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NOVEMBER, 1972



# conservationist





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Muskies being stripped — first eggs taken in Iowa

# muskies in iowa?

*Wally Jorgensen*  
Hatchery Manager

*Terry Jennings*  
Hatchery Biologist

In the past, to catch the elusive muskellunge Iowa anglers had to spend hours fishing one of the isolated lakes of northern Minnesota or northern Wisconsin. To many Iowa fishermen the dream of hooking one of these vicious fighting trophies could never become a reality because of personal travel time or monetary restrictions. But due to a limited stocking program in Iowa, trophy sized muskies are now present in Clear Lake and West Okoboji. For some, the once impossible dream of hooking a muskie is now possible.

During the late 1950's, in response to numerous angler inquiries, the Fisheries Section of the Iowa Conservation Commission investigated the possibility of introducing muskies into Iowa waters. Resulting from these investigations, in 1960 a muskellunge stocking program was initiated. Until 1970, when Rathbun Reservoir was stocked, the muskie program was restricted to Clear Lake and West Okoboji.

Muskies will not be commonly caught by Iowa anglers, but they will be highly prized whether caught incidental to other fishing or while angling specifically for them.

Muskellunge reproduction begins when the water temperature reaches 54°F, usually late April in northern Iowa. They prefer to spawn in shallow marshy areas connected to larger lakes where the adhesive eggs are scattered over submergent vegetation.

During the six to ten days required for yolk sac absorption, the fry are inactive and remain attached to submergent vegetation. After the yolk sac has disappeared, the fry become active and begin searching for zooplankton. A critical period in the life of all muskies occurs during the initial feeding period. If zooplankton of an edible size is not abundant, the fry will starve to death. Zooplankton is a primary source of food until the fish attains two inches total length, normally 15 to 20 days. During this stage, muskies are vulnerable to predation by other fish — particularly fingerling northern pike. Muskies longer than two inches are primarily carnivorous, feeding on minnow fry or any other live organism available. The transition period between plankton and predacious feeding is another critical period in the life of a muskie. If ample quantities of a suitable forage are not available

cannibalism and starvation are common.

Muskellunge is the fastest growing member of the pike family. In a favorable environment this species will attain a length of 12 inches at age one and 20 inches at age two. Growth of male and female is similar until sexual maturity is attained then females grow faster. Males reach sexual maturity at age four and about 30 inches, whereas females reach sexual maturity at age five and approximately 34 inches.

The life span (10-15 years) and the rapid growth rate for this species are indicative that fish larger than the present state record of 23 pounds and two ounces are present.

## Sources of Fish for Iowa's Muskie Program

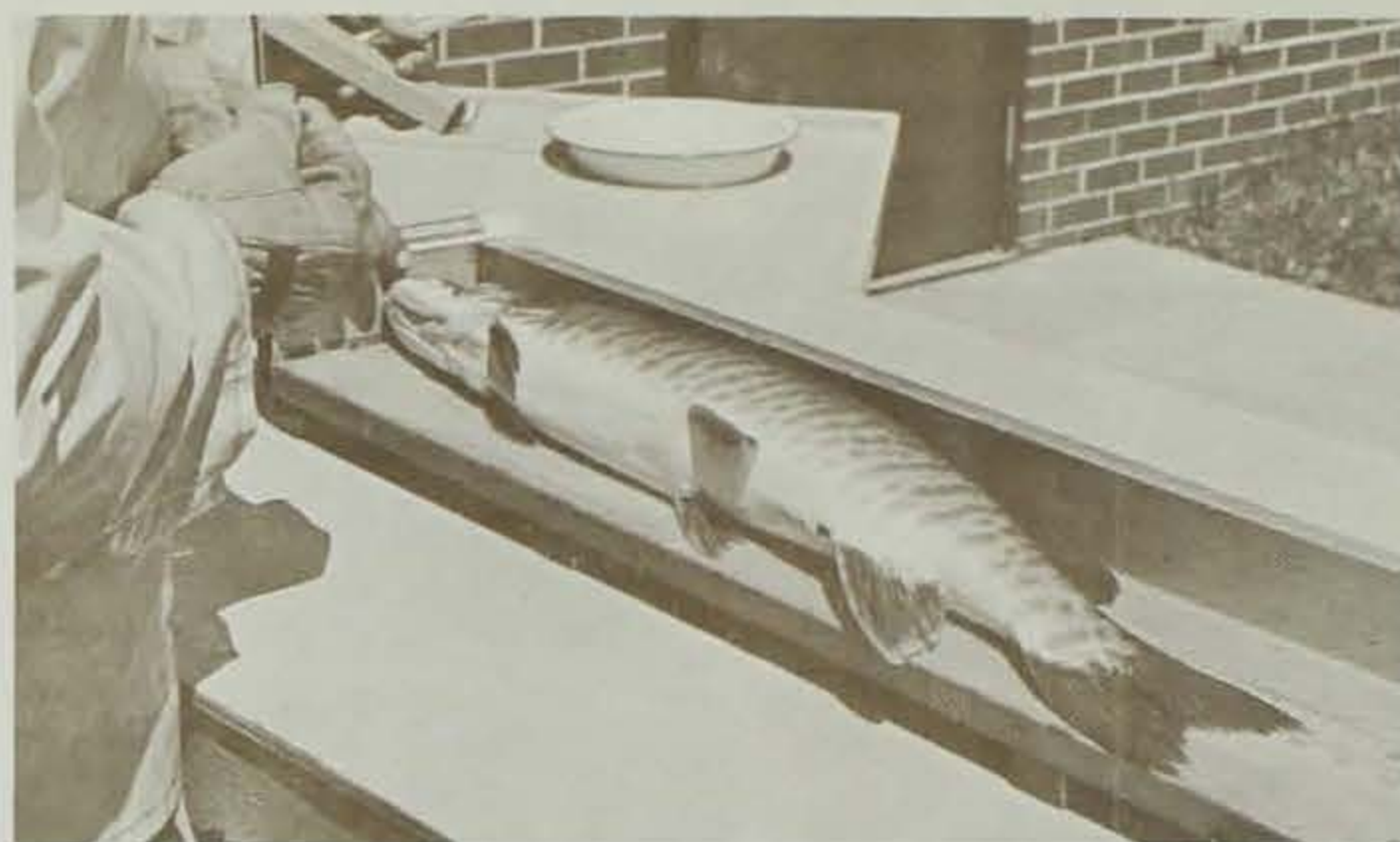
Since Iowa's muskie program began it has been dependent on other states for a supply of eggs. This has been a major factor controlling the number of fish stocked (Table 1).

