

17
N286
9
YR

JUL 20 1987



Iowa
CONSERVATIONIST

July, 1987

Department of Natural Resources

STATE LIBRARY OF IOWA
Historical Building
DES MOINES, IOWA 50319

VOLUME 46 NO. 7
JULY 1987

Iowa CONSERVATIONIST

DEPARTMENT OF NATURAL RESOURCES

NATURAL RESOURCES COMMISSION	Pittman-Robertson - 50 Years	2
John D. Field, <i>Hamburg</i> ; Marion J. Patterson, <i>Cedar Rapids</i> ; Douglas R. Smalley, <i>Des Moines</i> ; Richard C. Young, <i>Waterloo</i> ; William B. Ridout, <i>Estherville</i> ; Thomas E. Spahn, <i>Dubuque</i> ; and Sam Kennedy, <i>Clear Lake</i> .	Geology on View	6
ENVIRONMENTAL PROTECTION COMMISSION	Fishing Riffles and Dams	8
Catherine Dunn, <i>Dubuque</i> ; Donna M. Hammitt, <i>Woodbine</i> ; Charlotte Mohr, <i>Eldridge</i> ; Gary C. Priebe, <i>Algona</i> ; Robert W. Schlutz, <i>Columbus Junction</i> ; Nancy Lee A. Siebenmann, <i>Cedar Rapids</i> ; Richard L. Timmerman, <i>Ankeny</i> ; Keith E. Uhl, <i>Des Moines</i> ; and Clark A. Yeager, <i>Ottumwa</i>	Calendar	11
DIRECTOR	Conservation Update	12
Larry J. Wilson	Pheasants Forever	17
DEPUTY DIRECTOR	Iowa's Big Trees	20
Robert Fagerland	Ada Hayden	22
DIVISION ADMINISTRATORS	Fossils	24
Jim Combs, <i>Coordination and Information</i> ; Stan Kuhn, <i>Administrative Services</i> ; Allan Stokes, <i>Environmental Protection</i> ; Larry Bean, <i>Energy and Geological Resources</i> ; Gene Hertel, <i>Forests and Forestry</i> ; Mike Carrier, <i>Parks, Recreation and Preserves</i> ; Allen Farris, <i>Fish and Wildlife</i> .	Warden's Diary	26
SPECIAL PHONE NUMBERS	Creating Wildlife Habitat	27
DNR Central Office 1-515/281-5145 Turn In Poachers (TIP) 1-800/532-2020 Emergency Spill Response 1-515/281-8694	Yellow-Headed Blackbirds	30

FRONT COVER: Male yellow-headed blackbird. Photo by Lowell Washburn.

BACK COVER: Photo by Delores Meister.

CONSERVATIONIST Staff

Ross Harrison, *Bureau Chief*
Robert Runge, *Editor*
Julie Holmes, *Assistant Editor*
Larry Pool, *Graphic Artist*
Ron Johnson, *Photographer*
Ken Formanek, *Photographer*

Iowa CONSERVATIONIST (USPS 268-780), is published monthly by the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034. Second class postage paid in Des Moines, Iowa, and additional mailing offices. POSTMASTER: Send changes of address to the Iowa CONSERVATIONIST, Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Send subscriptions — one year; \$6.00, or three years; \$12.00 — to the Iowa Conservationist, Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

The Iowa Department of Natural Resources offers equal opportunity regardless of race, color, creed, national origin, or handicap. If you feel you have been discriminated against, please contact us.

Fifty

This year marks the 50th anniversary of the Pittman-Robertson (P-R) program in the United States. Professional wildlife managers can easily argue that this legislation has been responsible for the restoration of more wildlife species than any other piece of legislation in the history of wildlife conservation. The P-R program is funded through a manufacturer's excise tax on sporting guns, ammunitions and archery equipment. A portion of the cost of every shotgun, rifle, box of ammunition, etc. sold in this country is collected by the federal government and then submitted to the U. S. Fish and Wildlife Service. The funds are then distributed to state wildlife agencies where they are used for wildlife management purposes. States may use this money to acquire land, develop and manage areas, perform wildlife related research and conduct hunter safety programs.

Historical Perspective

The Pittman-Robertson Act was signed into law by President Franklin Roosevelt on September 2, 1937. This legislation, formally known as the Federal Aid in Wildlife Restoration Act, was dubbed the "Pittman-Robertson" or "P-R" Act after its two sponsors, Senator Key Pittman of Nevada and Representative Willis Robertson of Virginia. It was, in effect, an idea that would become more popular during our current time — a "user pay" program, with sportsmen footing the bill to conserve the wildlife they enjoyed.

The time from the turn of the century until passage of the P-R Act was a period of steady decline for many wildlife populations. The few game laws which did exist were liberal and did not adequately protect the species. Wetland drainage, clearing and an overall decline of the habitat base were also responsible for reduced wildlife numbers. Sportsmen and conservationists recognized this trend and began lobbying for tougher laws and legislation to aid wildlife.

Years Of Success

By Jeff Joens



In 1920, fewer than 500,000 white-tailed deer existed in the U.S.; today there are more than 14 million.

Money from the Pittman-Robertson Fund has not only been used for game species such as the white-tailed deer, above, but also for nongame wildlife management programs, wildlife research, land acquisition and hunter safety.

But passage of the P-R legislation was not without its obstacles. The mid-1930s were an inauspicious time for any proposal in which people were asked to take an interest in wildlife. Times were austere and the country was in the midst of a financial crisis. The Depression following the stock market crash of 1929 left at least one nonfarm worker in every eight unemployed, and 34 million men, women and children with no income whatsoever. In addition, the first of the "Dust Bowl" storms raged across the Great Plains in November, 1933 and, combined with drought and overplowing, ruined tens of thousands of farm families. Nevertheless, conservationists continued their quest for more effective conservation measures, and most importantly, they put their money behind their convictions.

Although Senator Pittman and Representative Robertson are most often credited with the P-R legislation, two Iowans played very significant roles as well. Jay N. "Ding" Darling, nationally syndicated cartoonist for the *Des Moines Register*, was asked in 1934 by President Roosevelt to head the Biological Survey, forerunner of today's U. S. Fish and Wildlife Service. Darling, an ardent conservationist, advocated a "wildlife policy" that would declare the survival of game animals and birds to be in the national interest and would also establish scientific wildlife management efforts at the federal and state levels of government. While Americans now take for granted the idea of scientific wildlife management, it was a brand new notion back then. Darling was, of course, recognizing and promoting the efforts of conservation pioneer and Burlington, Iowa native Aldo Leopold, who in 1933 had just published his major work on the topic, *Game Management*. The idea that wildlife species could be aided through scientific management principles gained swift public acceptance. Ding Darling made an important first



step in advancing this idea when he convinced executives from the DuPont, Hercules and Remington Arms companies to help fund this type of program. Finally, after Ding Darling's tenure with the Biological Survey had ended, his old idea was "dusted off" and redesigned to suit the "temper" of the times. The result was the creation of an 11 percent excise tax on sporting arms and ammunition which has provided more than \$1.5 billion to the states for wildlife restoration since 1937.

The Iowa Scene

To date, over \$31 million has been received by the state of Iowa through the P-R program. The annual apportionment to our state has increased and now totals about \$1.5 million annually.

The most significant contribution of the P-R program in Iowa was that it enabled the state to purchase and protect several thousands of acres of wetland, forestland and natural areas. Prior to P-R, the only public lands available to hunters and outdoor enthusiasts were sovereign lands and portions of Stephens and Shimek Forest which had been purchased by the federal government. Since 1937, 42,146 acres have been purchased through the program and P-R funds are used to manage and maintain approximately 230,000 acres of public wildlife lands.

During the 1940s, the acquisition of wetlands was the primary use of P-R funds. Major portions of the Riverton Wildlife Area (Fremont County) and the Rice Lake Wildlife Area (Winnebago-Worth Counties) were purchased for as little as \$10 per acre. Other state-owned marshlands purchased during this time include Ventura Marsh, Forney Lake, Barringer Slough, Dunbar Slough, Lakin Slough, Goose Lake, Harmon Lake, Sunken Grove Lake and Myre Slough. Acquisition has and continues to be a high priority use of both P-R and state funds.

The 1950s marked the era of a new program which was thought to have great promise. From 1950 to 1958, the DNR (formerly the Conservation Commission) conducted a farm-game habitat development program funded mostly from P-R funds. This program resulted in the establishment of several thousand acres of wildlife habitat on private land. Unfortunately, an intensive agricultural movement throughout the state put an end to this program as marginal lands and former wildlife habitats were converted to row crops. It is estimated that less than 5 percent of these areas remain in existence today. Needless to say, the farm-game habitat program was discontinued and more money was directed toward acquisition and development.

From the 1960s through today, P-R funds have been used primarily for land acquisition, wildlife research and the development and management of public areas. With these funds, major accomplishments have been achieved not only in acquiring many areas, but also in developing them. These developments have included such things as the building and repair of water control structures and dikes for wetlands; providing access areas and parking lots; the construction of boat launching facilities; the delineation of boundaries through fencing and signs; and various vegetative manipulations used to create optimum habitat conditions for wildlife.

Some of the noteworthy accomplishments in wildlife research and management have involved the wild turkey, white-tailed deer and Canada goose. Through trades with other states and eventual transplanting, wild turkeys now occupy over 90 percent of the available forested habitat in our state. Iowa's first turkey hunting season in 1974 produced some 115 harvested birds; ten years later approximately 4,200 birds were taken. Likewise, deer research and management over the past 35 years have resulted in a deer harvest of about 4,000 animals in 1953 to 63,000 in 1986. A Canada goose restoration program which began in 1967, also with P-R funds, now produces some

10,000 goslings annually. Other research conducted through P-R funding has involved the ring-necked pheasant, bobwhite quail, red fox, coyote and raccoon; all resulting in improved knowledge and management of these species.

In the future, the DNR will continue to emphasize land acquisition, wildlife research and the development and management of public lands. The continuing challenge in Iowa will be the future of wildlife and its relation to agriculture. The DNR must concentrate its studies and management to benefit wildlife while staying in tone with the agricultural practices of our state.

Undoubtedly, our state's wildlife will face many of the same problems that occurred over the past 50 years. Wetlands will continue to be drained, agriculture will significantly modify or change habitat, and increasing human needs will continue to compete with wildlife for space and territory. These and other unknown challenges make the future for wildlife far from secure.

The P-R program and the leaders responsible for its enactment are to be commended. They have provided us with a successful program probably more politically acceptable now than it was at the time it was passed. Amazingly, many people are surprised to learn that hunters have almost single-handedly supported wildlife conservation over the last half century. As Secretary of Interior Donald Hodel put it, "Long before such terms as 'ecology' and 'environment' entered our popular vocabulary, taxes on firearms and ammunition — willingly supported by hunters and the firearms industry — were rescuing wildlife species and their habitats that would otherwise have disappeared."

The P-R program can continue to insure the survival of wildlife as long as we continue to support the spirit and convictions of this Act — that saving and preserving our wildlife heritage is well worth the price.

Jeff Joens is a wildlife management assistant located in the department's central office in Des Moines. He has been with the department since 1977 and is a graduate of Iowa State University.



DNR Photo



Lloyd and Gayland Crum

Over 90 percent of Iowa's available forest areas are inhabited by turkeys — a noteworthy accomplishment of wildlife research and management, made possible with P-R funds. Acquisition of wetlands (above) became a primary use of P-R funds in the 1940s and continues to be a high priority. Several thousand acres of wildlife habitat have been established on private lands thanks to P-R funding (opposite page).

GEOLOGY ON VIEW

Iowa Geology reprint

By Jean C. Prior

In 1985, the University of Iowa Museum of Natural History unveiled a major new exhibition gallery known as Iowa Hall. The gallery offers a visual feast of information about the state's natural and cultural history. Leading exhibit-design studios, artists and craftsmen have joined with resident geologists, archaeologists, botanists, and zoologists to transform an historic building and a renown collection of specimens into a distinctive presentation focused entirely on the natural history of Iowa.

This unique effort is housed in Macbride Hall, a building completed in 1907 to accommodate the programs and collections of the oldest university museum (1858) west of the Mississippi River. During this era,



Kay Ireland

This panoramic diorama recreates the historic entry of Marquette and Jolliet into the Upper Mississippi Valley via the Wisconsin River over 300 years ago. Two Ioway Indian hunters watch the approaching canoes from what is today Pikes Peak State Park.

Among the outstanding exhibits at the Iowa Hall gallery is this diorama of a Devonian coral reef. The diverse marine life associated with this reef contains numerous forms recognized today as fossils in Iowa's limestone deposits.



Kay Ireland

Iowa naturalists Thomas Macbride, Samuel Calvin, and Bohumil Shimek, among others, brought international recognition to Iowa. These men and their contributions anchor an introductory exhibit which greets visitors to Iowa Hall and recalls the strong natural history tradition that exists here. Today, the Museum is under the curatorship of George Schrimper, who also directs the longest continuing program in museum training offered in the United States.

The dramatic geologic changes that have affected Iowa during its four-billion-year history are prominent themes among the Iowa Hall exhibits. These interpretations are expressed through a series of displays that include reconstructions of ancient environments, audiovisual presentations, graphic murals, and rare fossil and mineral specimens from Iowa. Highlights of the geological exhibits are four large detailed dioramas: a bright, undersea view of the diverse marine life associated with a Devonian coral reef; a dank, lush tropical swamp representative of Pennsylvanian coal-forming environments; a time-lapse, bird's eye view of the movements of Pleistocene ice sheets across Iowa; and a life-size recreation of a giant ground sloth that roamed the state during these glacial episodes.

These graphic scenes of Iowa's past life, climate and geography demonstrate geologic processes which have molded Iowa through eons of time. Information is also presented on Iowa's geologic framework — the influence of rock units and glacial deposits on statewide drainage patterns, surface relief, landforms and soils. The geologic exhibits serve as a foundation for other displays that focus on the state's native cultures and biological ecosystems. Organized in this way, geology is seen not only as an independent arena of interest, but as an integral part of today's environment. Geological processes and materials have shaped the physical habitats which now sustain mankind and the animal and plant species which share Iowa's land.

This interrelationship among the natural science disciplines is both an opening and closing theme for Iowa

Hall visitors. The viewing corridors to the geological, ecological and cultural exhibits leave from and return to the dramatic Marquette and Joliet diorama. This keystone exhibit focuses on that significant moment in history when the two French explorers, having canoed down the Wisconsin River, first enter the Upper Mississippi Valley, closely watched by Ioway Indians. This important cultural contact takes place in a panoramic setting of waterways, bluffs, islands, woodlands and rock, and is seen from the vantage point recognized today as Pikes Peak State Park.

The accuracy of these exhibits has been guided by University of Iowa faculty and by geologists with the Department of Natural Resources.

