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NATURES ...Not Ours

Conservation Commission Photos

IF YOU, like many other Iowans, will be spending a lot of time outdoors this spring and summer, you may encounter several species of wildlife—usually the young.

If you come upon young wild game animals—leave them alone. They are not up for adoption. The worst thing you could do would be to take some "cute, cuddly" young animal home with you.

Some people may have the notion that it would be fun to have a young wild animal for a pet. They fall in love with a helpless looking fawn, young raccoon or baby rabbit they "find" in the outdoors. If the young animal appears to be alone, the finders may decide its "lost from its mother" or "It'll starve if we leave it here."

Both assumptions are probably incorrect. The mother of the young animal is usually just waiting nearby for the trespassers to leave before coming out of hiding. Even if the mother doesn't show up again, young game animals are well-equipped to fend for themselves in the outdoors.

Tempting as it might be to bring a wild animal home, it's one of the worst mistakes one could make.

In the first place and most important, it's illegal to possess wild game animals during the closed season. Is someone who picks up a young fawn in the field and takes it home for a pet any different than a poacher who kills a deer at night during a closed season? Both are removing the game from the wild.

Trouble usually follows when anyone is foolish enough to bring home a young wild animal. If kept in captivity the animal can become completely dependent on humans. Then when they are released as adults, they can't cope with life in the wilds. In some cases they may even starve. They may become the victim of a predator because they have lost all caution and ability to survive in the outdoors.

Neighbors will complain when you start keeping a wild animal. That "cute, cuddly" young thing you picked up in the woods soom becomes a hungry, growling adult bent on mischief or worse. When kept as a pet, wild animals often lose all fear of humans. And this can be dangerous for both humans and the animal.

Each year one of the most difficult jobs that Fish and Game Conservation Officers are faces with is the reclaiming of wildlife pets held by individuals. In spite of public appeals, some people just won't leave the wildlife alone. Hundreds of animals are taken yearly.

Usually the law enforcement officers are notified by complaining neighbors that a wild animal is being confined nearby. Officers have no choice but to act on the information. It's not an easy task to reclaim these animals, but it must be done.

So if you should encounter or "find" a young wild game animal—Don't touch it. Leave it in the wild where it belongs. □

OAKWILT AERIA

By Bill Farris, *ssistant State*

THE NEWEST TECHNIQUE of forest disease detection is through the use of aerial photography. Within the past year, the Forestry Section of the Iowa Conservation Commission, in cooperation with the Iowa Geological Survey supplied a camera and the U.S. Forest Service supplied color and color infrared film. With this equipment, a cooperative survey was conducted on the Amana Colony's 11,000 acre timber for the detection of oak wilt.

Using aerial photography for detecting the disease costs no more than a ground survey and requires less time, plus it provides an acurate map of the infection.

In the past, the Amana timber harvesting program had been oriented toward the removal of red oak because of a suspected heavy infestation of oak wilt. When the Iowa Conservation Commission foresters were asked for management assistance, there was some concern on the forester's part that perhaps the infestation was not so serious that the harvesting program should be re-adjusted. The Forestry Section contacted the U.S. Forest Service and the Iowa Geologic Survey for assistance in setting up an aerial survey. A meeting was held with Forestry Section personnel, a U.S. Forest Service pathologist, a representative of the Iowa Geologic Survey, and the Amana forester. At this meeting it was decided to fly the area using both color and color infrared film to get a comparison for detection of the disease.

Ray Anderson of the Iowa Geologic Survey set up the flight lines and determined the elevation and flight speed. It was decided to fly at an altitude of 3,000 feet at a speed of approximately 150 miles per hours The initial flight was made on July 23. Flight personnel included the Iowa Conservation Commission pilot; Ray Anderson, Iowa Geologic Survey Cameraman; Roy Hatcher, Protection Forester of the Forestry Section; and the Amana Forester. On completion of the flight, the Forest Service had the film processed and sent to the Iowa Geologic Survey at their Remote Sensing Laboratory in Iowa City. A

PHOTOS BY IOWA GEOLOGICAL SURVEY

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ris, *sistant State Forester*

meeting was then held to examine the results.

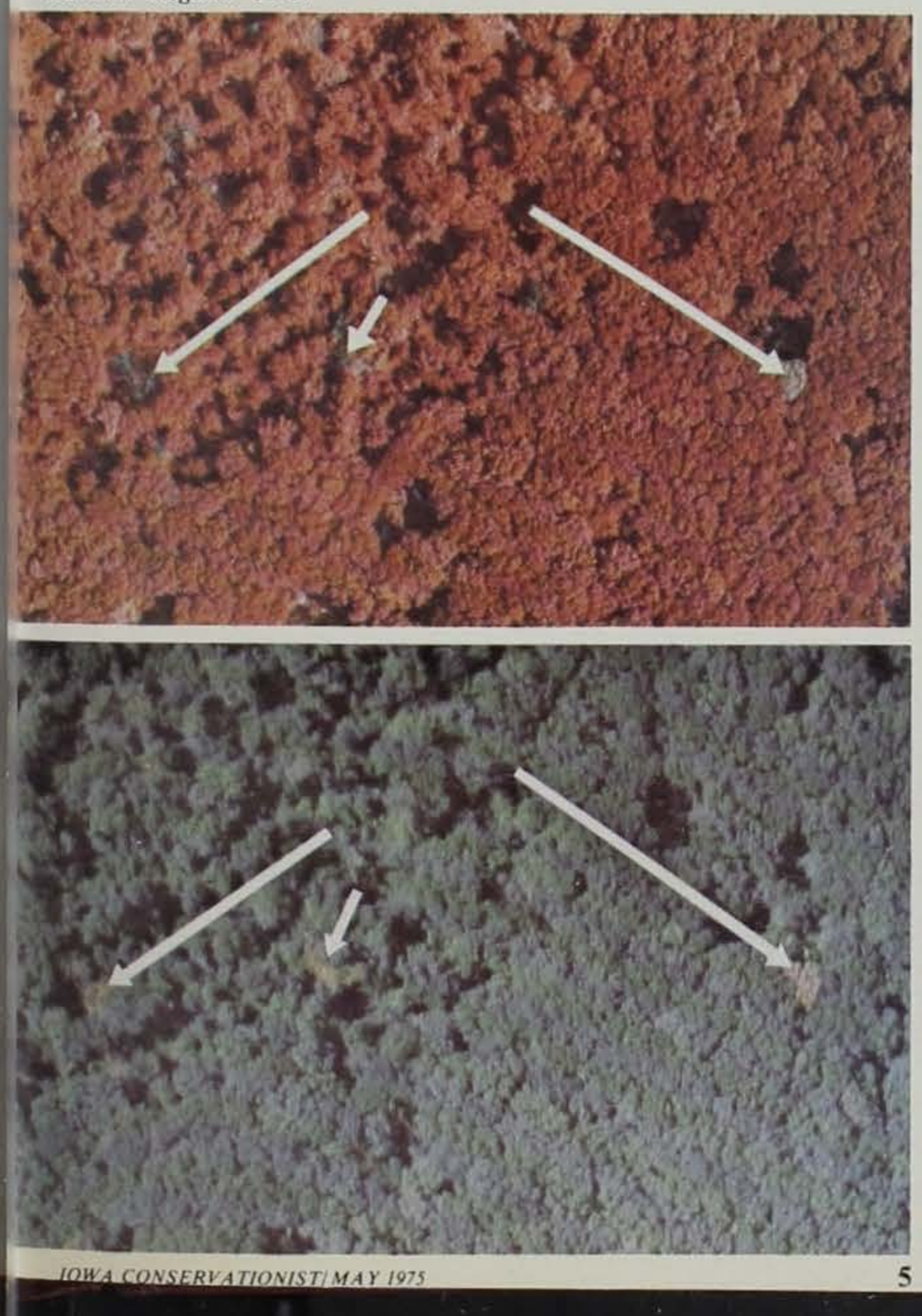
We met at the Remote Sensing Laboratory in Iowa City and did the photo interpretation. The color photos showed the infected trees as a brown color and the healthy trees as green. The color infrared film showed the diseased trees as green and the healthy trees as red. With magnification, it was easy to detect infected areas on both types of film. The number of trees infected were counted for each area where the disease appeared. The next step was to make some ground field checks on selected areas. Using the aerial photos, we located the infected areas on the ground.

A comparison of the infected tree count on the photos to the actual count on the ground was compiled. Samples of these infected trees were taken to confirm the presence of oak wilt. From this information, we were able to plot a regression scale that could be used in making total counts. This information was then applied to the entire stand of timber. This gives us a closer estimate of oak wilt infestation on the 11,000 acres. Use of the aerial photos eliminates the need for extensive ground observation, thus reducing the amount of time and the cost of the survey.