Eggs are not readily available from states artificially propagating this species because muskies are valuable to their own state.





A mature muskie taken from Clear Lake for stripping



After stripping, fish are measured and tagged, then released.

**Table 1.** Number of muskellunge stocked in Clear Lake, West Okoboji, and Rathbun Reservoir.

Year	Clear Lake	West Okoboji	Rathbun Reservoir
1960	40	40	
1962	41	41	
1965	200	200	
1967	133	134	
1968	376	401	
1969	75	77	
1970	129	231	35,000
1971	326	553	1,010

Eggs, normally obtained from Wisconsin, New York, or Pennsylvania, are shipped to the Lansing, Iowa fish hatchery and hatched at this station. From Lansing they are distributed in oxygenated plastic bags either to Rathbun Reservoir or to rearing facilities at Decorah, Clear Lake, and Spirit Lake. At the rearing stations muskies are grown to fingerling size before being planted into the lakes.

#### First Eggs Taken in Iowa

This year a limited quantity of eggs were collected from adult muskies at both Clear Lake and West Okoboji. Although the number of fry obtained was not suf-

ficient to maintain a desirable stocking program, it is significant that this was the first year Iowa has produced its own fry. Annually the number of sexually mature muskies in Clear Lake and West Okoboji is expected to increase. Thus these lakes should supply a major portion of the fish needed to maintain the present program. Rathbun Reservoir is also expected to be a major source by 1975. If this expectation becomes a reality and if Clear Lake and West Okoboji muskie populations increase as expected, the muskie program could be expanded to include other suitable lakes.

Another source of muskies for West Okoboji has been from a private sportsman's club. Musky Inc., a group of sportsmen formed this club with the intent of stocking as many fingerling muskie as their funds will allow. All muskies stocked by the club have been fin-clipped to distinguish them from state planted fish and to evaluate the club's effort.

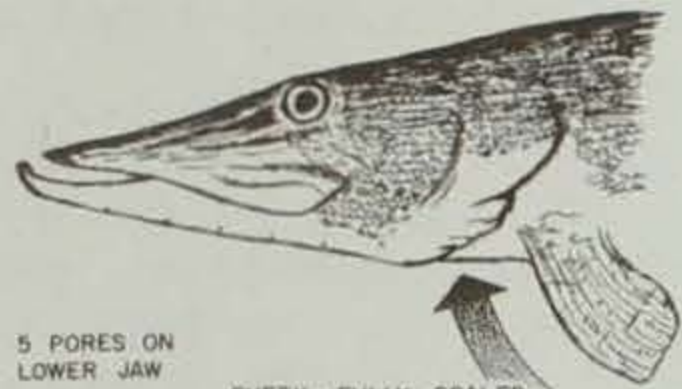
#### Management

Techniques for managing muskies vary depending on the type of water. At Clear Lake and West Okoboji muskie populations have been established in spite of dense populations of other species. These populations were estab-





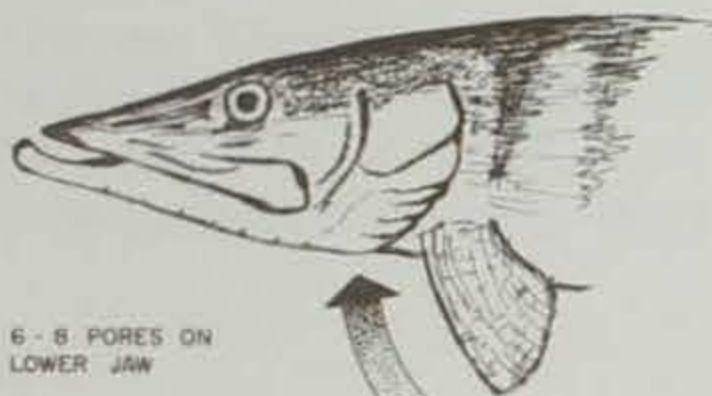
NORTHERN



5 PORES ON LOWER JAW

CHEEK - FULLY SCALED  
GILL COVER - SCALES ON UPPER HALF

MUSKY



6 - 8 PORES ON LOWER JAW

CHEEK - SCALES ON UPPER HALF  
GILL COVER - SCALES ON UPPER HALF

#### Northern Pike or Muskie?

Northern pike are abundant in muskie waters and they do physically resemble a muskie. Since angling restrictions are different for each of these species, it is imperative that anglers be able to accurately identify northern pike and muskellunge. Muskies are distinguished from other members of this family by a lack of scales on the lower half of their cheek and opercle and the presence of six to eight pores on the underside of their lower jaw (see drawing). Generally, but not always, this species has dark vertical bars along each side of their body. A muskie Northern hybrid ("normie") is considered a muskie.



Clear Lake hatchery — where first muskie eggs were taken in Iowa.

lished by stocking large fingerlings. Muskie populations in each lake have matured so that natural reproduction can now be expected. However, the competing northern pike in each lake will probably suppress natural muskie reproduction. So, the continuation or expansion of this program depends on the success of rearing sufficient numbers of fish to more than offset annual mortality.

Muskie management at Rathbun has been somewhat different because this was a newly impounded reservoir and the species of fish could be controlled. In 1970, with the expectation of es-

tablishing a reproducing muskie population, a large number of muskie fry were planted. The competitive northern pike has not been stocked into the reservoir.

Since muskellunge are trophy fish and never become as densely populated as northern pike or walleye, restrictive harvest regulations are a beneficial management tool. Statewide regulations for the 1972-73 fishing season permits a daily catch and a possession limit of one provided the fish is at least 30 inches long. The season is open from April 29 through February 15. In order to protect small muskellunge and to elimin-

ate the need to accurately identify "normies" (muskie-northern pike hybrids) from muskies, angling regulations consider hybrids to be muskies. These restrictive regulations are necessary to provide a trophy fish, maintain a harvestable population, and to distribute the take to a maximum number of anglers.

Because of the low density of legal-sized fish, few anglers have specifically sought this species. But with recent increases in stocking rates, the chances of a dedicated Iowa muskie fisherman fulfilling his dream in his home state are rapidly increasing. ☆



By Jon Gibson Information Specialist

**W**ithout the muskrat, that sometimes highly prized — sometimes utterly despised marsh inhabitant, much of Iowa's prime duck habitat would be destroyed.

