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FRONT COVER: The colorful ring-necked pheasant is Iowa's most popular game bird. This year's prospects are somewhat dim, however. See "Hunting Forecast" on the following pages. — Photo by Ron Johnson.

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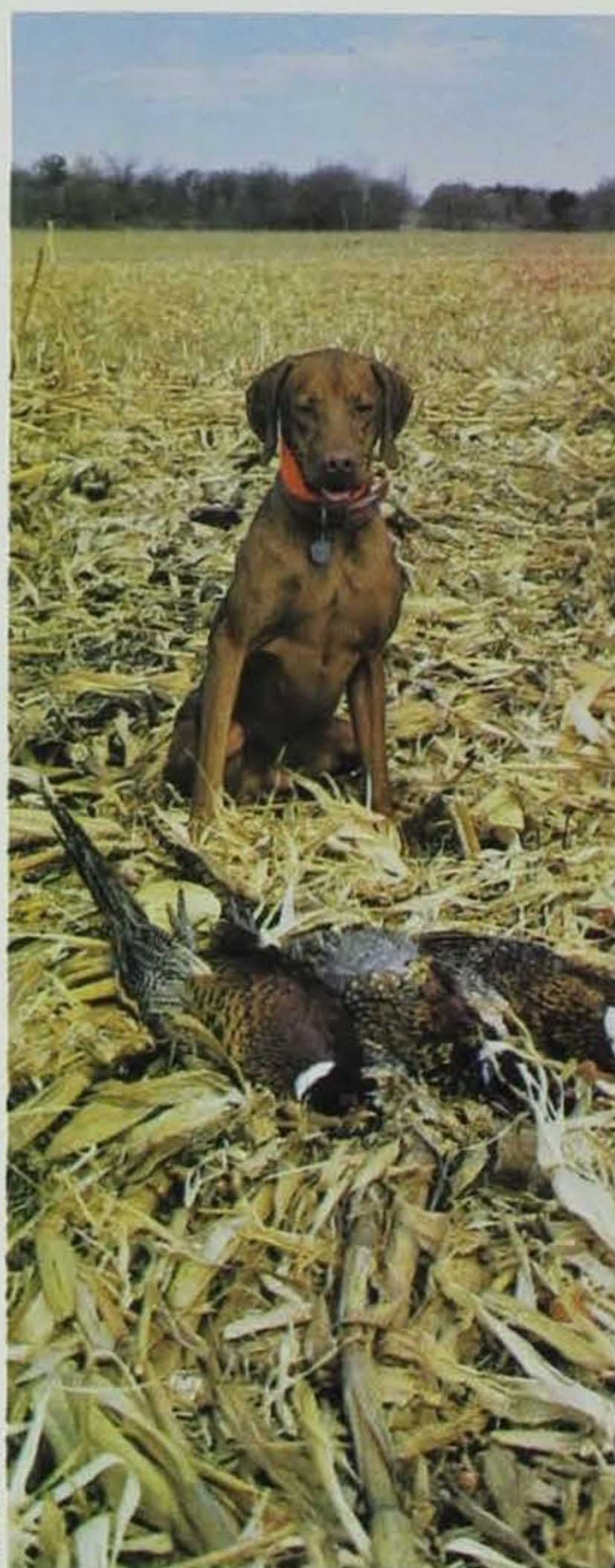
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Ken Formanek

"If you don't like the weather in Iowa, just wait five minutes and it will change." How many times have you heard this terse comment about the most unpredictable aspect of living in the Midwest? While you may have related weather problems to the size of your heating or cooling bills, or the status of crops, the perceptive outdoor person also realizes that seasonal weather throughout the year affects his/her hunting opportunities. This will be especially true in 1984.

Our wildlife populations suffered a "double whammy" this year — a tough winter followed by a generally poor nesting season. Record snowfalls came in November in northern Iowa, followed by ice storms, periods of bitter cold and blizzards statewide from December through early March. The weather improved in late March and early April, but temporary warm, dry conditions gave way to a cold, wet nesting season. Heavy rains and cool temperatures caused some loss of both nests and young of all our ground-nesting game birds. The western third of the state, and areas of north-central, central and east-central Iowa were most affected.

Predicting the availability of wildlife to hunters is a chancy business. Probably no task in wildlife management is more difficult than estimating wildlife abundance. Wildlife biologists know that harsh winters result in wildlife losses from exposure and starvation, and that cool, wet springs mean poor

HUNTING



Lloyd and Gaylan Crim

weather in and it will have you the most g in the e related of your status of r person weather her hunt- be espe-
nesting success for ground-nesting birds. Translating this knowledge into the specific effects of a given blizzard or hunderstorm is most unpredictable; many winter effects are localized and wild animals in good habitat often safely ride out the most severe storms. The following represents the best available assessment of the outlook for hunters in 1984.

Deer

White-tailed deer are probably least affected by Iowa weather of all our nuntable wildlife, and the deer hunting forecast for 1984 is excellent. The deer herd is healthy, with excellent population densities in most areas. Any-sex license quotas have been increased by about 25 percent from 1983 in an attempt to stabilize deer population levels. It will be hard to top the record high deer harvest of over 35,000 last fall, but with good hunting weather and an expected 110,000 or so shotgun hunters and archers, it could be achieved. Season dates for 1984 will be December 1-4 and December 8-14 for the shotgun hunter, October 6-November 30 for bow and arrow, and a new special muzzleloader-only season will be held December 15-21. Firearms hunters had to choose between the shotgun and muzzleloader seasons during an August-September application period.

Iowa produces many trophy-sized bucks because a nutritious food source

reduces winter stress. Trophy bucks can be harvested in any portion of the state containing good deer habitat.

Turkeys

About 3,500 shotgun hunters and 500 archers will pursue wild turkeys this fall in expanded zones in southern, northeastern and western Iowa. Fall hunting is for birds of either sex and is best when plenty of young, inexperienced birds are available. Turkeys generally came through last winter in good condition in most parts of the state and had a reasonably good hatch, despite a rainy and cool early nesting season. Good numbers of turkeys can be found in all zones, as evidenced by the nearly 50 percent success rate posted by Iowa's shotgun turkey hunters most years. Archers will see lots of birds, but because they are handicapped by having to move when drawing for a shot more than experienced turkeys will tolerate, their success rates will be five percent or less. The shotgun season runs from October 16-28, and archers may hunt from October 6-November 30. Shotgun permits were drawn during an application period in mid-summer, but archers can buy licenses from the commission until the end of the season.

Squirrels

Squirrels also survived the weather better than our game birds. Squirrels are an under-utilized resource with relatively light hunting pressure exerted in

nearly all squirrel timbers. Squirrel harvests are relatively constant between 750,000-1 million a year, and a harvest in this range can be expected again this year. Most squirrels are taken incidental to other types of hunting. The smaller, more active gray squirrels can be found in larger timber tracts in the eastern half of the state, while the more common fox squirrel is found throughout Iowa wherever a few trees are found. The hunting season opened September 3 and runs through January 31, 1985. Bag limits are five daily and ten in possession, both species combined.

Grouse, Woodcock

Ruffed grouse and woodcock are also lightly hunted in Iowa and most are confined to the northeast corner of the state. Grouse populations have been down the last two years and much will depend on nesting success this year. Populations should be up from the past two seasons but not yet at the excellent levels encountered in the early 1980's. Ruffed grouse season is open from October 13 through January 31, 1985, with bag and possession limits of three and six of either sex.

Woodcock are migratory birds whose numbers depend on nesting success in the Great Lakes states and Canada. Success on any hunt depends on the timing of the migration. Hunting pressure is so light here that woodcock hunters should notice little difference in numbers from past years. Woodcock

G FORECAST 84

By Terry Little
and the
Wildlife Research Staff



Bob Sheets



Ken Formanek

Hunting seasons for woodland species such as turkey, squirrel and deer should be excellent if weather cooperates.

season runs from September 15-November 18. Limits are five daily and ten in possession.

Pheasants

The forecast is most uncertain for upland game birds, because of the weather problems mentioned previously. Roadside surveys indicate a 12 percent decrease in pheasant numbers statewide from 1983. We harvested about 1 million pheasants last year, one of the lower kill figures for the past 20 years. The final tally for 1984 will probably be about the same. In general, the southern part of the state will provide the best hunting in 1984. This season will open on November 3 and run through January 1, 1985, with a daily limit of three roosters and six in possession.

Quail

Hunters won't find bobwhites as plentiful this fall as they did during the 1983-84 season. Statewide quail numbers are down substantially — some 57 percent from 1983. Many quail perished due to starvation and exposure last winter. In some areas, mortality approached 90 percent of the 1983-84 pre-hunting season population.

The best areas for quail this fall will definitely be in Iowa's southern two tiers of counties. Because studies have shown that mortality from hunting generally does not adversely affect quail populations, tentative season dates are basically unchanged from last year. Quail season will begin November 3, and extend through January 31, 1985, with daily bag and possession limits of eight and sixteen quail respectively.

Gray Partridge

Iowa's least pursued game bird, the gray partridge or "Hun," was apparently unaffected by unfavorable weather conditions. Surveys indicate a 60 percent increase for this hardy species.

Hunting for Huns is restricted to that area of Iowa above I-80, and the best populations will be found west of I-35, roughly the northwest quarter of the state. Hunters willing to travel and cover some ground will find plenty of action. Season dates and bag limits are the same as those for quail.

If weather cooperates, waterfowl hunting could be good despite poor production in Canada.

Cottontails

Cottontails came through last winter in good condition. Favorable weather for rabbit production in July and August should provide excellent numbers of rabbits this fall in good habitat areas. Hunters harvested 720,000 cottontails last season. Cottontails continue to be underharvested in Iowa, with only 48 percent of Iowa's licensed hunters pursuing them. Anyone looking for some sporty hunting, particularly after the first few snows this winter, should not overlook rabbits.

The hunting season for cottontails this fall begins September 1, and extends through February 28, 1985. The entire state is open to hunting with shooting hours from sunrise to sunset. Daily bag and possession limits are ten and twenty respectively. Iowa's southern three tiers of counties will again provide excellent rabbit hunting this fall and winter. Other good areas to find cottontails will be in brushy areas along rivers and streams throughout the state.