This project underscores the spirit of cooperation that exists between the university communities in Iowa and the DNR. Though seen primarily in the role of technical consultant, efforts such as Iowa Hall demonstrate another facet of DNR operations, that of working to bridge the gap between scientist and citizen. The result is an important educational resource and a valuable opportunity for Iowa's citizens and the visitors to deepen their understanding of the state's natural history.

Jean C. Prior is senior research geologist for the geological survey bureau. She earned a B.A. degree from Purdue University and an M.S. degree from the University of Illinois.

The tropical swamps in which Iowa's coal deposits formed are shown in this reconstruction of Pennsylvanian coastal environments.



By Tom Putnam

Wham! The streamlined-shaped, dusky-colored predator "hammered" my white twister, leaping three feet in the air in the process, prior to streaking downstream, peeling off line all the way. But, what was it? Fishing a well-known rock riffle area in Boone County, there were several species to choose from. It couldn't be a walleye, it was fighting too hard and the color wasn't right. Wrong shape for a northern pike. Could it be a wiper? It's a hard fighter. No, the fish's color is wrong. Maybe it's a largemouth or smallmouth; both species are known to frequent the riffle.

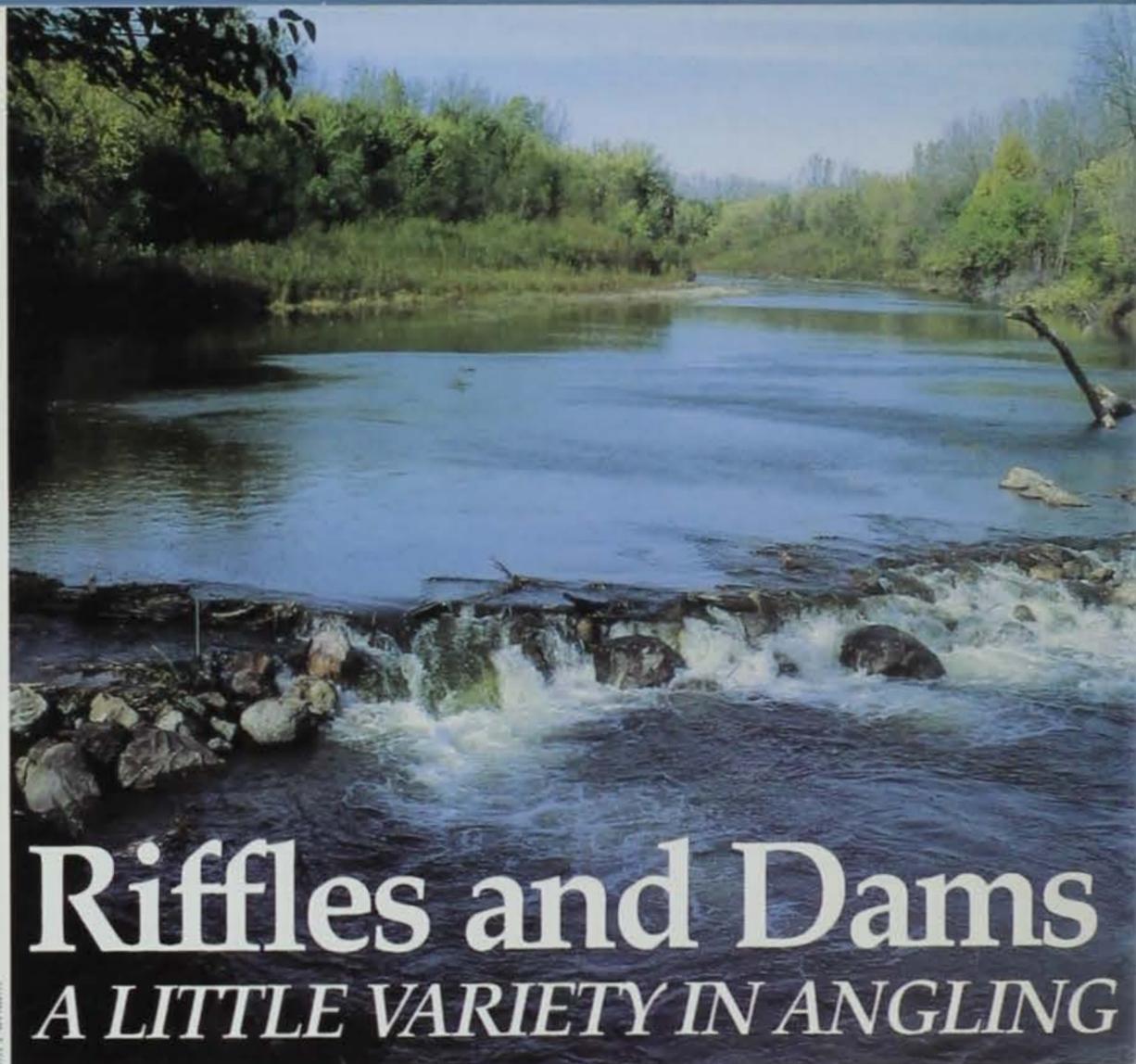
Needless to say, I was "mildly" surprised to land a six-pound channel catfish. That was the first of three I had on that morning all striking my lure with a vengeance. The other two were luckier than the first.

The fact that it is difficult to predict what species might be caught while fishing a riffle is one of its attractions. Riffles and lowhead dams, either naturally occurring or manmade, are tremendous concentrators of fish. There are several explanations for this phenomenon. The structure usually creates a plunge pool. Somewhere below the structure the cascading water will form a deeper hole that is attractive to fish. Even in low flows, this pool is usually of sufficient depth to offer escape from direct sunlight.

Below the riffle or dam there will also be one or more breaks in the current with adjacent still or slightly backswirling water. These breaks are used by gamefish as a form of structure. Several species prefer to align themselves adjacent to the current but in the quiet water waiting for a food item to be swept by. By laying in the quiet water, less energy is also expended in maintaining position.

The riffle or lowhead dam can also act as a barrier to upstream migration in moderate to low flow conditions. Species that tend to migrate in the spring, such as walleye, northern pike, white bass and wipers may find an impasse at the structure. Large numbers can "stockpile" in the plunge pool and other nearby downstream habitat.

Another attraction for gamefish is that riffles and lowhead dams are



Riffles and Dams

A LITTLE VARIETY IN ANGLING

Tom Putnam

also concentrators of forage fish. Minnows and shiners habitually frequent these areas encouraging predators to linger for a more easily caught meal.

In the Des Moines River, large concentrations of gizzard shad, a species that has multiplied astronomically with the impoundment of Red Rock and Saylorville, are also available for forage. Some of this species also tends to migrate upstream, especially in the spring. Where shad go, "wipers" and white bass are not far behind. Both of these members of the true bass family rely on gizzard shad to attain maximum growth rates and size.

Where are the best fishing riffles and lowhead dams in central Iowa? There are several types of these structures to fish, and the most accessible are usually of the manmade variety. Natural riffles are also popular, hold lots of fish, but are not always as easily accessible.

On the Des Moines River in Webster County, the lowhead rock dam at Lehigh, constructed years ago by the residents of that town, offers good angling with easy accessibility. Flake's Riffle, a short distance upstream ($\frac{3}{4}$ mile south of Dolliver Park) is another locally popular fish-

ing spot.

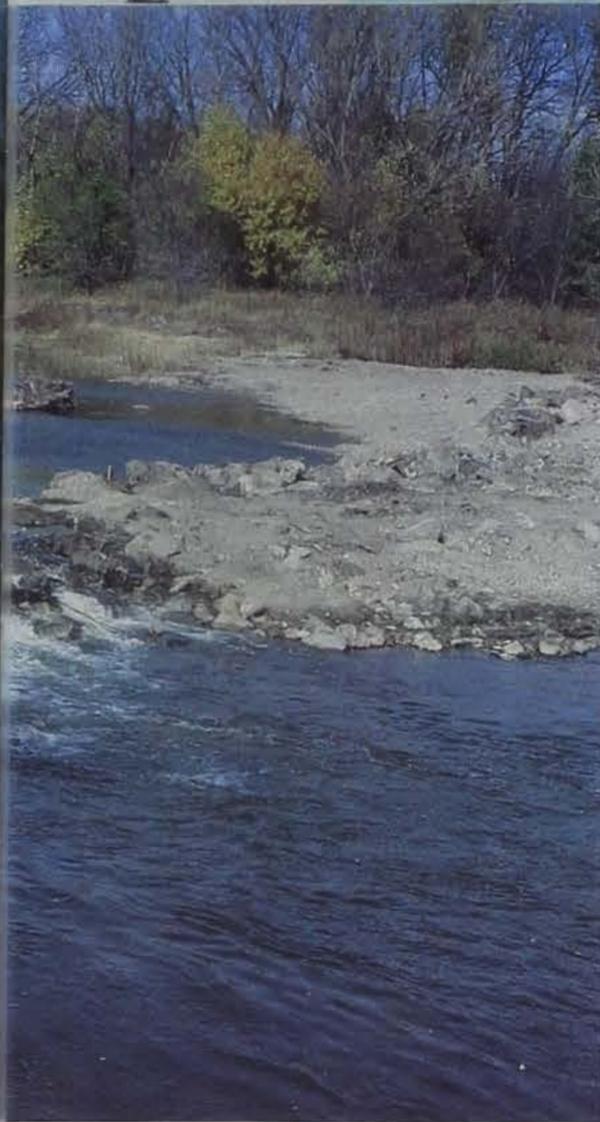
The lowhead concrete dams at Fraser and Boone in Boone County produce thousands of hours of angling enjoyment each year. Both are easily accessible from either river bank and produce good catches most of the year. The popular "Big Eddy"- "Little Eddy" area two miles below Fraser is also easy to find. There are several other riffles in this stretch, such as below Frazer bridge and upstream of the Boone Dam that are not as easy to get to but can be worth the trek.

Between the Boone Waterworks Dam and the upper end of Saylorville Lake near Madrid, are other less accessible riffles that are not as heavily fished. These include Tilley's Hole, one of the largest natural riffles on the river, located one and one-half miles downstream of Waterworks Dam. Smaller rocky areas associated with cutbanks include an area just above the mouth of Bluff Creek (upstream of Wagon Wheel Bridge, on west bank); Bennett's Rock (one-half mile upstream of the old Highway 30 bridge on east bank); Coal Valley (one mile south of the new Highway 30 bridge on the west bank) and the Blue Hole Area (one-half mile south of the Sportsman's Ramp

Iowa's riffles and lowhead dams hold a variety of different fish. Smallmouth bass (below) are a popular fish of the Middle Raccoon River, a stream with good stretches of natural riffles and rock outcroppings.



Keri Formanick



on the east bank).

The riffle at Ledges Park, below Pease Creek, can also produce gamefish at times, although the deep hole formerly associated with this riffle has filled in and the area is not as productive as it once was.

Two popular areas in Polk County that provide fish concentration habitat are the Center Street Dam and Scott Street Dam, both in Des Moines. Throughout the Des Moines River, walleye and channel catfish are two of the more sought-after species at riffles and lowhead dams. Northern pike and wipers are also taken with some frequency. White bass are very popular with anglers from Center Street Dam and downstream.

On the Raccoon River more emphasis has been placed on lowhead fishing riffle construction. This is because the river is not as wide with as much flow as the Des Moines, making for more durability of the structures. Glacially deposited fieldstone is also readily available as a building material.

The most popular fishing areas in Carroll County include the Carroll and Merritt Accesses both located a few miles south of Lanesboro. The Bennett Access north of Ralston is also a well-known angling spot.

In Greene County, there are presently three fishing riffles in place with another on the drawing board. The Hyde Park Riffle north of Scranton, McMahon Riffle west of Jefferson, and the Squirrel Hollow Riffle south of Jefferson all provide excellent fishing, at times, for several species. A fourth riffle at Henderson Park on the south edge of Jefferson will be in place by 1988. Several natural riffles in the McMahon Area west of Jefferson also provide good action.

In the Raccoon River system, catfish and walleye abound. Smallmouth bass are also taken with some regularity, especially closely associated with the manmade riffles. White bass are also often taken.

The Boone River in Hamilton County offers the natural riffle environment created by the stream coursing through glacial deposition that took place more than 14,000 years ago. Much of the best angling habitat must be accessed by canoe. The majority of the prime structure is located between Webster City and Bemer Bridge.

The rocky area along Brigg's Woods Park, however, is accessible by foot. Three riffles, located above Albright's Bridge, below Tunnel Mill Bridge and at Bell's Mill Park are also

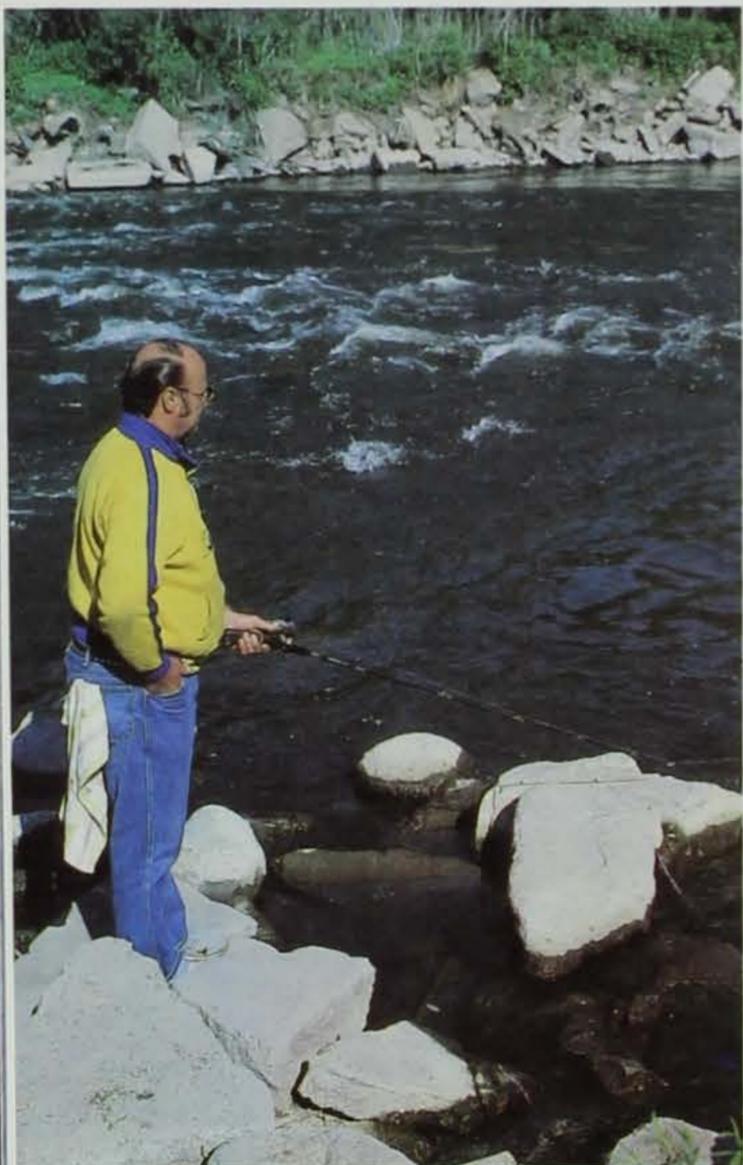
accessible from the bank.

