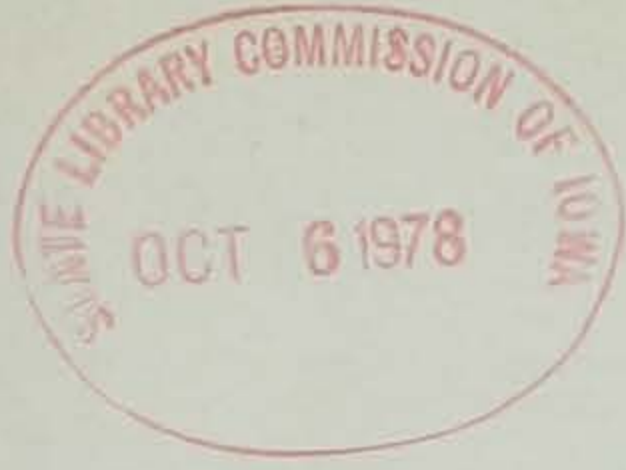


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OKO conservationist





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BACK COVER: "WOOD DUCKS"
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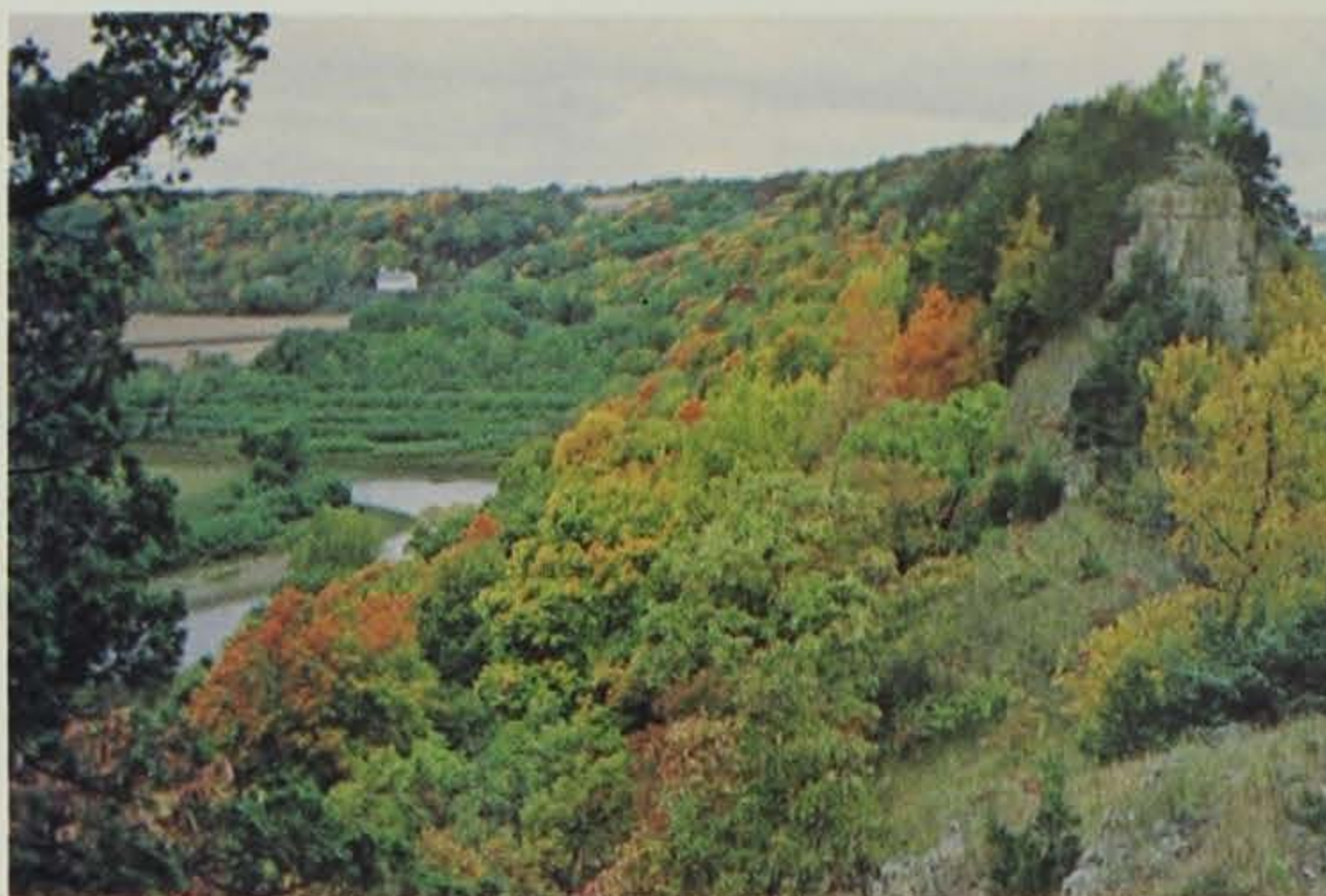
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White Oak

