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FRONT COVER: Photo by Ron Johnson

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WINTER BIRD FEEDING

By Laura Spess Jackson

By now a lot of you are feeding the birds and noticing some ups and downs in the number and types of birds coming to your feeder. There are some 34 species of birds that, depending on where you live, are attracted to bird feeders here in Iowa. Another 20 or so species are very rarely seen at feeders because they generally winter in other areas. Then there are birds such as hawks and owls that don't come to the feeders so much for grain, suet or fruit, but to nab one of the other birds.

Of the birds that you can reasonably expect at feeders, some occurrences will vary with the amount of food produced in the states north of us and the severity of the weather. Other fluctuations, we can't really explain — yet.

To start keeping track of the birds wintering in Iowa, the Nongame Program, in cooperation with the Iowa Ornithologist's Union, has been conducting a winter bird feeder survey since 1984. This survey is annually conducted in January and depends on the cooperation of volunteers across the state who watch their feeders and report their findings.

Although the survey is too new to report long-term trends in Iowa's winter bird populations, it has revealed some interesting facts.

Which birds were most frequently seen at Iowa feeders last year? The dark-eyed junco, blue jay, house sparrow, black-capped chickadee

and northern cardinal were seen at over 80 percent of the households participating in the survey. The rest of the top ten included the American goldfinch, downy woodpecker, European starling, purple finch and hairy woodpecker.

Many of the 1986 forms turned in noted that observers were seeing fewer or no goldfinches. However, on a statewide basis, about the same number of households saw goldfinches. In 1984, about 71 percent of the people saw goldfinches, in 1985 nearly 72 percent reported the finches and last year 73 percent noted goldfinches. People are seeing slightly fewer goldfinches though. In 1984, the average household reported 14 goldfinches at a time. In 1985, this dropped notably to only 11, but came back up slightly in 1986 to 12 goldfinches.

The big news last year was the purple finch and evening grosbeak invasion. These species will generally winter further north and feed on conifer seeds. Every so often though, large flocks will wander south in search of food and spend the winter in Iowa. In 1985, less than one percent of the households saw evening grosbeaks, while last year over 14 percent of the households had these overgrown goldfinches pay them a visit. Likewise, in 1985, less than 20 percent of the people say purple finches, yet this leaped to 43 percent in 1986.

Black-capped chickadees, hairy woodpeckers and cedar waxwings were also seen at a few more feeders last year. The chickadees and hairy woodpeckers were seen in their usual numbers — about four and two at a time respectively. However, if you were one of the lucky four percent of the households to see the cedar waxwings, you were apt to see a flock of 17 in 1986 compared to just seven at a time in 1985.

There were only two species which measurably decreased — the American tree sparrow and the mourning dove. It has been noted in other counts that tree sparrow flocks seem to be decreasing, but there is no clear-cut explanation. The mourning doves may have been pushed out of the state by the extreme cold of November and December of 1985 (that was the year we had the Thanksgiving

blizzard). The rest of the birds stayed at about the same levels as 1985.

Which birds you see at your feeder can be affected by where you live, what kinds of feed you offer and what type of feeder you use. If you live in a neighborhood with large trees, you'll be more successful attracting woodpeckers than if you live in a new suburban development with few nearby trees. Feeders with shrubs, trees, a small brush pile or even an old Christmas tree tied nearby are more attractive to birds. Then they have nearby areas to sit with some protection from the elements while waiting their turn to feed.

According to recent studies, the overall most popular food for the widest variety of birds is black oil sunflower seeds. The second most favored food is white proso millet which the ground-feeding juncos and different sparrows prefer. Many readily available mixes contain flax, wheat, oats, milo and other seeds that are not preferred, and consequently wasted by the birds.

If you are only going to put out one feeder, a tray or hopper feeder with wide perches mounted on a stationary object will attract the widest

variety of birds. Then ground-feeding and larger birds such as blue jays, cardinals and grosbeaks will use the feeder in addition to finches, nuthatches and chickadees which have no qualms about hanging onto a small perch swaying in the wind. If disputes break out, you may want to leave the stationary feeder for the larger birds and put out a hanging feeder for the smaller finches and chickadees.

To deter house sparrows and starlings, cut your perches to less than one inch on hanging feeders. You can also purchase or make a feeder with chicken wire surrounding the main food tube of your feeder. This will allow small birds to slip in and out to feed, but prevent the starlings from entering. You can also put baffles over your suet feeders. Then woodpeckers can hang upside down and feed like normal, but the starlings can't. The 1987 winter bird feeder survey will be conducted from January 22 to 25. All you have to do is record the highest number of each type of bird that you saw at your feeders during two consecutive days on our form. You don't have to be glued to your window during every daylight hour. Just pause, watch and



Two common winter birds at Iowa feeders — white-breasted nuthatch below, junco at right.



Ken Formanek



Ken Formanek

count the birds a few times each day (morning, noon and afternoon for example). The survey period includes Thursday and Friday so that schools or people gone during the weekends can still participate.

If you would like to participate, clip out the form included with this article or call the DNR office in Des Moines to request a copy.

Results are published in the Non-game Newsletter, the I.O.U. newsletter, and the Conservationist. Since we get better coverage across the state with more people participating, feel free to make copies of the survey form and distribute them to family, friends and patrons.

I would like to thank Rick Hollis who annually helps the urban program organize and decipher the results of this survey.

Laura Spess Jackson is an urban wildlife biologist located in Des Moines. She holds an MS degree from Colorado State University and has been with the department since 1985.

% Occurrence At Feeders	Species ^a	Food ^b
89	Dark-eyed Junco	White and red proso millet, canary seed, cracked corn
85	Blue Jay	Peanut kernels, sunflower (all types)
83	House Sparrow	White and red proso, golden millet, canary seed
83	Black-Capped Chickadee	Black oil sunflower, black striped sunflower, peanut kernels
81	Northern Cardinal	Sunflower (all)
71	American Goldfinch	Hulled sunflower, niger, black oil sunflower
65	Downy Woodpecker	Beef suet
59	Starling	Peanut hearts, hulled oats, cracked corn
55	White-Breasted Nuthatch	Black striped sunflower
43	Purple Finch	Sunflower (all)
36	Hairy Woodpecker	Beef Suet
34	Red-Bellied Woodpecker	Beef Suet
23	Tree Sparrow	Red and white proso millet
22	Pine Siskin	Sunflower (all)
19	Tufted Titmouse	Peanut kernels, black striped & oil sunflower

Results from 1986 Iowa Winter Bird Feeder Survey.

^aA. Geis and D. Hyde, Jr. Wild Bird Feeding Preferences, National Wildlife Federation, 1985.

1987 WINTER BIRD FEEDER SURVEY

SPONSORED BY THE IOWA
ORNITHOLOGISTS UNION AND
THE IOWA DEPARTMENT
OF NATURAL RESOURCES
NONGAME PROGRAM

On two consecutive days during January 22-25, 1987, observe your feeder and using this form, describe your feeder and record the birds that visited you. In the space provided, list the *highest number* of each species that you saw *together at any one time*. For example, if you saw 10 juncos at 9:00, 11 at 12:00 and 7 at 4:00, the number you should record is 11. If males and females can be distinguished (cardinals, downy woodpecker etc.) record the combined total. For example, if you saw 3 male cardinals at 11:00 then 1 male and 2 females at 2:00, record 5 cardinals — the highest count for the males and the highest count for the females combined. Count only on the two consecutive days and record only the birds that you see *at your feeder, under your feeder or in the trees around your feeder*. Do not count birds which just flew past your house and did not use your feeder area. We want information only about birds influenced by your feeders. If you cannot get an exact count, record your best estimate. An honest estimate is far more useful than 'umpteen' or 'too many to count.' Mail the completed form to me by February 2, 1987:

R. J. Hollis
3351 Lower West Branch Road
Iowa City, IA 52240

If you would like a personal reply, please send a stamped, self-addressed envelope and be patient; it may take 12 months before I can get back to you. Look for results in the Iowa Nongame News and the I.O.U. newsletter.

FEEDER SURVEY JANUARY 22-25, 1987

1. Name _____
- 2A. Address _____
- 2B. County _____ 2C. City _____ 2D. Zip _____
3. The feeder survey period this year runs from Thursday, January 22nd to Sunday, January 25th. Count birds on two consecutive days only. Please record which days you counted birds for us in the space below.
Check one: Thursday (1/22) and Friday (1/23),
 Friday (1/23) and Saturday (1/24), or
 Saturday (1/24) and Sunday (1/25).
4. Is your feeder in Town (including suburbs) or in the Country? Circle T or C
5. Check the one description which best describes the area within a 2-block circle around your feeder:
 suburban, houses with shrubs and small trees but few trees wider than 20 inches.
 suburban bordered by: (circle 1) timber, grass field or row crop.
 town, neighborhood has many mature shade and street trees.
 downtown with mostly buildings, sidewalks, roads, parking lots, high rises
 pasture
 row crop (corn, beans, etc.)
 timber
 farmstead with mature trees and shrubs around house.
6. Type and number of feeders: Thistle, Sunflower (only), Fruit, Safflower, Peanuts, Mixed seed, Peanut Butter, Suet, Cracked Sunflower, Corn, Millet (only, unfrozen water, other _____
7. On what date did you start feeding during 1986-87: About _____
8. Comments or additional description of your feeder or yard: _____