Furbearers

Furbearer populations continue to do well despite deteriorating habitat and increased pressure from hunters and trappers. Furbearers that are hunted and trapped are very adaptable to most conditions they encounter. Fall and winter weather actually affect the success and amount of hunting and trapping pressure exerted on furbearers more than they affect the animals themselves.

Fox numbers will likely be down somewhat this year. Traditionally, when snow conditions like last winter's exist, and hunting is good, fox populations decline and success is down the next year. Similar circumstances occurred for coyotes.

If we have drier, milder conditions this fall and winter, trapping success will increase and hunting success will decline. Seasons are set so that, over a period of years, trappers and hunters will have equally successful seasons.

Raccoon populations have been thriving despite the fact that 250,000 animals have been harvested annually for the past 10 years. Despite this high harvest, raccoons appear to be at an all time high according to the annual spotlight survey. Given mild fall and early winter weather, raccoon hunters and trappers will have excellent harvest conditions.

The mink, muskrat, beaver, badger, opossum and skunk population numbers will be more than adequate for trappers. One could expect muskrats to be lower in most marshes due to their being on the downside of a peak population three years ago.

Muskrats, mink and perhaps beaver may have suffered some losses from spring flooding of bank dens, but their numbers will still be high enough to provide good trapping.

Low beaver pelt values for the past several years have allowed beaver numbers to increase to the point that the



C. Thoenhaus

agency receives numerous damage complaints. Beaver pelt prices are still expected to be so low that only the die-hard beaver trapper will pursue these animals to any degree.

Pelt prices for all other furbearers are difficult to predict, but they should be very similar to those paid last year.

Harvest seasons for mink, muskrat, raccoon, badger, opossum and striped skunk, will be from 8:00 a.m., November 3-January 20, 1985. Red and gray fox seasons will open 8:00 a.m., November 10-January 20, 1985. Beaver trapping will begin 8:00 a.m. November 3 and run through April 14, 1985. A special beaver season runs from December 29 through February 24, 1985, only on the Upper Mississippi Fish and Wildlife Refuge.

Waterfowl

Continental waterfowl populations are suffering from just the opposite problem as our resident wildlife. The prairies of southern Canada, where most of our ducks are produced, are stricken by drought and were unavailable for most duck nesting this spring. The U.S. Fish and Wildlife Service's fall flight forecast indicates duck breed-

ing populations and production are down in the prairie provinces of Canada due to the poor water conditions. Water conditions were better in the Dakotas, but increases in production there will not be enough to offset poor production in Canada. Water conditions and duck production locally in Iowa have been quite good.

For the primary duck breeding areas in the U.S. and Canada, the mallard breeding population estimate is down 16 percent from 1983, and down 30 percent from the 1955-83 average. The estimate for blue-winged teal is up 14 percent from 1983, but down 22 percent from the long-term average. Total ducks (ten species) are estimated to be down slightly in breeding population from last year and down six percent from the long-term average.

Eastern Prairie Population Canada geese that nest near Hudson Bay and migrate through Iowa have had a poor nesting season due to late snows and low nest success. The fall flight will be increased only slightly from the dismal production of last year and will be much below average.

In Iowa, giant Canada geese had a fairly good nesting season, although production for some flocks may be down slightly due to late spring snows or flooding.

In spite of poor production in the North, hunting could still be good this fall if there is plenty of water in our

marshes and reservoirs to hold ducks, and if rough weather arrives soon enough to push ducks and geese out of the North before Iowa freezes.

Iowa's waterfowl season will be split into two seasons and zones again this year. The first season ran September 22-26 statewide to take advantage of early migrating teal and wood ducks. The second season will run from October 20 through December 3 north of I-80, and October 27 through December 10 south of I-80. The zones have different dates because of different timing of freeze-up in northern and southern Iowa. The point system will again be used to determine bag and possession limits.

In summary, the hunting and trapping forecast for 1984 is mixed. Hunters and trappers pursuing forest wildlife should have excellent seasons if weather cooperates when they are afield. Hunters after waterfowl and upland game birds will probably not have a banner year. Some areas will have good hunting, however, and individuals who recognize good habitat and are willing to find spots which still have good bird populations should have a successful season.

Terry Little has recently become wildlife research supervisor for the commission. He holds a B.S. degree from Luther College, an M.S. from Iowa State University and a Ph.D. from the University of Minnesota. For the past ten years he has been a wildlife biologist located at Boone.



Ron Johnson



Ronnie George

Cottontails and gray partridge, two of Iowa's least pursued game, could provide plenty of sport for those willing to try something a little different this year.

STEEL SHOT Behind the Scene

By Richard Bishop

The how's and why's of lead poisoning have been fairly well presented in a variety of articles including the story in the September issue of the *Conservationist* by Jim Hanson. Hanson reviewed the problems with lead shot and various technical aspects of lead poisoning. He also explained why we need to shoot steel shot for hunting waterfowl. Several comments have surfaced during the last year indicating that we have not presented all the available information to the duck hunting fraternity to allow them to totally understand the story behind steel shot.

Some hunters are saying "why the rush — let's take it easy and examine all sides of this issue." They also ask "why force this on us all of a sudden?"

Lead poisoning was brought to the front of waterfowl problems during the early 1960's when waterfowl populations were declining because of poor habitat conditions on the breeding ground. Technical people all across the country started working on ways to end the needless waste of the resource from disease including lead poisoning. When I went to work for the Iowa Conservation Commission in 1965 as a waterfowl biologist, I immediately became involved in a project on non-hunting mortality, with lead poisoning heading the list. We were very much concerned about this problem, and it was felt that it should be high priority to reduce this needless waste of the resource.

The one mallard limit due to low numbers of that species in 1965 alarmed

many sportsmen, and biologists were quite concerned for the future of duck hunting. The first step in solving the low-population problem was to curtail the needless loss of ducks from disease. People responsible for the waterfowl resource responded to this problem by searching for a substitute for lead. This detailed search cost a good number of sportsmen's dollars, but finally industry narrowed down the alternatives to a top prospect of soft iron shot. Tests and more tests were run. Biologists were the most suspicious of all. It took ten years to convince most of them that a viable substitute for lead shot could be produced. Since that time, several advancements have taken place in perfecting steel shot loads. The point is we haven't rushed into anything — rather, we have been quite slow in pressing for the use of steel shot.

Once technical people were convinced that steel was a viable substitute for lead in at least limited situations, a new battery of tests began. Lab tests for performance studied energy delivered, pattern density, shot sizes, muzzle velocity, crippling rates and more. Scientists also went to work solving the problem of barrel erosion which was caused when the iron shot contacted the forcing cone of the gun barrel. A hard plastic wad now keeps the shot from coming in contact with the barrel, thus avoiding any barrel scratching.

Many other tests were initiated in the mid-1960's, including a look at actual performance by a cross-section of hunt-



ers in the field. Reports on this work showed up in a variety of conservation magazines, but apparently many hunters did not read them or chose not to believe the information that was presented. Lead poisoning is not new and the story is getting old for many concerned sportsmen.

Why Shoot Steel?

There is another side to the story, of course. Early arguments against steel were:

1. It causes gun barrel damage.
2. It is ballistically inferior to lead.
3. It is dangerous to shoot.
4. It costs too much.
5. Good steel loads are not available.
6. You can't get reloading components.
7. It cripples more ducks than it saves.
8. You can't kill ducks and geese over 40 yards.

Most of these concerns have been eliminated because of information that has come to light. But certain concerns are still alive and well. The most important ones are the cost of steel, the



"HAWKEYE CANADA'S"

The Artist — John S. Eberhardt

John is a self taught artist and sportsman from the Mississippi River Valley. As an ardent sportsman, he spends countless hours in research, sketching, and photography. He draws on these experiences as he tries to capture, through the sportsman's eye, the excitement and drama of the hunt.

In "Hawkeye Canada's," John captures in a traditional Iowa setting the beauty and splendor of migrating Canada geese, which grace our skies each autumn, on their long journey to the wintering grounds.

John has been painting wildlife fulltime since 1978, and lives on the bluffs overlooking the Mississippi River in Montrose, Iowa, with his wife Jaleen and their two dogs.

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unavailability of reloading components and the belief that steel shot cripples more ducks than lead.

Progress is being made. Reloading components that will allow the reloading of steel shells that are comparable to factory loads are now available. The same shot, the same thick, plastic wads and a suitable powder are now available to the reloader.

The cost of steel is higher, without question. In reviewing price lists from Federal, Winchester, and Remington in comparable loads between lead and steel, steel cost approximately \$3 a box more. With larger quantities of steel being sold, this price differential should come down. I expect that lead and steel loads will soon be comparable in cost, but even at current prices, I ask, "How much is our resource worth?"

The objection that steel cripples more ducks than lead is the one most fervently spoken. It is difficult to get people to believe the data that says crippling is about the same with steel as with lead. All field tests but one support this conclusion. One consideration is that most people cannot kill ducks and geese at ranges over 60 yards, and if they become convinced of this, maybe if some of the "skybusting" that often cripples ducks would cease to take place. If this actually happened, crippling

could be considerably less with steel. My personal experience after shooting two cases of steel shot is that I had fewer cripples, but more of my birds were "shot up." My problem is that I use steel loads in a full choke on ducks over decoys. My pattern is very tight at that range, and I have very few crippled birds. I need to switch to a more open choke to achieve a better pattern.

The bottom line of this entire issue is, what do waterfowlers have at stake? The answer is "the future of waterfowl hunting."

Presently, the mallard population is close to the all-time low of 1965. This is due mostly to poor water conditions across prairie Canada and reduced nesting success caused by loss of habitat and increased nest predation. Other factors include hunting mortality and diseases. Of diseases, lead poisoning is the most serious when viewed on a nationwide basis. We can do little to improve water conditions in Canada other than to contribute to Ducks Unlimited and pray for rain. We have little or no control over wetland drainage in Canada or the number of nest predators. Even when water returns to the breeding grounds, the prior loss of wetland habitat (mainly to agriculture) and the loss of safe nesting cover decreases the

ability of hen mallards to hatch a clutch of eggs.