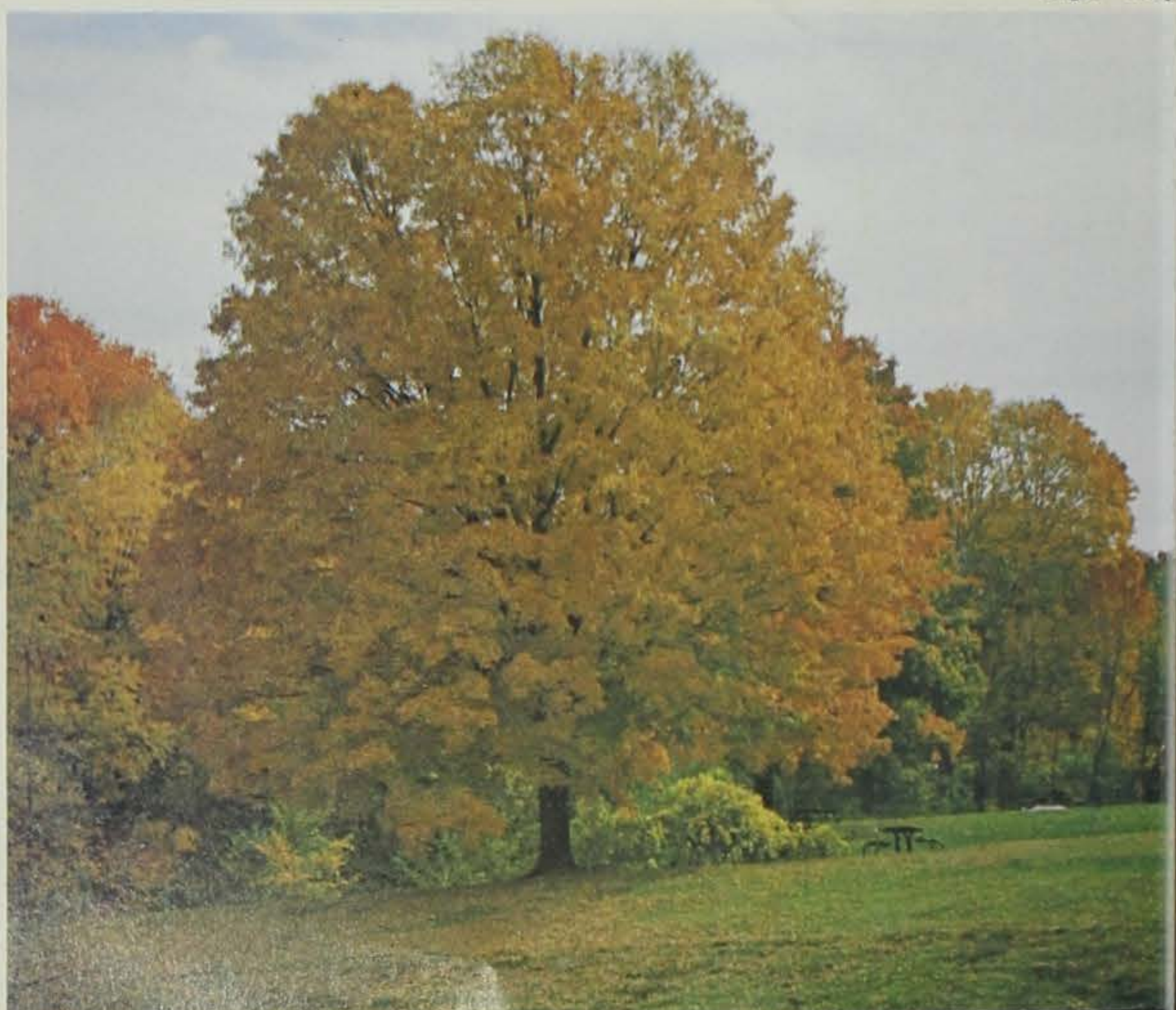


Sugar Maple

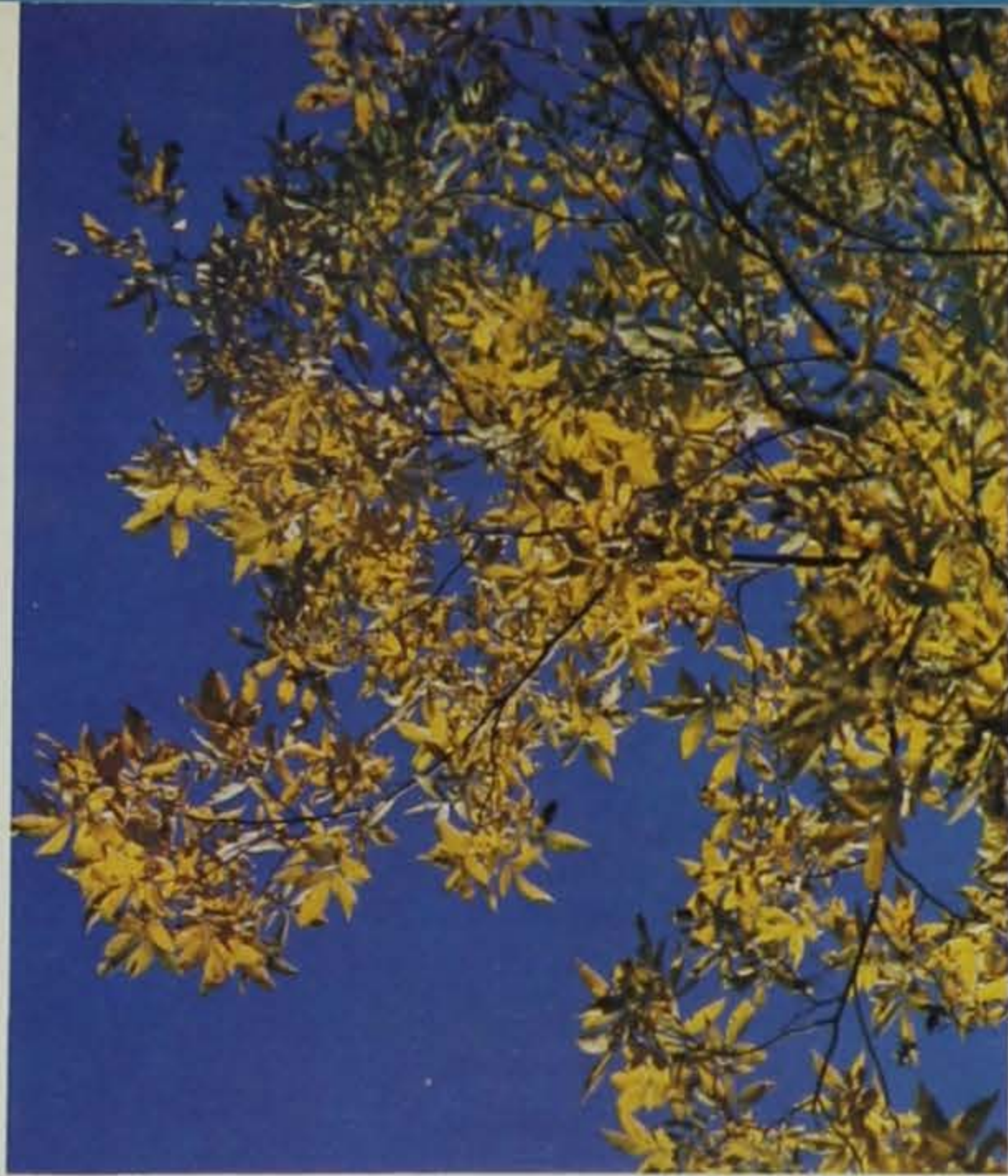


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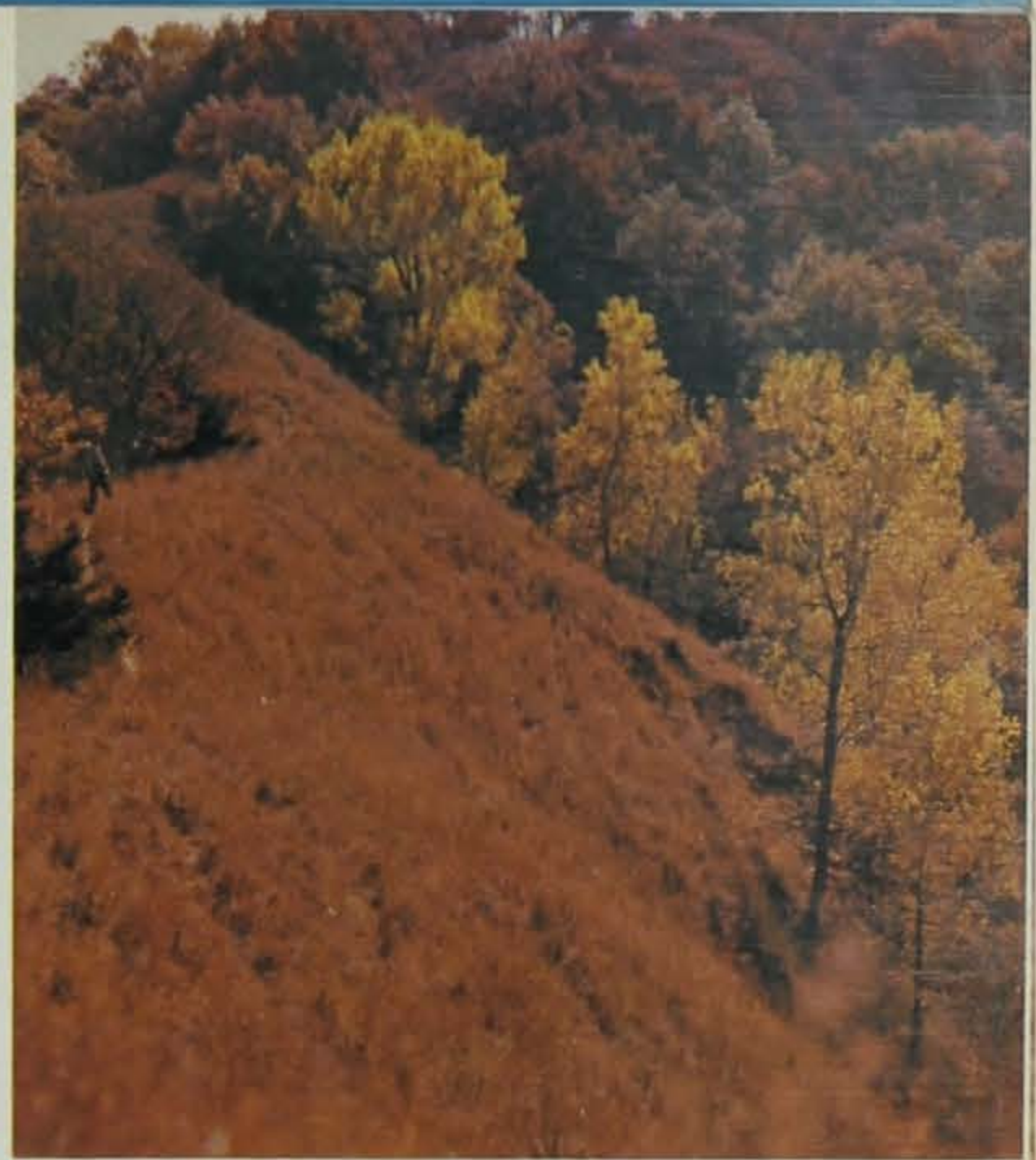
Sugar Maple