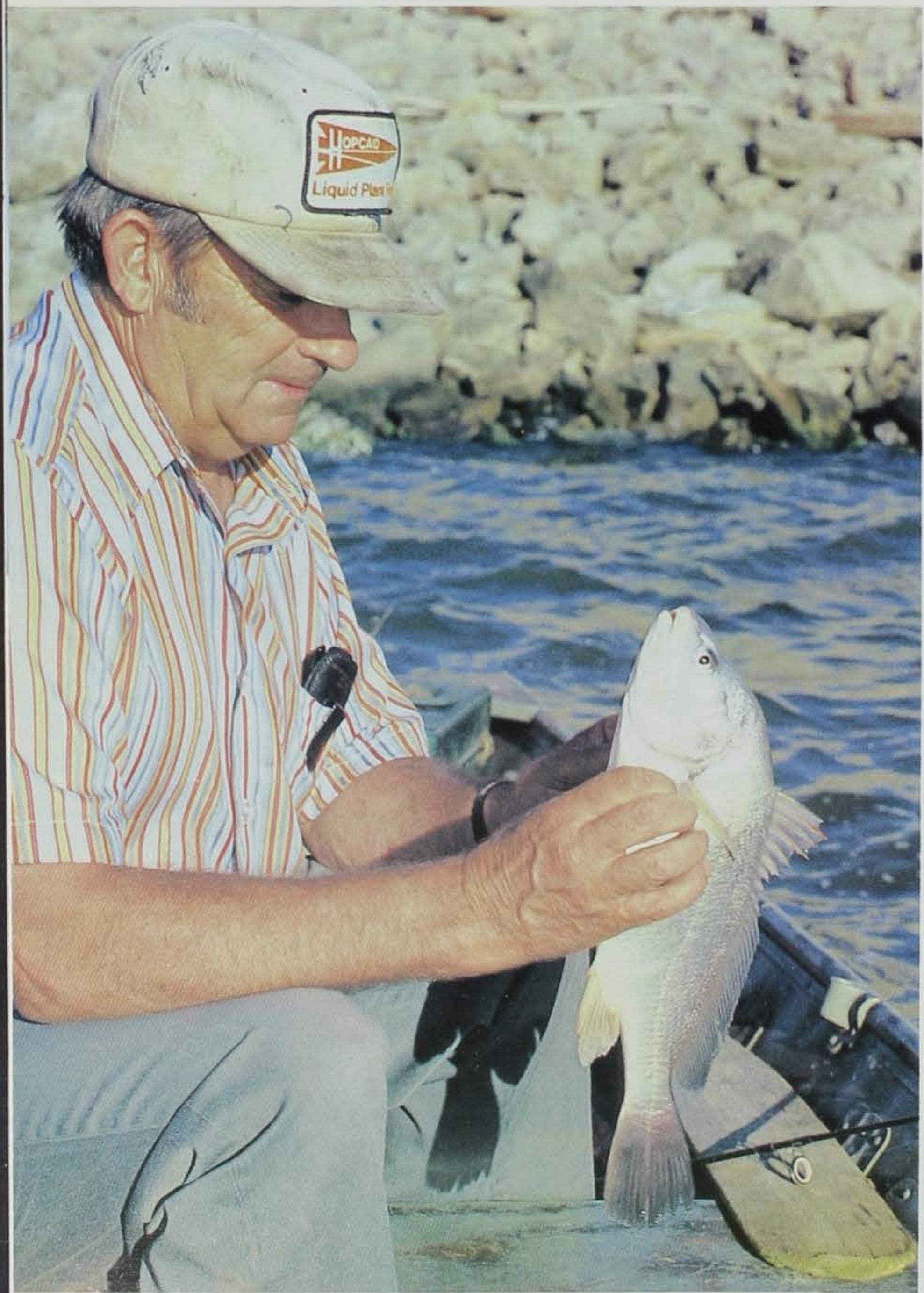
HIGHEST NUMBER SEEN FOR EACH SPECIES DURING 2 CONSECUTIVE DAYS

- | | |
|--|--|
| <input type="checkbox"/> Ring-necked Pheasant | <input type="checkbox"/> White-throated Sparrow |
| <input type="checkbox"/> Rock Dove (Common Pigeon) | <input type="checkbox"/> White-crowned Sparrow |
| <input type="checkbox"/> Mourning Dove | <input type="checkbox"/> Harris' Sparrow |
| <input type="checkbox"/> Red-headed Woodpecker | <input type="checkbox"/> Dark-eyed Junco (All races) |
| <input type="checkbox"/> Red-bellied Woodpecker | <input type="checkbox"/> Red-winged Blackbird |
| <input type="checkbox"/> Downy Woodpecker | <input type="checkbox"/> Grackle (Common) |
| <input type="checkbox"/> Hairy Woodpecker | <input type="checkbox"/> Brown-headed Cowbird |
| <input type="checkbox"/> Flicker (All races) | <input type="checkbox"/> Purple Finch |
| <input type="checkbox"/> Blue Jay | <input type="checkbox"/> Common Redpoll |
| <input type="checkbox"/> Crow (American) | <input type="checkbox"/> Pine Siskin |
| <input type="checkbox"/> Black-capped Chickadee | <input type="checkbox"/> Goldfinch American |
| <input type="checkbox"/> Tufted Titmouse | <input type="checkbox"/> Evening Grosbeak |
| <input type="checkbox"/> Red-breasted Nuthatch | <input type="checkbox"/> House (English) Sparrow |
| <input type="checkbox"/> White-breasted Nuthatch | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Brown Creeper | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Robin (American) | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Cedar Waxwing | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Starling (European) | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Cardinal (Northern) | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Tree Sparrow (American) | <input type="checkbox"/> (other) _____ |
| <input type="checkbox"/> Song Sparrow | <input type="checkbox"/> TOTAL SPECIES SEEN |

Please fill out carefully. Feel free to copy the form for friends and patrons. Thank you and enjoy yourselves!

Drumming The Mississippi River

By Tom Boland



Flipping through the pages of outdoor magazines will quickly tell you which species of fish are held in the highest esteem by sport fishermen. If you would exclude all articles about crappies, walleyes, bass, pike and fishes of the trout family, there wouldn't be much left except advertisements. It is about time for an article on a much underrated Iowa fish species.

This fish is the only member of a fish family that inhabits fresh water. The remaining 33 species in the family are found only in tropical and temperate marine waters. Also, many of the species of this family are important food fishes, and some, like the white sea bass of California, are highly prized by deep sea anglers. This species is silvery colored with a body that slopes steeply upward from the snout to the dorsal fin, giving the fish a distinctively "hump backed" appearance. The genus name for this fish is *Aplodinotus* (Greek, meaning "single back," referring to the dorsal fin) and the species name is *grunniens* (Latin, meaning "grunting"). I am referring to the good old grunt fish, the freshwater drum.

The drum is also known by a number of other common names which include sheepshead, croaker, grunter, grinder, white or silver perch, and in some areas, simply perch. The distribution of drum in Iowa includes the two border rivers (Mississippi and Missouri) with significant populations in some of the larger interior streams, reservoirs and natural lakes. However, the major drum fishery in Iowa is in the Upper Mississippi River where they have consistently ranked high fourth in both sport and commercial harvest. The commercial harvest for drum has increased over the years with annual harvest for the past 20 years averaging approximately 1.4 million

pounds. Although much of the sport harvest of drum may occur incidentally while fishing for other species, they have continued to maintain a high ranking (fourth) in numbers of fish caught by sport fishermen on the river.

The state record for drum is 46 pounds taken from Spirit Lake in 1962. Fish approaching 100 pounds have been reported from Lake Erie. River drum occasionally exceed 10 to 15 pounds, but most commonly are between one and three pounds.

Fishing for drum is most productive in areas where there is good current. River habitats such as tailwaters, side channels, main channel borders, and especially wing dams are top producers. The best month for drum harvest is June, but drum can be caught during most of the open water period and even during the hot "dog days" of summer when fishing for other species may have slowed.

The best bait and method for catching drum is a worm or night crawler fished on the bottom. However, drum in the 10- to 15-pound class seem to prefer crayfish. The rule is the bigger the bait, the bigger the fish.

The freshwater drum is one of the Mississippi River's most underrated sport fish. If the value or worth of a fish species has anything to do with its fighting ability, catchability and palatability, then the freshwater drum should rank much higher as a desirable fish. Therefore, this year, try "drumming" the Mississippi River. You could add a new dimension to your sport fishing pleasure.

Here are a number of tips and recipes for preparing your next catch of freshwater drum.

Beer Batter Drum

This recipe is supplied by Bob DeCook, and DNR fisheries technician stationed at Guttenberg. Bob claims the secret to preparing drum is to be sure to remove any light, fatty tissue from the fillets and then rinse thoroughly in cold water. This removes the natural oils and helps firm up the flesh. Then mix:

1-1/4 cup flour
1 egg
1 tsp. salt

1 tsp. baking powder
1 tsp. paprika
3/4 can flat beer

Roll fish fillets in flour, dip in prepared batter and deep fry.

The next four drum recipes were supplied from a Wisconsin DNR publication entitled "A Fine Kettle of Fish" by Vern Hacker. This fish recipe booklet is highly recommended and available for a nominal fee (\$1.95) by writing to the Wisconsin Natural Resources Magazine, Box 7191, Madison, WI 53707-7191.

Deep-Fried Drum

Dry the freshwater drum fillets and season with salt and pepper. Dredge the fillets in flour, or shake them in a paper bag filled with flour. Then drop them into a well-beaten egg and water mixture of 1 tbsp. cold water to 1 egg. After removal of fillets from the egg mixture, they are deposited in a bed of commercially seasoned bread crumbs. The crumbs are patted onto the fillets in a thick mixture which causes the fish to steam in its own juices. They'll be some of the best fried fillets you've ever tasted.

Drum Chowder

This recipe makes three gallons. Use a 12 quart kettle.
5 lbs. white potatoes
1 onion (3-inch diameter)
1-3/4 tbsp. salt
4 lbs boned freshwater drum
28 oz. can whole tomatoes
51 oz. can tomato soup
3/4 tbsp. black pepper
1/2 lb. butter
1 pt. half and half coffee cream
1/4 lb. soda crackers (reduce to meal in blender — add hot water to make slurry)

Peel, quarter and slice potatoes thinly. Rinse in cold water until water is clear of excess starch. Put onion in blender with a little water and reduce to liquid. Add onion and salt to potatoes, cover with water and add two extra quarts of water. Boil until potatoes are soft. DO NOT POUR OFF LIQUID. With potato masher, reduce about 3/4 of the potatoes to a puree. Cut the fish into chunks if using raw fish. Add to the potato puree. Put

whole tomatoes in blender for two seconds to break up, add to potato puree along with the tomato soup. Cook until the fish flake. Turn down heat. Add pepper, butter, half and half and soda crackers. Add hot water to give consistency of a medium thick soup. Simmer for one-half hour. Then eat and enjoy. Freezes nicely.

Pickled Drum

Pickling mixture:

1 pt. white vinegar
1 pt. white port wine
3/4 cup sugar
1/3 oz. pickling spice
Onions, slices

Cut fish into chunks. Dissolve salt in enough vinegar to cover fish. Let stand four to six days. Keep at about 40°F. Take out of salt solution and rinse thoroughly with cold water. Place alternate layers of fish and onions in sterilized jars. Place hot mixture of vinegar, wine, sugar and pickling spice over fish. Refrigerate and let stand one week before using. This solution covers four quarts of fish.

Poor Man's Shrimp Cocktail

1 tbsp. salt per quart of water
Celery cut into chunks
Lettuce
Cocktail sauce (blend catsup and horseradish to taste)

Cut freshwater drum fillets into one-inch wide strips. Drop into boiling salted water. Cook for two minutes after water returns to boil. Remove from water. Rinse in fresh water. Place in refrigerator to chill for at least four hours. Prepare salad bowls by lining them with lettuce. Add chunks of celery. Place strips of cold fish into bowl and cover with cocktail sauce. Serve with soda crackers and lemon wedges. After you try this, you will wonder why you ever threw freshwater drum away!

Tom Boland is a fisheries biologist located at Bellevue. He holds a BA degree from the University of Northern Iowa and has been with the department since 1971.

The Growth of Iowa's Parks

By Jim Scheffler, Associate Superintendent, State Parks Bureau

During the 1930's, the Iowa state parks' system grew tremendously. This was largely due to the various programs established by the Roosevelt Administration during the Depression. The Civilian Conservation Corps (CCC), the Works Progress Administration (WPA), U.S. Forest Service, U.S. Soil Conservation Service, as well as the Iowa Emergency Relief Administration all contributed a tremendous amount of capital improvement for state parks. The lodges, cabins, bridges, park residences, and other facilities which these organizations helped to make a reality now form the backbone of today's state park system.

In 1935 and 1936, the number of Iowa state parks increased from 54 to 65. By 1940, 72 state parks were in existence. New parks established during the 1930's included Lake Macbride, Beeds Lake, Lake of Three Fires, and Lacey-Keosauqua State Parks. In addition to major capital improvement programs, the state parks hosted a formal interpretive program effort with full-time park "nature guides" stationed in nine state parks. In summary, the 1930's represented the era of the most dramatic expansion in state parks and facilities in Iowa's history.

The work initiated in the 30's through the various governmental assistance programs continued into the 40's. However, the beginning of World War II signalled a dramatic decline in both state park capital development efforts and in park attendance. The various governmental work programs were largely phased out with the beginning of the war. State park manpower was reduced during this time and park attendance also suffered due to the rationing of gasoline and the fact that so many young men were members of the armed services. After World War II, significant funds were made available from the Iowa legislature which allowed some major acquisition and development projects to be initiated. For example, the lake at Geode State Park was constructed

and park development was initiated in areas such as Lake Darling, Nine Eagles, and Rock Creek State Parks. By the end of the decade, the total acreage in state parks and recreation areas was nearly 38,500.

During the 1950's, state park attendance increased dramatically. This decade saw a tremendous increase in the popularity of camping. Monies were made available from the legislature throughout this period and development was implemented at such areas as Rock Creek, Green Valley, and Viking Lake State Parks. In 1955, a formal prison labor program was initiated which used inmates from the Fort Madison Penitentiary and the Men's Reformatory at Anamosa. This program resulted in a great number of park improvements.

In the early 1960's, on-going park improvements and expansions continued. Probably the most significant phenomenon relative to state parks during the 1960's was the "Iowa Large Lakes" program. This program aimed at the establishment of at least five, large 1,000-acre lakes strategically located to provide relatively large water-based recreational opportunities for the growing numbers of Iowa residents concentrated in urban centers. Big Creek and Pleasant Creek State Recreation Areas sprang from this concept, as well as the Volga River State Recreation Area and the Brushy Creek State Recreation Area. During the 60's, major land acquisition programs were initiated to acquire significant land holdings in these areas.

