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IOWA CONSERVATIONIST

VOLUME 4

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Number 10

Ringneck Pheasant, King of the Game Birds

The Battle of the Cornfields from October 28 to November 30 in 1945

THE HAUL OF THE WILD

By Arthur Hawthorne Carhart

TAKE a small fishhook and a .22 caliber cartridge. You have about two and a half cents' worth of merchandise. In these two symbols of fishing and hunting there's little hint of any great field of business. Yet in peacetime these simple articles represent a business of nearly \$2,000,000,000 a year. Postwar, it may be up to \$3,000,000,000.

Seems almost unbelievable that each year sane people would spend \$1,200,000,000 on fishing and \$650,000,000 on hunting.

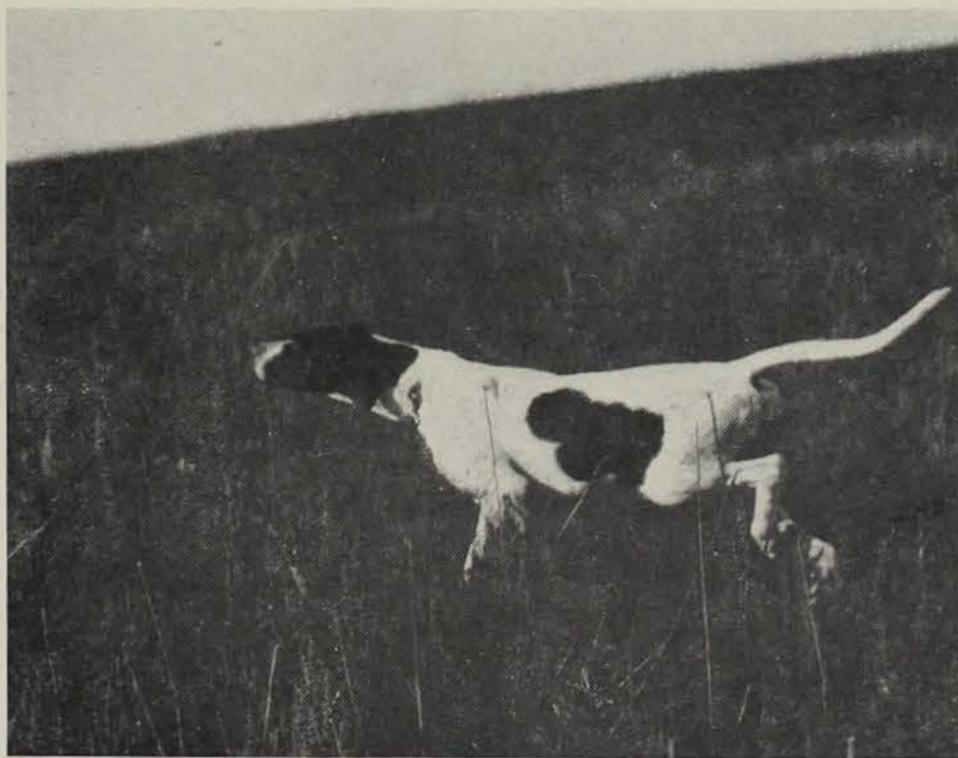
Sounds crazy.

There's something to that. Anglers and hunters are rabid devotees to their hobbies. Instead of sitting in the grandstand, munching peanuts, drinking pop and yelling at players and umpires, the outdoorsmen personally participate in their sports. That gives a hint as to why the fish and game sports create a business reaching to such high totals.

A ball fan may spend \$30 a year for admission tickets. A fisherman, on the other hand, may spend \$30 for a new rod without batting an eye—and he goes on from here to buy armfuls of other equipment. Then he pays for rail or auto travel to his favorite streams—and for room and meals. Perhaps he even hires a guide.

You see fishermen as lone individuals on lakes and streams. Or you see three hunters crossing a stubble field, shotguns ready, dogs working the fence-line thickets for pheasant or quail. You never visualize the millions of other fishermen or hunters on the

(Continued on page 172)



Get a smart, bold bird dog and a few gaudy-hued roosters together in short cover, and things will happen fast.

Brief Analysis of Iowa Fish and Game Policy

By Bruce F. Stiles
Chief, Division of Fish & Game

(Editor's Note: This is the first of three articles analyzing the various phases of the Iowa fish and game policy.)

UNDER pristine conditions, wild-life flourished simply because soil and water conditions were favorable within the climatic range of each species.

Game farms, fish hatcheries, predatory animal control and all other superficial aids to fish and game populations are secondary to use

(Continued on page 173)

“... And introducing in this corner, in the gayest trunks to have appeared in this arena, a China boy, naturalized American, tough, strong, smart, and undisputed game bird champion of the world—*Phasianus colchicus torquatus!* You know the rules, boys—break clean at the clinches, come out fighting—and may the best man win!”

Thus might the Conservation Commission reintroduce the ringneck pheasant to some hundred thousand Iowa hunters at the opening of the 34-day season October 28 at 9:00 a. m.

The battle of the cornfields is not a new event for old John Chinaman. He has developed from a three-day preliminary fighter in 1925 to present day championship distances of 30 days and more and, like other champions, has become smarter, tougher, and more secure in his position with each succeeding bout with the hunters.

For 12 months each year the Conservation Commission is the Champ's manager and trainer and is in his corner every open season at the bell. Let's look at the old warrior's record.

As a preliminary fighter old John failed to appear in 1936 and '37, and the managers had to throw in the towel for him in the second round after the Armistice Day storm in 1940 when the blizzard knocked him out. But there was no long count for old John after that all-time record storm, for he traveled the full distance the succeeding year and took a unanimous decision.

The ringneck pheasant is here to stay. This year again he will be hunted extensively over a wide section of the state by increased numbers of hunters and will be bat-

(Continued on page 171)