Ash



Ash



OCTOBER SPECTACLE

Every year at this time, we revel in the beauty of the trees, knowing well that it is only a fleeting pleasure. Before long, the leaves will flutter away from their summer home and become a part of the rich carpet that covers the forest floor.

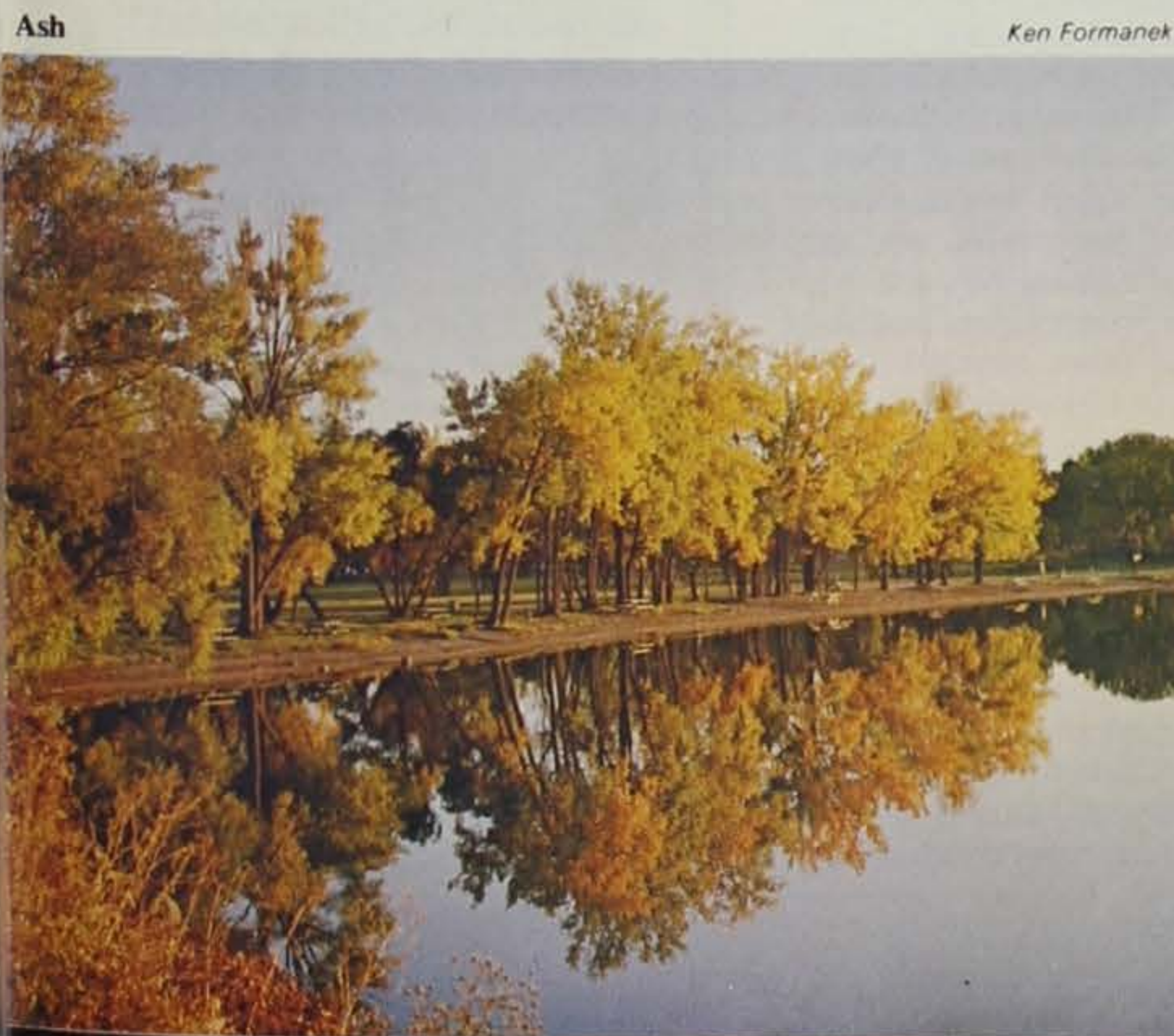
Many people suppose that Jack Frost is responsible for the color change, but he is not. Some of the leaves begin to turn before we have any frosts. The Indians had a fantastic idea that it was because the celestial hunters had slain the Great Bear — his blood dripping on the forests changed many trees to red. Other trees were turned yellow by the fat that splattered out of the kettle as the hunters cooked the meat. In reality, change in coloring is the result of chemical processes which take place in the tree as the season changes from summer to winter. But full understanding is not necessary to the enjoyment of the beautiful autumn displays in forest, town, and countryside.

IOWA CONSERVATIONIST/OCTOBER, 1978

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Ken Formanek



Ash



Sugar Map



LEWIS & CLARK State Park

BY LARRY LOCK
PARK RANGER

In 1924, the State of Iowa acquired 286 acres of land to begin construction of a park called Lewis and Clark. This park has much history and tradition to share with its visitors each year.

Lewis and Clark State Park shares its name with the two explorers, Meriweather Lewis and Captain William Clark, who were appointed scouts by President Jefferson to explore and map a new territory. In all, the expedition stopped and camped at eleven stops in what is now Iowa. One of those spots just happens to be in Monona County and lies between Onawa, Iowa and the Missouri River. On August 9, 1804, Lewis and Clark and their expedition camped on the southeast shore of what is now Blue Lake. Of course at the time of Lewis and Clark's expedition, Blue Lake did not exist. The Missouri River at that time ran wide across the valley. It was not until the late 1880's that the Missouri River, changing channels, left behind Blue Lake. The lake is an oxbow lake with an opening to the south and is the center of Lewis and Clark State Park. It provides swimming, boating, and fishing for the many park visitors.

As our visitors enter the park, the first point of interest is our Lewis and Clark monument, honoring both the explorers and the park. The monument was donated by the Daughters of the American Revolution and for many years sat on the original campsite across the lake. It was later moved to the park for its preservation and to be seen by the people who would visit the area.