Hunting, I am convinced, plays an important role in regulating duck numbers. But by no means is harvest the all-important factor. Habitat and nonhunting mortality collectively are more significant. I don't choose to reduce sportsmen's hunting opportunities just because we are unwilling to reduce nonhunting mortality, especially when we have the tools to accomplish this.

In order to help rebuild the waterfowl breeding population, we must either greatly decrease hunting mortality or greatly reduce nonhunting mortality in addition to improved habitat conditions. By shooting steel shot, we will not solve all the problems facing the waterfowl resource, but we can reduce some of this loss and aid in increasing the breeding population.

Duck hunters cannot afford to watch duck numbers decline further. We cannot continue to pollute the environment, nor can we continue to poison bald eagles. In short, the future of waterfowl hunting is at stake. Duck hunters must show their concern and do whatever they can to protect the well being of the resource. They have been the original "evangelists" on resource conservation and they cannot afford to stub their toe at this important moment.

NO-TILL FARMING AND WILDLIFE

By James B. Wooley

When early settlers first broke the Iowa prairie and introduced agricultural crops, the effects were generally beneficial — and not just to the pioneers. As land under agricultural cultivation expanded, wildlife populations prospered from the increased habitat diversity and stable food supply provided by rowcrops. Early farming methods left both waste grain and crop litter on the ground surface and weeds were a fact of life, all protecting the soil from the ravages of erosion. Prairie chickens are a good example of both the positive and negative effects of increasing rowcrop expansion. Their populations expanded rapidly until about 70 percent of the state was being farmed, but by the time 90 percent came under cultivation, prairie chickens were on the way out.

Intensified rowcrop agriculture has spelled not only the demise of several species of wildlife in Iowa, but has also

been responsible for monumental erosion problems in the state. Clean tillage of cropfields in fall and spring have led to major soil losses from the early 1940's until now in many midwestern states. Recently, heightened awareness of this problem by the general public, farm operators and agricultural scientists has led to adoption of conservation tillage practices by many farmers. These reduced tillage methods are designed to leave various levels of crop residue on the soil surface to protect against erosion. While these methods have some benefits for wildlife, the practice of no-till rowcropping probably has the greatest potential from a nesting standpoint. Acreage farmed under no-till methods has increased sharply in Iowa in the past five years, from about 70,000 acres in 1979 to 414,000 acres in 1983 — an average 118 percent increase annually over the period. If this trend in no-till popularity continues, it is

clear that many rowcrop fields across Iowa will present a much different kind of habitat to nesting birds and small mammals than has been available in conventionally-tilled fields in the past.

No-till methods utilize the principle of leaving all residue from the previous year's crop on the soil surface, with new crops planted directly through the residue. Saving soil, however, isn't always the prime consideration for adopting no-till methods. No-till practices are often more economical than conventional methods through reduced fuel inputs and lower machinery costs. Previous crop litter often provides standing dead residual cover that is attractive to birds for nesting. In general, no-till fields are not disturbed for cultivation after planting due to the use of herbicides to eliminate weed competition. This provides a relatively disturbance free environment in which both songbirds and gamebirds can find ac-

Corn residue in this no-till soybean field offers nesting material to a variety of birds including robins (inset).



Photos by Nancy Basore

ceptable nest sites. For this reason, the Iowa Conservation Commission, Soil Conservation Service (USDA), and Iowa State University (Iowa Agriculture and Home Economics Experiment Station) have collaborated since 1982 in funding and conducting a study to determine the effects of no-till farming practices on upland wildlife. While conclusions are not final, some interesting trends have emerged.

The study, based in Adair County in southwest Iowa, has focused on two major aspects — nesting ecology and small mammal populations. Comparisons of nesting by pheasants and songbirds in no-till versus conventionally-tilled rowcrops has been studied by Nancy Basore, a graduate student in Animal Ecology at Iowa State University. Crop fields selected for the nesting study consisted of three no-till treatments — corn planted into corn residue, corn planted into sod residue and soybeans planted into corn residue. Conventional corn fields were studied as a comparison, and all alternate strip cover associated with each study field was examined, including waterways, road ditches and fencerows. Nests were located by intensive searching of each crop row in June and July. Strip cover was similarly searched and nests were monitored to determine their ultimate fates.

Results have been striking. Nest densities in no-till fields have been significantly higher than in conventional fields. Species composition of ground nesters has been similar all three years of the study, with killdeer, mourning doves, robins, western meadowlarks, bobolinks, grasshopper sparrows, vesper sparrows and field sparrows using no-till crop ground. By contrast, only vesper sparrows and killdeer used conventionally tilled crop cover for nesting. Ring-necked pheasants utilized no-till corn and soybeans in corn residue in 1982, and corn-into-sod residue this past season, but did not use conventional rowcrops for nesting. Interestingly, pheasants did not use no-till fields in 1983, and nest densities for songbirds were also lower in that year. The most likely explanation appears to be the abundance of crop fields idled under the USDA's 1983 Payment-in-Kind Program. Nearly 40 percent of all corn ground was idled in Adair County, and many of the fields consisted of corn stalk residue and volunteer stands of weeds, providing attractive nesting cover that may have diluted the number of nests found in no-till.

Some birds appear to have a preference for the type of cover used for nesting. Western meadowlarks and grasshopper sparrows were found in greater densities in fields with sod residue the first two years of the study. Others, such as killdeer and vesper sparrows, were more catholic in their choice of nesting sites, using all four field types and strip cover. Densities of nests in no-till fields were nearly eight times higher than in conventional fields, but were still relatively low when compared to adjacent strip cover. Nest densities in strip cover were about ten times higher than no-till in the first two years of study. This is important information because it indicates that although no-till is much better than conventional fields for nesting, it is not a wholesale substitute for strip cover. Unfortunately, strip cover is vanishing rapidly today as fields are plowed closer to the fence, waterways are farmed through, and roadsides are hayed. These areas are not only important for nesting, but also for rearing of young gamebirds, as foraging areas for songbirds, and as a diversifying element on an otherwise rowcrop-dominated landscape. Yet, there is no doubt that no-till will play an important role in providing nesting areas for birds. It is noteworthy that rates of nest success in no-till were similar to those of nests in strip cover (predators were responsible for most losses). Low densities of nests in no-till, therefore, may be offset by the large number of acres of this type rowcrop, if current trends continue.

Rick Young, another graduate student at ISU, has studied small mammal populations, movements and crop damage in the same cropfield areas. The small mammal studies were begun in 1982 because of concerns that high levels of crop residue might attract or promote high populations of rodents that could damage crops in no-till fields. The treatments examined were the same, except that soybeans-into-corn residue were not included. Grids of live-traps were placed near the center and along the edge of fields during trapping sessions in May, August and after crop harvest. To document movements, live-trapped small mammals were toe clipped for identification and released to provide recapture information. Crop damage was assessed by checking individual corn plants along transects for the first ten days following emergence.

While ten different small mammal species were found using cropfields,

deer mice accounted for about 70 percent of all captures over the two year study period, 1982-83. Thirteen-lined ground squirrels were the only other small mammal captured in significant numbers. Interestingly, small mammal numbers in no-till treatments were not significantly higher than in conventionally-tilled fields, but species diversity did appear to be greater in the no-till treatments. Small mammal abundance was about the same between edge and middle grid locations, and there was little population exchange between those locations. Stable populations of small mammals were present even in central areas of conventionally tilled cornfields where little or no residue was present. Crop damage from rodents was minimal, averaging less than one percent during the two years of study — much less important than insect damage which ranged from five to nineteen percent.

What then will the impact of no-till rowcropping methods be on Iowa's wildlife? To the extent that no-till supplants present conventionally-tilled crop fields, the practice will probably be positive. However, if wildlife cover in previously untillable areas is converted to no-till rowcrops, there may be a detrimental effect. At the same time other unanswered questions remain, such as the effect of herbicides and pesticides applied in no-till and other agricultural situations. Further research in the chemical area will be needed in the future. Small mammal crop damage problems, in the current study did not appear to be a major problem, although individual fields did sustain some losses. Small mammals have posed problems to no-till rowcropping in other states and will be a factor that will need to be monitored and managed by those who adopt no-till practices. Even with these potential problems the use of no-till rowcropping will undoubtedly increase in the Midwest for economic reasons and because of the need to meet tolerable future soil loss levels. For now, at least, no-till and wildlife appear to be compatible, much more so than the conventional farming alternative.

Jim Wooley is a wildlife biologist located at the wildlife research unit in Chariton. He holds an M.S. degree from the University of Maine. He has been with the commission since 1977.

CEDAR RAPIDS BASS MASTERS CONTRIBUTE

The very active Cedar Rapids Bass Masters fishing club, at their April 4 meeting, made a sizable contribution of \$2,800 to the Iowa Conservation Commission. The group presented Park Ranger Randy Edwards with a check for \$2,500 for construction and placement of a boat dock at Pleasant Creek Lake, near Palo. Also, Fisheries Biologist Bob Middendorf received a \$300 check for the club's sponsorship of two teachers to the environmental education Outlook program.

Over the past ten years this club has been a frequent contributor to the commission's fisheries programs and to other related organizations. Along with monetary investments the Bass Masters participate annually in various physical projects to enhance and promote fishing in the area.

In addition to the Pleasant Creek boat dock money and sponsoring a total of four teachers for the Outlook program, other contributions include: \$3,000 for establishment of the Dennis Healy Memorial Scholarship Fund to be used by fish and wildlife students at Iowa State University; \$500 to purchase,

tag and stock largemouth bass in Lake Macbride, near Solon; and a donation of \$360 to the Iowa County Conservation Board for a boat docking facility at Lake Iowa.