Several gamefish species frequent the Boone River, but channel catfish and smallmouth bass are the most abundant. Catfish are distributed throughout the entire stream. Smallmouth are more frequently found in the upper stretch where riffles are more numerous. Walleye and northern pike are also caught, especially in the upper section.

The Middle Raccoon River, in Guthrie and Dallas Counties, is nothing but a series of natural riffles and rock outcroppings along its course from Panora to Redfield. Accessible by foot at Lennon Mills Dam in Panora and at several downstream bridge crossings, the river's more remote areas are attainable only by canoe. Due to the profusion of natural glacial rock outcroppings throughout this stretch, there is no need for man-made structures.

The most sought-after species in this stretch of the Middle Coon is the smallmouth bass. In the first two-mile stretch of the stream below Panora, bass are protected by a "catch-and-release only" regulation. Channel catfish is second in the creel. Walleye are also taken especially in the upper two-mile segment.

When should an angler fish these



Tom Putnam

areas and with what type of presentation? This depends on water levels, water temperature, clarity and the species sought after. The best fishing for walleye on all areas is March, April and May. Following the spring months, catch success really falls off for this species. Angling picks up again in September until freeze-up. Some of the largest walleyes are taken in November when most anglers have packed it in for the year.

In cold water, large live minnows or chubs are most successful for walleye. Fish are cold-blooded, and their body temperature conforms to the surrounding water temperature in their environment. They are more sluggish under these conditions, and will not attempt to take a bait that is moving too quickly. As the water temperature reaches the 45°F. mark, however, more rapidly presented jigs and twisters are successful. One of the most popular lures is the 1/8-ounce twister, either yellow or white in color. Two of these lures are often fished in tandem, tied 12 to 15 inches apart. At higher, more rapidly flowing river levels, 1/4-ounce jigs are more effective.

For northern pike, prime time is early spring, especially in the Des Moines River. They are usually more active in March than walleye, but can also continue to be taken through May if moderate river levels are present to trigger their movement. Twisters seem to be the most popular lure for northerns, as many are accidentally caught by walleye anglers.

White bass and wiper fishing are also spring-oriented, since both species like to migrate prior to their May spawning time. Although the hybrid wiper will not successfully spawn, it still will go through the motions. These can also be taken on jigs and twisters. In fact, angler returns from a postcard study several years ago revealed the white twister was the most successful lure, May the best month, and Scott Street and Center Street Dams two of the best areas to take this species. These are also prime areas for white bass, especially the Scott Street area. White bass are not presently found anywhere north of the Center Street Dam on the Des Moines River.

Smallmouth bass need a proliferation of rock riffle substrate to build a

The Mid-Iowa Bassmasters commissioned nationally acclaimed Des Moines artist Larry Anderson to do their first in a series of conservation prints. Proceeds from the sale of prints of "Springtime Spinnerbait" will be used for fishing-related conservation projects in the state of Iowa.

Limited editions of 350 prints may be purchased for \$60 each plus \$4 for shipping and insurance. Iowa residents add 4% sales tax.

For further information, contact:

Ron Baybayan
5609 Douglas Avenue
Des Moines, Iowa 50310
515/270-6588

Mid-Iowa Bassmasters have contributed approximately \$15,000 to fisheries management in Iowa.



population large enough to support a fishery. Several streams, especially the upper reaches of the Boone and Raccoon Rivers, and the Middle Raccoon below Panora contain just this sort of habitat.

Smallmouth can be taken during almost any open water conditions except extremely high river flows. The best angling is found when river conditions are low enough that riffle areas can be easily identified and are more usable by smallmouth. Even in mid-summer, with hot, sunny conditions, an angler can be very successful at smallmouth fishing.

A variety of lures and baits is used for this species, but one of the best is a lure resembling a crayfish, their most preferred prey choice. Live crayfish or minnows are another effective option. Small spinners and twisters also work well.

A species that can be found around the riffles and lowhead dams even when other species are not, is the channel catfish. Just after ice out, if the river levels do not rise too rapidly, "cats" can be taken in good numbers on dead shad, a bait mimicking a usual food item in early spring. Catfish can be caught on chubs, minnows or prepared bait throughout the spring. When the hot summer months approach, by changing to night or early morning fishing, catfish are still readily available both above and below many riffle/dam areas. And don't forget, you might even get the not uncommon surprise of having one "hammer" a twister, as I did.

Therefore, if you are looking for a little variety in your angling, why not try the riffle or lowhead dam experience? You never know what you might "latch on" to. And if you want more of a challenge, get off the beaten path, exercise those legs a bit (or the canoe paddle or small outboard!) and find your own riffle area. Along with avoiding the crowds, you may get a look at a part of Iowa's scenic environment you didn't even know existed.

Tom Putnam is a fisheries biologist at Boone. He has been with the department for 16 years and holds a B.S. degree in fisheries and wildlife biology from Iowa State.

CALENDAR

July 10, 17, 24, 31 August 7, 14, 21	Campground Programs 8:45 p.m.	Pioneer Park Page County 712/542-3864	July 22	Canoe Trip on Cedar River	Hartman Reserve Nature Center Black Hawk County 319/277-2187				
July-August	Saturdays Environmental Programs 2:00 p.m. Movies at Dusk	Swan Lake State Park Carroll County 712/792-4614	July 23	Herbal Happenings 7:00 to 8:00 p.m.	Conservation Center Warren County 515/961-6169				
July-August	Galland School Days Sundays	Galland School Lee County 319/463-7673	July 24	Friday Night at the Movies 9:30 p.m.	Lake Cornelia Park Wright County 515/532-3185				
July 10	Beavers of Cedar Rapids 7:30 p.m.	Indian Creek Nature Center Cedar Rapids 319/362-0664	July 25	Natural and Cultural History Hike 11:00 a.m. to Noon	Brown's Woods Polk County 515/285-7612				
July 11	Spelunking at Hunter's Cave 12:00 noon Pre-registration is required	Eden Valley Nature Center Clinton County 319/847-7202	July 25	Park Interpretation Program	Black Hawk Park Black Hawk County 319/277-2187				
July 11	Bike Ride Around Warren County 25-, 50-, and 100-mile loops 7:00 a.m.	Indianola 515/961-6169	July 25	Owl Calling 10:00 p.m.	Swan Lake State Park Carroll County 712/792-4614				
July 11	Blisters and Breakfast Hike 7:00 a.m.	Indian Creek Nature Center Cedar Rapids 319/362-0664	July 25	Summer Astronomy	Wilson Lake Park Lee County 319/463-7673				
July 11	Searching for Bluebirds 10:00 a.m.	Indian Creek Nature Center Cedar Rapids 319/362-0664	July 26-30	Wright County Fair	Eagle Grove Fairgrounds Wright County				
July 11	Life Cycling 8:30 a.m. to 3:30 p.m.	Wright and Hamilton Counties 515/532-3185	July 26	Sunset Hike 7:30 p.m.	Five Ridge Prairie Preserve Plymouth County 712/947-4270				
July 11	Great Raccoon River Float	Carroll County 712/792-5600	July 26	So You Want A Pet Raccoon! 2:00 p.m.	Indian Creek Nature Center 319/362-0664				
July 11	Canoe Safety Instruction 1:00 to 3:00 p.m.	Palo Alto County 712/837-4866	July 27	Junior Tournament — Ages 9-16 Entry Fee — \$5	Briggs Woods Golf Course Hamilton County 515/832-1994				
July 11-18	MADRAC Mississippi River Canoe Adventure	Burlington 319/753-5107	July 30	Scopes and Skies 8:00 p.m.	Indian Creek Nature Center 319/362-0664				
July 12	Canoe the Maquoketa River Pre-registration is required	Canton Jackson County 319/847-7202	July 31	Pioneer Folk Music 7:30 p.m.	South Sabula Lakes Park Jackson County 319/652-3783				
July 12	Wildflower Hike 2:00 p.m.	Five Ridge Prairie Preserve Plymouth County 712/947-4270	August 1-4	Palo Alto County Fair	Fairgrounds Emmetsburg 712/837-4866				
July 12	Art Alive 1:00 to 5:00 p.m.	Lake Cornelia Park Wright County 515/532-3185	August 1	Senior's Day	Hickory Hills Park Black Hawk County 319/277-2187				
July 15	Snakes for Lunch 12:15 p.m.	Greene Square Park Cedar Rapids 319/362-0664	August 1	Kids' Fishing Clinic 9:00-11:00 a.m. & 1:00-3:00 p.m.	Pollmiller Park Lee County 319/463-7673				
July 15	Prairie Work Week	Marshall County 515/752-3150	August 1	Pioneer Folk Music 7:30 p.m.	Spruce Creek Park Jackson County 319/652-3783				
July 17	Bike Ride 1:00 to 4:00 p.m.	Cedar Valley Nature Trail Black Hawk County 319/277-2187	August 2	Grassland Glory 2:00 p.m.	Indian Creek Nature Center 319/362-0664				
July 17	The Beavers of Cedar Rapids 7:30 p.m.	McCloud's Run City Park 319/362-0064	August 3	Prairie Seasons Walk 6:30-7:30 p.m.	Marshall County 515/752-3150				
July 17	Bike Ride 1:00-4:00 p.m.	Cedar Valley Nature Trail Black Hawk County 319/277-2187	August 6	Bike Ride 7:00 to 8:30 p.m.	Hartman Reserve Nature Center Cedar Valley Nature Trail 319/277-2187				
July 17, 18, 19	Tall Grass Prairie Heritage Gathering	Cooper Cove Park Pocahontas County 712/335-4395	August 7	Friday Night at the Movies 9:15 p.m.	Lake Cornelia Park Wright County 515/532-3185				
July 18	River City Friends of Folk Music 7:30 p.m.	Eagle Point Nature Center Clinton County 319/847-7202	August 8	Full Moon Walk 8:30 to 9:30 p.m.	Marshall County 515/752-3150				
July 18	Heritage Day Afternoon and Evening	Hickory Hills Park Black Hawk County 319/277-2187	August 8	Swan Lake Fun Day	Swan Lake State Park Carroll County 712/792-4614				
July 18	Fishing Derby 7:00 a.m. to noon	McFarlane Park Black Hawk County 319/342-2787	July						
July 18	Heritage Day Afternoon and Evening	Cedar Valley Nature Trail Black Hawk County 319/277-2187	S	M	T	W	T	F	S
July 18	Fishing Derby 7:00 a.m. to noon	McFarlane Park Black Hawk County 319/342-2787	5	6	7	8	9	10	11
July 19	The Mystery of Bees 2:00 p.m.	Indian Creek Nature Center 319/362-0664	12	13	14	15	16	17	18
July 20	Prairie Seasons Walk 6:30 to 7:30 p.m.	Marshall County 515/752-3150	19	20	21	22	23	24	25
July 20, 21	Children's Fishing Program \$20 members/ \$24 nonmembers 9:00 a.m.-3:00 p.m.	Indian Creek Nature Center Cedar Rapids 319/362-0664	26	27	28	29	30	31	
			August						
			S	M	T	W	T	F	S
			2	3	4	5	6	7	8
			9	10	11	12	13	14	15
			16	17	18	19	20	21	22
			23	24	25	26	27	28	29
			30	31					



TOTAL BAN ON LEADED GAS OPPOSED

The Iowa Department of Natural Resources has asked the U.S. Environmental Protection Agency to postpone its consideration of a total ban on lead in gasoline by Jan. 1, 1988.

While a DNR spokesman says the state agency supports the eventual elimination of lead in gasoline, he says more time is needed to come up with a reliable substitute that will not cause such an adverse economic impact on farmers.

Larry Dombrowski of the DNR's energy bureau estimates that a ban on lead would cost Iowa farmers at least \$8 million annually for lead substitutes. He said others that would be affected include owners of older cars, trucks, boats and other engines designed to use lead fuels.

"Since 1985, the EPA has reduced the content of lead in gasoline by 91 percent, and we are highly supportive of this progress in reducing environmental contamination," said Dombrowski. But he said that before all lead is eliminated, standards for lead substitute additives must be set to assure adequate consumer protection against engine damage and other problems from using unleaded gasoline in leaded gasoline engines.

Dombrowski says studies have shown that valve system wear is accelerated if unleaded fuel is used in engines built to operate with leaded gasoline, when engines are operated under moderate to high stress conditions.

Home Study Boating Course

The Department of Natural Resources has developed a home study boating course which is ideal for ages 12 and older. Those who successfully complete the course will receive a certificate and safety boating patch from the department. Successful students may also receive a discount on their boating insurance from several companies. Course materials may be obtained by contacting the Iowa Department of Natural Resources, Boating Safety Program, Wallace State Office Building, Des Moines, Iowa 50319-0034; 515/281-6824.

Other excellent boating courses are offered by the U.S. Coast Guard Auxiliary, U.S. Power Squadron and the American Red Cross.

Boating Statistics

Iowa boaters were involved in 68 accidents resulting in 36 personal injuries and eight fatalities, according to Iowa Department of Natural Resources officials. Property losses exceeded \$100,000.

These figures represent an increase from 1985 statistics when 50 reported accidents accounted for 28 personal injuries and 10 deaths.

Iowa's lakes and federal reservoirs proved to be the most dangerous, accounting for 44 accidents while Iowa's inland streams and border rivers accounted for 24 accidents. Types of accidents included 11 vessels capsizing, four waterskiing mishaps, 13 vessels colliding with fixed objects, and 13 boats colliding with other vessels.

QUIET COMEBACK OF AMERICA'S ANIMALS TOLD IN RESTORING AMERICA'S WILDLIFE

Restoring America's Wildlife, published by the Interior Department's U.S. Fish and Wildlife Service, chronicles 50 years of wildlife conservation in America.

Publication of *Restoring America's Wildlife* marks the half-century anniversary of the Federal Aid in Wildlife Restoration Act, a program created in 1937. Under this national conservation program, now popularly known as the "Pittman-Robertson" program, dozens of game species of birds and mammals have reemerged to record levels, testimony to professional wildlife management and the recuperative power of wildlife species. White-tailed deer, prong-

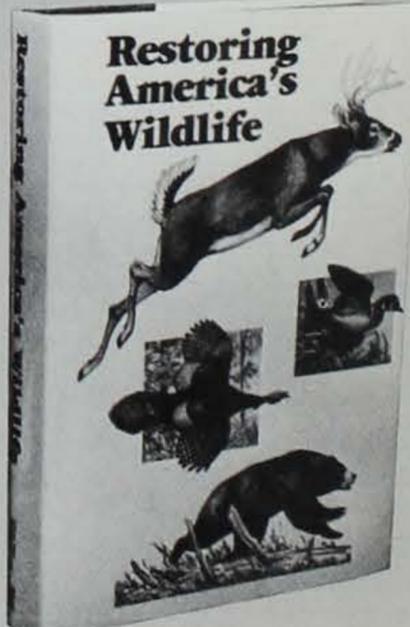
horn antelope, and prairie chickens, among many others, have reappeared from 1930s scarcity to 1980s abundance.

