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INFORMATION SERVICE, UNITED STATES DEPARTMENT OF THE INTERIOR

# WILDLIFE IN WARTIME

A CLIPSHEET ISSUED OCCASIONALLY BY THE FISH AND WILDLIFE SERVICE

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## HUNTERS AGAIN URGED TO BRING IN SALVAGE

"Salvage-minded" hunters and trappers can aid the war program again this season by saving hides from deer and elk, fats from fur-bearing animals, feathers from ducks and geese, and discharged shotgun shells and rifle cartridges, advises the Fish and Wildlife Service of the United States Department of the Interior.

This year's salvage campaign, according to reports received by the Service, is being backed with renewed vigor by the civic organizations, sportsmen's clubs, and patriotic citizens who responded so wholeheartedly to the drive last year.

No hunter should destroy a deerskin this season because the hides of these animals furnish the necessary leathers to make gloves and mukluks which are urgently needed by soldiers stationed in cold climates.

In view of the special market created by the United States Quartermaster Corps for these hides, an organized effort is being made to secure them throughout the deer hunting areas. This is a cooperative undertaking to obtain additional leather goods for the Army. The Quartermaster Corps, War Production Board, the Federal Departments of Agriculture and Interior, State Game and Conservation Departments, sportsmen's organizations, individual hunters, hide dealers, and leather manufacturers are working together to salvage all the available deer and elk hides.

Hides must be handled through the ordinary commercial channels since the Federal Government purchases gloves and other finished products, but does not buy raw hides or leather, nor can it accept them as donations.

Hunters are warned, however, that this request to salvage deerskins applies only to animals legally taken in compliance with State laws and regulations. In States where trading in deerskins is prohibited by law, it is hoped that some means can be found whereby the State game departments will set up agencies which can collect the hides and dispose of them.

To help meet the huge requirement of glycerine for military, lend-lease and essential civilian needs, surplus fats from game animals are needed in the manufacture of nitro-glycerine, dynamite and other high explosives.

Small game and fur-bearing animals such as raccoon, opossum and woodchuck are rich sources of fat. For example, it is said that the fat salvaged from the carcass of one opossum will make enough glycerine to fire five 37 mm. anti-aircraft shells.

Down and small body feathers of ducks are needed for lining high altitude flying suits for aviators. The down of 10 mallard ducks will supply a flying suit with protective warmth against subzero temperatures and with enough buoyancy to keep its wearer afloat for 24 hours. As last year, the feathers should be body feathers from ducks and geese, less than 2½ inches in length, and dry picked.

Two national conservation agencies have again established feather-collecting depots--the Izaak Walton League, 2801 South Halsted Street, Chicago, Ill., and Ducks Unlimited, 83 Columbia Street, Seattle, Wash. Packages may be mailed collect but they must be plainly marked "Waterfowl Feathers."

Local feather receiving stations are being set up in many States so that sportsmen can deposit feathers from which bulk shipments may be made.

Discharged shotgun shells are still being salvaged for their brass content. The paper should be trimmed off with a paper knife and only the base turned in. Hardware and sporting goods dealers in many hunting communities are accepting the used shells.

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#### SERVICE EXPANDS RABBIT PROGRAM

To meet the growing demand for information on raising domestic rabbits for food and fur, Dr. Ira N. Gabrielson, Director of the Fish and Wildlife Service, United States Department of the Interior, has drafted field personnel of his agency to aid in furthering the Service's program to increase the production of rabbits.

Through the directors of the Service's five regional offices in Boston, Mass., Atlanta, Ga., Minneapolis, Minn., Albuquerque, N. Mex., and Portland, Oreg., members of the field force have been designated as "key" men to disseminate information to the public on rabbit raising and to promote cooperative relationships with universities and agricultural

colleges for the development of rabbit production projects in each State.

According to Dr. Gabrielson, much progress has already been made in contacting State agencies and arranging for development of the production program.