Club work projects have included fish habitat enhancement structures at Lake Macbride and Pleasant Creek. Old tire and wooden stake bed devices were constructed and located at various depths at both lakes. A rock-filled gabion was installed for stream habitat improvement at Indian Creek Nature Center in Cedar Rapids. For the past five years the Cedar Rapids Bass Masters have co-sponsored, along with the commission, Youth Fishing Clinics for Cedar Rapids' area boys and girls. The group spends at least \$400 each year for various tackle items to give the participants.

The Cedar Rapids Bass Masters organization is a dual purpose group. Their first interest is in pursuing and promoting the sport of bass fishing; but they are also a civic-minded group, as shown by the aforementioned contributions and work projects.



Iowa Conservation Commission Director Larry Wilson (right) is presented a limited edition "Hawkeye Canadas" print by Ducks Unlimited Regional Director Pat Neuhaus (left). The print is presented to all sponsor members of Ducks Unlimited. The Iowa Conservation Commission renewed its sponsor membership this year by contributing \$32,000 of 1983 state duck stamp money to DU. The original "Hawkeye Canadas" was painted by John Eberhardt, Iowa's Ducks Unlimited Artist of the Year (see example of painting on page 6).

DONATIONS

Ivy Ridge Studio, Bellevue	Paintings and artwork for display cases, backgrounds, and bulletin boards, \$2,800 value
Ardo Keil, Bellevue	Various Indian artifacts and fossils, \$50 value
Dick Keil, Bellevue	Various Indian artifacts and fossils, \$50 value
Ed Putnam, Bellevue	Fossils, minerals, and rocks, \$50 value
McArdle Lumber, Bellevue	Lumber and 20% discount on materials, \$100 value
Edwin Fischer, Savannah, Illinois	Set of encyclopedias and set of children's Book of Knowledge, \$75 value
John Pitlo, Bellevue	Flora and fauna books, \$100 value
Marie Wandersheid, Bellevue	Rocks, minerals, fossils, arrowheads, \$50 value
Theresa Hahn, Bellevue	Soil monolith display of Bellevue State Park Area, \$50 value
Conrad and Eleanor Denning	130 acres of land in Lee County
Burrell and Nel Benjamin	130 acres near Otter Creek Marsh, Tama County
Mr. Erwin Weller, McGregor	Donated use of disc cultivator for wildlife food plot establishment at Pikes Peak State Park. 20 hours — \$160 value
Mr. Wendell Weudlein, Webster City	24 foot John Deere harrow to Brushy Creek State Park, \$200 value
Northeast Iowa Bass Club, Fayette	\$85 for plant materials at Volga River Recreation Area
Fayette Chamber of Commerce	\$100 for plant materials at Volga River Recreation Area
West Union Lions Club	\$50 for plant materials
Fayette Lions Club	\$50 for plant materials
Mr. and Mrs. Bill Dohrman, Fayette	\$50 for plant materials
Iowa Electric Light and Power Co., Boone	Five 30-foot light poles for Ledges State Park, \$150 value
Mr. Elmer Gerdes, Belmond	Eight anchor locks, \$65 value



As a part of the Iowa Conservation Commission's 1984 State Fair activities, the parks section gave away a 17-foot Osagian canoe donated by Hanson Marine, Inc. of Clear Lake. Mrs. Mary Ellen Grace of Des Moines was awarded the canoe by Commission Director Larry Wilson. Also pictured are Muffin and (front to back of canoe) Mike Grace, Erin Will, Elizabeth Grace and Joe Grace. Entrants in the contest had to properly fill out a camper self-registration slip.

TURKEY PRODUCTION UP

Results from the Iowa Conservation Commission summer turkey brood surveys are in and in general turkey production statistics appear to be better than or equal to last year.

Survey reports are sent in by approximately 3,500 cooperating landowners, rural mail carriers and conservation personnel from most of the major turkey range in Iowa.

The percent of hens with broods was up in all regions except the western, with a statewide increase of five percent. The number of young

per adult is also up in all regions except the central, with a statewide increase of eight percent. The decreased production statistics in central Iowa are probably a direct result of the extensive flooding in that zone during the nesting season. Most of the timber in the central zone is confined to narrow corridors along the major river drainages.

The following table summarizes the survey results for the various zones for 1983 and 1984.

CLASSROOM CORNER

Groups at the Conservation Education Center usually have a bird activity some place in their schedule. These can be song birds, upland game birds or waterfowl. Waterfowl sessions usually involve a trip to the captive giant Canada goose flock at neighboring Bay's Branch Wildlife Unit.

It is amazing the number of questions that arise on the trip. Jim Hansen, Iowa Conservation Commission biologist, provided 15 questions to test your knowledge of the waterfowl you might see on a trip to a marsh.

Waterfowl and Waterfowl Management

- Which of the following species does not nest in Iowa?
a. hooded merganser b. bufflehead c. shoveler d. red-head
- Which of these plants is most important as a duck food plant?
a. cattail b. canary grass c. smartweed d. foxtail
- Young ducklings feed heavily on _____.
a. invertebrates b. corn c. grasses d. seeds
- Which of the following ducks nests in cavities in trees?
a. American wigeon b. common goldeneye c. ring-necked duck d. black duck
- The _____ ranks number one in terms of number harvested by hunters in Iowa.
a. wood duck b. blue-winged teal c. mallard d. green-winged teal
- During the duck season in Iowa, red legs on a drake mallard are an indication that _____.
a. the bird did not hatch in Iowa b. it is a separate subspecies c. it came from the Far North d. hormonal changes in the bird have caused the leg color to change

- Baby wood ducks hatched in a tree cavity 40 feet above the ground reach the ground by _____.
a. jumping b. being carried in their mother's bill c. being carried on their mother's back d. flying down after being fed by their parents for a long time
- For marshes such as those in northern Iowa, wetland managers like to maintain a _____ ratio of cover to open water for ducks and other aquatic birds and mammals.
a. 1:4 b. 1:1 c. 1:7 d. 1:0
- The most critical problem facing North American ducks is _____.
a. hunting b. lead poisoning c. loss of habitat d. poaching
- Which goose historically nested in Iowa and has been successfully reintroduced?
a. giant Canada goose b. dusky Canada goose c. lesser snow goose d. white-fronted goose
- By reporting banded waterfowl that they shoot, hunters help to determine _____.
a. migration routes b. survival rates c. relationship of harvest areas to production areas d. all of the above
- Which of the following was the only species of waterfowl to become extinct in North America in historical times?
a. masked duck b. Labrador duck c. Steller's eider d. greater scaup
- Blue-winged teal usually lay about _____ eggs.
a. 4-6 b. 6-8 c. 9-12 d. 13-16
- Which duck would you most expect to find nesting next to a ring-necked pheasant?
a. mallard b. redhead c. lesser scaup d. ruddy duck
- Which duck usually migrates through Iowa first each fall?
a. ring-necked duck b. green-winged teal c. blue-winged teal d. common goldeneye

ANSWERS: 1. b 2. c 3. a 4. b 5. c 6. d 7. a 8. b 9. c 10. a 11. d 12. b 13. c 14. a 15. c



CALENDAR

October - December

October 18	Forestry Field Day	Eden Valley Refuge, Baldwin Clinton County 319/847-7202	November 8	Light Phenomenon By Bob Adams	Algona Little Theater, 7:30 p.m. Kossuth County 515/295-2138
October 20	Don Berry Trail Bus Tour (scenic bus tour through Warren County)	Warren County 515/961-6169	November 10	Moonbeam Walk (evening hike)	Swan Lake State Park Carroll County 712/792-4614
October 20	Fourth Annual Cedar River Turkey Trot	Black Hawk Park Black Hawk County 319/277-1536	November 10	Railroad Trail Talk & Walk	11:00 a.m. to 1:00 p.m. Brown's Woods, Polk County 515/999-2557
October 21	Sipping Cider	Hartman Reserve Nature Center Black Hawk County 319/277-2187	November 10-11	Waterfowl Migration Field Trip to a National Wildlife Refuge yet to be determined (will be an overnight event).	Madison County Conservation Board 515/462-3536
October 21	Fall Foliage Walk, Bear Creek	Meet at the Soper's Mill area 3:00 p.m. Story County 515/232-2516 or 377-2229	November 10-11	Algona Mall Conservation Days Wildlife Photo Contest & Exhibit	Algona Mall 10:00 a.m.-5:00 p.m. Kossuth County 515/295-2138
October 21	Landscaping for Wildlife	Swiss Valley Dubuque County 319/556-6745	November 17	Bird Feeder Workshop	Meet at Warren County Conservation Board Office Indianola 2:00 p.m. 515/961-6189
October 22	"Polk County Camping" program	Franklin Avenue Library 4:00 p.m. 512/999-2557	November 17	Attracting Birds: Winter Preparations	Lost Island Conservation Office 10:30 a.m.-Noon Palo Alto County 712/837-4866
October 26	Halloween Night Hike Family event Call to reserve times if desired.	Little Wall Lake 7:00-9:00 p.m. Jewell 515/836-4410	November 19	The Night Sky: An Evening of Star Gazing	West Bend Golf Course 7:30 p.m. Palo Alto County 712/837-4866
October 27	Halloween Night Hike Family event 7:00 p.m.-9:00 p.m. Call to reserve times if desired.	Briggs Woods Park, Webster City 515/832-1994	November 24	Seasons of a Marsh	Lost Island Conservation Office 2:00 p.m. Palo Alto County 712/837-4866
October 26 or October 27	Star Party/dusk	McFarland Park observatory Story County 515/232-8705	November 25	The Seasons of Union Slough	Union Slough NWR Office 2:00 p.m. Kossuth County 515/295-2138
October 28	Fall Foliage Walk, Robison's Wildlife	Meet at Robison's, Acres 3:00 p.m. Story County 515/232-2516 or 377-2229	November 30 or December 1	Star Party/Dusk	McFarland Park observatory Story County 515/232-8705
October 28	Fourth Annual Hickory Hills Orienteering Meet	Hickory Hills County Park Black Hawk County 319/277-2187	December 1	Wildlife Habitat Development	Location to be announced Warren County 515/961-6169
October 28	Little Maquoketa Indian Mounds Hike	Dubuque County 319/556-6745	December 2	A Prairie Heritage Christmas A Community Open House	Location to be announced. 2:00-5:00 p.m. Kossuth County 515/295-2138
October 29	Animal Life Around Des Moines	Urbandale Library 4:00 p.m. 515/999-2557	December 4	Conserving Soil is Your Choice	DeWitt Community Center DeWitt Clinton County 319/847-7202
November 3-4	DeSoto National Wildlife Refuge and Loess Hills Tour	Meet at Indianola City Hall parking lot 8:00 a.m. Nov. 3. Warren County Call 515/961-6169 for reservations.	December 8	Moon Lite, Ski Nite Cross Country Ski at night	Swan Lake State Park Carroll County 712/792-4614
November 8	Full Moon/Harvest Moon midnight (apple pressing and picnic)	McFarland Park observatory Story County 515/232-8705	December 28	Cross Country Ski Instruction and Tour	Easter Lake Park Polk County 515/999-2557

LEADERS IN CONSERVATION



Robert C. Russell

There are surely thousands of Iowans involved in conservation and outdoor activities who have met or heard of Bob Russell of Iowa City.