Marshes, Iowa's prime duck production and duck hunting areas, naturally tend to become choked with aquatic vegetation. When the plants die they begin to fill in the bottom of the marsh. As the water becomes shallower, and more sunlight strikes the bottom, more and more plants can grow in the marsh. In the future all of Iowa's marshes will become meadows. This tendency of marshes to slowly vanish under aquatic vegetation could occur within a century if it were not for, among other factors, animals that harvest these plants for food

and shelter. This harvesting of aquatic vegetation by animals can prolong the life of a marsh for hundreds of years.

Enough muskrats in a marsh can crop the aquatic vegetation for food and shelter so that there is open water to attract both breeding and migrant ducks, as well as other important marsh birds. Such cropping activity most often occurs right around the muskrat houses.

Two of the ducks that nest in Iowa, redheads and ruddy ducks, construct nests from aquatic vegetation. The nest, a mat of dead plants, is propped upon the stalks of living plants as much as a foot above the water's surface. If the stalks of the aquatic vegetation are too few and too far

apart, the nest cannot support both the mother duck and the eggs. If the stalks are too many and too close together, the ducks will not nest for lack of open water to both feed in and seek protection on.

Blue-winged teal, gadwalls, shovellers, and lesser scaup nest in the marsh grass at the edge of the water and need open water nearby. Since the amount of "edge" between water and aquatic vegetation is so important, the more irregular the shoreline is, and the more islands of aquatic vegetation there are, the better for these Iowa nesters.

Other important marsh fowl such as coots, pied-billed grebes, and American and least bitterns need nesting conditions much like

# MARSH ECOLOGY





the redheads and ruddy ducks above. The edge effect of water and aquatic vegetation, and the number of islands of such plants are of importance to all forms of waterfowl.

Stretches of open water are needed to provide for submergent vegetation which is used as a food source by such common diving ducks of Iowa as canvasbacks, redheads, lesser scaup, ring-necked ducks, common goldeneyes, buffleheads, and ruddy ducks. Although other Iowa ducks feed on submergent vegetation, they can also use terrestrial vegetation as a food source. Divers cannot walk well on land and such food sources are difficult for them to feed on.

Dense islands of aquatic vege-

tation are extensively used for protective cover by the mother duck and her ducklings.

A marsh blanketed with either solid vegetation or open water can support only a few species of waterfowl. On the other hand, a marsh with equal amounts of open water and aquatic vegetation can support many species of waterfowl in high concentrations, and a large population of muskrats as well.

The key to the whole situation, therefore, is for a marsh to harbor just the right number of muskrats. Too many muskrats can destroy the standing crop of plants in a marsh, turning it into an unbroken expanse of water. Lakes of this type are usually so shallow they are of little benefit even to

Iowa fishermen. This characteristic of muskrats to "eat out" all of the aquatic vegetation in a marsh is particularly severe when there is also high water. The high water further reduces the aquatic vegetation by increasing the wave action, and by literally drowning it and floating it away.

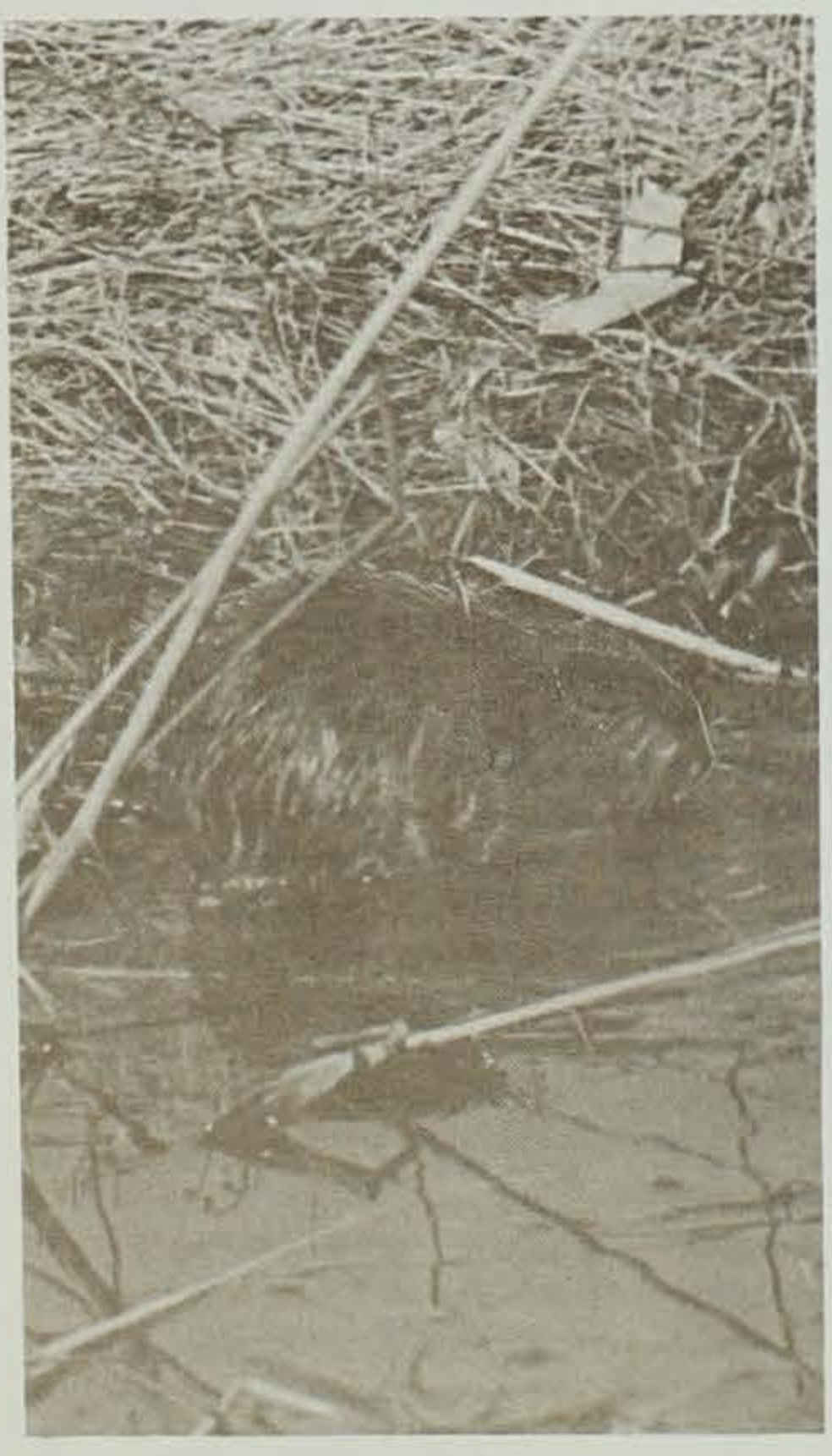
With large numbers of muskrats there is the problem of them burrowing into the levees of artificial marshes. The damage they may cause can lower the level of the marsh and significantly reduce the waterfowl and muskrat habitat.

