member of the North Linn Fish and Game Club, the Isaac Walton League, Eastern Iowa Ducks Unlimited, the Iowa State Peace Officers Association, and the United Methodist Church.

Surviving are his wife; two sons, Eugene Handeland of Waverly, and Wayne Handeland of Manchester; one grandson, Scott Handeland of Waverly; his mother, Amanda Varland of Lake Mills; one brother, Donald Handeland of Warrenville, Illinois; two sisters, Mrs. Merlin (Marie) Petersen of Northwood and Mrs. Myron (Clarice) Leraaen of Charles City. He was preceded in death by his father, Clarence Handeland.

DR. RAYMOND C. BERNER of Traer has been presented the Woodland Owner-of-the-Year Award by the Forestry Section of the Iowa Conservation Commission. The Award was presented by Gene Hertel, State Forester, at the Soil Conservation Awards banquet held recently in Fort Dodge. Bob Hibbs, Conservation Commission District Forester of Marshalltown, placed Dr. Berner's name in nomination for the award which was initiated in 1975.

The Woodland Owner-of-the-Year Award is designed to recognize individuals who are doing an outstanding job of woodland management. It is based on the individual's past and present accomplishments, as well as his efforts in promoting good woodland management in the community.

Dr. Berner, a dentist, owns 38 acres of woodland which has been carefully managed with total conservation in mind. Since 1964, he has planted approximately 7,000 pine, oak, and black walnut on his timber tract. Dr. Berner is totally involved in the production and use of Iowa wood and wood products. He built his own home utilizing native-grown Iowa wood.

by **John Klein**  
PARK ASSISTANT

Most of the litter in State Parks is big stuff — cans, beer bottles, sacks, and trash. But we also have a special litter problem that is hard to see. This problem is discarded fishing line.

A wad of tangled fishing line that some careless fisherman tosses aside can cause mechanical damage. Line caught in the blades of our rotary mowing equipment will stretch, wrap tightly around the drive shaft and eventually cut the lubrication seal. This will cause the shaft to score, lose balance, and be replaced at taxpayers' expense.

A similar problem happens to boat motors. Line caught in the propeller will cut the rear seal of the gear housing, letting water in and the oil out. Of the 22 boat motors owned by one state park concessionaire, 16 needed rear seal replacements last year. The cost for seal replacement with labor is around \$18. If not caught in time, the damage to the gears and lower unit can easily pass \$100.

But these are only machines, which, with enough money in taxes and fees, can be replaced. The most serious problem of fishing line is to life itself — bird life.

Birds are creatures of instinct. They have patterns of behavior, such as nesting, that allow them to survive here on earth. When a bird builds a nest, she uses the materials that are available in a design set down by instinct. In most cases this works superbly. But when a bird picks up a length of fishing line for nesting material, a deadly hazard develops.

Nests are built by the weaving of sticks and grasses together to secure each piece to the entire nest. Too often, fishing line is also weaved in among the sticks. This sets up the potential for either the parent birds or the young to become entangled and literally be tied to the nest. If the mother bird becomes entangled, she struggles, causing the knots to tighten. There in the nest, she and her family, will starve to death.

Discarded fishing line is a killer. Please cooperate in the clean up and control of this almost invisible, but hazardous form of litter.

# Tried and True Panfishing

by Cindy Squibb

FISHERIES WORKER

IF YOU are an avid fisherman you probably have plenty of "fish stories" but try to imagine catching almost 6,000 fish in one summer. It has been done on Red Haw Lake near Chariton. Frank Cox in 1974 caught 5,647 fish, 85% of which were bluegills. In 1975, "an off year" for Frank, he caught 4,803 fish. Being retired, Frank is able to put in more hours than most fishermen but his success is due more to his knowledge of fish habits. If Frank fails to catch a couple of fish within ten minutes, he tries a different method, bait or location.

Some of the equipment Frank recommends is: 1. A small ultra-light, flexible rod and reel; 2. A light line, 4-6 pound test is best; 3. Small hooks, size 8 Eagle Claw or size 12 English bait hook; 4. Nightcrawlers, torn into small pieces about 1½ inches long and hooked lengthwise through an end allowing a little to dangle below the hook; 5. A small bobber, an inch or less in diameter. A slip bobber works well; and 6. Small split shot for use in summer when fishing in deep water.