Two half-acre spread plots were established in the Amana timber where we had found a definite movement of the disease for several years. In these spread plots, a complete ground count was made of the infected area. In 1975, a re-survey of these plots will be made to note any additional movement of the disease. In comparing the color photos and the color infrared photos as to the ease of detection, it was found that both types of film were useful for detection work. The Forestry Section also plans to use aerial surveys for their forest management operations on the state forests. This will include forest inventory, timber typing, insect and disease detection, recreational planning and timber harvesting. Continuing cooperation with the Iowa Geologic Survey in providing camera, photo lab, and technical assistance will make the above programs possible. □

Top: Infrared

Bottom: Regular Color



Photos were interpreted in the lab

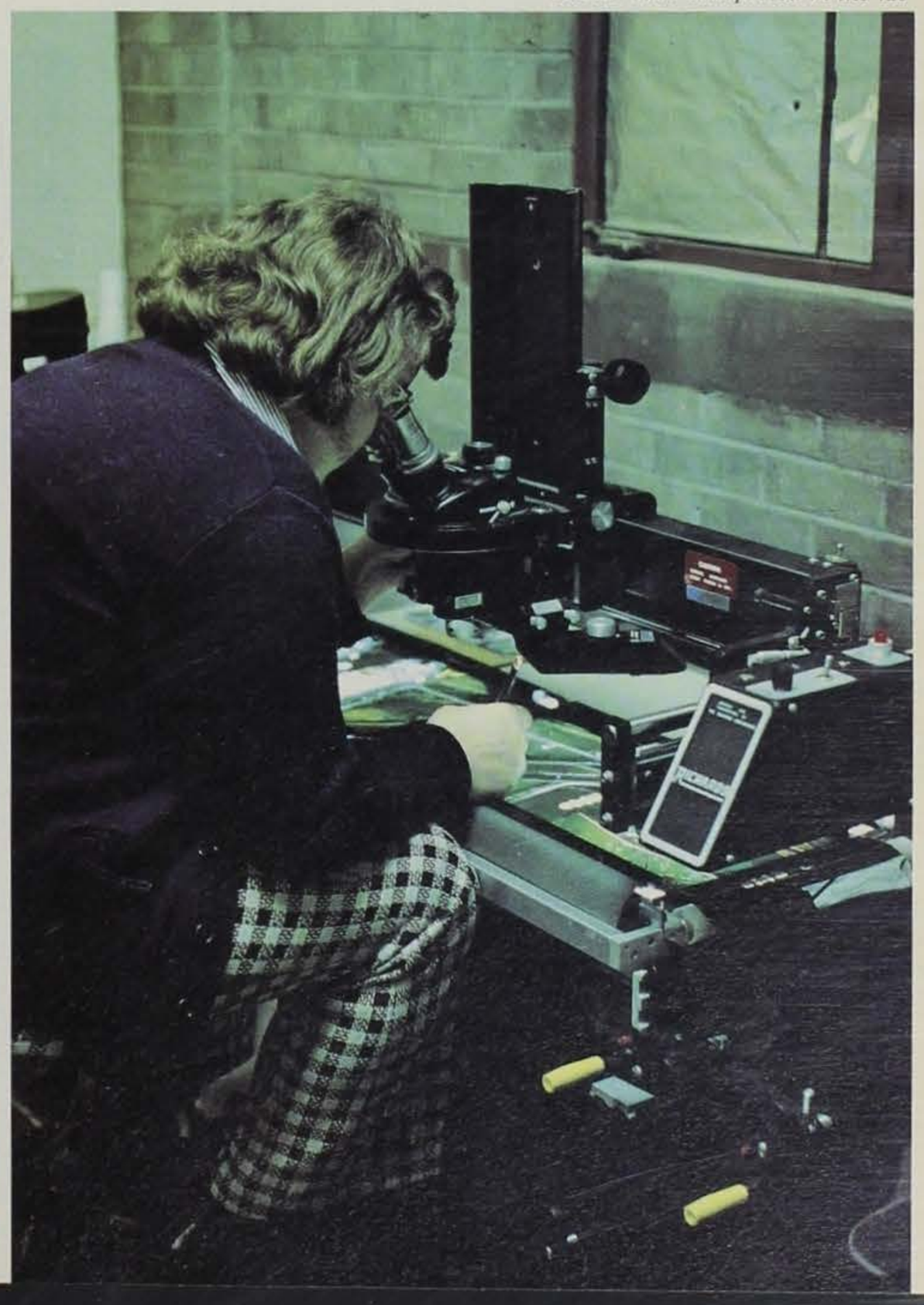
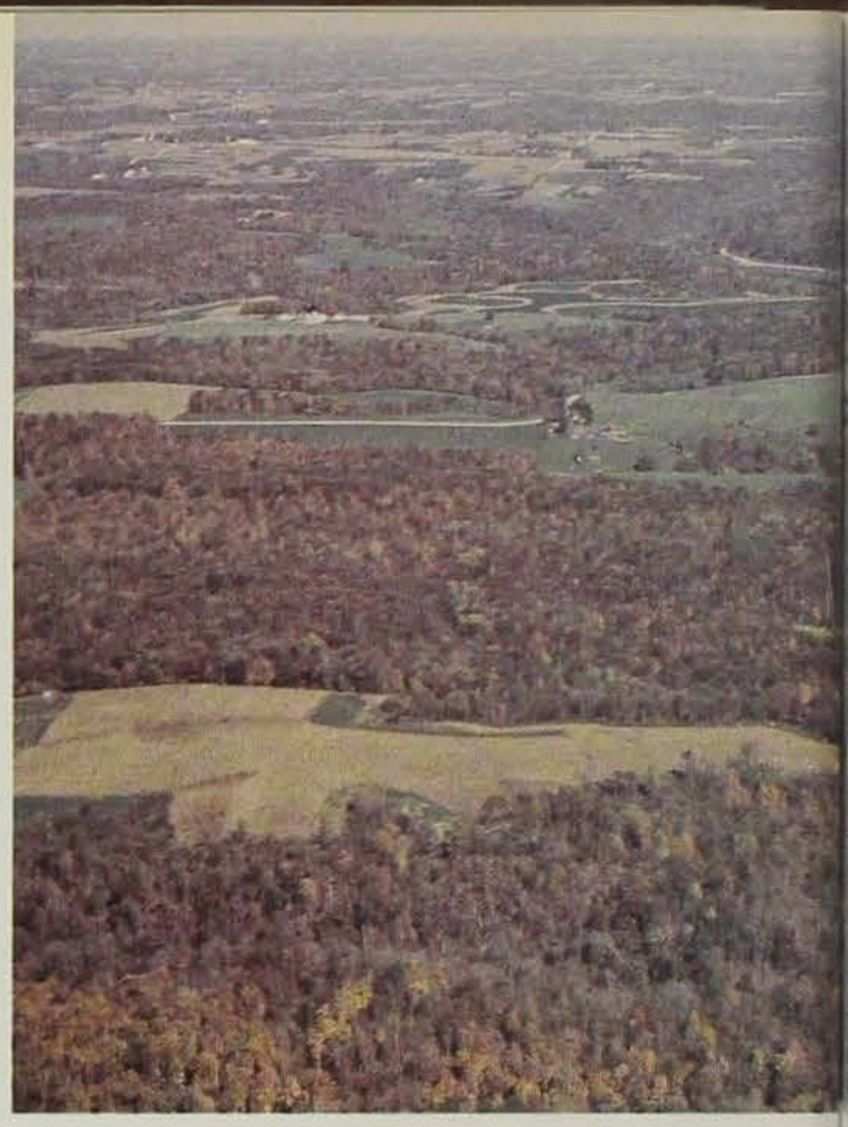


Photo by Ken Formanek



Iowa's New Trout Fishe

By Gaige under

Over 1,000 acres of outdoor fun will soon be available in northeastern Iowa's newest recreation area, the North Cedar-Sny McGill Fish and Wildlife Area. The area is located midway between McGregor and Garnavillo in Clayton County and offers typical northeastern Iowa topography-rugged timbered bluffs, deep green valleys, spring-fed streams and a quiet solitude unique to this corner of the state. The two trout streams in the complex will be developed as the major recreation resource, but deer and grouse hunting, backpack camping and hiking will also be available.

Sny McGill rises in the far northwest corner of the complex, flowing about seven miles to the Mississippi River. Of the two streams, it is the larger, more open stream. The floodplain ranges one-half mile or more wide and is predominantly row crop and grass pasture. North Cedar, its major tributary, flows from the south and west joining Sny McGill midway through the state-owned area. North Cedar is much smaller and cooler with extensive forest canopy with a number of spring runs feeding it. The floodplain is narrow, only 100 to 200 yards wide. Both streams have large portions which contain excellent trout habitat.