The production of domestic rabbits for food and fur has been a project in the Fish and Wildlife Service since World War I. The present campaign is based primarily on the results of research conducted at the U.S. Rabbit Experiment Station at Fontana, Calif., operated by the Service,

The results of this research have revolutionized the feeding of domestic rabbits not only in this country but in foreign countries as well. This has been brought about by developing a self-feeding system which is most economical, and contrary to previous belief has established the fact that rabbits not only prefer whole to ground and crushed grains, but make more economical gains when consuming them.

Much information based on research is now available as to feeding, breeding and management of domestic rabbits, hutch construction and operation, and the use of small areas such as backyards or other small enclosures for rabbit production.

In the past year the Fish and Wildlife Service has mailed out more than 200,000 copies of rabbit leaflets in response to inquiries received from every State in the Union and a dozen foreign countries.

Agricultural colleges are being encouraged to publish bulletins on rabbit raising to answer local inquiries. To date such pamphlets have been published in 16 States. These colleges are stressing rabbit raising as 4-H Club projects.

The Boy Scouts of America has recently approved a Scout Merit Badge for proficiency in rabbit raising. George S. Templeton, Director of the U.S. Rabbit Experiment Station, cooperated with the scout organization in the selection of proper requirements for the merit badge.

In post-war rehabilitation plans for ex-soldiers, the Service expects that rabbit raising will play an even more important part than following World War I, particularly as an occupation for disabled veterans.

In its efforts to increase rabbit production this year to offset the meat shortage, the Service has set a production goal of 11,250,000 pounds of meat--an increase of 2,250,000 pounds over the estimated production in 1942.

**'43 TAKE OF SEALSKINS BEING  
PROCESSED NOW FOR '44 SALE**

The 117,164 Alaskan sealskins taken on the Pribilof Islands in Bering Sea during this past season--sufficient to manufacture more than 15,000 fur-seal coats--are now being dressed and dyed preparatory to being sold at public auction, the Fish and Wildlife Service has advised Secretary of the Interior Harold L. Ickes.

The 1943 take of 117,164 skins is the largest ever made under Government controlled sealing. In 1942 only 127 skins had been taken during the first day's sealing operations when military authorities ordered the immediate evacuation of the natives because the Japanese were within bombing range of the Pribilofs on Kiska, only 500 miles away. The natives were removed by transport to Funter Bay, 1,500 miles distant and about 50 miles from Juneau in Southeastern Alaska.

This cargo of fur-seal skins arrived in Seattle from the Pribilofs on October 15 en route to the factory of the Fouke Fur Company in St. Louis, Mo., for processing. The processing operation for each skin takes about 60 days since there are more than 100 distinct manipulations or treatments involved, each of which requires great skill and care. A fur-seal coat contains an average of from 6 to 8 skins.

For many years all sealskins were dyed black, but in recent years shades of brown have been developed. Two shades are now used; safari brown, a deep chocolate tone, and matara brown, which has a bluish background.

The Government has a contract with the Fouke Fur Company for processing the sealskins and selling them at public auction twice a year. The net proceeds of these sales are turned over to the Treasury of the United States. Since the beginning of the fiscal year 1918, upwards of \$8,000,000 has been turned into the Treasury from the sale of sealskins.

At the fall auction of fur-seal skins from the Pribilof Islands, held by the Fouke Fur Company in St. Louis, Mo., on November 1, the gross sale amounted to \$717,147, the Service has reported to Secretary Ickes.

The entire offering of 17,525 dressed and dyed skins were sold at ceiling prices, for the account of the United States Government.

Average prices on finished sealskins were \$35.11 for 3,028 black-dyed; \$43.53 for 8,414 Matara brown, and \$40.21 for 6,083 Safari brown. These prices represented decreases of approximately 6.9 percent, 15.8 percent, and 18.6 percent, respectively, on the different colors, as compared with the spring sale last March.

For all finished skins the average price of \$40.92 showed a decline of 15.6 percent.

The decline is attributed to lower ceiling prices recently established by the Office of Price Administration which went into effect for the first time at this sale.

A record total of 151 firms was represented at the sale, of which 137 were buyers.

