

IOWA CONSERVATIONIST

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A LOOK AT GAME MANAGEMENT

GULL POINT PARK GEOLOGY

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Gull Point Reserve, an area of about 150 acres on the western shore of West Okoboji Lake in Dickinson County, has much to recommend it to a nature lover. It is on the shore of a lake renowned for its beauty and good fishing, its wooded slopes are the shelter of our native birds, and it is in the midst of hilly country that excites the curiosity of those who visit it. What is the story back of this reserve and its surroundings?

In the first place, here is a lake, one in a region of lakes. Why are there so many lakes here, and none, or so few, in other counties of northern Iowa? None too, except where man-made, in many counties of southern Iowa.

The depression in which West Okoboji Lake lies is the result of glacial action. The lake rests in a deposit of glacial drift. Similarly, all the lake-basins of the area are the result of glacial action, and the lakes are in glacial drift. The margin of the drift deposited by the last glacier passes through this part of Dickinson County. It is a relatively rough and hilly country, and the subsoil has more than the usual number of boulders. As the glacier reached its limit of advance the drift piled up in a rather helter-skelter fashion because the ice margin kept moving back and forth, all the while melting at the front. Much of the fine material was carried away by the melting ice, leaving more than the usual number of stones in the subsoil. The lakes occupy irregular shaped depressions in the drift. Lakes are fewer in country to the east, for there the drift was distributed more evenly.

The lakes vary greatly in size, depth, and outline. West Okoboji Lake is about five miles long, almost three miles wide in its widest part, and over 150 feet deep in the

(Continued on page 6)



Jim Sherman Photo.

What are two billion dollars compared to the companionship of father and son during a day in the field, or of the soothed nerves of the banker who sits under a tree waiting for a squirrel to crawl out on a limb?

Conserving Iowa Hawks and Owls

By J. Harold Ennis
Cornell College

Many sportsmen are learning to question some of the "old wife's tales" about natural history. As a result there is a better understanding about nature's ways. No longer do many individuals believe that porcupines throw their quills, that owls cannot see during the daytime, that poisonous mushrooms will turn a spoon black, or that rattlesnakes will not crawl over a rope. However, in this same class of mistaken ideas is the belief that hawks and owls are "vermin" and should be killed.

Unfortunately the scientific data relative to this last point are not so well known. The result is a widespread habit of shooting all

hawks and owls, and the bringing of some species to near extinction. This is taking place in spite of the fact that the latest studies indicate that these two groups of birds are, as classes, highly beneficial to man.

Iowa hawks and owls are not only interesting creatures, but they are beautiful, especially in flight. A red-tailed hawk soaring in great circles in the sky or a kestrel hovering over some luckless field mouse is truly "a natural resource of beauty." However, practical people are apt to ask, "Do these birds have an economic value?" To this question there is a positive answer.

Studies have shown, for example, that red-tailed hawks, frequently

(Continued on page 7)

By Charles A. Dambach
Reprinted from Outdoor America

Editor's Note: Dr. Charles A. Dambach is chief of the Division of Wildlife of the Ohio Department of Natural Resources. We think this article a timely and challenging contribution to intelligent handling of our game resources.

At the out-set the writer wishes to make clear that the subject of this article is limited to "game," not "wildlife" resources. He wishes also to make clear that better trained, more experienced, and better qualified men have treated this subject and have arrived at conclusions differing at least in degree with those of the writer. Presumably, those conclusions were the product of the author's training and experience. So, too, is this article the product of my training and experience.

Although my training and experience does not qualify me as an expert in anything, it has afforded an opportunity to view the problem of game management from several angles, and has led to the analysis of the problem which is herein set forth.

The Goal of Management

What is the goal and the importance of Game Management?

To me the goal is easy to state. It is simply to provide the maximum human enjoyment which our game resources can provide consistent with the welfare of all the people. Its importance is more difficult to state and impossible to appraise. Its economic importance, although surprisingly great in the aggregate is of little consequence compared to its aesthetic value, and its biological value is grossly exaggerated and except in a few local cases is probably of little if any significance. This of course does not detract from the biological importance of the myriads of other forms of wildlife which make up our wildlife fauna.

National expenditures for hunting amount to well over two billion dollars. What are two billion dollars, however, compared to the companionship of father and son during a day in the field; of the soothed nerves of the banker who sits under a tree waiting for 50

(Continued on page 4)

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GRANDPA IS RIGHT ABOUT HUNTING

Usually we take with a grain of salt the things grandpa tells us about the "good old days." It's human nature for grandpa to think that the things that were peculiar to his childhood were much better than what we have now.

But when grandpa talks about the hunting and the abundance of wild game years ago, you can believe him. Anyone who tramps the woods and fields with gun and dog nowadays realizes that game is more scarce. Real sportsmen are quite concerned about it, and well they might be. The "youngster" of 25 or 30 cannot even remember when quail for instance, were found in flocks in Winneshiek County. And how about the lowly but delicious-to-eat cottontail rabbit? In grandpa's day if you were handy with a shotgun you could bag 50 cottontails in a day if you wanted that money. Local pheasant hunters have remarked about the apparent serious shortage of rabbits in the Winneshiek County area this year. Quail are practically non-existent here, and pheasants are

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Many people don't realize that the holes dug by groundhogs in summer are about the only haven rabbits have in winter.

on a decline, at least near Decorah.

The reason? Everyone seems to be blaming the fox. But there were plenty of foxes in grandpa's day, too. The real reason is lack of cover for the smaller wild game. Different farming practices have brought this about. Twenty-five years ago you could see a brush pile every 20 or 30 yards along road ditches and in timber areas in Winneshiek County. Today, as one farmer remarked, "They burn the brush before they cut the tree down." In the old days the cottontail and the quail needed to run only about 20 feet in any direction when danger threatened, and he was bound to find a welcome cover of some sort. Now the small game darts around helplessly on barren prairie while hawks and fox take their pick for dinner.

It may not be a world-shaking problem, but a look at the increasing number of hunting licenses issued each year proves that plenty of people should be concerned about it. Curiously enough, as the game supply gets thinner, the hunter pressure gets heavier.