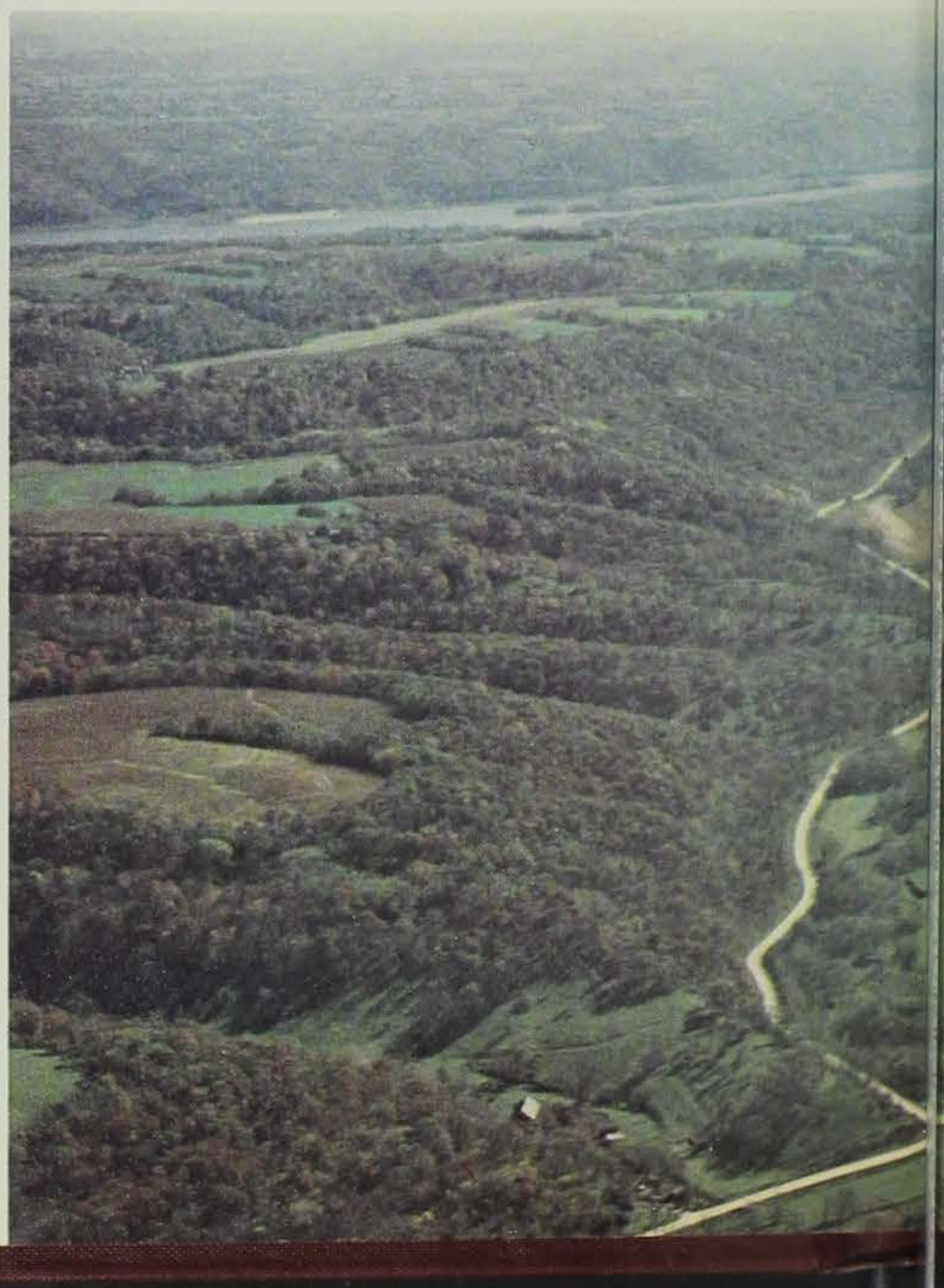
Sny McGill has been a popular trout stream since the Commission began planting catchable-size trout there several years ago. Angler access is very good from county roads. The majority of the stream is a succession of deep cool pools and shallow rock riffles. Approximately 10,000 trout averaging one-half pound were stocked in Sny McGill in 1974 from our Big Springs Trout Hatchery.

North Cedar has been an outstanding success in Iowa's marginal trout stream program. Fingerling brown trout (3-5") have been stocked biannually since 1968. Several bragging-size browns, four pounds and up, have been creeled since the initial stocking.

Purchase of property along the two streams was made possible with funds from the Iowa Open Spaces Program. This money was appropriated directly from the Iowa Legislature for acquisition of land the Conservation Commission felt had such recreational value that it should be preserved and developed for present and future generations to enjoy. Only properties held by willing sellers were considered for this program. Prime agricultural land was assigned low purchase priority. Tracts purchased for the complex were predominantly rough timber and grass pasture. The cropland that was purchased consisted of a few row-crop fields along Sny McGill.

Initial development and management in 1975 will consist of both streams being stocked with 12,000 catchable-size brown and rainbow trout from April to mid-November. Small plants of fish will be distributed along most stretches of both streams on a weekly basis. Access on North Cedar will be limited to walk-in only with all motorized vehicles restricted to parking lots on the upper and lower ends of the stream. In contrast, Sny McGill will be a "drive-up" trout fishery. A county road just a few steps from the stream will serve an angler parking to provide excellent fishing access while more adequate parking facilities will be constructed this summer.

Extensive access and stream improvements will also be completed on both streams this summer. Several techniques are to be implemented on North Cedar to improve available trout habitat-control, bank erosion, revegetate streambanks and rejuvinate natural spring flow. The existing stocking truck access road will be lengthened and improved to permit better trout distribution and serve as an angler footpath from parking lots constructed on both ends of the stream.



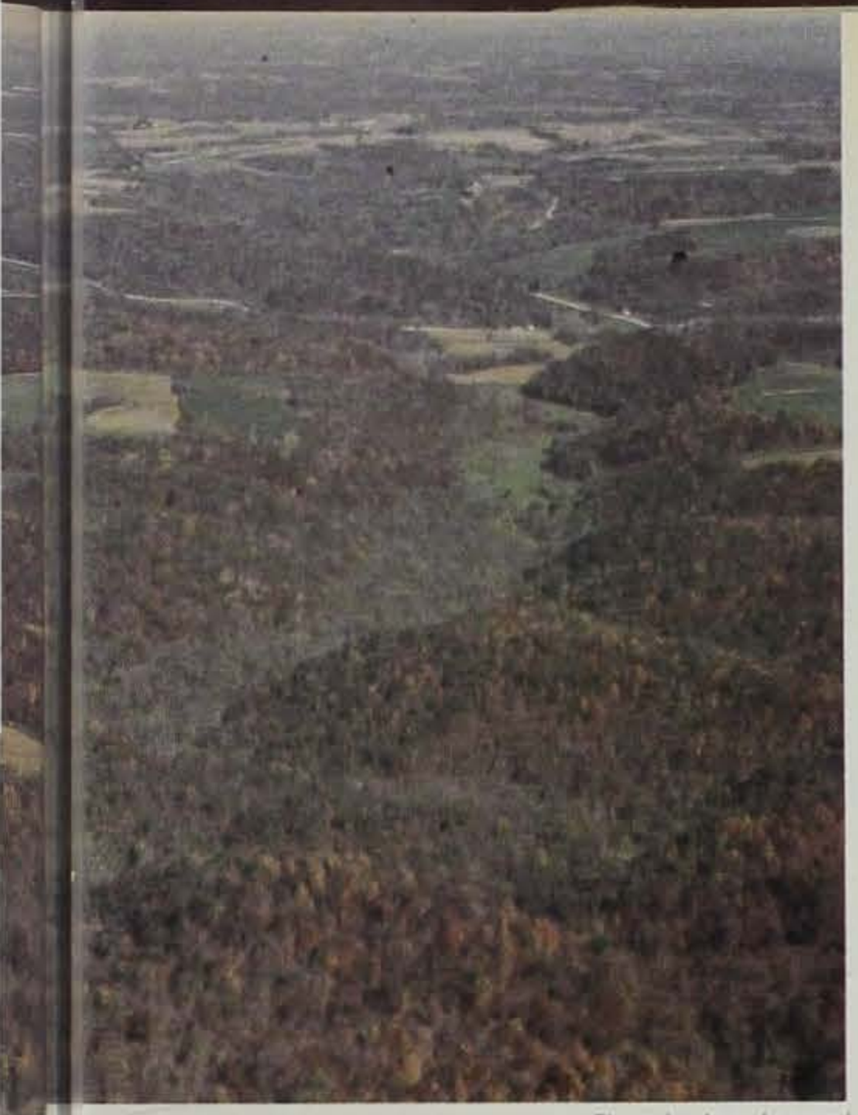


Photo by Jerry Leonard

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North Cedar and Sny-McGill Creeks

