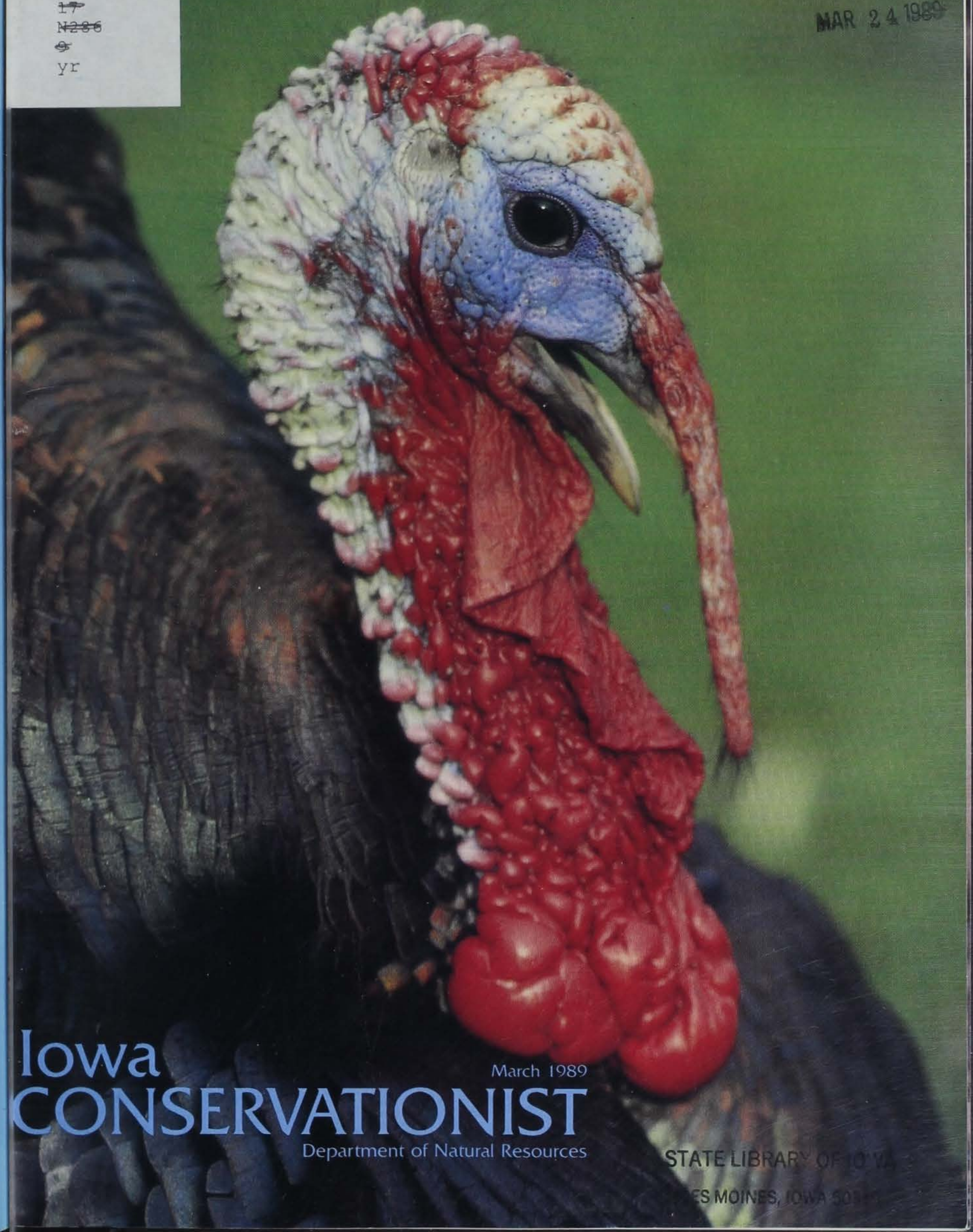


Iowa CONSERVATIONIST

March 1989

Department of Natural Resources

Iowa
CONSERVATIONIST

MARCH 1989, Vol. 48, NO. 3

SPECIAL PHONE NUMBERS

DNR Central Office	1-515/281-5145
Emergency Spill Response	1-515/281-8694
Groundwater Hotline	1-800/532-1114
Turn in Poachers (TIP)	1-800/532-2020

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.* ***Subscription rates: $6 for one year or $12 for three years.*** *Include mailing label for renewals and address changes. POSTMASTER: Send changes to the* Iowa CONSERVATIONIST, *Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.*

CONTENTS

Page 13

Page 20

Page 28

COVERS:

Front — Tom wild turkey. Photo by Lowell Washburn. **Back** — Rue anemone is found throughout the state in dry, open woodlands, especially on slopes. It blooms from late March through June.

Wild Turkey Restoration Is It Over?

— Part V —

The past has a way of coming back to haunt us all, but perhaps more so for those of us that commit our thoughts to paper. The written word is a permanent record of our attitudes and beliefs that is always there for inspection and criticism, should anyone care to look it up. I have been associated with Iowa's wild turkey restoration program for the past 14 years and on several occasions in this magazine I have summed up progress and predicted what the future might hold. Looking back on a series of articles that began in July 1976, it is apparent that I am indeed a conservative person. In assessing the potential for growth of our wild turkey flocks as the restoration effort built to a peak in the late 1970s and early 1980s, I consistently sold short this largest and most impressive of our native game birds.

From a fledgling program that involved a handful of wildlife biologists experimenting with a few releases of wild turkeys in southern Iowa, to see if any might survive, the program has expanded tremendously. Wildlife bureau personnel have worked diligently to stock virtually all of Iowa's remaining forest lands, no matter how small or scattered. Turkey flocks have thrived wherever they have been put and now easily accommodate spring and fall hunting seasons with a harvest of 10,000 birds in 1988, a number beyond our greatest expectations when the program began.

A quote from an article I wrote in 1981 seems appropriate " . . . biologists are a conservative lot, perhaps because nature has a way of laying waste to their best plans, (so) I still find reason to be concerned for our turkey flocks." Wild turkeys were not supposed to be able to survive here, according to the experts, so we in the wildlife bureau kept expecting the bubble to burst, for our initial enthusiasm over early successes to be swept away as some unforeseen calamity wiped out all of our hard work. We were not willing to admit that what the turkeys were showing us might be true.

How wrong we were! Not only have wild turkeys survived here, but they have become so abundant that we are now using them as trading stock with other state wildlife agencies to restore more native animals that, like turkeys, once disappeared from Iowa. Prairie chickens, sharptail grouse, ruffed grouse and river otters may once again be common in Iowa, thanks to our wild turkey restoration program. Before looking forward, however, lets briefly look back 30 years.

Story by Terry W. Little

Photos by Lowell Washburn

Turkey Restoration — Persistence Pays Off

Those readers that have only recently become aware of the Department of Natural Resources' turkey restoration program might be surprised to learn that wild turkeys could not be found here 30 years ago. Though turkeys were once common, early settlers quickly eliminated them from Iowa through subsistence hunting and timber clearing. By 1900, the wild turkey's gobble could no longer be heard in our forest lands. When attempts by the Iowa Conservation Commission (now the DNR) to restore wild turkeys failed in the 1940s and 1950s,

Turkeys have expanded to inhabit more than 95 percent of our remaining forest lands, in spite of the fact that most, if not all, of our forests do not fit the classical definition of turkey habitat.

using pen-reared birds from the state game farm, the future looked bleak.

In the 1960s, successful restoration attempts in states that used transplanted turkeys trapped from the wild renewed interest in turkey restoration among Iowa biologists. But there was a problem — Iowa had no free-ranging wild turkeys to transplant. Trades with other states provided the answer. Turkeys from Texas, Nebraska, Missouri and North Dakota formed the basis for experimental releases in the 1960s, when there was still considerable skepticism that wild turkeys could ever survive here. Turkey experts felt that vast, unbroken tracts of timber were needed to sustain wild turkey populations — 10,000 acres was a commonly quoted standard — and Iowa simply did not measure up. Only the northeast and southeast corners and parts of south-central Iowa seemed to offer the slightest hope for supporting wild turkeys.

Results of the earliest releases were not encouraging. None of the turkeys from the southwest did well here, and had the Missouri turkeys also failed, we might have given up before we had a good start. It has since been shown that the Rio Grande subspecies from Texas and the Merriam's turkey from Nebraska have never done well wherever the annual precipitation exceeds 30 inches. Adapted to the arid southwest, they do not survive or reproduce adequately in our cool, humid climate. The "wild" turkeys from North Dakota failed also, and eventually were determined to come from pen-reared stock that could not live out of captivity.

The Missouri turkeys, however, were birds of a different feather (this Eastern subspecies was once found in Iowa) and formed the basis for our entire successful restoration program. Released in Shimek State Forest in Lee County in 1966 and Stephens State Forest in Lucas County in 1968, their numbers grew rapidly, and they expanded throughout forest habitats in these counties. By 1971, there were enough birds at each site to begin our own trap and transplant program. The first releases from transplanted "Iowa" turkeys did so well that another trade for 500 Missouri turkeys in 1975 really sped up the program. Once we could move several hundred turkeys each year, the accomplishments began piling up.

Turkey releases were first concentrated in southern Iowa, where the initial successes were realized, but we soon began expanding to other parts of the state. Central Iowa's river valleys first received turkeys at a site in the Amana Colonies on the Iowa River in 1974.

Other major river systems quickly followed: the Des Moines River, Cedar River, Wapsipinicon River, Skunk River and Raccoon River all received turkeys in the late 1970s. Eastern turkeys were first released in northeast Iowa in 1975 and in western Iowa's Loess Hills in 1976. Surprisingly, none of these releases failed. Based on the unparalleled success of these early efforts, we relaxed our guidelines for release sites in the early 1980s and decided to stock all the remaining forest habitats in the state.

Today, 23 years after the first Eastern wild turkeys were released in Iowa, the numbers are staggering. Through trades and thousands of days of hard work by DNR trapping crews, we have released 2,849 wild turkeys at 175 sites, and are still waiting for our first release site to fail. Turkeys have expanded from these releases to inhabit more than 95 percent of our remaining forest lands, in spite of the fact that most, if not all, of our forests do not fit the classical definition of turkey habitat. Wild turkeys have proven to be much more adaptable than we thought possible. They thrive in small scattered woodlots and actually produce much higher turkey populations than those found in traditional turkey range. When poaching is discouraged and legal hunting carefully controlled, turkey densities exceeding 50 birds per square mile of timber have been recorded in Iowa. In most traditional turkey habitats, populations seldom exceed 10 per square mile.

Why have our turkeys done so well? Controlled hunting is a factor, but habitat also plays a role. Our forests are dominated by oaks and other seed-bearing trees that produce the acorns and other nuts that are a staple of the wild turkey's diet. Waste corn and soybeans left in crop fields after harvest provide a supplemental food source for turkeys when snow covers their natural foods, and keeps winter starvation losses to a minimum. The brushy field edges and pastures associated with most of our timber stands provide ideal nesting and brood rearing habitat. All things considered, Iowa may have turkey habitat that is far superior to the traditional Eastern wild turkey ranges in the South and East.

Counting wild turkeys on a statewide basis is impossible, but estimates derived from hunter success data and counts on a few smaller areas suggest that there are at least 100,000 turkeys in Iowa today. They are concentrated, of course, in the northeast, southern and western counties of the state where the most timber remains. Turkeys have done very well, however, along all of the river systems extending into the north-central and northwest parts of the state where timber stands are small, scattered and isolated by agricultural land. That represents quite a comeback in just 30 years and provides a fine example for other DNR restoration programs.

Turkey Hunting — Where It Is Best

This heading was actually the title of an article I wrote on spring turkey hunting in 1977. Turkey hunting was new to Iowans, and I was trying to offer encouragement to struggling hunters. In spite of the fact that few, if any, experienced turkey hunters could be found in the state, our hunters were doing quite well. In the past 15 years, things have only gotten better. From an uncertain beginning, turkey hunting opportunities have grown at a pace that has kept up with our blossoming turkey population.

Spring turkey hunting was opened in 1974 to allow hunters the opportunity to harvest a few birds from our growing turkey flocks. Spring hunts are the most conservative and have the least impact on turkey populations. Wild turkeys are promiscuous breeders. Adult gobblers establish dominance by fighting and displaying to each other in early spring, with only the strongest permitted to participate in breeding activities. Several hens form mating flocks with a dominant gobbler, leaving many other males to fall victim to hunters without impacting the future growth of the flock. The fact that our turkey population has increased many times over since 1974 shows that limited spring hunting has not hurt our turkey population.

Spring turkey hunting is much more than just going to the woods and walking around until a turkey is flushed and shot. Only gobblers are legal, so not all turkeys that are encountered can be shot. The most successful method for spring hunting is to call in gobblers eager to breed by imitating the calls of a hen turkey. This becomes very much a one-on-one contest between a gobbler and hunter, one that is easily ruined by too many hunters, or by inexperienced hunters roaming aimlessly through the woods.

To protect growing turkey flocks from over-hunting and inexperienced hunters from each other, the first spring hunt in 1974 was carefully controlled. Three hunting zones were established around the first release sites in southern and northeast Iowa, two hunting periods were allowed in each zone and a strict license quota was placed on each zone and period. Licenses were issued by a computer drawing from a list of applicants. Much has been modified during the ensuing 15 years, but this basic system is intact today. New hunting zones have been added, additional hunting periods allowed and license quotas greatly expanded. In 1989, the entire state will be open to spring turkey hunting for the first time and more than 20,000 turkey hunters will take to the spring woods.