Sportsmen are trying their best to remedy the situation. For years we offered a bounty on groundhogs, until they became almost extinct. Many people don't realize that the holes dug by groundhogs, or woodchucks, are about the only haven the rabbit has anymore when danger threatens. The groundhog holes don't damage the land seriously, but they do afford protection to the rabbits. . . .

Another aid to restoration of the balance is the planting of multi-flora rose. This curious plant is offered free by Iowa conservation groups to farmers. When planted in rows it forms a dense underbrush, heavy enough to form a stock-tight fence which works to the advantage of the farmer in several ways. The plant stops erosion, saves the expense of fence repair, and affords excellent cover for wild game of all sorts.

* * * * *



The unpredictable Chink won a round from the hunters in 1951. Jim Sherman Photo.

The next generation of children will find things even worse if we don't act now to protect our small wild game. It's something that every sportsman should think about.—Decorah Journal.

WILDLIFE IN COLOR

The National Wildlife Federation announces the publication of a new and spectacular book **Wildlife in Color** by Roger Tory Peterson.

There are 453 full color illustrations from the famous Wildlife Stamps series of the National Wildlife Federation which highlight the book. A brilliant text written by Roger Tory Peterson, combined with lavish color reproductions on nearly every page, makes it a valuable and authoritative book on wildlife. The stories and descriptions are in non-technical language that makes it extremely readable for both young and old.

Wildlife in Color is 192 pages. The publisher is Houghton Mifflin Company. It will be available through the National Wildlife Federation, 3308 Fourteenth Street, N.W., Washington, D. C. Price per copy is \$3.00.

TWO DEER STRUCK BY AUTOS

Two white-tailed deer have been killed the last few days near Emmetsburg but luckily the persons driving the automobiles that killed them escaped injury.

A large buck was hit on Highway 18 at the west city limits Tuesday when it bounded across the paving in front of a 1951 Buick driven by John I. Patton of Ashton, Illinois, who was en route to Ruthven. . . .

The other deer, a doe, was killed early one morning over the weekend when a Fort Dodge hunter, en route to Emmetsburg, hit it near the Des Moines River bridge on Highway 17 south of the city.—Emmetsburg Democrat.

THE UNPREDICTABLE CHINK

Our luck was less in the 1951 pheasant season than the 1950 and we believe that was the experience of most hunters. Fewer roosters were bagged this year but this was not because there were fewer birds but because cover and weather conditions were in favor of the ringnecks.

If anything, there were more pheasants this fall than last and there should be a greater winter carry-over for next spring's hatch. . . .

The Chink is probably the most unpredictable of all game birds and the conditions this fall made him more unpredictable than ever. Starting out, you never knew where you'd find game despite all the pheasant lore you may have accumulated in the past.

We were out about as often a year ago and brought home about twice as many roosters, but we can't blame it on our shooting because we missed just as many in 1950 as 1951. All of which is okay by us. There were plenty of hens around and nature, by imposing tough weather on the hunters, wants to save some roosters for another year; it can do no harm and might do some good for the future.—Emmetsburg Democrat.

HUNTING EASIER NOW

After a man has spent a day in the woods or fields hunting wild game he has a better understanding of what the early pioneers had to go through with all the time. And the pioneer didn't ride to his hunting spot in a heated car; he seldom had a warm place to come back to when he secured his game. And with all these modern comforts hunting in the winter time is a strenuous sport for most men today. Once is enough for some of us until spring.—Knoxville Express.



When winter comes, most fishermen go indoors. Those with polar bear tendencies haul out their long-handle underdrawers and go fishing. Jim Sherman Photo

TRY 'EM ON ICE!

When winter comes, most fishermen go indoors. Those with polar bear tendencies, known as ice fishermen, haul out their long-handle underdrawers and go fishing. Foul weather is no deterrent to the ice fisherman. You'll see him dragging his equipment sled across the ice before daybreak so he can get his choice of holes.

The first piece of equipment he uses is a spud. This is a length of heavy pipe with a weighted, chisel end. With this he "spuds" a six or eight-inch hole at his favorite spot.

Then comes his ice fishing rod. Usually it is a fly rod tip made of bamboo, glass or steel. It is quite limber and may or may not have a reel. The line is very fine leader. The hook is one just large enough for the fish being caught.

The bait will be any kind of preserved bait, worms, minnows, flies or small spoons. These usually are "jigged"—that is, bounced up and down to attract the fish. Fish don't seem to see a bait so well unless it is moving; perhaps this is because little light gets through the ice.

Once a fisherman starts catching fish, it's most amusing to observe the "moving in" process. Soon he is surrounded by "spudding" neighbors—and, surprisingly enough, they all usually catch fish. Bluegills and crappies, especially, move in large schools under the ice. Once the school starts feeding, everybody is in business.

It's really something to see a frozen lake dotted with 500 to 1,000 ice fishermen. If there wasn't real enjoyment to be had—and fish to be caught—you wouldn't see this amazing fight. Such a following is never seen during the summer.

So, although Heddon's make no

fishing equipment for such fishing, their Research Department recommends it highly as a winter sport. Besides providing some delicious eating, it is an excellent way to shorten the waiting period from the time fall fishing ends until spring fishing begins.—Heddon Fish Flashes.

The wealth of a nation depends upon both its available natural resources and upon the courage and resourcefulness of its people.

CAMPAIGN FOR KEY DEER

National Wildlife Week in 1952 will be dedicated to preservation of a species of wildlife about to pass from the American scene—the diminutive Key deer of Florida. Plans for the annual observance, scheduled for March 16-22, were announced in Washington by Carl D. Shoemaker, conservation director of the National Wildlife Federation.

Chairman for the week will be Ed Dodd, creator of the popular newspaper and radio outdoors feature "Mark Trail."

National Wildlife Week has been an annual observance since 1938, sponsored by the non-profit Federation as a means of calling public attention to the broad and pressing problems of natural resource management. The 1952 Celebration will mark the beginning of a new series in which each year a particular kind of wildlife—some species considered in critical or precarious condition—will be given special attention.