The next point of interest is our shelter house. The stones used in the

construction of this building are mostly limestone of blue, gray and brown color which contain pyrite, commonly known as fool's gold. As the stone weathers, the fool's gold turns to iron rust and becomes a dark brown. The stones also contain fossils. The most common of these fossils are brachiopods, which are two-shelled animals similar to a clam or an oyster. Many of the stones have scalloped or fluted edges which are imprints left from these fossils.

Much of Lewis and Clark State Park was created by man. In 1930, 7,000 new trees, of the pine, maple and elm varieties, were planted by the citizens of Onawa and by the Civilian Conservation Corps. These trees are a living memorial to Stephen A. Mather, the United State's Park Commissioner. Prior to the planting of these trees, Lewis and Clark was virtually treeless, except for a few native cottonwood. Thanks to these people the park has a lovely forest of trees for the nature lover, quiet forest trails for the hiker, shade for picnics, and a safe refuge for the wildlife of the park.

One of the most enjoyable spots for the children (besides the sandy beaches and swimming area) is our Cottonwood Tree. It is a monstrously gnarled wonder of nature with its giant roots extended far above the ground, as if in defiance of Mother Nature. It has weathered many storms and floods and stands as a guardian of the park. It is a perfect playground for the children and gives adults a chance to reflect on past memories.

Lewis and Clark State Park is a truly modern campground with bits and pieces of history to impress its many visitors. □

LOOKIN' BACK



Thirty Years Ago the Conservationist examined the fur crop and its importance as an industry.

The cash value of Iowa's crop was estimated to be over \$2 million.

A thirty day duck season with a bag limit of four was announced. It was also noted that Indians believed leaves turned red in the fall because celestial hunters had killed the Great Bear.



Twenty years ago the magazine lead article explained the hunting opportunities available on many of

Iowa's shooting preserves. These licensed preserves opened legally July 1, 1957 and had been operating for more than a year. The public greeted these businesses with some enthusiasm but the owners found out it was harder to manage these areas than many of them thought.

The law providing the establishment of County Conservation Boards was also one year old and half of Iowa's counties had or were planning boards one year later.



Ten Years Ago the Iowa Conservationist predicted a good hunting season for fall 1968. The pheasant and

quail outlook was termed excellent. There was much more cover in 1968 than now as a result of government set aside programs. In addition, the spring of that year was perfect for nesting.

(Continued on Page 15)

GIANT CANADA GEESE IN IOWA

BY RICH BISHOP
WILDLIFE BIOLOGIST



History of the Giants

The giant Canada goose (*Branta canadensis maxima*) is the largest sub-species of Canada geese and records indicate it sometimes exceeds 16 pounds. This extremely large goose once nested over a broad geographical area, but was most prevalent in the prairie region created by the Wisconsin glacier. Their breeding range extended from eastern Montana, Wyoming and Colorado, eastward to Michigan and Ohio; from the southern portions of Alberta, Saskatchewan and Manitoba southward to Kansas and Missouri. While these birds were numerous in Iowa in the early 1800's, severe exploitation by settlers of the rich prairie country caused giant numbers to dwindle to the brink of extinction. Early accounts told of settlers robbing nests and capturing young that were later eaten in the fall. By 1907, nesting Canadas were referred to as uncommon in Iowa and shortly after that the wild nesting population became extinct.

Throughout its range, the giant Canada goose experienced serious declines. It is not known when the wild free-flying population was lost, but probably this occurred in most of the upper mid-west by 1920. Tales of big geese weighing 18 to 20

pounds became stories that modern day sportsmen questioned. As time marched on, fewer and fewer authenticated records remained until 1962 when Harold Hanson, a biologist for the Illinois Natural History Survey, discovered several large Canada geese wintering at Rochester, Minnesota. These birds matched the physical measurements of the giant Canada goose.

Since this rediscovery, much interest has developed in giant Canadas. Several domestic flocks of Canada geese were located and their roots traced back to wild ancestors. These farm flocks originated from eggs and goslings taken from the wild and were perpetuated through the years by interested individuals. The genetic blood lines of some flocks are quite pure. Flocks found in Minnesota, South Dakota and Iowa served as brood stock for many states interested in re-establishing free-flying flocks. Iowa's first brood stock came from family flocks in these three states.

Wild flocks have been reestablished in almost all states included in its original range plus many more. In 1977, the winter inventory for the Mississippi flyway tallied 59,943 giant Canada geese.

Iowa Becomes Involved in the Goose Business

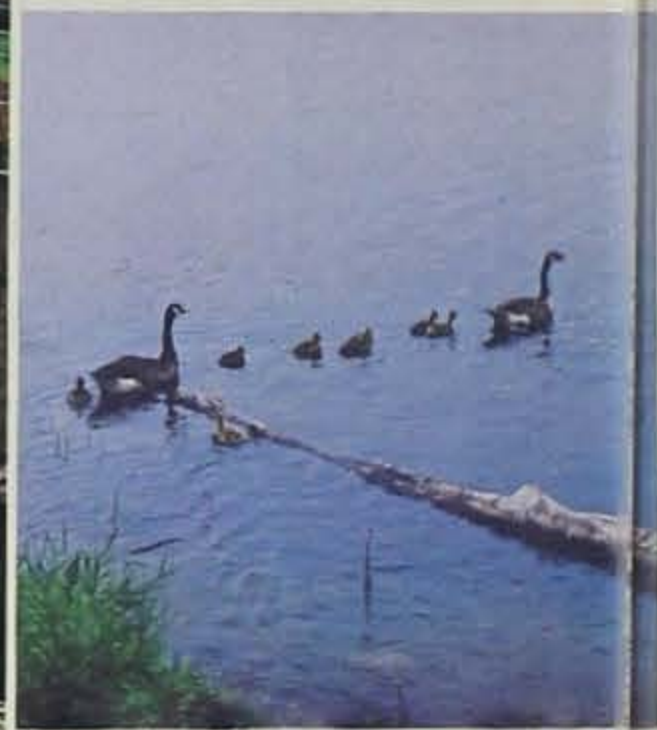
In 1964, 16 adult pairs of pinioned *maximas* were bought from private goose raisers in Minnesota and South Dakota. These birds were kept in an enclosure at Ingham Lake in Emmet County. Artificial, elevated nesting structures and man-made dirt islands were provided in the enclosure. Most of the young produced between 1964 and 1966 were pinioned to increase the captive breeding flock. The geese produced after 1966 were allowed free-flight. Artificial nesting structures were placed on marshes in close proximity to Ingham Lake in hopes that geese hatched in the pen would choose these relatively safe nesting sites in the wild.

Initially, the local harvest of free-flying geese was high and the flock was barely maintaining itself. In response to this problem, a 120 square mile refuge was established in the fall of 1967 closing parts of Emmet and Palo Alto Counties to Canada goose hunting. Additional birds were purchased from home grown Iowa flocks to bolster the Ingham Lake flock and some were later used to stock new areas. Some birds were purchased from Oscar Luedtke of Lotts Creek. Oscar said his brother traded a dog for 6 geese that were taken from the wild 8 miles southeast of Ingham Lake in Palo Alto County. This was in about 1906. Many goose raisers in Iowa and Minnesota got their stock from Luedtke's flock. Other geese purchased were descendants of the Luedtke flock.