So is turkey hunting still best in Iowa? Judge for yourself. In 1974, 450 hunters bagged 113 gobblers, for a 29 percent success rate. In 1988, 18,133 gun hunters bagged 7,059 gobblers, a success rate of 44 percent, and 1,060 archers took an additional 114 birds. Most states in Eastern turkey range consider a successful season to be one in which 10 to 15 percent of their hunters bag a turkey. Iowa is far above that standard. It should not be unreasonable to expect to maintain average success rates of around 30 percent over the next few years with turkey populations

Fall turkey hunting is becoming increasingly popular in Iowa, however, spring is still the *season for pursuing the wild turkey. This April and May approximately 20,000 turkey hunters will take to the woods.*

Fall hunts have been handled much like spring hunts. Restricted zones were created in southern Iowa, and were eventually expanded to include northeast Iowa, the major river systems and the Loess Hills. Restricted quotas and short seasons keep harvests well within acceptable limits. Although fall hunting has been slower to catch on than spring hunting, an increasing number of gun and archery hunters are taking advantage of the sport. By 1987, 7,047 gun hunters and 877 archers took 3,136 turkeys. Success rates have averaged about 50 percent for gun hunters and eight percent for archers.

Fall hunting will have to be more carefully controlled than spring hunting to insure that harvests stay within acceptable limits.

Some areas open to spring hunting may never be opened in the fall because the timber is too restricted and the birds could be too vulnerable. There is no reason to believe, however, that controlled fall hunting will not be a feature of Iowa's turkey program for years to come.

Perhaps the most amazing chapter in our turkey restoration story . . . has been the development of new trades that now ship turkeys out of Iowa to other states.

near current levels. If spring turkey hunting is not the best in Iowa, we are certainly among the leaders.

Hunting opportunity was expanded in 1981 to include fall hunting. Since gobblers will not come to a call as readily in the fall and young turkeys are difficult to distinguish from hens, all ages and sexes are legal. Shooting a limited number of hens is permissible because not all will survive to the next nesting season. Winter and predators take a toll that might as well be apportioned to hunters. Research in Iowa indicates that up to 15 percent of the hens may be taken without endangering turkey populations.

Trading Turkeys — The Final Chapter?

Even to a conservative wildlife biologist, the results appear to be conclusive — wild turkeys are here to stay. Fears about some disaster wiping out our turkey flocks seem unfounded. There is little reason not to expect that wild turkeys will continue to flourish in Iowa and for carefully controlled hunting seasons to provide unparalleled hunting opportunity for a growing number of hunters. A few wet springs might temporarily reduce turkey numbers by reducing nesting success, but our flocks have shown the capacity to recover from

such problems. And loss of forest habitat looms just over the horizon as a potential cause for concern. Turkeys cannot live without at least some forestland. But timber clearing has slowed dramatically with the decline in land values that occurred in the 1980s, and USDA farm programs like the Conservation Reserve Program have provided some incentives for additional tree planting. Hopefully these trends will forestall further loss of turkey habitat for at least the next few years.

Perhaps the most amazing chapter in our turkey restoration story, however, has been the development of new trades that now ship turkeys out of Iowa to other states. Our successful restoration program has shown that the potential for turkey restoration, in what were thought to be marginal habitats, is much greater than anyone thought. Because of our success, Iowa turkeys are now in great demand and allow the DNR to trade for other wildlife species that also have the potential for restoration.

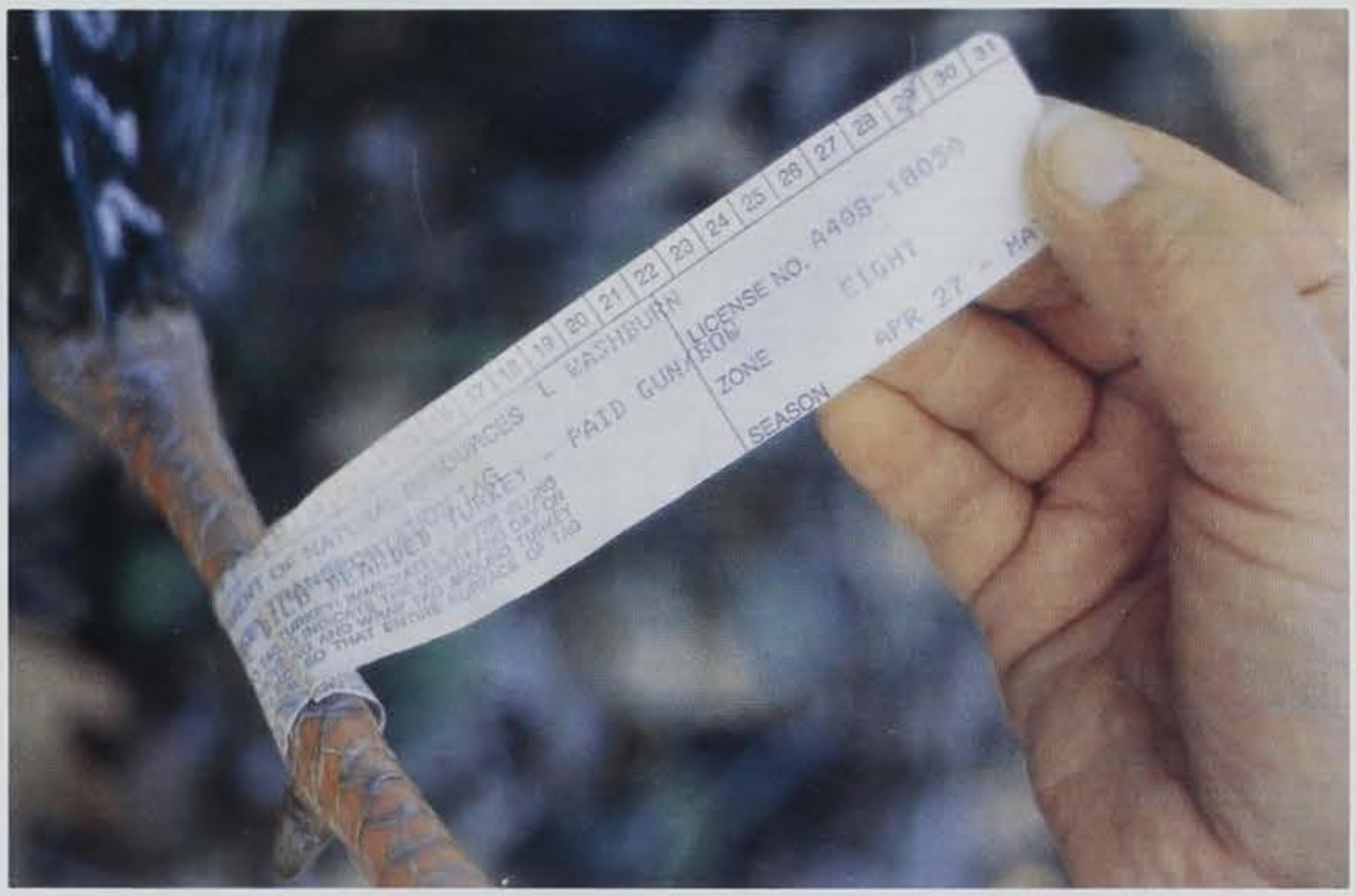
The first shipment of wild turkeys from Iowa went to Kansas in 1981 for prairie chickens that were released in remnant prairie stands in western Iowa's Loess Hills. Since then, we have traded turkeys to Michigan and Indiana for ruffed grouse that were released in southern Iowa, to Michigan (via Kansas) for more prairie chickens and to Kentucky for river otters. In 1988 we shipped 300 turkeys to Texas in exchange for $150,000 that was immediately used to purchase just more than 800 acres of turkey habitat in Clayton, Lee, Monroe and Webster Counties. Future trades include an agreement with South Dakota for sharptail grouse for the northern Loess Hills. Texas and Kentucky have agreed to trades that will net the DNR $1.25 million for turkey habitat acquisition in the next five years.

Why send turkeys out of state? Will it affect my hunting? Why not continue to stock turkeys in Iowa? These are questions that pop up as word of the recent trading spreads. Fortunately there are easy answers to all these questions.

Virtually no one thought turkeys could be successfully restored here 30 years ago, and look what happened! If the state of Missouri had not been willing to part with a few turkeys then, we would be years behind in our turkey restoration program today. Prairie chickens, sharptail grouse, and ruffed grouse are all game birds that seem to have at least as much potential for restoration as wild turkeys were thought to have. The gamble seems more than worth it. And the opportunity exists to partially remedy one of Iowa's greatest shortcomings, the lack of publicly owned land for outdoor recreation.

The effects of trading on hunting will be minimal. Most turkeys are now trapped on privately owned farms where the landowner is concerned about the number of turkeys on his land, or in parks that are closed to turkey hunting. Virtually no hunters should notice that these few birds are gone, and they will be more than replenished each year during the nesting season.

Some in-state stocking will continue even though most of the birds caught during the next five years will go out of the state. All of the major turkey habitat in Iowa has been stocked with turkeys, or will soon be by natural movements of birds from existing populations.



Iowa is one of the top states in the country for successful spring turkey hunting.

Whether or not the few remaining timber tracts get stocked will have little impact on our statewide program. As a continuing commitment to our landowners that still want turkeys on their land, the DNR will continue to stock some sites each year until the trapping program is finally shut down.

Is turkey restoration over in Iowa? Essentially, yes. Can more be accomplished with the wild turkey program? Absolutely. The program has far surpassed its expectations. Now we can look forward to years of relatively stable turkey populations that will provide the opportunity to restore other vanished wildlife, and to provide more public land for all Iowans to enjoy.

Terry Little authored three other articles regarding turkey restoration in Iowa. Parts I, II and III can be found in *Iowa CONSERVATIONIST* issues dated July 1976, August 1976 and June 1981, respectively. Greg Hansen authored Part IV, published in the March 1986 issue.

Terry Little is the wildlife research supervisor for the department and is located in Des Moines.

Eastern Wild Turkeys

Iowa's Spring Spectacular

Story and photos by Lowell Washburn

There are few places more quietly relaxing than the hardwood forest in early spring. This is particularly true if you begin your visit an hour or so before sunrise. For it is during this brief interlude between night and day that the woodlands become incredibly tranquil, the intense solitude being only occasionally broken by the ghoulish wailing of some distant owl.

Unfortunately, this soft balance between light and dark is both fragile and brief. Soon the unstable blend of mist and shadow gives way to a strengthening dawn. And as the ragged treeline of a nearby ridgetop becomes dimly visible, the timber rouses to life, stirring with the mellow calls of the cardinal, whip-poor-will and the soft scratchings of a dozen other creatures beginning their daily routines.

Suddenly, all these lesser sounds are swept away by one of the most primitive and blood stirring sounds in all creation — the deep, staccato gobble of a male wild turkey. The bird sounds off twice in quick succession. This results in a chain reaction of sorts as a second, third, and finally fourth turkey take up the challenge. The valley quickly echoes with the din, and if you happen to be a turkey hunter it is time to take a blood pressure pill.

During the months of March, April and May gobblers stake territories, gather hens into harems and conduct fierce and noisy battles with other adult males. Dominant toms advertise their whereabouts by means of those rattling gobbles, and on a clear and windless day these raucous vocalizations can be heard intermittently from before daylight until dusk.

When it comes to strutting his stuff, the wild turkey is a master and will spend hours marching back and forth across his domain with feathers puffed, tail fanned and wings dragging. Of course these elaborate rituals are clearly intended to impress the hens, but perhaps the most remarkable aspect of their displays is the bird's ability to control and change the color of the exposed skin which covers the head and neck. The hues may vary from snow-white to blue to rich crimson, all in the space of a minute or two.

For thousands of Iowans, the prospects of trying to lure one of these huge, woodland monarchs into effective shotgun range has come to represent the ultimate outdoor challenge. Nowhere in nature will you find a creature possessing more natural cunning or wariness than this feathered mirage. Whenever a wise old tom gazes in the direction of my huddled camouflaged form, I suddenly feel as obvious as a snowman in a plowed field. One old hunter put it this way, "The turkey's hearing is keen, its eyesight extraordinary and if they could smell, you'd never kill one."

Another seasoned enthusiast summed it up somewhat differently by remarking that the white-tailed deer thinks every man is a tall stump, while an old gobbler thinks that every tall stump is a man.

But no matter which old sage may be presently talking turkey, they all seem to agree on one point — the fact that the eastern wild turkey is clearly the most elu-

Turkey hunting is a game of cat and mouse employing a wide variety of strategies and calls to lure the tom within range.

sive, frustrating and wonderful quarry the woodlands have to offer. And, any way you slice it, turkey hunting is a 24-carat outdoor experience.

If the wind, weather and a million other factors are all just right, the day's first gobbler will sound off about the same time the last owl gives its farewell hoot before heading to bed. From then on it is a game of cat and mouse as the hunter employs a wide variety of strategies and calls which will hopefully bring the tom within range. Most often the contest ends in the turkey's favor, with the hunter returning to camp with plenty of tall tales, but no bird.

However, it should be noted that every now and then the hunt does indeed follow the textbook scenario. Somehow you have gotten into position without the tom hearing or seeing you and your pleading calls are cut off by his roaring response. Eventually, the bird marches in so close that you can see the glint in his eye. Your gun is already shouldered and you suddenly realize that this turkey dinner is dead to rights. It is moments like these that keep turkey hunters coming back for more.

1988 Top 25 Turkeys

In 1988 the Iowa Department of Natural Resources adopted the scoring system of the National Wild Turkey Federation. The top 25 1988 turkeys scored using this system are listed below.