The males will defensively snap at the foreign object. A short quick jerk will produce a hooked fish. Fly fishermen will find they can pick up nice catches with small poppers or wetfls. After several fish are caught the rest will likely get wary; moving to another bed of nests is then advisable. The more populated beds are usually on a shallow ledge that drops off to deep water. Be sure to check the area between the shore and weed beds.

After the eggs hatch, adult bluegills move toward deeper water. They can be found frequently around submerged trees or floating rafts where they utilize the shade. As the surface water warms they tend to move away from the shoreline to deeper, cooler water.

Most lakes develop a thermocline in summer. Below this thermocline is colder water but also lower amounts of oxygen. Fish tend to seek out the depth just above the thermocline where there is sufficient oxygen but cooler water temperatures, normally between eight and sixteen feet below the lake surface. Frank's slip bobber method will help locate this depth.

To make a slip bobber, slide a bead and then a small sliding bobber on before attaching the split shot and hook to the line. Make a slip knot at the desired depth in your line above the bead. Insert a small piece (about one inch long) of the line through the loop of the knot. When tightened this small knot will still allow for casting but will stop the bead which in turn stops the bobber and allows the hook to remain at the desired depth. When a change in depth is desired, pull out the short piece of line and tighten the main line. The knot will disappear.

Use two poles set with slip bobbers at different depths and drift in a boat downwind until a fish strikes one of the poles. If a fish fails to strike at one of those depths, set the slip bobber at another depth. Fish will school, so when one is caught mark the location with a weighted buoy. You should be able to pick up a good catch. Frank advises that if one method or location fails to produce fish try another.

Crappies are another panfish that can be caught in large numbers. They can be found along the rocky shoreline near a dam or a rocky point that drops off sharply. In the large impoundments they can be found around standing trees that have been flooded. Crappies spawn in deeper water than bluegills. They hit small lead-head jigs on a line with a small bobber one to five feet above the jig. Minnows on a tight line or a line with a small bobber and weighted just enough to hold the bobber at the surface will likely bring some bites. Various spinners with small pieces of worm work well, too. Frank advises a slow, steady retrieve for all crappie fishing.

With all these fish, Frank never lets his catch go to waste. He fillets all of them, averaging two fish per minute. The key to fast filleting is a long, sharp flexible blade on the filleting knife. One of Frank's favorite ways to fix the small fillets is to dip them in a pancake batter and deep fat fry them until golden brown.

Iowa has no catch limits on any of the panfishes. In most instances fish populations are helped by the removal of large numbers of adult panfish. It prevents a stunted population. Panfish can prove to be as rewarding as game fish. A nice sized bluegill on an ultra-light pole can give the fisherman as much excitement as a bass or trout. The abundance of these fish makes for a busy fishing day as well as providing a tasty supper. □