In 1971, 11 and 12 adult pairs of Ingham Lake birds were transferred to pens at Smith's Slough Wildlife Area near Ruthven (Clay County) and Kettleson Hogsback Wildlife Area near Spirit Lake (Dickinson County), respectively. A fourth flock was established at the Rice Lake Wildlife Area near Lake Mills (Winnebago County) in 1972. Refuges (60-120 square miles) were also established around each of these flocks and artificial nesting structures were provided in each pen. Subsequent young produced from these flocks have been banded and released as free-fliers. Artificial structures were constructed on wetlands surrounding each captive flock, except Ruthven to provide safe nesting sites for free-flying adults. At Ruthven, biologists are experimenting to see if totally natural nesting will work.

The success of the northern Iowa program prompted consideration of flock expansion into southern Iowa where thousands of farm ponds provide potential nesting habitat. In 1976, the original captive flock at Ingham Lake was moved to a pen at the Colyn Wildlife Area near Russell in Lucas County. The Colyn Area (770 acres) lies at the upper end of Rathbun Reservoir above Brown's Slough. Hopefully some limited production will come from the reservoir and nesting pairs will pioneer surrounding farm ponds. Most nesting will probably occur on these farm ponds and the geese will use the reservoir as a safe resting area during the fall.

Canadas are transplanted to new homes and raise young.



Development of a Flock

Selection of a site for a giant Canada goose flock and public involvement to ensure strong public support is the first step in developing a program. The area selected should have abundant water for nesting and brood rearing. Our first choices were in the rich prairie marsh country of northwest and north-central Iowa where breeding habitat was most plentiful. A pen site is the next step and it is important that a captive flock be under close scrutiny to protect it from vandalism, predators and provide immediate pen repairs after storms. Our pens, which enclose from 10-24 acres, are constructed of heavy chicken wire fencing. The fence is approximately 8 feet high and 12-18 inches of wire is buried to prevent animals from digging under. These enclosures would adequately provide nesting space for about 20 pairs. To get a rapid start, at least 30 adult birds are recommended. Paired birds, which have nested previously, provide the best stock for a new area.

For the first three years, most young geese are wing clipped to reduce the mortality of free-flying young. This procedure allows the flock to increase at a faster rate and provides visual witness to the success of the project. After three years of holding young-of-the-year, wing-clipping is discontinued. Until the flock exceeds 500 birds, a captive flock from 50 to 150 birds is maintained.



The flocks are kept under the careful eye of researchers.



Photo by Rock Bridges

Management of the free-flying flock is most important and hunting mortality must be regulated to allow for annual increases in the breeding population. The keys to success are to provide safe nesting sites and adequate refuge to reduce harvest during the building stage of the flock. Refuge size depends on the amount of food and water available, location of key areas that geese use, and the rapidity of success desired. The larger the refuge, up to a point, the faster the flock will expand.

A Look at the Present Status of Iowa Goose Flocks

Ingham Lake

The Ingham Lake refuge has been reduced from 120 square miles to 56 square miles. The captive flock has been removed leaving a completely free-flying flock of geese. Presently this area holds approximately 3,000 Canada geese at peak levels in the fall. Spring population levels are estimated at 1,500 adults of which at least 1,000 are breeding birds. These adults raised about 1,300 young in 1977. Most marshes in this area have nesting birds and may be reaching the saturation point in terms of nesting pairs.

Smith's Slough

This flock located near Ruthven in Clay County, was established in 1971. Eleven pairs were brought from Ingham Lake and additional birds were purchased from local goose raisers and added to the flock. A 63 square mile refuge closed to Canada goose hunting was established. The captive flock of 30 geese is held in a 14 acre pen with approximately 300 more free-flying adults. An estimated 200 breeders or 100 pairs occupy the marshes in the area and about 275 young were raised in 1977. Peak fall populations range around the 1,500 mark. Expansion of this flock is continuing and it is expected to reach 350 breeding pair.

Kettleon's Hogsback

The Hogsback flock at Spirit Lake in Dickinson County was started from 12 adult pairs in 1971 and, like Smith's Slough, additional birds from private flocks and from Ingham Lake were added. The captive flock now numbers 75 birds with an additional 420 free-flyers. In 1977 about 250 young were produced in this area from an estimated 120 breeding pairs. Peak fall populations are in the vicinity of 1,200 geese and the captive flock is surrounded by a 35 square mile refuge. This flock is expected to increase to approximately 400 breeding pairs.

Rice Lake

The Rice Lake flock was started in the spring of 1972 with 26 birds from Ingham Lake. Additional birds from Ingham Lake and Missouri were added each year. A refuge was established that encompasses 120 square miles. A ten acre pen was built around a bay at the northwest end of the lake. In 1977, the flock numbered approximately 350 adults, of which 200 were breeding adults. They produced about 200 young. The Rice Lake flock is expected to increase to at least 300 breeding pairs.

Colyn

Fifty-eight adult and sub-adult geese were moved from Ingham Lake to Colyn in February of 1976. An additional 34 young were brought to Colyn in June of 1976 plus 13 young were raised on the area. Twelve more adult birds were brought from the Ingham flock in May of 1977. Fifty-five



young were hatched in 1977 but serious predation by owls reduced the number of surviving young. The Colyn pen encloses 22 acres. The flock numbered 170 in the spring of 1978. Canada goose hunting was closed on approximately 25 square miles including all the water area of Rathbun, Brown's Slough and Colyn. This flock is expected to pioneer farm ponds in the Rathbun vicinity for breeding and return to the closed water areas for sanctuary during the fall hunting period.

Green Valley

The project was initiated in March of 1977 when 28 wild trapped geese from the vicinity of Ingham Lake were transported to Green Valley reservoir near Creston in Union County. No pen is provided on Green Valley but the captured birds had their primary feathers pulled which rendered them flightless for about six weeks. No nesting resulted from this first attempt but it is believed the birds were non-breeding two-year-olds. Forty-eight geese were live trapped from the wild in the fall of 1977 and transported to Green Valley in March of 1978. A refuge of 64 square miles was established to protect a portion of the breeding flock. Once established, breeding birds are expected to pioneer the numerous private farm ponds in the vicinity of Green Valley reservoir. The extent of success is, at this point, purely speculative.

Bays Branch

The Bays Branch flock was just recently started. In March of 1978, 50 geese were purchased from Chris Grabau, a local goose raiser near Boone, and transported to the Bays Branch area near Panora in Guthrie County. A 10 acre pen will provide breeding habitat for a captive flock which will hopefully expand to utilize the surrounding marshes and farm ponds. A refuge of 146 square miles is closed to Canada goose hunting.

Nesting and Production

As soon as the warm March winds turn snow banks into running water, the giants start returning to their traditional nesting areas. Anytime after the first of April and when the ice leaves the marshes, pairs of geese begin nesting. Nest sites are varied but islands surrounded by water, muskrat houses or man-made over-water nests are preferred. Other sites used include ground nests on creek banks or lake shorelines, old duck blinds and dirt levees.

The nest is made in a scooped out place in the ground and lined with down from the hens breast. The number of eggs per clutch ranges from 3 to 9 with most nests having 5 or 6 eggs; yielding an average clutch size of 5.2. Once the clutch is complete, the hen incubates the eggs for 26-29 days. The female does the incubating and only briefly leaves the nest to feed.



The Canada nest — more giants in the making.



As populations increase in local areas, nest success declines. When too many pairs attempt to nest in the pens, nest abandonment increases and lower overall production results. Production as it is referred to here, means the number of young raised to flight stage. In 1977, about 2,000 young were raised in northern Iowa, including young produced by the captive flocks.

As the breeding population increases, nesting pairs expand into available habitat and at present, goose populations are increasing around Smith's Slough, Hogsback and Rice Lake. Many birds are now nesting in southern Minnesota and this segment of birds is expected to increase considerably in response to attractive habitat.