The 1952 goal will be to save the Key deer from extinction. As part of the observance, the Federation has created a special fund, known as the Key deer fund. Contributions will be used first to keep a special protection officer on the job in the Key deer area. This will supplement an effort already started by the Boone and Crockett Club and the Wildlife Management Institute in cooperation with the U. S. Fish and Wildlife Service.

Next the Federation will use the fund to help improve the island habitat of the deer, through such measures as constructing water holes for the animals and protective fences along highways. The Federation is supporting legislation in Congress to establish a federal sanctuary in the area.

Shoemaker pointed out that only about 30 of the unique toy deer are still living. They cling to a precarious existence on the coral islands known as "Keys" off the southern tip of Florida. Menaced by illegal hunters from the mainland, hounded by dogs, and imperiled by forest fires, the deer now face a new threat. Several have been run down by speeding autos along the overseas highway to Key West as the animals sought water in roadside ditches.

Because of the centuries-long adjustment to its own island background, the surviving herd cannot be transplanted to other regions where they might be better protected. For this reason the Federation is attempting to provide the protection for the deer on their home grounds.

National Wildlife Week will be marked by proclamations by state and local government officials, speaking programs throughout the country, window displays, advertising campaigns and other media.

The National Wildlife Federation was organized in 1936 and now has active affiliates in 42 states. It represents more than 4,000,000 sportsmen and conservationists, not only in state-by-state activi-

(Continued on page 8)



THE LAST OF THE TOY DEER OF THE FLORIDA KEYS

THE SMALLEST SPECIES OF DEER IN NORTH AMERICA, ALONE, UNGUARDED AND ON THE WAY OUT!



Certainly there are many more cottontails today than before the forest was pushed back. Jim Sherman Photo.

Game Management . . .

(Continued from page 1)

cents worth of live squirrel meat to crawl out on a limb; of the pleasant hours spent by the retired railroader following his beagles by day and his coon hounds by night? These things cannot be measured, but they are treasured in the minds of millions of men and women. It is this use of game resources with which we are primarily concerned.

An Inventory

Anyone who has looked over the intensively farmed areas of the Mid-west, the cut over forests of the Lake States and the South, the arid regions of the West and the densely populated countryside of the East must marvel that game still lives in the United States. But live it does in surprising variety and with some species, in much greater abundance than before the coming of white men. Certainly there are many more cottontails today than before the forest was pushed back. It is quite certain too, that there are many more white-tailed deer per acre of forest than when towering tree giants shaded out new growth. The early French trapper would be hard pressed to match the catch of the modern muskrat trapper on a per acre basis in a well managed marsh or drainage ditch traversing cultivated lands. To be sure, some species passed into oblivion and still others are now threatened. Those that have survived have done so because of the remarkable adaptability of wild animals to changing environments and their capacity to abundantly reproduce their kind when provided with all of their living requirements.

Almost any American game species would quickly overpopulate its range in a few years if its full reproduction potential was realized. The diminutive bobwhite, for example, could increase from a single pair to almost 5,000 birds in five

seasons. The ringneck pheasant from one pair to 1,600 in five seasons, the fox squirrel to 500, and even the white-tailed deer could increase from one pair to nearly 500 individuals in fifteen years.

Although some truly phenomenal game increases have occurred, actual production is usually only a fraction of the potential. That it is not larger is due to a combination of factors. On one side is the production potential possible under the prevailing conditions of food, cover and water. On the other side are losses due to accidents, weather, diseases, parasites, predators and hunting. The role of each factor is, as yet, little known. We know a little bit about losses due to accidents in agricultural areas. We have only theories on the role of predation. We are just learning how to measure the losses due to hunting and we know practically nothing about the role of diseases and parasites. *Some of us are beginning to suspect that with possible exceptions such as waterfowl and other highly gregarious species, that losses due to hunting pressure under modern regulations are the least important of these factors.* Nonetheless, hunting is an important factor and its control has received above all others the most attention in American game management.

No one has as yet devised a reasonably accurate method of estimating game populations or kill. For this reason our inventories are based largely on intelligent guesses and projections of meager data from limited areas. The little data we do have, however, indicates a surprisingly high game population. Here in Ohio, for example, it is estimated that our fall rabbit population is in excess of 10,000,000 or one for every 2.5 acres. Our pheasant population probably exceeds 3,000,000 birds when hunting season opens, while

squirrels probably are equally numerous in the 4,000,000 acres of forested land. This is tremendous production for the 25,000,000 acres of land in this industrial and intensively farmed state. Most of our mid-western and southern states probably have comparable game populations.

People—The Principal Problem

In much of the country and particularly in the East and Midwest, however, the principal game management problem is one of people in relation to land use and the available game supply.

In Ohio we have approximately one hunter for every 20 acres of land open to hunting. If we assume that one half of the game crop can safely be harvested by hunting, we have approximately 1½ daily bag limits of rabbits, ½ a daily bag limit of pheasants, ½ a daily bag limit of squirrels, and smaller shares of the remaining huntable species per hunter for the season. There should be no doubt then that in some areas at least we are already feeling the pinch of shrinking habitat and seriously rising hunting pressure.

Management Efforts

There is nothing new about this problem. Moses called it to our attention, in Deuteronomy, Chapter 22, Verse 6, in which he states, "If a bird's nest chance to be before thee in the way in any tree; or on the ground, whether they be young ones, or eggs, and the dam sitting upon the young, or upon the eggs, thou shalt not take the dam with the young; but thou shalt in any wise let the dam go, and take the young to thee; that it may be well with thee, and that thou mayest prolong thy days." Obviously concern was then felt over the welfare of wildlife under pressure of human use. Let us see now what steps we have since taken to meet the situation.

Man's first efforts to regulate wildlife abundance were aimed at

control of hunting in one form or another. These efforts ranged from the simple tribal customs of biblical times to the complex regulations of today which usually take up several pages of fine print. The primary purpose of these efforts are to preserve brood stock and assure an equitable harvest of the crop. We do not, to my knowledge, have any real measure as to whether either of these objectives is attained. All we know is that game continues to produce in areas hunted over under modern regulations. We also know that on some areas, at least, game is just as abundant on heavily hunted ranges as it is on comparable unhunted tracts. On some of our intensively used state hunting preserves we have found that the hunter harvest is insignificant compared to the resident population of such species as rabbits. There are, of course, noticeable exceptions. It is significant, however, that hunting pressure has apparently not appreciably affected game populations in certain areas and the best game producing lands in Ohio and in many states are those which sustain the greatest skill.