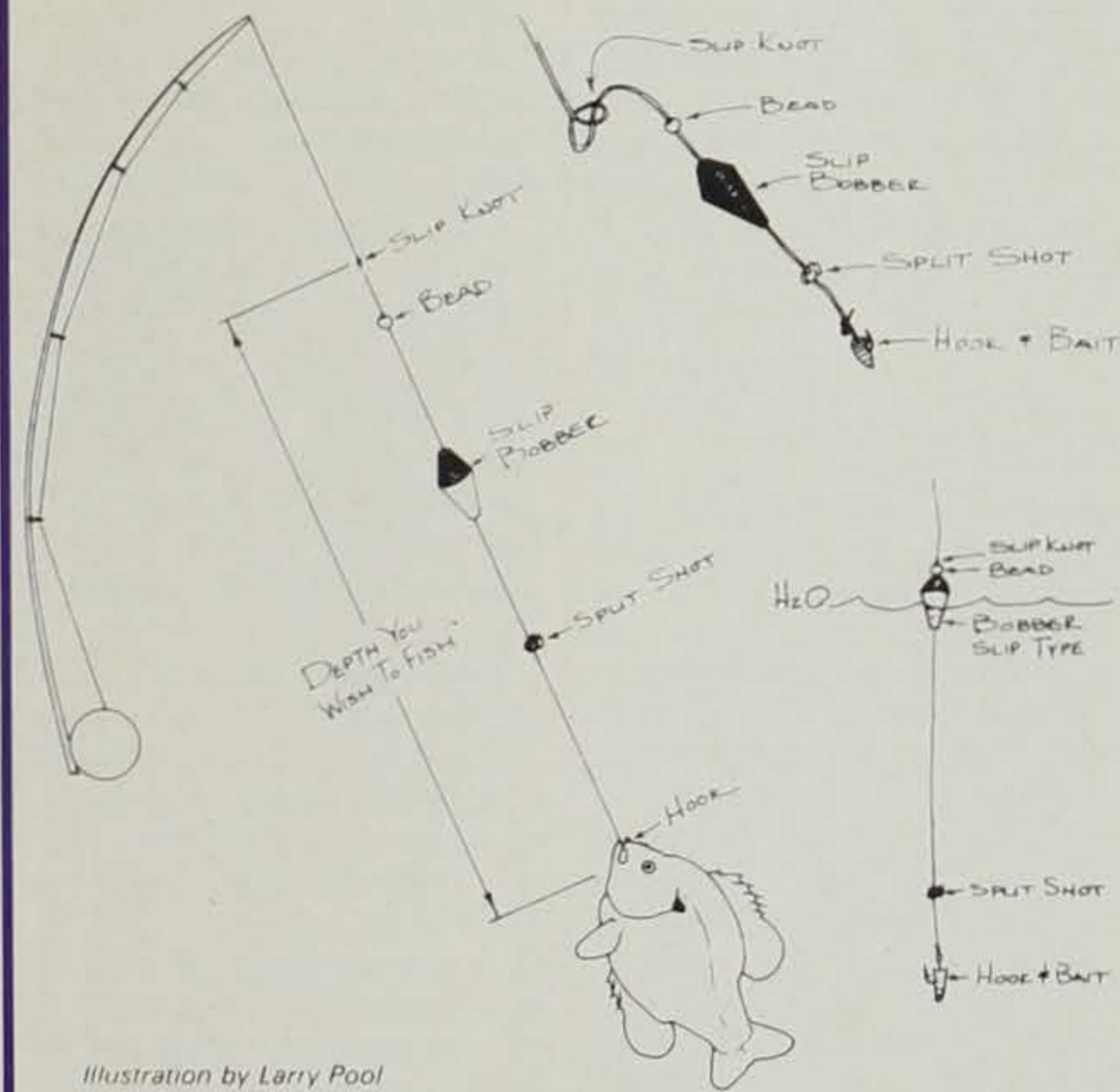


Illustration by Larry Pool

In late May, the bluegills move toward the shores to build nests for depositing eggs. These nests are small craters or depressions in the lake bottom, fanned out by the bluegill's tail. The males guard the nests and fan the eggs after they are deposited. This proves to be a good time to catch the large male bluegills. Weather does affect fish movement. A cold spell will send the bluegills to deep water, while the warm days bring on the spawning. If the cold spell lasts too long, they will spawn in the warmer deep water about four to eight feet below the surface.

To catch the bluegills on the nests, move up quietly in a boat or wade along the shore, trying not to be seen by the fish. Flip a baited hook among the nests with a small bobber six to twelve inches from the hook using no weight.

# Classroom Corner



BY BOB RYE

PHOTO BY THE AUTHOR

Tales about ghosts, evil spirits, and vampires have existed for years. Vampires were blood sucking ghosts — a term later applied to blood sucking bats of the tropics. The Romans thought of bats as the gods of sleep while some Caribbean people believe they are guardian

angels of the home.

A lack of knowledge and large amounts of prejudice and fear exist about bats. Bats, as a general rule, do not rank high on the list of people's favorite animals, but interest is always great when one has an opportunity to observe them in daylight.



A common bat found by groups using the Center is the Little Brown Bat, whose name describes its small size and basic color. Its ears are noticed by the group immediately. They have been described as resembling mice ears. In fact, this is one of their main identifying characteristics. The animal's total length is only 3 - 3-3/4 inches — the ears are 1/2 - 5/8 inches, making them rather showy in comparison with total body size. These bats commonly live up to twelve years and have few predators. The wild predators are mink, raccoons, hawks, owls, and cats. Humans often destroy them in buildings and caves.

