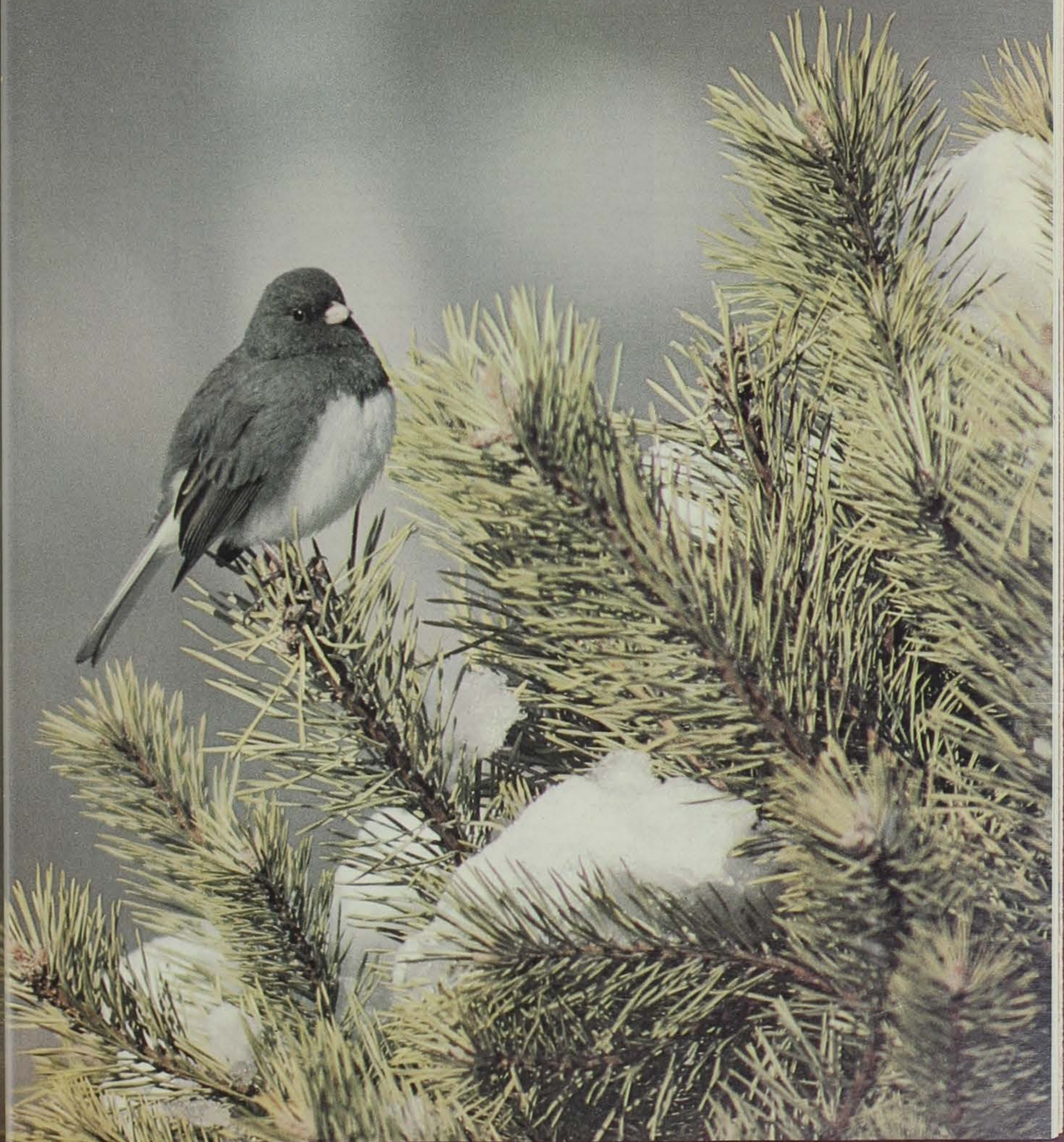




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COVER

1980 — Non-Game Support Certificate,
Dark-Eyed Junco (*Junco Hyemalis*) by
Robert Sheets, Wildlife Management
Biologist, Maquoketa, Iowa.

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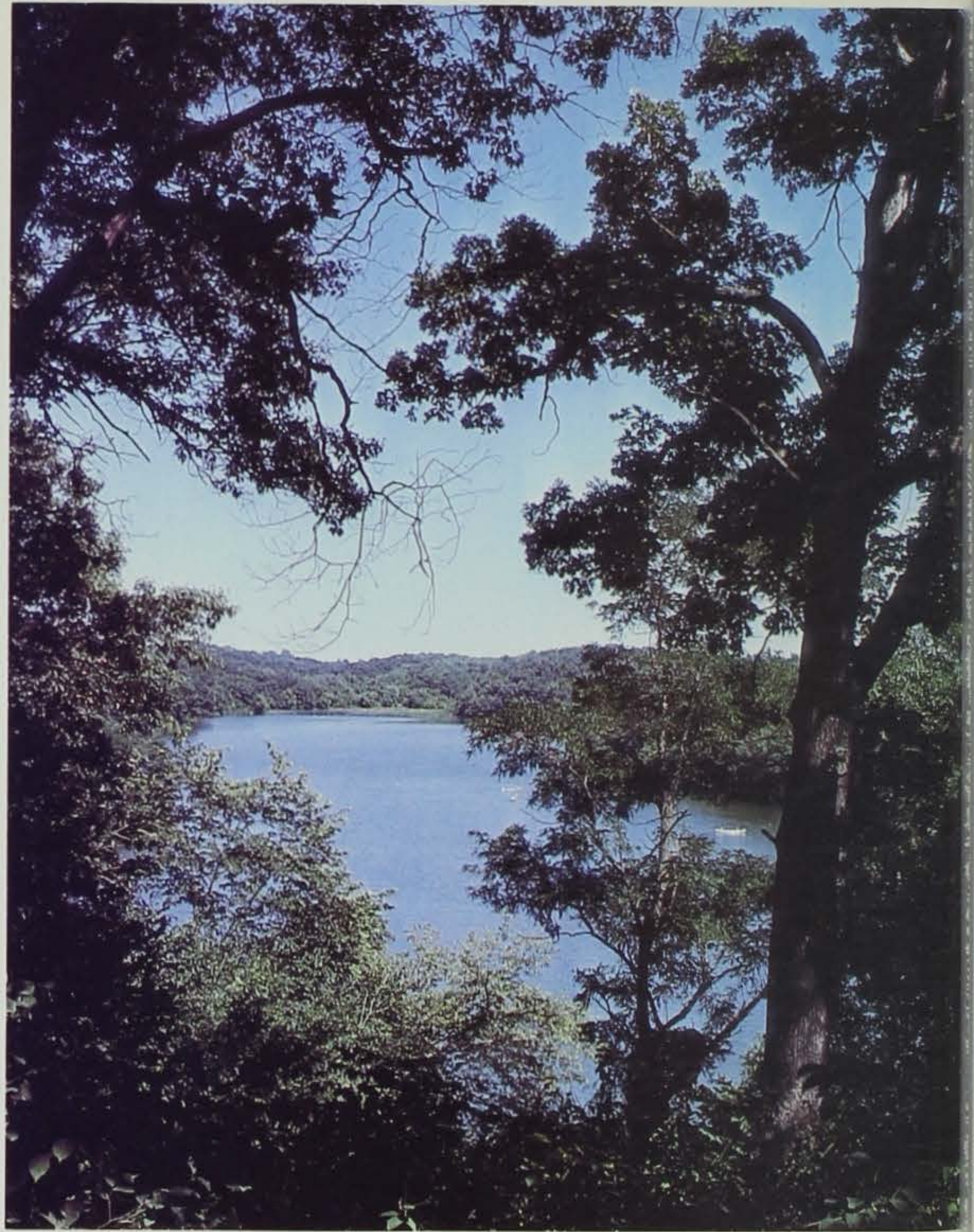
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points.



Pine Lake State Park

by Darrell Arntzen
PARK RANGER

Photos by Ron Johnson

When local residents stood back to look at Pine Lake State Park during the first 10 years or so, they saw a pretty area which was also rather barren of improvements.

As the park appeared in the 1933 season, it would have had little resemblance to today. The Lower Lake was there, along with a beach in the present beach location. A limited picnic area was available at the Hogsback, and the tunnel under the road was already built. But much of what you see in the park today came afterward.

Much of the credit for the building of improvements at the park goes to the local Civilian Conservation Corps (CCC) camps which were established in the area. Young men, ages 18 to 25, who were unemployed could enlist in the CCC during those years when times in the Depression were desperate. Pay was not great, but it helped.

Incoming President Franklin Delano Roosevelt, who took office in January of 1933, faced a difficult task. The stock market crash of 1929 had bankrupted millions of Americans. Times were hard, and millions were unemployed. The beginning of World War II, which finally snapped the United States out of the Depression, was still a decade away.

Seeing the need for conservation projects around the country, but finding no other way to get them done, Roosevelt devised the idea of CCC camps, employing young men ages 18 to 25.

Eldora was chosen as a site for one of the CCC camps largely because so much work needed to be done in the area of Pine Lake Park. The work of construction of the CCC barracks began in the fall of 1933 with the construction of six barracks, measuring

20'x100'. One year later, a recreation hall measuring 20'x60' was built. The camp officially began on November 14, 1933, with the enrollment limit set at 226 persons.

Certainly, pay could not be substantial. However, workers received \$30 per month for their efforts, while assistant leaders made \$40 per month and leaders made \$45. Although that pay seems insignificant by today's standards, it was important in those hard times.

Construction of the camp itself was carried out by a trainload of Works Projects Administration workers, who were supervised by several Army personnel. Total expenses for the construction of the CCC facilities was listed at about \$5,000.

In addition to the supposed boom at the park, the location of the CCC camps was expected to help the economy of Eldora, which was feeling the economic doldrums as much as any other town. The CCC workers had money to spend in Eldora, and food and fuel were purchased locally. Travel expenses were such that nearly everything the camp needed was from the local area.

Although the camp rarely ran full, the average may have been between 150 to 200 men. Recruits were from the local area, plus surrounding counties. Sometimes, men from all over the state would be sent to the local camp to help fill out quotas.

Each of the barracks constructed had a concrete floor, with wooden construction for walls and roof. The buildings had open cathedral type roofs, which made heating difficult at best.

Each camp had its own cook, blacksmiths, mechanics, and its own set of commanders or leaders. The

facilities included hospital area, officer's quarters, recreation rooms (later a recreation hall), mess area, and commissary. Local doctors took care of the more serious health problems at the camp.

But life was not easy. The barracks were cold in the winter and hot in the summer. Work was largely done in shifts, and on some projects it was carried out around the clock. Work went on the year around, meaning that it had to go on during the most bitter cold and the most brutal heat.