It is not a simple matter to manage muskrats, however. This marsh dweller has explosive reproductive potential. In Iowa, muskrats have been recorded as

# MUSKRATS / DUCKS





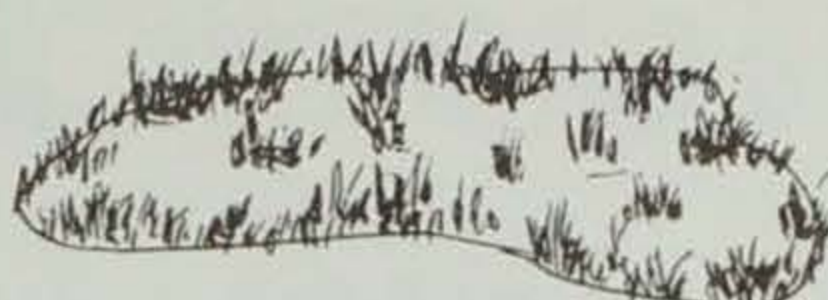


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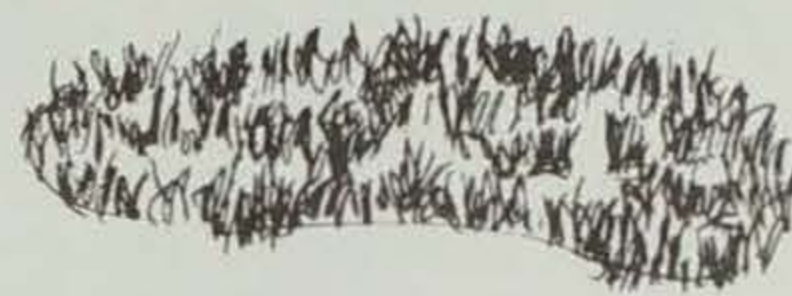




A. Open water; few waterfowl, few muskrats.



B. Interspersion of open water and aquatic vegetation; many waterfowl, many muskrats.



C. Marsh choked with aquatic vegetation; few waterfowl.

having as many as eleven young per litter, and up to 46 young per year. Young-of-the-year females can also give birth. There is the reproductive potential for a staggering increase each year. It's hardly necessary to stock a marsh with muskrats. If suitable habitat is available, muskrats will quickly locate it and rapidly populate it beyond the limits of the environment.

When there are too many members of a population for the environment to support, the problems of starvation, predation, disease, and stress become critical. The stress of crowded conditions causes muskrats to fight more among themselves, destroying much of the fur market value of their pelts. Overpopulation can become so severe in early spring, when the winter supply of food has been depleted and the spring growth of vegetation has not yet begun, that massive migrations, or literally death marches, take place in a futile search for food.

In the larger marshes, particularly those with control structures for raising or lowering the water level, the muskrat population can be reduced by lowering the water level for a given year. The decreased area of marsh habitat provides only enough food and cover to support the desired population of muskrats. The exposed mud flats that result permit the germination of a host of plants unable to germinate under water. A carefully controlled raising of the water level prevents drowning of the young plants, but provides enough water to support their growth. In this manner a large standing crop of aquatic vegetation can be restored to the marsh within one growing season.

Admittedly, such drawdowns can interfere with the duck hunt-

ing and muskrat trapping during the year of the drawdown. However, this action produces top quality hunting and trapping for four out of every five years. The alternative of not using the drawdown method of marsh management is five out of five years of mediocre hunting and trapping.

One problem that arises though, is that most of Iowa's duck production and duck hunting takes place on bodies of water too small or too uneconomical to draw down.

Fortunately, there is one other method for keeping muskrats in check — the trapper. By setting a length to the trapping season, the proper muskrat population can be maintained.

Because of the reproductive potential of muskrats, 60-70% of them can be harvested for any given year. By forecasting the trapping pressure for the coming year, season lengths are set to adequately harvest the muskrat population. To avoid unforeseen heavy trapping pressure, due perhaps to a rise in the prices of the raw fur markets, a quota system for a given marsh can be set. When the desired number of muskrats have been trapped, the area is closed to prevent overharvesting. For undertrapped areas special seasons are installed to increase trapping pressure and crop the overabundance of animals. The Iowa Conservation Commission can also close an area to trapping for a year in an effort to help build up the muskrat population.

Some people wonder why the natural predator of the muskrat, the mink, cannot hold the muskrat population in check. By nature, mink are solitary creatures. They can never exist in the same concentrations as muskrats can.

Optimum mink habitat includes large bodies of water all interconnected with each other. Iowa's marshes are small enough and isolated enough to restrict the number of mink that can inhabit them.

The ethics of using steel-jawed traps to harvest furbearers has come under heavy attack recently. Many of the accusations against trapping are of an emotional nature and lack insight into the principles of the conservation of renewable resources. Furbearers will go to waste unless they are cropped annually. The trapping of such furbearers as muskrats is a vital step in any marsh management program designed to benefit the welfare of other marsh wildlife. Death by a steel-jawed trap is not so cruel when compared to the slow and painful death associated with the rampant disease and starvation induced by overpopulation. Naturally, any trapper should use the most humane methods possible. Setting the trap so that the muskrat drowns immediately after being caught is a practice that should be used as often as conditions permit. Where possible, conibear instant-killing traps should also be used.

District game supervisor Tom L. Berkley of Panora, a specialist in furbearing game, states, "At no time do we try to remove all the muskrats from any area. We recognize that their pelts contribute to the local economy, but more importantly, they are a valuable and natural part of any waterfowl management program."