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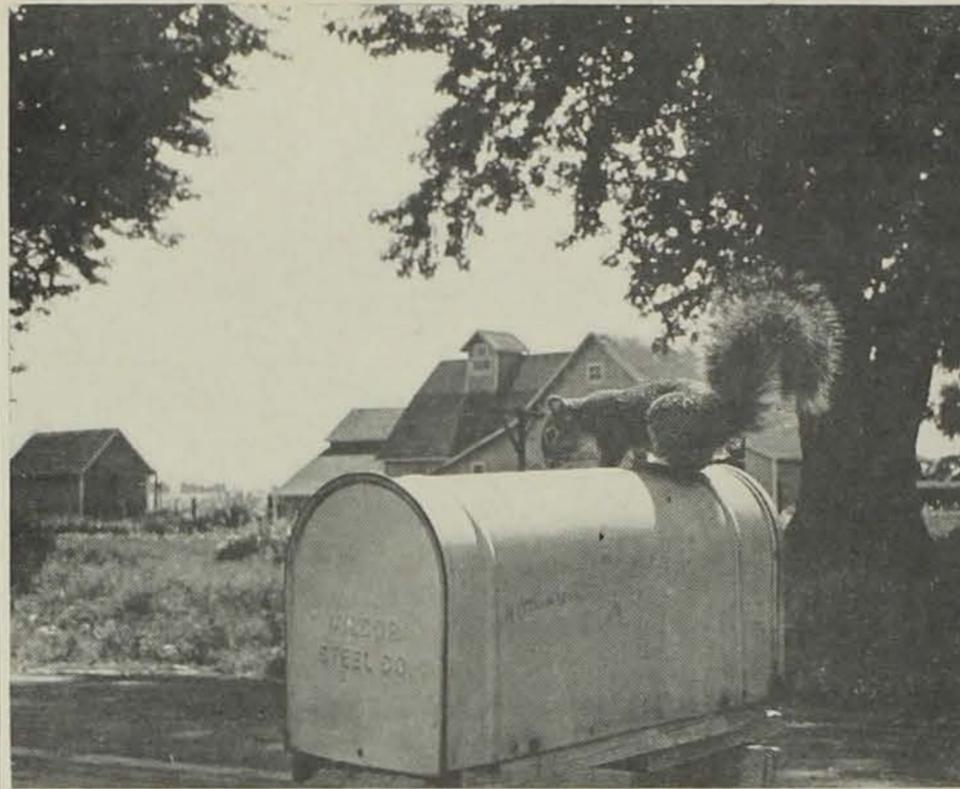
DOG AROUSES FROM HIS SLUMBER FOR BENEDICTION

Rev. Oswald Sandbach, pastor of the Reinbeck Methodist church, owns a dog, and the dog, which is just plain dog, is very obedient and worships his master. Everywhere you see Sandbach in Reinbeck, you also see the dog.

During the Union services last Sunday evening conducted in the United Presbyterian church, the dog was attracted by his master's voice and carelessly strolled into the church and upon the platform, where he lay down for a snooze during the services, and was undisturbed, although there were snickers throughout the audience.

At the close of the meeting when Rev. Clell Hickman said, "Let us stand for the benediction," the dog also arose, stretched, yawned, and went home.

—Reinbeck Courier.



This fox squirrel is impatiently awaiting the postman with his October issue of the "Iowa Conservationist" so that he may learn with certainty some of the interesting facts of life.—Jim Sherman Photo.

FOX SQUIREL FACTS

THE common rusty-colored squirrel is often miscalled "red squirrel." Its correct common name is fox squirrel. The red squirrel, or chickaree, is a much smaller mammal, limited in its distribution in Iowa, and is not considered game.

The two other tree squirrels found in Iowa are the nocturnal flying squirrel and the gray squirrel, an important game species in the heavily timbered areas and not to be confused with the gray ground squirrel.

It is believed that under ideal conditions the fall population of fox squirrels may reach a maximum of three animals per acre of woodland.

The bulk of young fox squirrels are born early in March, and old females ordinarily breed twice during the year, young females but once.

Squirrels can locate buried nuts by scent through more than a foot of snow. It is by scent and not by memory that squirrels are able to find their buried food caches.

Den trees protect squirrels from their enemies as well as from the weather, and the animals habitually gnaw the entrances to dens, to keep the holes from healing shut.

Dense populations of squirrels are particularly vulnerable to disease. Particularly in cities mangy looking animals almost devoid of hair are not uncommon. Generally this condition is caused by scabies, often associated with malnutrition.

Fox squirrels are frequently guilty of property damage, which

TO THE TOWN HUNTER

DID you ever kill two birds with one shot? It sometimes happens. Here is a suggestion for killing two birds with one stone: Buy a gift subscription to the "Iowa Conservationist" and send it to your farmer friend on whose land you like to hunt. For a dollar you can kill these two birds:

Bird No. 1. On the 15th for 36 months your farmer friend will receive a reminder that you think of him not only during the open hunting season, but the year around.

Bird No. 2. Your land-owning friend and his family by reading the "Iowa Conservationist" will have a better understanding of the needs of wildlife and will be able to increase the amount of game that can be taken on their farm during the hunting season each year.

Send your buck, the address of your farmer friend, say "Gift Subscription," to the State Conservation Commission, 10th and Mulberry, Des Moines, and we'll do the rest.

Government purchases of lumber in World War I were slightly more than six billion board feet. In this war 18 billion board feet were purchased from September 1, 1940, to August 31, 1944.

may become severe where heavy populations occur. The most common complaints are from depredation on field corn, destruction of pears and apples, girdling trees, particularly hard maples, in winter, and chewing holes in the roofs of buildings.

The so-called black squirrel is a color phase of the gray squirrel and not a separate species or a color phase of the fox squirrel.

FOREST CONSERVATION

By Phyllis Schmitt

(Editor's Note: This essay by Phyllis Schmitt, a 13-year-old seventh grade student in Sherrill School, was awarded second prize in a recent Dubuque County conservation essay contest.)

FORESTS should be protected not only for their lumber, but also because they help to control the flow of water after rains. When the forests are cut off and there is nothing to hold the water back, it washes valuable soil from the hillside and rushes on, turning the streams into raging torrents and causing a great deal of damage. It is important to keep the flow of water regular if streams are to be useful for furnishing water power.

Early settlers in America found most of the land from the Atlantic to the Mississippi an unbroken forest. Because they had to clear the land before they could plow it and plant grain, much of this great forest was wasted. Miles and miles of woodland were burned off, or the trees were cut down to make room for farms. As the pioneers moved westward the great forests of the Ohio valley were cut, not because the lumber was needed, but because the land had to be cleared for farms. The lumber could not be shipped as there were no railroads. Hundreds of dollars worth of maple and walnut logs were burned.

Many forests were wasted by careless methods of lumbering. They were cut down without any attempt to leave behind a growth of trees which would provide a forest for the future. Young trees, too small for use, were cut or injured in removing large ones. In the rush to get the lumber to market, underbrush, branches, dead trees, and other wastes were left behind. When dry, these materials made good kindling for the terrible fires that swept over the forests and burned live trees that remained. This waste continued until nearly half the forests of the United States were gone.

When people began to realize the value of the forests, they decided that they must be protected. For this reason a law was passed in 1891 which gave the President the right to reserve, or set aside from sale, forest land which the government still owned. Since that time many of the best forests have been reserved, until now there are more than 175,000,000 acres of national forests. More than one-fourth of all the forests in the United States are now national forests. Most of them are in the Rocky Mountains and Pacific Coast states, but there are important reserves in other parts of the country, too.

Forests have to be protected from many enemies. Fire is the

(Continued on page 174)

The Conservation Commission threw in the towel for old John Chinaman after the Armistice Day storm in 1940, but the hardy champion recovered and traveled the full distance during the 1941 season. —S. W. Lock Photo.



Ringneck Pheasants . . .