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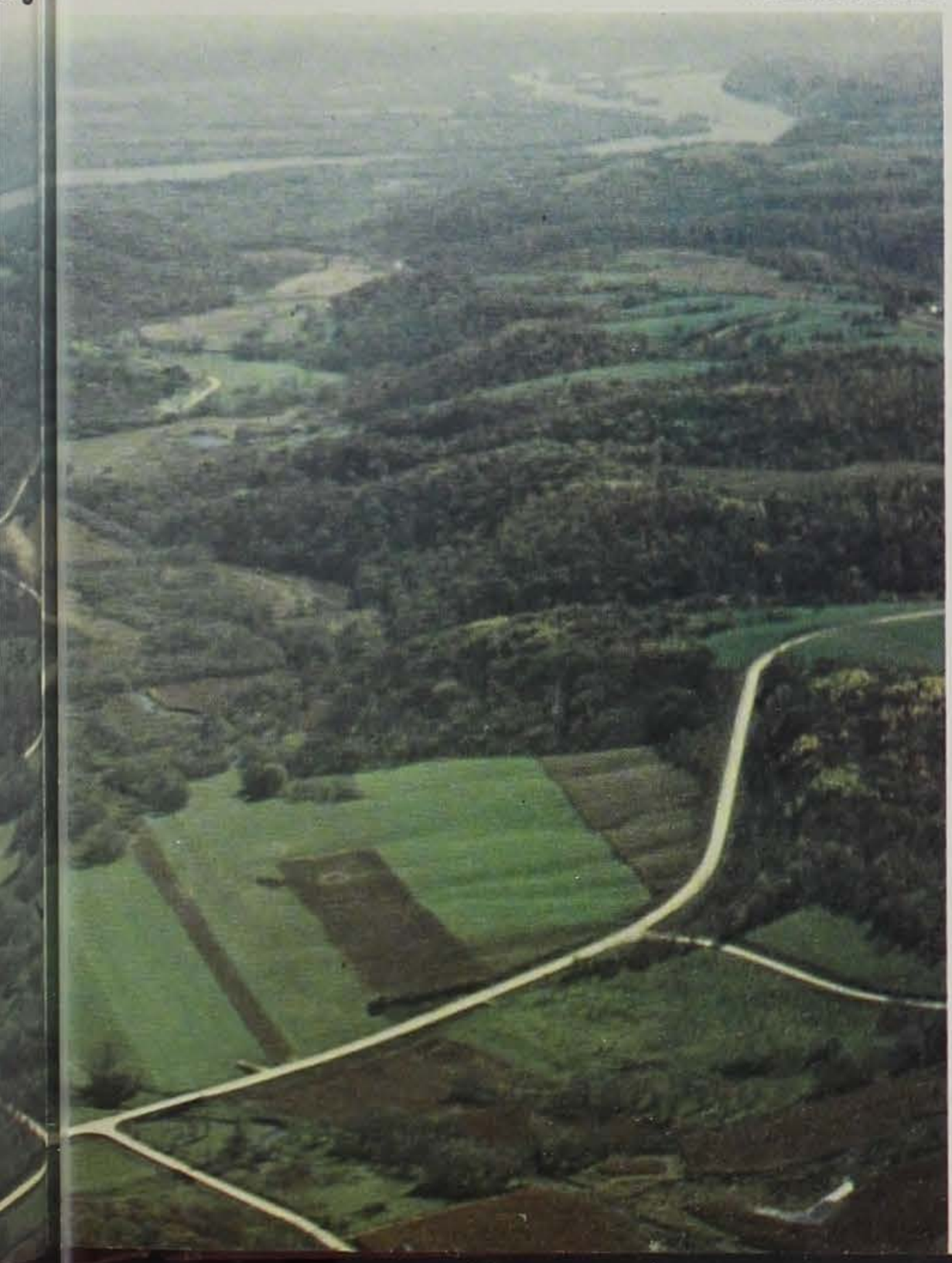
Photo by Jerry Leonard



Conservation Commission Photo

Sny McGill will also be developed this summer for better angler access. Five parking lots will be constructed off the existing county road to put fishermen within a few hundred feet of any part of the stream. An additional primitive road directly adjacent to the stream and parking lots will be constructed to serve as stocking truck access and as a footpath for anglers. Access will be developed to a point that handicapped persons will easily be able to enjoy angling for the crafty trout on Sny McGill.

In future years additional development is planned to complete the walk-in only, quality trout fishing concept on North Cedar. Further stream improvement and spring rejuvination will precede reintroduction of brook trout, Iowa's only native trout species. The improved habitat and spring flow should provide for natural reproduction of this species in North Cedar, a rarity now in Iowa. Continued limited access will be the key to success for a self-sustaining brook trout population. Brooks will not survive heavy fishing pressure. If all goes well, Iowa anglers will be able to fish as their grandfathers did in a truly remote area with a good chance of taking a brooky or two.

As the project progresses, Sny McGill will continue to be developed as an "easy access" trout stream. Some stream improvement, particularly to control bank erosion will be initiated. Vegetive plantings will be added to provide shade on some open stretches of the stream. Other areas overgrown with willow will be selectively cleared to provide better angler access.

As a result of public ownership, the Conservation Commission has the opportunity to develop this trout fishery with two opposing characteristics. Sny McGill will have easy access, open country and a reasonable chance for *quantity* fishing: i.e., a limit of trout on an outing. North Cedar will be a remote area, difficult to penetrate and fish, subsequently producing somewhat fewer fish to the creel, but providing a *quality* experience. Both will offer a chance to get away and enjoy the outdoors.

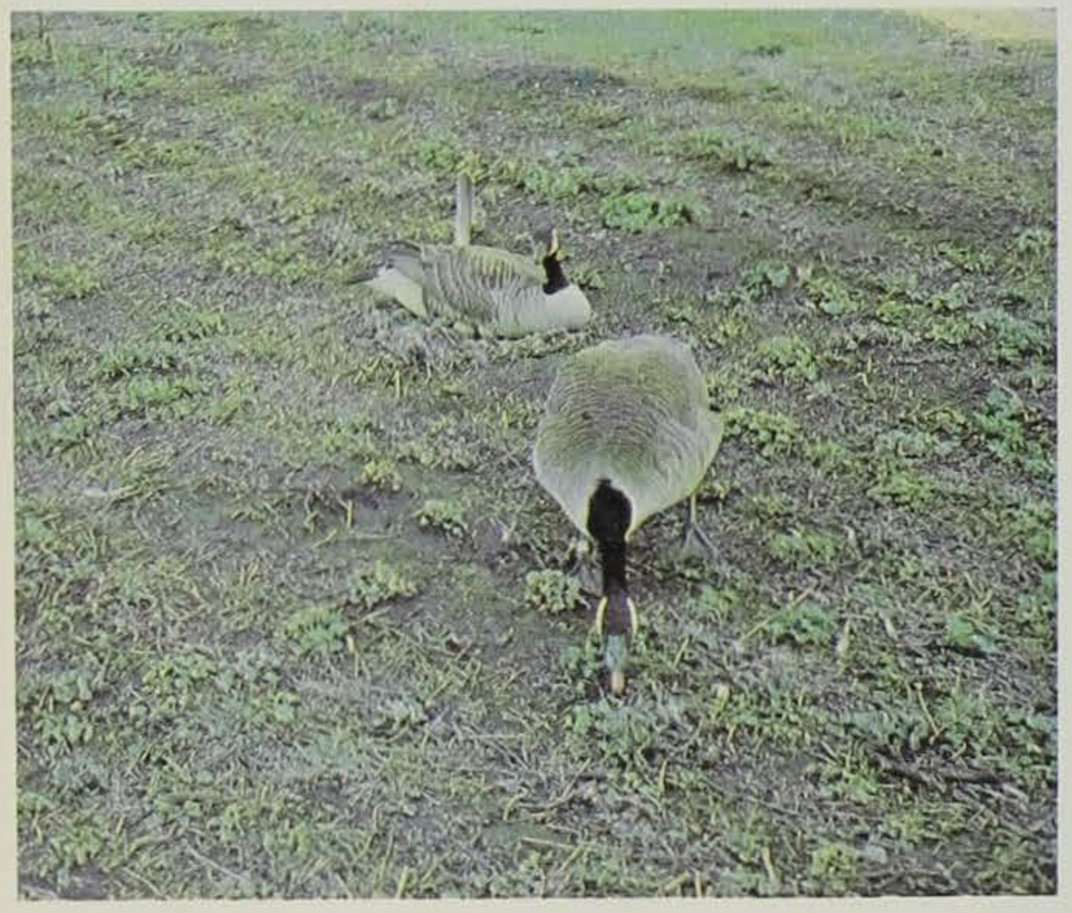
This complex will not be completed until all properties along the streams are state-owned. Three tracts along Sny McGill are still in private hands. Specialized development of a state recreation area is difficult if it is not made up of contiguous tracts, particularly on a stream where excessive water gaps (fences across the stream) must be maintained. If available, additional Open Spaces funds will be offered to purchase the remaining properties and complete this top quality trout fishing area. Regardless of the source of funds, total state acquisition of an area such as North Cedar-Sny McGill is the only guarantee for outdoor recreation for future generations.