When it comes to ducks and muskrats the old saying "you can't have one without the other" is certainly true. ☆



# Why Hunt for Antlered



Lee Gladfelter  
Game Biologist

The cool, crisp air of fall quickens the heartbeat of all outdoorsmen and causes that seasonal affliction often referred to as "huntingitis." The many symptoms of this affliction are always present — the watching of newspaper ads for sales on hunting ammo and equipment, that new shotgun that was always needed, rides in the country to spot likely hunting spots, etc., etc. With the Iowa deer hunter it all started back in September with that last minute rush to get the shotgun applications in on time. It continued through the long wait to see if luck was still holding out and a deer license would be received in the mail. Around 9,000 shotgun hunters were unlucky in the 1972 drawing and had to settle for a certificate that guarantees them a deer license next year.

Over the past 19 years, deer hunting in Iowa has not changed much, but in 1972 there is one significant change. In hunting zones three and five there will be 75% of the hunters (three out of every four) who will be required to hunt for antlered deer only (meaning any animal having at least one forked antler). For those of you who received the bright red license in the mail it means that you must stop and look for antlers on that deer before you pull the trigger. The first question that pops into your mind is why must I hunt for antlered deer only? Why should I reduce my chances of bagging a deer when I am accustomed to bagging, on the average, one deer every two years. To answer this question, let's start by looking back a few years to see what has taken place with our Iowa deer herd.

At the turn of the century, deer were very scarce in Iowa. The deer herd remained quite low, even though protected from the hunter, until the 1940's. Dur-

ing the next decade deer began to increase to the point where they could be harvested without danger to the growth of the herd. The first deer season in modern times was opened in 1953. The modest harvest of deer during the following years allowed the herd to increase at a rapid pace until in 1966 the deer herd peaked at its maximum size and began to slowly decline. In an attempt to curb the effects of hunting on the herd, various changes were made in hunting regulations. License quotas on shotgun hunters were reduced from 28,000 in 1966 to 18,000 in 1971. The season length was reduced from four days in some zones in 1966 to just two days statewide in 1971. A change in the free landowner-tenant law reduced the number of landowner hunters in 1971. With all these reductions there were still more deer harvested from 1966-1971 than during the earlier years of 1953-1965. The main reasons for the higher harvests in recent years were a greater number of hunters in the field and an increase in hunter success. Following the 1971 season, population estimates showed that the deer herd finally stabilized at a level of just under 30,000 deer. This is comparable to the size of the herd in 1964.

Why then has the antlered deer season been implemented for 1972?

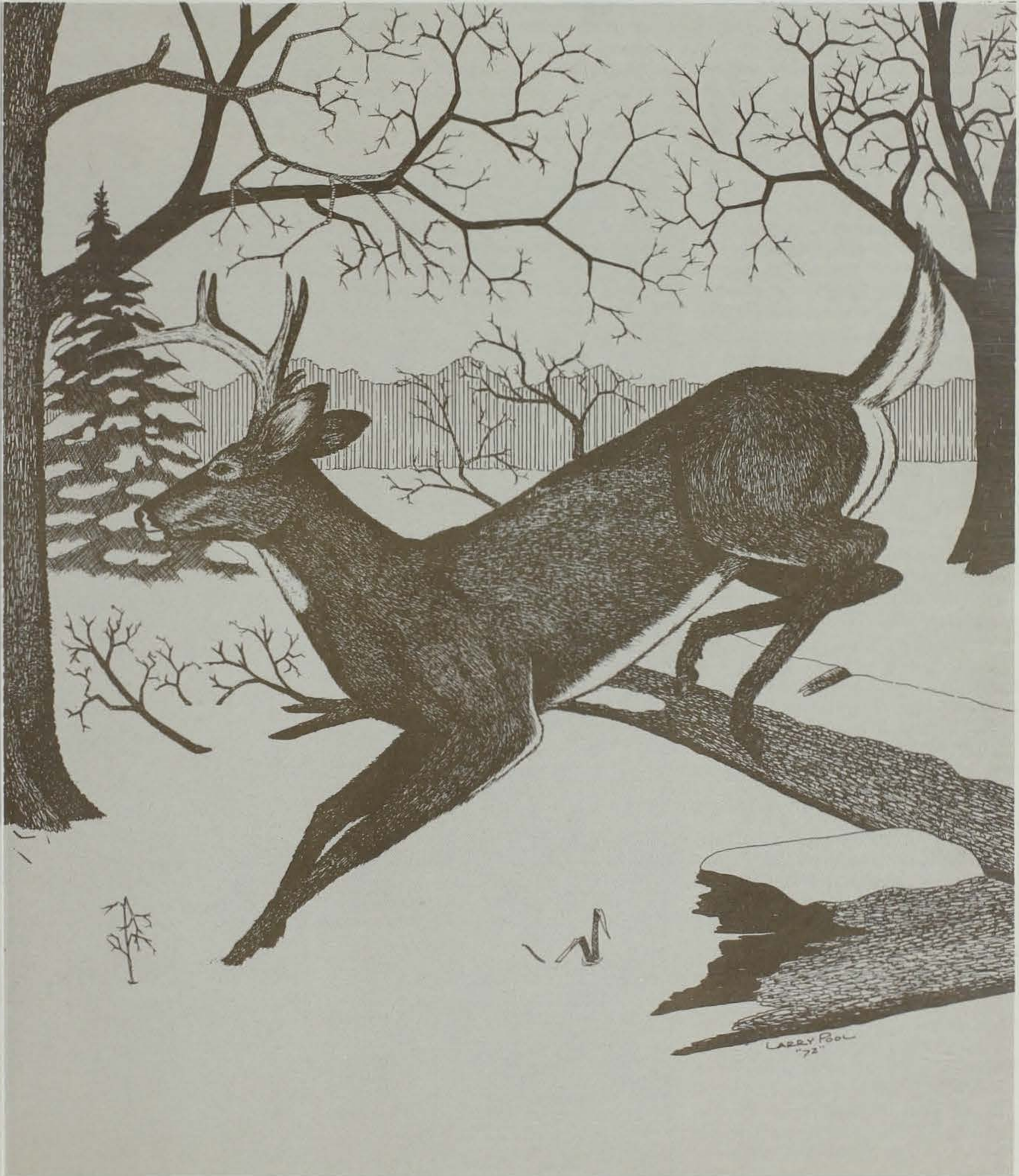
1. The goal of deer management in Iowa is to obtain small increases in the deer herd each year until the carrying capacity of the habitat is reached. With a larger deer herd, more recreation could be provided to the Iowa hunters by lifting quota restrictions and lengthening the season. An antlered deer only season will accomplish this goal. Because does and fawns are protected from the majority of the hunters there will be more animals carried over for production of young

the following year. Since bucks are polygamous (having more than one mate), there is an excess of them which can be harvested without reducing the production capabilities of the deer herd. Bad publicity on this type of season originated years ago in a few states. The reason for the opposition was that the population grew so rapidly because of underharvest that the carrying capacity of the land was exceeded. This brought about starvation of animals during the winter and thus the bad publicity. In recent years however, this type of season has become recognized by many midwestern states as a sound method of building up a herd. Our problem now is not enough deer to meet the recreational demands instead of too many deer for the habitat. Neither do we have the winter food problems often encountered in the more northern states.