With nationally known conservation writers and researchers like Joseph Linduska, Daniel Poole and Maurice Hornocker, *Restoring America's Wildlife* tracks black bears in the southern Appalachian highlands, follows the fortunes of the returning giant Canada geese, and marvels at how prairie chickens have hung onto their ancestral midwestern "booming grounds." Their narratives are graced by the paintings of acclaimed artists Bob Hines and Tom Beecham. Interspersed throughout the text are

color photographs from the U.S. Fish and Wildlife Service and other wildlife photographers throughout the nation.

The 394-page hardcover volume, *Restoring America's Wildlife*, is currently being offered for sale at a special price of only \$15 (through October 31, 1987) from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325. (Specify regular stock number 024-010-00671-4.) This introductory price includes domestic postage and handling charges. Payment may be made by personal check payable to the Superintendent of Documents, by

office deposit account, or by VISA or MasterCard. Credit card and deposit account numbers may also place orders by telephone, 202/783-3238, specifying title and stock number.

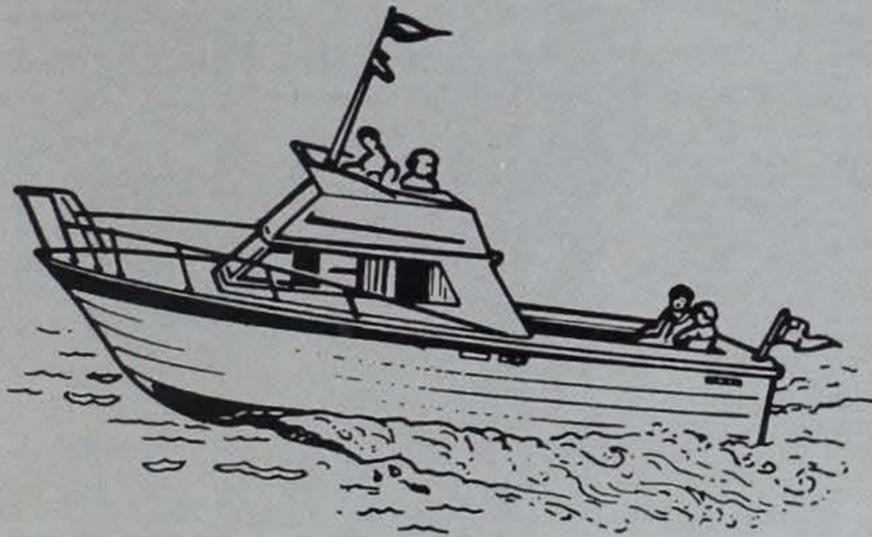




According to Sonny Satre, recreational safety coordinator for the DNR, almost all of the accidents could have been prevented by using common sense and by following simple navigational rules. According to Satre, causes of accidents included overloading, rough or hazardous water conditions, an improper outlook, operator negligence, excessive speed, faulty equipment and alcohol use.

Satre urged boaters to be familiar with Iowa's

boating regulations. To avoid collisions, boaters should be knowledgeable of right-of-way rules and speed and distance regulations. Boaters may obtain a copy of Iowa Boating Regulations from county recorder offices or by writing to the DNR, Wallace State Office Building, Des Moines, Iowa 50319-0034. "Keeping Iowa Waters Safe," a 16-page booklet on water safety can also be obtained.



Tips For Boating Parents

Protecting your children with properly fitted PFDs should be of utmost concern for all boating parents. Because most of their weight is localized in their upper body, particularly in the head, small children are top heavy. A special child-sized PFD will compensate for this.

Children should sit inside the boat, never on the transom, gunwales or bow. Properly seated, they will safely enjoy a trip on the water with you.

When you return to the dock, it is important to not let children or others fend the boat off the dock with their hands or feet. Numerous injuries have happened from this very common practice.

You and your child can easily learn how to have safe fun on the water. Boating classes are readily available. Call 515/281-6824 for a free home study boating safety course or information on a classroom course.

Classroom Corner

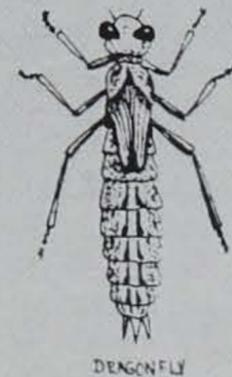
By Robert Rye

Insects are most noted by us during the summer months. This is because they are most active in feeding and completing life cycles during the summer. Have you ever stopped to consider what insects are doing the rest of the year?

An insect's ability to survive stress periods determines its ability to survive at all. These stress periods could be times of very wet or very dry weather, and very hot or very cold weather. Have you considered how humans have changed the environment and how it affects these insects' abilities to survive during stress periods. Many of the changes that we make affect the lives of the insects.

The following are ten insects. Match up the insect with where they are found in winter and what life stage they spend the winter stress period in.

Insect	Where Found	Life Stage
1. Cockroach	A. Ground	aa. Nymph
2. Mayfly	B. Attics and protected spots	bb. Young fertilized queen
3. Mosquito	C. Rotten wood, forest litter or heated houses	cc. Adult
4. Housefly	D. Ground	dd. Adult or larva
5. Monarch Butterfly	E. Water	ee. Adult
6. Dragonfly	F. Wood or soil	ff. Adult
7. Ant	G. Hollow logs	gg. Larva
8. Cricket	H. Water	hh. Adult
9. Grasshopper	I. Migrates south	ii. Nymph
10. Bumblebee	J. Water	jj. Nymph or egg



Answers:

1. C-ee; 2. H-aa; 3. J-dd; 4. B-ff; 5. I-hh; 6. E-ii; 7. F-cc; 8. D-ff; 9. A-gg; 10. G-bb

GAME FAIR AND RECREATION SHOW

The Black Hawk County Conservation Board will be holding the second annual Iowa Game Fair and Outdoor Recreation Show Friday, August 21 through Sunday, August 23, 1987. The event will be held at Black Hawk Park, located northwest of Cedar Falls along the Cedar River.

The Iowa Game Fair is an outdoor event at which you can personally participate in sporting events, experience the pleasures of the outdoors, learn about outdoor sports and have FUN. The Iowa Game Fair is a fun-filled gathering for everyone in the family including the dog. Its purpose is to share knowledge and demonstrate as well as offer participation in outdoor skills.

The first Iowa Game Fair, held last year, was a resounding success. Many

people did not know what to expect, but those who attended learned a lot and had a good time. This year's show will feature many of the same events and some new and exciting ones.

At the Iowa Game Fair, you will find outdoor recreation equipment, air rifle, muzzleloader, shotgun, and small-bore rifle shooting, archery, dog fun-trials, wildlife art, an outdoorsman's flea market and craft sale, boats, recreational vehicles, sporting experts, and much, much more. It is an opportunity to prepare your equipment, purchase more, prepare your dog and sharpen your skills for the upcoming seasons in the field and on the water.

Along with an opportunity to learn one on one, the Iowa Game Fair will feature special educational seminars and demonstrations covering a broad range of topics. Selected experts will share their secrets. Iowa DNR wildlife

biologists will be there with the latest forecasts on wildlife populations and projected seasons.

Young boys and girls can take part. Special events will include air rifle shooting, free canoeing, nature study activities, hunter safety, a Ducks Unlimited Greenwing Field day on Saturday, as well as opportunities to participate in the other activities. Special instruction will be offered.

Camping facilities are available at the park. Fees will be charged for admission and for some of the events. Shotgun ammunition will be available. The hours will be 1:00 to 7:00 p.m. on Friday, 11:00 a.m. to 6:30 p.m. on Saturday and Sunday. Food and refreshments will be available on the grounds. Bring your favorite bow, shootin' iron, dog and the entire family to the Iowa Game Fair and Outdoor Recreation Show. For further information, call 319/266-6813.

ECONOMIC SUMMIT BOOSTS ENVIRONMENTAL CONCERNS

A seven-nation economic summit recently declared support for efforts to halt the destruction of the world's tropical rain forests.

The three-day summit was held in Venice where world leaders from Great Britain, France, West Germany, Italy, Japan, Canada and the United States met to discuss issues confronting world development.

The summit leaders released a declaration stating the need to "underline our own responsibility to encourage efforts to tackle effectively environmental problems of worldwide impact such as... the destruction of tropical forests."

1987 TIP Officers and Board Members

Ronald Offerman, *President*
Cedar Falls

Leonard Grimes, *Vice-President*
Pella

Garold Martin, *Secretary*
Ames

Jerry Dowell, *Treasurer*
Pella

Jamie Beyer
Ames

Jim Murphy
Dubuque

Robert Roach
Dunkerton

Steve Piper
Eldora

Dick Vanderhorn
Davenport

Bob Moorman
Ames

Lavern Woock
Shell Rock

Jim Mahan
Hiawatha

Joe Beach
Cedar Rapids

Bill Tuttle
Ankeny

Chickadee Checkoff Gets Help from Children

Enthusiasm for researching and writing about animal topics was recently reinforced in a variety of ways at Spencer's Middle School. Each seventh grade student selected an animal of high interest to study. Simultaneously, students collected \$50 and donated the money to the Iowa Department of Natural Resources for the Chickadee Checkoff. These funds are used to promote and protect nongame wildlife by providing food, shelter

and clean water. Dennis Phillips, a state conservation officer, informed the seventh grade class on how the chickadee funds are spent. "When we lose wildlife, we will ultimately lose," he told them. Additionally, several students constructed wood duck houses which were later hung in the Ocheyedan River area west of Spencer. Through this writing project, the students were engaged in the application of higher order thinking skills.

World Bank President Barber Conable recently announced a series of reforms to strengthen the Bank's environmental overview of development proposals. The reforms stem from criticism environmental leaders leveled at several World Bank-financed projects, including a \$500 million road-building project in the Amazonian rain forests of Brazil.

"I am encouraged by the summit declaration and the Bank's recent announcement on reforms," U.S. Senator Robert W. Kasten, Jr., Wisconsin, said. "Although these developments are significant steps toward reaching our goal of international environmental protection, we must remain committed to see that these promises are upheld.

"The damage that has already occurred to rain forests around the world cannot be restored," Kasten said. "The potential fallout from this destruction could affect everything from the economic future of millions of people to the world's climate.

"We must remain vigilant in our efforts to ensure that the World Bank and other multilateral lending institutions uphold the environmental provisions of their loans," he said.

Kasten cited a United Nations study released in 1985 which indicated that only 3.8 million square miles of rain forest, an area equal to the 48 contiguous United States and less than half the amount that existed 50 years ago, would be gone in 40 years at the present rate of destruction.

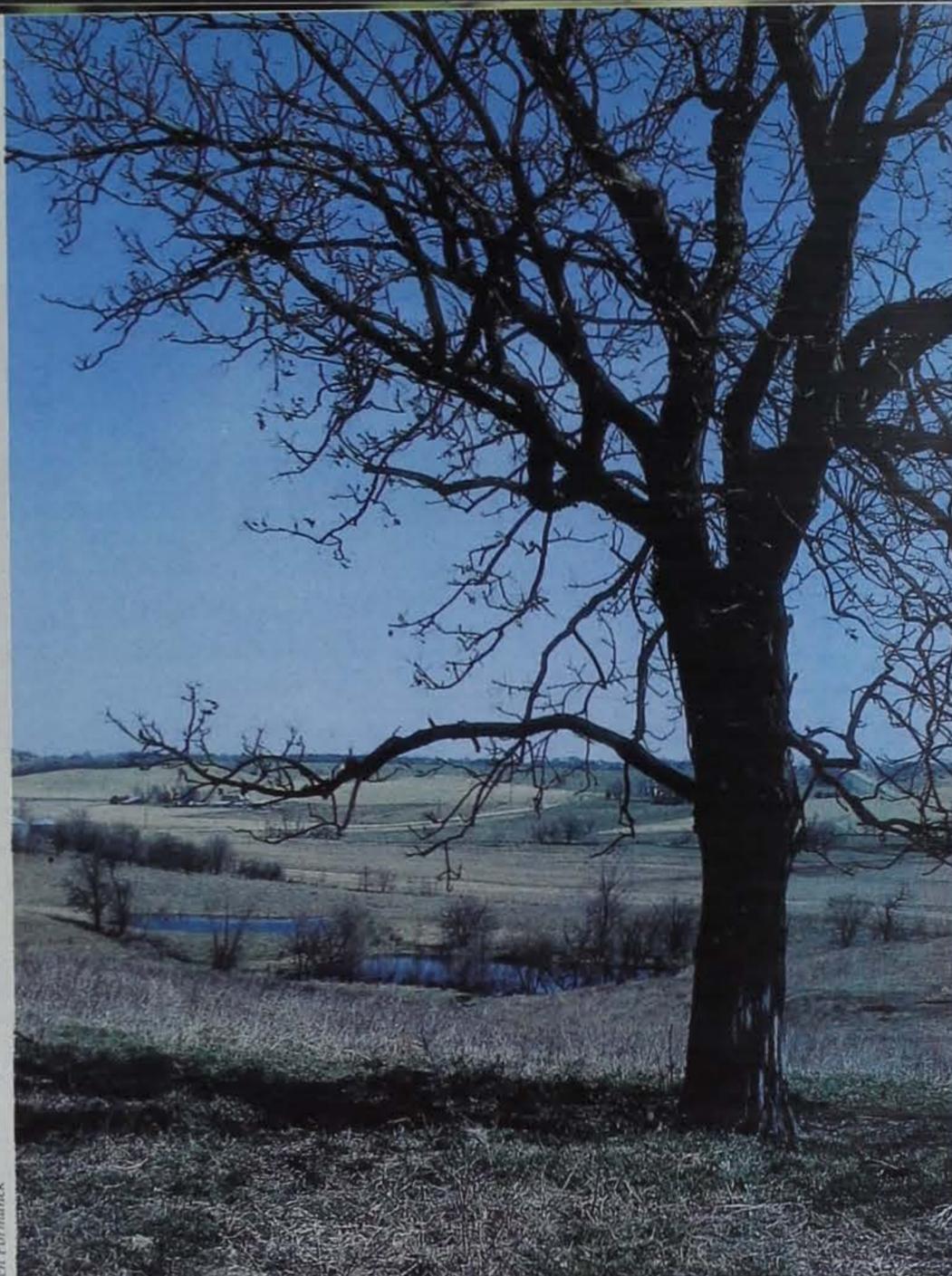
A FUTURE FOREST

Sherman Reichelt's Gift to Iowa

Earlier this year, Iowa's citizens received a gift of 444 acres from Sherman Reichelt of rural Kellogg. Located just east of Kellogg between Highway 6 and the Chicago, Rock Island and Pacific Railroad, the farm is within sight of the Kellogg Wildlife Area and Interstate 80.