Individuals whose turkeys were listed in the former all-time top 10 listing (by weight only) are eligible to have their turkeys rescored for the 1989 listing. For information, contact the Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

NAME/ADDRESS		COUNTY TAKEN	TOTAL SCORE	WEIGHT	BEARD LENGTH	LEFT SPUR	RIGHT SPUR
Matt Whatley	Riverside	Davis	85.69	28 lbs. 3 oz.	11 2/8	1 6/8	1 6/8
Steven M. Dirks	Wyoming	Jones	82.75	28 lbs.	13	1 4/8	1 4/8
Dennis J. Smith	Council Bluffs	Fremont	80.94	26 lbs. 11 oz.	10 7/8	1 5/8	1 5/8
Ralph E. Roberts	Oskaloosa	Davis	80.25	25 lbs. 8 oz.	10 4/8	1 6/8	1 5/8
Virgil Van Zee	Newton	Monroe	80.00	29 lbs.	10 4/8	1 4/8	1 4/8
Jeff A. Kelchen	Cascade	Jones	79.75	27 lbs. 8 oz.	11 1/8	1 4/8	1 4/8
Paul Vitale	Des Moines	Lucas	79.75	27 lbs. 8 oz.	13	1 2/8	1 2/8
Bryan Whatley	Riverside	Van Buren	79.38	27 lbs. 2 oz.	11 1/8	1 4/8	1 4/8
Stacy F. Schlicher	Farmington	Van Buren	78.50	26 lbs. 8 oz.	11	1 4/8	1 4/8
David T. Woodard	Oskaloosa	Appanoose	78.50	26 lbs. 8 oz.	11	1 4/8	1 4/8
Jim Robinson	Des Moines		78.25	29 lbs.	11 4/8	1 3/8	1 3/8
Roger Higgins	Dubuque	Clayton	78.13	29 lbs. 2 oz.	11 3/8	1 2/8	1 2/8
Darwin J. Kloft	Maquoketa	Jackson	78.00	30 lbs. 8 oz.	11 2/8	1 2/8	1 2/8
Ron Potter	Maquoketa	Jackson	78.00	29 lbs.	11 3/8	1 3/8	1 3/8
Dan Reinert	Indianola	Warren	77.81	22 lbs. 14 oz.	11	1 5/8	1 5/8
John H. Millspaugh	Mt. Pleasant	Henry	77.63	25 lbs. 6 oz.	11 1/8	1 4/8	1 4/8
George Waters	West Branch	Des Moines	77.50	24 lbs.	11 6/8	1 4/8	1 4/8
Jack Loonan	Waterloo	Davis	77.25	26 lbs.	10 5/8	1 4/8	1 4/8
William E. Paetz	Atalissa	Van Buren	77.00	25 lbs.	10	1 3/8	1 3/8
Bruce Parks	Burlington	Henry	77.00	26 lbs.	10 4/8	1 4/8	1 4/8
Daniel P. Campbell	Oxford	Johnson	76.88	26 lbs. 2 oz.	11	1 3/8	1 3/8
Melvin James Stevens	Victor	Monroe	76.88	28 lbs. 6 oz.	10 6/8	1 3/8	1 3/8
John L. Young	Douds	Van Buren	76.44	27 lbs. 11 oz.	11 2/8	1 3/8	1 3/8
Edward C. Van Lennep	Garber	Clayton	76.38	25 lbs. 6 oz.	10 4/8	1 2/8	1 2/8
Jack Brissey	Burlington	Des Moines	76.25	28 lbs. 4 oz.	11 4/8	1 2/8	1 2/8

The Iowa School Energy Bank Program:

Investing in Iowa's Future

Story by Sharon Tahtinen
Photos by Ron Johnson

Soon it will be spring and the weather will turn warm and balmy. School children will shed the layers upon layers of long underwear, coats, hats, mittens, scarves and boots like butterflies emerging from their cocoons. Activity will shift from within the school buildings to the outdoors. Soon the students and teachers will scatter to their vacations, baseball games and summer jobs.

Come fall, though, once again the school buildings, empty during the summer, will be filled with active, learning students eight hours a day, not to mention the potpourri of extracurricular activities that place demands on the buildings well into the evening.

One impact of this increased activity is the dramatic rise in energy uses of these facilities. The bad news is that these burgeoning utility bills negatively affect the "bottom line" of school districts statewide. This means that more money is being spent for energy costs and less money is available for other district priorities such as books and salaries. The good news is that school administrators now have a "weapon" to combat escalating energy costs and to boost their "bottom line." The "weapon" is an aggressive investment strategy in a comprehensive energy management plan.

School districts, corporations, communities and non-profit organizations know the importance of energy expenditures in overall budgetary planning. It is now critical that these organizations take this knowledge one step further and develop an action plan to make energy improvements a permanent consideration in budget development. Because Iowa imports 98 percent of its energy, it is easy to see what aggressive energy management investments can mean for the state.

Comprehensive energy management programs are a priority and the state is active in the development and delivery of programs to Iowa's public and non-profit sectors. The Department of Natural Resources (DNR) is working with public schools, state facilities, hospitals and non-profit organizations to help implement all cost effective energy management improvements, those with a six-year or less payback, by 1995. Iowa schools benefit from the Iowa School Energy Bank Program which is available to public schools, merged area schools and area education agencies interested in pursuing comprehensive energy management. First, the program was developed in response to legislation passed in 1986 which mandates that schools have energy audits completed on a five-year basis. The DNR, recognizing that an audit by itself does not constitute energy management or encourage long-term commitment to pursuing improvements, developed the Iowa School Energy Bank Program. The program consists of three phases: energy audits, engineering analyses and financing for the acquisition of cost effective energy management improvements. Although the program has three phases, it is important to note that each school may

Because Iowa imports 98 percent of its energy, it is easy to see what aggressive energy management investments can mean for the state.

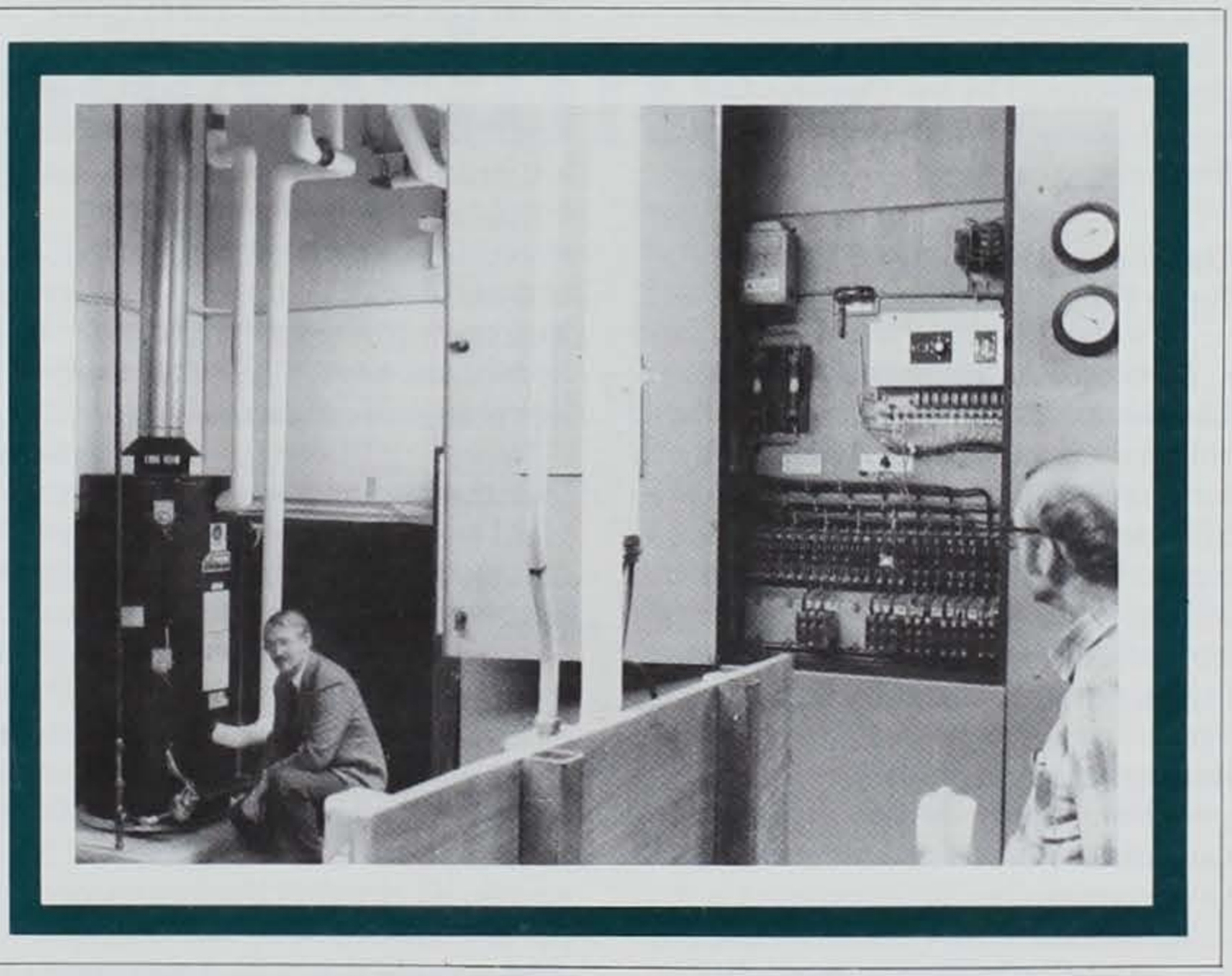
be prepared to pursue energy management at any one of the phases. For example, officials of schools with approved engineering analyses may elect to proceed directly with the implementation of cost effective improvements.

Both the energy audit and engineering analysis provide institutions with decision-making guidelines for implementing operation and maintenance procedures and developing long-range energy management plans. The energy audit is a preliminary checklist of energy saving opportunities and is an indicator of whether the more detailed analysis is necessary. Improvements which meet the six-year or less payback criteria are recommended for implementation. Simply, payback is the time it takes for an improvement to pay for itself. The sooner a project pays for itself, the sooner the school may direct the savings to other priorities such as salaries or programs. School administrators can access a variety of funding opportunities to implement cost-effective improvements. For example, officials may use any of the school district's funds, apply for conventional bank financing or utilize the Iowa School Energy Bank's lease arrangement.

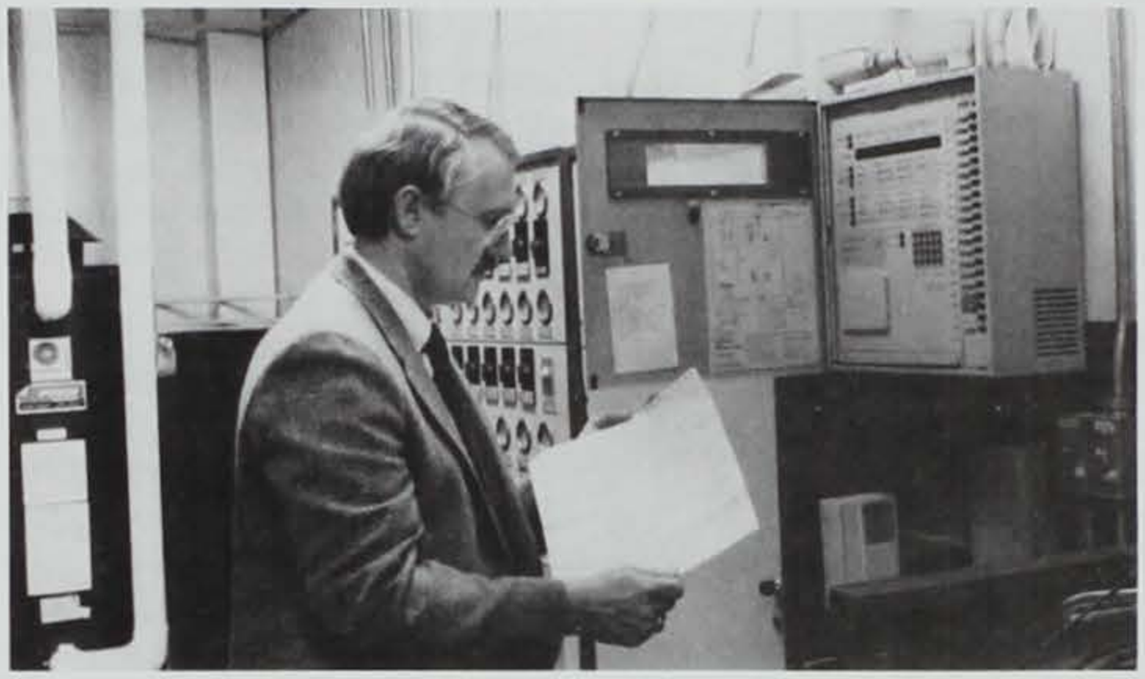
The lease is an exciting and flexible vehicle offered to schools through Norwest Investment Services. The lease financing has several desirable characteristics: 1) Since the capital for the leases is available from private investors who find energy management investments in public schools attractive, there is literally no ceiling on the amount of improvements that a school may choose to finance. This is particularly encouraging since it is estimated that the potential for cost effective energy management improvements in Iowa's schools exceeds $70 million. 2) Schools do not need any upfront capital to participate in the program. 3) All energy management improvements with an aggregate payback of six years or less, district wide, are eligible for financing. 4) Participation is not competitive and administrative costs are reduced because participants are not subject to lengthy federal requirements. 5) Lease obligations are paid with savings which accrue from implementation of cost effective energy management improvements. 6) School administrators can work with Norwest Investment Services to design the most advantageous lease obligation payment schedule for the district. For example, an administrator may choose to design the payment plan to be cashflow neutral so the payments are less than or equal to savings which occur from the projects.

With the promise of virtually unlimited financing and the availability of technical assistance from the DNR, schools are beginning to participate in the program. To date, 52 districts are receiving technical analyses on 202 facilities.

Even with financing and technical assistance readily available, school personnel must also embark on an effective information campaign to increase the energy management knowledge and skills of all facility users. Afterall, energy management goes beyond replacing boilers and insulating roofs. It also includes attention to day-to-day operations and maintenance activities such as turning out lights, cleaning vents and setting back the thermostat when appropriate. Energy must be included in overall management goals and objectives and integrated into all plans for operating facilities cost effectively. Information can serve as the first step in changing attitudes toward energy management. Staff support



The 500-gallon water heater was replaced with a gas boiler system at Ankeny Community School District. This $8,000 project paid for itself in two years.



Dr. Ben Norman, superintendent for Ankeny Community School District, examines the computer system that monitors energy usage in the elementary and high schools.

and feedback can be key mechanisms to a successful program as is demonstrated in the Davenport and Ankeny Community School Districts.

Davenport and Ankeny Benefit From Energy Management

Davenport Community School District administrators continually solicit staff support and feedback for energy management efforts. Staff members are given opportunities to both learn and use energy-saving methods. "We spend a lot of time raising awareness and showing staff members ways to conserve," says Roger Fisk, director of management support services. "We give them practical tips that they can use at school and at home to save money."