The map shown here will serve as a rough guide to North Cedar-Sny McGill. Routing signs are posted on all major highways and bulletin boards, with detailed maps of the area, are being erected to assist anglers in finding the streams. A copy of the *Iowa Trout Fishing Guide*, available free at any Commission facility, will also help acquaint anglers not familiar with the area.

Further information concerning the North Cedar-Sny McGill stream complex may be obtained by writing or calling: *Hatchery Manager, Big Springs, Elkader, Iowa 52043 (1-319-245-1699),* or *Management Biologist, Fish Management Station, Guttenburg, Iowa 52052 (1-319-252-1156).* □

Iowa...Home to Giant Canadas

By RONALD HOWING
Wildlife Management Biologist
Photos by the Author



WHEN I WAS A BOY, I thought that Canada geese only nested in Canada. Probably many others think of Canada geese as only nesters of the far north. Of course, this is not true. Authorities recognize about eleven races of the Canada goose on the North American Continent. The giant Canada goose *(Branta Canadensis maxima)* was thought to have nested from south central Canada to northern Arkansas and western Kentucky. The wild nesting Canada geese in Iowa were exterminated in Iowa about 1900.

From a few giant Canadas which existed on the North American Continent in the late 1940's, these birds have been re-established over much of their former range. This is a result of re-stocking from captive flocks by Federal, State and City agencies, private individuals, and wildlife organizations. The gaint Canadas have been successfully re-established in northwestern Iowa by releasing birds from captive flocks owned by the Iowa Conservation Commission and from individual private flocks.

The two main limiting factors regulating the successful re-establishment of giant Canadas are, safe nesting habitat and adequate protection. Natural habitat on and around lakes, marshes, rivers, and artificial water impoundments can provide many of the nesting sites. However, it is sometimes necessary to supplement these areas with artificial nesting structures to maintain adequate nesting. It is essential to provide adequate protection for the giant Canadas on refuges in

Canadas use varying nesting sites throughout the area.

strategic locations, especially on their nesting grounds. If not, it is probable they will be over harvested during the regular hunting season on all Canadas, and will not increase to fill the available habitat.

Wild nesting giant Canadas, which were re-established in Iowa, are found mostly in Emmet, Dickenson, Clay, Palo Alto, and Kossuth counties. The majority of the geese nest within a 25 mile radius of the Ingham-High Lake Area in Emmet County.

The wild giant Canadas, resident to Iowa, migrate south during late fall and return about the middle of March when the spring thaw begin.

Canada geese normally mate for life when they are two to three years old, with their first nesting attempt occuring at that time. However, they will remate if their mate dies. Generally there are very few divorces in mated pars of Canadas. I know of one hen Canada goose that is owned by a private individual near Emmetsburg that nested by his harden fense for 21 consecutive years and had three different mates.

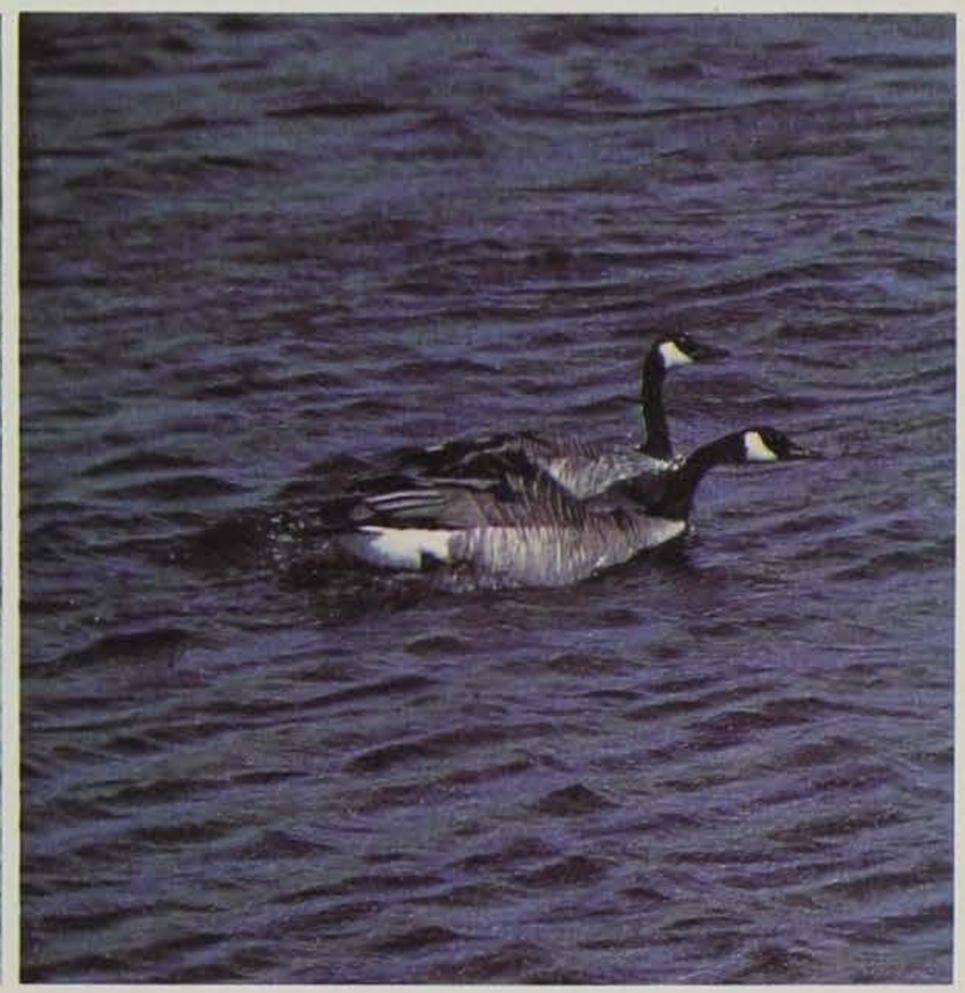
Nesting activities of the giant Canadas in the wild start about the last week of March and the first week of April, when returning pairs start selecting sites for their nest. Many of the returning pairs select the same nesting site year after year. Most nests are located on islands, muskrat huts, and artificial nesting structures. Many of the ground nests not surrounded by water, as a natural barrier from predators, are destroyed.

The average number of eggs laid in each nest is about five. Some of the younger mated pairs lay smaller clutches with only one, two, or three eggs. As they become more mature, they normally lay larger clutches. The largest clutch of eggs I have observed in the wild was nine.

After the eggs are laid, which takes about one week, incubation by the hen begins. The hen pulls the feathers off the middle of her breast, so that the body heat from her skin can incubate the eggs. The feathers are also used to line the nest. The incubation period is about 28 to 30 days. The gander stays close by to guard the nest and run off any intruders. The hen normally leaves the nest twice daily (morning and evening) to feed and water. She always covers her nest before leaving.

Young goslings normally start hatching the second week of May, with the peak hatching occuring when the first corn starts to poke through the ground. The production in the wild in northwest Iowa last year was between six and eight hundred. The diet of the young consists mostly of insects and grass browse. The pair and their young have a very close bond with most families staying together until nesting activities start the next spring. The young grow very fast on their rich diet in Iowa, and are normally flying by the middle of July.

When the hunting season on Canadas opens during October, they concentrate in the existing refuges for protection. A few leave before October, with some leaving during October and November. However, many stay until the lakes and marshes freeze solid, at which time they leave northern Iowa for warmer climates in the South. When they go south each winter I know they will return. They will always return if proper management practices are carried out by government agencies. Yes, there are wild Canada geese nesting in Iowa. □



FARMING FOR WILDLIFE

Conservation Commission Photo

By GARY K. SWANSON, *District Wildlife Supervisor* **and BOB BARRATT,** *Superintendent of Wildlife*