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BLUEGILLS AND LARGEMOUTH  
BASS IDEAL FOR FARM PONDS

The two most suitable species of fish for stocking in farm ponds are the bluegill sunfish and the largemouth black bass, according to "Farm Fish Ponds and Their Management," a new leaflet issued by the Fish and Wildlife Service, United States Department of the Interior, on pond management practices.

"The first species," says the leaflet "besides being an excellent pan fish, spawns throughout the summer and produces numerous young upon which the bass feed, and therefore, grow rapidly. Bluegills are efficient utilizers of the natural food supply in the pond and should reach a size suitable for human food within 7 to 12 months after stocking. Experiments indicate that the largemouth black bass is a better fish for maintaining a proper balance in ponds than the smallmouth, which is less carnivorous."

Investigations conducted at the Service's Lectown, West Virginia, experimental station indicate that in fertilized ponds, best results can be obtained by stocking 800 to 1,000 fingerling bluegill sunfish and 100 bass per acre. Both may be introduced at the same time, or the sunfish may be stocked in the fall and the bass early the following spring. At the beginning all fingerling fish planted should be as uniform as possible in size.

In addition to information on the stocking of ponds, the leaflet discusses the location and construction of farm ponds, fertilization of ponds, and the control of vegetation. Fishery Leaflet 27, "Farm Fish Ponds and Their Management," is available for free distribution upon request to the Fish and Wildlife Service, Merchandise Mart, Chicago 54, Ill. This leaflet is supplemental to Fishery Leaflet 12, "Fertilization of Fish Ponds," and Fishery Leaflet 17, "Construction of Farm Ponds."

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**SERVICE RECEIVES GOOD INCOME  
FROM FUR ANIMALS ON REFUGES**

Pelts taken from fur-bearing animals trapped during the 1942-43 season on the national wildlife refuges have sold outstandingly well this year, the Fish and Wildlife Service has advised Secretary of the Interior Harold L. Ickes.

Most of the muskrats, the Service reported, averaged between \$2 and \$2.25 each, with a few selling as high as \$2.75. Mink brought \$10 to \$11 each, while raccoons and foxes sold at slightly lower prices; 727 seal muskrats, taken on the Montezuma Refuge in New York, were sold for \$2,544.50 or \$3.50 apiece.

During the past trapping season, 148,669 fur-bearing animals, of 13 species, were taken on national wildlife refuges.

Muskrats were most abundant, accounting for 138,867 of the total, with 5,058 rabbits and 1,854 raccoons in second and third places, respectively. Other animals trapped were 1,352 mink, 554 skunks, 370 coyotes, 216 weasels, 195 bobcats, and less than a hundred each of beaver, fox, opossum, otter and badger.

The largest take of muskrats was reported from the Sabine National Wildlife Refuge in Louisiana where 63,332 pelts were obtained. The Tule Lake Refuge in California contributed 37,871 muskrat pelts.

The refuge fur-harvesting program is designed to keep under control the animals that prey on wintering or nesting bird populations. Muskrat and beaver, however, are not considered as predators. The rabbits were surplus western jack rabbits taken because their fur was needed for war uses.

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**PUBLISH BULLETIN ON  
DISEASES OF RABBITS**

Because the diseases of domestic rabbits are different from most of those observed in other forms of farm stock, the Fish and Wildlife Service of the United States Department of the Interior, has prepared a bulletin which will enable producers to recognize these diseases and deal with them.

The fact that few forms of stock raising allow for more than a small margin of profit makes it essential to keep preventable losses at the minimum. The factor of disease frequently determines whether the rabbit

producer will make a success or failure of his enterprise. The health of his animals therefore must be given great consideration in his management practices.

In "Diseases of Domestic Rabbits," Edward L. Vail and F. D. McKenny, veterinarians, emphasize that it is "far more economical to prevent or control rabbit diseases by effective sanitary practices than to treat animals that become sick."

Diligent application of the principles of disease prevention and of good animal-husbandry practices, according to the authors, should provide rabbit producers a reasonable profit from their investments.

"Diseases of Domestic Rabbits," is for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents a copy.