A condition of the gift is that 80 percent of the area be planted and maintained in forest and that it be a wildlife preserve. Responsibility for managing and planting the area has been assigned to the Forestry Division, Iowa Department of Natural Resources.

A few hundred trees are scattered here and there over the farm, and a small wooded area provides habitat to a variety of wildlife. A one-room school house where Sherman attended grade school is part of the donation. It is nestled in the hills close to his home.



Ken Formanek

An old hickory tree stands on the hill above two of the ponds Sherman used in his fish-rearing business. Sherman and his wife raised black bass for stocking ponds and sold thousands throughout the eastern United States and Canada. At one time, the farm had 18 fish rearing ponds. The wintering pond was used to hold fish over winter. Several wells provided a constant flow of fresh water.



Sherman Reichelt shown in this 1965 photo with a handful of the thousands of fish he has raised over many years, has donated his farm to the people of Iowa so others may share his avid interest in the out-of-doors. Sherman was brought to this farm at the age of six months, and has spent his 82 years here.



FREE!

Coleman Colorado Fold-down Camper

Register at the
1987 Iowa State Fair

August 20-30

State Parks Exhibit
Natural Resources Building



Donated by: Herold Trailer Sales, Hwy. 92 West, Indianola, Iowa 50125; The Coleman Company; Kueen's Trailer Ranch, Inc., 1120 E. Second, Box 340, Webster City, Iowa 50595; Johnny Ketelsen, 598 Fifth Street, Marion, Iowa 52302; Cheyenne Camping Sales, Route #3, Davenport, Iowa 52804.



ASANTS
er®



ginning
ation
n Iowa

By James Wooley

Two and one-half years ago, a small contingent of individuals gathered in the headquarters of the Floyd County Conservation Board in Charles City, Iowa. They came to hear a presentation and later discuss the possibility of forming the first Iowa Chapter of an organization dedicated to improving the lot of pheasants and other upland wildlife suffering from years of habitat loss. Several meetings later, the Iowa Pioneer Chapter of Pheasants Forever, Inc. was formed. The four counties (Mitchell, Cerro Gordo, Floyd, Chickasaw) that banded together in that first effort were the spearhead of a movement that has grown rapidly across the state. In a little over two years, 54 PF chapters have been formed in Iowa — representing over 10,000 members.

The impact of that growth is apparent in the funding that has been raised to develop upland wildlife habitat — approximately \$125,000 and \$240,000 net-for-habitat generated in 1985 and 1986, respectively. That is new funding, never before available for upland wildlife. There is, however, an associated effect that is equally important, if not more so, to simply generating dollars. That factor is involvement, bringing the productive energies of the upland sporting public to bear on problems of game and nongame wildlife.

There is little doubt that the upland sporting public is an important one. In 1984, 227,000 resident and 22,000 nonresident upland game hunters pursued their quarry across the Iowa landscape, in the process contributing some \$41 million in retail revenues and \$3.7 million in license fees. That is impressive, but less so when viewed in the context of the decline in those numbers over the last decade. In 1974, there were 306,600 resident and 452,100 nonresident upland game hunters. Those hunters, in 1984, would have meant an additional \$20 million in retail revenues and \$2 million in license fees. That decline is, in large measure, directly related to pheasant population losses over the period. Those losses, however, are also responsible for the development of Pheasants Forever.

Ron Johnson

What Is Pheasants Forever?

Pheasants Forever, Inc. (PF) was formed in 1982 in Minnesota in response to the continuing decline of pheasants and other upland wildlife in that state. Today, it is a nationwide, nonprofit conservation organization of over 25,000 members. Chapters (about 150) are found in 16 states. The organization's official publication, *Pheasants Forever Magazine*, is released five times annually.

The local chapter is the most visible unit of the organization. As with many other nonprofit conservation groups, local PF chapters stress fundraising for their area of interest: habitat development for upland wildlife. Chapters hold annual banquets at which limited edition wildlife art is auctioned and raffles are conducted. These and other secondary fund-raising affairs such as casino nights, hog roasts, and trap shoots form the basis of fund generation. With the exception of individual membership fees and chapter dues, all money raised is used locally to develop habitat for Iowa's upland wildlife.

At the state level, the Iowa Pheasants Forever Council (an umbrella organization of all chapters) has developed to provide services to chapters, work on legislative concerns, cooperate with other Iowa conservation organizations and create further funding sources for habitat management and acquisition.

Legislation is a particular concern of the organization, whose beginning centers on proposing and seeing through passage the Minnesota Pheasant Stamp Act in 1982. That program currently brings approximately \$500,000 to the Minnesota DNR for private lands habitat development in that state. Through that funding, monies have also been made available for work in Washington, D.C. in crafting present farm legislation that incorporates at least some wildlife benefits. Pheasants Forever has also been responsible for the proposal and passage of a bill which requires mowing of roadside nesting cover in Minnesota to be delayed until after hatch. Collaboration with other conservation groups has also led to the passage of RIM (Reinvestment In Minnesota), a bonding program which made \$16

million available to convert marginal farmland to wildlife habitat. Pheasants Forever expects to be active legislatively in Iowa, as well.

Partners In Conservation

Part of the success of Pheasants Forever in Iowa and elsewhere is the organization's ability to integrate with existing sources of funding and expertise. Chapters planning habitat projects actively solicit the assistance of DNR wildlife biologists, as well as experts in the USDA Soil Conservation Service (SCS) and county conservation boards. And funding assistance has often been made possible through county Agricultural Stabilization and Conservation Service offices (ASCS). These outside sources of funding and expertise in combination with PF dollars can often mean the difference between getting work done, or letting a project go by. The key is providing physical, technical and monetary incentive to landowners or agencies.

That conservation partnership with state, local and federal agencies has taken a number of different forms:

- Chapter provision of supplemental cost-share (above that already provided by ASCS) to put better nesting covers on CRP acres.
- Supplement cost-sharing on ACP (Agricultural Conservation Program) practices available through ASCS such as WL-1, Permanent Wildlife Habitat.

- Paying delayed mowing fees on annual set-aside ground (ACR) seeded to small grains, thereby allowing nesting wildlife an opportunity to hatch.
- Providing free corn, sorghum and other seed to farmers for wildlife food/cover plots on ACR. Here, major seed companies like Pioneer, Garst, Asgrow, Cargill, McCurdy, Wilson and others are partners in conservation.
- Cooperating with the DNR and CCBs to acquire uplands to be owned by those agencies as public wildlife management areas (WMA).
- Cost-sharing with the DNR and CCBs on private lands wildlife habitat development through vehicles such as the DNR's Shelterbelt Program and Winter Food/Cover Demonstration Area Program.

These are just a few of the ways that active chapters do their best to help upland wildlife. Below are some specific examples from just a few of the 54 Iowa chapters.

Woodbury County Chapter — Sioux City

Following an exciting and successful first banquet, the Woodbury County Chapter of Pheasants Forever was blessed with a great deal of funding for local projects. Because the banquet was held late in the spring, "We found it difficult to initiate projects on private lands the

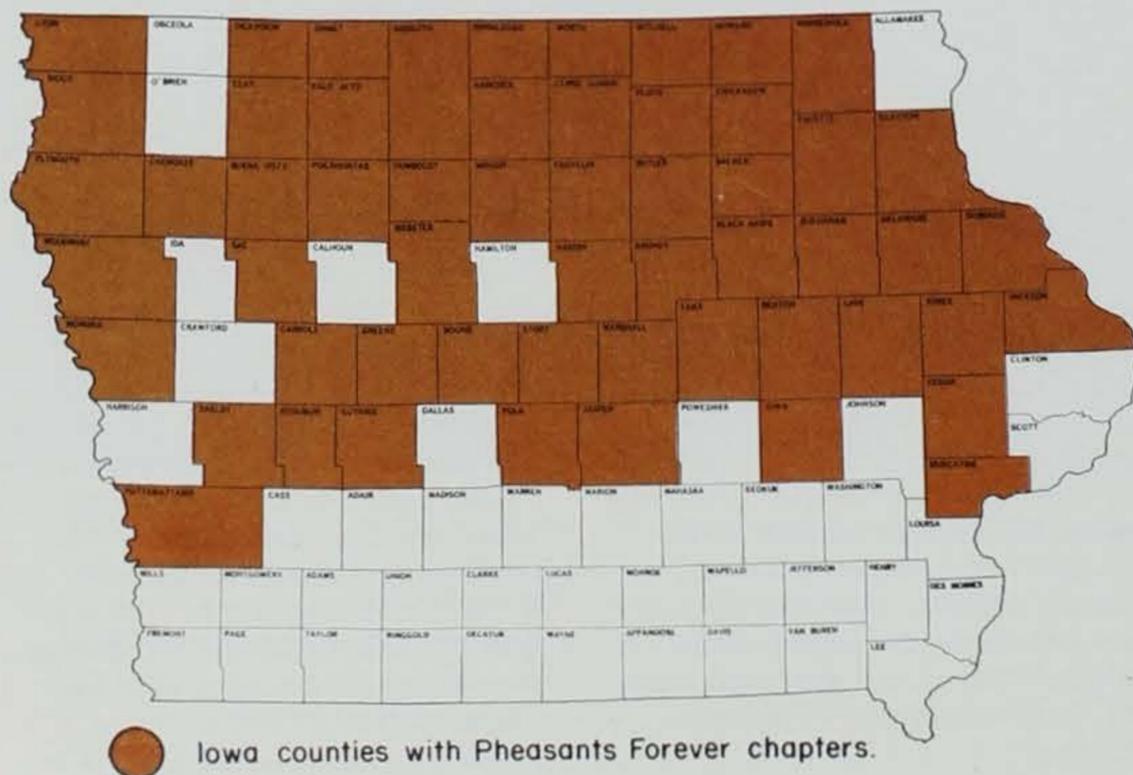
first year," says Scott Rustwick, chapter president. However, the chapter spent the past summer and fall working on details of a cost-sharing arrangement with the Woodbury County Conservation Board (CCB) for the purchase of 148 acres of upland wildlife habitat adjacent to the existing Shagbark Hills WMA. Under the agreement, which will double the size of the area, the chapter will provide the local portion of cost-shared funds while habitat stamp monies will cover the remaining cost of the \$51,000 tract.

Clay County Chapter — Spencer

With several fund-raising events behind them, Clay County PF has established its ability to generate dollars for upland wildlife, and has already left a legacy for those who follow. A tract of 151 acres consisting of cropland, upland nesting cover, marsh and wet meadow became the chapter's principal focus this spring. The area, a cost-shared acquisition with the Iowa DNR, will be added to the existing 100-acre Ocheyedon WMA — an area bordering the Ocheyedon River that is valuable to both waterfowl and upland wildlife.

Iowa Pioneer II, Mitchell and Cerro Gordo Counties

Part of the original four-county consortium that formed the first Iowa Chapter, Iowa Pioneer II PF has a solid history of both successful fund raising and project establishment behind it. In addition to planting



THINK WILD ON SET-ASIDE



YOU CAN MAKE THE DIFFERENCE FOR PHEASANTS AND OTHER WILDLIFE

- Plant cover crops before May 1.
- Delay destroying cover crop until August 1.
- Control weeds by spot spraying or spot mowing.
- Plant corn or sudax and leave standing for food and cover. (Check with your ASCS office for set-aside details.)

CONTACT YOUR LOCAL PHEASANTS FOREVER CHAPTER FOR ASSISTANCE.



Contact: _____



over 25,000 trees for woody winter cover, 450 acres of winter food/cover areas and 50 acres of switchgrass nesting cover, the chapter has provided the equipment necessary to establish habitat. The chapter has purchased a 10-foot Haybuster grassland drill that will be used by local farmers and agencies in establishing nesting cover, particularly on Conservation Reserve areas. The SCD and CCB will promote using the drill and maintain it.

In addition, the chapter has been involved in cost-sharing with other groups (DNR, Cerro Gordo CCB, Wetlands For Iowa, and Trappers Association) this year in the acquisition of Toppin Marsh, a 37-acre area to be retained and managed by the CCB. In 1986, the chapter also cost-shared the acquisition of a 40-acre upland wildlife tract by the Mitchell CCB.

Iowa Pioneer PF — Floyd and Chickasaw Counties

This two-county chapter kept the name of the original Iowa PF Chapter, and has continued having successful fund-raising affairs as well as successfully putting habitat back on the landscape. In 1985 and 1986, the chapter was responsible for establishing over 600 acres of winter food/cover areas, and 30 woody winter cover projects (mostly shelterbelts) totaling over 120 acres and comprising over 45,000 trees.

Palo Alto County Chapter — Emmetsburg

While involved in the other areas as well, this chapter has picked nesting cover as a priority. More specifically, the emphasis is on warm-season native grasses. In 1986, the chapter cost-shared on the establishment of over 400 acres of switchgrass on CRP acres by providing cost-sharing above that already provided by ASCS.

Winnebago/Hancock PF — Forest City

Coming into its second habitat development year, the Winnebago/Hancock chapter plans to build upon a solid foundation of projects completed in 1986. Those included establishing ten large farmstead shelterbelts and a 28-acre warm-season native grass planting for

nesting cover, as well as 60 acres of corn and sorghum winter food/cover areas.

Kossuth County PF — Algona

Ambition is the watchword in this north-central Iowa chapter. Kossuth is a very large county, about the size of two standard counties. In 1986, some 1,800 acres of corn, cane and grain sorghum were established as winter food/cover areas. Fifty acres of woody winter cover areas, in the form of 23 eight-to-sixteen-row farmstead shelterbelts were also established through the cooperative efforts of the chapter, DNR and local ASCS office. In addition, over 100 acres of mixed cool-season grass/legume nesting cover was established on annual set-aside acreage through provision of free seed to landowners.

Dickinson County PF — Milford

This northwest Iowa chapter is organized in the heart of some of the best remaining marsh and pothole country in Iowa. It seems fitting that one of their first projects has been cost-sharing the addition of 34 acres of marsh and upland to the existing Diamond Lake WMA — a major DNR pheasant wintering and production complex. The purchase, which will also help waterfowl, was accomplished with chapter monies and DNR receipts from lottery proceeds. Dickinson PF also has been active on private lands, providing over 28,000 trees for 17 farmstead shelterbelt and other winter cover projects, 50 acres of winter food/cover plots, and 20 acres of switchgrass nesting cover.

Dubuqueland PF — Dubuque

The Dubuqueland PF Chapter got off to a great start in 1985, netting nearly \$18,000 for upland wildlife. The use of the funding has been unique in some ways. The chapter has been funding its own active habitat program including cost-sharing with the DNR on two township demonstration areas involving winter food/cover plots. It has been involved in aiding other chapters' progress as well, through grants or loans to those chapters. The chapter was also responsible for beginning the Iowa Pheasants Forever Council State Trust Fund with a donation of \$1,000.