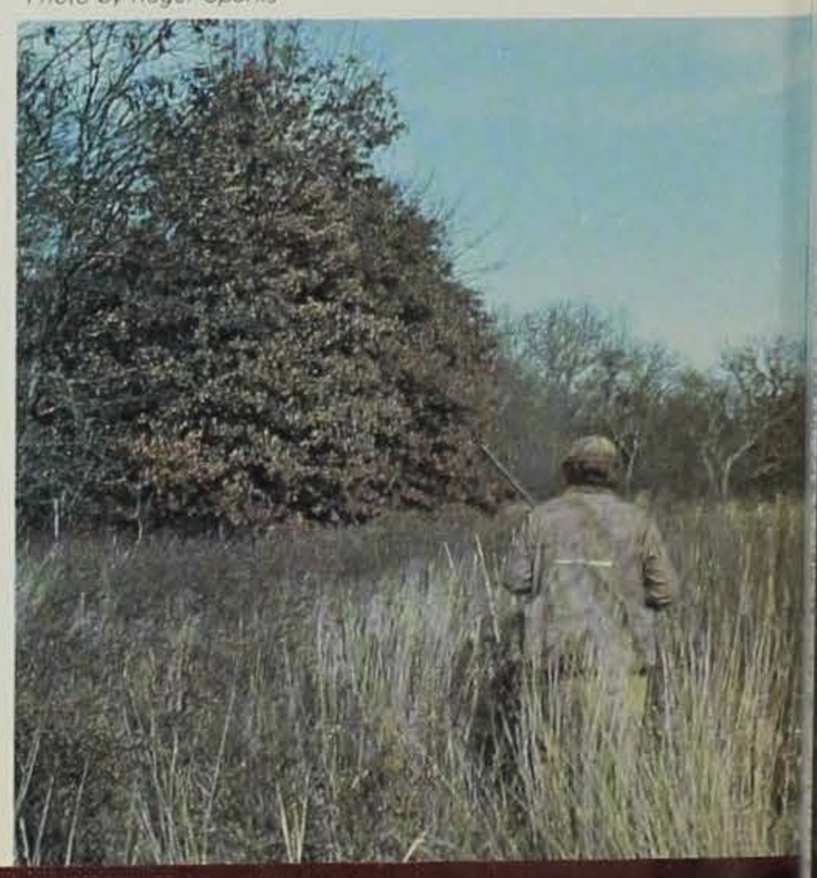
ONE IMPORTANT KEY to good farm game populations as the sportsman has heard over and over again is habitat. Habitat can come in many types, such as permanent brush cover and timber, permanent grasses and annually manipulated cover. Wildlife managers use this annual cover on our state-owned game management areas, but the type of cover may vary in different sections of the state and different species require a different type of management.

An important objective in a good program of cover management is "edge effect". Wildlife use various habitat types during their daily activities and as a rule they don't wander deeply into any one type unless forced. Because of this desire for "edge" the manager uses small crop fields in his planning to provide wildlife easy access to many of their life requirements. As a general rule, the more edge the better the cover. But the size of the crop fields can also depend on desired results. The manager designs the crop plan to reflect the type of management he desires, which is dictated by the species to be managed.

Aldo Leopold, in his classic work *GAME MANAGEMENT*, classified American game species and gave an **estimated** composition for optimum range requirements for each species. Following is an excerpt from his tables as they relate to important Iowa game species for which the state-owned areas are managed:

Class of Game	Composition of Optimum Range					
	Cultivated	*Grassland*	*Brushland*	*Woodland*	*Marsh*	*Water*
I. Farm Game						
Bob White	1/4	1/4	1/4	1/4		
Cottontail	1/4	1/4	1/4	1/4		
Ringneck Pheasant	1/2	1/4	1/8	1/8		
Hungarian Partridge	3/4	1/4				
Fox Squirrel	1/4			3/4		
II. Forest & Range Game						
Whitetail Deer	1/8	1/8	1/2	1/4		
III. Migratory Game						
Puddle Ducks	1/3				1/3	1/3
Diving Ducks					1/4	3/4
Geese	1/4	1/4			1/4	1/4

Photo by Roger Sparks



He further says, *"Farm game consists of species which because of their short cruising radius and high requirement for cultivated land, are especially adapted to be grown on farms."*

He dwells at length on the importance of good interspersion of type requirements for various species. He states mathematically a law of dispersion: *"The potential density of game of low radius requiring two or more types is, within ordinary limits, proportional to the sum of the type peripheries."*

In his *Game Survey of the North Central States*, Leopold documented conclusively that a certain degree of settlement in this country actually improved the habitat for farm, forest, and migratory game instead of deteriorating it as is commonly believed. In *Game Management* he states, *"These species attained an abundance in the early days of crude farming probably far surpassing that obtained under pre-settlement or virgin conditions. The lack of productivity now characteristic of most of their ranges is not due to settlement and cultivation as such, but rather to overkilling, overgrazing, and clean farming."*

Durward Allen has stated that pheasants could not have been introduced into this country without agriculture. He cites several examples to illustrate his point. In *Our Wildlife Legacy* he tells of the Sacramento Valley in California where thousands of pheasants were stocked unsuccessfully before 1916. At about that time, the landowners converted much of the valley to rice farming and alfalfa with the result that it attained one of the highest pheasant populations in the nation.

All crop leases on our fish and game areas are designed to provide optimum wildlife habitat and the production of income is of secondary importance. Harvested crop strips also make surplus game more readily available to the hunter. To accomplish our purpose, it is necessary to utilize the lease arrangement with individual farmers, since it is impossible and impractical to duplicate the present programs with state personnel and equipment.

It is estimated that it would cost the Iowa Conservation Commission at least $250,000 annually to carry out this program with its own force. Not only would it entail the great cost of producing these crops, but it would also result in the loss of revenue accuring to the Fish and Game Trust Fund, which averages about $75,000 annually. In other words, farmers are willing to pay the state for the privilege of carrying out our management activities instead of the state having to spend enormous sums to accomplish the same end result. (The farmers, of course, make a profit on the crops harvested).

The Commission has approved farming of state-owned fish and game lands by cooperating farmers on a cash-bid basis with the bids being made for a three-year period. This eliminates some of the workload since approximately one-third of the leases are renewed each year. Crop plans for each individual year of the three-year period are prepared in advance and the farmer must bid for the privilege of farming these lands in accordance with our specifications. In other words, he must plant in each individual field the crops designated by the game managers.

About half of the cultivated lands are designated each year to be planted to corn with other important crops being oats, hay, grain, sorghum and winter wheat. Because of weather conditions at planting time, it is sometimes necessary to amend the cooperative agreements and occasionally this results in soybeans being planted on some acreages.

Past experience has shown that an average of 20% to 25% of oats and rowcrops are either never planted or do not mature to produce a crop. This is the result of wet ground at planting time or floods after the crops are planted.

Corn is the most important farm crop produced on the game management areas. The agreements usually provide for fields to be planted to this crop to provide the all-important "edge" effect, brood rearing habitat, and winter food and cover. The agreements provide for approximately 50 bushels of this crop to be left unharvested in each field. Except for major duck and goose areas or areas in the process of acquisition, corn fields are relatively small, averaging about six to eight acres. In major waterfowl areas, fields are much larger and grain crops are extensively grown to attract migrating ducks and geese. During the interim period while areas are being acquired or are in the initial stages of development, fields are also somewhat larger than they will be after the areas are completely developed.

As stated previously, soybeans are usually an emergency crop suitable to replace corn on areas which are too wet at the normal corn planting date. They do however, provide excellent brood-rearing habitat for upland birds, are used heavily by deer and rabbits for food during the growing stage, and provide some winter food after harvest. Planting of crops on these wetlands also controls the growth of undesirable weeds and sprouts.

Grain sorghum is an alternate crop for corn and provides valuable food and cover. Many of our agreements specify that several rows of grain sorghum be planted around the entire border of the field and be left standing unharvested.

Such crops as buckwheat, millet, etc., are planted entirely for wildlife food and are not harvested.

It should be pointed out here that the practice of leaving standing grain crops in the field for winter food is probably of more value as a public relations measure than as an actual game management tool. There is no evidence that wildlife has ever starved in Iowa. Almost all of our areas are surrounded by cultivated lands and waste grain is abundant. In most cases, wildlife species would find plenty of food on adjacent farm lands or in our own harvested crop fields. However, the presence of some standing grain crops may have value in concentrating game populations on our public hunting areas where they are available during the hunting season.

Oats is normally grown as a nurse crop for grasses and legumes. It also provides nesting cover in the regular crop rotation. The hay resulting from these seedings provides nesting cover, and harvest of hay is allowed only after July 15. Winter wheat is planted to provide green browse for geese on waterfowl areas.

Pasture agreements are executed to improve nesting habitat on uplands and to control weeds. Grazing is controlled by limiting the number of animals on any given tract.

Again, it should be pointed out that farming on state-owned game management areas is a part of our game management practices. Current studies by the biologists indicate that we might increase wildlife populations on some of our areas by increasing the proportions of cultivated lands. Idle areas are important and serve a real purpose in wildlife management, but the very fact that crops in other areas are planted and harvested annually is important in the overall picture. Farming activities retard plant succession. If the areas were not managed, they would soon grow thick with brush and trees which would be little used by wildlife populations. Farming and farm crops are both very important tools that the wildlife manager uses.

Conservation Commission Photos

IOWA'S FARM POND PROGRAM

By Marion Conover
District Supervisor

A proper farm pond harvest

IOWA'S NEW FARM POND PROGRAM got off to a successful start in 1974. Last year a total of 576 ponds were inspected, of which 278 were approved for stocking. The ponds receiving fish averaged 1.4 acres and totaled 398 acres. The construction cost of this amount of impounded water approximates 1.5 million dollars.

Wildlife too will benefit from the habitat created upland from the water's edge. Vegetation, protected from livestock by an all encompassing fence will provide valuable wildlife nesting and winter cover areas.