Predator Control Impractical

Control of winged and ground so-called "vermin" has been practiced at least since the 15th century. We know little more about the effectiveness of this method today than we did then. From an administrative point of view, however, it is obvious that it is utterly impractical on a state-wide basis regardless of its biological importance. *To hire men to effectively trap, shoot, or otherwise control predators at present day labor costs would bankrupt all the conservation agencies in the country.* To control foxes alone in Ohio would require the full-time services of more than 200 full-time trappers at an estimated cost of nearly a million dollars a year. *Even with this force and normal trapping*

(Continued on page 5)



The diminutive bobwhite quail could increase from a single pair to almost 5,000 birds in five seasons if its full reproduction potential was realized. Jim Sherman Photo.



To control foxes in Ohio would require the full-time services of more than 200 professional trappers at an estimated cost of a million dollars per year.

(Continued from page 4)
 pressure it is quite likely that fox populations would remain at their usual levels and would fluctuate like they have for centuries in accordance with an as yet little understood natural rhythm.

Refuges where gregarious animals can congregate in migration, or on nesting or wintering grounds, have been used effectively for centuries. More recently unsuccessful efforts have been made to extend this practice to benefit species of low mobility and solitary habit. Thousands of acres have thus unwittingly been withdrawn from public hunting by indiscriminate use of refuge signs, ostensibly to protect such species as quail, squirrels, cottontails and grouse which do not flow out of refuges in abundance to replenish adjacent depleted areas as is popularly supposed. Actually, game from adjacent depleted areas may flow into the already well stocked refuges set up for these species.

Little need be said about the role of artificial stocking as a tool of game management. It too has been practiced for centuries with notable success only where intelligently applied. The successful establishment of pheasants is an example. Its continued use for experimental stocking of adapted species and strains to meet changing conditions holds considerable promise. Its continued use to aid natural production of established stocks is sheer folly and poor business practice. Ohio's annual artificial production of 60,000 pheasants produced at a cost of \$125,000 amounts to but 2 per cent of the natural crop and probably contributes less than 1/2 per cent to the annual kill due to post-release losses. To equal natural production in this state would require an annual expenditure of over \$6,000,000 for artificially raised birds. To put that number of artificially raised birds over the guns of the hunter would cost several times this figure. Further

public enlightenment is needed before the apparent ills of this practice can be dispensed with.

Habitat Not the Whole Answer

It should be noted that these methods are all aimed at reducing or alleviating the effects of those factors which kill game after it is born. Except for refuges, they have little to do with providing the factors of food, cover and water necessary that animals can be born and thrive. The latter approach popularly called habitat improvement is now in vogue throughout the country on paper, in words, and to some degree, on the land. It, too, is as old as recorded history and is beset with misconceptions as to its effectiveness. The current popular approach is based on the premise that land management practices such as soil conservation, reforestation, and woodland management alone will assure optimum game populations. This simply is not true. Actually, it is possible that under certain circumstances intensive application of these practices may result in decreased game populations.

Visualize for illustrative purposes the once rolling patchwork of crop field, meadow, pastures and woods which, under an ideal plan of soil conservation, is converted to a uniform clipped carpet of grass. Visualize also the dense stand of conifers planted on once abandoned hillsides, or the carefully groomed, though ungrazed farm woods which is the goal of many a well meaning farm forester. These are virtual biological deserts. Land management for soil, water and forest conservation are not then the tools of game management, but rather the foundation upon which game production must be built.

Explanation for this may be found in the true meaning of those terms of food, cover and water so easily and carelessly used in this field. Wild animals do not just need food, cover and water, per

se. They need it in the quantity, quality and distribution that contributes to their well-being. There is vastly more food, cover and water on the Ohio landscape than all the quail, pheasants, grouse, squirrels, raccoons and other animals need. The problem lies in its availability within the living range of each species.

A bobwhite, for example, needs open grassy cover in which to nest, short weeds or stubble in which to roost, a dry bank in which to dust, thicket cover in which to hide, insects to eat in summer, weed seed and grain to eat in fall and winter. It needs fruits, dew and succulent vegetation to quench its thirst and the companionship of fellow birds. All of these things must be available within the daily "shopping" range of these birds or they cannot survive. In summer this may be a quarter mile in radius. In winter during deep snow it may be less than a hundred yards.

The same principle applies to most species of game. The basic problem in game production, thus, is to first determine the particular needs of each species and to then provide them with suitable range. Fortunately we know enough about most species to make a reasonable start. The major problem is in getting application on the land of those things which we know are needed. Here we encounter what I believe to be the most perplexing problem in the field of game management.

Land Ownership, the Bottleneck

More than three-fourths of the entire game crop is harvested on private lands where neither the landowner nor the hunter has made a significant effort to produce the crop. The reasons for this are many. Primarily it is due to the fact that the hunter has depended upon the state to provide the crop and the farmer has lacked incentive to produce it. We need only to be honest in our appraisal of the value of game to the farmer to understand his lack of incentive. Failure of the state to provide this incentive requires more searching inquiry. Part of the failure may be attributed to lack of knowledge and leadership and to political interference. The wealth of biologi-



Jim Sherman Photo.

To equal natural production of pheasants in Ohio by artificial methods would require an annual expenditure of over \$6,000,000.

cally trained man power now available, however, has cancelled out the excuse for lack of knowledge and leadership and political interference with sound management programs is apparently waning. The real reason, I believe, lies in the fact that state game departments are not financially able and are not likely to become financially able to do the job alone. Again Ohio data is cited to illustrate the point.

The Ohio Division of Wildlife, like virtually all similar agencies in all other states, is supported solely by revenues received from taxes levied upon the sportsmen. From these sources the Division of Wildlife receives annually, about \$700,000 from hunting licenses and \$300,000 from excise taxes on sporting arms and ammunition.* If this entire income were to be allocated for habitat improvement

(Continued on page 8)

*Hunting license fees in Ohio were doubled by an act of the last state legislature.