Russell's first interest in conservation probably began after his return from service in 1946, with his joining the Johnson County Izaak Walton League. He served that club as secretary, vice president and was president for two years. He also served on their board of directors. He later served as vice president, then president of the Iowa Division of the League. He was hired as executive secretary of the Izaak Walton League in 1964, and served in that capacity for approximately 15 years. (The executive secretary is the only full time, paid office in the state division.) This job also entailed his serving as editor of the Ikes' "Waltonian" magazine.

During that time Russell was also a registered lobbyist in the Iowa Legislature for the Iowa Division of the Izaak Walton League. He is very well respected for his work with these legislators. Russell served a four year term on the State Preserves Advisory Board. Another four-year appointment came from Gov. Ray to the Iowa Water Quality Commission.

He was appointed by both Gov. Hughes and Gov. Ray to the Governors Commission on Outdoor Resources, for a total of eight years. Hughes also appointed him to a firearms study committee.

Bob Russell's work with the Izaak Walton League, the Iowa Legislature, and numerous boards and commissions has left a trail across Iowa from river to river. Among conservationists in Iowa, he will always be known as a tireless leader.



How many times has it been proclaimed that volunteers just can't get a big job done? Fortunately, those who founded Ducks Unlimited didn't listen.

Ducks Unlimited was formed in 1937 to help restore and rehabilitate prime waterfowl breeding grounds in Canada, where over 70 percent of North America's waterfowl are hatched. These grounds were nearly destroyed as a result of the sudden and massive westward expansion of civilization after World War I and the subsequent draining and cultivation of the land. The severe drought of the 1930's also contributed to the decline of continental waterfowl populations.

The majority of DU money is raised through individual memberships, sponsor memberships (those contributing \$250 or more) and fund raising banquets.

Since its inception, DU has completed more than 2,400 wetland restoration projects. These projects have benefited man as well by creating a stabilized water supply for agriculture, industry and municipalities. More than \$237 million has been raised in DU's forty-six year history, \$175 million of which has been spent on wetland improve-

ment and management. This means that the greatest percentage of every dollar contributed to DU has gone directly into project construction.

Presently, National members number approximately 505,000, many of whom have been enrolled by the over 2,900 DU committees. DU's Greenwing program, initiated in 1973 for boys and girls under the age of 18, now boasts a membership of well over 40,000.

DU has reserved some 3,200,000 habitat acres which provide over 13,000 miles of vital nesting shoreline for waterfowl, while at the same time offering refuge to hundreds of other species of wildlife. In 1983 DU raised over \$38 million for wetland habitat restoration and has set a \$44 million goal for 1984.

Ducks Unlimited has recently begun projects in Mexico — primary wintering grounds for waterfowl and other migratory birds. Last year DU announced plans to spend a portion of its money in the United States. Projects are planned for several prairie pothole states in the north-central U.S.

Iowa Ducks Unlimited members should be especially proud of their contributions. Iowa ranked ninth in total income for DU in 1983. Total dollars raised in Iowa amounted to \$1,137,543 last year. Iowa also ranks in the top ten for total contributors and number of greenwings.

Today there are many organizations using private donations and volunteer support for worthy conservation programs. But for raising big dollars fast and funneling them into immediately successful projects, none can match the impressive record of Ducks Unlimited.



Nature Tale for Kids

Robbie and the Old Man



Illustration by Rex Heer

By Dean M. Roosa

He had lived on the same small farm for over seventy years. Now an old man, he was born, raised a family, and was now alone on these few acres that bordered the river in central Iowa.

He knew the name of every plant and bird that lived in the nearby woodland and he took the time to teach these to his children when they were young. He was looked upon with amusement by his neighbors who owned large farms and had the latest in technology. They nudged each other and winked when his name came up or when they saw him riding his ancient tractor, but it was he to whom they went when they found a new weed in their field or saw a strange bird they didn't know how to identify. They shook their heads in complete befuddlement when he planted a portion of the field to prairie vegetation "just for old time's sake," but he saw them occasion-

ally stop and look at the latest prairie flower that appeared.

Many years before he had planted an orchard and through the years had kept it pruned and managed. Every spring one of these old apple trees provided a nest-site for a robin, much to the old man's delight. He was careful not to use pesticides that might accidentally poison the new family. On April 10, give or take an occasional day, he could depend on his robins returning from their wintering ground; by April 20, he knew their nest was completed and by April 25, a clutch of eggs, usually four, was complete and the female was incubating.

This spring he noticed something different about the female robin — she had several pure white feathers on one wing, sort of a birthmark that permitted certain identity. The old man liked to check on the progress of the nest but he received terrible scoldings from worried parents that never accepted his caring presence. The neighbor's cat really caused an

uproar and would get "divebombed" by the parents and by nearby grackles. The old man resented the cat and often muttered drastic words like "shotgun," "trap," and "club," but his gentle nature would not permit any such action. He threw rocks, being careful not to actually hit the cat. All the while, the female incubated, the male sang from treetops proclaiming to the world, and especially to other robins, that the orchard was his and any intruders would face battle. The song was melodious and brought joy and comfort to the old man who was often awakened by it just before sunrise.

Robin's eggs are a very special color of blue-green, unlike those of any other bird. One day the old man noticed the robins were especially upset by his presence. He suspected, and a quick peek into the nest confirmed, that those precious eggs were hatching; two eggs and two helpless, naked baby robins were in the nest. In the following days, the babies doubled their weight several times, and both parents were kept busy making trips to the nearby garden where earthworms abounded. The babies bulged with worms, the nest bulged with babies and the parents bulged with pride. Peace and tranquility abounded in the orchard on the small farm by the river in central Iowa.

Spring thunderstorms in Iowa can be as violent as the late April weather is pleasant. The ominous black clouds that appeared on the western horizon and the sudden calm caused the robins to cease singing and take immediate cover. The sudden, violent downpour, the whipping branches, the gusty winds, all heard by the old man in his house, caused him to worry about the safety of the nest. The next morning the sad small farm owner found two young lying in a puddle at the base of the tree. The other two were drenched, but safe; they dried fast in the warm sunshine and the parents soon forgot the tragedy.

The two remaining young were almost too big for the nest and soon were seen hopping about in the lawn, begging for food. Their breasts were spotted, their tails stubby and they could not fly. The loud begging hunger calls were a monotonous refrain, but got results. The parents kept bringing food and showing the young how to find food. Soon the young were taking short flights following their parents, who were becoming less willing to cater food. While the hunger call may be very effective in gaining parents' attention, it also gains the attention of other animals. This was the case two days later when the neigh-

WARDEN'S DIARY

Ol' Bum

By Jerry Hoilien

bor's cat came carefully creeping through the grass toward the call. The next morning the farmer found a small pile of spotted blood-splotted feathers on the lawn. The parents, once proud of their four young, had seen their family reduced to one. Robbie, the remaining young, was now on his own and fast approaching adult size. The old owner noticed Robbie had inherited the white spot on the wing, just like his mother.

Robbie was accident prone; one day the old man found him entangled in string, hanging upside down in the apple tree, although unhurt. Another day, he flew into the picture window; lucky, the farmer was inside and heard a loud thump and found Robbie unconscious in the shrubbery. The young Robin, taken into the house, rapidly recovered and flew away, with only a bump on his head and on his pride. A few days later, the neighbor's cat pounced on him, but he escaped to the treetop where he stayed all day and all night. His parents nested again, this time in the very top of the apple tree, and now chased Robbie from the orchard. That was all right because Robbie's narrow escapes made him one of the wisest and most cautious robins in history. He knew all about rainstorms, cats, string, and windows.

In September, Robbie became restless. New robins, strangers from the north, showed up on the lawn. Not knowing why, he followed them south when they left.

The next spring, on April 8, the old man was delighted when two robins, each with a white spot on one wing, showed up on his lawn. One nested in the old apple tree, the other in the cedar tree just outside the door of the old farmhouse. The old man kept a proud and watchful eye on both nests.

For seven years, Robbie showed up on the lawn of the small farm by the river. He raised seven broods, lost several young to the neighbor's cat, and lost a brood to a fox snake. The old man often wondered how Robbie found his way back to the same tree for all those years. Robbie was eight years old now, old for a robin; the old orchard owner was equally old for a human.

During the winter, the old man passed away; the following spring, April 10 came and went and Robbie didn't show up on the lawn. On April 15, a young robin with a white wing spot was hopping about on the lawn. A young man, the orchard owner's grandson, stepped from the old farmhouse and welcomed this unusual robin to his orchard. A new cycle of friendship began.

If ever a dog was a gentleman, "Ol' Bum" filled the bill. He always held his head so high and dignified, with his chest puffed out as if he owned the world, whether anyone else knew it or not. He rode with me for many years and his fame grew with each passing season.

I was working the pheasant opening in Chickasaw County with Bruce Parker (now retired after a distinguished record with the U.S. Fish & Wildlife Service). There was a lot of corn standing yet and I eased through the crossroads with cornstocks so high you couldn't see. I did see a car off to the left, though. There were several hunters around the open trunk. By the time I stopped, backed up and turned the corner, they were getting into their car and preparing to leave. I turned on the red light and asked if I could check their birds and licenses.