But that is exactly how it all got done. When time for pleasure came, the men of the camp played hard. More than one romance and eventual marriage came about because a young man from the CCC camp at Eldora struck up a friendship with one of the local young ladies.

Area residents remember the local CCC camp best for its good works at the Pine Lake State Park. But that was just one area where the men worked; they also did soil erosion work for area farmers, and worked on roads and bridges in the area. WPA workers did many of the larger road and dam projects.

Roads and trails had to be improved through the park; those were some of the first projects undertaken. Sanitary facilities had to be built, picnic facilities increased, and a new lake was planned.

In that first year alone, inventories showed the men had constructed five miles of trails, eight bridges, five latrines, a shelter house, planted 16 acres of shrubs and trees, cleared the bed of what is now Upper Lake dam, built fish shelters, and began work on the dam of Upper Lake.

The men also built new picnic tables, put camp stoves around, and spent hours clearing more area for picnic

facilities.

Much of what today's visitor sees in the park built of sandstone was constructed during the CCC days. This included trail bridges, some of which have since been replaced; the huge sandstone lodge; the latrines at the Hogsback and the Lower Lake boat area; the old boathouse on Upper Lake (now under water), and the pillars marking the entrance to the park from north and south.

In short, if something needed to be done, the CCC men did it. The biggest single project was construction of the Upper Lake, which included clearing the valley floor of Pine Creek for some 75 acres, then construction of the earthen and concrete dam which is still in use today. During the building of the dam, CCC men worked in five-hour shifts around the clock during the late fall months to get the job done. For that one job alone, 30,000 cubic yards of earth had to be moved, with a total of 8,300 man-days spent in the process. The project cost \$6,000, a high figure for depression days.

Water began to gather behind the new dam and spillway in November of 1934. When that was done, CCC men began to build the new road to the area where a sandstone lodge was to be constructed. Work was going on all during this time on the fish ponds which are still visible just to the south of the Park Ranger's Residence.

The work was never-ending because so much needed to be done. Early pictures of the basins of Pine Creek show an area which had some timber, but nothing like today. Much of the plantings were undertaken during the CCC days, and that forestation is now reaching toward adult age.

Later, when projects at the Pine Lake Park began to wind down, the CCC men found other work, doing reforestation in the Iowa River Greenbelt Area of Eagle City, and helping farms with soil erosion work.

Although the work was difficult and the hours long, CCC workers earned honest money and had enough to eat and wear in addition to having a place to stay. During the Depression, others would have been happy to have so much.

But even the CCC camp had its times of tragedy. One of the workers, 20-year-old Jack Williamson, drowned in the Lower Lake on June 25, 1934 when his pleasure boat began to sink. Three other companions were saved when they were able to swim to safety on the island. Williamson could not swim.

A walkway had to be built on the high bridge east of Eldora over the Iowa River when a CCC worker was hit by a truck, pointing out the problems of increased foot traffic over that huge structure. The walkway was eventually built on the north side of the bridge, and is well-remembered by local residents. The old bridge was replaced by the new structure over 10 years ago.

The largest concentration of CCC workers in Eldora came in July of 1934 when a second

CCC camp was established. This camp was moved into tents on a tract of land south of the present Hardin County Fairgrounds, in an area now used for a portion of the Eldora Cemetery. This camp brought the total of CCC workers to 400, probably the high for any one time at Eldora. Eventually, the original camp was moved out of Eldora, and members of this tent camp moved into the barracks on the Fairgrounds. The tents were trucked back to Des Moines and no trace of that camp now exists.

Finally, in 1941, the United States went to war. The advent of a war economy and the need for young men in the armed services brought an end to the eight-year era of CCC camps and work around the Eldora area. The barracks of the former camp were then used for prisoners of war from Germany and Italy during the 1940's. On many a summer afternoon large crowds of spectators would fill the Fairgrounds Grandstand to watch a Sunday soccer match between teams from this prisoner of war camp. The days of the depression and CCC were long gone.

Now, some of the old barracks stand as a mute and run-down reminder of the period when times were hard, but when so much got done in the Pine Lake Area. □



CONTEST FOR GRADCH

The U.S. Power Squadron, the U.S. Coast Guard Auxiliary, and the American Red Cross are dedicated to the mission of eliminating boating accidents, injuries, and fatalities. This is a challenging and complex task. The key to success of these organizations is its membership — and interested, willing, and highly qualified people devoted to the improvement of boating and water safety.

At least twice a year, each of these organizations offer free boating education courses. These classes include basic information on aids to navigation, rules of the road, charts and compasses, boating regulations, motorboat handling, sailing and canoeing. Information on course dates and areas can be obtained by calling the Des Moines Conservation Commission Office. The first set of classes usually start in January or early February. Most of these free boating classes are held at night in area school houses for adults, however, a few classes are taught during school hours to junior high school age students.

Upon the successful completion of the Power Squadron or U.S. Coast Guard Auxiliaries exam and a 16 question supplemental exam covering Iowa laws, the student is certified as a safe boater. This certification guarantees the student that if in the future, mandatory boat operators license is required, these students will not have to take another safe boating course.

COLORING BOOK OFFERED

The Water Section of the Iowa Conservation Commission is again offering Iowa elementary school teachers and their students a free water safety coloring book. The book is geared for grades 1st through third grade, and consists of a teachers guide plus 22 pages of cartoon animals illustrating most of the basic water safety requirements and precautions.

The coloring books are available on a first-come first-serve basis through the ICC's main office, Wallace State Office Building, Des Moines, Iowa, or by writing to the local Waters Officer.

WATER AND BOATING SAFETY POSTER CONTEST ANNOUNCED

This year the Iowa Conservation Commission in cooperation with the Iowa Coast Guard Auxiliary, Des Moines Power Squadron, the Iowa Chapter of the American Red Cross, and the Department of Public Instruction, are inviting elementary age children to participate in a First Annual Water Safety poster contest. A Co-sponsor of the poster contest is IMT Insurance who is providing more than \$300.00 in cash prizes. This poster contest will be conducted in conjunction with the Iowa Safe Boating week.

The safety posters will be exhibited and judged for a cash prize and the top winners will have the opportunity to be present for the signing of the Iowa Safe Boating proclamation by the Governor. This first year, students in the primary and elementary school grades have been assigned this slogan, "DROWNPROOF YOURSELF". Ideas on how to drownproof yourself are: (1) learn to swim, (2) swim at swimming beaches only, (3) use the buddy system, (4) wear a personal flotation device — life jacket around water, (5) in a boat, be alert to hazards, (6) load your boat properly, (7) watch the weather when boating, (8) wade upstream. Posters need not be limited to these ideas, but should carry the drownproofing theme.

Through this contest, students will be able to put their creative skills to use for water and boating safety. An entry form and contest rules are listed below. If additional forms are needed, simply make xerox copies.

RADCHOOOLERS - WATER SAFETY STRESSED



CONTEST RULES

1. First grade through sixth grade students are eligible to enter.
2. The poster must be drawn only on white poster paper, 15" x 20" or 14" x 22". Students may sketch their design lightly with pencil, but it must be colored. To color the poster students may use crayons, paint, colored pencils, or felt tip markers. The entry form must be lightly pasted to the back of the poster.
3. Posters should be designed on a vertical plane rather than horizontal plane.
4. To be considered for a prize, the official entry form must be completely filled out in ink, or typed.
5. Mail the contest form and poster in a sturdy, sealed mailing tube to: Water Safety Contest, Iowa Conservation Commission, Wallace State Office Bldg., Des Moines, Iowa 50319. Entries must be postmarked by February 1, 1981.
6. We will not be able to acknowledge or return any entry.
7. All entries will be judged first according to age group, then winners will be chosen from the best in each grade classification.
8. Winners will be individually contacted and also announced in a special news release.
9. Children of the judging committee may not enter.
10. The grade classifications and prizes for the contest are:

	1-3	4-6
First Prize	\$60	\$60
Second Prize	\$40	\$40
Third Prize	\$30	\$30
Fourth Prize	\$20	\$20
Fifth Prize	\$10	\$10

OFFICIAL ENTRY FORM (Please Print)

Name _____ Phone _____

Street Address _____

City _____ State _____ Zip _____

Name and Address of School _____

Grade _____ Date of Birth _____

To Parent or Teacher: To the best of my knowledge, this is the original work of my child/student and represents his/her level of ability.

Signature of Parent ____ Teacher ____ (Check One)

All entries must be postmarked on or before February 1, 1981.

Address to: Iowa Conservation Commission
Wallace State Office Building
East 9th and Grand Avenue
Des Moines, Iowa 50319

Fill out entry form completely and secure it to the lower left-hand corner on the back of the entry.

SOME FACTS ABOUT LEAD POISONING OF WATERFOWL

by Bob Barratt

Photo by Ken Formanek

What Is Lead Poisoning?

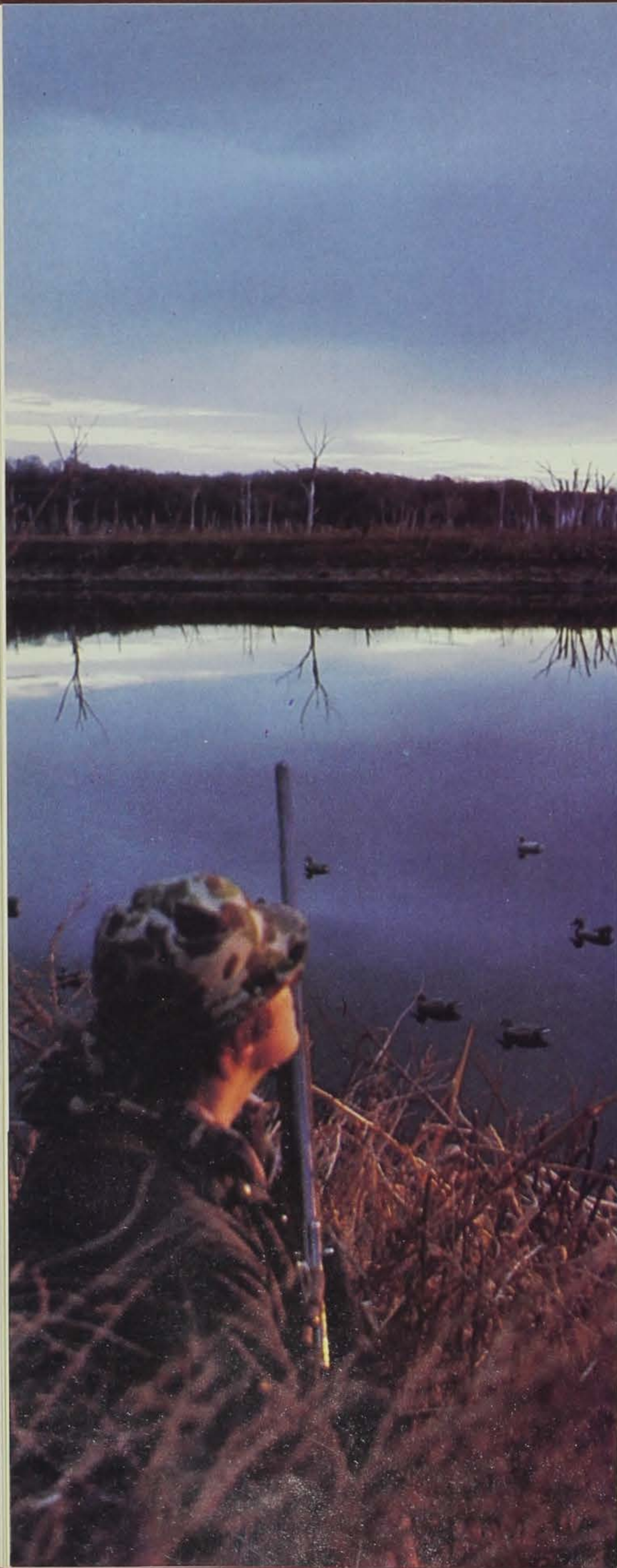
Lead poisoning is a form of heavy metal poisoning. In waterfowl, it occurs when feeding birds pick up and swallow spent lead pellets. The pellets pass through the upper digestive tract to the gizzard. Here the grinding action of the gizzard and the actions of the gastric juices convert the lead to a soluble form which then passes into the bloodstream. Once it enters the bloodstream, it disrupts the production of hemoglobin, thus reducing the oxygen supply to all tissues. It also interferes with the body's ability to breakdown glucose or other carbohydrates, leading to serious weight losses and malnutrition. The blood imbalance impairs the functioning of the liver and heart, causing damage to these organs. Lastly, it affects the central nervous system so that partial paralysis may occur, causing the wings and head to droop and the bird to lose the ability to walk or fly.