Jim Sherman Photo.

Wild animals do not just need food, cover and water. They need it in the quantity, quality and distribution that contributes to their well-being.



The accumulation of large stones or boulders along the shore of Okoboji is a striking part of this and other lakes of northern Iowa. Jim Sherman Photo.

Geology . . .

(Continued from page 1)

deepest part. Only a few small streams come into it. The natural overflow would pass eastward through Minnewashta and Lower Gar Lakes into Little Sioux River.

Where does the water of West Okoboji Lake and other lakes of the area come from? A moment's thought will make it apparent to anyone that it comes from the rain, and that the level of the lake, unless artificially controlled, rises and falls with the rainfall. Some water is continually being supplied to the lake by seepage from the surrounding country. The glacial drift acts as a sponge, and gradually releases the rain water which has soaked in. In time of drought the lake level will fall because of evaporation and because the level of water in the subsoil of the surrounding country has fallen.

This lake has existed only since the last glacier vanished. One may wonder then whether there will always be a lake here. In answering this question it is well to realize that all lakes are temporary features of earth history, even the largest of them. This is because, for one thing, they are slowly filling up, through material carried in by streams and rainwash, worn from the shore by waves, blown in by the wind, and through the accumulation of plant growth. Fortunately, streams flowing into West Okoboji are small, and but little sediment is carried in by them. The lake will last for a long while.

Some lakes decrease in size and even disappear because of lowering of the outlet. This is accomplished by the force of the running water. It will play little part in the future of West Okoboji Lake.

The steep bluffs, wherever they are present along the lake shore, are the result of wear by the waves. The sandy beaches are the sheltered places where sand has been carried and deposited by currents.

These currents are generated by waves striking the shore at an angle.

The accumulation of large stones or boulders along the shore in places is a striking feature of this and other lakes of northern Iowa. It is the result of "ice-push." Ice, freezing onto the bottom near the shore in shallow water, is responsible.

After it has formed in the fall, the ice may later crack, as colder weather causes it to contract. Water coming into the cracks freezes. Then, with a warmer spell of weather coming on, the ice will expand. The sheet of ice is too big for the surface of the lake, and so it pushes up on the shore. Also, strong winds may push the ice shoreward. The material frozen to the bottom of the ice near the shore is moved landward. The finer material is later carried away by the waves, leaving the large stones in a wall or natural riprap along the lake shore. Thus, we get our "wall" lakes. Many of our Iowa lakes have "walls" of this character. Boulders from these "walls" have been used in barn and house



The lodge at Gull Point Reserve is made of glacial boulders. They have been trimmed to dimension stone with fresh surfaces exposed that show the real character of the rock. Jim Sherman Photo.

IN MEMORIAM

Harry Schlotfeldt, conservation officer in charge of Wild Cat Den State Park, died December 25 as a result of an auto accident occurring December 22. Harry was buried December 29 at Mount Auburn, Iowa. He is survived by his wife, Mrs. Ada L. Schlotfeldt, and six children. Mrs. Schlotfeldt and four children were injured in the tragic accident.

Harry was first employed by the Conservation Commission as officer in charge of Lacey-Keosauqua State Park in 1941. He was transferred to Wild Cat Den at Muscatine in 1947.

To those of us who have worked with Harry the past ten years and shared with him his personal problems, it seems there could be no more fitting eulogy than the brief letter received at the Commission office three days before the accident that caused Harry's death.

Moline, Illinois
December 19, 1951

Director of State Parks
Des Moines, Iowa

Dear Sir:

During this Christmas season people should have many things to be thankful and happy for. In my opinion I think the State of Iowa should have cause for feeling very proud and happy to have such men as Mr. Harry Schlotfeldt, custodian at Wild Cat Den State Park, Muscatine, Iowa.

My family and I have been camping in and around Moline for some years now, and I must say no one has ever made us feel more welcome and at home than Mr. Schlotfeldt; his courtesy and helpfulness are of the highest order and his wealth of information on conservation is of greatest interest to

foundations. There are many kinds of rocks among them, although one would often never guess it from the outside appearance. They are stained and weathered so that they all look alike on the outside.

The lodge at Gull Point Reserve is made of rocks similar to those



Harry Schlotfeldt.

my son and myself. We have discontinued camping at other places just to go down to Wild Cat Den, since we feel it is one of the nicest spots anywhere to be found and under Mr. Schlotfeldt's direction attracts many people who perhaps would not otherwise go there.

In closing, may I say that far too many people are inclined to write and voice complaints. The complimentary letters are never written. We are patiently waiting for spring to come around so we may go down to the Den for our weekend camping trips.