2. The second important point is an attempt to improve the quality of deer hunting in Iowa. Because of our necessarily short seasons, deer hunting has become a "rat race." Most hunters worked harder during the few days of deer season than during any other time of the year. With an antlered only deer season this pace can be slowed by furnishing a longer season. Hopefully more enjoyment can be obtained from being in the woods and hunting with close companions. More hunting skill is necessary because the buck is much smarter and more wary than the doe and fawns. There is just more prestige in harvesting a big buck. Some hunters may fear that after several seasons all the bucks will be shot. This is not true since the male fawn is protected from the majority of the hunters and will provide a big boost to the adult buck population each year. Also, as the deer herd grows more male animals are produced thereby



# Filtered Deer ONLY?





providing a larger supply of bucks.

As with all types of hunting regulations there are certain disadvantages.

1. The major disadvantage will be illegal kill and most states with an antlered only season experience this but to what degree is almost impossible to predict. This will certainly happen in Iowa because the regulations are new and the hunter is not accustomed to looking for antlers. The responsibility rests with the Iowa sportsman. If care is taken and caution is encouraged by all members of the hunting party, the regulation will be a success. The one who has everything to gain and likewise everything to lose is the Iowa deer hunter!

2. Hunter success will decline because the adult bucks make up only 25% of the deer population and are much more wary. The average shotgun hunter success in 1971 was 45% while under this new regulation hunter success will probably drop to around 20%. Hopefully the deer hunter will carry this burden until the deer population has increased enough to liberalize the seasons.

What will the outcome of this season be? It is very difficult to measure the response of the deer population to hunting season regulations, for it often requires several years for a trend to materialize. Hunting for antlered deer is not a new idea for it has been proven in other states that with public acceptance it will increase the deer herd. In Iowa we hunt pheasants and waterfowl by identification between sexes. With most other game birds and animals sex identification is impossible under field hunting conditions. The sex of deer is distinguishable in the field if care is taken by the hunter before he shoots. The white-tailed deer is a great natural resource and part of the ecology of a farmland habitat. Greed and carelessness are the enemies of the deer as well as the whole ecosystem of which man is a part. ☆

## 6 six vision rules for hunters

1. If you normally wear glasses wear them when you hunt. If you are worried about fogging, a tiny amount of wax on the surface of the lens — rubbed up to a high gloss — will do much to eliminate this problem.

2. Always double-check your target. You can train yourself for this by working on your ability to distinguish figures against backgrounds that blend with their natural color.



### ALL TIME IOWA RECORD RACKS

#### BOW AND ARROW TYPICAL

Name	Address	Year	County	Total Score
Lloyd Good	Knoxville	1962	Monroe	197 6/8

#### BOW AND ARROW NONTYPICAL

Blaine Salzkorn	Sutherland	1970	Clay	216 3/8
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#### SHOTGUN NONTYPICAL

Carrol Johnson	Moorhead	1968	Manona	250 4/8
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#### SHOTGUN TYPICAL

Marvin E. Tippery	Council Bluffs	1971	Harrison	185 1/8
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### RECORD RACKS MEASURED IN '72

#### SHOTGUN TYPICAL (Minimum qualifying score — 140 points)

Name	Address	Year	County	Total Score
Marvin E. Tippery*	Council Bluffs	1971	Harrison	185 1/8
Wayne Swartz	Bedford	1967	Taylor	183 7/8
Charles Tighe	Chariton	1969	Lucas	171 2/8
Terry Tasler	Churdan	1965	Guthrie	168 2/8
Kent Shever	Sioux City	1971	Ida	165 6/8
Ronald R. Powell	Mystic	1971	Lucas	165 6/8
Jerome Schueller	Sherrill	1971	Van Buren	165 6/8
Maynard O. Thompson	Eagle Grove	1968	Boone	164 5/8
Jack Sickels	Creston	1970	Ringgold	162 4/8
Dale R. Hansen	Onslow	1970	Jones	158 7/8
Scott Knudson	Churdan	1970	Cass	158 3/8
Walt McGinnis	Baxter	1971	Ringgold	154 6/8
L. E. Allen	Council Bluffs	1965	Harrison	154 5/8
Jerry Sobotka	Van Meter	1971	Ringgold	153 3/8
Kenny Tietsort	Battle Creek	1971	Harrison	153 3/8
Reynold T. Moser	Amana	1971	Iowa	152
Ronald D. Henry	Garrison	1971	Harrison	151
Bert Gibbs, Jr.	Sanborn	1966	Lyon	150 2/8
Ronnie Brandel	Dubuque	1971	Dubuque	150
Dale McGinnis	Creston	1971	Union	149 5/8
Ronald Kraus	Carroll	1966	Harrison	149 3/8



3. Remember that decreased daylight as well as rain, snow and sleet reduce visibility. Keep this in mind when you think you have sighted a target.

4. To improve your personal safety remember that from two to five percent of all men are colorblind. Most optometrists agree that hunter orange (blaze orange) is the easiest color to see. Only blaze orange is absent from nature. Iowa deer hunters (ex-

cept bow hunters) are required to wear a blaze orange garment.

5. If you know that you are color blind, make this your signal to be doubly sure before sighting in on your target.

6. Some people have "tunnel vision" which limits their range of sight. Always allow for a second look when sighting in on a moving target coming from your left or right. ☆

## A PERSPECTIVE ON LAND USE

By Gene Hertel  
State Forester

A forester rarely sees such destructive harvesting in the woodlands. The area in which I found myself had been harvested within the year and the harvesting technique left something to be desired.

There was no soft, spongy cushion of leaves and decayed organic matter usually found on the forest floor. The disturbance of heavy machines used in the harvest had bared the soil and gouged it in many places. As a result of this treatment, gullies were beginning and would obviously continue under the cropping system. Where a small rill came onto a flat place at the bottom of a hill, a wide fan of silt had been deposited. This was common at the foot of other slopes on the area, and gave testimony that the taking of this crop had indeed reduced the future capabilities of the site.