Hibernation is a characteristic of this species. The body temperature drops and the rate of breathing and heartbeat also slow down. Little Brown Bats hibernate in winter and during cold periods of the summer. They normally hang upside down by their hind legs in one of their retreats while at rest. The summer slow down is correlated with its food, (insects) which aren't active in cold and cooler weather.

Little Brown Bats are almost entirely insectivorous. They prefer soft bodied adult insects. Bats will eat at the rate of one insect every few seconds and can fill their stomachs in an hour or two. Bats consume one half their body weight in one night.

Bats do not soar like birds when flying. They continually beat their wings at a rate of fifteen strokes per second. This moves them about ten miles per hour as they move in erratic flight following insects.

Bats have many values. They are one of the wild animals people have an opportunity to observe. From an economic standpoint, bats consume large quantities of insects which otherwise might destroy crops and gardens or bother people. They are also animals often found in folklore — much of which is based on uniqueness as a mammal; an agile flier with an echo-location method of navigation.

As a part of our natural resources, bats must be admired and used wisely. To some this means moving bats away from man, but scientists use them to study their homing activities.

Although Little Brown Bats can have rabies, the other bats which more commonly have rabies give them a worse reputation than they deserve.

Groups at the Education Center consider bats an "extra" during their stay. During their initial orientation to these flying mammals, a lifelong learning situation takes place. Night activities, whether tracking animals with blacklights, attracting insects or owls, or listening to night sounds, are always prime times for people. Bats add to these and can add to your evening if given a chance.

Take time to study the bat's motion and then put your creative mind in motion. Try to arrange music or a poem to what you see. Think of how bats fit in the environment years ago and try to imagine how they will fit in man's plan for the wise use of our natural resources in the future.

## 1979 Wildlife Habitat Stamp Design Contest

The Iowa Conservation Commission is conducting a contest to select a design for a Wildlife Habitat Stamp. Rules and regulations are available by writing to: "Wildlife Habitat Stamp Contest," A-V Section, Iowa Conservation Commission, Wallace State Office Bldg., Des Moines, Iowa 50319. Entries must be a specific size and will be accepted no later than September 15, 1978.

## Thanks for the Memories . . .

Would you like to do something for the farmer who let you hunt last year? Or has a friend or relative included you on one of their hunting, fishing, camping or boating trips lately? Show your appreciation in the form of a gift subscription to the IOWA CONSERVATIONIST! All you need do is send us (1) the name of the recipient, (2) his/her complete address, and (3), a check or money order for the proper fee. Our address is: IOWA CONSERVATIONIST, Wallace Building, Des Moines, Iowa 50319. We will send each and every name on your gift list a suitable notification of your thoughtfulness.

Subscription rates - 1 year - \$2 2 years - \$3 4 years - \$5

**DO IT NOW!**

# LOOKIN' BACK

Thirty years ago the

Iowa Conservationist discussed the possibility of opening the pheasant season in southern Iowa. The season in 1948 consisted of 20 days with only 67 of Iowa's counties open to hunting. Hunters took to the field at noon in an attempt to take a two rooster limit.

Also in this issue was a small article which stated that the Conservation Commission did not agree with Iowa State College that all roadsides should be sprayed with 2, 4-D to get rid of the weeds.

Twenty years ago

the magazine featured some hot weather fishing tips. It was noted that fish generally move to different locations and change their feeding habits when hot weather comes. The real trick was and still is to find them.

Commission director, Bruce F. Stiles, had a few comments to make concerning requests for agricultural irrigation. He stated that at that time it would be a waste of a public resource to use nearly 5 billion gallons of water for this purpose while much land was in the soil bank.

Ten years ago

we ran a story which urged Iowans to be safety conscious around water. This included boating, fishing, swimming or any type of recreation near water. The general belief that only other people drown is not completely true.

Black Hawk Marsh, a valuable addition to Iowa's wildlife production and hunting areas, was dedicated on Thursday, May 23, 1968. Black Hawk Marsh is located two miles south of Lake View in Sac County.