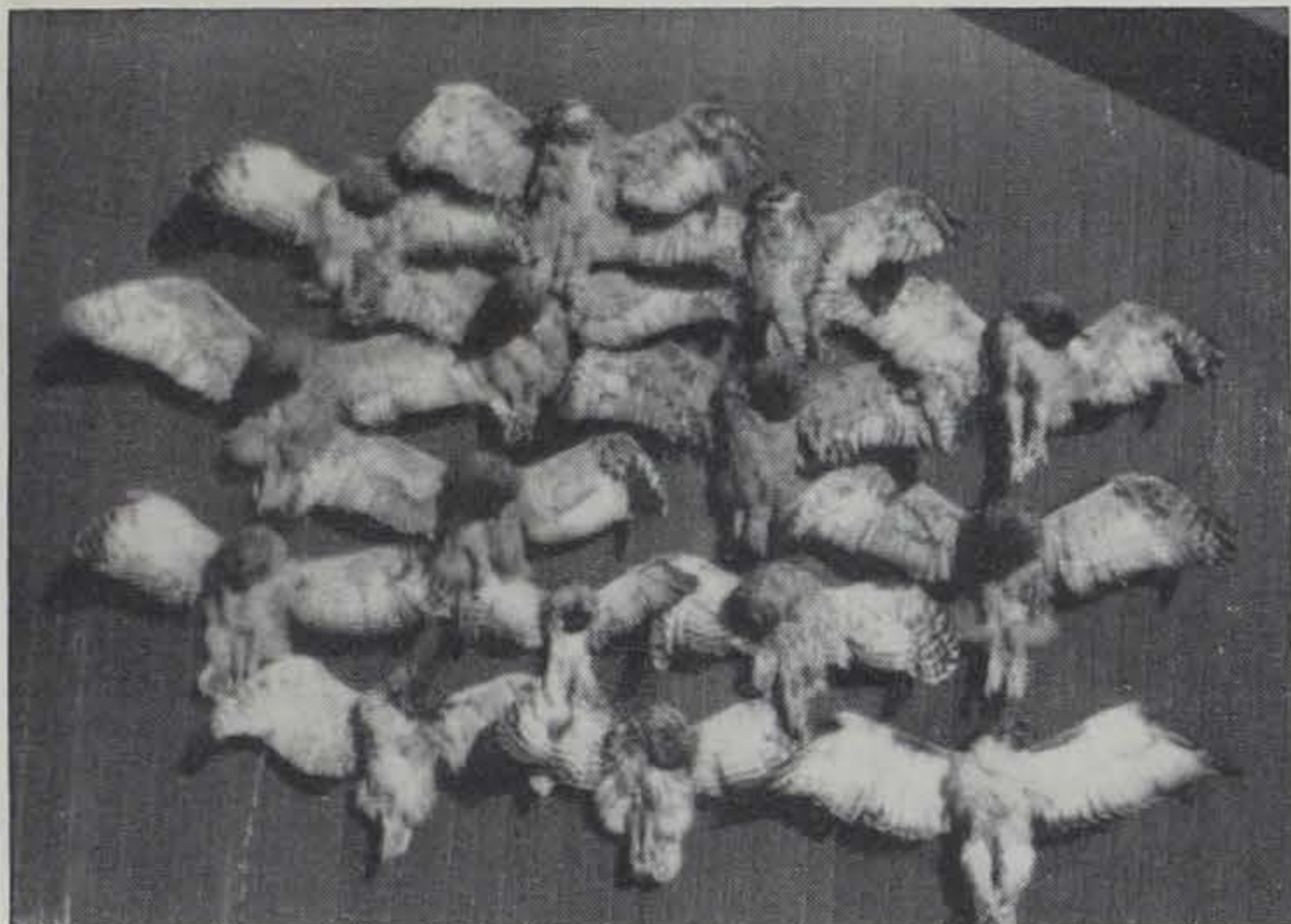
May the State of Iowa be fortunate in securing more men like Mr. Schlotfeldt and be able to retain them for the better good of conservation.

Yours truly,

E. K. Metz, Rowena, Myrtle,
Robert, Patty, Bettina
The Metz Family
1822 9th Street
Moline, Illinois

found in the lake shore. They have been brought from somewhere in nearby country, where they were gathered in the clearing of fields. Here, however, they have been trimmed to dimension stone, so that fresh surfaces are exposed. They show the real character of the rock. All of these stones were brought to this part of Iowa by the glacier. Originally they were part of the bedrock of places far to the north, in Wisconsin, Minnesota and Canada.

Gull Point gets its name from the point of land which projects into the lake. The boulders out at the end have been a popular resting place for gulls. The shore is low here, and it has changed much in shape since the glacier left. Projecting into the lake as it does, it is particularly subject to wear by wind and waves. The boulders out at the tip of the point came from the glacial drift. They have been shifted about by the ice until they have come to rest in their present position. They will be moved farther in the seasons to come, but Okoboji will remain "the place of rest."



Studies have shown that red-tailed hawks are annually worth \$25 apiece to the Iowa farmer. It was senseless to destroy this \$375 worth of living moustraps.

Hawks and Owls . . .

(Continued from page 1)

labeled "chicken hawks" by the uninformed, are worth, annually, over twenty-five dollars apiece to the Iowa farmer. These hawks live largely on the destructive rodents, such as field mice and ground squirrels, that destroy field crops.

The misunderstanding over the value of most hawks arises from the fact that, occasionally, a hawk does take a chicken. However, this is not the rule. The red-tailed hawk and the rough-legged hawk, most commonly called "chicken hawks," live chiefly on small mammals and should not be condemned as a class because they stray infrequently from their usual diet. If one saw a driver of a tan-colored Ford exceeding the speed limit, it would not be common sense to arrest all drivers of that type of car. By the same token, all hawks should not be killed merely because of an occasional violator.

A few months ago, while driving along a country road, the writer noticed a large red-tailed hawk take off from a spot near a farmhouse. We were close enough to see hanging from the bird's talons a freshly killed field mouse. Not more than five rods away was an open chicken yard with small chicks. Clearly this so-called "chicken-hawk" preferred mice to chickens. Yet, within a half-mile of the place where this incident was witnessed, the writer also saw the carcasses of two other beautiful "red-tails" nailed to a pasture gate. This may have been a testimony to some farmer's skill with a gun, but in the light of the facts concerning the food habits of hawks, it was also testimony to someone's ignorance.

A close study of Iowa's hawks shows four broad groups with somewhat different food habits. The buteos, or buzzard hawks, are large hawks with broad wings. They are frequently seen soaring in wide circles high in the air. This group includes the "red-tail" and rough-legged hawks. Examination

of the stomach contents of 202 "rough-legs," or winter hawks, showed that none consumed game or poultry, but 84 per cent consumed mammals. This misunderstood bird is clearly a "mouse hawk." The stomach contents of 2013 "red-tails" revealed that, again 84 per cent consumed mammals, 11 per cent, poultry or game, 19 per cent, other vertebrates, and 9 per cent, insects.

A second group is the falcons. The common Iowa representative is the little kestrel or sparrow hawk. Study of 427 birds disclosed that 63 per cent consumed insects, 34 per cent consumed mammals, 16 per cent, other birds, and none, poultry or game. In other words, this beautiful little hawk lives mainly on the larger insects, chiefly grasshoppers and small rodents.

A third group is the accipiter,



Jim Sherman Photo.

The destructive ground squirrel is chicken dinner to most of our birds of prey.

including Cooper's and the sharp-shinned hawks. While these woodland hawks prey heavily on small birds, their relative rarity makes them of little economic consequence. In fact, their protection might well be defended on that ground.