(Continued from page 169)

tered from ringpost to ringpost, possibly knocked down in some heavily hunted sections, but he will come through the season with ample breeding stock to repopulate the fields for another year. And that is part of what makes him champ.

Regular pheasant hunters know most of the angles to pheasant hunting, but each year thousands of first-timers try their luck, and many of their disappointments could be prevented by a little advance information.

Ask the Farmer First

A most important point to know is that the hunter in strange territory must contact the landowner on whose property he expects to hunt. The importance of good farmer - sportsman relationship must be kept in mind by the non-landholding hunter at all times, for 97 per cent of Iowa's land is privately owned, and if the landowner were to say, "You may not hunt," your upland game hunting would become a thing of the past. Each hunter must do his share and more in guaranteeing the privilege of all to hunt on private land. **Ask permission first, make a friend of the landholder, and conduct yourself as a gentleman, sportsman and guest at all times.**

Firearms Safety Pays

Hunting is a pleasant sport, and the sportsman is entitled to crow about his successful days, long shots, and other happy memories. Occasionally, however, tragedy in the form of firearms accidents spoils the picture. The hunter who is **not ultra conservative in handling firearms in the field had better stay home.**

The principles of firearms safety

have been stressed innumerable times, and the cardinal principle, first and last, is: Always carry a gun so that in case of accidental discharge no one will be injured. Hunting from an automobile is dangerous, unsportsmanlike, and illegal. Do not under any circumstances carry a loaded gun in your car.

Hunters with no knowledge of the ringneck may get birds, but those with an intimate acquaintance with his habits are certain to be more successful. No man knows all about the Chink, however, for he doesn't know himself and he is the most unpredictable of all the game birds.

Use Your Head and Spare Your Feet

You are apt to find him in almost any place. He may be high in the top of an evergreen tree at midday while hunters beat the grass below. He has been known to crawl into a drain tile to escape pursuit. He is, of course, more apt to be found in the heavy cover of cornfields, marshes, or weed patches.

As with most other game birds, our champion is more apt to move in the early mornings and late evenings. To give the bird a chance, the statutes have taken this fact into consideration with the daily opening and closing hours, which give the birds a chance to feed unmolested and to concentrate on escape when shooting hours are open.

Much of the pheasant hunting in Iowa is by drives of from five to a dozen hunters lined abreast and sweeping through a cornfield. This driving is particularly effective early in the season before the birds get "wise." It is well to remember in this type of hunting that pheasants, particularly the legal cock birds, depend primarily upon fleet-footedness and ability

to run to escape. Generally speaking, the bird will take to wing only when it feels that it is trapped.

Short Pauses Drive Hiding Birds Nuts

It is the flying bird that makes the target, and after they have been located the job is to get them into the air within gunshot range. Sometimes a noisy pell-mell rush through cover works, especially with inexperienced birds. As the season advances, a slow, quiet approach with frequent short pauses does the business.

Don't overlook apparently barren patches of hay meadow, oat stubble, and field edge after the birds have become gun-shy, for the Chinaman is a master at hiding and in spite of gaudy plumage is excellently camouflaged—and he knows it. No thrill is so great after a fruitless, heart-breaking tramp through marsh or heavy weeds as the noisy flushing underfoot of a half dozen or so cackling roosters in the short grass bordering the adjoining cultivated field.

Good Gunners Often Miss

Pheasants are an easy target for the experienced gunner, but the first-timer need not hang his head in shame for missed birds. Even the expert misses more than his share regularly and for much less reason. He, too, can remember the first pheasant as it bounced 15 feet into the air amid a wonderful conglomeration of confusing colors and conflicting noises. He, too, shot in self-defense and missed by feet instead of inches. He, too, with wild eyes and heart pounding, exclaimed, "Boy, they're sure hard to hit!"

Remember this—a flushed bird going away is always rising. Cover him up with the end of your gun and if in range, he'll come down.

A bird on a cross shot must be lead, for his long tail is confusing and gives him the appearance of being a bigger and consequently easier target than he really is. Pull ahead of his bill and he will tumble. Remember, too, that although the Chink is a slow flyer on the take-off, once underway he is traveling plenty. Lead him accordingly, and as the canoeist said to his companion on their trip over Niagara Falls, "Take your time—don't get excited."

Find Your Downed Bird Now

Mark the spot where the downed bird falls, and though the cover be negligible, retrieve him immediately, for even a mortally wounded pheasant has an almost supernatural ability to hide, and a dead bird in the weed patch puts no meat on the table.

A retriever dog is almost an essential with cover conditions as they have been in Iowa pheasant coverts the past few years, and an all-around hunting dog adds to the sport. The spaniels are excellent for bringing in dead and crippled birds, and many pheasant hunters choose the spaniels in preference to pointers and setters in hunting ringnecks.

It is true that when a spaniel takes out on the hot trail of a pheasant the bird will soon be in the air, but because of the spaniel's hunting methods, many times the bird will flush out of gunshot range. Those who hunt with a spaniel may expect many wide-flushed birds, and if they accept this fact, they will have an enjoyable hunt and more success than the dogless man.

Brother, Then You Start to Live!

Some pointer and setter dog owners believe pheasant hunting (Continued on page 174)



With cover conditions as they have been the past few years, a retriever dog is almost an essential. The spaniels are excellent retrievers, and many pheasant hunters choose them in preference to bird dogs for ringneck hunting.

The Haul of the Wild

(Continued from page 169)

tens of thousands of streams and hunting ranges.

The Federal Fish and Wildlife Service tallied the nation's hunting and fishing license sales between July 1, 1941, and June 30, 1942. In that period—including the seven months of heaviest annual license sales after Pearl Harbor—8,423,218 persons bought angling permits, and 8,532,354 bought



Before the war fish and game played the unbelievable tune of two billion dollars annually on the nation's cash register. The register is expected to read three billion dollars in the immediate postwar years.

hunting licenses. That approaches 17,000,000 licenses. Some are duplications. Certainly many sportsmen bought both hunting and fishing permits.

Just how many duplications occur is not known. But compensating numbers of others who fish and hunt are not included in the license totals. In many states women, veterans, pensioners and youths need purchase no license. None is required for salt water angling—and surf and deep-sea fishermen comprise an army. In some states, if one hunts and fishes in his home county, no license is required. It is estimated there are as many in this group as there are licensed sportsmen.

In peace years, at least 20,000,000 hunt and fish in the 48 states or angle along our ocean shorelines.

Actually, we need not discount

too heavily the duplications when estimating the purchasing potentials of the entire sportsmen's group. Anyone who is both angler and hunter buys equipment for each sport. He is a double customer. Clothes, boots, tents, boats and camp duffel may serve for either sport, but a rod and reel will not shoot ducks or deer, and a rifle or shotgun will not cast a trout fly or lure a bass.

War work and restrictions have reduced the number of licenses sold, but only some seven per cent. It hasn't actually reduced the number of sportsmen. War merely keeps them from going into the field.