In the 1970's, recreation master planning projects were initiated for not only the new large state recreation areas underway, but also for existing major state parks such as Ledges, Gull Point, and Honey Creek. Park visitation continued to increase in the 1970's, although the initial "energy crisis" did result in a slowdown in attendance during the mid-1970's. During this decade, major capital improvement occurred at Big Creek State Park resulting in Iowa's newest major outdoor recrea-

tion facility. Development was still not implemented to any major extent, however, at the other state recreation areas.

The decade of the 80's proved to be a frustrating one for state parks and recreation areas due to budget and manpower restrictions. A number of major outdoor recreation facility development and improvement projects have been stalled due to a scarcity of funding. However, some important work has been completed. For example, Lake Manawa has been dredged through funds from the Environmental Protection Agency. In addition, significant capital improvement projects were begun at George Wyth and Lake Manawa State Parks, although considerable work remains to be done.

During recent years, the goal of the Iowa state parks system has been to broaden visitor opportunities. To this end, an effort has been made to establish self-guided nature trails in all of the parks, as well as to provide a variety of on-site programs to park visitors. Recent special efforts to provide additional outdoor recreation to park visitors have included the proclamation of an annual state park week, as well as special park events. Recent new projects which include the Saylorville Corridor, which will provide a multi-purpose trail link between the city of Des Moines and the Saylorville-Big Creek complex. The state has also assumed control of the E.B. Lyons Nature Center and the adjacent Mines of Spain area at Dubuque. This is one of the most unique natural and historical areas in the state and will prove to be of tremendous educational value to the public.

Finally, the passage of the state park user fee bill has provided much needed funding for the repair and renovation of existing state park facilities. A portion of the income from the state lottery is available for the much needed capital improvement programs at Pleasant Creek Recreation Area and additional work at Lake Manawa State Park.



These buildings at Lacey Keosauqua were constructed by the CCC's in the early 1930s.



Some facilities, like the residence at Backbone State Park, were completed in the 1920s. Others, like the beach facilities at Backbone, were built during the 1930s.



Bald Eagle Appreciation Days

By Laura Spess Jackson

The dot in the sky moved closer, slowly drifting downward. It became obvious that this was no ordinary hawk. The wingspan of the bird was tremendous, easily longer than six feet. Against the blue sky the bird looked black. Then it began a circle above the river. The sun caught the bird's profile, exposing the white head and white tail of the adult bald eagle.

Of all the things Iowa has to offer, the chance to view wild bald eagles is a rich and unusual opportunity. The bald eagle is unique to North America. Unlike the golden eagle which also lives in Europe, Asia and Northern Africa, the bald eagle only occurs from Alaska to Florida. Prior to settlement, the bald eagle was common throughout most of the United States and Canada. Then due to loss of habitat, human persecution and environmental pesticides, the bald eagle vanished to the point of near extinction in the lower 48 states by the 1960s.

In 1968, less than 3,000 bald eagles were counted during winter surveys in the lower 48 states. Now, for the last several winters, counts have averaged around 12,000 birds. The eagles are beginning to rebound due to protective laws and banning chemicals (DDT and DDE) which interfered with their ability to reproduce. However, the birds are still classified as endangered in 43 states (so few that they could become extinct) and threatened (in danger of becoming endangered) in five states.

Nearly 70 percent of North America's bald eagles live in Alaska and British Columbia at population levels high enough that they are not considered threatened or endangered. For the rest of us, eagles are a special treat. In the early 1800s, bald eagles regularly nested throughout the midwest. Then, from about 1900 until the late 1970s, few or no nests were found in Iowa, Illinois or Missouri. Minnesota, Wisconsin and Michigan suffered less declines. They currently have several hundred eagle nests and list the bald eagle as threatened. However, things have picked up in the other states too. Since 1979, Iowa has had two eagle nests, and in 1986 we had three. Likewise, Illinois and Missouri have had several nests for the last few years.

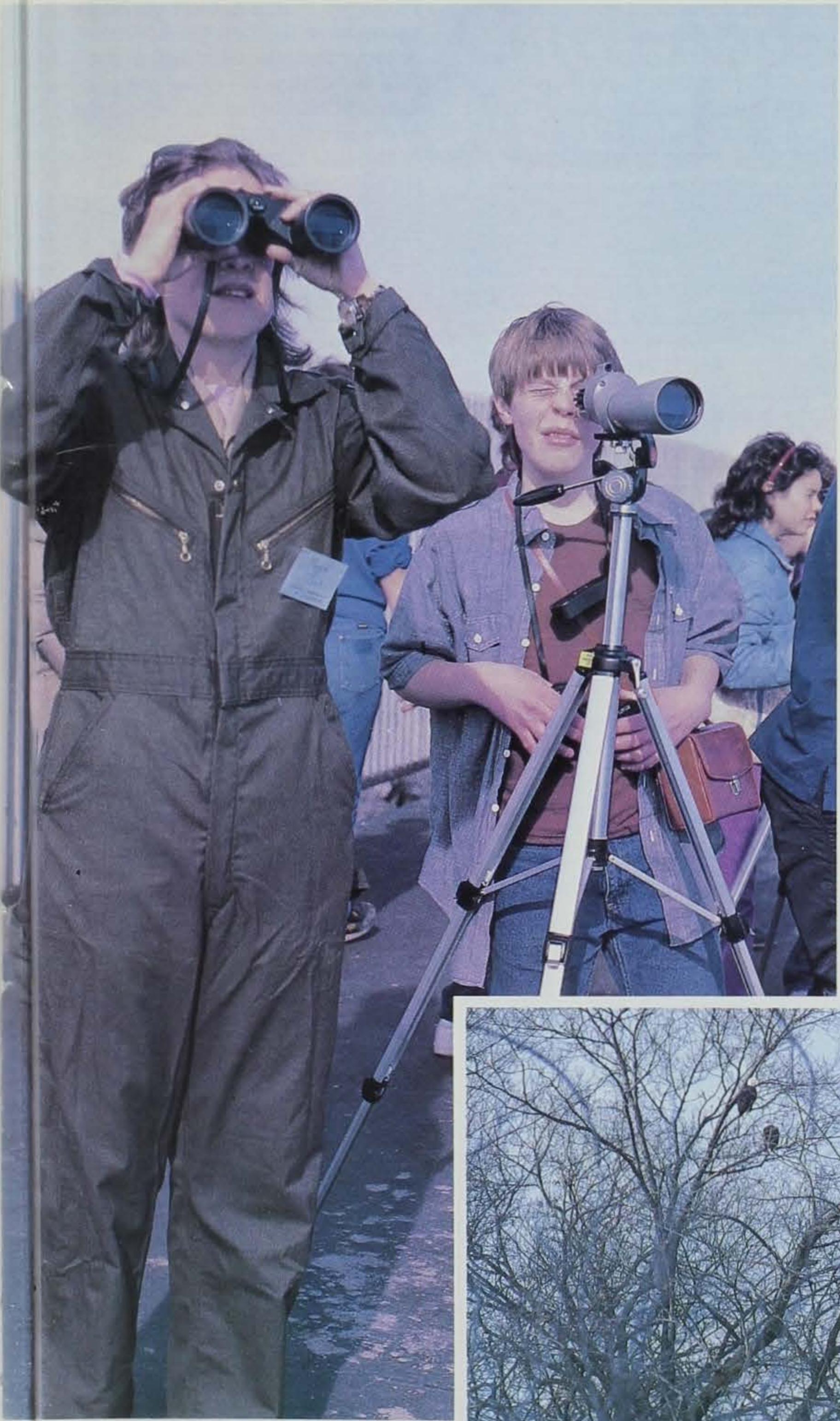
Eagle watching in Iowa is not a spring and summer pastime. Come September though, bald eagles begin to migrate from Canada and the Great Lakes into Iowa. About 200 eagles spend the winter here, while 300 stay in Illinois. As many as 800 may head to Missouri during a cold winter. The true hotspot for eagle watching is along the Mississippi River, one of the major wintering areas for bald eagles in the lower 48 states. Between Minneapolis and an area just south of St. Louis, 700 to 1,400 bald eagles spend the winter.

Keokuk, Iowa is one of the major concentration areas on the river. Depending on how cold the winter is, between 50 and 400 birds stay in the area. The eagles are attracted to Keokuk because of several factors. First, a bald eagle's primary food is

fish. During a cold winter, most of the river will freeze, leaving few fishing sites. However, the lock and dam at Keokuk keeps the water open. Gizzard shad coming through the dam tend to be stunned, providing easy pickings for the eagles. Across from Keokuk, Illinois has a forested shoreline, providing the eagles with perching and roosting sites. Other lock and dams tend to have similar conditions.

A unique opportunity exists to view bald eagles. To teach people about these majestic birds, the non-game program of the Iowa Department of Natural Resources sponsors Bald Eagle Appreciation Days. At these events, biologists with spotting scopes are stationed at the riverfront to answer questions and help visitors observe eagles that are perched, fishing or flying overhead in the area. An indoor program that includes a movie and a live bald eagle is also conducted. There people can view an eagle up close and ask additional questions.

Iowa's first Bald Eagle Appreciation Days was held in Keokuk in 1985. It was bitterly cold with a windchill factor of 50-80 degrees below zero. This froze the river and concentrated nearly 200 eagles in the area. About 800 people braved the cold and had the opportunity to view eagles. Last year, it was quite warm and nearly 6,000 people flocked to Keokuk to see the eagles. Friday was designated for school groups. Over 1,000 kids came to the indoor bald eagle program. They got to see two bald eagles at the show, take pictures



People view birds on the Mississippi through spotting scopes at Bald Eagle Appreciation Days celebration.



and carry away the memory of that majestic, cool demure. Always before the handler, Ryan Walden, would bring out the eagle, there would be a quiet hesitation. Then with its wings outstretched, flapping to balance on the arm of Mr. Walden, the eagle would face the crowd. A rising, "oh, my!" would fill the room. The awed appreciation continued for adults, and all who attended the following two days.

At the river, we couldn't point out hundreds of birds, but there was nearly always a couple of eagles in the area. There we would focus the spotting scopes on the eagles, then people could look through the scopes and see a wild bald eagle, in its natural setting in detail. We had scopes set for the tiny tots too. There the children would close both eyes and try to look through the scope. With coaxing from parents and biologists, the child would finally cover one eye and look through the scope with the other. Silence — "do you see anything yet?" Then suddenly, the tiny face would break out into a smile, "I see it! It's right over there! It's a real bald eagle!" These are moments that also make the day for the many people who work the event.

To provide more opportunities for people to observe bald eagles, we expanded bald eagle days. This year we will have a Bald Eagle Appreciation Days at Keokuk and the Quad cities. The Keokuk event will be January 16-18. Friday is primarily for school groups who have reserved a space. On Saturday and Sunday it is open to everyone. There will also be an additional eagle lecture by an eagle specialist at 1 and 2 p.m. on the weekend. The indoor programs are held at Keosippi Mall on Main Street. On the weekend, the regular live eagle talk will be at 9:00, 10:00, 11:00, 12:00, 1:30, 2:30, 3:30 and 4:30. There will also be additional eagle videos, displays and artwork in the mall. The biologists will be at the riverfront from 9 a.m. to 5 p.m. People can drive to the observation areas, or we will probably have a shuttle bus to take people to the riverfront.

The Quad Bald Eagle Appreciation Days will be held February 14-15 in Rock Island at the Modern Woodmen of America building on hwy. 92 along the river. Friday is ONLY for school groups with advanced reservations. The weekend is similar to the Keokuk event, with a live eagle program and displays in the Modern

Woodmen building. Here the observation areas will be a short walking distance from the building. At the lock and dam in the Quad cities, a dozen to 100 bald eagles will winter in the area.

The Bald Eagle Appreciation Days are sponsored by the U.S. Army Corps of Engineers and the Non-game Programs (Chickadee Check-off) of the Iowa Dept. of Natural Resources and Illinois Dept. of Conservation. In addition the Keosippi Mall assists the Keokuk event and the Quad City Audubon and Modern Woodmen of America are helping with the Quad city event. If you have additional questions call Urban Biologist, Laura Jackson at 515-281-4815. For school reservations at Keokuk, call Keosippi Mall, 319-524-8041. For questions concerning the Quad cities event, call Lester Wadzinski, U.S. Army Corps of Engineers, 309-788-6361, ext. 360. For information concerning food and lodging call the local Chamber of Commerce.