To facilitate the hands-on learning offered to staff members, district officials also circulate reminders and operating tips on a regular basis. Presentations, in-service meetings and one-on-one discussions help educate and involve faculty, principals, food service managers, bakers, custodians and maintenance supervisors. "We do a lot of program monitoring," said Fisk. "If we see something askew, we follow up quickly with a reminder so we can keep energy management in the forefront." Staff members are given examples of how may watts are burned and what can be saved. "Turning off lights in an empty classroom might save 3 1/2 cents over a half hour," said Fisk. "That doesn't seem like a lot, but it *is*, in a district with 2,300 employees. If every employee saved that much each day, then all of a sudden, it is a pretty big figure. You can't just go after the big items, you have to go after the little items at the same time."

Investing in energy management training and improvements can yield substantial rewards for both district and staff. As demonstrated in the Ankeny Community School District these rewards may range from comfort level to cashflow. "For everything we do, we try to look at what will make our buildings more comfortable as well as what will save money. We have greatly improved comfort levels and people are happier with the changes. At the same time, we are saving measurable dollars and the savings have snowballed," commented Dr. Ben Norman, superintendent for the Ankeny Community School District.

"We have saved money which keeps us from having to cut back programs. One year we funded more than half of our salary increases with energy savings. Another year, our savings were so good we did not have to increase the budget. That was during a time when education was taking a lot of cuts and utility rates were rising 8 to 10 percent, so it really helped us out," stated Norman.

These examples demonstrate that dividends can sometimes surface from unlikely sources and that comprehensive energy management does pay for itself. Just because schools may not have the staff or finances to dedicate to energy management does not mean that they must lose valuable dividends. The Iowa School Energy Bank is designed as a "one stop shopping" program which maximizes assistance to all schools. DNR staff is available to provide on-site assistance and Iowa School Energy Bank Program training to all districts. The purpose of the training is to discuss with school officials strategies to implement comprehensive energy management in schools statewide. Whether using private money or existing funds, the administrator's goal should be to implement all cost-effective energy management improvements so that schools can reap economic rewards as quickly as possible. The potential for improving a school's "bottom line" through energy management investments is here. If you have any questions regarding the Iowa School Energy Bank Program, contact the DNR at (515)281-8681.

Sharon Tahtinen is a program planner for the department's energy bureau.

Reasonable Expectations

In the arena of fishery resource allocation and use, expectations can be either or both or something entirely different, but first and foremost they must remain reasonable. Many of our nation's most valuable resources, whether they be the magnificent wilderness areas of Montana, parking spaces in metropolitan New York or the rich and diverse fisheries of the lakes and streams of Iowa, are publicly owned and are thus considered common property or open-access resources. This means they are available to all who desire to use them. Unrestricted access often results in excessive levels of use and ultimately over exploitation of the resource. Scientists refer to this as the tragedy of the commons. The tragedy results from the economics of exploiting a common property resource.

Here is how it works. The use of any resource, say for example a fishery resource, involves both a positive and a negative component for the user. The plus side is a benefit, for example catching fish, derived from the resource which belongs entirely to the user. The negative side is the cost or damage done to the resource as a result of use—one less fish to catch. With a common property resource, such as a fishery, this cost is not shouldered entirely by the individual but is shared by all resource users. For the individual angler, the benefit of catching a fish is almost always larger than their share of the cost; thus, it becomes advantageous for the individual to increase their use of the resource. The cumulative result is escalating use and eventual over exploitation. Fisheries management strategies which allow for reasonable use of the common property resource and which prevent over exploitation and/or excessive conflict between users are responsible goals for fishery scientists. The product of these strategies is a partnership between scientist and user which allows for the fulfillment of reasonable expectations.

Let us examine some expectations common to fishery resource

Expectations — are they the substance of what dreams are made of, or are they a presumption of something we will receive?

Story by Tom Gengerke
Photos by Ron Johnson

use in Iowa. First of all, *can I expect to have access to our fishery resources*? The answer is an unqualified yes. Iowa has a long tradition of actively pursuing, acquiring and developing accesses to our fishery resources. We have more than 19,000 miles of fishable streams; 266 miles of coldwater streams; 32,115 acres of natural lakes, 11,831 acres of artificial recreational lakes; 30,250 acres of on-stream reservoirs; 2,211 acres of lowhead dam impoundments; 6,146 acres of important oxbow lakes; 26,000 acres of surface mine lakes; 1,345 acres of water supply reservoirs and at least 50,000 acres of farm ponds.

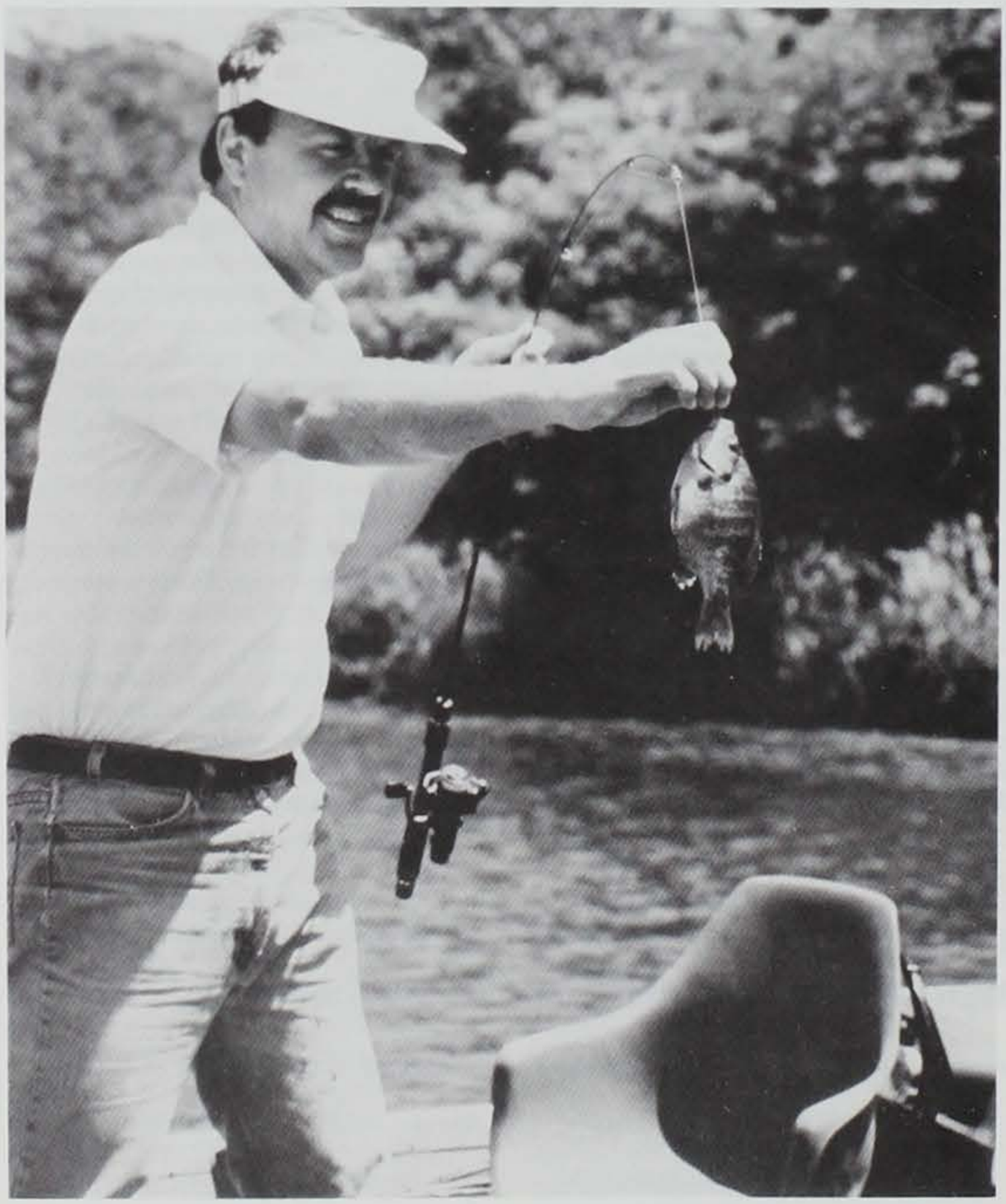
Shoreline access development has been and still is a top priority on all of these resource areas. The recent expansion of federal aid cost-share dollars has allowed the acceleration of access development programs. The Iowa Department of Natural Resources is building fishing jetties and piers (many handicap accessible), acquiring coldwater streams, adding access sites to our prairie streams, and acquiring land on which to build high-quality lakes. All of these projects will ensure that our expectation for access will be fulfilled. This is a reasonable expectation.

Because we have been assured access to our fishery resources, *what can we reasonably expect to find when we get there*? One thing we are going to find is that there are a lot of other expectant anglers using the resource. Remember the discussion on common property resources?

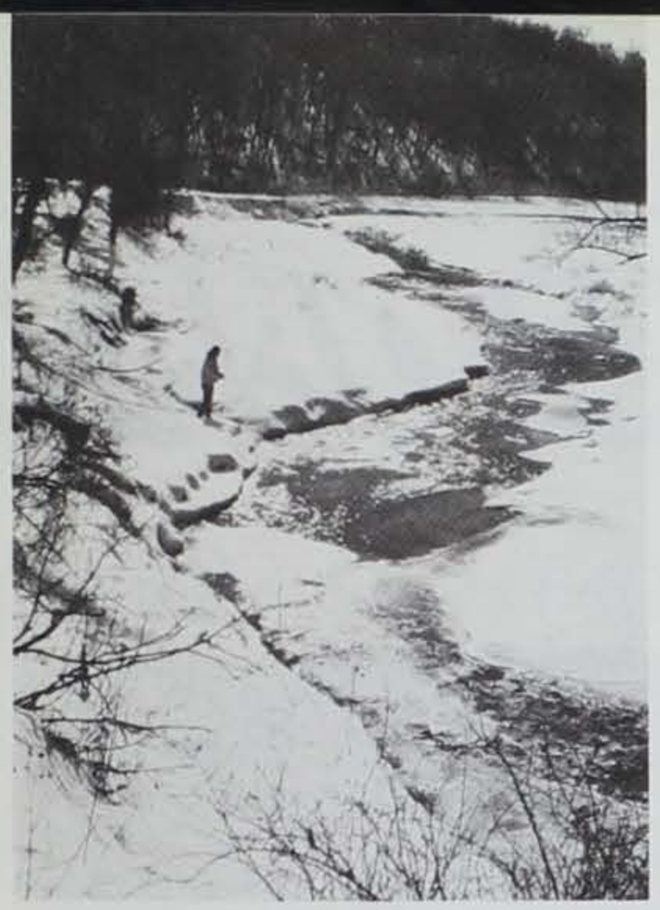
There are approximately 400,000 licensed anglers in Iowa. One out of three Iowans fish. Each of our fishery resources has specific areas which, because of differences in habitat types, hold more fish than other areas. Is it then reasonable to expect that you or I will have any given area all to ourselves every time we go fishing? Obviously the answer is no — this is not a reasonable expectation. It is reasonable, however, if we remain flexible in our choice of areas and in choosing the time we select to go fishing. For instance, a friend of mine wanted more solitude in his trout fishing experience, so he tried fishing in the winter. His expectation became reasonable.

What about the fishery resource itself? Will there be fishing available? Will there be a lot of fish? Will we find the kind and size of fish we want in the quantities we desire? Obviously there are a lot of variables which impact the answers to these questions. Let us look at a few of the complexities and how they influence our expectations.

Unless there has been some severe environmental disturbance such as a toxic pollutant, virtually all waters within Iowa are capable of supporting some measure of fish life. If we confine the discussion to public fishing waters, it is reasonable to assume that fish are available for anglers. After all, we are fortunate enough to have 148 species of fish in our state. Are there a lot of fish? The answer to that question depends upon where you are going to fish. If you expect a body of water to contain a lot of fish and that body of water happens to be a gravel pit, your expectation is not reasonable. By comparison, if you are thinking about most of Iowa's lakes and streams, your expectation for a lot of fish is reasonable. The difference is due to the relative fertility of the water, basin shape and the relative complexity of the fish community present in the system. Expectations become reasonable if they are adjusted to the specific



Nearly 150 species of fish inhabit Iowa's waters, with bluegills being caught most often.



Solitude is one advantage to trout fishing in the winter.

aquatic environment we are using and to the time in which we are using the resource.

Will we find the kind and size of fish we want in the quantities we desire? I sincerely hope so, and I believe that in many cases we can. Opinions reported in the 1986 survey of Iowa anglers demonstrated that 16 percent of us prefer to catch walleye, but walleye comprise only four percent of the total number of fish caught. Only seven percent of us professed a preference for catching bluegill, and yet bluegill comprised 24 percent of the catch. Obviously there is a lot of frustration, and in many cases, our expectations are just not realistic.

When my friends visit me at the Iowa Great Lakes during the end of July or the first part of August and want a lot of big walleye, they may be disappointed. First of all, I am more than likely not a proficient enough walleye angler to accomplish that task. More importantly, if we set out in quest of a few nice fish during the late fall period, our expectations would be more reasonable — perhaps not fulfilled — but, nevertheless, more reasonable.

The process can be rather direct. It is best to fish where, when and how the particular circumstance dictates and be realistic in what we expect our aquatic systems to produce. In other words, *create* reasonable expectations.

All of our water bodies have limits to their productive capabilities. Some are relatively high, such as our better prairie streams, and natural and artificial lakes, while others are somewhat less, such as our trout waters. All of these water bodies are dynamic, ever-changing, complex aquatic systems. Within each fish community, fish produce, grow and suffer mortality at varying rates. It is, therefore, unreasonable to expect a constant population of a particular species. Nor is it reasonable to expect that if, for example, a particular system holds 10 pounds of trout or walleye per acre that the entire biomass is comprised of five-pound fish. Fish populations have considerable elasticity in their ability to expand and contract in relation to the capacity of the habitat supporting them. And the habitat, in the holistic environmental sense, is a very dynamic parameter.