What happened to license sales during and after the first World War indicates what lies ahead. A recent survey shows that, in the 25 states where records were complete enough to provide exact data, total license sales actually increased 1.6 per cent from 1916 to 1917; 2.6 per cent from 1917 to 1918, and then, after the Armistice, in 1919, yearly license sales swept up nearly 30 per cent. The boys who had been introduced to outdoor life in the armed forces turned to hunting and fishing in civilian life as a natural field of recreation.

Proportionately more men of the hunting and fishing ages are in the armed forces today. At least a 30 per cent increase in license sales may be expected when victory comes. That means at least 27,000,000 customers for outdoor equipment postwar.

In addition, a tremendous backlog of replacement and new equipment sales is in prospect for the millions of sportsmen not in the armed services. Practically every fishing tackle manufacturer is in war production. No tackle has been made for civilians for several years and reserve stocks are exhausted. Arms and ammunition plants are totally devoted to war goods. Meanwhile, rods break,

lures are lost, lines wear out and guns get older. The war experience will produce new tackle and such advanced models of guns that perhaps half of the sportsmen will want to replace old equipment. That is the waiting market.

Any analysis of what this market may mean in total expenditure simmers down to what each sportsman, on the average, will spend annually for his favorite sport.

One angler may spend relatively few dollars a year; the next may spend several thousand. That is also true of the hunters. The question is, "What is the average outlay?"

When I consider the average hunter and fisherman, I think of the four mechanics at the garage where my car is serviced. These men are in the moderate income brackets. Their annual bill may suggest what the average per person might be.

They spend from \$15 to \$30 a year for new fishing tackle and ammunition. They take at least five fishing trips into the mountains each season, travel a minimum of 200 miles per trip, spend a full day and parts of two others each time. They camp, cook their own meals but certainly spend \$8 each per trip.

They all go big game hunting, too. Travel, food, shelter, horse hire and other costs of this trip would average at least \$30 each. They hunt pheasants and rabbits twice each fall and ducks three times. That would cost \$5 per trip per person.

We have as minimums \$15 for tackle and ammunition, \$40 for fishing trips, \$30 for big game, and \$35 for small game hunting. That totals \$120 a year. If you told those fellows they spent that much they'd deny it—but if they figured all costs they'd probably find ours is a short estimate.

By contrast, before the war, a group of Texans, traveling to Colorado with house trailers and a refrigerator truck, had a big game season budget of \$500 each. It was put in a jackpot and had to be spent. That was only one annual hunt for those Texans. They hunted and fished on other trips, too.

Analyzing all figures available, Frank G. Menke, author of the "Encyclopedia for Sports" and a national authority, has estimated that the average annual bill of each sportsman in peacetime is \$143. Any inclusive figure for outdoorsmen would cover not only tackle, arms and ammunition, but clothing, flashlights and camp lanterns, bedrolls, camp axes and knives, travel, lodging, meals, guide services and other comparable items. The sportsman buys some equipment and services every time he goes into the open. He goes several times a season if he can make it.

The annual expenditure of \$143 a person appears conservative. Let's discount that figure and ac-

Outdoor Oddities

BY WALT HARVEY



cept an average of \$100 per sportsman per year, all costs. If we do that, 20,000,000 sportsmen will spend at least \$2,000,000,000 a year.

If you doubt this figure, take yourself to any sporting goods store, price equipment you must have either to fish or hunt, figure the number of trips you could take each season, add up the total of all costs—well, try it if you disbelieve. You'll spend \$50 for bare necessities for trout fishing; \$150 if you get better quality equipment. When you've done that, you've just started. A hunter's outfit costs more than a fisherman's.

The cash outlay resting on the foundation of ample supplies of game and fish has a place in the critical reconversion period. It means lots of jobs.

If technological advancement and volume production developed during the war is applied to sporting arms, if sportsmen can get good guns at low prices, literally millions of men who are single gun owners today will be two- and three-gun sportsmen tomorrow. Not all arms and ammunition plants can, of course, keep their war workers busy producing sporting arms, but this approach to volume production and sales, with five to 10,000,000 rifle, shotgun and pistol purchasers in prospect, with volume sale of ammunition to follow, can ease reconversion problems in that field.

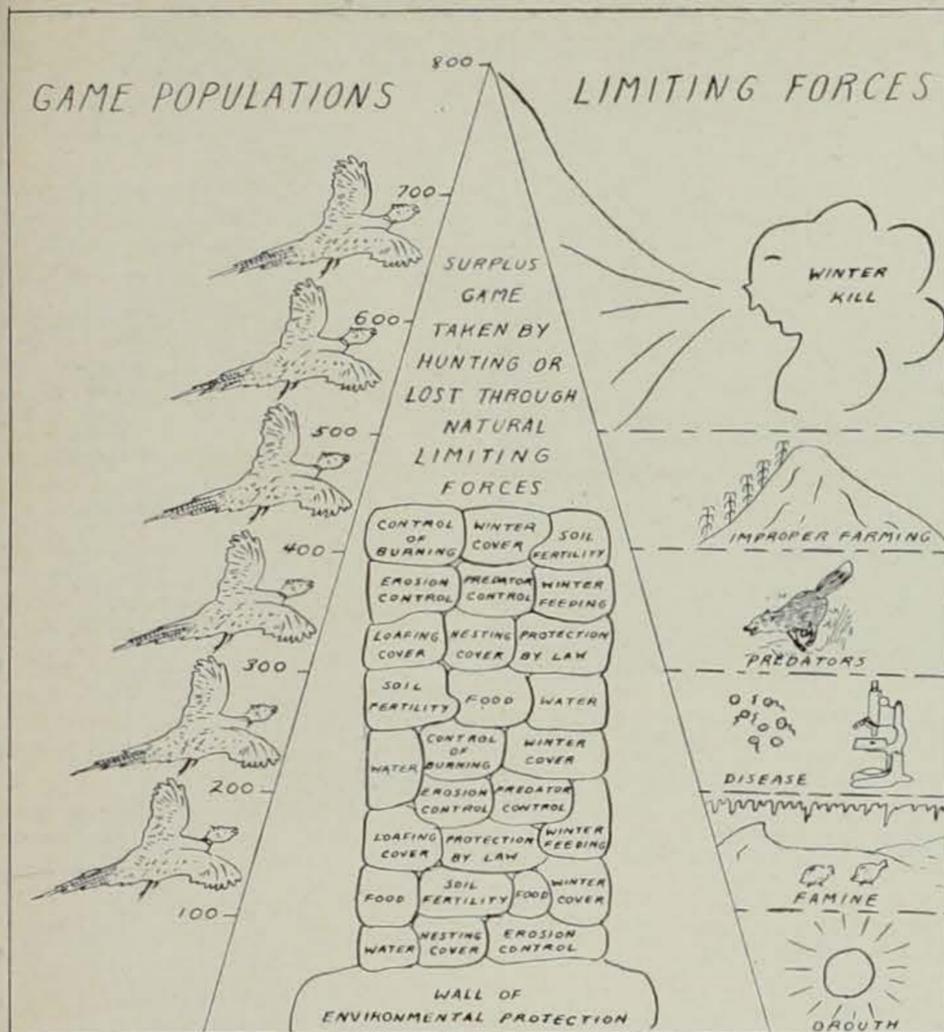
Fishing tackle factories show a much wider spread both by location and size. Here is a little shop in Montana, producing a special trout fly, employing a dozen people. A shop in Denver making fine fishing rod fittings employs a dozen more. A concern also in Denver making fishhooks on automatic machines and tying trout flies, now employs 300 workers. They are all set to make plastic bass lures after the war. The big plants at Akron, or at Utica, or at South Bend, or Geneva, will support a pay roll of at least 1,000 names each.