There is no admission fee for Bald Eagle Appreciation Days. We only hope that you will continue to support the Non-game Program with your donations so we can continue to organize and host these events.



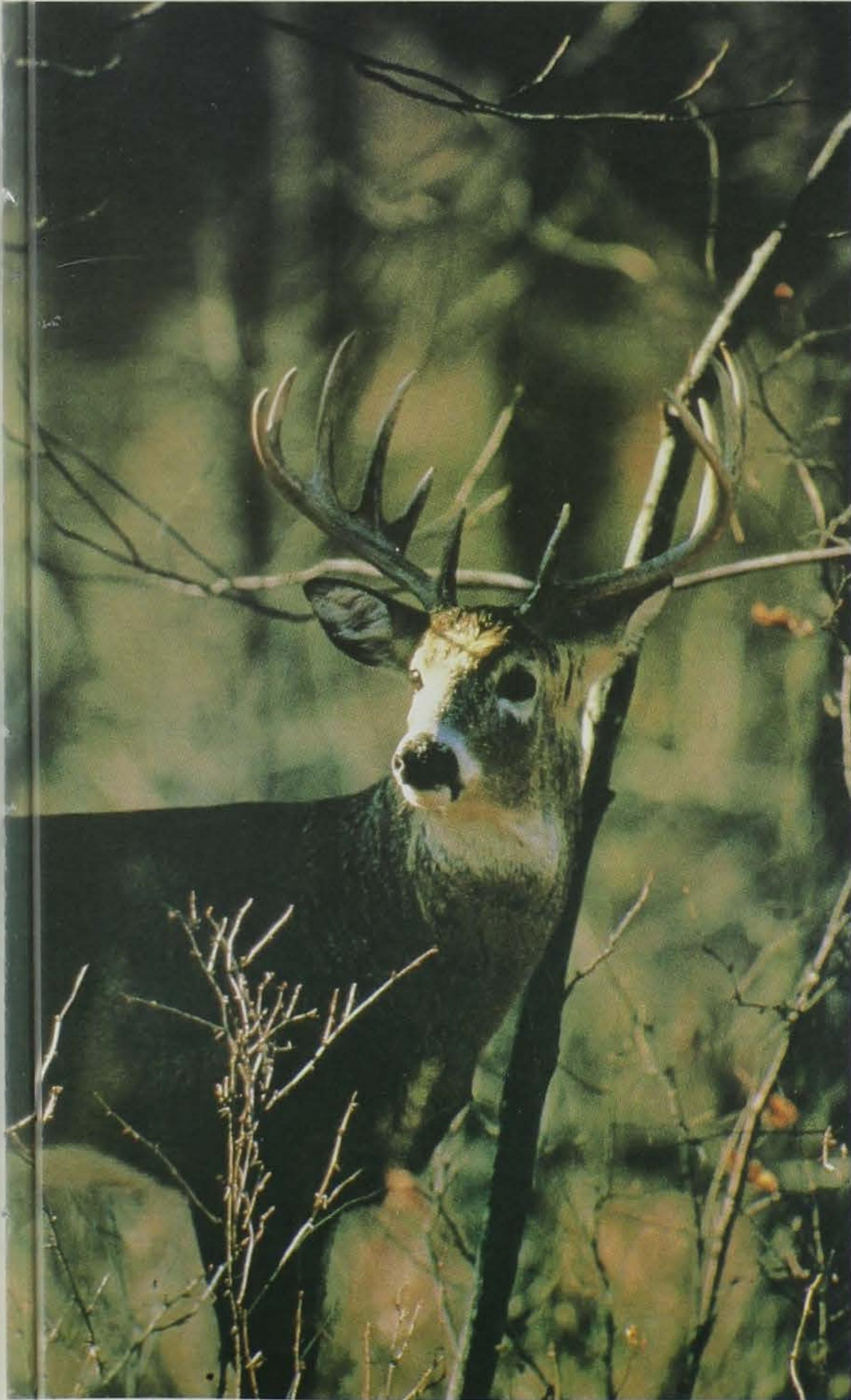
Much of the Eagle Day effort is directed toward school children. Friday of the three day event is aimed at school groups at both Keokuk and Rock Island.



Ken Formanek

Catch-and-Release Deer Hunting

By Dan Dessacker



As snow begins to appear across the Iowa landscape, the thoughts of many Iowans turn to white-tailed deer. In this respect, researchers with the Iowa Department of Natural Resources are no different than the over 125,000 deer hunters who take to the fields each year. However, deer bagged by Iowa sportsmen soon become venison in the freezer, whereas deer bagged by members of the forest wildlife research team are released after being fitted with a collar that contains a radio transmitter.

Since January, 1985, 95 deer have been captured at Springbrook State Park in Guthrie County and fitted with radio collars as part of an ongoing research project. This project will provide the answers to many questions of interest to both wildlife professionals and Iowa's agricultural community. These questions include: (1) How much agricultural crop damage do surrounding landowners incur as a result of the high deer densities often associated with state parks and other refuges closed to hunting? (2) To what extent do refuge deer populations repopulate surrounding areas?

The capture season runs from January through March. Deer are most likely to be attracted to baited sites during winter when natural food supplies are less prevalent.

Three methods are currently being used to capture deer at Springbrook — box traps, rocket nets and dart guns. Each of these methods has certain advantages and disadvantages, yet all were designed to enable researchers to handle deer while minimizing the possibility of injury to the animal.

A box trap is simply a large wooden box. It is approximately 9 feet long, 3 feet wide, and 3.5 feet high and has sliding doors at each end. Corn or some other bait is placed inside the trap, and a trigger wire is stretched across the trap about 12 inches above the bait. The trigger is designed so that when a



deer feeds on the bait, its head or neck makes contact with the wire, thereby tripping the trigger and releasing a rope that has held the two trap doors open. These doors slide down and close both ends of the trap before the deer inside can escape.

Traps are placed along well-used trails to intercept deer as they travel from bedding to feeding areas. Each trap is baited and set late in the afternoon just prior to the time when deer begin to actively feed. Traps are checked in the morning, and any deer captured are released into a handling net and processed. Once moved into position, box traps are relatively labor-free, making them an efficient method to capture a large number of animals.

Fawns from the previous year, which are now eight to ten months old, are easily captured using box traps. However, as is the case with most animals, deer often become progressively wiser and more cautious as they get older. Few adult deer will readily enter the confinement of a box trap. Other methods, which allow researchers to select specific individuals, are used to capture adult does and bucks.

A rocket net can be used to capture deer, primarily adults, that are not willing to enter a box trap. A 60-foot



Lee Glauffelter

by 40-foot, heavy-duty six-inch mesh net is rolled up, either covered with straw or left uncovered, and placed near the edge of a small clearing. One seven-pound metal rocket is placed in a holder at the top of each of four fenceposts driven into the ground at regular intervals along the length of the net. The net is attached via rope or chain to the rockets, and bait is placed several feet from the center of the net.

Deer approach the net and begin to feed. The powder charge in each rocket is electronically detonated simultaneously by an observer concealed in a blind. The rockets fly parallel to, and about five feet above the ground, pulling the net up and over any deer at the bait. Researchers then rush to the struggling deer to pin them to the ground.

Rocket nets have two advantages—the rockets need not be fired until the desired individuals are at the bait site, and several deer can often be captured at the same time. One disadvantage to rocket nets is the large number of personnel required to control and process those animals captured.

"Darting" is another method used to ensure that only those animals selected for capture are handled. There are two basic types of dart

guns. One type uses compressed air to propel the dart, and the other uses a powder charge. Each fires a drug-filled dart that injects its payload into the animal upon impact. Effective range of most guns is approximately 30 yards. Depending upon the size of the deer and the type of drug and dosage used, the time between injection and immobilization ranges from 20 minutes to one hour. Deer are either shot from a blind while feeding at a bait site, or along roadsides at night with the aid of a spotlight.

The physiological condition of an animal can influence its susceptibility to the drugs used with dart guns. A deer's metabolism decreases to conserve energy during the winter and increases again in early spring. Deer with low metabolic rates (winter) are more susceptible to the effects of drugs than deer with high metabolic rates (spring). This means that the same drug and dosage that was sufficient to immobilize an individual deer in January may not be enough in late March.

Anytime a wild animal is captured and handled, the possibility exists that it may be injured. However, wildlife researchers handling deer at Springbrook take every precaution to ensure that injuries are kept to a minimum.

Live trapping allows biologists to attach radio collars and monitor deer movements. This research will help answer questions relating to refuge herds.



The best way to protect against injury to a captive animal is to maintain complete physical control over it at all times. This is accomplished by having research personnel literally lay on top of the deer while at the same time holding its legs still. Throughout processing, which normally takes about ten minutes, researchers keep the deer relatively calm by covering its eyes and limiting unnecessary conversation. If an animal captured in a box trap is judged to be too excited to safely release into the net for processing, researchers simply release the animal from the trap rather than risk having it harm itself during handling.

In addition to physically restraining an animal, Rompun, a drug that acts upon the nervous system, is often used to sedate captured deer prior to processing. The dosage of Rompun necessary to immobilize a deer is well below a lethal dose, so researchers have a wide margin of error when estimating the weight of each deer and the corresponding dosage to be used. After being processed, deer are given an injection of an antidote to Rompun. This revives the deer and ensures that it is fully alert when released.

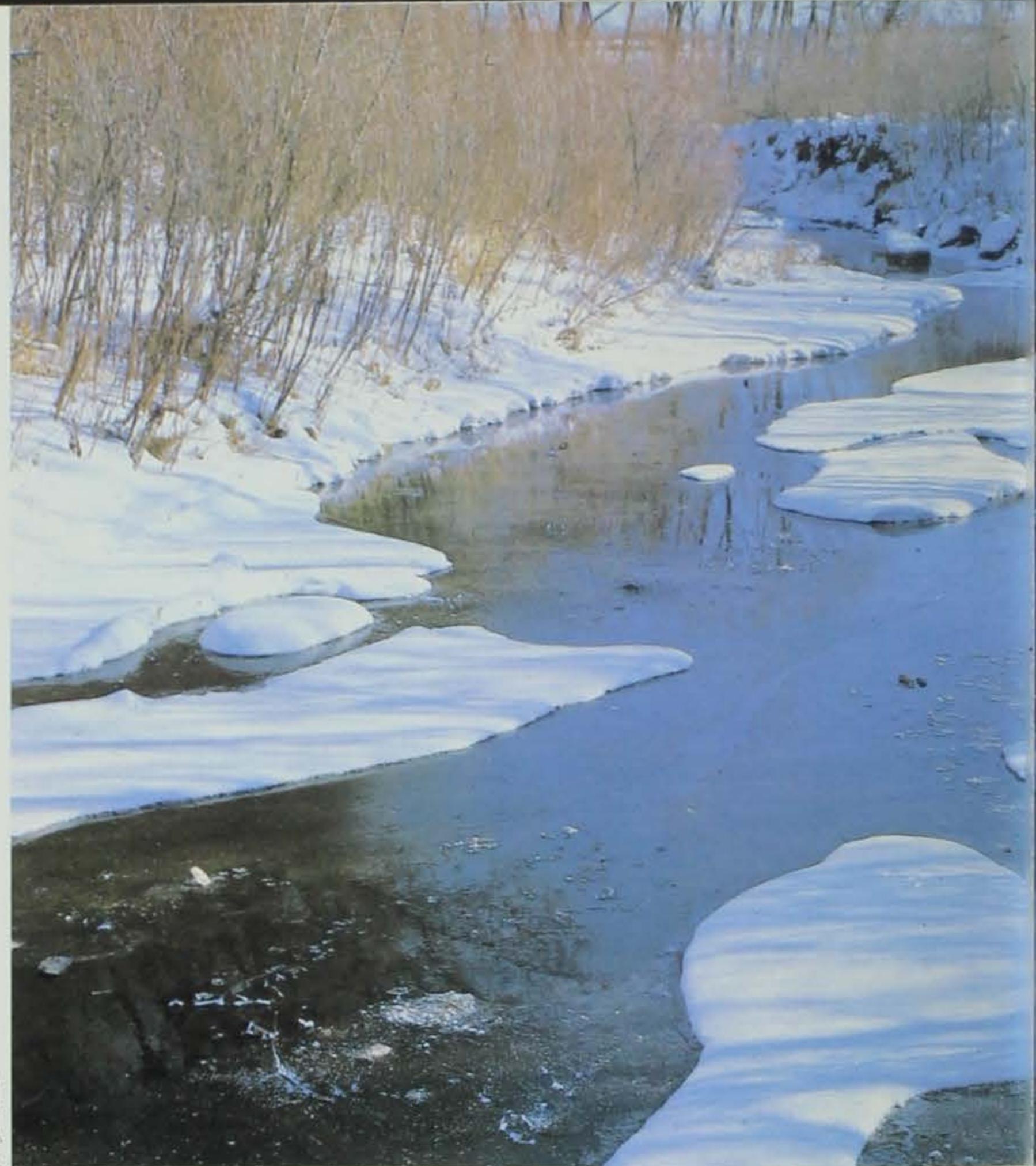
Hands-on studies such as the one currently underway at Springbrook State Park are essential if we are to effectively manage our wildlife resources. Through constant improvement of pre-existing techniques and the development of new ones, researchers can collect much-needed data on wildlife populations, while at the same time ensuring that the very process of data collection does not unduly interfere with the population being studied.