Photos by Tom Putnam

Four basic requirements help insure that quality ponds are selected: (1) Ponds must contain at least one-half (½) surface acres of water. (2) The pond must have a maximum depth of at least eight (8) feet. (3) The pond should not have contained water for more than one year prior to stocking, or have been recently renovated and free of fish. (4) Ponds must be surrounded by a continuous buffer strip; the entire area being encompassed by a fence to exclude livestock.

The greatest percentage of rejected ponds failed the list of criteria because they contained water for more than one year, or were previously stocked with fish. In either case, we can logically assume that these ponds already contain existing fish populations. The small fish to be stocked would have almost no chance for survival in ponds such as these, and would be wasted.

Where pond fishing has deteriorated, a new start is generally advisable. This is accomplished by removing the undesirable population with a fish toxicant and restocking under the farm pond program. Contact our field representative for recommendations concerning renovation.

Some ponds failed to meet the criteria because the owner would not exclude livestock by a fence. Recognizing the value of impounded water, it is sound judgement for the owner to protect the pond banks from being trampled by stock. Fence construction costs will be returned in the extended life of the pond through livestock exclusion. As important is the quality fish and wildlife habitat provided. A livestock watering system below the dam can be incorporated into the construction of the structure.

Small bluegill at 1,000 per acre and channel catfish fingerlings at 100 per acre are stocked in October. Largemouth bass fingerlings at 100 per acre are provided in late June of the following year. A general life history knowledge of each species will aid in understanding the role of each in the pond community.

Largemouth bass are primarily predators, feeding upon other living animals. Young bass eat water fleas, insects, and tiny bluegill. Adult bass feed on bluegill, crayfish, frogs, and insects. Bass spawn during May and early June in Iowa when the water temperature is between 60 and 70 degrees. Approximately 10,000 eggs are laid in a nest fanned out in shallow water areas. Male bass can usually be observed guarding the nest during incubation. They keep the eggs aerated and silt-free by fanning them with their fins.

Approximately four pounds of food is required for a bass to gain one pound in weight. The average pond in Iowa can support about 75 pounds of bass per acre. It is readily evident that large quantities of natural forage are necessary for normal growth of the bass population. The Iowa record largemouth bass weighing 10 pounds, 5 ounces, was taken from a farm pond. A fish this size would exceed 10 years of age. The average natural life span of Iowa bass is six to eight years.

Bluegill are unequalled as forage fish for largemouth bass in ponds. They provide the food necessary for good bass growth. In addition, these sporty fish will provide most of the angling opportunity. The good ponds in Iowa support an average of 300 pounds of bluegill per acre. These fish are of different sizes, serving as food for different age bass. The large adult bluegill end up on some lucky angler's dinner plate. Bluegill spawn twice a year in shallow water colonial nests. The state record bluegill weighing two pounds, three ounces, was also taken from a farm pond.

Bass and bluegill will both reproduce and maintain healthy populations for years to come in properly managed ponds. Proper harvest of fish is the key to successfully maintaining a quality bass-bluegill fishery. Remember, the bass are the only real check on bluegill numbers. Overharvest of bass can lead to overpopulation of bluegill, resulting in a stunted undesirable panfishery within a few years. Excessive bluegill numbers will prohibit successful bass reproduction. When such a fishery develops, little option is left the owners, but to renovate the population and start over.

To aid in maintaining balance in farm pond fish populations, release back to the water those bass under 14 inches in length. It is a good practice to remove at least five pounds of bluegill for each pound of bass.

The channel catfish is the trophy fish for ponds. Feeding on a diet of live and dead plant and animal material, "old Whiskers" often exceeds 20 pounds. Catfish seldom reproduce successfully in ponds stocked with bass and bluegill, even when spawning sites are available. The tiny fry are quickly eaten by bass and bluegill. Periodic stocking of 50 eight-inch catfish per acre is necessary to provide lasting catfishing in most ponds.

Crappie, carp and bullhead all have one thing in common; they can ruin pond fishing. All three tend to overpopulate in small ponds. Crappie quickly end up stunted and too small to keep. Worse, they directly compete for food with bass; thus, limiting bass numbers and growth. Bullhead and carp both muddy the water and make it difficult for sight feeding bass and bluegill to feed. For these reasons, none of these species are a part of the farm pond stocking program.

Both the pond owner and fisherman can benefit by following the above recommendations. For any further management advice, contact your nearest Conservation Commission field office. □

CLASSROOM CORNER

By Curt Powell,

Administrator, Conservation Education Center

THE WILDFLOWERS ARE BLOOMING and a colorful cascade of various plants adorn the hillsides throughout the State. It's the time of year that classes should be outdoors enjoying nature.

As I've mentioned in the past, all subject matters in a school curriculum have adaptations which can be used in the study of conservation and the environment. This month, let's concern ourselves with art and the many things that can be done to brighten up your home and classroom.

Photography is a form of art which is often neglected. Pictures and slides of wildflowers can be enjoyed throughout the entire year. Not only that, but the slides serve as a constant refresher on identification of the wildflowers which appear at various seasons. A roll of film, a camera, and leisure time is all you need to enjoy yourselves and spend many productive hours.

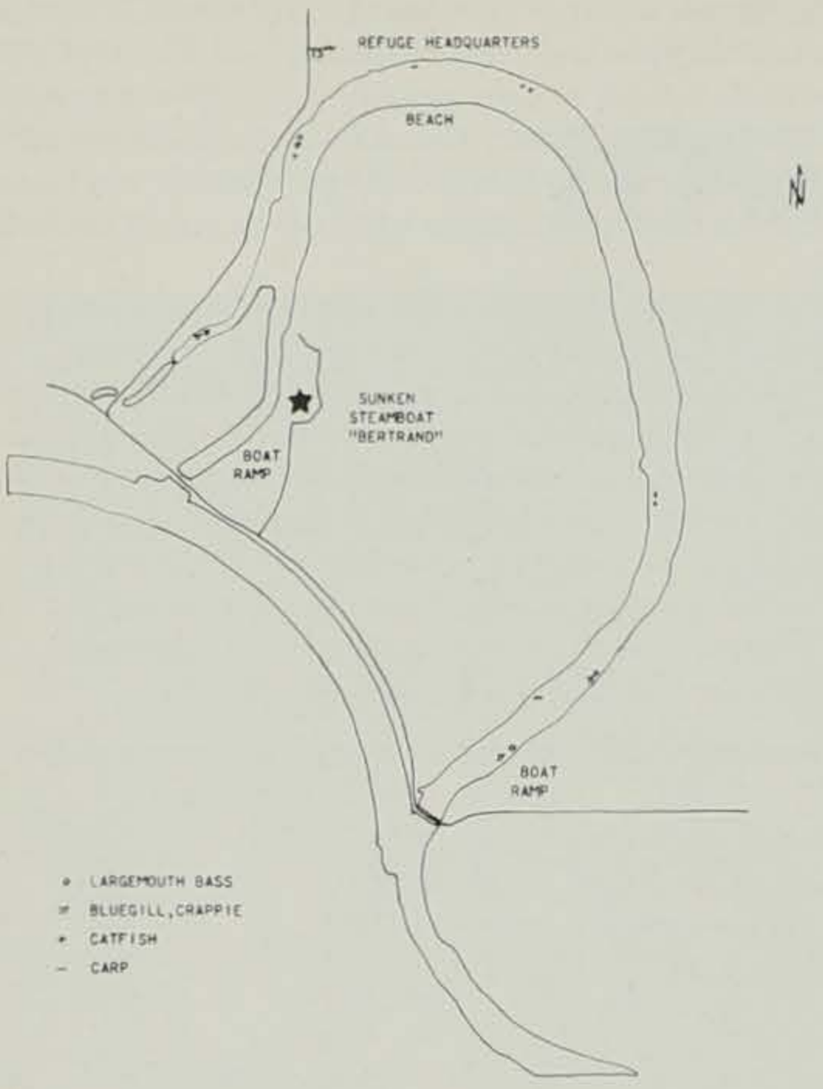
How about making some prints? Do you know what they are? A block print is really quite easy to do and can make a lasting print for you to enjoy. Your subject matter is unlimited. You need a piece of linoleum, a block of wood, Elmer's glue, a carving instrument, printers ink, a roller, carbon paper, and a subject.

Glue the linoleum to the block of wood (this should be the size you wish your print to be). A one inch thick pine board will do. After the glue has dried, lay a pice of carbon paper on the linoleum. Then trace a picture, or preferably, a sketch of some outdoor scene you have made, on to the linoleum. Remember to press hard so the carbon paper will leave a proper copy. This picture on the linoleum should be just the reverse of what you want your print to be since it is the negative that you're making. The word *"PARK"* should appear on your block as *"KRAP"* or *"IOWA"* should appear as *"AWOI"*. Then when the print is made the words will be a "positive print" and read correctly.

After your picture is traced, take a sharp carving instrument such as a knife and carve away the linoleum every place you *DON'T* want the ink to reach. This means the portions carved away will show up white on your picture.