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#### LITTLE KNOWN SPECIES OF FISH ADD VARIETY TO WARTIME MEALS

Thumb-nail sketches of the food fishes in New England and in the waters of the Mississippi River and the Great Lakes, with suggestions for the better utilization as food of the lesser known varieties, are presented in two new bulletins recently issued by the Fish and Wildlife Service, United States Department of the Interior.

In "Fishes of the Middle West," the theme of "food from home waters" is featured by the author Rachel L. Carson, Service biologist, who writes "to acquaint the people of the Middle West with their native food fishes as individual species differing in their food qualities, their adaptability to various methods of preparation, and their seasons of availability.

"The waters of the Mississippi River and the Great Lakes are a potential source of several hundred million pounds of food in the form of tasty lake and river fishes. This rich resource of the inland waters is important to a nation at war. Because of the growing meat shortage, people will eat more fish than in pre-war years."

Many excellent food fishes are included in the scores which are native to the Mississippi and the Great Lakes. Some of these, however, as the author points out, are little known even in the States that produce them in greatest quantity. These fishes, if known and properly used, will add variety to wartime meals and health-giving proteins, minerals, and vitamins to the diet.

Under the heading of "General guides for selecting and preparing fish," information is given on how to buy, when to buy, common market forms, canned fish, salt or smoked fish, fat content of fish, and sauces and garnishes.

In the second publication, "Fish and Shellfish of New England," Miss Carson states, "Millions of Americans are developing new wartime food habits, trying food they once neglected, turning to alternates for long familiar products. For every one of the ten fish or shellfish that make up more than four-fifths of New England's catch there are seven species little known or utilized, many of which could provide tasty and nutritious foods.

"Turning to these under-utilized species will conserve food resources by lifting the burden of over-exploitation from such fishes as cod and haddock, and will augment dwindling supplies of protein foods. Exploring the seafood markets for unfamiliar species rewards the housewife and her family with delightful taste surprises, for scarcely any other class of food offers so great a variety, so rich an opportunity for mealtime adventures."

While both publications are of particular value to home economists and home demonstration agents, their field of educational interest is unlimited. The two bulletins can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 15 cents a copy.

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#### RECORDS OF FISH NOISES GIVE NAZI PROPAGANDISTS HEADACHE

Officials of the Office of War Information, the Navy, and the Department of the Interior are chuckling over a press release on fish noises which unexpectedly turned into anti-Nazi propaganda.

Recently the Navy and the Fish and Wildlife Service recorded noises made by a number of common Atlantic fish—among them the drum, croaker, and toad fish. The records are now being used in training the men who man under-sea listening devices so that they will be able to tell the difference between the noises made by submarines and the natural sounds of the sea. A story about the joint venture was released by OWI and was widely printed throughout the United States. It was also printed in the Swedish Press and was picked up by the Germans. Within a few hours OWI was able to issue the following statement.

"The Nazi agency, D.N.B., in a wireless dispatch for use by the German domestic press and radio today, put out what purported to be merely an interesting little feature item on the subject, "Can fish talk?"

"The D.N.B. dispatch, as recorded by the United States foreign broadcast intelligence service, quoted the Stockholm newspaper Tidningen as reporting from New York that the United States Department of Interior's Fish and Wildlife Division had conducted experiments with "delicate sound instruments" to record the "voices of fish." D.N.B. told the German people that the toad fish is the loudest fish and the Interior scientists had discovered that "fish caused strong underwater vibrations "by grinding their teeth."

"Four hours after sending out the story, however, D.N.B. sent the following message to German editors: "Please do not publish item nine, "Can fish talk?"

"In the interim, it was suggested by the Office of War Information, it probably occurred to Nazi propagandists that they had put over to the German people unintentionally the point that the United States now has more delicate instruments than ever before to detect the sounds of German U-boats."

On hearing that German propaganda officials were afraid that the story might lower German morale, OWI promptly translated the article on fish noises into German and shortwaved it to Europe.