All these are set to turn swiftly

(Continued on page 176)



Analyzing all figures available, Frank G. Menke, author of the "Encyclopedia for Sports," has estimated the average annual bill of each hunter and fisherman in the United States in peacetime to be \$143. Department of Commerce figures give the value of all refrigerators, air conditioning units, and electrical appliances manufactured in 1939 at \$424,000,000, less than a fourth of the sportsmen's bill during the same year. —Jim Sherman Photo.



Wildlife carrying capacity of the land can be increased only by increasing its wall of environmental protection. Populations that increase to a point above the top of the wall during the easy summer period, if not cropped by hunting, are inevitably destroyed by pressure of natural limiting forces.

Brief Analysis . . .

(Continued from page 169)

The sportsman visualizes fish hatcheries, battery jars stacked row on row, tanks running over with cold clear water, nets, rearing ponds and more fleets of trucks, culturists with beakers and test tubes and the myriad of other scientific paraphernalia that to the fisherman has always been synonymous with fish hatching.

What Is Wildlife Management?

Let us analyze the term "wildlife management." Let's take it apart and see what it consists of. Because we are attempting to cure the ills of hunting and fishing, let's draw a parallel from the practices of medicine. As far as wildlife management is concerned we are just emerging from the era of mumbo-jumbo, witch doctors, and sorcerers up onto the plane of scientific knowledge with its accompanying diagnosis and surgery.

As the man with a ruptured appendix knows he must voluntarily submit to an operation, so our sportsmen must come to know that their hunting and fishing ills cannot be cured with fish hatcheries and game farms; and they must either submit to the unspectacular wildlife habitat improvement treatment or, figuratively speaking, suffer the agonies that accompany malpractice.

Almost without exception, sportsmen who come to the Conservation Commission office with suggestions they believe will increase fishing or hunting request one of two

things—won't we kindly stop the poaching in their territory so that hunting will be good, or won't we please send them a load of fish for their lake or pheasants and quail for their coverts. The requests are almost tragically pathetic. Wouldn't it be easy if the cure were that simple?

Fish and Game Hatcheries Not the Answer

With the revenue we receive from fish and game licenses we could almost overnight double, treble or quadruple the production of our fish and game hatcheries. With little additional dollar expense we could bring many more than the present number of violators into court. Such action would, of course, be at the expense of sound practices such as habitat improvement, land acquisition and development, research, etc., and the cold facts are that such action would contribute little to the hunter's chances of bagging a single additional bird or the fisherman's opportunity to add one more bass to his stringer. The foundations of wildlife management are not predicated upon such simple things.

We are fortunate in having the way clearly pointed out for us in the "Iowa Twenty-five Year Conservation Plan." On page 82 under the heading of management we read, "Wildlife management is the deliberate manipulation of the habitat to control populations. It is applicable to all living things which we need or want; it is the main available instrument for re-

storing both game and non-game wildlife."

Environment Key to Game Production

Both fish and game are the products of their environment, and they prosper or fail to prosper in direct proportion to the number of favorable environmental factors that are present or provided. Winter feeding, predator control, law enforcement and stocking are but fragmentary practices of management.

To produce increased hunting and fishing in Iowa requires that we discard mumbo-jumbo and get down to facts. The ability of either land or water to support game and fish is in a direct ratio to its fertility. Other factors being equal, fertile land will always produce more game than infertile land and fertile waters will produce more fish than infertile waters.

The fertility of both land and water in Iowa is not surpassed anywhere on this continent. Yet if we are honest, we must admit that South Dakota has better pheasant hunting. Nebraska has better duck hunting. Missouri provides more opportunities to shoot quail, and more fish are caught in Minnesota.

The reason for this apparent contradiction is that the wildlife productivity of our fertile Iowa land is limited by other factors referred to as environment.

Natural Pressures Limit Numbers

Environmental factors are in two classes—favorable and unfavorable. Nature has provided innumerable checks and balances, and she continuously exerts a relentless pressure against each wildlife species to limit its numbers. Between this natural pressure to eliminate and the maintenance of the species stands a wall of environmental protection. As we build this wall up by adding nesting

cover, improving water supply, etc., we increase the game-carrying capacity of the land, but as the population increases beyond the highest stone in this environment wall, the inexorable forces of nature will inevitably bring it back in line. It is this increase—that above the top stone—that is the surplus which may be safely harvested by the hunter.

It may even be harvested a bit below this point, as nature has provided for increased production in low populations and diminished production in high populations.

Now that we have set out briefly the basic factors that control the production of wildlife, let's consider the effective management practices that we as a state agency can carry out to improve the opportunities of Iowa sportsmen to harvest more fish and game.

Any well rounded, coordinated program of wildlife management must take into consideration numerous phases and weigh them as to their relative importance.

With Public Sentiment Nothing Can Fail

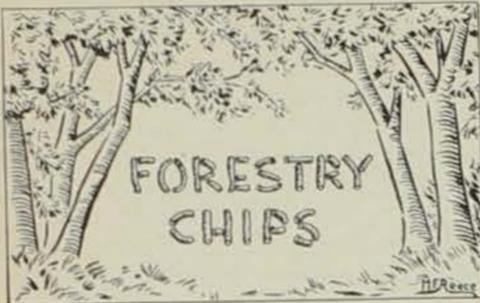
Public Relations is the departmental function designed to secure the support of our entire program, and without it the most carefully worked out fish and game plan is doomed to failure. Abraham Lincoln is supposed to have said in a cabinet meeting that "with public sentiment nothing can fail; without it nothing can succeed." Certainly this is true in a democratic form of government. The 18th amendment is our classic example on a national scale of the inadequacy of a program that does not receive public support.

Conservation officers and fisheries and game employees represent the Conservation Commission in the field, and for the most part statements coming from them on fish and game policies are accepted as representing the thoughts of their superiors.

(Continued on page 174)



With present fish and game license revenues we could easily multiply the production of fish and game bird hatcheries. Such action would contribute little to the sportsman's chance of bringing home a single additional game bird or fish and would be at the expense of other conservation practices that do enable the sportsman to harvest additional fish and game.