Twin Rivers Chapter — Jones County

Entering its second planting season, Twin River PF will expand upon its 1986 accomplishments. Those included about 200 acres of winter food/cover areas and a 30-acre habitat complex including tree and shrub plantings, eight acres of improved cool-season nesting cover and a five-acre winter food/cover plot. Plans for 1987 include reestablishment of warm-season native grasses for pasture rotation/wildlife purposes on a 200-acre area, management of remnant prairie tracts and expansion of previous projects.

Northern Prairie Chapter — Worth County

This chapter on Iowa's northern border has just produced a large full-color poster for display in SCS and DNR offices outlining the benefits of managing cover for wildlife on ACR. In addition to expanding food/cover plot and nesting areas, the chapter will also pay for hiring a summer habitat development technician for the CCB.

The Beginning — Space limits the individual chapter activities that can be described here. A single thread, however, unites those activities — a desire to become involved with and to accomplish habitat objectives for upland wildlife. Pheasants Forever is looking forward to the future in Iowa.

Much has been done, but much more remains. We hope that you, too, will become involved in the accomplishments yet to come. The well-known outdoor writer John Madson, a former Iowan, said something recently in an interview that is significant. "What we enjoy today we don't inherit from those who went before us. Rather, we borrow it from our grandchildren." It is up to all of us in Iowa to see that it is paid back — with interest.

Jim Wooley is the midwest field representative for Pheasants Forever. He holds a B.S. degree in biology from Central Michigan University and an M.S. degree in wildlife management from the University of Maine.



Jerry Leonard

Take
Pride in
Iowa's

BIG TREES

By Bill Farris
State Forester

The
desig
vario
pose
big tr
gen
com
Eve
searc
owne
certifi
ging r
and/o
Tre
surem
and c
determ
uted b
Cin
the tr
level.
the m
fork w
mum.
point
Hei
difficu
tion. A
obtain
measu
Next,
inches
inch m
sight a
tree ar
height
have f
surem
foot of
Cro
from th
edge")
the tru
other s
angles
This ca
foot of
If yo
please
tree sp
phone
nomin
tion to
Depart
Wallac
Moines
Divisio
measu
with th
sponse
Associ
a nation

The Iowa Big Tree Program is designed to locate the largest tree of various species in our state. Our purpose is to give special recognition to big trees, focus attention on trees in general, and have a little fun and competition.

Everyone is invited to join the search for Iowa's biggest trees. The owner and nominator will receive a certificate of recognition and all bragging rights associated with finding and/or owning a "big tree."

Tree size is based on three measurements: circumference, height and crown spread. A champion is determined by total points contributed by the tree measurements.

Circumference: Measure around the trunk at 4-1/2 feet above ground level. If the tree forks at that point, the measurement is made below the fork where the circumference is minimum. Circumference counts one point for every inch.

Height: This measurement is more difficult but important for a nomination. An estimate of height can be obtained using a yardstick. First, measure off 100 feet from the tree. Next, hold the yardstick vertically 25 inches from the eye; sight the zero-inch mark at the base of the tree; then sight along the stick to the top of the tree and read in "inches" the tree's height. For every "inch," the tree will have four feet of height. This measurement counts one point for each foot of height.

Crown Spread: This is the distance from the end of the branches ("drip edge") on one side of the tree through the trunk to the branch ends on the other side. Two measurements at right angles should be made and averaged. This category counts 1/4 point for each foot of average crown spread.

If you wish to nominate a tree, please submit: the measurements, tree species, the name, address and phone number of the owner and nominator, and the specific tree location to the Forestry Division, Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034. The Forestry Division will confirm the species and measurements. A check will be made with the National Big Tree Register, sponsored by the American Forestry Association, to determine if it may be a national champion.

Iowa's Big Trees, September, 1986

Species	Circumference	Height	Spread
Ailanthus	11'5"	47'	47'
Black Ash	7'	98'	48'
Green Ash	16'2"	71'	79'
Big Tooth Aspen	6'10"	90'	38'
Quaking Aspen	3'7"	82'	22'
Bald Cypress	21'9"	60'	56'
American Basswood	17'10"	65'	72'
American Beech	11'1"	80'	80'
Paper Birch	6'6"	55'	48'
Boxelder	14'8"	77'	88'
Buckeye	11'6.5"	43'	57'
Butternut	9'2"	55'	70'
Catalpa	9'5"	83'	54'
Eastern Red Cedar	8'11.5"	57'	40'
Black Cherry	10'9"	88'	63'
American Chestnut	12'7"	80'	63'
Eastern Cottonwood	31'	98'	118'
Cucumbertree, Magnolia	24'5"	75'	83'
American Elm	19'7"	91'	104'
Siberian Elm	15'4"	92'	90.5'
Red Elm	11'8"	72'	83'
Balsam Fir	4'9"	87'	23.5'
Douglas Fir	7'6.5"	78'	43'
White Fir	7'8.5"	77'	26'
Ginkgo	12'1"	85'	72'
Hackberry	18'5"	88'	93'
Eastern Hemlock	8'6"	72'	56'
Bitternut Hickory	9'4"	86'	73.5'
Shagbark Hickory	7'4.5"	80'	52.5'
Shellbark Hickory	8'5"	82'	46.5'
Horsechestnut	11'5"	57'	67'
Ironwood	5'10"	34'	39'
Kentucky Coffeetree	10'3"	73'	62'
European Larch	11'6"	86'	80'
Black Locust	11'6"	72'	60'
Honey Locust	15'6"	84'	96'
Norway Maple	12'3"	71'	64'
Silver Maple	22'2"	84'	98'
Sugar Maple	17'5"	70'	75'
Mulberry, Red	6'4"	52'	38.5'
Mulberry, White	16'1.5"	64'	61'
Northern White Cedar	11'7"	52'	42'
Black Oak	15'5"	56'	92'
Bur Oak	19'0"	72'	95'
Chinkapin Oak	10'10"	81'	85'
Pin Oak	13'5"	92'	86'
Red Oak	13'6"	112'	79'
Shingle Oak	9'9"	65'	61'
Swamp White Oak	13'2"	68'	86'
White Oak	16'1"	64'	93'
Osage Orange	13'7"	57'	65'
Pecan	8'6"	90'	72'
Persimmon	3.11"	41'	46'
Jack Pine	5'	64'	24'
Pitch Pine	8'5"	52'	51.5'
Ponderosa Pine	7'3"	69'	40.5'
Red Pine	6'10.5"	73'	36'
Scotch Pine	15'10"	60'	62'
White Pine	11'4"	116'	43.5'
White Poplar	25'2.5"	90'	97'
Eastern Redbud	4'9.5"	38'	25'
Russian Olive	10'4"	63'	45'
Colorado Blue Spruce	5'8"	77'	27'
Norway Spruce	12'7"	67'	58'
White Spruce	10'1"	81'	43'
Sweetgum	5'6"	51'	36'
Sycamore	18'4"	88'	98.5'
Tamarack	6'5"	64'	42'
Tulip Tree	15'4"	93'	76'
Black Walnut	13'2"	112'	100'
Weeping Willow	19'2"	61'	73'

ADA HAYDEN

By Katy Wilcoxon

Pioneer Protector of Iowa's Prairies



From Proceedings of Iowa Academy of Science, 1951

Ada Hayden

Some people, looking at the remaining stretches of Iowa prairie from a distance, see only an overgrown neglected weedpatch that ought to be quickly plowed over and made "productive," or at least mowed down. But many others see the beauty of the prairie — simple, magnificent, nostalgic. Today, from our restricted exposure, we merely sense what the early pioneers learned from experience:

"Nowhere does nature sit more majestically enthroned, overawing man by the terrible grandeur of her phenomenon, than on these immense prairies. What can be more beautiful and charming than a summer's day — what more sublime and terrific than a thunderstorm, on these plains."

It is this, the distinct characteristic landscape of the native Iowa prairie, that Ada Hayden devoted her life and study to help preserve.

Ada Hayden, a name familiar to few Iowans, was a respected pioneer botanist and conservationist. Born in 1884 on a farm near Ames, Iowa, Ada developed an interest in prairies early in her childhood. At their farm, her parents kept a tract of virgin prairie merely to preserve its beauty. It was here, as a child and later as a student, that she studied the charac-

teristics and perceived the value of prairie land. But her interest in preserving areas of native prairie flora was more than nostalgic. After graduating from Ames High School in 1904, she entered Iowa State College as a botany major. Here she studied under Dr. L. H. Hammel, a distinguished botanist who was also a close family friend, and received a bachelor of science degree in 1908. Two years later she received a master of science degree from Washington University in St. Louis, Missouri. After doing further graduate work in botany at the University of Colorado and the University of Chicago she became, in 1918, the first woman to receive the PhD degree from Iowa State College at Ames.

Doctor Hayden worked as a professor of botany and plant pathology at Iowa State from 1918 until her death in 1950. She also served as an important member of numerous conservation groups including the Grassland Research Foundation, the Ecological Society of America, and the Iowa Academy of Science. She was also an accomplished photographer and botanical illustrator. Although her scientific interest went beyond the study of prairie botany, she provided much of the impetus for the crucial prairie conservation movement in Iowa.

In Doctor Hayden's article of 1947, "The Value of Roadside and Small Tracts of Prairie in Iowa as Preserves" she pointed out that virgin prairie, which originally covered five-sixths of the state of Iowa, had been reduced to scattered patches found in areas not suitable for cultivation such as in undrained parts of farms, on rocky knolls, or bordering railroad rights-of-way. In a recent article for the Iowa Academy of Science entitled "Iowa Prairie — An Endangered Ecosystem," D. A. Smith noted that prairie vegetation that was dominant in parts of Iowa for the past 9,000 years had become endangered in less than a century of settlement. When the first significant wave of eastern settlers crossed the Mississippi River,

85 percent of the state was composed of tall grass prairie. Ironically, the original settlers coming from the densely forested east commonly assumed that because prairie land did not support trees it was poor, infertile soil. In fact, it proved to be some of the richest soil in the world, and it was this incredible fertility which the prairie ecosystem creates that led to its rapid demise. As Smith noted, thirty million acres of Iowa prairie was changed to agricultural land in seventy years — an average of four million acres a year.

In 1933, the first recommendation for preservation of Iowa's native prairie was made by the Iowa Board of Conservation and Iowa Fish and Game Commission, both now part of the Iowa Department of Natural Resources. The program outlined in the report known as "the Iowa twenty-five year conservation plan," explained that "a large enough original tract of prairie vegetation should be secured in order to save the characteristic landscape, and wildflowers, and wildlife of the native prairies." Although this was a recognition of the need for preservation of this land and several tracts had been located, the plan remained vague and ineffective. Ten years later still no action had been taken on this part of the twenty-five year plan — the state had made no move to purchase any land.

In the early 1940s Ada Hayden, acting as chair of the Conservation Commission of the Iowa Academy of Science, wrote numerous articles and reports promoting the state to take immediate action. In 1945, she proposed a basis for the selection of prairie tracts in order to ensure that representative types of the variety of Iowa prairies would be selected. A year later, she surveyed and described the location and characteristics of 6,000 acres of prairie which she said "must be preserved where it still exists." Further, she said that prairie preservation was crucial as the "chief botanizing places for the students of native grassland vegetation, and almost the only locations

where school children may become acquainted with native fauna and flora, or where persons who entertain a sentimental interest in historical aspects of the state may reconstruct a picture of the original Iowa landscape."

In these articles and others published by the Iowa Academy of Science, Doctor Hayden stressed not only the sentimental value, but also the scientific and ecological value of preserving undisturbed native land. She noted that the study of unbroken prairie is necessary in attaining knowledge of the different soil types, composition, characteristics, and proper land use. Studying undisturbed native prairie populations also provides a "measuring stick" to help determine proper wildlife management. She pointed out that stretches of native prairie grass are also crucial for nesting birds such as pheasants, bobwhite quail and now-endangered species such as the short-eared owl (endangered because of the loss of its prairie habitat). Ada Hayden recognized in the 1940s what plant ecologist John Weaver worded so well in 1954 — that "civilized man is destroying a masterpiece of nature without recording for posterity that which he has destroyed."

Today, as a result of her work and that of others, twenty-six major tracts of prairie are under state preservation, plus numerous other small

patches throughout the state. After her death in 1950, in recognition and commemoration of her contribution to the conservation movement, the state named a preserve acquired in 1946 in her memory. Hayden prairie now comprises 240 of the approximately 2,400 acres of state preserved prairie in Iowa. This total acreage of protected prairie land in Iowa is about one-third of the 6,000 acres that Dr. Hayden recommended forty years ago. A more startling way of phrasing this is that today, less than .1 percent of Iowa's original virgin prairie remains unbroken.

In an attempt to regain a portion of all the land that was lost before the prairie conservation movement gained momentum, two programs are now in progress throughout Iowa to restore broken land back to prairie. The process of restoration, which involves regular seeding and burning, can be completed in five to ten years. Without human intervention, this process could take 200 to 300 years to complete; and in both cases, will succeed only if conditions are satisfactory and sufficient adaptable seeds are available on nearby plots of prairie. Even when these conditions are met, the reconstruction can never be totally authentic to the original vegetation.

Although prairie preservation is no longer merely a desperate hope, largely due to the promoting and

Butterfly milkweed.

determination of Ada Hayden and others, D. A. Smith of the Iowa Academy of Science is still pleading for "Iowa to be surveyed and inventoried so that the significant remaining prairie remnants can be located and preserved." This contemporary conservationist echoes Ada Hayden's words of warning written forty years ago. John Weaver, a distinguished botanist, explained in 1954 for any pessimistic passerby that "prairie is much more than land covered with grass. It is a slowly evolved, highly complex organic entity, centuries old. It approaches the eternal. Once destroyed, it can never be replaced by man."

Katy Wilcoxon is a student at Grinnell College majoring in history. She recently completed an internship with the DNR's information and education bureau.

LIST OF STATE PRAIRIE PRESERVES

PRAIRIE	COUNTY (Acres)	SIZE
Anderson Prairie	Emmet	200
Cayler Prairie	Dickinson	160
Cedar Hills Prairie	Black Hawk	90
Clay Prairie	Butler	3
Crossman Prairie	Howard	10
Dinesen Prairie	Shelby	20
Doolittle Prairie (Plover Tract)	Story	25
Five Ridge Prairie	Plymouth	789
Freda Haffner Kettlehole	Dickinson	110
Gitchie Manitou	Lyon	91
Hayden Prairie	Howard	239
Hoffman Prairie	Cerro Gordo	36
Kalsow Prairie	Pocahontas	160
Kish-ke-Kosh	Jasper	17
Liska-Stanek Prairie	Webster	20
Manikowski Prairie	Clinton	40
Marietta Sand Prairie	Marshall	20
Nestor Stiles Prairie	Cherokee	10
Rolling Thunder Prairie	Warren	123
Sheeder Prairie	Guthrie	25
Steele Prairie*	Cherokee	200
Stinson Prairie	Kossuth	32
Turin Loess Hills (Cutler Tract)	Monona	30
Williams Prairie	Johnson	30

**To be dedicated as a preserve in September, 1987.*



Ken Farmanek



Keith Mann

A field crew excavates the Warren County fossil site. The sequence of deposits exposed in the creek bank where the bones were found is carefully measured, described and sampled for further study.