The harvest was complete and the crop which had been harvested was obviously one of even age and of only one species.

There was much evidence everywhere of poor utilization. The broken and twisted stems of the once proud, tall plants littered the landscape. This crop, which had been lush and green a few months ago, had suddenly become a thing to discourage and infuriate. The oxygen producing capabilities of the plants had been forever lost, the wildlife cover which was provided was mostly gone, and the general view of the area was no longer one of beauty.

No young plants were visible on the land that had been harvested and it was clear that much work would have to be done in order to establish another crop.

Meanwhile, the watershed was left unprotected, contributing silt to the streams below and permitting an excess of water run off. The low level of organic matter meant the absorption of water in-

(Continued on Page 15)

Name	Address	Year	County	Total Score
George Pappas	Mason City	1965	Mitchell	148 4/8
Loren Neppel	Carroll	1971	Shelby	146 3/8
Don L. McDonald	Maquoketa	1971	Jackson	144 5/8
Jim Holmes	Sidney	1967	Fremont	144 2/8
Gerald Leu	Hastings	1969	Mills	143 7/8
Gary Mount	Scranton	1971	Greene	143 4/8
Homer Baxter	Britt	1971	Fremont	143 2/8
Ronald Krau	Carroll	1967	Harrison	142 6/8
Francis Ehler	Ida Grove	1968	Woodbury	142 1/8
Charles E. Tighe	Chariton	1971	Lucas	140 1/8

### BOW AND ARROW NONTYPICAL (Minimum qualifying score — 120 points)

Dennis Ballard	Iowa City	1971	Johnson	197 4/8
Bob Oden	Waukon	1971	Allamakee	166 4/8

### SHOTGUN NONTYPICAL (Minimum qualifying score — 120 points)

Donald Crossley	Hardy	1971	Humboldt	221 4/8
Donald C. Bailey	Oskaloosa	1971	Mahasaka	193
J. L. Toney	Lamoni	1970	Decatur	190
Duane K. Rohde	Wall Lake	1964	Lyon	188 7/8
Bob Sickels	Mt. Ayr	1970	Ringgold	185 7/8
Ed Vittetoe	Washington	1971	Washington	184 5/8
Lyle Tietsort, Jr.	Battle Creek	1971	Harrison	182 3/8
Mark S. Galbraith	Storm Lake	1971	Clay	179 5/8

### BOW AND ARROW TYPICAL (Minimum qualifying score — 115 points)

Loy J. Brooker	Clinton	1963	Clinton	166
Norman R. Bell	Burlington	1971	Des Moines	164 4/8
Marvin Peterson	Rock Rapids	1970	Lyon	160 4/8
Lawrence Quayle	Newton	1970	Jasper	153 7/8
Wayne Veach	Unionville	1971	Appanoose	146
Bill Farris	Burlington	1971	Lee	144 4/8
Kenneth Durnin	Waterloo	1971	Fayette	144
Illan "Ike" Adreon	Sibley	1971	Lyon	143
Nick Carter	Sidney	1971	Fremont	142 7/8
Dr. Jerald T. Waite	Fenton	1966	Emmet	138 2/8
Faril Johnson	Harlan	1971	Shelby	138 2/8
Warren Presly	Auburn	1971	Sac	138 2/8
Otis "Toad" Smith	Sibley	1971	Osceola	136 5/8
Alan Monson	Clear Lake	1971	Winnebago	136 2/8
Fred Wesselink	West Liberty	1971	Cedar	134 7/8
Everett L. Parsons	Chariton	1963	Lucas	134 7/8
Bob Visek	Marion	1971	Delaware	132 7/8
Bernard W. Saylor	Hartley	1971	O'Brien	132
Dayton Jones	Harpers Ferry	1971	Allamakee	131 4/8
Claire Doyle	Solon	1971	Johnson	128 6/8
John Carlson	Spencer	1971	Clay	128 4/8
Robert Fudge	Burlington	1971	Des Moines	128 2/8
Earle J. Gustafson	Emmetsburg	1971	Palo Alto	125 6/8
Lawrence Hummel	Sidney	1970	Fremont	122 7/8
Bill Wollenhaupt	Elliott	1971	Montgomery	122 1/8
Otis "Toad" Smith	Sibley	1969	Lyon	121 2/8
Kenneth Olson	Harlan	1970	Shelby	120 6/8
Rev. Bernard Sayer	Hartley	1971	O'Brien	120 6/8
Ronald G. Makin	Oelwein	1971	Fayette	116 5/8
Earl J. Gustafson	Emmetsburg	1964	Palo Alto	116 2/8
Jim Bohnenkamp	Ft. Madison	1971	Lee	116

\* All Time Iowa Record

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## Campfire Cookery

By Dick Ranney

We would like to share with you a composition we received from a young lady. We as participants in outdoor recreation in Iowa look at these enjoyments through eyes of users. We feel you might enjoy this look through the eyes of a 14-year-old who lives and works in one of Iowa's fine state parks.

Miss Nita Gandy, the author, is the daughter of Park Conservation Officer and Mrs. Albert Gandy, Lake Ahquabi State Park, Route No. 1, Indianola, Iowa 50125.

### "A Playground for Many But Home To Me."

Have you ever lived in a state park? Well, as unusual as it may sound, I have for over 13 years, along with my father, mother and brother.

My father is an Iowa Conservation Officer, in management of Iowa parks. We have lived in five different parks, Palisades Kepler, Ambrose A. Call, Lacey Keosauqua, Nine Eagles and presently Lake Ahquabi State Park, near Indianola.

Most state parks have swimming, picnicking, fishing, boating, camping, hiking and ice fishing. Many of the parks now have snowmobile trails, and some have bridal trails. There is always

something to enjoy year around in our state parks.

There is always work to be done in an area. In summer the mowing alone requires many man-hours, not to mention the litter strewn around by careless people that must be picked up. Latrines and shower houses are cleaned twice daily, cabins and lodges are cleaned and made ready for the next rental. Book work is a never ending job, each gallon of gas, cleaning equipment and supplies must be accounted for. The number of acres of grass mowed, loads of garbage hauled, and total hours each machine is used must be recorded. A daily attendance record is kept. Man-hours worked, water systems checked, cabin and lodge reservations and camping receipts are totaled. Cutting fire wood, painting and repairing picnic tables is a full winter's job.

Living in a state park is a family project, each member of the family pitches in and helps when needed. I just wish I had a penny for each piece of paper, beer and pop can I have picked up.