As for whether or nor we will be able to catch fish — the answer lies within each of us. A mountain of fishing literature and a growing number of "fishing educators" are available to help you gain proficiency as an angler. But you have to go out and try it. You must learn from your experiences. You must remain flexible in your approach, and you must maintain reasonable expecations in light of what the aquatic environment, under the influence of people, is capable of producing.

For each individual, under any given circumstances, the answers to the expectations posed in this article may be different — not right or wrong — just different. Perhaps that is what makes the angling fraternity so unique, our individual experiences so special and our expectations for the common property resource so diverse.

Tom Gengerke is a regional fishery supervisor stationed at Spirit Lake.

KEN FORMANEK

Overcrowded fishing conditions can be avoided by being flexible in choosing when and where to fish.

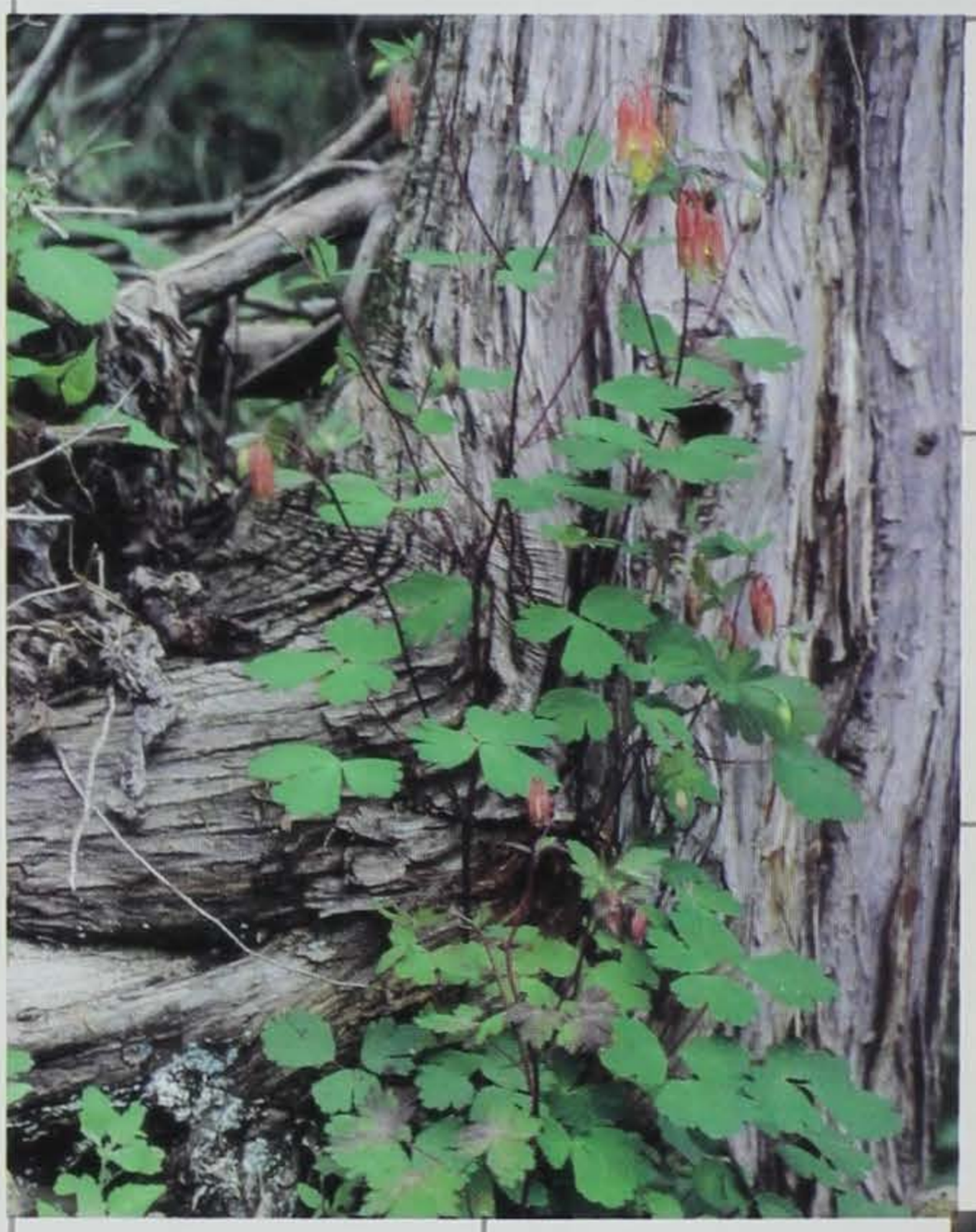
A Calendar of Wildflow

Photos by Ken Formanek

Iowa's woodlands offer one of the first glimpses of spring. With only a few short weeks to absorb the warm rays of the spring sun, unobstructed by the canopy, the forest floor quickly becomes a colorful carpet of pastels.

This year, why not find some time to look for a few of these wildflower favorites? Discover the beauty our woodlands offer with their native flower gardens.

Information on blooming times and locations were reprinted by permission from *Wildflowers of Iowa Woodlands* by Sylvan T. Runkel and Alvin F. Bull, © 1987 by Iowa State University Press, Ames, Iowa. The book can be purchased at most book stores, or through the ISU Press for $15.95 plus postage and handling.

SUNDAY	MONDAY	TUESDAY	W
		**Columbine:** *Found throughout the state under a wide variety conditions including loose soil on cliffs a other steep slopes. Blooms April to July.*	
		7	
		14	
19	20		
	**Wild Geranium:** *Found throughout the state in rich moist open woodlands, often in thick stands. Blooms April to June.*	**Dogtooth Violet:** *Found throughout th state in rich moist woodlands, especially bottomlands with ope woods. Colonies of plants may be extensi Blooms April to June.*	

Flower Favorites

SPRING 1989

SDA WEDNESDAY THURSDAY FRIDAY SATURDAY

Sweet William: *Found throughout the state in partial shade of rich, moist woodlands, often in patches or colonies along streams. Flowers April to June.*

9

17

Bloodroot: *Found in rich, moist but well-drained woodlands throughout the state — usually in small colonies of plants. Blooms March through May.*

May Apple: *Found throughout the state on moist soils of open woodlands, usually in colonies. Blooms in May.*

23

30

Yellow Ladyslipper: *Found, now rarely, throughout the state on rich soils of moist to wet woods and swamps that are undisturbed by livestock. Blooms May to July.*

Seedlings are a Start

Woodlands are a source of recreation and economic opportunity, as well as habitat for wildlife and protection from soil erosion, noise and the cold winter winds. With a little planning and a very small investment you can enjoy the benefits a woodland offers.

Tree and shrub seedling stock for spring planting is still available from the State Forest Nursery in Ames. For current information on availability or to place an order, contact the nursery at 2404 South Duff Avenue, Ames, Iowa 50010, or call (515)233-1161.

Plant Some Opportunities Today

WARDEN'S DIARY

Lessons To Be Learned by Jerry Hoilien

When you get to be my age, and certain ailments start creeping up, you begin to reevaluate your list of priorities. No matter what, I think, listening to tom turkeys will always be *very* high on my list. After a fella introduced me to that phenomena some time back, I never got over it. I've got a new wrinkle I want to try this year — that's a muzzleloader. I came by a very old Bavarian, with lots of silver and engraving. I think it needs a little turkey blood on it to finish out its illustrious career, before someone hangs it on a mantle someplace. It may turn out to be an aggravation, though, if the cap is not seated or something. But it's got two barrels for a second chance, so my ambitions are high.

Last spring, I had a real bout with a magnificent tom, and if my heart can stand it, I'll have to tell you about this one. I had spent a couple of frustrating mornings looking down the barrel, waiting for the tom to come out of the brush into the meadow, but he would always circle around behind me and then stop gobbling. An afternoon of investigating revealed a deer trail behind me and a nice view of my rear from below. I decided to pull a familiar trick and move down into the brush to take him on that trail that ran parallel to the pasture. The next morning, I got there in the dark, placed my decoy 20 yards up the trail in the direction of his roost and waited. Sure enough, he was back there and gobbled from the roost. A cluck or two from my call, and he would answer nicely, getting my blood pressure going strong. Well, we kept up that routine for a long time. I was sure he was on the ground just over the ridge from me. After some time (seemed like an eternity), it became obvious he wasn't coming. Probably had several hens with him and couldn't tear himself away.

Throwing caution to the wind (I have a habit of this), I started to crawl towards the top of the ridge past my decoy and finally struggled to the top. The tom kept me pinned down for another hour, gobbling directly in front of me, but no sightings. My neck was completely strained, and I couldn't hold my head up anymore. I was going to move to where I could see him . . . or die, right there. There was a large stump right at the top in front of me (there always is). I crawled forward and rested my head against its side, just in time to watch the tom pitch off a limb, high in a huge tree about 75 yards in front of me. How could I have been so dumb! He was in the tree all this time and must have been watching me squirm down the deer trail like a big sea turtle. He hit the ground and calmly walked around a huge rock out of sight. So much for lesson number 482. When will I learn? At least I was able to rest my neck. I laid my head down and rubbed some circulation back into my neck. (I can hear you laughing now, go ahead, I would have too, but my neck hurt too much.)

I glanced at my watch and it was after nine. Pure pride won't let me figure out how long I had spent on that fiasco. But when I finally gained enough strength to raise my head, it was just in time to see him round that same rock and stride steadily towards me. He continued right on that deer trail until he was about 20 yards in front of me and I was tightening on the trigger. Then, suddenly he vanished. He was gone! You know how well they can disappear, well this one completely vanished. I was still starring down the barrel in complete disbelief when THERE HE WAS! His head was right in front of the barrel. When he stopped and turned his head, BOOM — it was over.

I examined the trail he had approached me on and apparently he had walked into a gully on the trail and simply stepped below my vision. And when he came up, he was 5-1/2 steps in front of my gun barrel.

Boy he was good eatin', and I don't think I'll ever forget him — but then I don't think you ever forget any of them, right? Right!

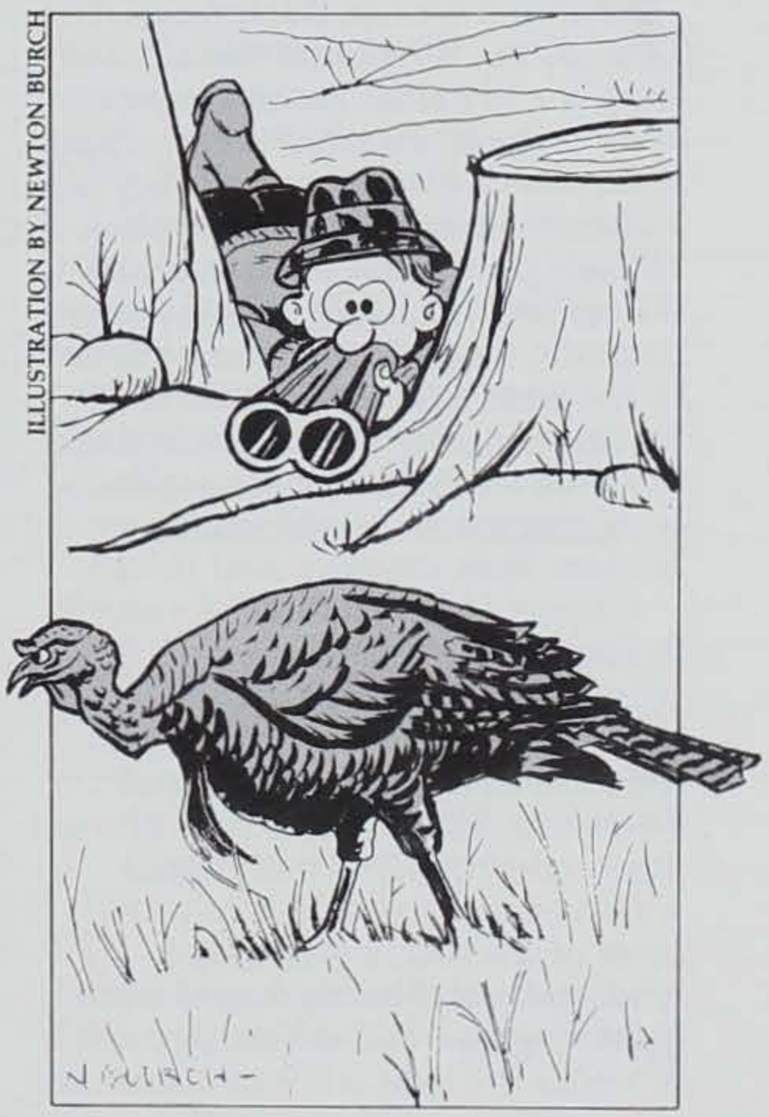


ILLUSTRATION BY NEWTON BURCH

FIRES OF SPRING

When under controlled conditions, prairie fires can assist in the rejuvenation of native grasses.

Story and photos by Mel Moe

Flames were leaping 20 feet into the air as the fire swept across the prairie hillside. The crackling of flames became a roar and what a few seconds before had been a thick mat of prairie grass was now a black plume of smoke billowing high into the spring sky. When the flames had passed, a few lingering wisps of smoke continued to rise from a field of black ash. Saplings of trees and shrubs trying to gain a foothold in the grassland were charred stubs and small pebbles were now exposed to view.

A scene of devastation? An end to abundant wildlife? No. This fire was set intentionally and under controlled conditions by a crew of the Iowa Department of Natural Resources. This fire was set with no destruction in mind, but instead with a goal of renewal — improvement of the native prairie and wildlife cover. The blackened earth quickly warms and within a couple of weeks the field will look like a green lawn. The warm-season grasses such as switchgrass, bluestem and Indiangrass will grow taller and more lush than those in the surrounding fields. Seed production of the grasses will increase. Grazing animals will find the new grasses more nutritious. Ground nesting birds such as pheasants and quail will move their broods into these fields because it is much easier for the short-legged, young birds to move about. There will be adequate vegetation residue next spring, ideal for nesting. Woody plant succession that would have converted the field from grass to brush will be halted.

For years, the destructiveness of fire to wildlife cover has been a common theme promoted to help prevent wildfires and stop indiscriminate burning. Unless properly planned and controlled, fires can be very destructive to wildlife and every effort should be made to prevent such fires. Controlled fires, when properly planned, can be beneficial to both wildlife and livestock.