FARM FORESTRY ACCOMPLISHMENTS

Privately owned timberlands in Iowa comprise one of the state's important natural resources. Understanding of this resource, its capabilities, management and other factors by the average owner has been very limited. As a result trees have not been considered as the farm crop that they actually are. Although there have been sufficient technically trained persons of various state and federal agencies to provide information and assistance to farmers on other crops, there never have been sufficient foresters in the state to provide similar assistance on tree crops. This was true before, during, and after the 1870's when Clinton, Iowa, was the largest sawmill center of the world.

In order to provide forestry assistance to owners of this neglected resource, the State Conservation Commission entered into agreements with other agencies, and a farm forestry service was established in cooperation with the U. S. Forest Service in the fall of 1942. The present limited organization consists of four farm foresters under the direction of State Forester G. B. MacDonald. Two of these farm foresters began work about the first of the year 1943 and the other two did not start until the spring of 1945.

From the beginning of the project to July 1, 1945, assistance has been given to 476 farmers on 16,723 acres of tree crops. Many of these 476 persons have been given assistance on more than one occasion. This is a good beginning, but a long way from providing adequate assistance to the owners of the state's two and one-quarter million acres of woodlands.

Forest products valued at \$84,023 were harvested from these managed tree crops, and a large part of these were used in maintaining the owners' farms. Lumber, fence posts, and fuelwood made up the bulk of the farmers' "home needs." Sawlogs, veneer logs, piling, and walnut trees made up the bulk of the "cash" crops.

Tree farming is like any other farming in that it provides a place for the grower to turn his labor into money. About half of the farmers, assisted by farm foresters, took advantage of this by harvesting their own crops. This group of farmers increased their tree crop earnings by about \$34,800.

A vital link in the chain of events moving the crops to the consumer is the important job of marketing.

Valuable assistance in this field has been given by farm foresters, both to the growers and to the users of forest products. Only a small percentage of Iowa's 1,100 sawmills are in areas now served by farm foresters, but those that are were given assistance in various ways, one of which was improving the quality of their lumber to the mutual benefit of themselves, the farmers, manufacturers, and other users.

Although these represent the major activities of farm foresters, many minor activities were carried on, such as cooperation with local conservation organizations and others. Since forestry has an important bearing on soil conservation, it is well to point out that soil conservation district commissioners have the authority to petition the State Conservation Commission to provide farm forestry assistance in preparing management plans for woodland areas and rendering other forestry services.

Over 90 percent of Iowa's woodlands belong to farmers, and it is, therefore, essential that owners of this important renewable resource be given as much help and guidance as possible.

Trees not only protect the soil upon which they stand, but influence silting of streams and provide valuable cover and food for wildlife. Farmers are not going to raise crops or utilize their lands for purposes which do not return a revenue or contribute to the maintenance of their farms. Since a large percentage of timberland is owned by farmers, it is important to sportsmen and others to see that farmers are provided with technical forestry assistance so that this important crop will contribute its valuable benefits to farmers and sportsmen alike.

Ringneck Pheasants . . .

(Continued from page 171)

spoils the dog for the more leisurely sport of quail hunting. Many other bird dog men believe that a good bird dog is the solution to all the pheasant hunting problems. A good pheasant dog must be fast and bold to hold the hard-running roosters, for a smart old cock will lead a deliberate pottering dog into the next section, cackle in his face, and then fly over some distant hill. But get a smart, bold bird dog (and there are some) and a smart old Chink (and there are plenty) together in comparatively short cover—and, Brother, then you start to live!

The birds are there. The cover is dense and hunting will be tough again. You know the rules, boys. Let's have a clean contest. Come out fighting at the bell, and may the best man win.

"Since the achievement of our independence, he is the greatest patriot who stops the most gullies." Patrick Henry.

A butterfly tastes with his feet. Certain species of butterflies emit wonderfully fragrant odors.



It has been necessary to devote more time and energy explaining the importance and object of rough fish removal than any other program undertaken by the department. One-tenth of the time and energy spent in explanation before the inauguration of the program would have been sufficient to secure general public acceptance.—Jim Sherman Photo.

Brief Analysis . . .

(Continued from page 173)

Game Policies Constantly Change as Research Increases Knowledge

As our knowledge of wildlife management is increased we must change our management programs and policies. As an example, through our research work we discovered that some of our lakes were overpopulated with bass and crappies. For years crappie fishing and bass fishing have opened on the 15th of June. It was our plan to open these particular lakes to fishing on the 15th of May, a month early. Such a change from the established season of long standing was bound to bring criticism unless fishermen were prepared for the change.

A public relations program designed to acquaint the public with the facts was inaugurated about the first of January. A letter was sent to all conservation employees explaining what we proposed to do and why. In the areas affected, conservation officers were instructed to arrange for meetings with sportsmen to explain the reasons for the new program. Local newspapers were contacted and given the complete story. When the new season was announced shortly before the 15th of May, the public was prepared for it and opposition was almost non-existent.

Informed Public a Supporting Public

The antithesis of this prepared public opinion is the rough fish removal program, especially in the natural lakes region in northwest Iowa. When we started intensive rough fish removal in this area, feeling became bitter against the department and our work was greatly hampered. Letters were written to the Governor, senators,

representatives, members of the Commission and sportsmen throughout the state. At one time an injunction was sought enjoining us from seining Twin Lakes in Calhoun County.

Such protests were expressions of sentiment rather than reason, of emotion rather than evidence. Only now after all these years of laborious public relations work are we able to make progress in rough fish removal without serious opposition. Some sportsmen, while now a small though loquacious minority, still nourish their old resentment.

It was probably necessary to devote more time and energy selling the public on this one important subject than any other program undertaken by the department. One-tenth of the time and energy spent before inauguration of the program would have been sufficient to secure general public acceptance.

The Conservation Commission has a selling job, and its programs must be sold to the public. It is, therefore, essential that conservation officers be fully conversant with our program and recognize that law enforcement is only a part of the field officer's duty, and that his most important single function is in the field of public relations.

(Continued next month)

Forest Conservation

(Continued from page 170)

most dangerous one. In past years many millions of acres of woodland have been entirely or partly burned. The rangers try to protect our forests and prevent and check forest fires. In the summer, when the forests are dry, the chief duty of the rangers is to protect them, watching all the time for fires. Men in high towers use telescopes to watch for smoke. As soon as a ranger sees a column of smoke which looks at all as if it might be from a fire, he sends word by telephone, messenger, or signal to the nearest "smoke chasers," as the fire fighters are called.

Rangers make forests as beautiful recreation places. There are now in national forests more than 5,000 free campgrounds with fireplaces, pure water, and simple but sanitary conveniences.

With our government watching our forests and each of us realizing how valuable our trees are, we have reason to feel that the forests and their benefits will be made lasting for the American people.