They weren't the friendliest group and when they opened their trunk there was their full limit of birds nicely laid out. I was busy checking their licenses against the number of birds when I felt a nudge on my knee. Looking down, there was Bum, proud as he could be of the rooster pheasant in his mouth. I thanked him and watched him move to the grass beside the car, paw away some grass and retrieve another rooster. He gave me that one as the hunters began to grumble, and he retrieved still a third bird from the same place. One of the group remarked, "That G-- D---- D--!" "Don't cuss my dog, mister, you're the guys that are wrong," I told him.

Bum was good at checking duck hunters, too. He almost dug the bottom out of a duck blind to get at the over limit of ducks hidden underneath. I used to say he was so good I could send him out by himself, but the truth is he was too soft hearted and wouldn't write a ticket.

One early fall morning I popped over a hill just in time to see a guy throw something over a brush pile. After a short conversation I asked him what he threw away. He avidly denied throwing anything until I said I'd have to get my dog out. Ol' Bum was watching us

through the windshield. (He never got on the seat but he was big enough to sit on the floor and rest his chin on the dash.) "Oh, you're the warden with that big red dog! Well, never mind, just as well get it over with," he mumbled as he walked over and retrieved two fresh muskrats. "I guess I started the season a little early, huh?" I didn't have the heart to tell him that Bum would try to retrieve an elephant if I shot one, but he hated muskrats with a passion and wouldn't touch one.

He was an invaluable partner at times, quietly sitting where he was told, watching intently the goings on as if he understood every word. I believe he did at times. I had arrested a rather irate violator and placed him in the front seat of my car. He had to sit with his legs extended over the laying form of Bum, whose head was resting next to the gear shift. Bum didn't mind, he was used to it, at least until the guy started to cuss that "no good *#@*#@*# game warden" that was taking him to jail. Bum raised his head, looked the guy straight in the eye, peeled back his lips to show some sizable incisors and grumbled a low growl from deep in his chest. There was not one more word said all the way to jail.

Bum was a full-blooded golden retriever who never knew the meaning of cold or fear. He was proud to the end and a partner you can only be privileged with once in a lifetime. I've seen and owned my share of goldens but he was the best. Strange how life grants us special favors. Last year when I lost Bum's son, Buck, just as fate would have it, Buck's last litter was just six weeks old. My first look brought tears to these eyes as the biggest of the litter sat with his head so high — his young chest thrust forward and an oversized front foot pawed my boot. He was quieter than all the rest and sat looking at me with big bright eyes under two light eyebrows. He knew a partner when he saw one, and so did I!

You're right, young Bum and I are off again, so watch it!



Iowa's Nongame Program

*Nongame Animals Benefit from
Chickadee Checkoff*

By David Newhouse, Doug Reeves and Bruce Ehresman

Nongame logo designed by Brian Monroe of Cedar Rapids.

The "Chickadee Checkoff" is benefiting nongame wildlife across Iowa. Last year, over 43,000 Iowans contributed nearly \$239,000 from their state income tax refunds for nongame wildlife in Iowa. At current rates of giving, about 40,000 people will have donated nearly \$220,000 in 1984.

This year the Iowa Legislature made it possible for everyone to take part in this important program from now on. Everyone who files an Iowa income tax form next year will be able to contribute to the "Chickadee Checkoff" for nongame wildlife. Originally, only those people who received refunds were eligible to contribute to this important program.

Here is how the Conservation Commission is using the money.

LAND MANAGEMENT

Iowa may be a "Place to Grow" corn, hogs, and beans, but wildlife needs a place to live, too. It's called habitat and it is in short supply in this state so heavily dedicated to producing crops from its ground. Trumpeter swans, elk and whooping cranes have disappeared from Iowa, along with their habitats. Thus a major nongame program goal is to preserve and restore land for uncommon animals. Picking the best areas and the best uses of limited funds makes for slow work, but the Conservation Commission has so far been able to contribute \$25,000 to the purchase of 20 miles of

railroad right-of-way between Bondurant (Polk County) and Baxter (Jasper County). The Polk and Jasper County Conservation Boards, Iowa Natural Heritage Foundation, Rails to Trails and an anonymous donor of \$50,000 spearheaded this project. About 260 acres of wooded streamside, and prairie remnant habitat is being maintained here in the heart of Iowa.

A parking lot has been developed and trails planned for Strasser Woods Preserve, near the State Fairgrounds in the city of Des Moines. This 40-acre gift is also being fenced to protect its forest, streamside and grassland areas for public appreciation.

Several marsh, prairie and forest areas that are valuable to both wildlife and people are being evaluated so that we can acquire and manage the best of them. Shorebirds and waterfowl, ornate box and yellow mud turtles, warblers and hawks, and even uncommon newts will have new leases on life in Iowa when we can conclude negotiations with willing sellers. Anyone knowing of other good wildlife lands which might best be managed by the state should contact us. A three-acre home site in Woodward has been donated to the nongame program. The owners developed their lot to attract and care for wildlife. Now, through Edward Anderson's generosity, it will serve as a demonstration area so that many people can learn how to enjoy wild animals in their own backyards.

PUBLIC PARTICIPATION

We often get excited about endangered or threatened wildlife (like bald eagles or giant pandas) that we seldom, if ever, see. But we often fail to understand or appreciate the wildlife in our own backyards. By taking the time to look for wild things near home, we can develop a better feeling for the natural world in which we live. That is why nongame contributions are now developing an urban wildlife program; to provide enjoyment of the animals living in urban and suburban areas of Iowa.

Urban wildlife biologist, Doug Reeves is working with city planners and organizations to enhance wildlife habitats and provide viewing areas for residents and park users.

Besides developing Strasser Woods, urban wildlife projects include sending copies of "How to Attract Birds" to nursing homes in Iowa. This book explains how to attract, feed, and provide nests for many colorful species. By working with community groups, nursing home administrators can use these tips to provide hours of enjoyable viewing for their residents.

Biologists are also collaborating with the city of Mount Pleasant to plant and maintain trees and shrubs that produce food for wildlife in a large industrial park. Not only will these plantings reduce expensive mowing and beautify the area, but they will increase the number of attractive birds visible in the city.



Iowa is host to the American white pelican each year during their spring and fall migration. Last month interested birders attended a "pelican watch" at Red Rock Reservoir. The commission and Army Corps of Engineers had spotting scopes available to help visitors view the birds.

Individual landowners are being encouraged to improve their backyards by planting flowers, shrubs and trees that are attractive to wildlife as well as to people. A good backyard includes cedars or spruces for winter shelter, flowers for hummingbirds and butterflies, and fruit or nut bearing shrubs and trees. Other work includes the investigation of two surprisingly common city residents, American kestrels and great horned owls. Both kinds of birds are beneficial to us because they eat small rodents and insects. Reports of red fox in Iowa City, deer in Cedar Rapids, black-bellied fox squirrels in Des Moines, and beaver in almost every town, are also verified and recorded.

Checkoff contributions helped construct a viewing platform for visitors at the Riverton Wildlife Area, in Fremont County.

WILDLIFE RESTORATION

In order to maintain the uncommon wildlife inhabiting Iowa, we try to care for those animals most in need of immediate help, as well as preserving their habitat.

Barn-owl Restoration Project

During 1983, we released 58 common barn-owls (12 adults and 46 young owls) at seven sites in six counties. Southwest and south-central Iowa became home to most of these birds, which are sensitive to bitter northern winters. We search for grassland areas that harbor the owls' prey (mice and voles), because research shows that good barn-owl habitat has nearly 50 percent grass, up to 25 percent timber, and less than 30 percent crop ground.

In 1984 an additional eight pairs with 29 young, plus 24 young birds at six sites, and 12 young from re-nesting at three of the barns were released. With help from concerned citizens, Iowa has 81 more barn-owls this year. One indication of the interest in and success of this project is the 11 verified sightings of free flying barn-owls thus far in 1984.

At least 17 Iowa families fed these owls for several months to make this project possible. They helped reintroduce a species which has been seen only about four times a year in Iowa's recent past. These cooperators include the Bakehouses (Hastings), Coopers (Kellogg), Ehresmans (Boone), Froyens

(Knoxville), Gunthers (Anamosa), Craig Hensley (Atlantic), Inmans (Indianola), Kesslers (Castana), Kuzelas (Sgt. Bluff), Lennox's (Coggon), Links (Maxwell), Mel Moe (Mt. Ayr), Peters' (Keokuk), Sabins (Greeley), Schlueters (Garnavillo), Schmuckers (Marengo), Suhns (Decorah), and Wilsons (Hastings).

We have also placed nearly 40 nest boxes for barn-owls in the vicinity of these 18 release sites. Other interested Iowans have built and placed another 35 boxes in the last two years. Students at the State Training School at Eldora have volunteered to make more boxes, to provide replacements for the natural nest trees so often cut for fuel, farming, or "sightliness." Others can help by building and placing nest boxes in quiet outbuildings; plans are available in our barn-owl brochure.

Raptor Rehabilitation

Veterinary surgeons and students at Iowa State University are cooperating with the nongame program by providing emergency first care for injured wildlife. More uncommon birds of prey are being successfully treated and are surviving to



A number of eastern bluebirds took up residence in new nest boxes this year. Approximately 400 boxes were constructed and placed across Iowa with the help of volunteers such as these at Lake View (opposite page).

Chickadee Checkoff funds were used recently to help purchase 260 acres, 20 miles of rural road right-of-way, between Bondurant and Baxter.





David Newhouse

return to the wild. Dr. Caroline Runyan and her staff provide this valuable expertise. Several County Conservation Board members and individual rehabilitators have also been extremely helpful in caring for common animals. Their generosity and devotion have allowed us to concentrate Checkoff dollars on the care of endangered, threatened, and uncommon species.

With all this help, our rehabilitation facility near Ledges Park, outside Boone, has been an active recuperation center this year, releasing a turkey vulture, Cooper's hawk, rough-legged hawk, eastern screech owl and yellow-billed cuckoo. We are still caring for a peregrine falcon, an American kestrel and two red-tailed hawks.