Migration, Wintering Areas and Mortality

A sample of young and adult giant Canada geese have been banded each year. Recovery distribution of banded birds appears in Table 1. Before 1967, most geese were harvested locally. With the establishment of large refuges around each captive flock, local pressure was alleviated and flocks began to expand. This was followed by a corresponding increase in the number of recoveries being reported from other states. Migration of giants to points southward usually begins in late November with the biggest exodus occurring in December after harsh weather covers the food supply.

Table 1. Recovery distribution of harvested giant Canada geese banded in Iowa, 1967-1977.

AREA	TOTAL RECOVERIES	% OF TOTAL RECOVERIES
Iowa	77	32.2
Minnesota	63	26.3
Missouri	31	13.0
Illinois	10	4.2
Wisconsin	6	2.5
Tennessee	3	1.3
MISSISSIPPI FLYWAY TOTAL	190	79.5
South Dakota	12	5.0
Nebraska	6	2.5
Oklahoma	5	2.0
North Dakota	4	1.7
Kansas	3	1.3
Montana	1	0.4
CENTRAL FLYWAY TOTAL	31	12.9
Manitoba	10	4.2
Saskatchewan	8	3.3
CANADA TOTAL	18	7.5
GRAND TOTAL	239	99.9

Most recoveries (banded birds shot and bands sent to the Fish and Wildlife Service) have been in the Mississippi Flyway with Iowa and Minnesota accounting for 32.2 percent and 26.3 percent of total recoveries respectively. Nearly all geese shot in Minnesota (88.9%) were not shot the same year they were banded. An analysis of 44 of these recoveries showed 64 percent to be one and two-year-old birds. This, along with visual sightings, suggests that there is movement of sub-adult Iowa produced birds into available habitat in Minnesota.

The age of sexual maturity is still under study. While it appears that most giant Canadas do not nest until they are at least three years of age, some two-year-olds definitely do nest. Nest success of two-year-olds and first time breeders is lower than that of experienced hens. Next success varies with the number of safe over-water nesting sites but the free-flying flock at Inghan Lake showed 76 percent success. Raccoons and man seem to be the two main nest predators.

Hunter returns as well as geese that are recaptured, indicate Missouri to be the principle wintering area for Iowa produced giants. Forth-three of 44 Missouri post-season retrapped geese were taken on Schell-Osage Wildlife Area (Vernon County) in the southwestern portion of the state. One was taken at Trimble Wildlife Area (Clay County) near Kansas City. Of the 31 hunter recoveries in Missouri, 10 were shot on or very near the Schell Osage Area and 11 on or near Swan Lake Refuge (Chariton County) in north-central Missouri. A research project in northwest Iowa has shown that 40 to 50 percent of the neck-collared geese marked at Ingham Lake are wintering at Swan Lake and Schell Osage Wildlife Areas, thus substantiating the banding information.

Summer trapping efforts in northeastern South Dakota resulted in 32 retraps of Iowa banded giants. Twenty of these birds were captured on Piyas Lake (Marshall County) while the rest were taken on areas within approximately 25 miles of that location. The concentration of birds found in this area during July probably results from a molt migration of birds out of Iowa. All but six of the retrapped geese were one and two-year-old birds.

Direct recovery rates (birds shot in the same year they were banded) calculated for Iowa banded giants, indicate that harvest rates have generally been light. The overall direct recovery rate based on all birds banded (1967-1976) was only 2.5 percent. The overall immature and adult rates were 2.8 percent and 1.3 percent respectively. These figures suggest that immatures have been 2.2 times as vulnerable as adults. The recovery rates of Iowa giants have been significantly influenced by two important factors: (1) the establishment of adequate refuges around each captive breeding flock thus alleviating heavy local hunting pressure and (2) a late southward migration generally after goose season closes. As populations build, refuge size may be reduced to allow more recreational opportunity. The monitoring of recovery rates will continue in order to evaluate the impact of hunting and other management practices.

Non-hunting mortality is not considered extreme in Iowa. However, horned owls, snapping turtles, and dogs are serious predators on geese, especially young birds and may seriously limit the rate of increase in the flock.

Recreational Values and Private Interests

The demand for the majestic Canada goose is continuing to increase and it far exceeds the supply. Hunters travel great distances to shoot one of these big gray birds. In past years, Missouri, Minnesota, and Iowa have had curtailed seasons on Canada geese, building up the Eastern Prairie Population to partially meet the present demand. They are truly trophy birds and they can be likened to big game in the western states.

Giant Canada geese from many state-established flocks are contributing to the entire goose harvest in the Mississippi Flyway. In the future, these birds may contribute a respectable percentage of the total goose harvest in the eastern half of the United States.

Funds from hunting licenses and Pittman-Robertson monies (a federal tax on sporting arms and ammunition that is redistributed back to the states) support all of the restoration efforts in Iowa. Hunters pay for this program and they receive direct benefits through hunting and watching these beautiful birds. This is a program sportsmen are proud of and one they support.



Photo by Ken Forman

More important than the actual placing of a goose in the hunter's bag are the esthetic and non-consumptive assets. There is nothing more stirring than the call of the wild goose or of a flock of honkers traversing the sky. These feelings have been with people since our ancestors settled this land and have been handed down as part of our heritage. Canada geese have inspired song writers, authors, poets, naturalists and industrialists. The serene tranquility produced by the mere presence of such birds is unmeasurable. The actual sighting of a goose with goslings in a natural setting in Iowa can do nothing but bring people more in tune with our environmental needs and nature itself.

The esthetic values of winging geese probably outweigh the more materialistic desires of man. Hunters and bird watchers alike receive great satisfaction by watching the giant honker. Reestablishing flocks of *maximas* has many contributions to society. First, it tends to right a wrong to nature by bringing these birds back as a nesting species in their native prairie slough country of northern Iowa. Secondly, it provides hunting recreation per individual bird far in excess of any other game bird except the wild turkey. Thirdly, the presence of honkers just going through their life processes tends to attract the attention of people of all ages and is educationally as well as emotionally rewarding.

Landowners with wetlands in the vicinity of these goose flocks could entice nesting pairs by providing nesting structures on marshes or farm ponds. Some farmers in northwest Iowa have not drained small marshes on their farms due to the enjoyment of watching the geese. The future for private landowners in southern Iowa to have nesting geese on their farm ponds is quite bright. If anyone is interested they should contact their nearest wildlife biologist for advice.



Barrel nest.

Photo by Ron Johnson

Several different types of over-water nesting structures have been tried and almost all were used. However, the best one and the one most easily constructed is the barrel nest. A 55 gallon drum is cut into thirds, leaving two sections with bottoms and a middle section which can be fitted with a wood bottom to make a third structure. A notch is cut in the side of each structure three-fourths of the way to the bottom to allow goslings to escape. Holes are drilled in the bottom to allow

moisture to drain away and a 1 inch to 2 inch piece of styrafoam is placed in the bottom to insulate the nest and prevent freezing of eggs during unexpected cold snaps. To mount the structure, two angle irons (like pieces of steel fence posts) are welded in an 'X' fashion to the bottom of the barrel. Then a four inch piece of 1 1/4 inch inside diameter pipe is welded to the angle irons. This pipe should be drilled and a nut welded to the pipe matching the drilled hole. A piece of 3/4 inch inside

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diameter galvanized pipe, long enough to stick out of the water 3 to 5 feet completes the nest. This pipe should be placed in the desired area and immediately after the ice goes out, the barrel should be placed on the pipe. This is done by slipping the 1¼ inch pipe on the nest over the ¾ inch stand pipe and a bolt screwed through the nut tightening the nest to the stand. Nesting material from slough grass to grass-alfalfa has been acceptable.