To understand the effects of fire on grassland, it is helpful to have some understanding about the types of plants present. The major grass species on the original Iowa prairie were warm-season grasses such as big and little bluestem, Indiangrass and switchgrass. These plants put on most of their growth during the hot months of summer. Following European settlement of the Midwest prairies, most of the warm-season grasses were gradually destroyed by overgrazing and cultivation. Consequently, cool-season grasses such as bluegrass, brome, timothy and fescue were introduced. These plants put on the majority of growth during the cool weather of spring and fall, and are somewhat dormant during the hot, summer months.

The effects of spring burning on these two types of grasses are very

different. Warm-season grasses have evolved to respond favorably to early spring fires. Burning removes old, dead vegetation and releases nutrients to improve growth and vigor of prairie plants. Prairie grasses are dormant in early spring and fire does not injure the growing portion of the plant. Burning a field of cool-season grasses will usually do more harm than good. These plants are at a peak growth period and are usually damaged by spring fires. Spring burning of mixed stands of warm- and cool-season grasses will favor the warm-season grasses and native prairie vegetation may take over the field.

Timing of the fire is important. The best time to burn is when the warm-season grass is just starting to break dormancy. This is usually from late March into April. Frequency of burning is another important factor. Burning a field of prairie grasses once every three to five years is usually about right. Burning more often actually reduces the value of wildlife cover and can reduce the productivity of the stand.

The use of fire in grassland management is not a new idea in the Midwest. Early visitors to the prairies reported that it was a common practice for Indians to burn prairies near their villages. One purpose was to make the local grasslands more attractive to the roaming bison herds. Such use of fire was common across the Midwest for centuries and was likely an important factor in maintaining the prairie landscape. Without periodic fires, the natural vegetation in this region goes from grass to brush.

Early European settlers feared prairie fires. Breaking up the landscape with roads and plowed fields slowed wildfires that could travel for miles. The replacement of prairie grasses with cool-season grasses, for hay and pasture, eliminated the need for widespread burning, and the use of fire for grassland management nearly died out in Iowa.

In recent years, land managers looking for ways to control brush invasion and improve wildlife cover started to experiment with controlled burns, a technique long used on quail plantations in the South. It soon became apparent that prairie grasses respond miraculously to fire. Old fields of bluegrass, with a few remnants of prairie plants, were restored to warm-season grasses following a controlled spring fire. At about the same time, managers began to realize that native grasses provided excellent summer pasture and quality hay, especially in drought years. Research has shown that a pasture system containing 25 percent warm-season grasses could support substantially more cattle then the same number of acres of all cool-season grasses. Wildlife managers also recognized that pastures and hayfields of warm-season grass provide excellent, undisturbed spring nesting cover.

As interest in warm-season grasses increased, land managers soon realized that a timely fire was an important tool in the proper management of these plants. Just as early settlers feared prairie fires, an uncontrolled burn today can endanger human life, equipment and property. There is much more to controlled burning than just throwing a match into the grass. An effective controlled burn involves the preparation of a detailed fire plan, understanding the relationship between fire and weather conditions, and regulating the fire at all times with adequate equipment, manpower and a water supply available at the fire site. A controlled fire is attended to at all times until the last wisp of smoke drifts away. As a precaution, the burned field is rechecked before finally leaving the area.

Today's land manager knows that a planned, controlled fire is a beneficial and effective tool in the management of our native grasses.

Mel Moe is the management biologist at the Mount Ayr Wildlife Unit.

Warm-season grasses like big bluestem respond favorably to early spring fires.

CONSERVATION UPDATE

River Otter Sightings Should Be Reported

People seeing river otters in Iowa are encouraged to report their sightings to the Iowa Department of Natural Resources' Nongame Program. Relocated river otters from Louisiana are reproducing in Iowa, according to Terry Little, research supervisor for the DNR. "We have documented otters reproducing on four of the release areas and are hoping to see young otters next spring at the remaining five areas," said Little.

Otter sightings are rare. Anyone seeing their unique dot-dash — dot-dash track pattern are asked to notify the DNR.

Since 1985, 176 otters have been released at nine sites around the state. Release areas where young otters have been seen are the Red Rock Reservoir, Otter Creek Marsh near Toledo, Springbrook State Park on the Middle Raccoon River near Guthrie, and Boone Forks Wildlife Area near Stratford. In 1987 and 1988 otters were released at the Colyn Wildlife Area near Russell, the Little Sioux River near Peterson, the Nodaway River near Morton Mills, Sweet Marsh Wildlife Area near Tripoli and the Wapsipinicon River near Waubeek. These areas contain good beaver habitat that the otters rely on.

The otters breed in the spring, but due to a system of delayed implantation, the young are not born until the following spring. No otters were pregnant the year they were released in Iowa so a two-year wait has been normal. Young otters remain with the parents through their first winter and appear smaller than the adults.

"Due to the otter's shy and elusive nature, sightings are rare," commented Little. "Looking for otter tracks along Iowa's interior waters is encouraged, and people are asked to notify the DNR if any otters are seen."

Unlike some Iowa animals, the river otter remains active all winter. During this time, otter tracks and other signs are most obvious. The unique dot-dash— dot track pattern left by them in the snow is unmistakable. The "dots" are made by the feet of the animal as it lopes along. The "dash" is where the otter slides along on its belly. Looking over bridges near release areas is a good way to observe otter tracks.

To provide more information on otters, the Nongame Program has developed a slide presentation of the river otter in Iowa. Anyone interested in the otter program or wishing to report any sightings should notify the Nongame Program, Wildlife Research Station, RR #1, Ledges Road, Boone, IA 50036, (515)432-2823.

The Nongame Program is funded by the fish and wildlife checkoff located on line 60 of the Iowa income tax form 1040 and line 13 on form 1040A.

Chickadee Checkoff Poster Available

The third Chickadee Checkoff poster, produced by the Iowa Department of Natural Resources' Nongame Program, is now available. "We are pleased to announce the poster, *Home Again*, with photography by our DNR staff photographer, Ron Johnson," said Laura Jackson, nongame biologist.

The full-color poster features a photo of a river otter and describes the natural history of the otter, as well as the history of Iowa's Nongame Program.

The poster is being used to promote the Nongame Program and will be available from tax preparers for their clients who donate to the checkoff. The Chickadee Checkoff is a voluntary donation which appears as the Fish and Wildlife Fund on line 60 of the

state form 1040 and line 13 on form 1040A. Those who prepare their own taxes and donate, or those who make any contributions to the program, may obtain a poster by sending $2.50 for postage and handling to Nongame Poster, Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034. Checks should be made out to the Fish and Wildlife Trust Fund—Nongame Donation.

Help Wildlife, Cut Energy Bills With Shelterbelts

Permanent cover is essential for wildlife survival in winter months, according to Terry Little, wildlife research supervisor for the Department of Natural Resources. "Shelterbelts of live trees and shrubs offer wildlife some of the best possible protection from harsh winters plus shelterbelts have other benefits," said Little.

When wildlife shelterbelts are planted close to a house, they may provide energy savings, by cutting consumption up to 36 percent.

With spring approaching, many people are thinking about what kinds of trees and shrubs to plant. "Remember, most winters are characterized by sub-zero windchill factors and blowing, drifting snow, which wreaks havoc with wildlife, not to mention heating bills. Now is the time to make plans for a shelterbelt planting," he advised.

According to Little, an adequate shelterbelt can be established on as little as one acre of land. "Pines offer excellent cover," he said, "particularly white pine, with branches that drape down to the ground. Shrubs such as ninebark and dogwood grow rapidly and will help provide a snowcatch next to the pines."

Little suggests using potted pines, available at local nurseries, to help define the shelterbelt and to quickly establish its usefulness. Some of the harder to find shrubs, as well as additional trees, can be purchased as seedlings from the DNR's forest nursery in Ames. Most tree and shrub seedlings cost about $12.00 per 100. When ordering from the State Forest Nursery, seedlings must be ordered in units of 100 with a total of at least 500 plants.

Through two separate cost-share programs, offered by the DNR and the ASCS, some Iowa landowners can be reimbursed for up to 90 percent of the shelterbelt establishment costs. "With these cost-share programs and low-cost seedlings, a good shelterbelt, beneficial to both wildlife and homeowner, can be established for almost nothing," said Little.

Little added that wildlife need food as well as shelter. Planting crops next to the shelterbelt or choosing shrub and tree species that provide food through the winter, will give wildlife optimum benefits.

To order tree and shrub seedlings contact the State Forest Nursery, 2404 S. Duff Avenue, Ames, Iowa 50010, or call (515)233-1161, Monday through Friday, 8 a.m. to 4:30 p.m. For more information regarding shelterbelt planting and cost-share programs, contact a local DNR wildlife biologist or the Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034.

Little suggested conservation groups, such as Pheasants Forever, the Izaak Walton League and Audubon Society, take advantage of the low-cost seedlings of the State Forest Nursery for local habitat projects. As local service projects, these groups may want to offer planting assistance to help defray costs of shelterbelt establishment.

The nursery has a variety of seedlings available as well as wildlife packets and songbird packets for $22 and $12, respectively. "The packets contain both tree and shrub seedlings," says Little, "and are perfect for landowners wanting to add a little wildlife habitat to their yards." The songbird packet is designed primarily for the urban landowner and the wildlife packet for the rural landowner.

Larry Wilson (left), director of the Iowa Department of Natural Resources, accepts an art print of a pair of otters from Loren Forbes, president of the Iowa Wildlife Federation in appreciation for the success of the reintroduction of the otter in Iowa. Jim Landenberger of Cedar Rapids was the artist.

Changes in State Fishing Laws

The Iowa Department of Natural Resources has made a few changes in the 1989 sport fishing regulations.

- It is legal to return carp and other rough fish species to the waters from where they were caught.
- A person may use up to three tip-up fishing devices in the Mississippi River and its connected backwaters. A tip-up fishing device means an ice fishing mechanism with an attached flag or signal to indicate fishing action, used to hold a fishing rod or pole with line and hook. A person may use multiple hooks on the same line, but the total number of hooks used by each person shall not exceed three. Each tip-up fishing device used in fishing shall have attached a tag plainly labeled with the owner's name and address. A person shall not use a tip-up fishing device for fishing within 300 feet of a dam or spillway or in a part of the river which is closed or posted against the use of the device. Three tip-up fishing devices may be used in addition to two lines with no more than two hooks. The number of tip-ups and lines in total for all other waters in the state remains two.
- It is unlawful for any person to stock or introduce into the waters of the state any live fish, except for hooked bait, without the permission of the DNR director. This law does not apply to privately owned ponds and lakes.

- The open season on walleye, muskellunge, tiger musky and northern pike in lakes West and East Okoboji and Spirit Lake is from May 6, 1989, through Feb. 14, 1990.

Complete rules and regulations regarding sport fishing are included in the 1989 Fishing Regulations and are available at county recorder offices, DNR offices and at most stores where licenses are sold.

Americans use about 80 million tons of paper products each year, or 600 pounds of paper products per person in 1986. Americans throw away 45 million tons of paper products each year.

—National Wildlife Federation

Creston Residents Chosen As 1988 Woodland Owners of the Year

Erwin and Roberta Barkalow of rural Creston have been chosen as the 1988 Woodland Owners of the Year according to officials of the Iowa Department of Natural Resources.

"The Barkalows developed one of the first successful agro-forestry operations in the Creston area," said William Farris, chief of the DNR's Forests and Forestry Division. "They began planting trees in 1977 in response to increasing fuel prices and anticipated increasing fuelwood demands. The Barkalows have since expanded their initial energy plantation to more than 14 acres of fast-growing hybrid poplars, ash and silver maples. Through experimentation, the Barkalows integrated their tree farming operation with their truck gardening operation by raising bumper vegetable crops between hybrid poplar rows until excessive shading occurred. During the first planting year, the trees reached more than eight feet in height under this dual cropping system. The trees are now being chipped and used for mulching vegetables."

In 1985, the Barkalows expanded their tree farming operation by purchasing 18 acres of standing oak-hickory pole-timber that had been severely damaged through overgrazing and resulting soil erosion. This area is currently being protected from grazing under the Forest Reserve Law and is now being actively converted to a highly productive timber through weed tree removal for fuelwood and underplanting of desirable tree species.

In 1987, in conjunction with the Conservation Reserve Program, the Barkalows set aside 20 acres of marginal crop land for fuelwood production, walnut seed and veneer production, and wildlife habitat improvement.

"The Barkalows are taking an active part in promoting the wise use of our greatest renewable resource and are truly outstanding woodland owners," Farris said.

Volunteers Needed For New Fur Harvester Education Program

A fur harvester education program has been developed by the Iowa Department of Natural Resources and Iowa fur harvester organizations, and volunteers are needed to teach the course beginning this fall.

The course is a voluntary program to educate future and present fur harvesters. Subjects covered in the 12-hour course include ethics/

responsibility, hunting with hounds, trapping, pelt preparation, predator calling and laws.

The DNR is compiling a list of potential volunteer instructors to teach the course. To become certified as a fur harvester education instructor, candidates must be at least 18 years of age with a minimum of three years of experience in fur harvesting. All candidates must complete the student and instructor training courses, administered by the DNR.

Anyone interested in becoming a fur harvester instructor should contact any conservation or recreational safety officer or write Sonny Satre, recreation safety coordinator, Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319-0034, (515)281-8652. An Iowa Recreational Safety Training Instructor Application form will be sent to each applicant.

Our Apologies

Our sincere apologies to CONSERVATIONIST *readers who found it difficult to understand our story entitled* The Mallard *found on page six of the February 1989 issue. In the production process, the story's ending was mistakenly placed at the bottom (5 lines) of the first column and the top (12 lines) of the second column making the story rather difficult to follow and consequently leaving an unfinished sentence at the end.*

NWF'S 1989 Conservation Directory Now Available

The National Wildlife Federation (NWF) has released its *1989 Conservation Directory*, the most comprehensive listing available of organizations, agencies and officials concerned with natural resources.