Birds injured too severely to be released (a sharp-shinned hawk, American crow, and red-tailed hawk) have been transferred to licensed exhibitors for educational use.

Nesting Projects

Because habitat is so important, the nongame program is trying to help nongame animals whose nesting habitat is in short supply. During 1984, we have inspected the aeries once used by peregrines along Mississippi River bluffs, and checked reports of the falcons using the area again. We plan to recondition some of the cliffs and caves to make them suitable for peregrine nesting. Several rappellers and falconers have volunteered their help in this somewhat risky house cleaning, beginning this fall.

We have also placed nearly 400 new bluebird boxes across Iowa, partly re-

placing some of the hollow trees that have been cut. Yellow River Forest timber was transformed into nest boxes by participants in a workshop at Lake View, by Camp Fire members, by scout troops and by Conservation Commission personnel. Those boxes now enrich the habitats of state parks, wildlife areas and farms. You can get information on bluebirds and plans for these boxes from the Iowa Conservation Commission.

RESEARCH AND MONITORING

Keeping track of Iowa's nongame wildlife is a little tougher than counting sheep. About 700 species live in Iowa, but we have few useful monitoring tools. The animals with the biggest problems need the most help, but they are usually the hardest to find. In order to keep our staff small and spend as much as possible on helpful projects, we count on volunteers for a lot of help. An army of interested eyes and ears helps us learn more about the needs, distribution, and abundance of our nongame neighbors. With information provided, we can target our efforts and your Checkoff contributions where they do the most good.

We are monitoring Iowa's nongame wildlife populations by conducting a frog and toad survey, in cooperation with the commission's natural areas inventory team. Over 160 recordings of frog and toad calls, with survey instructions, have been sent to interested people. Those people's observations from this first year of this survey are being analyzed.

We are cooperating with the Iowa Ornithologists' Union in instituting a breeding bird atlas survey of the state.

During the next five years, we will search over 850 quarter-township areas for evidence of the birds nesting there. Each county has eight or more blocks to survey and we could use your help.

Flying over and checking the heronries along the Mississippi River is another project. We found 20 heronries, including those on the Illinois and Wisconsin sides of the river. One was abandoned and another may be threatened because of logging activity near their nesting colonies. All are vulnerable to human intrusion during spring and early summer. Biologists Bill Aspelmeier, Bill Ohde, Jim Ripple and Art Roseland lent their experience and knowledge of the river on these flights. Other biologists around the state are watching more scattered inland heronries and cormorant colonies. We will be working together with the U.S. Army Corps of Engineers to manage these areas to protect this resource.

We also distributed the first winter bird feeder survey conducted jointly with the Iowa Ornithologists' Union. Astoundingly, 1754 feeder watchers responded, representing every county in Iowa. Some 118,000 individual birds of 33 species were counted in numbers sufficient to analyze. Watch for Rick Hollis' complete report upcoming in *American Birds*.

Research on habitat preferences of eastern screech owls in central Iowa is being funded. The results of this study, supervised by Dr. John Bowles of Central College, should be useful to those who want to attract and provide for this declining little mouser.

The nongame program is paying for part of a study of Iowa marshes as wildlife habitat. Mike Borwn's research at Iowa State University will help us determine what size and distribution of wetlands we should seek to acquire and manage for the greatest benefit to nongame birds.

These are some of what the Chickadee Checkoff contributions are doing for nongame wildlife in Iowa. More and bigger things will follow if we all tell our friends, neighbors, and tax preparers about the nongame program. Word of mouth is the best way to get other people involved.

David Newhouse is a nongame wildlife biologist, Doug Reeves is an urban wildlife biologist and Bruce Ehresman is a nongame wildlife technician. They make up the state's nongame team.



Steve Bothwell

Iowa's Habitat Stamp Program

By Richard Bishop and Robert Walker

Habitat Means Wildlife

Iowa, the beautiful land, was transformed from a sea of prairie, wetlands and woodlands into a great agricultural producer. This has taken its toll on the natural areas. Over 99 percent of the prairie has vanished, over 95 percent of the lakes and marshes have been drained and 80 percent of the timber removed.

The frankness of this change has championed a breed of people who see the necessity of maintaining a part of the state's naturalness for wildlife and people. The Izaak Walton League, The Natural Heritage Foundation, The Wildlife Federation, The Wildlife Society, The Sierra Club, The Nature Conservancy, Audubon Society, Wetlands for Iowa and a host of hunting, fishing and trapping organizations all see a need to protect unique and natural areas.

One program that was spawned by this concern for the future of Iowa was the Habitat Stamp Program. Passed into law in 1979, this act provided that everyone required to have a hunting and trapping license would be required to purchase a \$3 stamp. Funds from these stamps were to be earmarked for the purchase and development of wildlife habitat. One provision of this law designated 50 percent of the funds from habitat stamps to be cost shared with county conservation boards to purchase approved wildlife habitat projects.

The Commission Habitat Program

Since the birth of this program in 1979, the sale of habitat stamps has generated between 800,000 and 900,000 dollars annually. The state's share of this money during the five years totals \$2,106,323. All of the money has been spent on purchasing 27

tracts of land totalling 6,717 acres. Table one shows the county and the

Table 1. Wildlife Habitat Stamp Fund Purchases

Area	County	Acres
Hazelbrush Wildlife Area	Carroll	72
Elk Creek Marsh	Worth	68
Cardinal Marsh	Winnebago	320
Tuttle Lake	Emmet	237
Boone Forks Wildlife Area	Hamilton and Webster	620
Badger Lake	Monona	151
Shimek Forest	Lee	215
Hawthorn Wildlife Area	Mahaska	315
Fox Hills Wildlife Area	Wapello	1294
Lakin Slough	Guthrie	18
Kiowa Marsh	Sac	285
Gabrielson Wildlife Area	Hancock	200
Sweet Marsh	Bremer	317
Pool Slough	Allamakee	220
Black Hawk Bottoms	Des Moines	401
Cheever Lake	Emmet	25
Stephens Forest	Appanoose	535
Ringgold Wildlife Area	Ringgold	240
Stephens Forest	Davis	519
Big Marsh	Butler	13
St. John's Wildlife Area	Harrison	65
Round Lake	Harrison	1
Three Rivers Area	Harrison	300
Whiting Access	Monona	150
Lakeport Wildlife Area	Woodbury	121
Washta Access	Ida	2
Princeton Area	Scott	13
Total		6,717



Habitat stamp money is used to purchase tracts of Iowa's vanishing timber as well as other habitat vital to various wildlife species.

acres of these purchases. So, sportsmen and naturalists, we have been making progress. Your dollars are at work preserving valuable wildlife habitat. In five years you have preserved over 6,700 acres of land. Approximately 3,800 acres of forest and mixed uplands along with about 2,900 acres of wetlands and associated uplands have been added to our public hunting areas. Let's take a look at a few of these purchases.

Fox Hills Wildlife Area — A tract of timber land in Wapello county is one of our more attractive purchases. A total of 1,294 acres have been acquired, and additional land will be added to this project as land and funds become available. This area is a beautiful upland hardwood forest with a nice small fishing lake. Mature stands of white oak, red oak, hickory, ash and many other tree species with an understory of shrubs and wildflowers make attractive

habitat for deer, wild turkey, squirrels, raccoons, woodpeckers, thrush, warblers, red tailed hawks and, yes, even bald eagles use this area in the late fall and winter.

Boone Forks — Six hundred and twenty acres were added to this large land complex. The Boone Forks is a gem in central Iowa with a mix of woodlands and uplands along the Boone River. This area is just flowering out as a significant recreational area for hunting, canoeing, birdwatching and scenic hiking. There is something for everyone in this area, and our plans are to continue to expand it.

Black Hawk Bottoms — A four hundred-acre tract of bottomland hardwood and river oxbows was acquired from Southern Iowa Utilities. This is a good example of what our lower river bottoms are all about. Unique in their own right they offer good duck hunting,

bird watching and a real treat to those seeking a different hiking experience. It provides habitat for numerous wetland wildlife species including herons, egrets, hawks, woodpeckers and ducks.

Stephens State Forest — Over 1,000 acres have been added to Stephens Forest in Appanoose and Davis counties enlarging those areas and providing better management capabilities. Stephens Forest offers much in the way of deer, raccoon, turkey and squirrel hunting as well as hiking, nut picking, birdwatching, etc.

As we acquire more land we are placing more pressure on our limited force of field people to manage these lands. Once we purchase these tracts we must fence them, sign them, provide parking lots, food plots, control weeds, etc. This requires manpower and the more spread out the land purchases are the more difficult the maintenance. To solve these problems our acquisition program with habitat stamp funds is being centered as key areas across the state. Whenever possible we are purchasing habitat that adjoins existing wildlife areas. The larger an individual tract of land is the lower the cost per acre of maintenance. Often times these habitat projects solve boundary problems or improve the wildlife management capabilities of the area. This happens when we need upland nesting cover around a marsh for duck and pheasant production, or if we need some additional land to plant food

patches for giant Canada geese, deer or turkeys. Expanding acres gives us greater flexibility in managing for a diverse group of users.

Our interest is to continue to expand our more important wildlife areas as land comes up for sale. The sad thing today is that far more land is for sale than we can purchase and some of it may never be offered again. It is too bad the public could not rise to this occasion and somehow obtain a large loan, ten million dollars or more to purchase marginal agricultural lands from those landowners wanting to sell and at the same time preserve valuable habitat. From an agricultural point of view these lands should not be under intensive row crop systems and it would be to the farmers advantage if more of this land was taken out of production. Our agricultural system needs less acres of cropland to reduce total production in order to gain higher prices for the products we produce. Good farming and good conservation programs do go hand in hand.