A fourth group is the harriers, of which Iowa has the marsh hawk. Study of 418 stomach contents showed that 62 per cent consumed mammals, 42 per cent, other birds, but only 2 per cent, poultry or game. Hence it may be concluded that this hawk is of economic benefit to man.

Examination of the pellets of owls revealed that their diet is made up largely of the smaller mammals. Consequently, as a class, owls are as beneficial, if not more so, than hawks.

It must not be assumed from these remarks, however, that shooting these birds is the only lim-

itation of their numbers. The widespread destruction of timberland and other suitable aspects of habitat is also an element. Last year the bulldozing of a certain small woodlot in eastern Iowa eliminated the only nesting site of the uncommon Swainson's hawk known to the writer.

Of major importance to all true sportsmen is the recent comment by Mr. Richard H. Pough, conservationist with the American Museum of Natural History in New York City. He suggests that a high game bird population is dependent in part upon a high hawk and owl population. His reasoning is that hawks and owls greatly reduce the work of mammal predators in their destruction of nesting game birds. The proper place of the hawks and owls in the great balance of nature well warrants their protection by all sincere conservationists.—Iowa *Waltonian*.



Jim Sherman Photo.

The trumpeter swan once nested in Iowa, but now is extinct here. The whistling swans shown in this picture migrate through the state in spring and fall.

TRUMPETER SWANS HIT NEW HIGH

Unless the restoration program hits a snag within the next few years, people can stop using the customary adjectives "disappearing," "rare," and "almost extinct," in referring to the largest waterfowl in the United States, according to the Wildlife Management Institute. The annual census reveals a national population of 535 trumpeter swans, 159 more than last year and 462 more than in the low year of 1935 when no more than 73 of these magnificent birds could be found.

The history of the trumpeter swan offers a perfect example of what modern wildlife management can do when given the funds and resources with which to work. Efforts in preserving the big trumpeter have been geared around the Red Rock Lakes Wildlife Refuge in Montana which is the population center of the swan in this country. The refuge was established in 1935 near Yellowstone National Park to save the dwindling remnant from extermination. Since then, birds have been transplanted to other refuges in Oregon and Nevada and to the National Elk Refuge in Wyoming. Increases were reported in all of these transplanted flocks this year.

The trumpeter, like the buffalo, was a victim of encroaching civilization into its wilderness habitat. With the destruction of its nesting, resting, and feeding grounds, it declined rapidly, and the restoration program which began in 1935 came just in time to save the birds from destruction.

Canada, simultaneously was active north of the border in preserving this spectacular bird. In the early 1930's the species was making what appeared to be a last stand in British Columbia and Alaska. Aggressive activity by the Canadian Wildlife Service and its departmental predecessor was responsible for keeping the numbers above the danger point. Dr. Ian McTaggart Cowan of the University of British Columbia estimates that numbers wintering in that province have never fallen much below four or five hundred birds. From this low the population has been built to around nine hundred. The trumpeter is a rugged bird spending the rigorous Canadian winters in areas where the only open water is that created by the swiftest rapids.

Both spotted and striped skunks have an interesting habit of stamping their front feet when they are angry or annoyed. Civets carry the foot-stamping habit a bit farther than striped skunks. Civets may raise the rear end of their bodies and actually walk on their front feet for a few steps.



Jim Sherman Photo.

For the state to put Ohio fence rows into multiflora rose or other permanent wildlife cover would cost \$120,000,000.

Game Management . . .

(Continued from page 5)

it would amount to less than five cents per acre to do the job. Let us see how far this would go.

Just to provide the planting stock necessary to put Ohio fence rows into multiflora rose or other permanent cover would cost \$300 per farm, or a total bill of over \$60,000,000. To do the job of planting, fertilizing and cultivation necessary for successful establishment would cost another \$60,000,000.

To provide an annual half acre patch of nesting and escape cover would cost at least \$10.00 per farm and to add a half acre of standing feed would raise the total cost to \$400 per farm or approximately a million dollars a year for the state. In short, the funds available to state game divisions simply are not adequate to produce a sustained crop of game by land management. Neither are they adequate to produce a crop by any other means.

What's the Answer

What then can be done? I doubt that anyone has the complete answer, but I feel there are certain things that we must come to recognize if we are to do an adequate job of perpetuating our game resources. These include:

1. Game is an important recreational resource which, for the most part, is an incidental by-product of agricultural and forest land use.

2. Although game has considerable economic value in the aggregate to the sporting and tourist industry, as presently harvested it has little economic value to the average farmer on whose land most of it is produced.

3. Although pressure on both game and game land is great, game production can be increased to provide for the continuation of hunting in America for many years to come.

4. Production can be increased

significantly only by providing the necessary game welfare factors on the land—and that their establishment is dependent upon the willingness of the farmer to put them into effect and the willingness of the sportsmen to provide the necessary incentive. The incentive may be provided by the sportsmen through courtesy, services or direct economic return to the farmer, or through the state by such services as protection from hunter abuse, protection from crop damage by wildlife, and guidance and material help in establishing permanent food and cover.

5. The state can provide such service only if it is adequately financed to do so. Most states are not.

6. Sportsmen and governmental agencies must work together in solving their problem. The sportsmen, by their conduct and treatment of the landowner and their support of their game division, the state by providing the leadership, the know-how and the services which the landowner and sportsmen respect.

These things can be done only through a fully informed and actively interested public. The job of reaching each hunter so that he recognizes and carries his share of the responsibility is a tremendous one. Conservation minded organizations like the Izaak Walton League can do much to reach the hunter and help him to help himself.

Key Deer . . .

(Continued from page 3)

ties, but in Congressional interests as well.

Week Chairman Dodd, "father" of Mark Trail, is widely known as a conservationist and outdoor leader. In addition he is an ardent hunter and fisherman. The Trail feature is six and a half years old, and is carried in nearly 300 newspapers.