FOSSILS

Yield Key to Ice Age Geology

Iowa Geology reprint

By E. Arthur Bettis III

On May 27, 1985 three brothers, Todd, Neil and Kyle Bartelt made a fascinating discovery on their father's farm in western Warren County. While fishing along Clanton Creek northeast of the town of St. Charles, the boys discovered several large bones eroding from a layer of sand and gravel at the base of the steep creek bank. Mrs. Bartelt contacted the Iowa State Historical Department and the Iowa Geological Survey (now part of the DNR), and personnel were sent to examine the bones and the deposits in which they were found.

The size and shape of the bones indicated that they belonged to a proboscidian, the order of mammals which includes modern elephants, as well as extinct glacial-age mastodons and mammoths. To date, no teeth have been found at the site. Teeth are the most diagnostic element of the skeleton of proboscidians, allowing paleontologists to readily distinguish between mammoths, which

were grazers, and mastodons, which were browsers. Further complicating the identification of the Clanton Creek proboscidian is the fact that the bones are those of a juvenile, and therefore had not attained their full size at the time of the animal's death.

Interest in the discovery of the bones is matched, if not exceeded, by the interesting sequence of deposits within the creek bank exposure. These deposits compose an alluvial terrace and represent materials deposited by an ancestor of the modern Clanton Creek. Pennsylvanian-age shale is exposed at creek level, just below the bone-bearing gravel bed. The much younger alluvial deposit comprising the terrace grades upward from the stream gravels into a complex of finer-grained overbank (flood) deposits. Developed in the top of the alluvial sequence is a thick paleosol or "ancient soil" known as the Sangamon Soil, regarded as having developed between 80,000 and 120,000 years ago during the Sangamon Interglacial period. This buried

Illustration by Pat Labrum

soil w
perm
intens
17,000
the he
glacial
paleos
mantl
(wind
ited ac
Iowa
21,000
the las
devel
loess,
erode
the de
dian r
The
be one

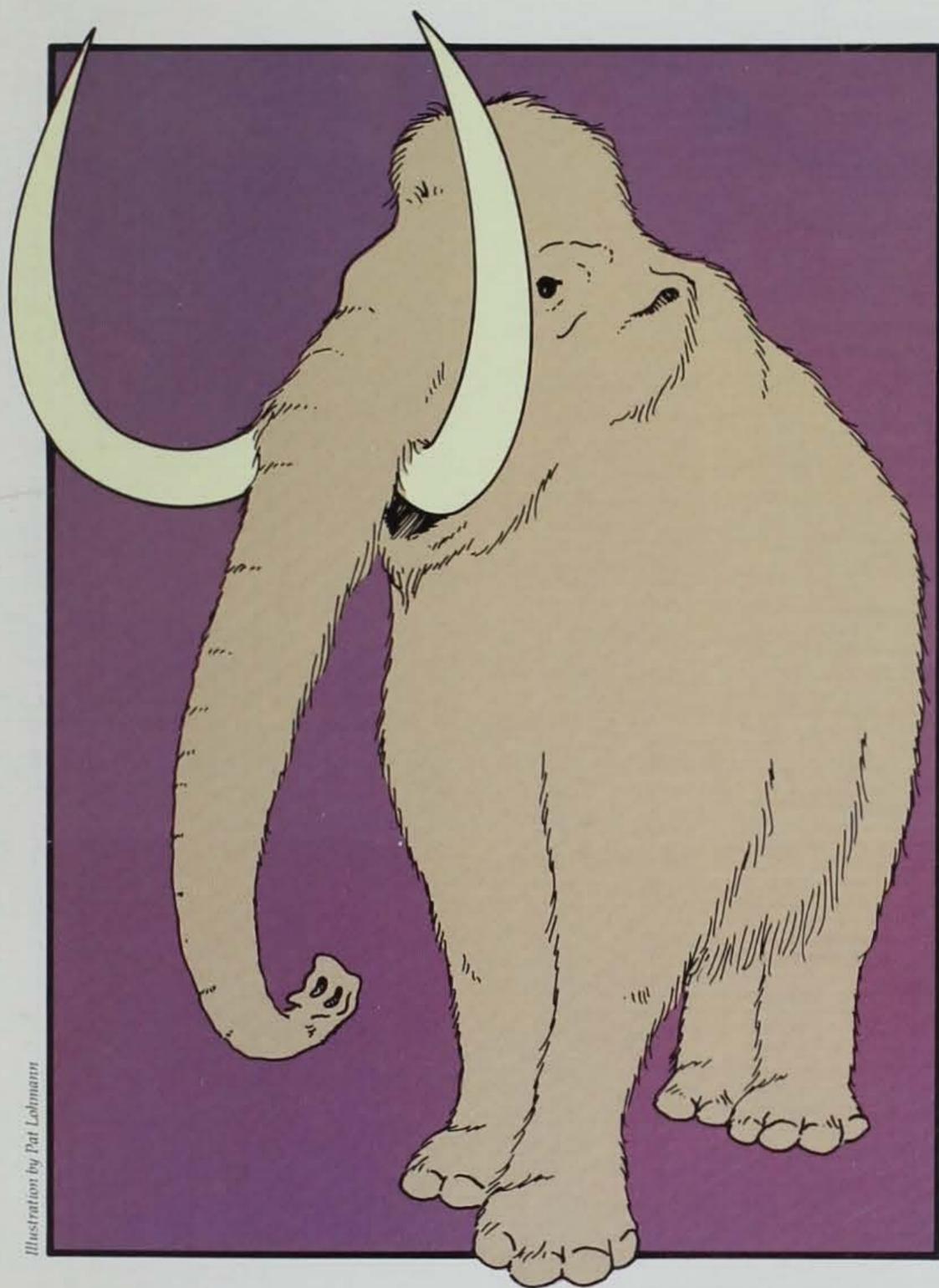


Illustration by Pat Lohmann

Mammoth (elephants) lived in Iowa during the "Ice Age."

A vertebra from the glacial-age member of the elephant family is compared in size to the vertebra of a skunk.



Kay Ireland

soil was distorted and disturbed by permafrost which resulted from intense glacial cold, between about 17,000 and 20,000 years ago, during the height of the last continental glaciation of North America. The paleosol and alluvium, in turn, are mantled with Wisconsinan loess (wind-blown silt) which was deposited across ice-free portions of the Iowa landscape between about 21,000 and 12,000 years ago. During the last 11,000 years, the modern soil developed in the upper surface of the loess, as Clanton Creek downcut and eroded into the old terrace, exposing the deposits containing the proboscidian remains.

The Clanton Creek site promises to be one of the premier paleoenviron-

mental localities in Iowa. This is the oldest stratigraphically documented proboscidian occurrence in Iowa. In addition, the site contains a well-preserved fossil pollen and plant macrofossil assemblage dating from the last interglacial period. No other paleobotanical sites dating from this period have been documented in Iowa. The alluvial deposits' potential for containing fossil insect remains also is being examined. Other detailed studies include attempts at thermoluminescence dating, a relatively new technique being used here because the deposits are too old to be dated by the radiocarbon method. Further study of the proboscidian bones is underway at the University of Iowa. This site should provide us

with a detailed picture of the flora, fauna and valley landscape of southern Iowa during a portion of the Sangamon Interglacial.

Concerned citizens such as the Bartelts are to be commended for bringing this and other geological discoveries to the attention of professionals. Without their notification, the full scientific and interpretive value of the locale may have been lost.

Arthur Bettis III is research geologist for the geological survey bureau. He holds a B.S. degree in anthropology and an M.S. degree in agronomy from Iowa State University.

Warden's Diary

"DUTCH"

By Jerry Hoilien

I was driving down the road the other day when a patch of red flashed on the edge of a creek. With amazing grace and ease, it leaped the clear water and vanished in the brush on the other side. Ol' Red Fox had been caught napping, but was quick to pull his disappearing act once more. His long strides reminded me of another sly ol' fox I knew for years — a veteran warden, I think, since year one. His name was L. E. Lemke, better known as "Dutch." Tall as a pine and big as a barn, it was said he never broke stride coming to a fence, just stepped over and kept going.

Guess the first time I saw Dutch was in our old Des Moines office, I couldn't have missed him for he looked like a fireball. He was wearing a red fur coat! That's right, he had it made in the order of an Ike jacket from fox he had taken. I am not sure how many pelts it took, but he looked like a fire engine coming down the aisle. "You must be the new warden, Hoilien. I am Dutch Lemke. Glad to know you. Welcome to the crew!" What a welcome! My hand felt small in his as he gripped it

like a vice. Up to then, I had never considered myself small, but looking up at his big grin, I wondered if I could ever measure up to men like him. He commanded the whole area as a dominating figure in his big fox coat.

To meet Dutch was to *know* him. He absorbed your attention and radiated a warmth about him, making you feel a real part of his conversation. He made me, a raw rookie, feel a part of the outfit and give me a lot of good advice over the years. "Never grown unless your guns are loaded!" he used to say when he was referring to accusations. Never accuse anyone of anything unless you *know!* Darn sound advice. His quaint sayings made a real impression on your mind.

Dutch worked the southwestern part of Iowa. A few years ago, after 35 years, he retired on his farm near Bedford.

Out in his shop, I was standing by his desk one day and noticed a card tacked to the wall. It was typewritten and looked very official. It read: "THE PARK COMMISSION WISHES TO ANNOUNCE THAT YOUR BACK YARD HAS BEEN SELECTED FOR A GAME PRESERVE AND THAT THE FIRST SHIPMENT OF 500 BUFFALO WILL ARRIVE AT YOUR HOME ON TUESDAY AT 3:45 A.M."

I don't know just where he got it, but it has given me many a chuckle whenever my memory drifts back to those "good ol' days." Dutch was one of a kind, and I recall other giants like him, such as Ward Garratt, Frank Starr, Chris Hein and Marlowe Ray — legends in their own special way. Wardens of the past, some gone, but never forgotten. They gave us what we have today, and any claim to glory we might have started with men like them. Thanks, Dutch — for everything!

As this part of the Warden's Diary was being written, I called Dutch on the phone. I asked him for permission to use that old card I mentioned. He laughed and remembered right where it was and asked Ellen to send it to me. We had a good talk and he didn't seem to have changed one little bit. I smiled when he told me to hold on a minute while he switched ears, so he could hear me better. In a couple of days, I got a letter from Ellen, written on some special stationery. On the top was printed: "THIS IS NO ORDINARY HOUSEWIFE YOU'RE DEALING WITH!" With the note was the card I had asked for and one of the calling cards Dutch had printed up, apparently after he retired:

No Phone	No Address
L. E. (Dutch) Lemke	
No Business	No Money
No Worries	No Complaints

The very next day, I received a call from Don Priebe, the warden at Shenandoah. Dutch had been called Home that morning — age 76.

I feel the loss — all who knew or ever met him feels the same, for he was a priceless and rare individual — one of a kind! I look at his calling card and think,

No Phone — just look around, he was always there when you needed him,

No Address — just address it to "Dutch," everyone knew him,

No Business — with him it wasn't a business but a way of life

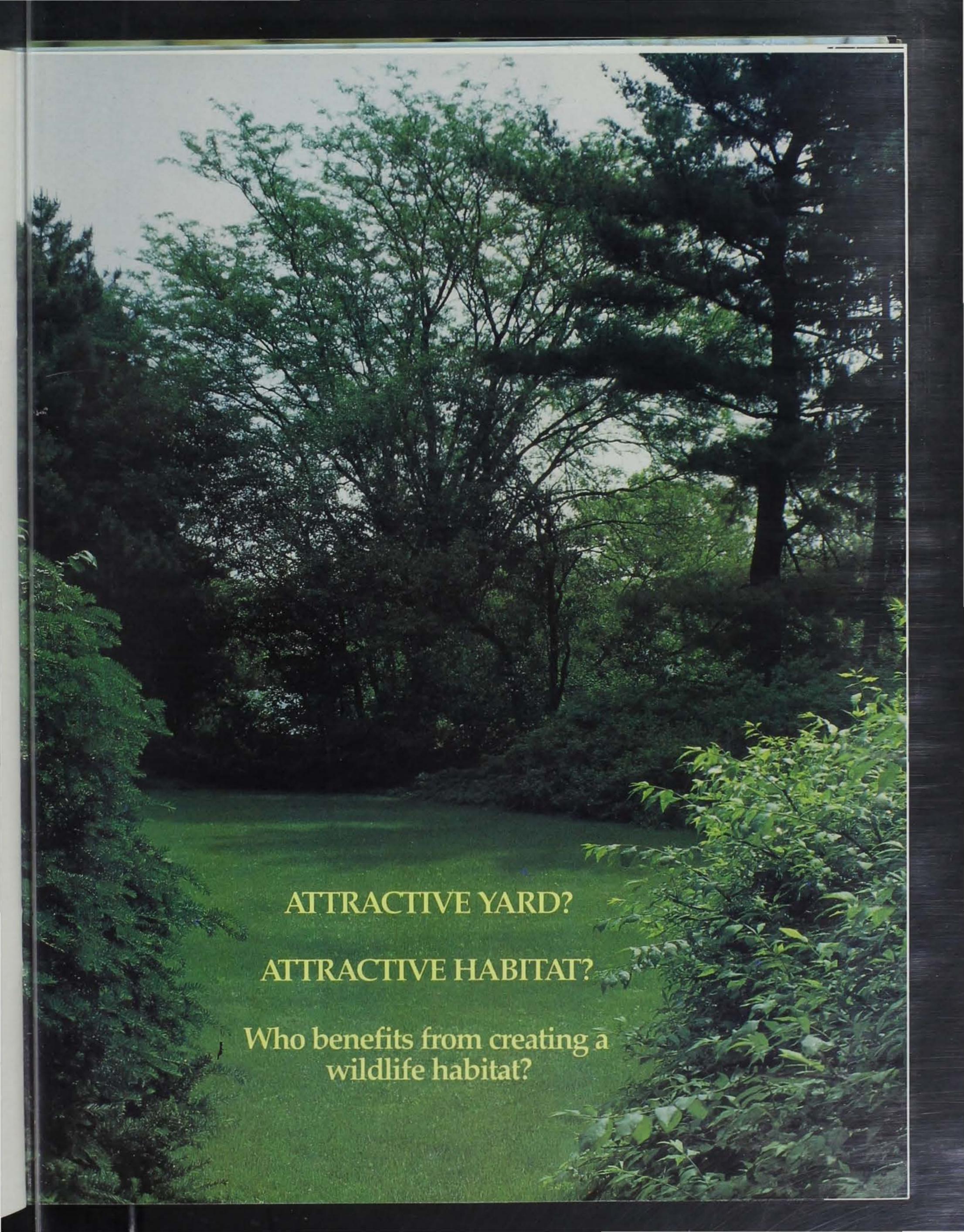
No Money — he never worried about it, too busy doing the job,

No Worries — not now,

No Complaints — he never did. He lived life giving and loving full measure!