Dan Dessacker is a wildlife research technician located at Boone. He holds an MS degree from Penn State University. He started with the department in January, 1986.

Roger Hill

Plant Tale of the Month

Jerry Leonard

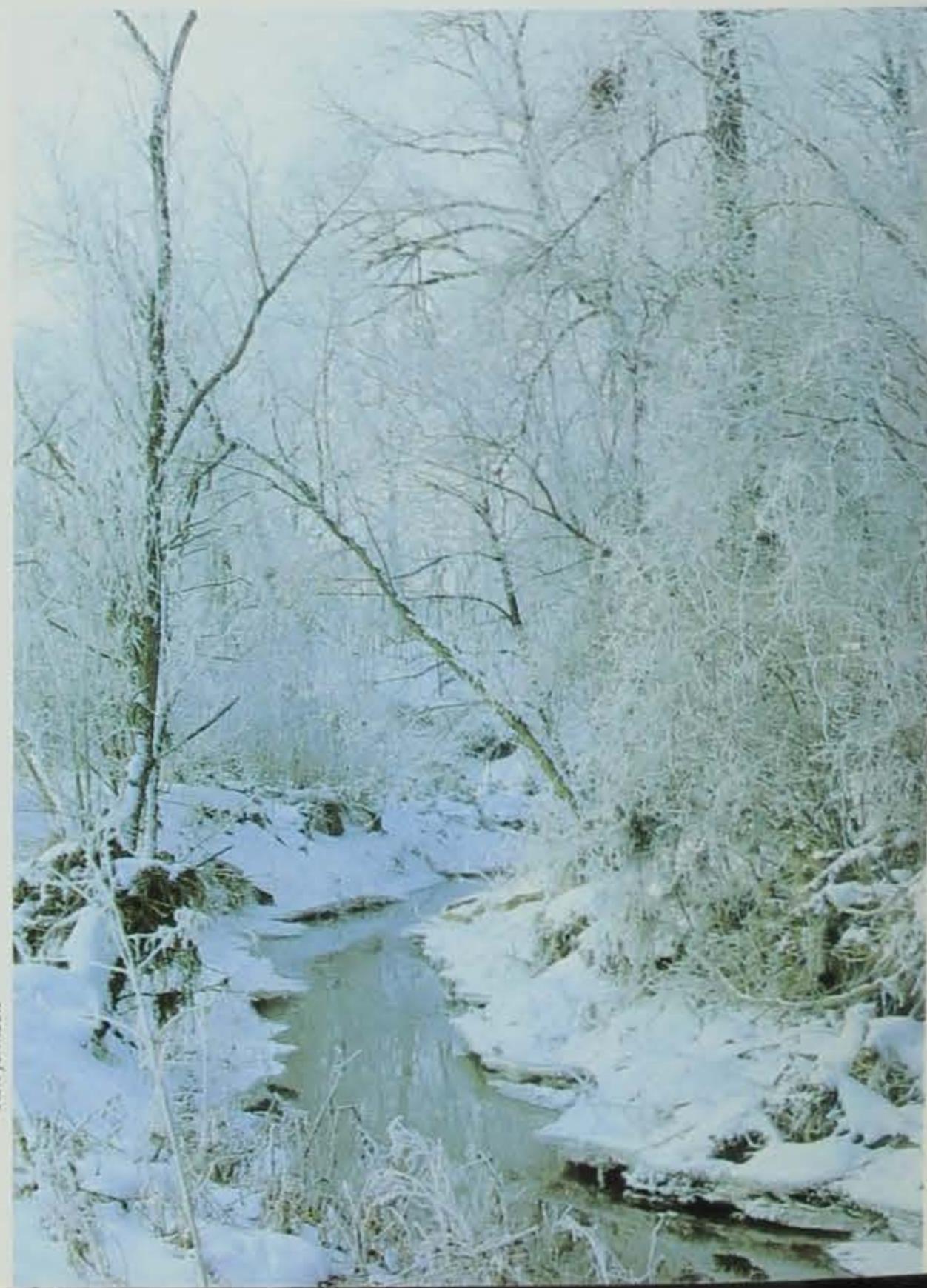


THE SILENCE OF WINTER

Dean M. Roosa

*The last bird song
has echoed softly away,
The landscape lies as in death;
The silence, the overpowering silence,
has descended.
The land lies resting, gathering strength
To burst back to life
Tomorrow.*

Ron Johnson





Ron Johnson



Polygonum fuscum



Dale Brumm

Volunteers and Bluebirds

By Steve Anderson



I can remember vividly the excitement of Mr. and Mrs. John Hawk of Knoxville when they reported counting 17 bluebirds working nest boxes at Lake Red Rock's Whitebreast Campground. Whitebreast has the largest trail with 21 boxes and the highest number of successful broods. Due to the increased number of bluebirds, park rangers were often confronted with the question, "What kind of bird was that?". This is not surprising since 90 percent of Iowans under 40 have never seen this beautiful songbird.

The reason so many bluebirds were spotted has a lot to do with two special people and the value of volunteerism. Paul and Mary Felsing retired from farming and moved to a wooded area adjacent to the lake. Soon they were putting up nesting boxes and feeders to attract birds. Mary was not content with just watching; she studied and became a licensed bird bander. Paul helps Mary with the banding, and both keep records which are sent to the Fish and Wildlife Service's Bird Banding Laboratory. Their love for birds leads them from their backyard program to a cooperative bluebird trail program with the Army Corps of Engineers. Since they started volunteering in 1982, the number of bluebirds fledged has risen from 18 to this year's high of 166.

In the last four years, the trail has grown from 20 boxes to 61. The Corps constructed the initial boxes, but since has only had to provide materials to volunteers such as the Pella High School Industrial Arts Club and local scout groups. Fifteen new boxes are presently being constructed by the Pella Webelos to be used to replace old boxes and to expand the trail.

Information from the Iowa Department of Natural Resources' nongame biologist Doug Reeves, along with nest box records, indicated a need to relocate several boxes that were in brushy areas. They were prone to nesting failure due to predation and competition for boxes by white-footed mice and even an occasional snake.

The increase in boxes and relocation were two important steps, but efforts by the Felsings proved to be

the major contributing factor in increased bluebird nesting.

Paul and Mary checked the boxes regularly during the months of March and April. They continued to monitor the boxes all summer and banded birds when they were about one and one-half weeks old. Every box was invaded at one time or another by house sparrows. Sparrows constituted the greatest threat to bluebirds due to competition for nest sites. The Felsings evicted these interlopers, and their vigilance was rewarded as the number of birds fledged continued to grow.

In the past five months, Paul and Mary have volunteered 332 hours. The Corps estimates that the value of their labor amounts to nearly \$2,300.

Dollar figures tell something of the cost/benefit ratio, but the true management implications go beyond dollars. The critical time for monitoring of nest boxes is in the spring. That is precisely the same time that prairies need to be burned, food plots planted and campgrounds readied for the ensuing rush. Without volunteers, this all-important monitoring would simply not be accomplished. The most important implication is that the bluebird populations rebound and, in fact, flourish with box monitoring.

The bluebird trail program lends itself to volunteerism since many industrial art classes and scout groups are looking for worthy projects to undertake. In addition, concerned birders often can take care of boxes on their own, thus eliminating any administrative overhead. Finally, the program enhances both bluebird populations and the agency's public image.

For the Felsings, there is a strong feeling of satisfaction and a sense of accomplishment. Their actions are rewarded each time they watch a bluebird fly to and from a box. This year there was some additional "icing on the cake" when Paul and Mary received a certificate of appreciation from the Iowa Department of Natural Resources for their leadership in the conservation of eastern bluebirds.

The Felsings blushed with pride while showing me their certificate; the glow on their faces said, "we'll be back next spring."



Paul Felsing



Jim Messina

Bluebird nest box routes at Lake Red Rock are excellent examples of how volunteers can contribute to improving the outlook for these beautiful birds. Contributing their time and efforts, Paul and Mary Felsing saw 166 bluebirds fledged this year.

Steve Anderson is a park ranger for the U. S. Army Corps of Engineers at Lake Red Rock. He has been with the Corps since 1985. He holds an MS degree from the University of Illinois Institute for Environmental Studies.

ANGLERS CAN HELP FISHERIES

By Bernard Schonhoff



Can anglers help improve fishing? The answer is yes. By knowing the size, species and number of fish caught by anglers, biologists can determine the characteristics of the fish population within a lake. By knowing the number of anglers, their preference, and how much they fish, the biologist can work to adjust the fish population to better meet the needs of the angler.

So how can anglers provide input into the management of Iowa's waters? There are five basic channels — creel census, angler diaries, personal contacts and letters, angler surveys and public meetings.

Creel Census

A creel census is a study that involves interviewing anglers fishing a particular water body. A creel clerk asks anglers questions concerning fishing and attitudes. The creel census is set up in such a way that data collected over a short period of time can be expanded to cover the entire period of the study. Through this method, a fishery manager can statistically expand the information to learn the number of people fishing; how many, what size and what species were caught; and the amount of time taken to catch the fish. Additional questions can be asked so that each creel census can be tailored to fit the needs of the particular water body.

This information, combined with other data, assists the fishery biologist with the development of the area's fish management plan.

Angler Diaries

Although most people think of angler diaries as a fairly recent addition to the tools that fishery managers use, diaries were used as far back as 1946 in this country and as far back as 1934 in New Zealand. Most of the diaries being used around the country today are directed at a single fish species. Diaries are used in Iowa for recording information on largemouth bass and muskies, or at a related group of species such as trout which would record rainbow, brown and brook trout catches.

Information in diaries is similar to that collected during a creel census. The information includes length of

time fished, the length and weight of the fish caught, and whether the fish were creel or released. If a tagged fish is caught, the number is recorded. Diary information is particularly valuable because the keeper has normally received some instruction and knows what data the fishery manager needs. Diary information is also very economical to collect. In a study done in New York, it cost 52 cents per acre per year to collect the data using a diary program. It cost \$3.61 per acre per year for the biologist and his crew to collect the same information. Although the data collected by the biologist was more extensive, if the data collected by a diary system is adequate, it is much more economical.

Personal Contacts and Letters

Another way an angler can have input into how a water system is managed is by personally visiting, phoning or writing the local fishery biologist. Although the biologist cannot satisfy each angler's wants, many suggestions are used in developing a fisheries management plan.

Angler Surveys

Angler surveys could be considered a combination creel census and personal contact. The surveys are often conducted by phone, like the one done in Iowa in 1981. The respondent is asked a few questions about his or her fishing habits and

preferences concerning fish species and places to fish. These surveys give an overview of what the angler wants and indicates where fisheries research, fish production and management efforts might return the best results.

Public Meetings

The public forum is an important tool for both the fishery manager and the public. At a public meeting everyone is given a chance to ask questions and express interest in various fisheries programs. Fisheries experts in turn review these comments and incorporate them into the decision-making process.