Once the carving is done, ink your roller and roll the ink across the linoleum. Then press the block on a piece of paper. Press hard and evenly so the paper and inked portion of black come in contact. Remove the block carefully and place your print somewhere to dry. Now you have a block print. You may make them in any color and all of Iowa is your subject.

FISHING DESOTO BEND LAKE



By KAY R. HILL

ALONG THE WESTERN EDGE of Iowa, DeSoto Bend National Wildlife Refuge lies along the flat lands of the Missouri River Valley. The lake, DeSoto Bend, was made when the US Corps of Army Engineers completed construction of a new river course and thereby isolated a large bowl of the Missouri River. The result was a 7 mile-long, 760 surface acre impoundment. The lake is horseshoe shaped with a maximum depth of 34 feet and an average depth of about 10 ft. DeSoto Wildlife Refuge was established in 1959 on this cut-off oxbow. It is one of a vast network of National Wildlife Refuges that provide food and sanctuary for migratory waterfowl and other wildlife. The refuge also provides seasonal outdoor recreation such as fishing, boating, swimming, picnicking, and hunting. DeSoto Bend is located approximately 20 miles north of Omaha, Nebraska and Council Bluffs, Iowa and six miles west of Missouri Valley, Iowa.

Fishing is at its best in April, May and June picking up again in late September. A recent sport fish harvest survey revealed that the catch rate was about 1/3 of a fish per hour in April and May declining to nearly 1/10 of a fish per hour in August. Thirty-four species of fish inhabit the lake, but the main sport fish species are largemouth bass, channel catfish, bluegill, black and white crappie, northern pike, walleye and perch. Occasionally, large paddlefish are caught; in fact, the Iowa record spoonbill was caught in DeSoto Lake in May, 1973, weighing 83 pounds.

The interested angler would experience better fishing if he fished different parts of the lake for the desired species. Most channel catfish are caught at the north end of the lake although numerous catfish are caught from the boat docks at the southern boat ramp. Largemouth bass fishing is best along the rock banks near the first major bend in the lake. Most bass anglers use boats to reach this portion, but it is also accessible from land. Good bass fishing is also experienced around pilings on the west side of the lake about mid-way in the lake. Large numbers of crappie and bluegill are taken around the various beaver lodges scattered around the edge of DeSoto Lake. Many of these lodges are located in the upper fingers of the lake. Another hotspot for crappies is the pilings ¼ mile up the lake from the southern boat ramp and concession area. Lately, carp fishing has become a popular sport for some, as this species is very palatable, smoked or fired. Best fishing is reported across the lake from the concession stand and at the extreme north end of the lake near the refuge headquarters. A quick view of the map will give a good idea of likely spots to fish for different species.

Late spring, mid-summer and fall are good times to catfish and better fishing usually occurs from dusk to dark, using baits such as small sand toads, frogs, stink bait and chicken entrals. Spring, early summer and fall are times when largemouth bass hit the best. Good baits are spinners, plugs, artificial worms and minnows. Fishing is best for crappie and bluegills at about the same time as for bass. Worms and small jigs are good baits for these species. Worms are the best overall bait, as all the species mentioned above will readily bite on worms. Spinners, spoons and minnows are the best baits to use for northern pike, but walleye bite best on minnows. Carp bite readily all summer and most people use commercial dough ball, but a few anglers pride themselves in their own unique dough ball recipe.

DeSoto Lake lies in both Nebraska and Iowa and since it is a Federal wildlife refuge, special regulations are needed. The lake and refuge are open to the public from April 15 until September 15 from 6:00 a.m. to 10:00 p.m. daily. Ice fishing season runs from January 1 through February 28 with the same daily time limits. Either a valid Nebraska or an Iowa fishing license is required and fishing is permitted in accordance with state regulations and subject to the following special regulations: (1). Trot lines and float lines are not permitted. (2) Digging or seining for bait is not permitted. (3) No more than two lines with two hooks per line may be used.

Anyone visiting DeSoto Bend should stop at the headquarters along Highway 30 and obtain a copy of a map and regulations. The Bertrand Museum and fall waterfowl are also memorable items to see while visiting DeSoto Bend National Wildlife Refuge. □

FIELD GLANCES
by Larry Pool

CAMPERS CHECKLIST

ITEMS YOU MAY WISH TO BRING

Food - Salt, Pepper, and Sugar
Refreshments
Clothes
Personal Toiletries
Sheets, Blankets (Bring Plenty of These) Sleeping Bags and Pillows
Medical Supplies - First Aid Kit and Personal Medications
Towels and Washcloths
Ice For Ice Chest - 25 LB Block Maximum Size
Dish Sponge and Dish Drying Towels
Dish Soap and Scouring Pads
Flashlights and Extra Batteries
Paper Towels and Old Newspapers (Start Campfire - Wrap Garbage)
Matches In Sealed container
Plastic Dishpan (Container for Washing Dishes)
Water Jug - 2½ Gallon is suggested
Table Service - Knives, Forks, Spoons
Glasses Or Plastic Tumblers
Long Handled Fork and Spatula For Campfire Cooking
Can Opener, Bottle Opener
Dinner Ware (Paper or Plastic Suggested) Plates Etc.
Hot Pan Holders
Plastic Pitcher for Orange Juice and Lemon Aid
Pots With Lids (Remember Plastic Handles Will Melt Over Campfires)
Skillet or Fry Pan
Coffee Pot and/or Tea Kettle
Vegetable Peeler
Cutlery
Serving Spoon, Spatula, Fork and Tongs
Swim Suits
Boots
Suntan Lotion
Mosquito Repellent
Charcoal and Starter Fluid
Folding Chairs
Laundry Bag
Fishing or Other Recreational Equipment

Gordon Hauschild of Sigourney has been awarded a certificate of service for graduating his 1,000th Student in gun safety. As a gun safety instructor, Mr. Hauschild held his first class in April of 1963. He has taught the class in 22 Iowa towns and cities.

Mr. Hauschild was presented the certificate in a special ceremony by *Fred Priewert*, Conservation Commission Director (left) and *Charles Olofson*, Hunter Safety Officer (right).

FROM THE

Warden's diary

By Rex Emerson,

Law Enforcement Supervisor

AFTER A WEEK of checking fishermen and listening to all the usual complaints such as *"not enough public access to the river"*, *"too many fish traps in the river"* (they hadn't actually seen any), *"should be stocking more fish"*, *"snagging should be legal"*, *"should be allowed more lines"*, *etc., etc.*, and excuses such as *"I left my license at home"*, *"I was going to get a license the next time I got to town"*, *"I was just holding the pole for the kid"*, *"didn't know three poles were illegal"*, *"you mean I need a license to fish a farm pond?"* (he wasn't the owner of the pond), I felt like I had about had it!

About three o'clock this afternoon I pulled into a county-owned timber area, locked up the car, and took off on foot. About one-fourth of a mile from the parking area was a little stream so small you could jump across it. A fallen tree made a good place to sit and observe nature for a little while. It wasn't long till the inhabitants of the woods forgot that I was there. A quail began to whistle for his mate, and a cardinal's bright red feathers flashed in the sunshine as he flew by. It was nice and warm in the woods where the wind coundn't get through. Two squirrels were playing on the limbs of a nearby den tree. A red-headed woodpecker was working hard pecking on a tree trying to find some bugs. It's interesting to watch a little toad swell this throat up like a balloon and then sing the song that evidently all little girl toads like to hear.

The large trees were all reaching as high as they could, competing for the sunshine. The small trees were doing the best that they could with the little sunshine that could reach them. When one of the old trees dies and the wind causes it to fall to the forest floor, the little trees will then have a chance to grow. The dead tree helps enrich the soil of the forest. Oh, yes, there is life and death in the forest, for trees as well as animals.

A study of the forest floor around my nature's easy chair revealed many kinds of wild flowers and other plants. Some of those wild flowers blooming near me were red trillium, sweet williams, May apple, and false rue-anemone. Across the little stream were some buttercups showing their small yellow waxy flowers. Some thorny canes of a gooseberry bush were growing under the branches of my fallen tree. Not far away was some poison ivy. Every time I see poison ivy it reminds me of the time at Springbrook teachers' camp when a teacher came carrying in some leaves from a poison ivy plant for someone to identify for her. I'll bet she remembers what that shiny three-leafed plant is!

Close to the water's edge were the tracks of animals that had been there for a drink, indicating that somewhere in the forest were deer, raccoon and fox. No doubt they have some little ones out there some place this time of year.

Glancing back up at the tall treetops you can't help but think of this as nature's cathedral. You not only learn a lot about nature and life and death, but I think in the words of the younger generation *"you can get your head on straight"*.

Almost an hour had passed since I sat down on the log. It was time to get back to work. No doubt the world would look a little brighter and all the problems would be a little lighter. If you visit a place like this, please don't leave anything except your footprints, and be careful where you put *them*.