I enjoy winter the most, as we have more free time as a family. Summers are very hectic and confining. We are allowed only one week vacation in summer. The rest of our vacation must be taken in the off season. Then

school is in session, and who can miss two weeks of school?

My favorite recreation is snowmobiling. We manage a "snowfari" almost every night when we have sufficient snow. I have my own snowmobile, which I worked and saved my money to purchase. I worked in the concession stand and boat dock during the summer. It took a lot of hours, but it's well worth it. In winter we have every other weekend off, and weather permitting, we load our snowmobiles on our camper and are off for a fun weekend in the snow.

How do you think you would like living in a state park? I do.

Enjoy your state parks, but remember, take only pictures and memories, leave only footsteps.

—Nita Gandy.

If you look closely you can see a recipe for happiness in this composition. The ingredients used in large quantities are, swimming, fishing, boating, camping, picnicking, hiking, and winter snow. Add the responsibility of work in young hands, the love and affection and close family ties, and the energy and enthusiasm of youth. Mix them well in a large bowl called a state park. We are sure you will agree the finished product is great, we call them healthy, happy kids. ☆



# Classroom Corner

By Curt Powell

Administrator  
Conservation Education Center

LAND USE . . .  
(Continued from Page 13)

to the underground water system was practically nil. Some plants in the cropped area had been sprayed with chemicals and it was likely that some of the material would have moved with the water and soil particles into the streams.

Due to the size of the plant material, it was obvious that this was an excellent site for high production of the species. The crop on this particular site was also one of very short rotation with frequent harvesting the rule. Foresters are concerned with such short rotations that open the land to this extent. The ordinary rotations of forest land might be from 20 years to 100 years or even more and do not expose the land to erosion and all the other perils of frequent harvesting.

The site visited and reported above is not a forest, however, but an Iowa cornfield, observed in the early spring just prior to converting the land to another crop of corn or soybeans.

Forest crops are harvested in similar fashion to provide a needed crop for the use of our people. Farmers and foresters accept the fact that a site must be disturbed in order to take a useful crop from it. This fact has escaped those critics of forest harvesting, however, who fail to realize that the harvesting of a forest crop every 20 to 100 or more years does not deplete the site for the future in any marked degree. It is often healed over in the ensuing year to again provide watershed protection, wildlife cover, beauty, and a continuing growth of a crop for the next rotation.

The cornfield is growing on some prime agricultural land, of extreme value when compared with forest land, and land which society can ill afford to lose to mismanagement.

Perhaps the analogy between a cornfield and a stand of timber will serve to put the matter of

(Continued on Page 16)

The winter holiday season is very rapidly approaching, although it seems such a short time ago that we were enjoying the warmth and lazy days of summer. The school year is progressing in earnest, the harvest season is coming to an end, and the hunting seasons are in full swing.

Stepping outside and looking toward the sky, one can see V-shaped flocks of geese and tightly bunched flocks of ducks winging their way south in their annual fall migration. The clouds of blackbirds and the floating orange puffs of monarch butterflies have already completed their sojourn in our midst.

Winter is not far away! Soon snow will be flying and temperatures dipping low enough to cause ponds and marshes to wear a winter cap of ice. Many marsh creatures have begun their long hibernating sleep until spring.

However, there is much to do this month! Undoubtedly, many of us will be tramping the fields and marsh lands in pursuit of pheasant, ducks, rabbits and other creatures, or we just might be out on a short hike enjoying the out-of-doors at this different time of year. There are so many things to see.

Walking about Iowa this time of year you notice that the trees have shed their mantle of leaves, marsh and forest plants have allowed wind, birds, and animals to scatter their seeds, and there is a general hastening of activities by forest creatures shopping for winter supplies of delectable goodies that is provided for them to eat.

We also should be gathering materials for winter projects.

There are many things that we can do when the snow is on the ground and the temperature fogs our breath when we step outside. Thanksgiving is not far, and this might be the time to prepare some decorations and arrangements for the table on the Holiday.

Rather than discuss specific designs for table centerpieces, it would be best to use your own imagination and creativity to produce your own personal centerpiece. There are a variety of wild materials you might use. You would also need a small block of styrofoam, glue and a few pipe cleaners. A few of the natural items you might use would be bittersweet, sumac, tickle-grass, cattails, leaves, and seeds.

Here is a place marker that might be challenging. You will need three pipe cleaners, a small drill, a milkweed pod, and an acorn. The place marker is to resemble a four-legged creature. The body is the milkweed pod, the pipe cleaners the legs, neck, and tail, and the acorn the head. Force one pipe cleaner through the lower front of the pod and one through the lower rear portion of the pod. Bend these to form the legs. Drill a small hole in the acorn, insert part of the third pipe cleaner and attach it to the pod in the front portion for the neck and head. Attach the other piece of the pipe cleaner for a tail. Your guests name can then be adhered to the pod with glue.

Remember, many animals and birds use these items for food during the winter months. Therefore, don't remove too much material from one spot. ☆



## LAND USE . . .

(Continued from Page 15)

land use for the good of man into perspective. Each crop requires that we take something from the soil in order to use the crop. Our goal as a society must be to minimize any loss of land productivity. The basic soil resource must be maintained for the future while supplying our present needs.

Public gains from the land use made of private holdings are of much importance. If we are to ask the landowner to manage in a way that is socially acceptable and contributes to the public good, we must reward his effort. Some forms of good management are rewarding in themselves. They are financially profitable for the landowner. Others, such as the protection of watersheds preservation of beauty in the landscape, maximum protection of the soil, and the production of wildlife are not commonly self rewarding. In the case of these values it becomes necessary for society to assist the individual who must provide them.

There are ways in which society can deal with such matters. These include incentive payments to landowners for doing certain socially acceptable things upon their land which would contribute more to the general public. There are property taxes which are based upon the productivity and the present use rather than the high values for uses such as housing developments and trailer courts. A comprehensive land use policy would permit the land base to be used for its best purpose.

Hopefully, a perspective will be established so that renewable natural resources can be used without emotionally motivated curbs. Our charge must be to keep the land use options open. A decision to preserve a particular area at the present time for a particular use may not be acceptable to our children.

Our responsibility for agricultural and forest land alike is to protect its productivity. We will thus give future managers a choice in growing the crops they need. ☆

## CORRECTION

The seasons on ruffed grouse and woodcock were incorrect as they appeared in the October issue. The correct dates are October 21 - December 1. ☆



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