FROM THE

# Warden's diary

BY REX EMERSON

IT WAS a hot July weekend. Another officer and I were checking for fishing licenses, for life preservers in boats and boat registrations on Lake MacBride. As we motored past the beach we talked about how relaxing it would be if we could join all the people who were enjoying the sandy beach and the cool refreshing lake water. When you look at a State Park folder it's surprising how many nice lakes and parks there are in Iowa. Some of them that are a little further from high population areas are seldom crowded.

Last week at Lake Geode I ran across the old man who lives down by the river. He had on his bathing suit that I am sure he must have bought forty years ago.

He said, "I could get plenty of sunshine at home, but we don't have all of these 'purty' girls down by the river."

I said, "Hey, old man, don't let your mouth write any checks that your body can't cash."

Meanwhile, back to the lake where we were working. Sometimes you can spot a person who doesn't have a license. We were about fifty yards offshore when I saw a lady drop her rod and reel as if it had suddenly gotten very hot. With a quick hand signal to the officer running the motor, we soon beached the boat right beside her line which was still in the water. She admitted that she didn't have a fishing license. While making out the court citation we got the idea that she was very upset with her husband. He had bought himself a license, but didn't get one for her. She kept saying over and over, "I'll kill him, I'll kill him." So husbands, let that be a warning to you. Don't forget to get the wife a license too. They might be hard to live with after getting an invitation to court from us.

We checked fishing licenses along the shore and

then went back out in the lake. We talked about how fortunate we are here in Iowa to have so many parks and lakes, really nice ones. Lake Darling, Lake Wapello and Lake Geode were mentioned as being some of our favorite places to visit. Also, one of my favorites is the little hideaway lake at Lacey-Keosauqua Park. Those are just a few that we have in southeastern Iowa. Actually there is more water in Iowa than most people realize, as well as the two great rivers that border our state.

We motored around a point of land and could see we would have to go back to work. There was a boat which couldn't have been more than four feet long, with two men in it. We very carefully pulled alongside so as to not swamp the little yellow plastic craft. If there is one thing we don't need it's to have someone drown. We don't like using those sharp hooks to grapple for dead bodies. After towing the little boat and its two occupants in to shore we wrote tickets for no life preservers, overloaded boat and no registration. They thought we had spoiled their whole day. I told them if they had drowned it would have spoiled my day, so better to spoil theirs than mine. They could hardly argue with that.

During the afternoon we wrote tickets to three more people for not having a fishing license, and two more for lack of life preservers. After putting our boat back on the trailer we drove through the beach parking lot. We were pleasantly surprised by the number of out-of-state license plates on the cars and campers. We had checked several nonresident fishing licenses during the day, but evidently many more were enjoying the swimming area. This is good. We talked about the fact that we should try harder to sell Iowa as a

tourist state. The people in cities across the state spend thousands of dollars to attract industry to their areas, but not much to promote tourism. Industry brings in people who receive wages and in turn spend money in that area. Tourists may earn their money in another state, but if we can get them to spend it here in Iowa the end result would be the same as an industry, and it would be practically pollution free. We both agreed that Iowa has been a state which tourists go through to get to another state. If we can interest them in stopping for just a day or two we would find that their money is just like silt in a stream. When the water stops flowing so fast, the silt drops out.

Some of the hunters who come from other states have told me that it costs them at least a hundred dollars each for a weekend of hunting in Iowa. This goes for gas, food, lodging, shells, license, dog food and a new pair of socks that his wife forgot to pack. I guess it depends partly on how much partying they do at night. Some hunters spend more than that. I heard of one such hunter who went home from a weekend of hunting and told his wife what a great hunting trip he had in Iowa, and about all the pheasants he had shot. He gave all the birds to the farmer so he wouldn't have to transport them all the way home. He said, "Everything went real good except you forgot to pack by safety razor."

His wife said, "Oh, I packed it. It's in the end of your shotgun barrel." The other officer raised his eyebrows as if he didn't believe this story.

Tourism should be real easy to sell in Iowa. Besides all the great places we have to offer the tourist, we have something else that we can be very proud of — **FRIENDLY PEOPLE!**

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