Is Lead Poisoning in Waterfowl a Recent Discovery?

No, in 1842, C. J. Fuchs recognized the problem of lead poisoning in waterfowl in a paper published in his native Germany. Waterfowl "die-offs" from lead poisoning have been documented in the United States since the turn of the century. Alexander Wetmore reported on an extensive study of waterfowl lead poisoning in 1919 in a publication by the U. S. Department of Agriculture. A great number of papers have been published since that time documenting losses and seeking solutions to the problem. The widely-recognized waterfowl expert, Dr. Frank C. Bellrose of the Illinois Natural History Survey, has studied the problem and its possible solutions for more than 30 years.

Is Lead Poisoning in Waterfowl a Major Problem?

Authorities generally agree that between two and three million ducks die in the United States from lead poisoning each year. In an average year, hunters bag an estimated twelve million ducks. They also knock down, but fail to retrieve (crippled, lost in heavy cover, etc.), a number equal to 18 percent of the number bagged, or slightly more than two million per year. Thus, the lead poison loss has a very great impact on waterfowl populations, and is even more significant when we remember that most of these losses occur in the winter and spring following the hunting seasons and must be subtracted from the next year's breeding populations. In addition to the direct death losses, we must consider the impact of sub-lethal lead doses. It is believed that several million birds are stricken with less than fatal lead poisoning that may impair their reproductive capacities. Even very small amounts of lead, though not fatal, cause serious changes in body chemistry and may well prevent normal nesting. Weakened birds are also far more susceptible to predation. Dr. Milton Friend, Director of the National Wildlife Health Laboratory, Madison, Wisconsin, believes that lead poisoning may be responsible for some of the spectacular die-offs of waterfowl which have been attributed to fowl cholera and other diseases. He explains that stress from lead poisoning may cause a carrier of avian cholera, for example, to start shedding the organism, thus infecting the flock and causing a much more serious loss of birds. Also, don't forget that secondary lead poisoning can occur in species that feed on the dead or weak waterfowl. A number of cases have been confirmed where bald eagles have died of lead poisoning as a result of feeding on dead waterfowl which have high concentrations of lead in the body tissues.



How Can We Tell How Many Ducks are Ingesting Lead Shot?

Large die-offs are obvious, of course, and have been documented for years as noted above. Laboratory analysis of these dead birds can positively determine the cause of death. Trained observers can readily diagnose lead poisoning in dead or dying birds. The National Wildlife Health Laboratory routinely examines samples of dead birds from all over the United States to determine not only the cause of death, but other factors including the level of lead in tissues.

Gizzards are collected from ducks taken by hunters each fall throughout the nation. Biologists then visually examine gizzard contents to determine the presence of lead. At some areas, birds are fluoroscoped to determine the presence of lead in the gizzards.

Duck wings are collected annually from a sample of hunters by the U. S. Fish and Wildlife Service to determine the species, age, and sex composition of the waterfowl harvest. Bones from several thousand of these wings have been analyzed to determine the level of lead residues.

A recently-perfected technique will permit biologists to take small blood samples for lead analysis from live birds which can then be released.

All of these methods can be used, but it must be remembered that they will be minimal figures. Gizzards collected from hunters, for example, come from what appear to be normal, healthy birds. Those having ingested shot obviously have obtained it within a relatively short period before they were killed. Had they swallowed the shot some several weeks previously, it would have been ground down and disappeared and the bird in all probability would have acted other than normal. Analysis of the data from the gizzard collections shows that the incidence of ingested shot increases as the season progresses. Heavily hunted areas, where the most spent shot is deposited, are constantly disturbed by hunters during the open season and not readily available to the ducks as feeding sites during this period. These sites are usually used extensively by waterfowl after the season closes and during the spring migration (in some areas, they overwinter). Thus, the probability of a bird ingesting shot at that time is much greater than during the season when the gizzard collections are made.

How Many Ingested Pellets does it take to Kill a Duck?

There is no hard, fast answer to this question. Shot size, diet, weather, and other variables greatly influence the fatality rate for lead poisoned birds. A great many experimental tests have been carried out under controlled conditions to determine toxicity of various doses of lead shot. Most experiments have used either number 4 or number 6 shot since these are the most popular sizes with duck hunters. Almost every size of shot manufactured has been found in the gizzards of ducks, however, so apparently they are not selective. One number 4 shot has been found to have serious effects on both the hemoglobin and the nervous system. In wild mallards on a grain diet, Bellrose and others have shown sixty to seventy percent death rates for birds fed one number 6 shot each. In game farm mallards on a whole corn diet, one number 4 shot caused a twenty percent mortality. Other tests also show differential rates for wild birds and game farm mallards even though they had the same diets. Stress is probably a factor in this difference. Even with game farm mallards, those fed eight number 6 shot and a corn diet had mortality rates of ninety to one hundred percent. Birds feeding on green plants or on high protein diets had lower mortality rates. Unfortunately, birds picking up shot in Iowa marshes during the fall, winter, and early spring depend almost entirely on waste corn in the fields for food, and consequently would be vulnerable to lead poisoning with a low rate of shot ingestion. As a result of very numerous tests on captive birds, it is apparent that individual birds have differential vulnerability. Under Iowa conditions, we can conclude that some birds would die after ingesting only one shot, additional ones after the second pellet, and so forth, until the

point was reached where mortality reached one hundred percent. In most cases, it would be a fair statement to say that five or six number 6 shot is a fatal dose.

If That Many Ducks are Dying of Lead Poisoning, Why Don't We See the Dead Birds?

Most lead poisoned birds that die, succumb during the winter and spring after the hunting season is over. Sportsmen are not out visiting the remote areas of the marshes at this time of the year. Only on major concentration areas are significant numbers of dead birds obvious. It is a known characteristic of birds suffering from lead poisoning to crawl into or under dense vegetation to hide, where they subsequently perish and are hidden from all but the most persistent searchers. Many are found and carried away to be eaten by coyotes, foxes, raccoons, and other scavengers. Eagles commonly concentrate where large numbers of waterfowl are found, and serve as efficient cleanup crews for the dead and dying waterfowl. Death losses are usually widely scattered over most of the many millions of acres of habitat used by waterfowl during the winter and during spring migrations. Where major die-offs occur, even so, hundreds and often thousands of dead birds can be found.

How Much Shot is Deposited where Ducks Might Be Expected to Pick It Up?

Lead is widely deposited wherever waterfowl are hunted. Iowa waterfowl hunters deposit at least 75 tons of lead in their hunting areas each year. This is the equivalent to 540 million number 6 pellets. This constitutes enough potential poison to exterminate the total North American duck population. Let us reduce this to a simpler example: Four hunters lease a ten-acre pond along the river; they hunt the area regularly, but have a pretty poor season, killing only 25 ducks among them for the year; if they were average shooters and used number 6 shot, they deposited 45,000 pellets in and around their pond; based on the premise that six number 6 shot is usually fatal if ingested by a duck, these hunters scattered enough lead on this area in one year to potentially poison 7,500 ducks. Yet, this would be considered to be a lightly hunted area compared to many. Bottom sampling of public hunting areas has been done in many states including Iowa. Even lightly hunted areas usually have several thousand shot per acre. Moderately hunted areas often have 40-50,000 shot per acre. A recent study on two heavily hunted areas in Missouri found sites with nearly 200,000 spent shot deposited on the bottom per acre. Samples in Iowa showed more than 100,000 shot per acre on one acre.

Lead Poisoned Mallards



Build A Solar Firewood Dryer

ONLY A GREENHORN would burn green wood. But what does one do when he needs a cord and doesn't have three summer months to wait for it to dry? He makes a solar dryer, of course.

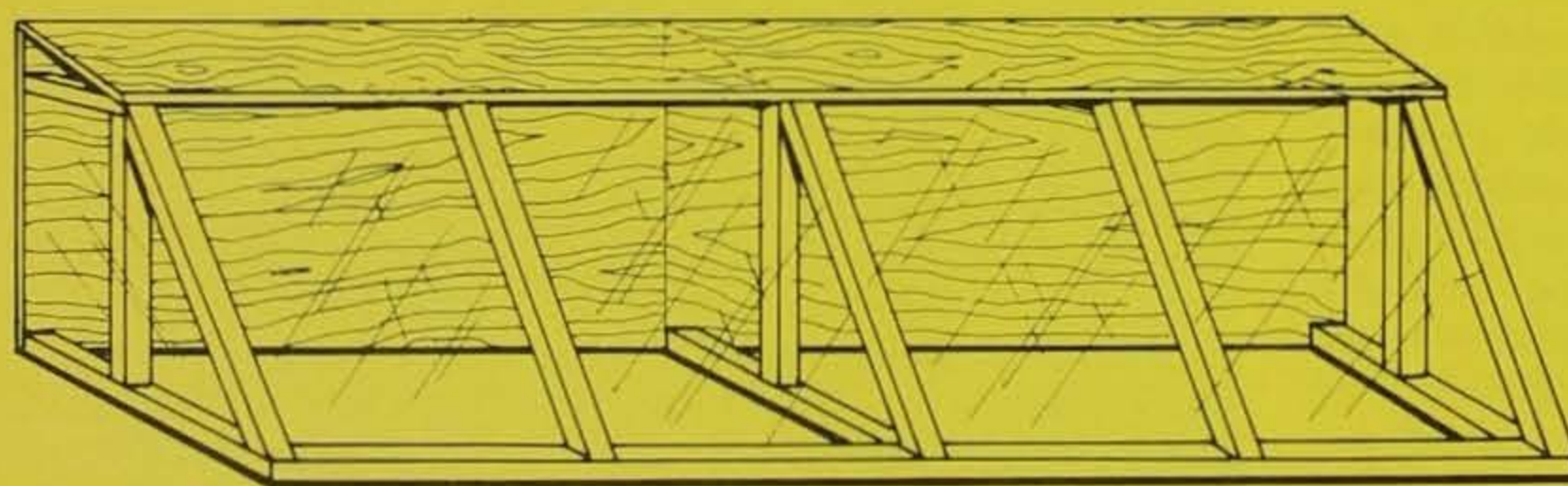
For about \$70 one can build a passive solar dryer that will cure a cord of wood in 6 to 8 weeks. And that wood will produce 50 percent more heat than if it were burned green. That means 50 percent less will be needed to produce the same number of BTU's. In addition to liberating more useful heat, dry wood keeps the chimney hotter and reduces creosote buildup.