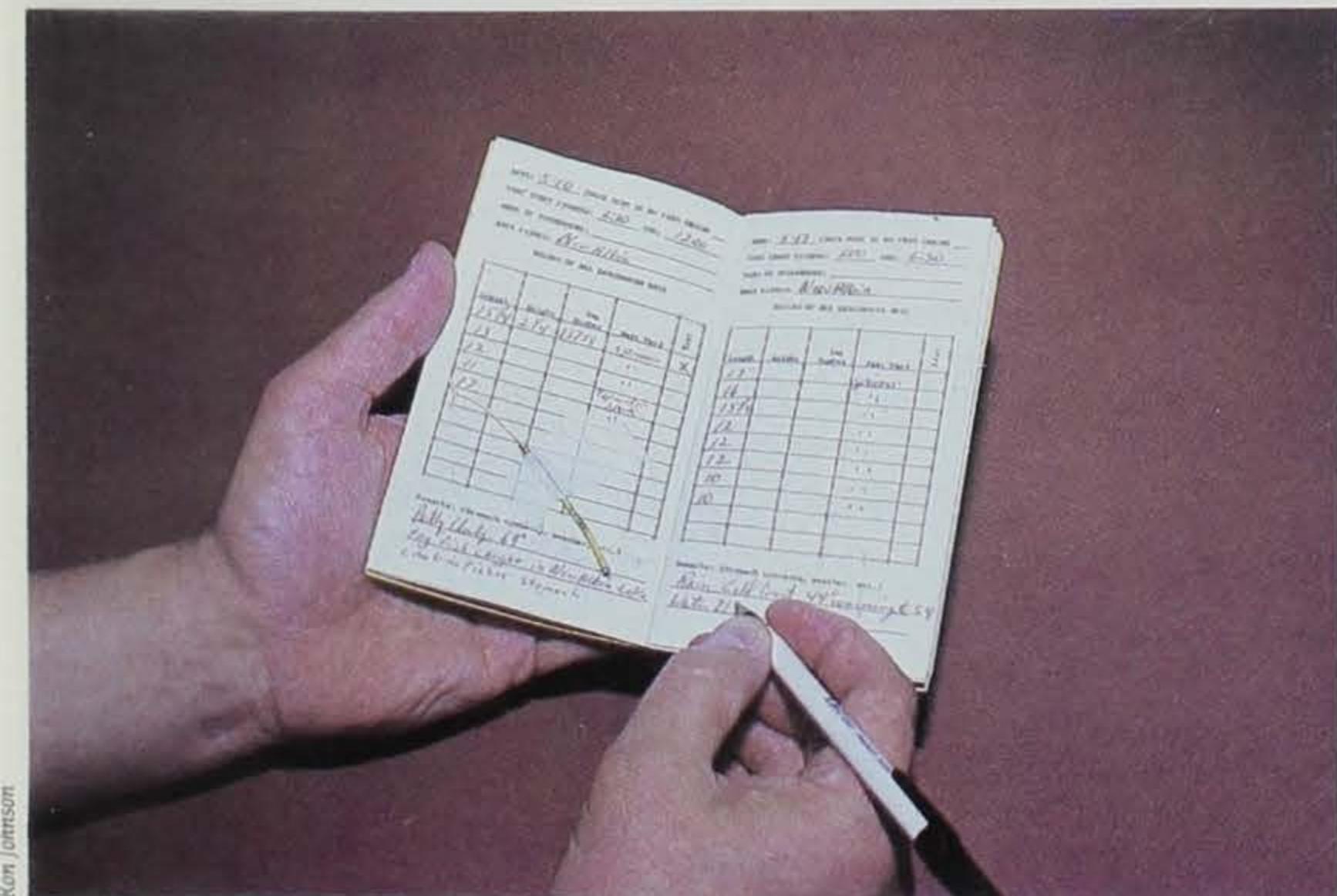
Angler wants, the potential of the lake or stream to provide for those wants and costs must be carefully weighed. The angler plays a major role in managing fisheries in Iowa. All of the methods for angler input are tools used by the biologist to develop the best fisheries management program possible at a cost the angler can afford.

Bernard Schonhoff is a fisheries biologist located on the Mississippi. He holds an MS degree from the University of Missouri at Columbia. He has been with the department since 1985.



Steve Gruy

Expressing opinions at public meetings and keeping angling diaries are just two ways anglers can help improve their fishing.



Ron Johnson

County Conservation Board Feature

Southeast Iowa



Land For All Seasons

By John E. Stuart

Are you looking for a new vacation spot? Do you think you have to drive hundreds of miles to beautiful sites, do some quality fishing, or visit a historic place? If so, read on!

There are 17 counties in southeast Iowa that make up the "Land for All Seasons" (Appanoose, Davis, Des Moines, Henry, Jefferson, Keokuk, Lee, Louisa, Mahaska, Marion, Monroe, Muscatine, Van Buren, Wapello, Washington and Wayne). In total, these counties manage more than 10,800 acres of parks, wildlife areas and river accesses. Rich with scenic beauty and steeped in history, these counties offer visitors plenty of things to do and places to see throughout the year.

Spring is ushered in with an explosion of color with the blooming of wild cherry, serviceberry and redbud trees. As the petals fall, the forest floor is soon carpeted with blooming spring beauties and anemones. Many early April outings result in a bread sack full of morels or a stringer of crappie. The only thing better is the eating!

John Stuart is the director of the Wapello County Conservation Board. He holds a BA degree in outdoor recreational resource management from Iowa State University. He has been with the Wapello CCB since 1977.

Summertime to many southeast Iowans means largemouth bass fishing, and the bass in southeast Iowa grow to large sizes. Southeast Iowa boasts the state's record largemouth, a 10-pound, 12-ounce monster caught from Lake Fisher in Davis County just two years ago. There's little doubt that the next state record is lurking somewhere in one of the many lakes or ponds in the region, just waiting for the right plug to come along.

Bass fishing isn't the only summer attraction in the area. The exhilaration of seeing a hundred or more hot air balloons lifting off at sunrise during the Ottumwa Pro Balloon Races is a sight to behold. Any history and antique buffs delight in the many activities at the Annual Old Threshers and Settlers Reunion held in Mt. Pleasant every year.

Fall comes to the area's timbered lands after the colors of northeast Iowa have faded, yet its brilliance is nonetheless dazzling. Combining a fall squirrel hunt with the bright colors of autumn provides real enjoyment and beauty.

Winter brings great ice fishing, cross-country skiing, and excellent deer hunting to southeast Iowa. It also brings the bald eagle. And one of the best places in the midwest to view this majestic bird of prey is along the Mississippi River near Keokuk.

The "Land For All Seasons" invites all to come and share its treasures. For more information, contact the local county conservation board office for a copy of the County Conservation Board Area Directory and the address of the "Land For All Seasons" county to be explored.



Spiderwort

Nature Tale For Kids

One Small Death

It so happened that there were 700 rabbits in Sleepy Hollow — according to a five-year-old girl who lived close. She had arrived at this figure, of course, by asking her father. "Oh, several hundred, I guess," he answered without looking up from his paper. She understood "seven hundred" and marveled at her father's knowledge. So, furthermore, there were 700 rabbits in the wooded, shrubby, sandy, ugly, beautiful valley near her home.

No wonder, then, that one of the 700 wandered into her yard one winter morning. She excitedly followed the tracks in the snow, dragging her patient father by a finger, and the tracks led to an impenetrable thicket where the human followers had to stop. This was the rabbit's home, according to her father who explained the need for rabbits to live in a thicket for protection. He explained about predators and about rabbit life in general.

How long do rabbits live? "Oh, seven or eight months, probably; some live to a year or more," her father answered. Now seven or eight months seemed forever to a five-year-old, so furthermore 700 Sleepy Hollow rabbits lived forever and ever, and all these things ran through her head as they walked back home.

It so happened that the neighbors owned a beagle, who, when not snoozing in the sun on the doorstep, was pestering the 700 Sleepy Hollow rabbits. Never mind that he never caught one, this was his favorite hobby. As the little girl and her father walked toward their house, they heard the beagle pursuing his favorite hobby. The girl didn't understand why one animal would chase another and a long explanation did not help much. Only the part about the beagle "thought it was fun" to chase rabbits made any sense.

Adults have learned to accept death as a part of life; we often cause death, often promote death, and in the end we accept it. Not so with

By Dean M. Roosa

small children. When the family drove through the valley one spring day, they saw a rabbit lying on the road. The parents hardly noticed, but questions popped up from the back seat. Answers, not completely satisfactory, followed, and in the end, it was noted that it "sure seemed stupid" for a rabbit to die on the road. "It's just one small death," her father said, "necessary to make room for new rabbits." Only silence from the back seat.

On a dry ridge farther up Sleepy Hollow, Rey, the Red Fox had a den full of youngsters. By the sheerest coincidence, the little girl, sitting with her father on a ancient fallen

tree just at dusk, saw a fox streak from the brush, grab a half-grown rabbit and bolt from the valley.

"Wow, did you see that?" her father asked. Yes, but what was the fox going to do with the young rabbit? An explanation followed, telling about baby foxes that might otherwise starve, about how rabbits have several families each year and would soon eat themselves out of house and home if they all lived. Quiet contemplation followed.

That night, long after bedtime for a five-year-old, her parents sat talking. Upstairs, a five-year-old lay awake, rethinking an early lesson in ecology, but really a first lesson in life.

Classroom Corner

By Robert P. Rye



Walking through the woods or field anytime during the year, the most noticeable things are the sounds. Many times we know an animal by their sound first and sight second. See how well you can match the animals with the sounds you might hear as you walk.

Animals

1. Squirrels
2. Pheasants
3. Herons
4. Turkeys
5. Chipmunks
6. Prairie Chickens
7. Wild Geese
8. Fox
9. Owls
10. Frogs

Sounds

- a. Gobble
- b. Croak
- c. Boom
- d. Squawk
- e. Yap
- f. Chip
- g. Chatter
- h. Honk
- i. Cackle
- j. Hoot

Answers:

1.g 2.i 3.d 4.a 5.f 6.c 7.h 8.e 9.j 10.b



Record Spring Turkey Harvest

According to the latest estimates by the Iowa Department of Natural Resources, spring turkey hunters harvested a record 3,974 gobblers in 1986. This was an increase of 27 percent over 1985 and continues the trend which has seen a new record harvest each year since 1974, when the first modern spring turkey season was held.

According to Greg Hanson, forest wildlife biologist for the DNR, this year's record was the result of two factors. The first was excellent turkey production in 1985 as a result of a warm, dry spring and early summer. The second was the opening of many new areas of the state. Spring hunting was held in portions of 79 of Iowa's 99 counties in 1986 (an increase of 20 counties over 1985). This is attributed to the DNR's wild turkey transplant/restoration program. Since 1966, DNR biologists and other field personnel have transplanted over 2,000 eastern wild turkeys at 149 sites in Iowa.

Hunter numbers were up from 10,684 in 1985 to 13,535 in 1986. Much of the increase came from sales of archery-only licenses. This license was offered to archers for the first time this year, and response was much higher than expected. Archers purchasing this license were allowed to hunt in any zone and in all seasons. Shotgun hunters chose from 15 zones and four seasons.

Hunter success rates were the highest ever, with 37 percent of the shotgun hunters bagging a turkey. Generally, hunters in southern, eastern and western zones had the best success followed by hunters in central and

north-central zones. Hunters who hunted the first season were slightly more successful, followed by third, fourth and second. In 1984 and 1985, third and first season hunters, respectively, had the highest success rates.

Spring turkey harvest estimates for 1986. Success rates (percent of active hunters that bagged a turkey) are in parentheses.¹

Zone	Total
1	1,857 (41)
2	273 (31)
3	143 (31)
4	496 (35)
5	728 (36)
6	17 (29)
7	75 (25)
8	15 (42)
9	5 (17)
10	72 (30)
11	49 (22)
12	183 (42)
13	28 (40)
14	21 (43)
15	12 (52)
Statewide	3,974 (37)
Southern	2,089 (40)
Eastern	1,299 (35)
Central	253 (31)
North Central	20 (29)
Western	313 (32)

¹Does not include archery only kill.