This year's 331-page directory contains the names of more than 12,000 individuals and 2,000 organizations in the United States and 113 other countries. Federal and state officials, committees and agencies, in addition to hundreds of citizens' groups, are listed.

Each entry includes the address and telephone number of the organization, as well as each organization's leaders. The directory provides an index covering 68 environmental subject areas, from acid rain to zoology. Also, for the first time, the directory contains a publications index, listing the publications of citizens' groups and government agencies.

The *1989 NWF Conservation Directory* can be ordered by writing to: *Conservation Directory,* National Wildlife Federation, 1400 16th Street, N.W., Washington, DC 20036. The cost is $15 per book plus $3.25 for shipping charges per order, regardless of the number of books ordered.

Classroom Corner

by Robert P. Rye

Help celebrate National Wildlife Week March 19 - 25. This year's theme is "Predators — They're Part of the Picture."

This year, many students are studying predators. Recognizing these animals is part of the picture. The loss of any predator changes the environment and its plants and animals. The following true or false questions will lead you to a greater knowledge of a family of the smaller-sized predators.

1. The weasel family generally has small, long, slender bodies, short legs, elongated heads, round ears, and short fine fur.
2. All weasels are carnivores (eat other animals).
3. Weasels have no predators.
4. The weasel family can spray their musk.
5. The long-tailed weasel may reach a total length of 17 inches.
6. The weasel's coat color is dark brown with white underneath. The long- and short-tailed weasels also have black on the tip of the tail.
7. The long-tailed weasel is found in woodlands, field edges, brushlands and near water.
8. Weasels are quick and ferocious predators which hunt primarily by scent.
9. The short-tailed weasel prefers open country around woodpiles, stone walls and old buildings.
10. Least weasels prefer wetlands and may be found in bogs and marshes.
11. The North American Indian believed the least weasel was bad luck.

ANSWERS:

1. True 2. True 3. False (hawks, eagles, owls, foxes and domestic cats) 4. False (can only release it) 5. True 6. False (only in summer, turns white in winter, called ermine) 7. True 8. True 9. True 10. True 11. False (good luck, wealth and power)

COUNTY CONSERVATION BOARD FEATURE

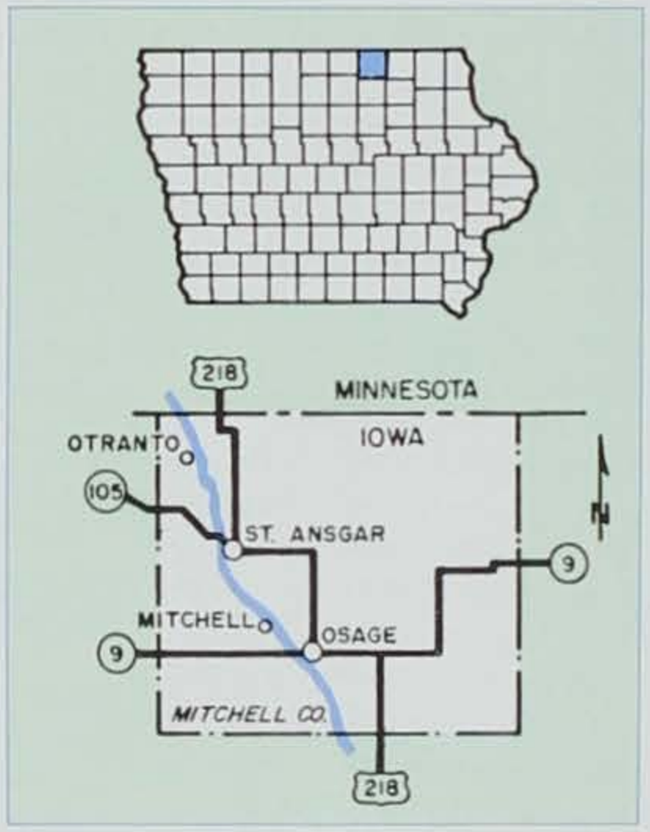
Jewel of the Flats by Milt Owen

Webster's dictionary defines a jewel as a "highly valued object." In the case of the Cedar River, as it winds its way through the flat farmlands of north-central Iowa, that description could not be more appropriate. In Mitchell County, with 85 percent of its 299,000 acres devoted to crop production, the Cedar River truly becomes a very special jewel—something to be valued and protected, and enjoyed by all.

So, come along as we travel the Cedar River as it flows through Mitchell County — from the Minnesota-Iowa border to Osage where the Cedar River leaves Mitchell County on its way to the Mississippi River.

As the Cedar River enters Iowa, a small dam downstream at the town of Otranto slows the flow of the water. Before we reach the dam, however, we pass by the sites of two long-forgotten, water-powered grist mills. Today, nothing remains to mark the location of mills and dams constructed in 1856 and 1876 along this section of the river. Even the original location of Otranto has disappeared, and, today, is marked only with a single farmstead and courthouse records showing a plat for a town that was never to be.

Arriving at Otranto, the original dam, built in 1876, powered a three-story grist mill, but has since been replaced with the present structure which creates a scenic pool adjacent to Otranto Park. The park is located on the east bank just above the dam and offers fishing and boating accesses, as well as camping, water and rest room facilities. A short 15-minute float downstream brings us to the Cedar Block Wildlife Area. Purchased in 1986 with assistance from habitat stamp funds, this 40-acre site will be



developed to provide upland habitat for the area's wildlife populations. Back on the water, keep an eye out for mink, muskrat, beaver, deer, fox, herons and wild turkey which frequent the river banks. Or, if you are an angler, no finer smallmouth bass waters can be found anywhere. Little evidence remains, but a keen eye and review of a Mitchell County history book may help you find Wherry's Ford where the stageline from St. Ansgar to Austin, Minnesota, crossed the river long before a bridge was available.

Another hour and a half south brings us to the Hamlin Garland Wildlife Area. This 120-acre public hunting area has something for everyone. For history buffs, the area was named in recognition of Hamlin Garland, the author who, as a boy, lived in Mitchell County in the 1870s and later wrote about pioneer life on the prairies. His books are filled with boyhood stories of the county.

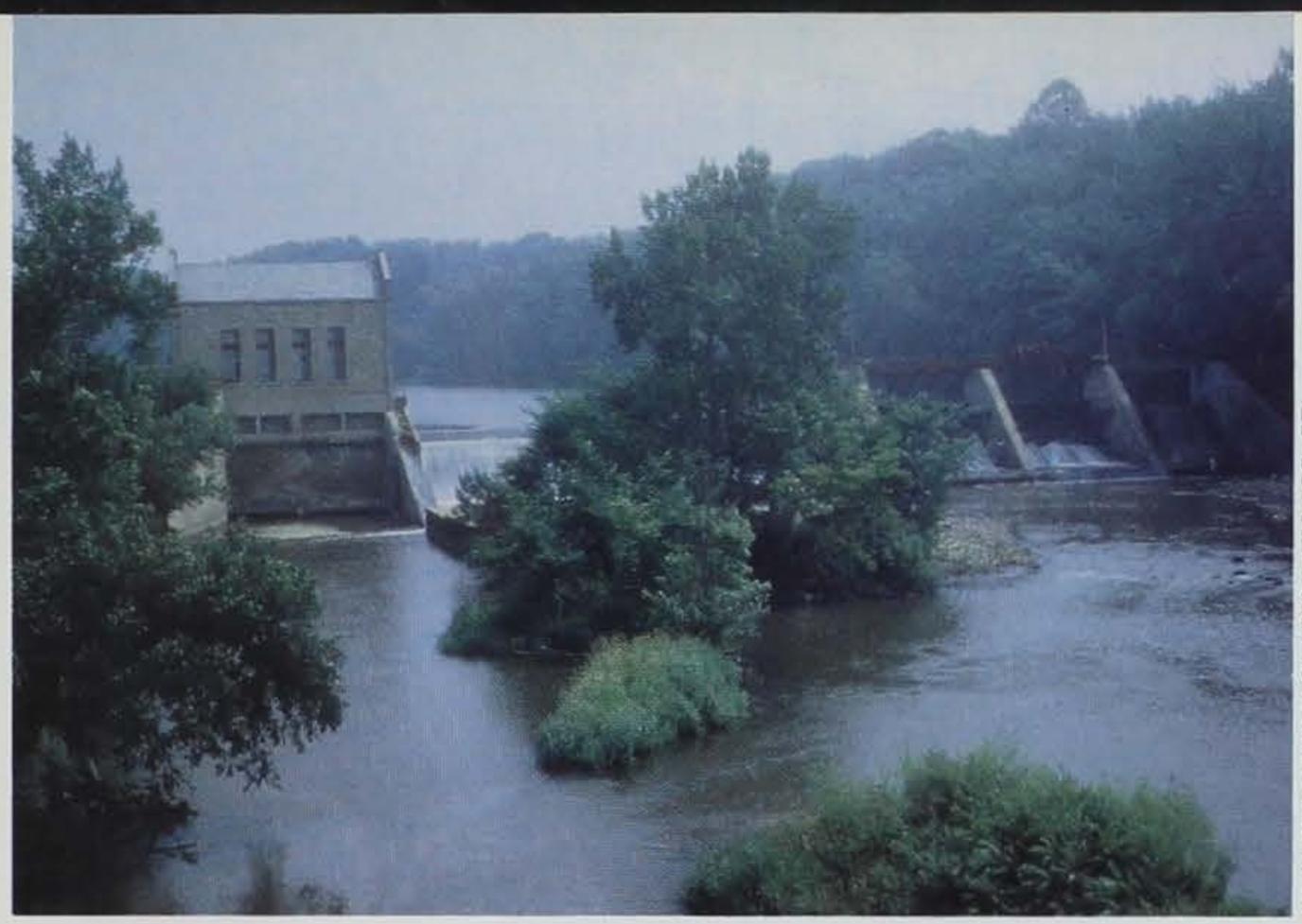
For hunters, the area contains a 30-acre marsh, a quarter mile of the Cedar River and nearly 60 acres of upland timber, attracting a wide variety of game species. The area is also a haven for people who love wildflowers, hiking, photography and cross-country skiing, as both woodland and prairie plants bloom along the one-and-a-half-mile trail system groomed for cross-country skiing in the winter.

Leaving Hamlin Garland Wildlife Area and traveling another hour downstream, the waters begin to slow a second time. Located just southwest of St. Ansgar is a second dam which, until recently, powered one of Iowa's last water-powered mills. The Cedar River has spilled over a dam at this site since 1855. Although this is a privately owned dam, the public is granted access for fishing and portage on the west bank.

Below the dam, the richly oxygenated water barely has time to stop churning before starting to slow for the third time. Six miles downstream is another dam, but first we should stop to wet a hook as we pass over excellent bass, crappie and catfish habitat, or stop for a break at Halvorson Park 30 minutes downstream. The park has a lot to offer any river traveler — camping with electricity, running water, rest room facilities, playgrounds, and a concessionaire offering a variety of services from canoe rental to bait and snack items.

Although still several miles downstream, the Mitchell Dam has already slowed the river to a near standstill, and some work is needed to paddle downstream to the dam. The waters become wider and deeper, but fishing is still great.

Two hours downstream at the town of Mitchell, we can truly



MITCHELL COUNTY CONSERVATION BOARD

Dam and powerhouse at Mitchell.

appreciate the meaning of "water-powered." The river drains 825 square miles, and its power, even during normal flows, is impressive. Built in 1925, the 18-foot-high dam provided electrical energy to surrounding homes and farms until 1961 when Interstate Power deeded the site and adjacent properties to the Mitchell County Conservation Board for use as a park and recreation area. Today, Interstate Park offers camping, boat accesses above and below the dam, rest rooms and picnic areas.

The dam is impressive with its two flood gates and massive spillway, but the powerhouse, built in 1925 to house the electric turbines and generators, is truly a unique structure. Built of native limestone, some of which was reused from the old Paragon Woolen Mill built on the site in 1865, the powerhouse was accepted to the National Registry of Historic Places in 1978. Inlaid in the north wall of the building is an original millstone taken from a flour mill also located at the site as early as 1856.

Downstream, the Cedar River remains wide, but its waters are swift and much more shallow. The basin is deep and dotted with jagged limestone outcroppings along the east bank. Also along the east bank, a county road between Mitchell and Osage offers easy access for anglers and sightseers interested in a scenic drive. Two public access points and a public hunting area are located along this section of the river. Bennett Access is nearly 30 minutes downstream from the dam, while the Highway 9 Access provides canoe access to the river.

The 100-acre L. R. Falk Wildlife Area provides a combination of upland and waterfowl hunting opportunities. Donated to the Mitchell County Conservation Board in 1986 by the L. R. Falk Construction Company, L. R. Falk Wildlife Area is a multi-purpose area. Habitat types include upland timber, old fields, food plots, and shallow limestone quarries which are being improved for waterfowl habitat. Spring and fall visitors along this section of the river may observe numerous species of migratory hawks, and bald eagle sightings are common.

Traveling another 30 minutes downstream, we arrive at Spring Park. An Osage city park, Spring Park is true to its name and contains a picturesque enclosed spring which flows more than 700 gallons per minute. The park is unique in several other aspects as well. Originally started in 1894 as a private park and campground, it was eventually deeded to the City of Osage for public use. Although a city park, it is located more than one mile outside the city limits of Osage. The park offers excellent campsites, rest rooms, canoe access and picnic areas.

From Spring Park, the basin remains deep and heavily timbered, but the stream is shallow and swift as rock riffles become more frequent. Another hour on the river brings us to the last public access before entering Floyd County. The T-38 Access, located one mile south of Osage, is a popular fishing and canoe access for this section of the river.

The Cedar River, jewel that it is, is not without flaws, however. Increased crop production in the watershed during the past 40 years has increased soil erosion and resulted in silt deposits along all sections of the river, but particularly in the impoundments created by the three dams. Silt deposits have eliminated favorite fishing spots and restricted boat access in several areas.