With this design, light energy streams through the clear plastic on the sloping south roof and is absorbed by the black interior. The warm air rises, creating a draft through the stacked wood. After the wood is dry, it can be removed to make room for another batch or stored right in the dryer. Since bark is an excellent vapor barrier, wood should be split for faster drying. The dryer should be located on the south side of a building or windbreak and away from shade for optimum performance.

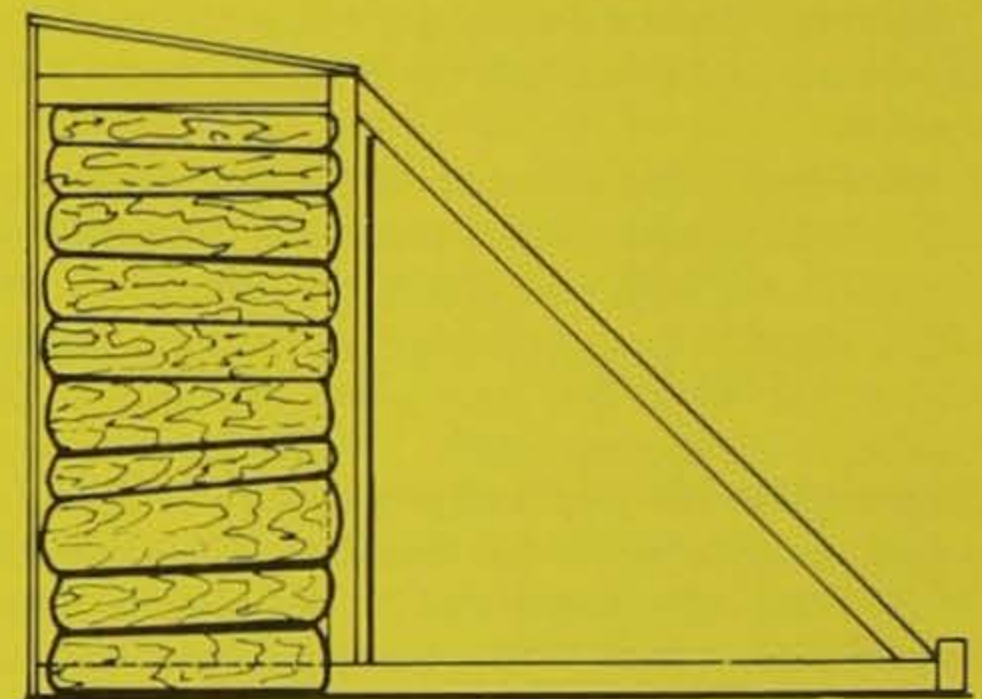
Contact your district forester or the Iowa Conservation Commission Forestry section for more information.

List of Materials (1 cord size)

QUANTITY		EST. COST
10	2x4x8' studs	\$14.49
1 lb.	16 penny common nails	.34
3/4 lb.	roofing nails	.32
3 pcs.	3/8" C-D-Ext. plywood	20.85
1 qt.	white paint, latex exterior	2.00
1 qt.	black paint, latex	2.76
16 ft.	48" window screen	12.30
6 ft.	16' black polyethylene plastic sheet	1.20
16 ft.	16' clear polyethylene plastic sheet	2.99
TOTAL		\$57.25



FRONT VIEW



SIDE VIEW

(Continued from previous page)

Is All This Lead Available to Feeding Ducks? What About That in Deep Water, Where the Bottom is Soft, or Deposited On Dry Land?

Many persons think shot is picked up only in shallow water where the bottom is firm or hard. This is not true. Ducks would not even feed in such an area because there would be little or no food at these sites. Puddle ducks, as their name implies, feed by tipping up and "puddling" or "dabbling" in the mud and vegetative matter on the bottoms in water up to 18 to 24 inches deep. This is where they obtain most of the spent shot. For many years, it was assumed that there would be very little lead poisoning in the coastal marshes of Louisiana, due to the soft bottoms and great accumulations of decayed vegetative matter. Instead, it has been found that mottled ducks, a nonmigratory species that spends its entire life in these marshes, have a very high incidence (35%) of ingested shot in their gizzards.

Field and laboratory tests have also shown that shot does not quickly settle down through the soft bottom materials, but remains in about the top one inch of muck or vegetation. Tests also prove that there is no significant difference in the settling rates for different shot

sizes. We must remember that lead suspended in water has a degree of buoyancy. It strikes the water surface, then gently settles to rest on top of the bottom material.

Puddle ducks seldom dive for food, but divers feeding in deep water which has been heavily hunted show alarming amounts of ingested lead in their gizzards. The incidence rate for divers is usually higher than for mallards.

Shot deposits on dry land are usually light and pose few problems. Where field hunting is heavy, however, losses will occur. In southern Illinois, recently, about 4,000 Canada geese died of lead poisoning as a result of feeding in winter wheat fields near the hunting blinds after the season had ended.

Many factors influence the availability of shot pellets to waterfowl. In some private areas, the lands are drained following the hunting seasons and tilled to provide food for the next fall. Other areas may be covered with heavy silt layers as a result of floods. All disturbances such as these tend to make the lead less available in subsequent years.

We must remember, however, that most of the shot being picked up by birds is that deposited during the hunting season immediately preceding the die-offs. Opening day brings a new batch of trouble in the form of thousands of lead shot pellets.

Continued next issue

ST. COST
\$14.49
.34
.32
20.85
2.00
2.76
12.30
1.20
2.99
\$57.25



Produce Low Cost Trees and Shrubs to Help Reduce Timber Loss

3½ MILLION SEEDLINGS AVAILABLE!

IF THE IOWA CONSERVATION COMMISSION has anything to say about it, this may be the Year of the Tree. Foresters at the state nursery in Ames expect to process and package more than 3½ million low cost seedlings during 1981. As the state's timber resource continues to diminish, nurserymen, district foresters, wildlife managers and other conservation personnel are hoping that increased production at the nursery can help change people's attitudes toward timber management.

Iowa landowners interested in planting trees and shrubs for timberland improvement, for future firewood uses, for creating wildlife habitat, for water conservation or for controlling erosion can qualify for this extremely inexpensive stock. Applicants must agree not to resell or give the seedlings away, nor to plant them for shade or ornamental purposes. State seedlings must be protected from fire and livestock damage. Stock must be purchased in quantities of 500 or more, in units of 100.

State foresters are going all out to try to meet the increasing demand for high quality seedlings. Reforestation forester Gerry Grebasch notes that state nursery stock alone cannot reverse the trend of the declining number of timbered acres. But he

does believe that nursery stock plantings can serve as living models to display to other Iowans the values of creating, maintaining and enhancing good woodlands, conservation plantings and habitat areas.

Public awareness has been aroused. Earlier this year, the Governor organized a group of government agencies and public and private institutions to begin a statewide campaign to plant trees and shrubs. The Plant Iowa Program was an outstanding success. More than five million trees and shrubs from state and private nursery supplies were planted throughout Iowa as a result of this effort. The program will continue next year as organizers hope to further develop a wise management ethic among all Iowans.

State nursery stock is grown from seed and seed collection must also be stepped up. Commission personnel can't keep up with the accelerating demand and need, so private organizations and individuals capable of collecting sufficient quantities of seed from many Iowa species can help. The state nursery pays varying amounts per bushel for good quality seed. Further information can be obtained from the nursery at 2404 South Duff, in Ames 50010 (515) 294-4622.

SUGGESTED SPACING

Species	Reforestation	Wildlife	Erosion Control
Pines & Larch	8' x 6' (908 plants/acre) — for timber 5' x 5' (1,742 plants/acre)— for Xmas Trees	same (High density makes good cover)	same
Walnut, Ashes, & Maple	8' x 8' (681/acre) to 12' x 12' (302/acre)	8' x 8' (681/acre) to 16' x 16' (170/acre)	8' x 8' to 12' x 12'
Russian Olive		6' x 6' (1,210/acre) to 12' x 12'	same
Autumn Olive & other shrubs		3' to 5' between plants within rows; 5' to 10' between rows; range from 2,900 plants/acre (3' x 5') to 871 plants/acre (5' x 10'). Or plant in clumps 4 x 4 or 6 x 6.	