"We were not able to determine a success rate for the archery-only hunters," stated Hanson, "due to a very low response rate by archers to our postcard survey. This is one of the few negative aspects of the 1986 spring season. Response from shotgun hunters is usually in the 65-90 percent range. Only 20 percent of the archers surveyed returned their cards. We need this information to evaluate our regulations and also as a basis for making wildlife management decisions."

Hanson commented that the only other negative aspect of spring turkey hunting was the continued tendency of hunters to concentrate on public lands. Nearly 40 percent of the turkey hunters used public areas this spring while only seven percent of the turkey habitat is publicly owned. This leads to higher hunter interference and low success rates on public land. It also leaves much of our turkey habitat with very low hunter densities.

NATIONAL 4-H AWARD TO AMES MAN

James L. Pease, a 4-H Youth development specialist with the Iowa State University Extension Service, has received the Distinguished Service Award from the National Association of Extension 4-H Agents. Pease joined the Extension Service in 1980,

and is responsible for developing the 4-H Ding Darling Project, a school program on soil, water and wildlife, which is now in more than 80 schools in 25 states and two foreign countries. He also works in environmental education, is the

author of several 4-H natural science literature and activity guides and is a resource person for state, regional and national projects. Pease received his B.S. and M.S. degrees in animal ecology from the University of Wisconsin.



Keefe Retires After 36 Years

For many Northeast Iowa anglers, trout fishing may seem a little bit different from now on. Bill Keefe, affectionately called "slim" by those he has served, has decided to retire.

Keefe, who has worked at the Decorah hatchery for 36 years, has been the man on the stocking truck during much of his career. Decorah area anglers know him as the guy who "walks 'em in." Ron Johnston, hatchery manager explained.

"Bill Keefe would carry trout farther than anyone. If we couldn't get the trucks back in to some of the favorite pools, he would often carry buckets of fish to the areas," he said. "And nobody could keep up with him."

Keefe began his career in

January, 1951, as a laborer for former hatchery manager Hjalmar Carlson. His starting salary was \$7 per day. He became a foreman in 1954 and was promoted to fisheries technician in 1958.

Those who know Keefe appreciate his dedication to the trout program and his job. Once, he was forced out of action for a few days due to a case of chicken pox. That was the last time he missed work and that was in 1953.

"He just quietly goes about doing his job," Johnston said. "You don't have to tell Bill Keefe what to do, you just get out of his way and let him go."

Johnston added that he and a good many Decorah area trout fishermen, "are sure going to miss him."

ENVIRONMENTAL EDUCATION WORKSHOPS

The following winter and spring workshops offered by the Institute for Environmental Education will provide one hour of graduate credit. For information on workshop costs and enrollment, contact Dr. David McCalley, Institute for Environmental Education, University of Northern Iowa, Cedar Falls, Iowa 50614. Telephone: 800/772-1746.

Conservation Education Center, Springbrook

February 6-8, Project WILD; for Facilitators; Duane Toomsen, Dan Siebert, Terry Wilson, Robert Vanden Branden

April 10-12, Iowa Birds Families, Field Studies and Their Future; Gail George

May 1-3, Ecology for Elementary School Science; Carl Bollwinkle, Don Sievers

Camp EWALU, Strawberry Point

February 6-8, Life in the Dead of Winter

March 6-8, Project WILD/ Energy; Robert Tye, Duane Toomsen, Robert Vanden Branden

April 10-12; Soil Loss/Water Pollution; Ben Clausen

May 8-11, The Role of Geology in the Environment, Lynn Brant

King Eiders Collected

Three northern Iowa duck hunters received an unusual treat during the last week of the season when a flock of four king eiders came into their decoys at Clear Lake. Two of the birds were bagged by the party which included Jim Hansen (DNR waterfowl biologist), Rick Poole, and Ron Glanville, all of Clear Lake.

The king eider is among the largest of wild ducks. A sea duck, the king eider lives farther north than any other waterfowl species, nesting extensively along the coastal areas of arctic Greenland, Siberia, Canada, and Labrador. The bird normally winters in the Aleutians and along



the Atlantic coast from Greenland to Newfoundland.

Extremely rare here, the eiders represent only the fourth and fifth known specimens from Iowa.



A HUNTER'S LETTER

By Bob Mullen

Dear Son,

The .22 rifle you received this year as a Christmas present was given out of love; but more importantly, it is a gift that you have earned. With a firearm goes a lot of responsibility as a hunter, and you have proven that you are a responsible young sportsman and a safe handler of firearms. During your years of training, I have received much joy and pleasure as I have seen you grasp the fundamentals of safety and proper hunting techniques, and put them into practice.

How well I remember your excitement when I first took you with me squirrel hunting. You were six years old and I didn't let you carry a gun for several years, but you improvised your own. You would find a stick and carry it as your rifle. It was during that first year that I realized how important it is for me to be a good example and a safe hunter. I observed how you would carry your stick exactly as I carried my rifle, and would hold it like I did as we sat under a hickory tree waiting for a squirrel. I remember how you diligently saved your money and bought a toy rifle. You said "I wanted a rifle that was like Dad's." It was then I realized how much you enjoyed going afield with me, and that I must be sure to train you to be a true sportsman and competent gun handler.

I had the satisfaction of watching you take care of it and improve your shooting skills with practice. More important was your practicing of good firearm safety without having to be reminded — it was becoming a habit.

Those young eyes of yours could surely spot squirrels, and you learned to sit patiently as we waited. Once, when you were only seven, we had been sitting for a long period of time before I got a shot at a squirrel. I wish I had had my camera that day. You had stretched out on your back and fallen asleep.

I am sure over the years you got tired of hearing me repeat the safety rules, but now you watch where the muzzle of a firearm is directed, keep the safety on until ready to fire and adhere to many other safety rules without being reminded. I was pleased when you successfully completed the Iowa hunter safety course.

As you get older, son, we won't always be hunting together. In this sport, you are your own referee. There won't be anyone there to correct you if you make a mistake. It is a big responsibility you carry when you pick up a firearm, but I believe you have proven yourself a responsible hunter. That responsibility requires respect toward your firearm, others around you, wildlife, and the land on which you hunt.

In your hands, you carry the future of hunting and shooting that we currently enjoy in this great land of ours. You will find there are people and groups that are opposed to the hunting and firearm ownership that we enjoy. Many of these people are well meaning, but they are misinformed as to the importance of the honest hunter's role in modern game management.

I feel confident, son, that you will, by your actions, be an example to others of what a responsible hunter is. I hope they will say, "I would like to be like that hunter," and one day you may have the pleasure of teaching your children firearms safety and the responsibility that goes with owning a fine sporting firearm. This rifle is a gift to you, but you have given me an even greater gift. I have gained a hunting partner, and I am proud of him.

Love, Dad

Bob Mullen has been a conservation officer since 1971. He graduated from Northwest Missouri State University with a BS degree.

Warden's Diary

By Jerry Hoilien

This one goes back a lot of years. Back to the days of Wes Ashby, Bruce Parker, Herb Ells, and Dan Nichols — back to the days when we didn't wear uniforms and the badge in the pocket was our identification.

It was in the spring of the year and the small streams in northeast Iowa were running high, and the suckers were on their annual "spring run." Sucker spearing back in those days was a great thing — especially at night with a torch. The fact that it was illegal didn't seem to deter anyone; in fact, I think it seemed to make it more sporting to some.

I was a fledgling warden, still green around the ears and more than eager to help the ol' veterans when they constructed their plans. They knew the area well. The weather was cloudy, making it hard for them to see us coming without the moon. The particular area was down a road dead-ended because of a bridge-out. The riffle in the river had been full of suckers that morning and there would be plenty of action that night.

I'd never been in on anything like this before, and listened intently as plans were made. We were to park on an abandoned farm about a half-mile away, sneak through the woods without lights in the dark, and come out right above them. We should be able to see the poachers clearly as they would all have torches or lanterns. Each warden had his assigned area, and we were to grab as many as we could and surround the rest. Good plan!

Well, I had never seen such a pitch black night! We all arrived at the abandoned farm and checked our flashlights and equipment. One of the guys had brought along our new portable radio. I don't know who he was going to talk to, as we only had one and it didn't work worth a darn in the valleys. Plus, it weighed a ton

by the time you carried it any distance. Well, our leader said to follow him and took off through the dark into the weeds and brush. It didn't take long to get lost, but I could follow their general direction by the crunching of underbrush and muttered swearing in the dark. I knew I was slow, picking my way through the vegetation, and I lost their trail. With no lights to be used, I didn't have much hope. The old barbed-wire fence creaked noisily as I located it with my legs. I heard a cough ahead and struggled toward it. I'd worked up a real sweat and every tree branch wanted my hat in the worst way, but by now I could hear the river and sure enough, make out the glow of torches ahead.

Putting on my best sneak, I worked ahead but came to a big ditch. I could hear the rocks falling a long way down. Working to the right, I came across the top of a tree which seemed to be leaning my way and I hoped it had its beginning in the bottom of that dark ditch. Climbing down that tree took awhile, but was not nearly as difficult as clawing my way back up the other side.

To my amazement, there, in front of me, was a roadway. Suddenly a car was coming with lights shining down the old road towards me. Back in the ditch, I crouched low as the vehicle banged to a stop just past me a little ways. The driver slammed the door and hollered out, "You guys gettin' any?" He was answered from the river with loud laughs and remarks about his ancestry. He opened the back door and lit up his lantern. I could make out the long-handled spear he pulled out of the back and started down the bank. (I couldn't help wondering why we hadn't just driven up.)

I had just eased up out of the ditch to get a better view, when all hell broke loose on the riffle. "Game wardens — run!" Everyone seemed to be going in different directions at once. Torches were flying, men and boys were scrambling; one, carrying a lantern, ran right into me. "Let go, you darn fool, the wardens are here! What's the matter with you? Run!" I hung on and pulled him down to the edge of the riffle where several others were gathered, trying to explain to him that I was one of "them." There

was a lot of mumbling and cursing.

Our leader spoke out in a loud clear voice that everyone in sight was "under arrest" and they were to stay where they were. There was silence.

Suddenly from out of the dark above there was a muffled screech as a toe caught an exposed tree root. Keeping his feet under him was a real task as he came running down the almost vertical bank. His momentum carried him past us and head first right into the river.

"What was that?" The figure came out on the other side and disappeared into the darkness. Nobody gave chase — not that we could have — but we had recognized one of our own and just couldn't bring ourselves to admit it!

Which warden was it? I'll never tell. But I'll never forget that original "spring run."



HAM-BEAN SOUP

Earl "Butch" Fullmer (the one with the handle-bar mustache) has sold his fishing float at Lock and Dam 9 and bought the Red Cedar Inn in McGregor. If you like ham and bean soup, here is his special recipe:

1 quart navy beans (don't precook)
2 or 3 lb. picnic ham with bone
2 cups canned tomatoes (#303 can)
 $\frac{1}{4}$ cup shredded carrots
1 large chopped onion
2 bay leaves
3 tbsp. sugar
1 tbsp. Worcestershire sauce
 $\frac{1}{2}$ tsp. whole thyme
 $\frac{1}{4}$ tsp. ground thyme
 $\frac{1}{2}$ tsp. whole oregano
 $\frac{1}{2}$ tsp. pepper
3 tbsp. chicken base

Boil enough water to cover ham by 3 to 4 inches, then place ham and beans in and simmer until tender. Stir frequently to avoid sticking. Remove ham from pot, chop meat into small pieces (chop skin of ham very fine) and return to soup. This very definitely requires watching, especially to protect from the cook and other snitchers. Serve on cold blustery days right after a good hunt.



Mike McGee

Former marsh basins in Hamilton County, flooded after a heavy spring rain. All could be restored to marshes.



Rebirth of an Iowa Marsh

By Ted LaGrange

THE YEAR 1840

The covered wagon sank slowly, while a family of new arrivals stood helplessly by. The wagon had become mired in a small prairie slough in the heart of the wild Iowa frontier. This small slough was part of a huge complex of prairie wetlands that covered an estimated two and one-half million acres of Iowa. The settlers had little time to marvel at the vast number of marshes yet to be traversed; all that mattered to them was getting their wagon out of that slough. Once freed, they headed back east and told others following their path to avoid the area, later to become Story County, for it was much too wet to ever be settled. The story was much the same throughout the rest of central and northern Iowa.