RIFLE AND BIBLE

By Carl Shoemaker
National Wildlife Federation

One of the able leaders, in and out of Congress, who left his imprint on the conservation movement was the late Senator Harry B. Hawes of Missouri. He was a conservationist, a statesman, a philosopher and a diplomat. Coming first to Washington as a Representative from his state, he was later elected Senator. He made many speeches which are classics in diction and profound in thought. A little over a quarter of a century ago he arose one afternoon in the House of Representatives and, while discussing a pending measure, made some observations on the subject of relaxation. Our nation was then just midway between the end of World War I and the crash of 1929. What he said then could well be said today with greater emphasis.

His words on that occasion are brought to you as a message for the year ahead.

Relax

(Excerpts from a speech by the Honorable Harry B. Hawes in the House of Representatives, January 24, 1924.)

Our forefathers came with the Bible in one hand and the rifle in the other.

Some of their descendants have lost the rifle; some the Bible; some both the Bible and the rifle.

Let us restore the confidence and strength that knowledge of the rifle brings. Let us restore the spiritual strength the Bible gives.

Let us help to bring back both by the purchase of a piece of the big "outdoors," where strong men and spiritual power find the best nourishment.

When we lose our "pep," when good food tastes bad, when friends do not satisfy, when life becomes

a bore, when music seems out of tune, when the old dog annoys, when the doctor fails, and the good wife irritates, there is but one remedy for the "run down," and it is found in the forests or on the streams in the big "outdoors."

There we go to church and worship God by conversing with the things He made, listening to sermons from rocks and trees, choir music from the birds.

If you need a fresh start and want to lose the "run-down" feeling and get back your "pep," go fishing.

It is a notable fact that of the Twelve Apostles selected by Christ, four were fishermen.

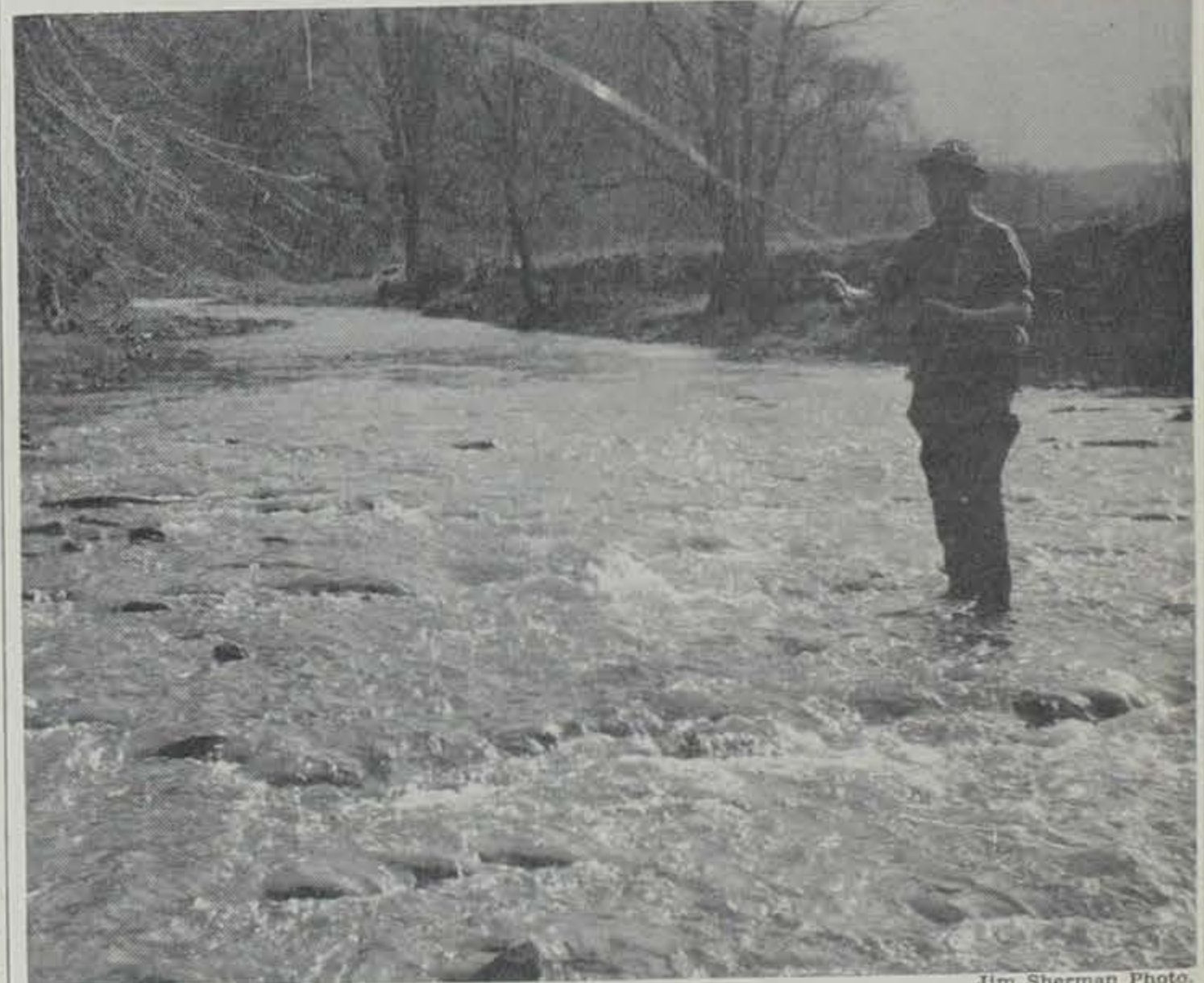
They were natural philosophers who made their living in the big wide open, who knew the stars, the tempest, the sea, the sun, the moon, the winds, and the calm.

They were prepared for a campaign for men because they had first campaigned with the elements of nature.

Study of nature had prepared them for a study of men, and their thoughts and teachings were big, like the outdoors whence they came.

"CONSERVATIONIST" INDEX

Two years have passed since an index has been compiled for the "Iowa Conservationist." We are working on one now covering 1950-51 and expect to have it completed about March 1. Many of our readers are planning to bind their "Conservationist," and an index will be valuable. If you will mail us a card requesting the new index, it will be sent to you without cost when completed.



Jim Sherman Photo.

When we lose our pep, when good food tastes bad, when friends do not satisfy, when life becomes a bore, there is but one remedy. It's found in the forests or on the streams in the big outdoors.