During normal years, more shotgun shells are fired at rabbits than at any other species of North American game. The rabbit also furnishes more meat for the sportsman than any other single species. In Missouri alone, the cottontail harvest in a normal year totals about six million, yielding approximately 10 million pounds of dressed meat. Total for the nation is close to 69 million pounds.

—Missouri Conservationist.

Fur Refuge Experiments Pay Out

By Paul L. Errington

THE history of refuges for wild animals may be traced back to the Kubla Khan of the thirteenth century, and it is highly probable that lesser personages had much the same ideas long before.

In the United States, refuge systems expanded and multiplied during the past quarter century, or about the time that certain facts of life involving natural resources began to filter through our collectively resistant minds. Motives for establishment of refuges may be or may not be in public interest, esthetic, or altruistic, but the refuges do have a common denominator insofar as they are supposed to give one or more wild species protection against man. Effective administration, of course, can hardly avoid restraining people from doing some of the things they would do with more or less freedom on non-refuge lands, and such restraints may be accepted gracefully or otherwise.

At one extreme we have refuges for migratory birds and, contrary to what often seems the popular view, these do not owe their justification solely to making better duck hunting (if they actually work that way) on surrounding areas. To some extent their primary purpose may be to prevent ducks from being shot—a purpose sometimes of far greater fundamental importance than giving hunters what they may think they want.

Refuges Important in Duck Comeback

By 10 years ago, North American waterfowl had been so reduced that some species were threatened with extinction (and all are not overly well off today, for that matter), and the status of the group as a whole was most unsatisfactory. Drainage and drought unquestionably had their part in this

great continued decline, but in the northwest Canadian wilderness there were enormous expanses of first-class breeding grounds harboring only small fractions of the duck populations previously observed there.

Let due credit for the recent improvement in the waterfowl situation be given the belated cooperation by the weather as well as the efforts of governmental and private agencies in restoring and managing marsh lands; nevertheless, according to the most impartial evidence of which I know, the one factor that came the nearest to being the proverbial "last straw" during the bottom of the "duck depression" was gun fire upon the concentrated remnants, and we may thank a functional refuge system for what it did to carry breeding stock through the crisis.

At the other extreme of refuge types are those for species moving about on a very limited scale. In contrast with waterfowl refuges—which may be large and widely separated—systems made up of numerous comparatively small refuges seem best for conserving breeding stocks of the less mobile creatures.

Need for Muskrat Refuges

The muskrat during years of high fur prices is a notable victim of the ancient philosophy of "If I don't get them somebody else will." Prolific though this animal is, it can't be all but trapped out of all places one year and yet reasonably be expected to produce a satisfactory crop of pelts the next. Good management should insure that fair numbers regularly escape trappers and natural hazards to winter and to breed.

Some of the technical requirements for a refuge system that might help with the problem were outlined several years ago (see the paper "Natural restocking of muskrat-vacant habitats," Journal

of Wildlife Management, vol. 4, pp. 173-185, April, 1940), but ways and means of getting an experimental program of muskrat refuges started in Iowa did not seem to be in sight.

Then, early in 1943, Elmer Wogen, conservation officer at Estherville, whose observations on fish spawning areas had made him wonder if something of that sort wouldn't work for muskrats, wrote that he wanted to try it in his territory, close to home where he could watch it. So it came to pass that heads were put together, inspections of eligible state lands made, and trial areas set up at Cheever and Four Mile Lakes. Results during and following the 1943-44 trapping season were both enlightening and encouraging.

Five conservation officers now participate in the program, which has been extended, still on an experimental basis, to a total of nine state-owned marshes.

Automatic Safety Factor

As the main goal of this experimenting is a system that safeguards automatically enough muskrats to repopulate trapped out surrounding areas, it has been well supported by trappers—at any rate those living in the neighborhood and mindful of next year's fur crop. The refuge animals are public property in a literal sense, and if someone sneaks in and cleans out the breeding reserve during a winter of general overtrapping, the whole trapping community may feel it later, right where it hurts. It can, in fact, mean the difference between a fairly sustained yield averaging perhaps a muskrat or two per acre of good marsh and a yield several times as great; and, in some cases, the difference between annual catches of only a few dozen muskrats and thousands.

The best rule of thumb formula worked out in the course of the 12-year Iowa muskrat investigations is that a **spring breeding stock amounting to a fifth of the fall population will ordinarily allow the recovery needed for sustained, high-yield trapping.** If the habitat is excellent in relation to the muskrat population, a smaller proportion of animals reserved to breed might accomplish as much, for averages of 15 or more young successfully raised per adult female from spring to fall have been recorded. On the other hand, if the habitat is inferior, or either underpopulated or overpopulated, the rate of increase may be four or five young per female, or still fewer. And if living conditions are very bad, there may be no increase at all.

Maximum Reproduction Depends

On the whole, the information we have makes clear the following trends. When a breeding population is so low that mating is inefficient—let us say lower than about one pair of adults, or equivalent, per

15 acres—there may not be many young born, although in good habitats most of those born may be raised. As populations rise to favorable breeding levels, their production of young improves; then, as breeding populations go still higher, the average pair raises fewer young by fall. These trends have shown remarkably definite mathematical characteristics on those of our main research areas for which long-time information is available.

There is a natural balancing here that largely offsets year-to-year differences in birth rates and losses of young. Within limits, severe juvenile mortality early in the breeding season means greater security later on, or prolongation of breeding to compensate; light early losses mean rising loss rates later and may result in early termination of the season's breeding; and if deaths from one cause increase, those from others tend to diminish. In short, while many factors have potentialities for bringing about great mortality, they normally adjust to each other in such ways that the total reduction up to the beginning of the fall trapping tends to conform to a pattern predetermined by the muskrats' own population densities and the habitability of their environment.

What are some of the things, other than human misdeeds, that can upset calculations on a refuge area? Droughts can do as much as any emergency, although their opposite, floods, can do pretty well when they drown immense numbers of young too late in the summer for the adults to compensate by having extra litters. Another factor is ecological succession by which low grounds turn to rush-filled marshes, marshes to open-water lakes, or reverse the procedure as the weather changes. In addition, muskrats share with other wild species "cyclic" depressions occurring at about 10-year intervals and for which no convincing explanations have been advanced. (Incidentally, we may expect a new one practically any time, as the last for the north-central region came in 1936-37.)

Virus Disease Deadly

In late years we have been gaining experience with what can be one of the worst disappointers of all—a liver and intestinal disease that, despite lack of a formal name, manages to kill muskrats by the hundreds on local areas in the space of weeks and, in probability, has done bigger things than we know for sure. It seems to specialize on muskrats from October until late spring, and can get in some mighty licks just before the trapping season. It is tricky but doubtless would prove to have its own rules of behavior if we could learn what they are.

In setting up tracts for muskrat breeding stock refuges, the first essential is to look for places stand-

(Continued on page 176)



A gully isn't worth very much in any farmer's language, but the multiple values of a farm pond can be measured in actual dollars and cents.—Don Berry Photo.