A Look at the Future

The four giant Canada goose flocks in northern Iowa are gradually increasing and populations are expected to triple at Smith's Slough, Kettleson's Hogsback and Rice Lake. Presently there is enough unoccupied habitat in those areas to accommodate that increase. More research will be needed to determine the effects of dense breeding populations on nest success, gosling survival and birds being forced to move to unoccupied habitat. Inter-relationship of marked birds and life history information of neck collared birds will be very meaningful to management.

If present efforts to establish free-flying flocks in the farm pond region of southern Iowa are successful, the future is bright for reaching a population goal of 8,000 adults. This population level would yield about 5,000 breeding birds which could produce 7,500 goslings annually. Cooperation and support from the Iowa public is invaluable in reaching this goal. Our major goal is to provide most Iowans an opportunity to view these majestic birds and to provide for a harvest compatible with maintaining population levels.

Harvest — A part of management.



Photo by Roger Sparks

Profile of an Endangered Species

MONKSHOOD

(*Aconitum noveboracense*)

BY DEAN M. ROOSA
STATE ECOLOGIST



BECAUSE of the shape of the petals of this lovely woodland plant of the Buttercup family, it has been given the common name 'monkshood'. Its scientific name is *Aconitum noveboracense*; the word 'noveboracense' means 'of New York', the place where the plant was first discovered. It still occurs in New York, as well as in a location in Ohio, but its major population center is in the 'driftless area' of Wisconsin and Iowa. In Iowa, it grows in perhaps only five locations and has such specific habitat requirements, low reproduction rate and

specific pollination requirements that it was placed on the Iowa endangered species list in 1977. It appears also on the Smithsonian Institution list of plants proposed for the federal endangered and threatened species list. It has survived in Iowa because it is a plant of rugged terrain and fairly remote locations. One of its major habitats was threatened by a dam in Wisconsin; fortunately the idea of the dam is losing favor. There are several species in the genus including a species in the Rocky mountains in Colorado and a lovely, tall cultivated

plant. As with almost all rare species, it is not safe to transplant as it is dependent on several micro-climatic and soil factors which cannot be duplicated in cultivated conditions, or even in conditions which may appear suitable to the human observer. As with all rare plants, it should be enjoyed for its beauty where it grows and should not be handled if one is found. There are likely only a few thousand plants remaining in the world; this fact nearly mandates us to do all possible to provide for its existence. This would include purchasing and permanently protecting any additional

sites where this rare beauty may be found. This requires acquisition money and broad public support for the Commission's program.

This lovely plant grows to over three feet tall; no one knows how old such a plant would be. The species has survived in Iowa for perhaps ten millenia; it requires a delicate balance of boreal micro-climate, soils, the proper pollinator and little human disturbance. Surely we are a sufficiently rich state that we can afford to set aside tracts to be forever undisturbed as safe habitat for a co-inhabitant struggling for existence. □

1978-79 HUNTING AND TRAPPING SEASONS & LIMITS

HUNTING SEASONS	Game	Season Dates	Shooting Hours	Daily Bag Limit	Possession Limit
RABBIT	(cottontail)	Sept. 2-Feb. 28	Sunrise to Sunset	10	None
	(jackrabbit)	Nov. 4-Jan. 7	Sunrise to Sunset	3	6
SQUIRREL	(fox and gray)	September 2-Jan. 7	None	6	12
DEER (bow)		Oct. 7-Dec. 1	½ hr. before sunrise ½ hr. after sunset	1 1	1 1
DEER (shotgun)	All zones, 2 seasons	Dec. 2-Dec. 5 or Dec. 9-Dec. 15	Sunrise to Sunset Sunrise to Sunset	1 1	1 1
GROUSE (ruffed)		Oct. 14-Jan. 7	Sunrise to Sunset	3	6
RAILS (Sora & Virginia)		Sept. 2-Nov. 10	Sunrise to Sunset	15	25
SNIPE (Wilson's - Jack)		Sept. 2-Dec. 17	Sunrise to Sunset	8	16
WOODCOCK		Sept. 23-Nov. 26	Sunrise to Sunset	5	10
RACCOON & OPOSSUM		Nov. 4-Jan. 7	None	None	None
WOODCHUCK		June 15-Oct. 31	None	None	None
FOX (red and gray)		Nov. 25-Jan. 14	None	None	None
COYOTE		Continuous Open	None	None	None
PHEASANT		Nov. 4-Jan. 1	8:00 a.m.-4:30 p.m.	3	6
QUAIL		Nov. 4-Jan. 31	8:00 a.m.-4:30 p.m.	8	16
PARTRIDGE (gray)		Nov. 4-Jan. 1	8:00 a.m.-4:30 p.m.	6	12
GEESE		Oct. 1-Dec. 9	½ hr. before sunrise to sunset	*5	*5
DUCKS (split season)		Oct. 1-8 Oct. 21-Dec. 1	½ hr. before sunrise to sunset	Point System	
COOT		Same as Ducks	½ hr. before sunrise to sunset	15	30

TRAPPING SEASONS

MINK - MUSKRAT	6 a.m. Nov. 4 through Jan. 7, 1979.
FOX (red and gray)	6 a.m. Nov. 25 through Jan. 14, 1979.
BEAVER	6 a.m. Nov. 4 through March 25, 1979.
<i>except that portion of the state along the Mississippi River north of Interstate 80 and east of Davenport, Rock Island, and Northwestern Railroad tracks and the Chicago, Milwaukee, St. Paul, and Pacific Railroad tracks where the season shall be 6:00 a.m. December 30 through February 25, 1979.</i>	
RACCOON, STRIPED SKUNK	
OPOSSUM, BADGER, AND WEASEL	6 a.m. Nov. 4 through Jan. 7, 1979.
OTTER AND CIVET CAT	No Open Season
COYOTE	Continuous Open Season



Kemler Named New Commissioner

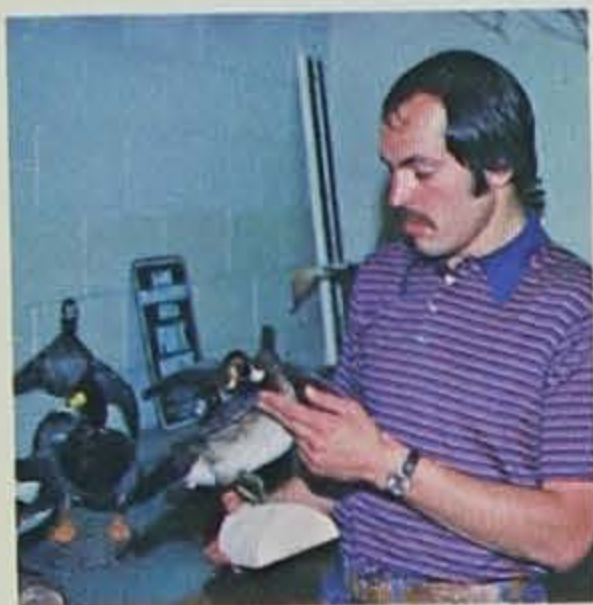
Richard W. Kemler of Marshalltown was recently appointed to serve on the Iowa Conservation Commission by Governor Robert D. Ray. Kemler is an active outdoorsman with interests in many phases of conservation. His term will run to June 30, 1983.