GENERAL INFORMATION

Species	Mature Size Range	Moisture			Light		Growth Rate	Remarks	#Ordered (For Your Records)
		Dry	Well Drained	Moist	Full Sun	Some Shade			
White Pine	50-80'		X	X	X	X	fast	Intolerant of air pollutants. Good timber tree. Adaptable to most sites.	
Scotch Pine	30-60'	X	X		X		medium	Hardy. Adaptable.	
Red Pine	50-80'		X		X		medium	Requires cool sites. Good timber tree.	
Ponderosa Pine	60-100'	X	X		X		medium	Recommended for Western Iowa only.	
Jack Pine	35-50'	X	X		X		fast	Hardy and adaptable. Good cover for coal spoil banks.	
Red Cedar	40-50'	X	X	X	X		medium	Tolerates poor, gravelly soils; prefers airy site. Very drought resistant. Good cover and food.	
European Larch	70-75'		X	X	X		fast	Needles drop annually. Firewood.	
Black Walnut	50-70'		X		X		fast	Valuable wood products tree. Firewood. Requires deep, rich, well-drained soil.	
White Ash	50-80'		X		X		medium	Valuable wood products tree. Good firewood.	
Green Ash	50-60'		X	X	X		fast	Valuable wood products tree. Good firewood.	
Hickory	60-80'		X		X		medium	Wood products. Good firewood.	
Bur Oak	70-80'	X	X	X	X		medium	Adaptable to various soils. Good firewood. Staves and railroad ties.	
White Oak	50-80'		X	X	X		medium	Valuable wood products tree. Good firewood.	
Russian Olive	12-15'	X	X		X	X	medium	Very hardy plant. Good food for wildlife. Drought resistant.	
Autumn Olive (Cardinal strain)	12-18'		X		X	X	medium	Good wildlife food and cover. Plant on protected site.	
Tatarian Honeysuckle	10-12'	X	X		X	X	fast	Very hardy. Dense growth. Good food for birds. Fruit available July-August.	
Amur Honeysuckle	12-15'	X	X		X	X	fast	Occasional winter killing of branches in northern Iowa. Fruit available in September-November.	
Ninebark	5-9'		X	X	X	X	medium	Very hardy. Good cover.	
Gray Dogwood	10-15'	X	X	X	X	X	fast	Hardy. Forms a large colony of plants from original. Good cover.	
Redosier Dogwood	7-9'		X	X	X	X	fast	Producers cluster of stems from ground. Good wildlife food.	
Wildlife packet									

FORESTRY SECTION IOWA CONSERVATION COMMISSION

The Forestry Section of the Conservation Commission assists the people of Iowa to enhance the woodland resources by following this broad objective: To foster environmental protection and strive to insure, for present and future generations, the greatest economic and social benefits from trees, forest land, and related resources. The Forestry Section works toward these objectives through forest management, tree planting, forest protection, timber processing improvement and demonstration of woodland values. These services are available to all landowners, public and private.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

For planting information and other assistance concerning the management, harvesting, marketing and utilization of your woodlands, contact the District Forester serving the county in which your land is located (see map on back of application). This is a free service, and we urge you to contact them before you plan any special or extensive plantings.

Similar management advice for wildlife is available from Wildlife Management Biologists (also listed on the back of the application). Planting assistance may also be available from your County Conservation Board.

1. DELIVERY INFORMATION

(Please print)

- I will pick up my order at the nursery when notified.
 I want my order shipped to the address below:

 (NAME)

 (ADDRESS)

 (CITY) (PHONE)

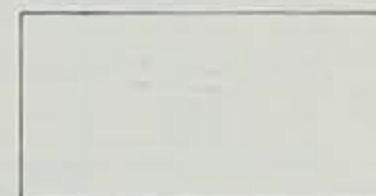
2. NURSERY STOCK REQUESTED

(Do not order less than 500,
 in units of 100)

Species	Age (yr.)	Height	Cost/ Hundred	Number Wanted	Office Use Only
White Pine	3	5-12"	3.80		
Scotch Pine	2	4-10"	3.80		
Red Pine	3	6-14"	3.80		
Ponderosa Pine	2	5-12"	3.80		
Jack Pine	2	5-12"	3.80		
Red Cedar	2	6-12"	3.80		
European Larch	2	6-18"	3.80		
Black Walnut	1	10-18"	3.80		
White Ash	1	6-12"	3.30		
Green Ash	1	6-12"	3.30		
Hickory	1	3-6"	3.30		
Bur Oak	1	5-12"	3.30		
White Oak	1	5-12"	3.30		
Russian Olive	1	6-12"	3.30		
Autumn Olive	1	6-12"	3.30		
Tatarian Honeysuckle	1	6-12"	3.30		
Amur Honeysuckle	1	6-12"	3.30		
Ninebark	1	6-12"	3.30		
Gray Dogwood	1	6-12"	3.30		
Redosier Dogwood	1	6-12"	3.30		
Wildlife Packet (containing 50 conifers & 150 shrubs chosen by the Nursery)			10.00/ Packet		

The Nursery reserves the right to make substitutions if necessary. These substitutions will be suitable for the purposes for which the Conservation Commission Nursery stock is sold.

1981 APPLICATION FORM



3. LEGAL DESCRIPTION OF PLANTING LOCATION

These trees are to be planted in _____ Quarter,
 Section _____, Township _____ N,
 Range _____, in _____ County,
 Iowa.

4. GENERAL INFORMATION

A. I RECEIVED ASSISTANCE IN PLANNING THIS ORDER FROM: 1. No one, 2. Soil Conservation Service, 3. ASCS, 4. County Extension Service, 5. District Forester, 6. Conservation Officer, 7. Wildlife Biologist, 8. County Conservation Board.

B. MAIN PURPOSE OF PLANTING: 1. general forestry, 2. wildlife habitat, 3. erosion control, 4. other.

C. METHOD OF PLANTING: 1. machine, 2. hand.

D. THE PLANTING LOCATION IS: 1. farm, 2. city, 3. acreage, 4. government land 5. other.

E. HAVE YOU PURCHASED PLANTS FROM THE NURSERY BEFORE? 1. No, 2. Yes.

If yes, is this order for 3. Replacement or 4. Expansion of previous planting?

5. LANDOWNER AGREEMENT AND SIGNATURE

I agree to plant and use the nursery stock requested upon the described property for establishing or improving existing forests, erosion control, game or water conservation, with these restrictions: I agree NOT to resell or give these plants away with roots attached to any person, firm, corporation or agency nor to plant any of them for new wind-break, shade, or ornamental purposes. I agree to protect all plantings from fire and domestic livestock grazing. I agree to forfeit for destruction any trees planted or used in violation of the above restrictions.

- If you are a tax-exempt government agency, please check here.

 (LANDOWNER NAME — PLEASE PRINT)

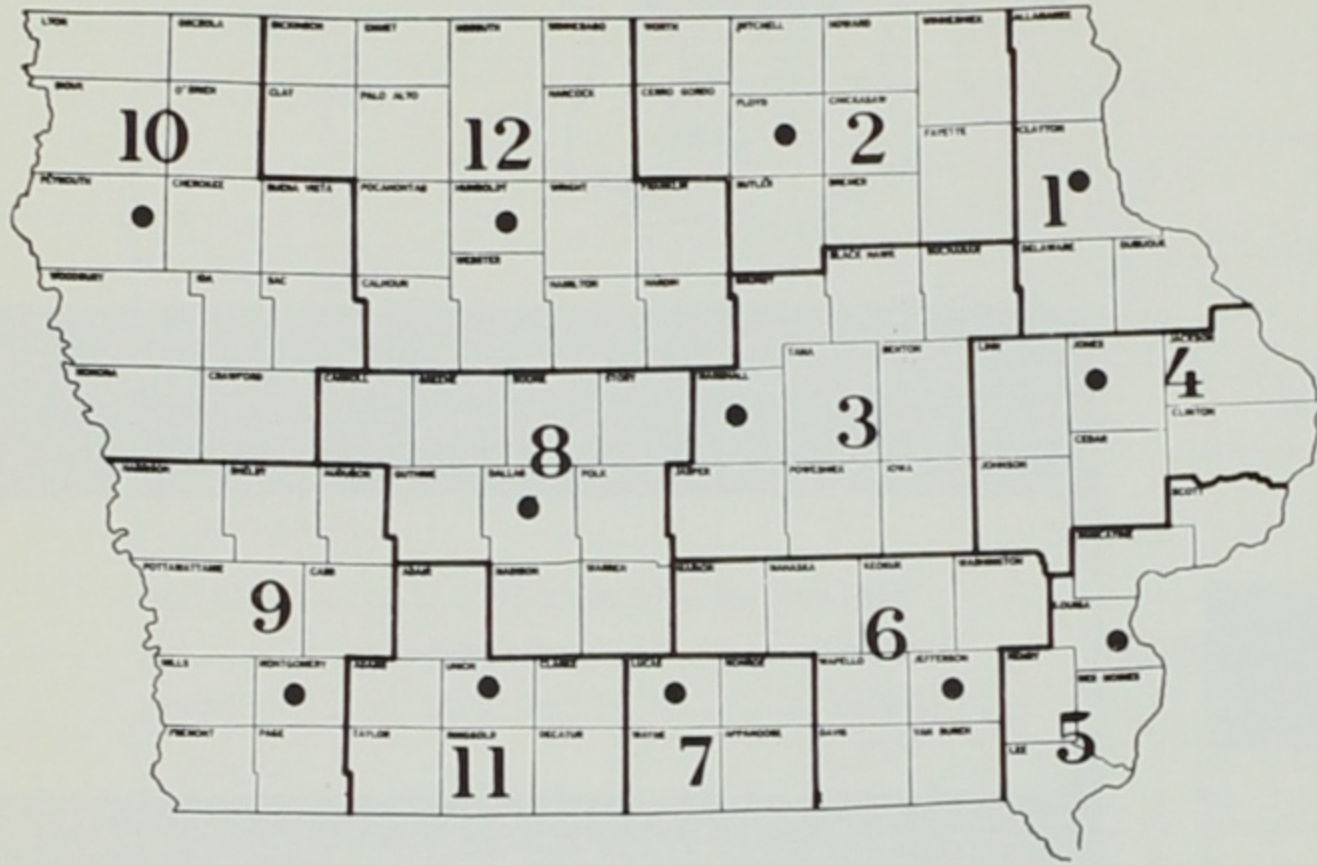
 (MAIL ADDRESS)

 (CITY) (STATE) (ZIP)

 (PHONE NUMBER)

 (LANDOWNER SIGNATURE)