While 6,700 acres is quite an accomplishment it is by far not a solution to the problem of dwindling habitat in a state with one of the lowest percentages of public owned land. Realizing that we cannot preserve all the habitat needed for public recreation we view this challenge in two ways. First of all private citizens must do their share also. Private individuals are purchasing and protecting many acres of land for future generations to enjoy. We applaud you for your stewardship and encourage more people to become involved. Many farmers have protected woodlands or wetlands on their farms because they appreciate their value to Iowa and their families. A number of these landowners are donating their land to the State Conservation Commission in order to ensure its protection in the future. You can obtain tax benefits from these gifts and be assured that the land will be managed as you desire. If you are interested in donating a tract of wildlife habitat, contact an employee of the Iowa Conservation Commission and he or she will put you in contact with the right individual, or call 515/281-4934 and ask for Jerry Gibson.

Iowa's 98 county conservation boards are also aggressively involved in the protection of existing wildlife habitat as well as the long-range interspersion of habitat with land devoted to agricultural production. These boards primarily have jurisdiction of smaller areas of county-wide significance. Of

their 1100 areas which are comprised of parks, recreation areas, river accesses, historical sites, forests and environmental education facilities, the county conservation boards provide a total of 270 separate wildlife areas including 20,200 acres of land. These are generally areas of less than 100 acres in size scattered over the entire state and serving as links between the generally larger state wildlife areas. These areas serve many purposes such as winter cover, nesting cover, and food cover for wildlife and also provide soil erosion control in most locations. For the hunter and nature lover, they serve as small wildlife ecosystems close to home and are sometimes more handy than the large state facilities.

Fifty percent of the money hunters and trappers have invested for habitat stamps has been used by county conservation boards for wildlife area land acquisition and habitat development. This portion of your dollars, approximately \$2,106,000, has been administered by the State Conservation Commission. Counties submit project proposals to the state, and through a rather complicated formula the best projects are selected and funded. When a project is selected, the habitat stamp fund pays for 75 percent of the cost and the local county provides 25 percent from local sources. The somewhat innocuous result of this cooperation is that the hunters' and trappers' dollars invested in county projects are multiplied by 33 percent, thus providing more critically needed money for habitat preservation and expansion.

In the last four years, 35 different county conservation boards have sponsored 42 land acquisition projects. Table two shows the location of these areas. The result is the protection and provision to all of Iowa's residents of an additional 5,281 acres of public owned wildlife habitat. If we combine this with the land acquired by the State Conservation Commission, wildlife habitat stamp funds have provided a total increase of approximately 12,000 acres of wildlife habitat held in the public trust.

Woodland, wetland, prairie — wildlife habitat is important to all of us and our future. It provides variety and diversity in our environment and a place for us to get away from the daily rat race. It offers us a place to hunt well-managed wildlife species or to simply watch the beauty of their existence. The wildlife habitat stamp program will allow us to add to and improve our present public trust of wildlife areas.

We can maintain Iowa's natural heritage and pass along to future generations a more diverse or as equally diverse Iowa as we enjoy. If we expect to attract business to our state and hold our young people, whether it be in farming or business, we must provide a quality of life that allows strong educational and recreational opportunities. This is built into Iowa's fiber. We cannot afford to lose our ties to the land, chasing minnows in the creek shrunk by hot August days, mud squishing up between your toes along the marsh edge, a frog in the pocket, a bouquet of sweet williams, a thinking place in the woods where we can go and contemplate our problems and future, and of course, that first buck deer bagged by a proud son.

Table 2. County Habitat Stamp Land Acquisitions

Area Name	County	Acres
Bruggman Park Addition	Black Hawk	144
Cono Wildlife Area	Buchanan	40
Nodaway Wildlife Area	Cass	40
Haugen Wildlife Area	Cerro Gordo	75
Little Sioux Habitat	Cherokee	216
Railroad Wildlife Area	Chickasaw	124
Turkey Ridge Wildlife Area	Clarke	59
Bertram Reservation	Clay	160
Sherman Park Wildlife Area	Clinton	130
Rozen Wildlife Area	Franklin	93
Sawmill Hollow Wildlife Area	Harrison	155
Berster Wildlife Area	Iowa	68
Vandalia Wildlife Area	Jasper	97
Woodcock Wildlife Area	Jasper	56
Railroad Wildlife Area	Kossuth	15
Erickson Wildlife Area	Kossuth	23
Mattell Bridge Area Addition	Linn	59
Cairo Woods Wildlife Area	Louisia	135
Hidden Bridge Area	Lyon	155
Russell Wildlife Area	Mahaska	195
Arney Wildlife Area	Marshall	203
Runde Wildlife Area	Mitchell	310
Pike Run Area	Muscatine	110
Wolter Prairie	Osceola	40
Eldridge Wildlife Area	Palo Alto	17
Loess Hills Nature Preserve	Plymouth	790
Wiegert Prairie	Pocahontas	37
Chichaqua Wildlife Area Addition	Polk	81
Fox Forest Addition	Poweshiek	203
Millgrove Access Addition	Poweshiek	120
Wapsi-County Wildlife Area	Scott	147
Oak Ridge Area	Shelby	94
Larson's Marsh	Story	12
Sand Timberland Preserve	Taylor	91
Groesbeck Area	Union	112
Talmage Hill Wildlife Area	Union	108
Rolling Thunder Prairie	Warren	123
Woodland Mounds Preserve	Warren	184
Thorpe Wildlife Area	Winnebago	72
Larson-Tweed Wildlife Area	Winnebago	59
Sullivan Wildlife Area	Wright	64
Troy Township Area	Wright	265
Total		5,281

Robert Walker is administrator for the county conservation program. He holds a B.S. degree in fisheries and wildlife biology from Iowa State University and an M.S. degree in fish science from the University of Idaho.

Richard Bishop is the commission's wildlife superintendent. He holds a B.S. degree from Iowa State University and an M.S. degree from the University of Arizona. He has served as the state's waterfowl biologist and wildlife research supervisor during the past 19 years.



Switchgrass - A Hope for the Future

Wildlife enthusiasts and cattlemen have reason to be optimistic during these times of declining habitat and inadequate summer forage. From all indications, wildlife biologists appear to have a solution for "seasonal forage slumps" and for the lack of undisturbed nesting cover available to ground-nesting game birds and nongame birds. That solution is switchgrass, and the Iowa Conservation Commission is currently promoting its establishment through the switchgrass cost-share program.

The switchgrass program was developed to demonstrate the use of warm-season grasses in Iowa's cornbelt. The commission will cost-share 50 percent of all establishment costs up to \$75 per acre with selected landowners around the state. The landowner in return must sign a five-year contract which includes management requirements. The ultimate goal of the cost-share program is to encourage the unsubsidized establishment of switchgrass pastures throughout Iowa. If this occurs, properly managed switchgrass fields are expected to provide: 1) an economically desirable warm-season grass to complement pasture rotation systems during the summer slump period when cool-season grasses can go dormant; 2) undisturbed nesting cover and winter cover for ground-

nesting game birds, nongame birds and other wildlife species; and 3) protection of Iowa's valuable soil resource from wind and water erosion.

Obviously, Iowa landowners must realize financial benefits from switchgrass as a forage if it is to be successful. Preliminary evaluation of the program looks very promising. Considering the warm-season grasses are relatively new to Iowa and establishment techniques differ from cool-season grasses, most of the comments received to date are very positive. Many cattlemen were convinced of its value last year when the hot, dry summer parched their cool-season grass pastures, leaving very little forage. The sun-loving switchgrass, however, responded extremely well and provided the only green forage on their farms.

Beginning in 1985, the commission will formally evaluate the switchgrass cost-share program through questionnaires and personal interviews with landowners. At that time, five-year contracts with landowners who participated in the program in 1980 will have expired, giving them full management control. These landowners will be able to speak freely of the program and offer valuable insight with respect to the establishment, management, and utilization of their switchgrass fields. Their

responses will be used to determine the future direction of the switchgrass cost-share program. (The Iowa Conservation Commission is always interested in receiving comments from the public as well as readers concerning various programs. Readers of this article wishing to comment on the program are encouraged to write or call Jeff Joens in care of the Wildlife Section, Wallace State Office Building, Des Moines, Iowa 50319, telephone 515/281-8664.)

The switchgrass cost-share program is tentatively scheduled to end in 1986. Until then, several counties remain eligible for assistance. In 1985, landowners may sign up for cost-share assistance in Cherokee, Clayton, Delaware, Des Moines, Jackson, Jefferson, Johnson, Jones, Keokuk, Marshall, Monona, O'Brien, Osceola, Pottawattamie, Sac, Tama, Van Buren, Washington, Allamakee, Benton, Boone, Calhoun, Cedar, Dubuque, Fayette, Ida, Linn, Louisa, Muscatine, Story, Winneshiek, and Woodbury Counties. The application period is from October 1 to March 1 of the following year. Prospective landowners should contact their local wildlife management biologist or USDA Soil Conservation Service district conservationists for more information.

Photo by Ron Johnson



Wildflower of the Month

Wild Bergamot

Monarda fistulosa

By Dean M. Roosa and Bill Pusateri

Wild bergamot, *Monarda fistulosa*, is widespread in the eastern, northeastern and central United States, often found on rich, moist soils. It grows in a variety of habitats, from woodland edges to moist prairies, to roadsides, to floodplains and old pastures. In Iowa, it is a very common late summer and fall wildflower, blooming from July through September. It is a member of the mint family, the Lamiaceae or Labiatae, and has square stems and opposite leaves. The leaves and stem has a mint-like aroma which persists long after the foliage has died. The leaves are somewhat oval in shape, but narrowing to a point at the tip. It is a perennial so when you find a clump, you can depend on it being there year after

year. The individual flowers are slender pink or lavender tubes, each with a distinct lip, and make a dense head that is over an inch in diameter.

Another member of the genus, *Monarda punctata* the spotted horsemint is not nearly as common and is found almost exclusively on sandy areas.

As may be expected, wild bergamot has a history of medicinal uses; native Americans used it for treatment of skin disorders, as a remedy for fever, sore throat, bronchial ailments, and stomach disorders.

Although common, it is a strikingly handsome plant that has played a part in early medicine and one that continues to grace our landscape. It is worth getting to know.

Photo by Randall Maas