These marshes teemed with life—ducks, geese, swans and cranes—and provided much-needed food. But they were viewed in the long run as an impediment to agriculture and transportation. Something had to be done to remedy this problem.

THE YEAR 1880

The heavy iron dredge sliced deeply through the layers of prairie sod. The bite took hold, and water began to pour into the new ditch; within minutes, another prairie marsh vanished. This scene was repeated millions of times across Iowa as the lakes and larger marshes were drained by an extensive system of drainage ditches. Underground tile lines were put in place to dry up the smaller wetlands and the mighty drive to tame Iowa's wetlands was underway. One by one the marshes fell and with them went the nesting whooping cranes, pelicans and trumpeter swans that once called Iowa home.

THE YEAR 1980

The tractor rode smoothly across the flat ground that had once been the bottom of a marsh. It was May and corn was being planted. The tile was functioning perfectly and kept the water neatly out of the way. Iowa's drainage program had func-

tioned just as perfectly, draining over 95 percent of her marshes in just 100 years.

THE YEAR 1984

The cattail plant began its ascent toward sunlight. For 60 years it had laid waiting as a seed, and finally the conditions were right. My father-in-law viewed his "new" marsh with mixed emotions. He could see that the idea of a cornfield turning into a marsh delighted me, but at the same time he had to make a living. What was suddenly growing cattails and sedges had once raised corn and soybeans. He was amazed at how quickly the marsh had reclaimed his field after the tile line had failed. That very spot, he recalled, had been in continuous crop production since his father tiled the slough over 60 years earlier.

I was fascinated by this transformation that takes place as an Iowa cornfield reverts to a prairie marsh. Therefore, in 1984, I jumped at the opportunity to study this transformation in three previously farmed Story County basins that had lost their drainage abilities. When these basins refilled with water, a series of remarkable changes began to occur.

The wet soil conditions proved to be the perfect stimulus, cueing the marsh plant seeds that conditions were now favorable for their growth. While some of these seeds were undoubtedly blown in by the wind or carried there by animals unknowingly, most had likely remained in the soil since the site was last a marsh, waiting there for 50 to 100 years surviving repeated cultivation and herbicide applications. The seeds of wetland plants can remain alive for over 100 years in the "muck" on the bottom of the marsh.

A total of 43 different types of wetland plants were found growing in the "new" marsh, with smartweed, bulrush, cattail, rice cutgrass and arrowhead being the five most common. I was most surprised that the submergent plants such as pondweed, coontail and milfoil had become established. In one spot, I even found sago pondweed (a favorite duck food) pushing its way up through the stalks and cobs of corn planted two years earlier.

With a variety of plants providing abundant food and cover and numerous aquatic insects and snails serving as additional food, it was no surprise that the marshes were quickly colonized by birds and muskrats. Sixteen species of birds were observed during the nesting season and six (mallards, blue-winged teal, coots, pied-billed grebes, red-winged blackbirds and yellow-headed blackbirds) were confirmed nesters. Muskrats had colonized and built huts on all sites, even though some were over a mile from the nearest marsh or creek.

Wading through one of these reborn marshes, it was very difficult to distinguish it from a marsh that had never been altered. Over 90 percent of the plants and animals found in unaltered marshes of similar size were present in the renewed marshes.

While this information is fascinating in itself, the implications for the

future are boundless. The potential exists to actually begin reversing the long history of wetland loss in Iowa. Through an aggressive restoration program, the number of wetland acres in Iowa could increase for the first time since the ice age. The basins are still present, and within them lay the ingredients for the rebirth of a marsh. All we need to do is add water.

Imagine the thrill a flock of north-bound giant Canada geese would feel as they scanned the earth below. Suddenly, a large series of marshes would appear where for the past century there had been only fields. They might set wings to a marsh that years ago had raised their ancestors. The geese would be home at last.

Ted LaGrange is a wildlife technician located at Clear Lake. He holds an MS degree from Iowa State University. He has been with the department since 1985.



Wetland plants growing where corn has just two years earlier.

Dry-Fed Muskies

By Brian DeVore

For Wally Jorgenson and the staff of the Iowa Department of Natural Resources' Spirit Lake Hatchery, ignoring the doubters of the fisheries business has paid off. It has paid off in the form of what may be the first successful artificial-feeding program for purebred muskellunge in the country.

"Everything we'd heard is "you can't do it with purebred muskie," says Jorgenson.

What people were saying was that it is impossible to rear muskies to larger sizes on a diet of artificial dry feed. The period between fry and fingerling is a critical time in the life cycle of the muskie, and hatcheries across the country and Canada have been frustrated in attempts to raise the fish efficiently with a low mortality rate. But after a few years of hard work, the problem may be solved for natural resource agencies that are attempting to establish populations of these great game fish for recreational fishing.

The Spirit Lake hatchery started raising purebred muskie in the 1960's, and is the only hatchery in Iowa that does so. Until a few years ago, the fry were started by feeding them a constant supply of zooplankton. When the muskie fry reached one and one-half inches in length, fathead minnows were added to the muskies' daily diet. Using this method, the hatchery was successful at keeping the state supplied with muskies. The state requires about 5,000 muskie fingerlings a year.

But on the average, only 18 percent of the fry survived to stocking size. Jorgenson says the "natural" feeding method not only consumed a lot of manpower in collecting the zooplankton and minnows, but was very expensive. As a result, hatchery personnel set out to find a more efficient method of rearing the fish through the use of commercial dry feed.

"When the need arises, you're pressured to come up with better methods," Jorgenson says.

The U. S. Fish and Wildlife Service uses a dry feed to raise tiger or hybrid muskies. However, until 1985, when Jorgenson started the feeding program, purebred muskies were not known to take the dry feed. After consulting John Nickum, who was then a fisheries scientist at Iowa State University, Jorgenson started a program using brine shrimp in combination with the tiger muskie feed. The shrimp is used to encourage the muskies to accept the dry feed. Eventually, the fish take the tiger muskie feed alone and the shrimp is no longer necessary.

Because of problems with equipment at the hatchery, the dry feeding program got to a slow start. However, by 1983, 53 percent of the artificially fed muskies survived to a stocking size of five and one-half inches. At that time, the hatchery was still rearing some of the fish on minnows and zooplankton; but by 1984, they had gone to a total dry feeding. Since the program started showing positive results in 1983, the average survival rate of the fry has been about 50 percent. One reason for the improved survival rate is that with dry feeding, the young muskies are receiving a constant supply of nutrition whereas when the fish are fed minnow and zooplankton, there is no guarantee each fish gets the proper amount of food at all times. In addition, the risk of introducing disease organisms with each feeding is greater when fish are raised on a natural diet, according to Jorgenson. He says the muskies have no problem reverting to natural foods when released into the wild.

One of the most pleasant surprises the hatchery personnel have received from the experiment was that dry feeding costs about \$.29 per fish (as compared to \$1.79 per fish using the

natural feeding methods). Jorgenson thinks the hatchery can improve the conversion rate (on the average, the fish gained one pound of flesh for every four pounds of feed they consumed).

Jorgenson admitted that luck played a part in the success of the program. "We were very fortunate we hit about the right combination the first year," he said. "That was probably the secret."

Jorgenson said his success with the muskies has caught the fancy of other states and Canada, who first heard about it at the National Muskie Symposium in April, 1984. Since that time, Jorgenson has received several letters from other natural resource agencies inquiring about the dry feeding program. He says this puts Iowa in a unique position because other states such as Minnesota, which are considered "muskie" areas, are seeking Iowa's help. Iowa, until a few years ago, did not have substantial populations of the fish.

Jorgenson said the early success with dry feeding muskies prompted the fisheries bureau to start a similar program with walleye, another fish that sustains high mortality when it is young. Getting some species started on dry feed can be tough, but Jorgenson looks forward to it. "That's what keeps things interesting," he says. "It's kind of fun to have a challenge."

Brian DeVore is from Cumberland and has written outdoor articles for Fur-Fish-Game, The Trapper, Iowa Agriculture and The Iowa State Daily. He is a graduate of Iowa State University.



Kon Johnson

The rearing of fingerlings on artificial feed has provided a big boost to Iowa's musky program.



Iowa DNR photo

Jorgenson started a program using brine shrimp in combination with dry feed. Eventually the muskies take the dry feed alone and the shrimp is no longer necessary.

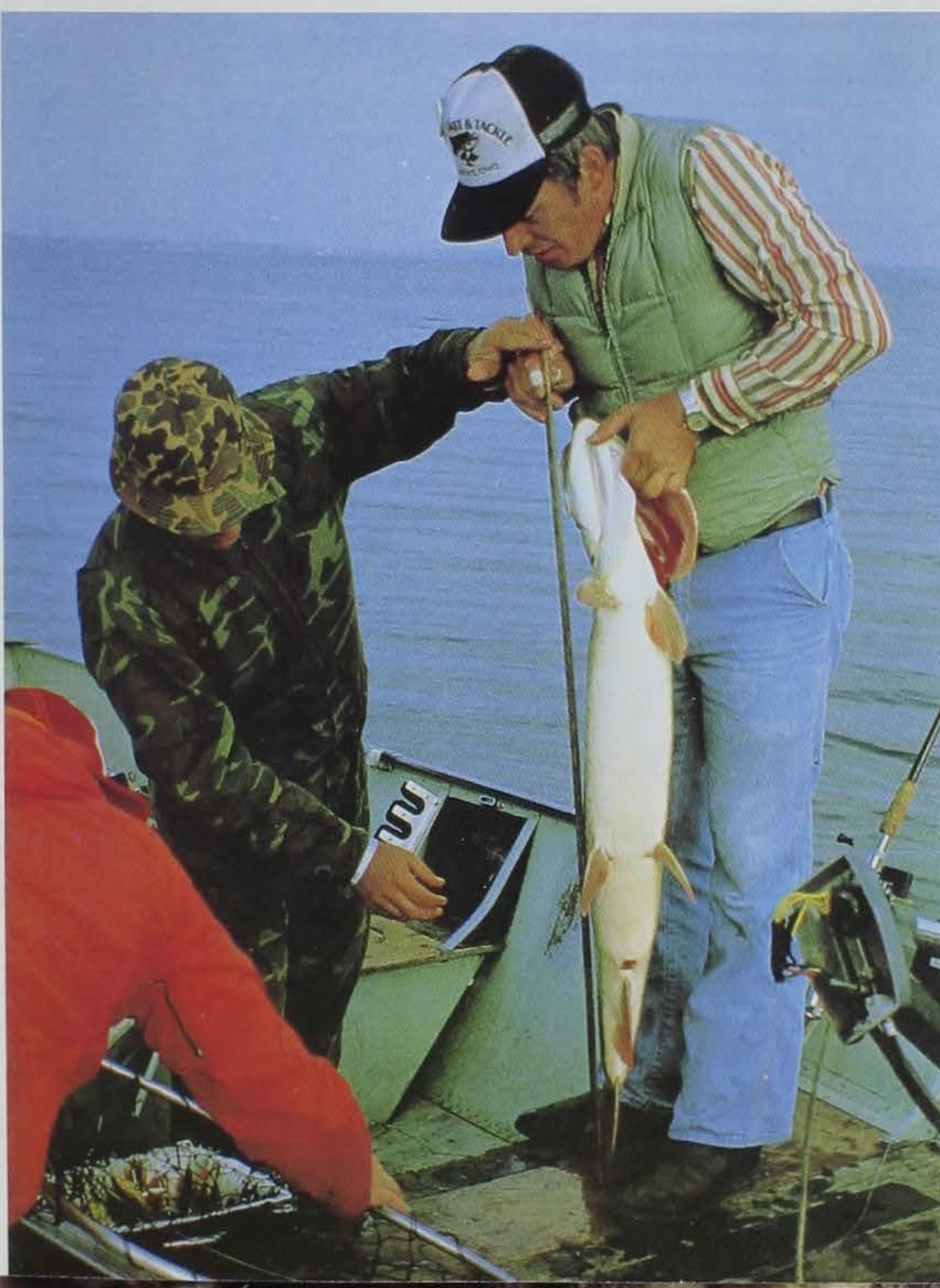


Photo by Kon Johnson



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