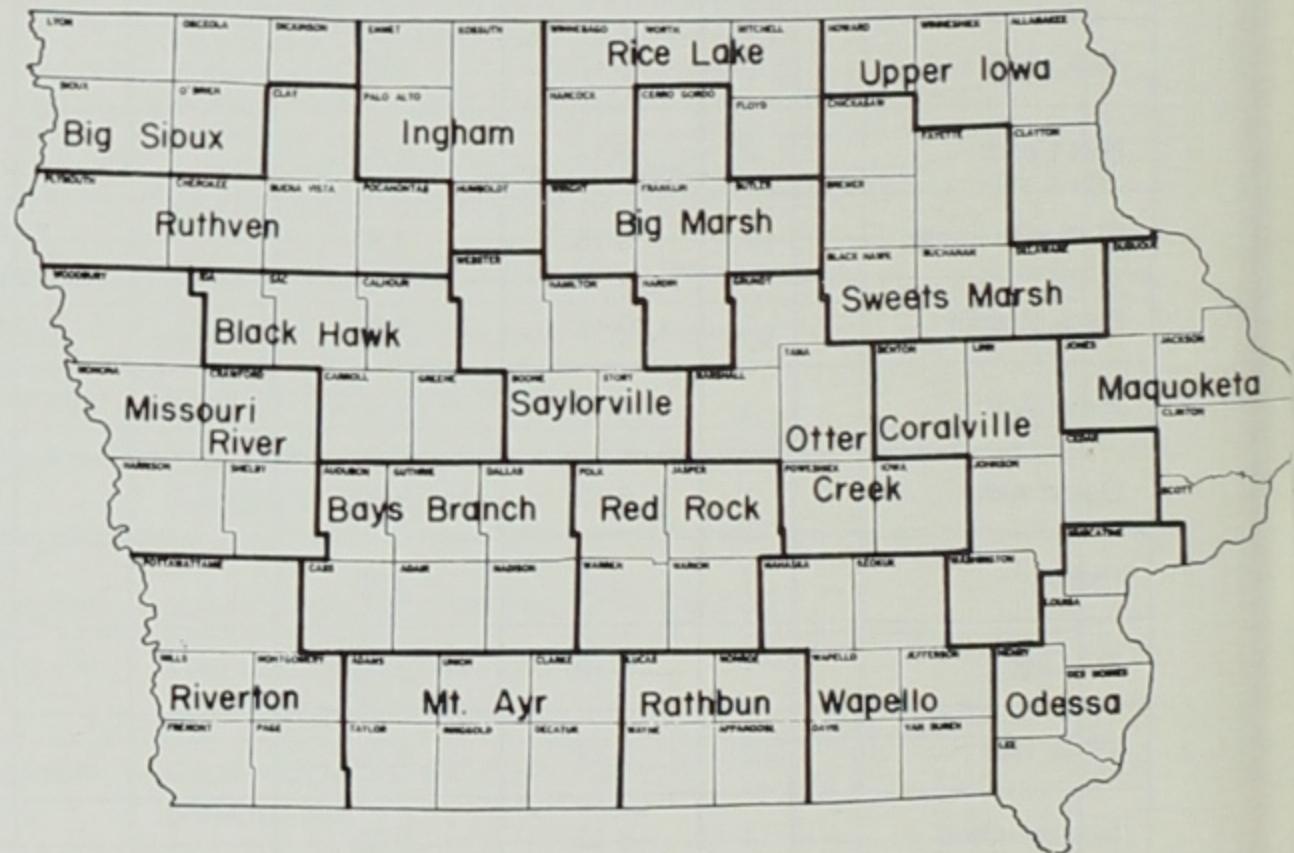
DISTRICT FORESTER ADDRESSES



- 1. ELKADER Box 662, 52043, (319) 245-1891
- 2. CHARLES CITY Box 4, 50616, (515) 228-6611
- 3. MARSHALLTOWN Box 681, 50158, (515) 752-3352
- 4. ANAMOSA Box 46, 52205, (319) 462-2768
- 5. WAPELLO Box 62, 52653, (319) 523-8319
- 6. FAIRFIELD Box 568, 52556, (515) 472-2370
- 7. CHARITON Stephens State Forest, RR 3, 50049
(515) 774-4918
- 8. ADEL Box 175, 50003, (515) 993-4133
- 9. RED OAK Box 152, 51566, (712) 623-4252
- 10. LE MARS Box 65, 51031, (712) 546-5161
- 11. CRESTON Box 2, 50801, (515) 782-8211
- 12. HUMBOLDT 102-8th St., S., 50548, (515) 332-2761
State Forest Nursery (515) 294-4622

WILDLIFE MANAGEMENT BIOLOGIST ADDRESSES

- 1. Bays Branch Wildlife Unit (515) 747-2278
ASCS Office Bldg., Box 247, Guthrie Center, 50115
- 2. Big Marsh Wildlife Unit (515) 456-3730
ASCS Office Bldg., Box 296, Hampton, 50441
- 3. Big Sioux Wildlife Unit (712) 472-3751
SCS Office Bldg., Rock Rapids, 51246
- 4. Black Hawk Wildlife Unit (712) 297-7824
SCS Office Bldg., 330 Richmond St., Rockwell City, 50579
- 5. Coralville Wildlife Unit (319) 354-1074
ASCS Office Bldg., 517 Southgate Ave., Iowa City, 52240
- 6. Ingham Wildlife Unit (712) 362-7222
SCS Office Bldg., 2109 Murray Rd., Estherville, 51334
- 7. Maquoketa Wildlife Unit (319) 652-2456
Pershing Rd. E., Maquoketa, 52060
- 8. Missouri River Wildlife Unit (712) 423-2426
SCS Office, Lindley Bldg., Onawa, 51040
- 9. Mt. Ayr Wildlife Unit (515) 464-2220
SCS Office Bldg., RR 3, Mt. Ayr, 50854
- 10. Odessa Wildlife Unit (319) 523-8319
ASCS Office Bldg., 117 S. 2nd St., Wapello, 52653
- 11. Otter Creek Wildlife Unit (515) 484-3752
USDA Office Bldg., 203 W. High St., Toledo, 52342
- 12. Rathbun Wildlife Unit (515) 774-4918
Highway 34 By-Pass, Chariton, 50049
- 13. Red Rock Wildlife Unit (515) 961-2587
Box 423, Indianola, 50125
- 14. Rice Lake Wildlife Unit (515) 324-1819
SCS Office Bldg., 706 1st Ave. N., Northwood, 50459
- 15. Riverton Wildlife Unit (712) 624-9063
SCS Office Bldg., Malvern, 51551
- 16. Ruthven Wildlife Unit (712) 225-4595
SCS Office Bldg., Cherokee, 51012



- 17. Saylorville Wildlife Unit (515) 432-4320
ASCS Office Bldg., 718 8th St., Boone, 50036
- 18. Sweet Marsh Wildlife Unit (319) 352-1113
ASCS Office Bldg., 911 Bremer, Waverly, 50677
- 19. Upper Iowa Wildlife Unit (319) 382-4895
ASCS Office Bldg., 911 S. Mill St., Decorah, 52101
- 20. Wapello Wildlife Unit (515) 682-3552
ASCS Office Bldg., 1309 E. Mary, Ottumwa, 52501

Place this order blank in an envelope and mail to:

**NURSERY FORESTER
IOWA STATE FOREST NURSERY
2404 SOUTH DUFF AVENUE
AMES, IOWA 50010**

DO NOT SEND ANY MONEY AT THIS TIME

AND A RUFFED GROUSE IN A PINE TREE

BY R. RUNGE

Painting by Maynard Reece

HUNTERS from various areas around the state sometimes ask the question, "how do you go about hunting those grouse anyway?" Now, anyone who lives in grouse country more or less just picks up the sport by being familiar with the bird. But for those who have never hunted the timber ridges of northeast Iowa, the whole thing seems pretty foreign. Then if you compound the problem by adding snow and making it late in the season — the whole thing seems impossible.

December grouse hunting can be fun and productive if the hunter will only take the time to hunt the area properly. In early fall, the birds use a variety of covers, but most often can be found in hardwood timbers where the fruits and seeds savored for food are easily found. They will also move into mixed forests and edges to take advantage of apple trees, sumac, wild roses, wild grapes and brambles. As long as fruits and tender leaves are available, they are preferred.

Fruits of dogwood, apple and grape are still available in December, and where the sun melts away early snows, acorns, rose and green ferns will be eagerly used. It is these areas the hunter must find in order to find the grouse. But, there is another important factor to be considered — winter cover.

Mr. Grouse usually checks into evergreen hotel when the snow flies. Stands of conifers provide good winter cover for grouse and although the birds do use other areas, these stands are good places for the hunter to check out. Once again, however, there is more to consider. Though evergreens provide good shelter, they are generally deficient in foods. The birds have to move out of them in order to eat and an isolated stand of conifers is not very attractive. Where the shelter trees are very close to winter foods and perhaps a southerly exposed slope, ideal conditions exist for grouse.

The birds will stick fairly close to the evergreens on a winter morning and move to the sunny slopes and hardwood areas later in the day. Snow or rain seems to move the birds out of the hardwoods and back into the conifers or, if it is warm, into thick overgrown food areas.

Now that you know where they are or might be, you can scout the timber to find the best grouse combinations and shoot your limit — right? Well . . . it's not always that easy. If it is your first grouse trip, you may want to try the Yellow River Forest in Allamakee County or perhaps one of the other public hunting areas in the three or four most northeastern Iowa counties. There are many good grouse timbers on private land, but you



must be careful to get permission from the landowner before entering these areas. If you plan to hunt in December, it may also be wise to stay away from the timber during the shotgun deer season.

There are a few other things you should have — good quality hunting boots, warm (but not hot) hunting clothes and a box of 7½

or 8-shot trap loads. Remember that the grouse ridges are often rocky and during winter often slippery. All caution should be used to make the hunt as safe as possible.

Now, if you can only figure out the biggest question of all "how do you shoot grouse all tangled up in those pine trees?" Don't ask me, I haven't figured it out yet . . .

SNOWSHOEING

BY BOB MULLEN
STATE CONSERVATION OFFICER

Photo by the Author



THE WINTER OF 1978-79 is not soon to be forgotten. Heavy snowfall combined with strong winds created conditions making travel difficult and hazardous in many areas. We had a chance to experience conditions that people in northern Minnesota and Canada are faced with every winter.

The sportsman was confronted with deep snow making travel on foot extremely difficult, if not impossible. Many people, trying to fight the deep snow, gave up trying to get back into areas for their recreation.

People that were familiar with snowshoeing were not hampered at all. Snowshoes are used extensively by outdoorsmen in the northern latitudes for crossing wintry terrain without being bogged down by the deep snows.

Those experienced at using snowshoes will tell the novice there's nothing to using them. *"Just step into the harness, buckle up, and let them dangle as you go"*. But it's really not quite that simple. Once a snowshoer gets used to his webs they can travel as easily as if wearing ordinary footgear on bare ground. The snowshoer quickly gets into the habit of "throwing" his snowshoes with each stride

and the snowshoes weight automatically lengthens each stride by several inches. That, in turn, gives a sort of swinging gait which allows one to cover country faster when on a cross county jaunt. The snowshoer can't travel quite as fast as a cross county skier, but can definitely move faster than a walker on bare-ground terrain.

Getting used to snowshoeing requires some conditioning. If the first time you try snowshoeing, you only go a short distance, it will seem like there's nothing to this sport. A trip of five miles is quite a different matter. Soreness and stiffening ordinarily will occur in the calves and thighs. Frequent trips on a pair of snowshoes quickly conditions the muscles and stiffness will be alleviated.

The best snowshoes are constructed of hickory and ash wood, but occasionally white oak or birch are used. All these woods can be shaped by steaming. When dried in a shaping form, they retain their shape indefinitely. Other woods are not suitable for snowshoes because they're brittle, or wear out quickly. Many woods would tend to quickly lose the shape into which they were steamed and bent.

Making a pair of durable snowshoes requires a great deal of craftsmanship. The weaving of the webbing over the wooden frames is the key to a pair of quality snowshoes, and their ability to withstand hard use. Snowshoe webbing is made of rawhide; pre-soaked in water so it can be stretched taut when installed. Rawhide is utilized to achieve a maximum shrink and toughness when dried. Webbing which would lose its tension if wet or stretched is virtually worthless. Rawhide is an Indian development sometimes called "Indian iron" because of its great strength and durability.