He is a member of the Izaak Walton League, the Marshall County Wildlife Club, Ducks Unlimited and the National Rifle Association.

An "Ace" for Conservation

BY ROGER SPARKS

Students at Lincoln High School in Des Moines are learning to appreciate and use our great outdoors. A two-semester conservation course is offered students there as a science elective. Ace Hendricks, in his sixth year of teaching and coaching at Lincoln, has time to instruct two classes each semester.



Hendricks doesn't have to sell students on taking the course — the classes are always full. He does sell them practical knowledge and sound conservation philosophy. The course is a good one, emphasizing appreciation and responsible conduct.

"We hope through this course," he says, "students may become good consumers of our great outdoors. Many young people, particularly in an urban area, simply do not have the opportunity to learn those things necessary to become conscientious sportsmen and knowledgeable outdoor enthusiasts. This course introduces them to the basics."

The Lincoln course includes some outstanding subjects. Under the fall course, "Hunting and Wildlife", students learn the basics of wildlife management, hunting and trapping seasons and limits, ways to improve landowner-sportsman relationships, types of cover and habitat, species identification, hunter safety, and taxidermy. The campus bird life is surveyed and songbird houses are constructed as semester projects. During the spring semester, classes are introduced to subjects such as forestry, which includes annual plantings and maintenance on the large Lincoln campus, tree identification, and wood product uses. Students also get lessons on boating and boating safety, fish identification, and fishing seasons and limits.

The course does not delve into complex environmental issues but rather deals with practical outdoor information that students enthusiastically seek. As generations of lowans drift further from their natural heritage, educational institutions must span the knowledge and understanding gap. Ace Hendricks is proving it can be done.

Photos by the Author



Classroom Corner

BY ROBERT RYE

ADMINISTRATOR, CONSERVATION
EDUCATION CENTER

FORESTRY in Iowa is sometimes referred to as "forestry on the farm". The farmer, not the logger, has cleared Iowa of many of her forests. These farm forests have produced important commercial species of timber. Walnut, Oak, Hard Maple, Soft Maple, Elm, Hickory, and Ash are some of the important trees. Lumber products are very important, especially to people in a farming state. The uses are varied — lumber for buildings, posts, poles, and fire wood.

The lumber industry in Iowa dates back about 140 years. Early saw mills were originally located along the rivers and run by water power. At one point in history, about 70% of our counties had saw mills in operation. Most of this production was used locally.

Until recent years, many homes were heated by wood burning stoves. Cordwood was also important as a fuel for stream boats as they moved up and down the Mississippi River. The term cordwood comes from the measurement of a pile of wood 4 ft. x 4 ft. x 8 ft., which is called a cord.

To be used as a good source of lumber, a forest has to be managed. A managed forest will usually have more younger trees — those which grow faster. This reduces losses due to disease and insects. A managed forest also has more open spaces, increased sunlight, moisture, and soil nutrients available to the trees. Straightness of trunk, limb placement, and scars while the tree is growing all affect its value and final use. Wood and its uses are considered while the forest is being managed up until the lumber is in a completed project.

IOWA CONSERVATIONIST/OCTOBER, 1978



Photo by the Author

When it's time to cut the log, it is plain cut (straight through side to side) for softwoods and quarter cut (to show edge of grain) for hardwoods. Quarter cut is more expensive, but shows better grain patterns, prevents warpage, and provides a better wearing surface. The wood is then dried from a fresh cut, 30% — 100% moisture, to 6% — 10% moisture for furniture construction.

Another use of lumber is the production of veneer, which is a very thin sheet of wood that is sawed, peeled, or sliced from a log. Layers of thin sheets are glued together to make plywood. Plywood has great strength, yet is very light.

Lumber (pulpwood) is also used to make paper and paperboard. Pulpwood flour and sawdust is used in making dyes, paints, explosives, turpentine, and resins. Bark of trees is made into flavorings, drugs, and chemicals. Roots are made into oils, teas, smoking pipes, and trinkets.

The Education Center's new dorm is set up to display a variety of native Iowa woods. The building has

eight rooms and each room contains beds made of a different type of wood. The wood was produced by the forestry saw mill at Yellow River State Forest and cut and assembled into beds at the Park Section's central shop located in Solon, Iowa.

We have rooms of Walnut, Oak, Hard Maple, Butternut, Ash, Red Elm, White Elm, and Cherry. They provide an excellent opportunity to observe the same product made of different woods, which produces a totally different effect in each room. Arrange a winter program and include this wood study as part of your schedule, or stop at the Center's office for a tour.

LOOKIN' BACK

(Continued)

The first ruffed grouse season in 45 years was announced in this issue. We will be having our eleventh modern season this fall and the birds are doing well. Some say the hunter has never lived until he or she has walked up and down those nearly vertical hills chasing grouse all day.

FROM THE

Warden's diary

BY REX EMERSON
LAW ENFORCEMENT SUPERVISOR

THE COOLER DAYS of October let us know that fall is here, one of the most beautiful times of the year in Iowa. These cooler days make more people think about going hunting. Consequently, we have more squirrel hunters taking to the woods than we had in September when the season opened. Also, I have noticed, early Sunday mornings right after sunrise many hunters are out, and again quite a few on Sunday afternoons, after church.

The old man who lives down by the river had been to church and when I stopped at his place about 5:00 p.m. he was cleaning four nice young squirrels. Of course, I had to listen to his bit of philosophy for the day. He said, "If all the people who sleep in church were laid end to end they would rest much better."

It didn't take him very long to skin the four squirrels. He cut through the skin and bone of the underside at the base of the tail. While standing on the tail he simply grasped the squirrel by the hind legs and pulled up, which turned the skin wrong side out as it peeled off clear to the head. Then he pulled the remaining skin back the other way to the hind feet, cut off the head and feet, and there it was with hardly a hair on it.

We talked for awhile about the different ways to hunt squirrels. The most common way is with a .22 cal. rifle. The hunter goes into the woods and sits down where he can observe a den tree and quietly waits for a squirrel to show himself. Sometimes a squirrel call is used if the hunter is a little impatient. The report of a .22 cal. rifle is soon forgotten by the other squirrels and another one will soon show himself.

The old man told me that was the way he used to hunt until the front sight of his rifle got old and got to looking kind of fuzzy. He started using a 20 gauge shotgun. A lot of squirrel hunters have gone to the 20 gauge. For one thing, they can hit a running squirrel easier, and the shot doesn't carry nearly as far as a rifle bullet. For that reason quite a number of farmers will let you hunt squirrels in their timber with a shotgun, but not with a rifle.

A very enjoyable and successful way to hunt squirrels is to float down the river in a boat or canoe. You can use only a shotgun with this hunting method because it is illegal to shoot a rifle on, over, or from water.

You should take a cooler along, dress your squirrels immediately and place them in the cooler. Squirrels are a real gourmet's delight when properly cared for.

A dog not only makes a good companion on a squirrel hunting trip, but can be very helpful. Most any dog can soon learn to hunt squirrels. Some of the best squirrel dogs I have seen were just the old "pot-licker" variety. Usually about one minute after you shoot the first squirrel they learn what they are supposed to be looking for and are ready to join in on the hunt. The dog will chase the squirrel up a tree and bark at it until you get there. If it happens to be a good den tree, one that is full of holes, then you chalk one up for the squirrel and go look for another one. Thank heaven for den trees, and may they never be destroyed!

Enjoy the sport of hunting. Ask permission to hunt on private property. Always hunt safely.

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