God Bless You, Dutch.





ATTRACTIVE YARD?

ATTRACTIVE HABITAT?

Who benefits from creating a
wildlife habitat?

By Marcia Shaffer

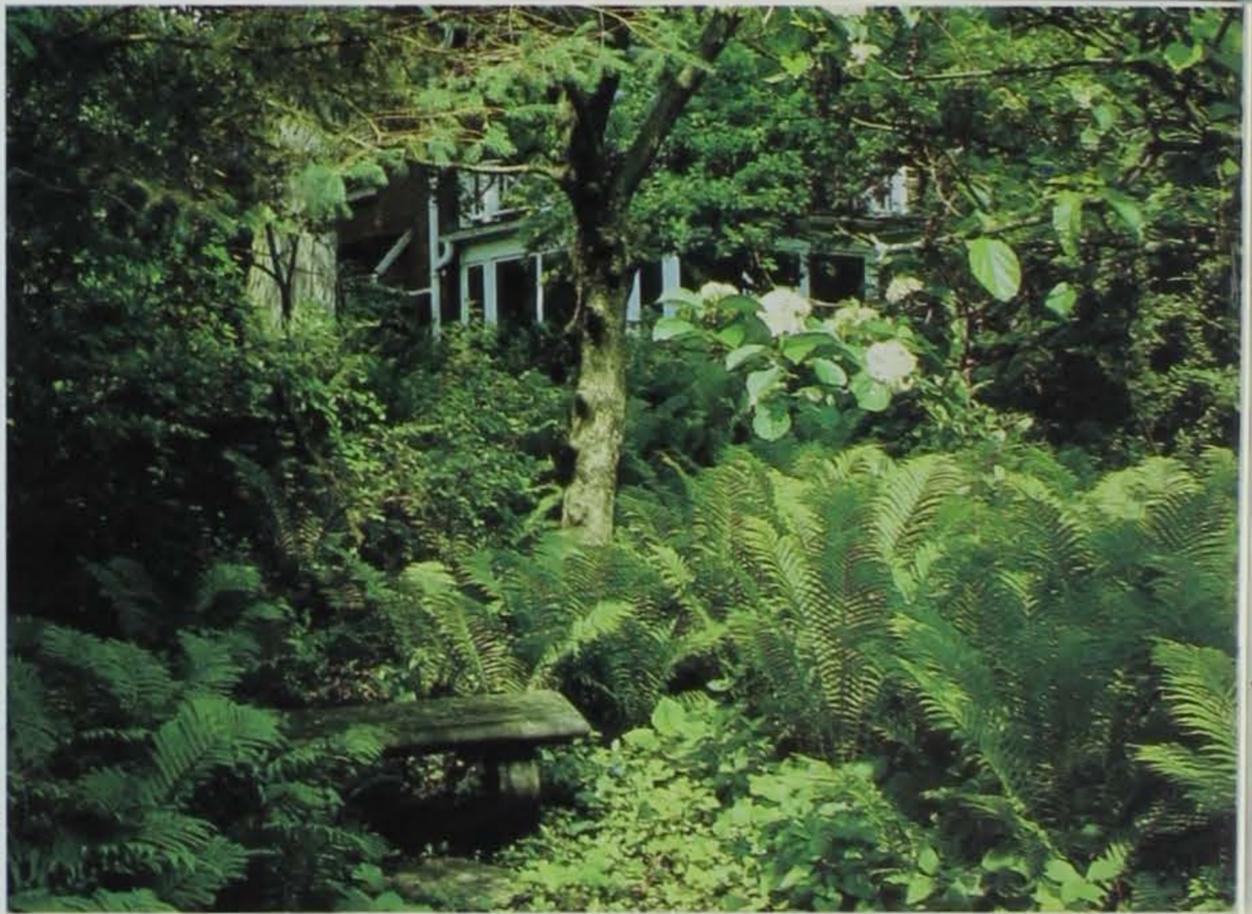
There can be a quiet place in your yard, where you can sit undisturbed, and listen to the sound of the water's drip and the bird's song. Tucked in the corner of your yard, you can enjoy a small retreat from the week's busy swirl. If we can take the time to make a connection with nature on our work breaks, we are so better able to return to work refreshed. Any day takes on a different complexion when it has begun by watching a family of cardinals pass seeds to one another while lined up along a fence.

A first step is to envision a comfortable chair in your yard that gives you a feeling of seclusion and yet has a view of the plantings you will use to attract wild creatures. Next, think about what kind of habitat you want to create. It is important to be practical here. If you are already in the woods, it is easiest to build on this by adding understory trees and berry bushes along the edges. If you live in sunshine, consider a prairie. Another possibility is a combination of two habitats because the greatest number of species are found where habitats meet.

If you are looking for low maintenance, try to work with nature rather than against it. Buying a house on a wooded lot and then clearing out the brush and planting grass will certainly be more work, not only in doing the actual clearing and planting, but in trying to get Kentucky bluegrass to grow in the shade of Iowa woods. Take a walk in some native areas and let nature be your teacher. Notice the tremendous variety of wildlife there. Then think about our neighborhoods where the endless sea of chemically treated bluegrass is interrupted only by clipped hedges.

Certainly lawns and hedges have value, and I have both lawn and hedge in my yard; but let's know what we are doing and why and be aware that there are other possibilities.

Support has been growing in recent years for using native plants in landscaping. After all, our native plants and wildlife have evolved together and form an interconnected web of dependencies. Native plants are extremely tough and will live through our chaotic weather changes



Ken Furmanek

while plants imported from the south will grow through a period of easy winters only to frustrate us when the inevitable killing winter comes.

When I hear people say that they haven't space for a woodland or a prairie, I think of the typical Japanese garden that includes one clump of prairie grass, symbolizing the prairie, or one large tree, symbolizing a forest. You probably have more space than this and therefore more opportunity to make an interesting wildlife garden. You might decide to plant several large trees, some ornamental understory trees plus some fruiting shrubs and still have some space alongside this "forest" for a bit of prairie grass.

You need always keep in mind what wildlife you are trying to attract. Once you decide this, you must learn what they need that you might provide. If you have a sunny yard, butterfly gardening would be a lovely hobby with appeal for all ages. Planting some colorful flat-topped flowers is a wonderful start. Butterflies like orange, pink, purple, yellow and white, and like the blossoms arranged in flat heads so that they can sit while they drink the nectar. Annuals such as marigolds and zinnias will give bloom all summer. Perennials will need to be planned carefully so that one type of flower will come into bloom when its neighbor has finished.

A whole new facet of the hobby involves providing for butterfly water, shelter and breeding needs.

Butterflies like to have rocks placed in the sun so they can warm themselves if the weather turns chilly. They need water just like other creatures and will sometimes gather in large numbers at a favorite watering hole. Most importantly, butterflies need particular plants for the larvae stage of their life cycle. Sulphur butterflies need red clover or alfalfa, black swallowtails need parsley, dill, osage or fennel, and monarchs need milkweeds. The orange butterfly weed (*Asclepias tuberosa*) is a member of the milkweed family and is lovely in a flower garden. The others mentioned could be planted in the vegetable garden.

If birds are your hobby, consider providing a complete habitat for them. Trees and shrubs often will provide both food and shelter. Evergreens are extremely important in providing shelter in our Iowa winters. Deciduous trees can provide fruit and sometimes flowers for the birds and the bird watcher. Cedar waxwings actually eat the apple blossoms!

Some native large trees that hold a very high wildlife rating are maples, hackberries, oaks, river birch, and black and choke cherry. Serviceberry and mulberry are medium growing (35') trees with high ratings. Pagoda dogwood, smooth sumac, pussy willow, and wayfaring bush (*Viburnum lentago*) are under 20', native, and have high wildlife ratings. Native shrubs for birds include snowberry, wild rose, blackberries and grapes,

red twig dogwood, and American plum.

To provide nesting sites, plant shrubs and trees that grow to various heights as outlined above since different species have different height preferences. Access to water is needed year-round and can be as simple as a bird bath. A pond with fish and recirculating pump will take time to maintain, but is an interesting addition to your habitat. Submersible heaters can be purchased in farm supply stores for winter use. Birds also enjoy an area of dust for dust bathing to control parasites.

The backyard birder's enjoyment can be increased by providing for the particular needs of particular birds. The red-bellied woodpecker never visited my yard until I made a flat, roofless bird feeder. Birdhouses for wrens, chickadees, bluebirds and flickers are particularly fun. Hummingbirds can be attracted by planting trumpet-shaped flowers such as trumpet vine, salvia, petunias, fuchsias, etc.

Incredibly it doesn't take that long to provide attractive habitats. River birch and red maple can make dramatic changes on a property in three to five years. If you already have a framework of trees, you are way ahead on your habitat setting since additional shrubs will grow quickly. Someday, instead of just raking, clipping and spraying in the yard, you will come to sit in that comfortable chair, have a cup of tea and observe what's nibbling on the dogwood fruit.

Note: For those interested in creating backyard wildlife habitat, the DNR has a booklet titled "Attracting Backyard Wildlife." Single copies of the booklet are available free of charge. This fall, tree and shrub seedlings will be available from the State Forest Nursery. A special songbird package will be available to those interested in developing their yards for wildlife. For more information on these two items, write the Iowa DNR, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Special thanks to Lurene Warters of Des Moines for her beautiful example of a backyard.

Marcia Shaffer is a landscape designer from Coralville.



House wren.

Bird houses and bird baths also provide some basic needs to wildlife.



Ken Formanek



Lowell Washburn

Yellow-headed blackbird pair.

Golden Jewel

of the Iowa Marsh

THE YELLOW-HEADED BLACKBIRD

By Lowell Washburn

In the early 1960s, some friends of mine discovered a dead bird they could not identify. They brought the creature home with them, but no one had seen the likes of it before. I saw the bird a day later as it was lying in state in a cardboard doughnut carton. When my turn came to view the remains through the cellophane window of the box, I too could not identify it.

It was, however, one of the most beautiful things I have ever beheld. Its head, neck and upper breast were of a brilliant golden yellow that would make the warbler seem dull by comparison. The rest of the body,

with the exception of two white wing patches, was jet black. Later, aided by a trusty field guide, we discovered that our mystery bird was a male yellow-headed blackbird — a species that I would one day regard as one of the very best reasons to visit the July marsh.

By mid-summer, the shallow tepid waters of Iowa's wetlands have become a bubbling cauldron of activity. As a host of wild creatures bring forth their young, the marsh is once again living up to its well-earned reputation of being one of the most profoundly productive ecosystems on earth.

Birds represent the most visible class of marsh dwellers, and these habitats are perhaps best known as producers of waterfowl. But Iowa's wetlands are also the breeding grounds for a wide variety of perching birds, and of all the species that inhabit the summer marsh, none is so outrageously conspicuous as the yellow-headed blackbird. Distinctly unique in its life cycle, it annually provides Iowans with the opportunity to observe some amazing aspects of avian behavior.

Yellow-headed blackbirds are most abundant along the prairie wetlands which lie sprinkled across the state's northern half. By late April, the males begin arriving on their home ranges and immediately go about the business of establishing a territory. This task often involves usurping the rights of male redwings which arrived on the marsh more than a month earlier.

Because the yellowhead is something of a colonial nester, claim staking becomes a tricky proposition. After a few days of intense neighborhood strife, each bird ends up with a small but well-defined territory that no other male dares enter. All in all, it represents a rather orderly system — that is, until the females arrive. At that time, the well-ordered territories quickly deteriorate into total chaos. Boundary lines are violated, the squabbling resumes, and even the males themselves seem confused over exactly who owns what.

In the presence of the females, the battles become grim business and some males are even killed as aerial dogfights lead to collisions with fences, powerlines, and even motor

vehicles. My brother and I were once enjoying breakfast on the veranda of a lakeside cafe when two fighting yellowheads headed directly for our table. So intent was the lead bird on fleeing its rival, that the creature crashed headlong into the restaurant's picture window just inches from where we gaped in astonishment.

It is not until the females begin to choose mates that order is slowly restored to the colony. As pair bonds strengthen, most of the male's time is spent in lavish courtship displays. Landing on a swaying cattail stalk near the female, he bows his golden mantle and spreads his wings and tail to show off slick ebony plumage. During this display, he utters a song of love that, although of great interest to his mate, is decidedly unmusical to the human ear. The "song" begins with a harsh insect-like buzzing and ends with notes that resemble the screeching of a rusty gate hinge. Once heard, the call is never forgotten.

As summer weather arrives, the female of the species assumes most of the nest building responsibilities. The structure will be carefully placed over the water where, with the exception of mink, it is safe from most roving predators. Colonies may contain upwards of 100 nests, which may be located as close as 10 to 12 feet apart. The closest I have found were separated by a mere four inches.

To accomplish her mission, the female carefully binds together several cattail stalks with strands of grass. Once this foundation is formed, more and more grasses are woven into the structure until it takes on a basket-like appearance which includes a deep nesting bowl. Often at least a portion of the materials used in this construction are in a somewhat water-logged condition, and as the sun's rays evaporate moisture from the grasses, the nest becomes so firmly anchored that it can withstand the strongest winds.

Once the nest is complete, the female deposits the first cinnamon-spotted egg into the soft nesting bowl. Most clutches contain four eggs which soon become very ugly, very helpless chicks, whose forms are dominated by huge bellow-

shaped mouths. From now on, it will be a full-time job for the parents to keep those mouths full. From dawn until dusk, the adult yellowheads fly back and forth to the uplands, returning with protein rich cargoes of insects and grubs. Growth is rapid, and the appearance of the young changes daily. Soon the nest is crowded to capacity, and the young now sport feathers instead of down.

Perhaps it is this crowding that causes the young to leave the nest long before either their wing or tail feathers are fully developed. Consequently, fledging becomes an extremely perilous time for the birds, especially since the initial flights take place over water. The adult yellowheads, of course, are well aware of the dangers. Whenever a squawking youngster takes to flight, the entire colony will noisily rise from the cattails and anxiously escort the wobbling fledgling until it eventually crash lands into the marsh vegetation where the youngster holds on for dear life.

For several days yet, the young birds will remain totally dependent upon their parents and can be seen awkwardly perched among the reeds, begging for food. Gradually feathers grow and wings strengthen until the fledglings are able to accompany the adults into the insect-rich uplands.

Man's use, or misuse, of lowland habitats has a direct and obvious impact on the survival of this intriguing member of the wildlife community. In Illinois, the yellowhead is currently considered an endangered species. In Iowa, however, the bird is faring much better and could even be considered as common in the north-central and north-western portions of the state. Maintaining this status will call for the continued protection of Iowa wetlands.

Lowell Washburn is an information specialist located in Clear Lake. He has been with the department since 1984.



Lowell Washburn



Lowell Washburn

A typical clutch of four yellow-headed blackbird eggs and fledgling (left).