Webbing in the toe and heel area of all types of snowshoes is of a finer pattern, and the webbing is made of narrower rawhide. This front and rear webbing is mortised into the frame, in a manner as the gut of a tennis racket. The center webbing of snowshoes is made of fairly wide material, because this is where the wearer places the weight on the snowshoe.

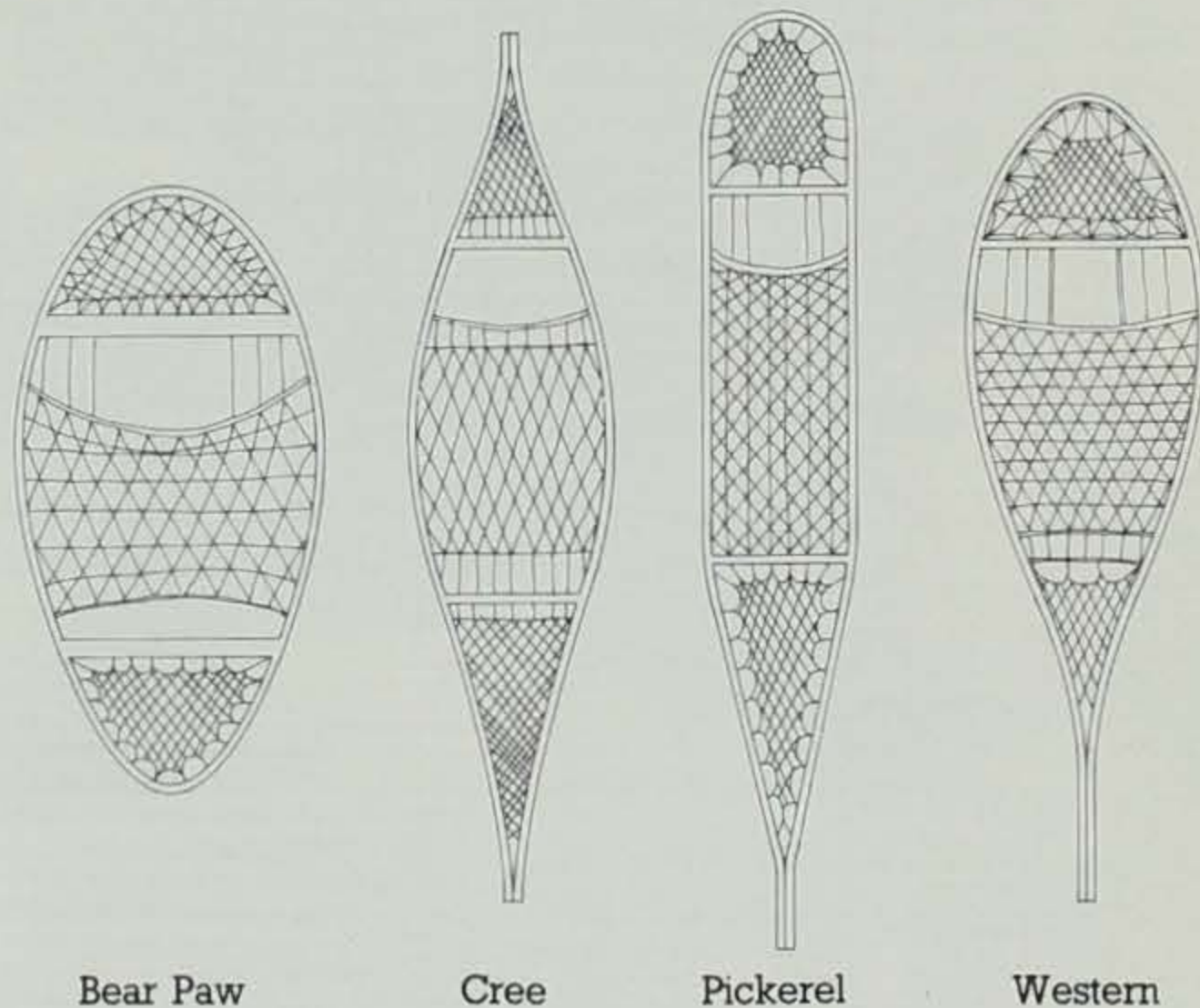
The harness which attaches the snow shoe to the wearer's foot varies from the so called "Indian hitch" to a more elaborate system of straps and buckles. When the foot is properly harnessed to the

snowshoe, the instep of the boot rides on the master gut of the center webbing. When properly adjusted the toe of the boot will tip into the open well in the webbing when the person steps forward. If the foot is not properly placed and harnessed it can make use of the snowshoes difficult and contribute to sore muscles in the legs.

The between season care of snowshoes is simple, and very important if a pair of snowshoes are to last another year. Clean all parts of the snowshoe with soap and water and allow to dry for at least a day. No moisture should remain anywhere between wood and webbing. Apply two or three coats of good exterior spar varnish, allowing each coat to dry thoroughly before applying the next coat.

Normally, snowshoes are fitted to the user according to height, weight and length of stride. A tall, long legged individual will be most comfortable with a fairly long and narrow snowshoe. The heavy, short legged person will require a wider snowshoe to avoid sinking into the snow deeply.

There are four main styles of snowshoes, and each is constructed for a specific purpose. The western style, a



rather large snowshoe, is shaped to provide maximum stability on light soft snow. The pickerel, a long narrow snowshoe that is best suited for travel in brushy areas. The Cree design is very similar to the pickerel, but both toe and heel are narrowly pointed, allowing one to penetrate heavy brush. The bear paw is a short squat design shaped for travel in areas of uneven terrain and where short turns are required. Lengths of these different patterns will be from

30 to 60 inches, and from 10 to 16 inches wide.

If you have never tried snowshoeing, you have missed out on a definite aide to enjoying the outdoors during the winter. With snowshoes one can get back into areas otherwise inaccessible. Snowshoeing is comparatively quiet, and allows one to get out into the great white silence of the winter world, and enjoy an otherwise sedentary season of the year.



BEAVER

Iowa's Solution to Modern Engineering and Related "Dam" Problems

by Robert Pinneke and Ron Andrews

THE GREEK WORD FOR BEAVER is "*castor*". Hence the scientific name "*castor canadensis*" with "*canadensis*" Latin for Canada where the first beaver were harvested in North America.

The beaver is the largest North American rodent with an adult reaching 4½ ft. in length and a weight in excess of 85 lbs. Its webbed hind feet, large flat tail, and chisel teeth are distinguishing features. Nature has given the beaver special adaptations to cope with day to day life. Vision is only fair above water, but good below. The beaver's nose and ears have valves which close when submerged. To aid in gnawing under water, the lips meet behind the large incisor teeth. The flat tail covered with leathery scales is used as a rudder and propeller when swimming, as a support for the body when cutting down trees, and as a balance when walking. The tail also is used to slap the water with a resounding smack to warn other beavers



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and scare an unsuspecting catfisherman, half asleep on a night fishing expedition. A beaver's front feet, in addition to an aid in walking, are used for digging, combing fur, and handling food and construction material. The large, webbed hind feet are used for swimming, combing fur and distributing oil from the castor gland. Under water the animal can stay submerged for over 15 minutes at a time due to a large lung and liver which holds oxygenated blood. Beaver are difficult to sex because there is only one common opening for digestive, reproductive, and excretory systems. Two pair of teats are visible on the female only during late pregnancy.

One to eight young are born in April, May or June with three to four kits common. Kits will stay with the family unit for up to three years before leaving the colony to set up their own family units. Breeding season starts in January. Males may also leave the family unit in the spring and set up bachelor quarters nearby.

Beavers, historically, are well-known for engineering skills, particularly in building dams. For centuries beaver dams have backed up silt laden waters and subsequently formed many of the fertile valley floors of North America. These dams have helped stabilize stream flow and have slowed down soil runoff. The cost benefit ratio compared to modern day Corps of Engineer projects needs no comment. However, as the beaver population has increased in Iowa in the 1970's, so have the problems with this old engineer. Like any 20th century animal population, numbers must be managed within the confine of available habitat and agriculture. Flooded cornfields which probably should not have been planted on floodplains are complaints farmers frequently make to the local conservation officers and county conservation departments. Usually controlling willow and poplar invasions along water courses will discourage their presence. If there is no food supply, there is no beaver.

Another major problem, however, is the fact that in most inland Iowa habits, beaver burrow into banks for their homes rather than building lodges. Lake and stream banks often slough in and holes in earthen dams can weaken these structures. Beavers can be moved by live trapping, but the procedure is very time consuming and at least as difficult as it is to trap and kill the animals.

Beaver dams can be removed with dynamite but recently enacted regulations make dynamite hard to obtain and oftentimes the dam is rebuilt and the problems are not eliminated. Most conservation agencies will give technical advice in reducing beaver damage complaints, however, dynamite and other materials must be obtained by the landowner. Most conservation agencies do not have the manpower to live-trap all unwanted beaver.

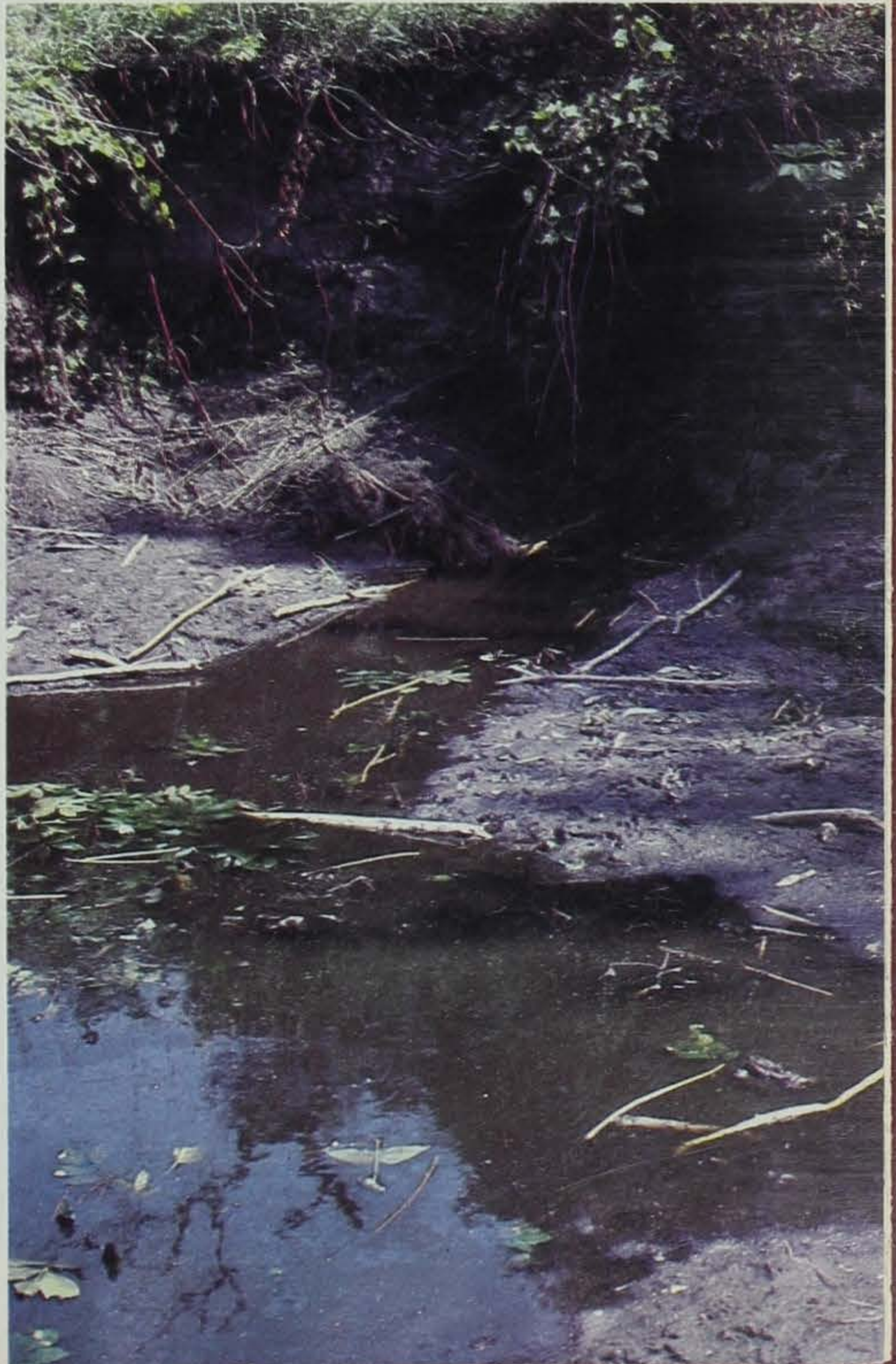
Low fur prices, difficulty in trapping animals and a near absence of predators have allowed beaver numbers to increase in Iowa. The outlook is for higher beaver pelt prices and more interest in beaver trapping so perhaps there will soon be less beaver damage complaints.