Fur Refuge . . .

(Continued from page 175)

ing the best chance of carrying the animals through the winter to come—places not only having suitable depths of water (preferably about three feet) and growths of rushes or cattails, but also those that are suitably located for protection. Tracts should be neither so large that only a small percentage of the wintering muskrats disperse from them in the spring (a common drawback of those exceeding 100 acres in area) nor so small that traps at the refuge boundaries may unduly deplete the stock intended to be conserved. For general purposes, 40- to 80-acre sizes are recommended, but in practice, sizes may be scaled up or down according to the "lay of the land" and the nature of the habitat.

Extensive marshy units should have several moderately-sized refuges selected and spaced so that their spring overflow of breeders may promptly spread into trapped-out parts. Areas open to trapping should consist as much as possible of the poorer grades of winter habitats where mortality is naturally high during the cold weather months. It may be pointed out that poor wintering areas are often food-rich shallows, which make excellent breeding grounds and thus afford trappers opportunities for fine harvests of muskrat pelts in late fall and early winter; when annually "reseeded" by muskrats from refuges, they reach their maximum productivity.

Protection of the refuge tracts means protection most of all from the boys who are handy with spears or traps and slip in and out again at night. Protection under Iowa conditions seldom requires any special attention to native predators, even though minks very frequently enter lodges in winter and at times may subsist almost entirely upon muskrats. Protection against the liver and intestinal disease at present consists chiefly of not encouraging concentrations of muskrats where the disease is locally prevalent, or obviously getting a start—which signifies for practical purposes that sometimes muskrat refuges may be exactly what we don't want, at least for a year or two.

According to the Smithsonian Institute, Washington, D. C., about 1,500,000 bison (American buffalo) were killed by white hunters in 1873 alone. It is also estimated by Col. Richard Irving Dodge of the U. S. Army, one of the most reliable authorities on the subject, that 5,373,730 of these animals were killed by white men and Indians during the three years, 1872, 1873 and 1874, which was the period of the greatest slaughter.

An English law prohibits any person convicted of cruelty to a dog from owning or having custody of another canine for a period of from one year to life.



A small refuge of from 40 to 80 acres in a large marsh can mean the difference between annual catches of a few dozen muskrats and several thousand of these valuable fur bearers.

Multiple Value of Farm Ponds

By Rudolph J. Habrich

A GULLY isn't worth very much in any farmer's language. And it was worth even less than that to us on our farm three miles east and two and one-half miles south of Pawnee City. So Dad—the whole family, in fact—got busy and decided to make something good out of the gully, a farm pond.

As it was explained to me, the dam would hold the water from washing out more soil, and would make not only an excellent source for water to irrigate a garden below, but it would enable us to raise fish as well as other wildlife on the farm.

And it did just that. In 1943, the one-quarter acre garden below the dam which was irrigated by siphoning water over the dam with a garden hose produced 26 bushels of tomatoes, 12 crates of strawberries, six bushels of cucumbers, 200 pounds of muskmelons, 140 pounds of popcorn, and a world of other vegetables that make a farm table a swell place at meal-time.

But that's just a start. We put a pipe through the dam that gives water for the livestock. And if anyone thinks that saving the job of worrying about water for the livestock isn't worth something, he should think again.

But personally, the pond itself is the best and here's why. On one fishing trip alone, we caught two bass that weighed three pounds apiece. Altogether last season we caught 53 pounds of fish, shot 53 wild ducks and five geese on the pond, not to mention the swimming and boat riding, and all in our back yard. And here's another

thing—we sold the feathers from the ducks and geese for \$12.50.

Just so anyone interested in getting a swell pond with all these benefits out of an old gully can have the facts, here they are. We built the dam in 1938 with the help of Soil Conservation Service technicians assisting the district. It was part of our farm conservation plan which Dad worked out to control soil erosion on our land. The old gully was 16 feet deep before the dam was built.

After the dam was built (with the cement drop inlet), fenced to keep out the livestock, all of the water edge of the pond was planted to rushes and water grasses. Some of the surrounding area was seeded to bromegrass and many kinds of trees, shrubs and berries were also planted. These furnished good protection and food for wildlife. The spillway, which was built in case there was too much water to go over the drop inlet, was seeded to grass. Then the 70 acres which drain into the pond were terraced, and grass and legumes were planted and are being used in rotation on the waterway to control erosion and hold silting to a minimum.

—Outdoor Nebraska.

Bounty was paid on 15 mountain lions by California during the month of August. Five males and 10 females were taken. Effective September 15, 1945, by action of the state legislature the bounty now paid on mountain lions is \$50 for males and \$60 for females. Previously the bounty was \$20 and \$30.

Snakes cannot close their eyes, for they have no eyelids. Tough transparent membrane serves to protect their eyeballs.

The Haul of the Wild

(Continued from page 172)

to civilian production, and practically no labor will be drifting on the market from their conversions. Here is a sizeable buffer against unemployment.

Moreover, the ramifications of business underwritten by the wildlife resources go on into many fields. Outboard motors, boats, canoes, even such items as pack sacks, must be manufactured to meet demands. Or, taking another trail, there will be increased demands for private cottages on lakes and streams. Many ex-service men, handy with tools, could find employment in just that one field. There will be need for new and increased facilities at resorts.

There will be work on structures on plumbing installations, on unit electric plants for these establishments, and a demand for furnishings to equip them. The farther one goes, the more the outlook of goods and services that hunting and fishing underwrite enlarges.

Just where, as a matter of interest, will this sportsmen's business stand in comparison with manufacturers we have regarded as important in postwar business?

Repeatedly, we have heard of the tremendous demand for electric refrigerators and home air-conditioning units as one type of product of which the manufacturer will absorb postwar labor. Let's glance at the record of where these stood just before the war. The Department of Commerce census of manufacturers gives the 1939 figure for total finished-goods value of refrigerators and air-conditioning units as \$278,645,540. In the same year, all electric appliances, fans, irons, toasters, driers, domestic cooking and heating units, all products in this class, totaled \$145,696,194. The two together, much discussed as "buffer" backlogs in postwar economy, totaled \$424,341,734—less than a fourth of a total of the sportsman's annual bill in 1939.

Admittedly some segments of postwar business will be much larger than that based on our stock of wildlife. But equally certain is the fact that few in business have realized the magnitude of annual expenditures resting on fish and game.

Hunting and fishing are actually big business.

—Reprinted from "Nation's Business"

The Dow Chemical Company has announced the development of a bird shot harder than regularly used chilled lead shot but which will dissolve in water. Principal metals of the revolutionary new shot include lead and magnesium. By using the new alloy, company officials believe that thousands of wild ducks which annually perish as a result of lead poisoning resulting from the eating of ordinary lead shot will be saved.

—Maryland Rally Sheet.