These problems have not gone unnoticed by local individuals. Organized in 1986, the Cedar River Preservation Foundation immediately began working with the Soil Conservation District and the Mitchell County Conservation Board to promote permanent soil conservation practices throughout the watershed. These efforts have already produced plans or actual installation of conservation practices on more than 6,000 acres. Combined with the Conservation Reserve Program, which has idled 4,000 acres for at least 10 years, reduction of soil erosion in the watershed may soon become a real possibility.

Although our travels on the Cedar River through Mitchell County are at an end, the river's journey has really just begun as it meanders more than 400 miles through 10 additional Iowa counties before joining the Iowa River in Louisa County just 30 miles from the Mississippi River. County and state accesses, as well as recreational and historical areas, are common sites along the Cedar River. So, plan your float trip down the river, stop along the way, and enjoy the value of this precious resource — the Cedar River.

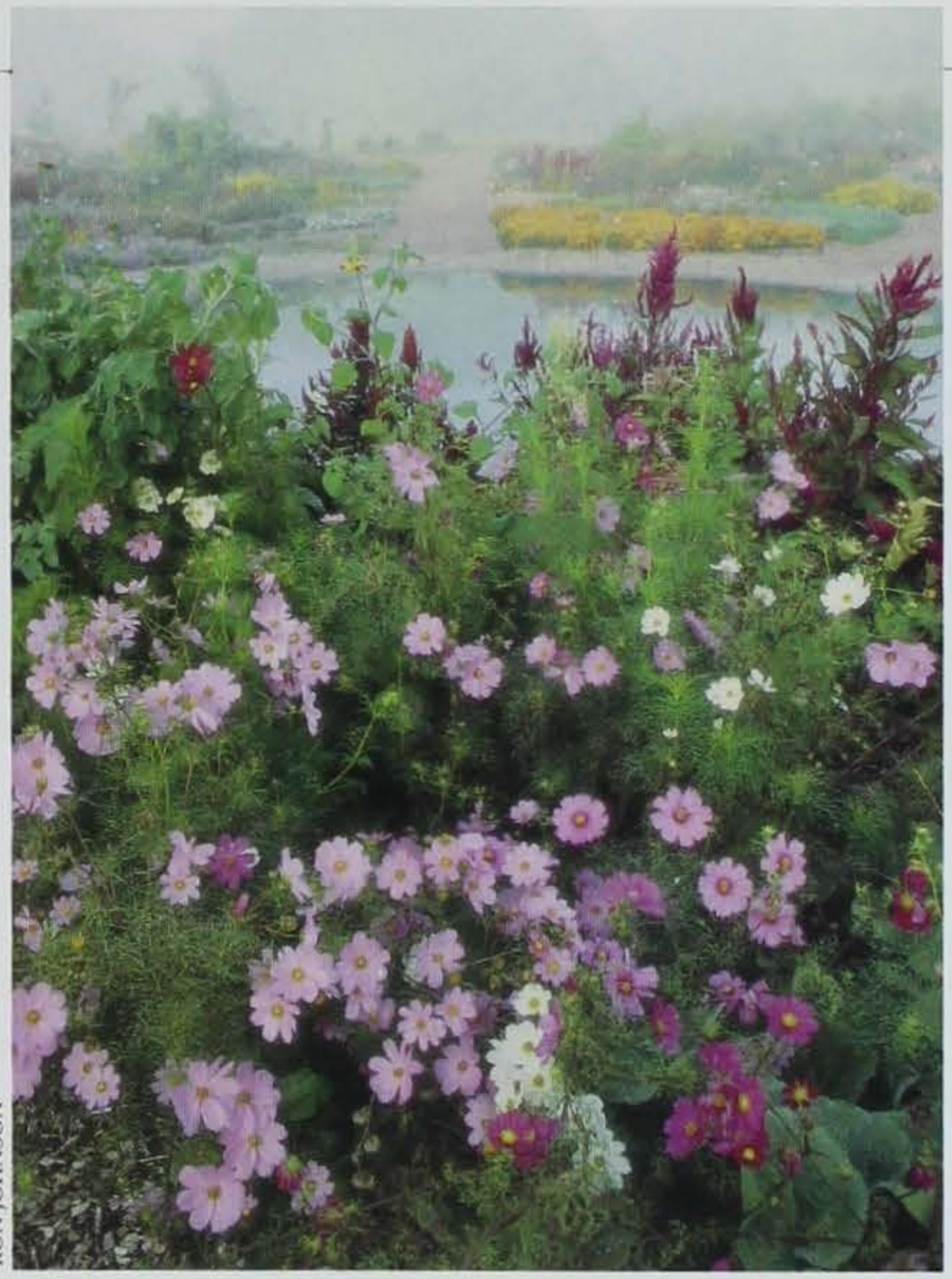
Milt Owen is the director of the Mitchell County Conservation Board.

This Spring, Garden For Wildlife

by Laura Spess Jackson

When you garden for wildlife, your harvest is boundless. If you plan your wildlife garden with your family, you sow the seeds of understanding wildlife and its needs with another generation. You provide the opportunity for another generation of people to watch and enjoy wildlife while providing the habitat necessary for another generation of wildlife to raise its young. You can attract a colorful array of birds, butterflies, mammals and other wildlife to your property and enjoy the daily and seasonal rhythms of their lives. You will discover the names of a variety of plants and learn how plants and animals interact. While landscaping for wildlife, you can also eliminate some backyard problems and decrease the time needed to mow your yard. Additionally, like any garden, a garden for wildlife can be designed to fit any size of yard or budget.

KEN FORMANEK



RON JOHNSON

A wide variety of plants provides wildlife with a variety of areas to nest, roost and find protective cover from bad weather. Along with the plantings, be sure to offer some source of water.

Across the U.S., more and more people are watching, feeding and photographing wildlife or planting their yards for wildlife. According to a 1985 survey on hunting, fishing and wildlife-associated recreation, 69 percent of Iowans enjoy these types of non-consumptive activities in their own residential area. More than half of Iowans feed wildlife and nearly 20 percent maintain natural areas for wildlife. An astounding 43 percent who enjoy wildlife in their residential area, participate in one or more of the above non-consumptive activities, 50 to 200-plus days per year. Thus, our yards can potentially provide more recreational opportunities to enjoy wildlife than most two-week vacations to wilderness areas.

To begin landscaping for wildlife, first decide which types of wildlife you would like to attract. Most people are interested in attracting songbirds first. Later, many people decide to add plants to attract butterflies and special birds, such as hummingbirds. People who overcome their initial dislike of nature's "uglier" animals might also add areas for bats, snakes, lizards and other less-popular animals.

Second, review your neighborhood. Determine the overall habitat surrounding your yard. You might live in a neighborhood that is mostly wooded, surrounded by rowcrops, or has pole-sized to large, mature trees. If you live in a wooded area, it would be easiest to attract woodland wildlife. Likewise, if you live in an open area or newer subdivision, landscaping for grassland or shrubland species would be most successful. Once you determine the surrounding habitat type, learn more about the wildlife that tends to live in the habitat. Write down the names of birds that you observe in your area. Then you can specifically plan to add plants or structures to attract those species to your yard.

As you tour your area, note which trees, shrubs and flowers look healthy in your neighbors' yards and which appear stressed, diseased or dying. This will give you an excellent clue to which plants might or might not flourish in your yard because of similar soil, soil compaction, salt runoff, chemical drift, moisture or other conditions. You should know what kind of soil is in your yard. The county Soil Conservation Service should have a map of soils in your county. If your yard has had top soil removed or fill material added during the development of your neighborhood, you might want to contact the county Extension Service to test your particular yard.

During the final review of your area, note which spots are sunny, shady, wet or dry in your yard. Later, when choosing plants, you can match the type of plant with your soil and various site conditions, and consequently increase the chance of survival for your plant investment.

LAURA JACKSON

RON JOHNSON

When gardening for wildlife, avoid planting everything in rows. Corners and hedges provide dense cover for wildlife to raise their young and to avoid chilling winds.

Step three in landscaping for wildlife is to map your yard. On a piece of graph paper, roughly to scale, draw all the structures in your yard—the house, shed, swing set, kennel, power line, septic tank, fence, sidewalk, driveway, etc. Then add all the vegetation that might already exist in your yard. Next, think about how you use your yard. Do you need an open space for children or pets? Do you want a vegetable garden? Do you work on cars in the yard? Where do you normally walk when going from point A to point B? As you are thinking about the yard, think of views that you enjoy or might wish to screen. Also note trouble areas such as wet, steep, narrow or lumpy areas that are difficult to maintain. Armed with this information, you can make sure your new landscape design is compatible with how you and your family use the yard, solves some of your current problems and avoids future problems. Having a map of your yard will also help you realistically plan how many and where additional plants might be added. A map will also provide an ongoing record of what has been planted through the years which will reduce unwanted duplications or failures. The map will assist you while planning your planting budget and can make you look like a botanical whiz when friends and neighbors ask, "Gee, what kind of plant is that?"

Now it is time for designing your yard for wildlife. No matter what type of neighborhood you live in, you need to provide food, cover, space and water to attract wildlife. Wildlife requires these four elements to survive in the wild as well as your yard.

Plants are the primary means for providing food and cover. To provide an adequate supply of food, you need to provide a diversity of plants. Select plants which fruit during different times. Plants such as cherries and serviceberry (Juneberry) provide an early summer meal; dogwoods and mountain ash provide fall foods; and crabapples, hawthorns, grasses, perennial flowers and nut trees provide food through the winter. Having a variety of plants also provides wildlife with a variety of areas to nest, roost and find protective cover from bad weather. Conifers are an important addition to any yard because they provide essential winter cover for wildlife.

By planting a diversity of trees and shrubs in your yard you will also have the benefit of a diversity of flowers, scents, fruits, color, contrast and texture in your yard to make it more aesthetically pleasing. You will also reduce chances a disease will completely denude your yard. To further enhance the aesthetics of your property, avoid planting everything in rows. Scallop the lines of your shrubs, flower beds or prairie plot. Plant a circle or cluster of vegetation and round out square property edges. Cluster plantings, naturalized corners and hedges, two or more plants wide, provide dense cover for wildlife to successfully raise their young and avoid chilling winds. Scalloped edges and paths (particularly around prairie plots) will enhance the contrast between mowed and

Selected Plants Which Provide Excellent Seasonal Foods

Summer Food
Serviceberry (downy, bartram, shadblow, alleghany)
Red mulberry (best in large lots away from buildings)
Wild plum
Cherry (pie, choke, black, nanking, bush)
Elderberry
Grape

Fall Food
Dogwood (gray, red-osier, round-leaved)
Ash (green, white, black)
Apple Virginia creeper
Mountain ash (American, European)

Winter Food
Hackberry
Hawthorn
Russian olive
Red cedar
Crabapple (red spendlor, Siberian)
Highbush cranberry
Sumac (smooth, staghorn)
Nut trees (oak, hickory, walnut)
Bittersweet
Flowers (asters, black-eyed Susan, coneflower, goldenrod, marigold)
Grasses (bluestem, Indian grass, sideoats grama, switchgrass)

RON JOHNSON

RON JOHNSON

unmowed areas and subtly let people know you did not "just forget" to mow the back half of your lot.

With good planning, you can locate a prairie plot over the lumpy section of your yard, plant shade-tolerant perennial flowers or a grape trellis in shady, narrow areas, and plant permanent ground covers on steep slopes, to eliminate mowing in difficult areas.

While drawing your tentative plans on the graph paper, draw shrubs at the height and width they will reach upon maturity. For shade trees, draw them at three-quarters their mature size. This will help you to recognize potential conflicts with buildings and powerlines and accurately determine how many plants are necessary.

Lastly, while selecting plants and designing your yard, make sure you leave an open area where you can view wildlife from the comfort of your favorite window. If you close off all of your vantage points, you will not be able to enjoy the species that you worked so hard to attract.

To finish landscaping for wildlife, supply some source of water at least during spring, summer and fall. Water can be provided by regular watering of the lawn, creating a holding puddle at a gutter outlet, an upside-down garbage can lid, regular bird baths or a mini-pond.

After you have tentatively designed your yard, the next step is to review your time and money allocation. Remember, you do not have to plant everything at once. Since shade trees are slow growing, you may want to establish them first. Again, because trees are slow growing you may want to choose nursery stock that is already several feet tall, even though this larger stock costs more. Shrubs will start looking like "real" shrubs after three years, even if you start with bare-root stock.

Flower beds or prairie areas can be started either by seed or potted plants. Again, seeds are cheaper but the desired affect will take longer to establish. Many prairie plants might not bloom for the first two years. During that time it may be difficult to identify the young prairie plants. Additionally, weeds will try to smother your prairie plot just like they do your garden. Consequently, you will need to control weeds for the first two or three years until the prairie plants can out-compete and control the weeds. Since most people are unfamiliar with young prairie plants, you may want to start seeds in potting trays, so you will recognize the young plants later when weeding. Remember to check local mowing ordinances before starting your prairie. Your best protection against "weed patch" complaints is to inform your neighbors about your wildlife plan.

Finishing touches to any yard landscaped for wildlife include bird feeders and bird houses. Later you might also want to add a bat house, brush pile for ground feeding birds and mammals or rock pile for chipmunks and reptiles. For butterflies, plants in the daisy, carrot and milkweed family are excellent sources of adult and larval food. Even if all you have is a patio, you can provide potted flowers for butterflies, a small window bird feeder and a dish of water for wildlife.

To help start landscaping for wildlife, biologists with the Nongame Program have developed two plant packages that are available through the State Forest Nursery. The songbird package is designed for suburban yards and includes one white pine, two nanking cherry, five amur honeysuckle, six ninebark and six serviceberry seedlings for $12. This provides 60 to 90 feet of hedge plants, plus a conifer for winter cover. The wildlife package contains 50 green ash, 50 Russian olive, 50 Scotch pine and 50 serviceberry seedlings for $22. To order seedlings or for additional information, call the State Forest Nursery at (515)233-1161.

Gardening for wildlife provides year-round and life-long benefits for both people and wildlife. For additional information on landscaping for wildlife, contact the Nongame Program, Route 2, Ledges Road, Boone, Iowa 50036; (515)432-2823.

Laura Spess Jackson is the urban biologist for the department and is located in Boone.

F