Some landowners appreciate seeing the beaver but dislike their forestry practices. Beaver must continue to gnaw to prevent malocclusion of their large incisor teeth. Trees up to 2 ft. and larger in diameter are often toppled. Such trees are usually cottonwood, willow, or soft maple, although once in a while someone's favorite birch crashes to the earth.

To protect trees from beaver cuttings, trunks may be painted with creosote or enclosed in wire mesh up to 3 ft. in height. However, you may want to encourage the beaver's presence. Story County Conservation Board let a bid in 1975 to build a small dam below the new dam at Hickory Grove Park to break the energy of falling water down the Hickory Grove Lake Spillway. The lowest bid, which was rejected, was \$25,000. Today a beaver dam has just about completed the job and has backed water into the spillway basin of the dam.

Also, today's farmers might do well to take a second look at the value of a beaver dam on their property. Such a dam could reduce erosion and while some cropland may go out of production, perhaps saving part of their land for wildlife would be more cost efficient than over-farming it. Beaver dams and the pools created by them harbor many kinds of fish and wildlife. The aesthetic value of such an area cannot be expressed in dollars and cents. Hopefully, as people become more aware of the values of wildlife, Mother Nature's finest "dam" builder will be held in higher esteem.

Bank Den



My old friend who lives down by the river listened intently as I told him about a complaint we had of some large bird that seemed to land on lightning rods atop people's houses, thus bending the lightning rod down.

He said, "Oh, yeah, that is the 'OO-Ow' bird. Just as he lands on that sharp point of the lightning rod you can hear him go, 'Ooh Ow — Ooh Ow!'"

We did receive such a complaint, but I don't think you can depend that much on the old man's knowledge of birds. He tends to make up stories sometimes.

December is the month the shotgun and muzzle loaders get their chance to hunt deer. Quite a few hunters plan all year on taking that old muzzle loader out to hunt deer. However, when the actual day of the hunt comes most of them will grab the semi-automatic shotgun and take off.

Deer hunting can be a really great and rewarding sport, if done right. The deer hunter who goes into the woods alone, or maybe with one friend, gets to enjoy nature at its best. Sitting by a deer trail and being very quiet will give a person a chance to see all kinds of wildlife. A squirrel may run right across your lap. Insect hunting birds will work up and down the tree trunk you are leaning against. The fluorescent orange colored hat or jacket you are required to wear while hunting deer seems to make little difference to the wildlife as long as you don't move. If you bag a deer, that is just an added reward to a wonderful day in the woods.



THE WARDEN'S DIARY

By Rex Emerson

Unfortunately many deer hunters don't hunt that way. Most seem to feel that they spent \$15.00 for a deer license and they have fifteen dollars worth of meat coming. They will get in a group of about twenty hunters. Out of the twenty, only fifteen will have deer licenses. The other five will have high powered rifles and are hunting coyotes, or so they say. Only about one-fourth of the group will have had very much hunting experience. Chances are pretty good none will have been through our voluntary hunter safety course. The state legislators say they don't need any training, so we don't have a mandatory hunter safety course in Iowa.

Party hunting of deer is usually the way it is done in Iowa. That's what we call it when large groups go out and surround a small timber

patch, or they put some "standers" out on one side of the timber while the others walk through from the other side.

Deer hunters have a license to hunt deer during the specified days shown on their license. Their limit is one deer apiece. If they also shoot one for someone else they are shooting over their limit, and could very well lose both deer to the court. After shooting one deer the tag must be attached to the deer before it can be transported. If you will look up the word "transport" in the dictionary you will see it means "to cause to be moved". So, tag it before you move it. The hunter who shoots and tags his deer still has a license to hunt, and may drive deer for others in the hunting party. But don't shoot more than

one; that is your limit.

Each year we find deer hanging in an old barn some place that have not been tagged. That means only one thing. The greedy hunters are out trying to get another deer. When they come back to the barn they get court citations. These deer didn't hang themselves up there.

If you go deer hunting and are among the fifty or fifty-five percent who don't get a deer, and if you didn't enjoy the hunting experience simply because you didn't get a deer, then I would say you should take up some other sport. Or you might try a different way of hunting, such as one on one, just you and the deer. Try it! You'll like it!

Above all, try to be a safe hunter. Too often we hear of someone who heard something in the bushes and after shooting found out it was another hunter. Don't shoot until you know your target. We teach that kind of safety in our hunter safety classes.

ASK THE FARMER FIRST! You are not permitted to hunt on private property without permission. We teach that, too, in our hunter safety classes, — but, they are only voluntary classes.

There are a few people who already know it all, and you can't teach them anything. I asked my old friend who lives down by the river if he participated in the soil conservation program and used their services.

He said, "No, they couldn't teach me anything. I have already wore out three farms during my lifetime. I've got experience."

LOOKIN' BACK

Ten Years Ago



the *Iowa Conservationist* reported on the results of the new catfish cage-rearing project. The initial tests were made at Lakes

Brown, Wapello, Clear and Lock Ayr. The results were very encouraging and the program has been continued in cooperation with the County Conservation Boards around the state.

Another project was beginning to show promise. After several years of testing it was decided to stock the eastern strain of wild turkeys rather than the Merriams strain from the west. Iowa's turkey population has been expanding ever since.

Twenty Years Ago



the magazine featured an article on beaver trapping. At the time, fur prices were average to low and the beaver was generally

underharvested. Beaver fur became more popular later in the sixties but then fell off again in the seventies as trends in fashion changed.

During the 1880's many outdoorsmen were advocating a program to rid our streams of northern pike which they considered a nuisance. Don't you wish you could go down to the river and find an abundance of trash fish like ten-pound northern.

Thirty Years Ago



the *Conservationist* ran an article on Christmas tree cultivation which was not a big business in Iowa but caught the interest of the

magazine in that it does help control soil erosion and provide cover for wildlife.

Some pheasant hunters near Elk Horn bagged a U.S. Weather Bureau balloon complete with instruments. No, they didn't shoot it down.



Nature activities continue year-round at Education Center.

Classroom Corner

by Bob Rye

ADMINISTRATOR, CONSERVATION EDUCATION CENTER

REMEMBER . . . only you can prevent cold bodies and feet!!! This warning goes out to leaders of winter groups.

A visit to the Center is *not* the same as a trip to town or school. When dressed for town or work, there are gaps at the neck where most coats leave an exposed "V". The wind is also usually free to whistle up your sleeves and pant legs. If you dress for indoor work, you can expect to be cold in the field.

If you dress for field comfort, you'll be mostly uncomfortable indoors. If you are field dressed and wearing long underwear, you will perspire at ordinary indoor temperatures, which will speed the loss of heat from your body once you get out of doors.

Field clothing is dense without being windproof. Hats need to cover the ears to avoid heat loss from exposed ears — which, incidentally, are among the parts of the body most vulnerable to frostbite.

Clothing appears to be our answer to handling cold, although there are some problems. Electrically heated suits are only as good as the extension cord. Chemical heaters don't seem to warm the entire body. And space suits don't function well in everyday work styles. A garment designed to be comfortable while the wearer is sitting or standing may cause a person to work up a good sweat if he starts any physical activity. Therefore, a "one-way" cloth needs to be found — one which would keep cold moisture out, yet, permit perspiration to escape.

Scientists know that one reason "damp" cold is more chilling than "dry" cold is because water molecules sneak in and out through outer clothing and conduct heat away from the body. A water-proof garment will reduce the amount of moisture that can get to the body.

Informal research has revealed more "cold" facts: One's own temperature preferences, and those in a group vary widely. No matter what the thermostat setting is, some are uncomfortable.

No one can say exactly why individuals vary so widely in temperature preference. Some blame it on where you come from geographically. Fat is also thought to play a role, but only to a certain point. Human "skinnies" usually take cold badly, but moderate and "overstuffed" people are about equal in their ability to tolerate cold.

People of one sex may take cold better than the other. It seems to be true that women can bathe and work in colder water than men because of generally more layers of insulating fat beneath their skin (hormones may also have an affect). On the other hand, women normally need to sleep under warmer blankets after exposure to the cold. They feel cold because the blood that flows back into their hands and feet to bring them up to warmer temperature leaves their trunks cold.

When the body is exposed to cold, blood leaves the hands and feet, and concentrates in the trunk. When the hands are really cold, the blood flow may be down to only a teaspoon a minute. They become very hard to use when cold and yet are the hardest part of the body to clothe warmly.

There is a solution to cold hands and feet. Add extra clothing to other parts of the body. Put on a sweater, or better yet, put on a hat. The head is the opposite of hands and feet — blood goes there when the body gets cold.

You can probably get used to cold. It always seems that a cold day in December is worse than one in February. It could be that the body is used to providing more heat.

The Center's rules for winter dress are available by writing the Center:

Conservation Education Center, R.R. 1, Box 53, Guthrie Center, Iowa. 50115.