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#### PUBLISH NEW RECIPES FOR CARP AND BURBOT

To popularize the burbot and the carp - two under-utilized species of fish - new leaflets on cooking these species have been issued by the Fish and Wildlife Service, United States Department of the Interior.

Prepared by food technologists working at the Service's fishery technological laboratory in College Park, Md., the leaflets describe in detail the methods for cleaning and dressing the burbot and the carp.

Eleven laboratory-tested recipes are presented in Fishery Leaflet 21, "How to Cook the Burbot", and 6 burbot flake sandwich fillings, in addition to several luncheon and dinner menus.

Fishery Leaflet 19, "Cooking Carp," gives 8 pages of recipes as well as information on corning carp for temporary preservation.

Either or both leaflets may be obtained without charge upon request to the Fish and Wildlife Service, Chicago 54, Ill.

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FORTY WAYS TO COOK  
DOMESTIC RABBIT MEAT

Rabbit is one of the most adaptable of meats and can be prepared by cooks in many ways other than by frying, traditionally the most popular method of preparation, according to the Fish and Wildlife Service of the Department of the Interior.

In a new 17 page leaflet "Recipes For Cooking Domestic Rabbit Meat", 40 recipes are given, including, of course, the old standby of frying. Domestic rabbit meat is much like chicken and is quite different than the meat of wild rabbit.

A favorite of cooks familiar with rabbit is the recipe for Vagabond Stew:

Vagabond Stew

1 mature rabbit	2 cups broth (from rabbit)
3 tablespoons butter	1 cup carrots (Julienne)*
1 teaspoon salt	1 cup tomato sauce
1 cup potatoes (Julienne)*	1/2 cup chopped parsley
1/2 cup celery (Julienne)*	1/4 cup flour
1 onion, sliced	1/4 cup cold water

\*Julienne: Cut in match-size strips

Cover rabbit with salt water and stew until tender, drain, and save broth. When cold, remove meat from bones and chop coarsely. Melt butter in skillet, add potatoes, celery, onion, and carrots. Cover and cook slowly for 15 minutes. Add broth and tomato sauce. Bring to a boil and add meat, parsley, and salt. Blend flour and water until smooth and add slowly to stew, stir until thickened, and let cook slowly for 15 minutes. (Six servings.)

Wildlife Leaflet 240, "Recipes for Cooking Domestic Rabbit Meat", can be obtained without charge upon request to the Fish and Wildlife Service, Merchandise Mart, Chicago 54, Ill.

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## ALASKA

### WILDLIFE OF TERRITORY NEEDS MORE PROTECTION

In its efforts to perpetuate the wildlife of Alaska beyond the present war, the Fish and Wildlife Service faces a difficult task, according to a report made to Secretary of the Interior Harold L. Ickes by Dr. Ira N. Gabrielsen, Director of the Service, upon his return recently from a two-month inspection trip of Service activities in the Territory.

The construction of the Canadian-Alaskan Military Highway and other military highways in Alaska and the increase in population of the Territory make it imperative that additional steps be taken to safeguard the wildlife resources, the Director declared.

The wildlife of Alaska is one of the three major resources from which a substantial revenue is derived by resident trappers and the license fees and fines collected afford a substantial return to the Federal treasury. The game animals are an important source of food for the residents of the Territory, and in normal times serve to attract annually many non-resident hunters who spend considerable sums of money, thus benefiting the Territory financially.

At present, it was pointed out, there are approximately 490 miles of military highways which affect 30,000 square miles of important big-game and fur areas. The population of the Territory is several times greater than two years ago.

The wildlife resources along these highways and in adjacent areas are valuable for food, in supplying a livelihood for trappers, and for recreational purposes. "Steps should be taken immediately to safeguard these resources before the influx of people who will use these highways become the cause of depleting the wildlife in adjacent areas."

Only 14 game wardens with 5 airplanes are available now to patrol the 590,884 square miles that comprise the Territory, according to the report. The present equipment and personnel of the Alaska Game Commission--the Service's operating agency in the Territory--lags far behind the current needs. "It is still geared only for a prewar population of 75,000 local inhabitants."

Wildlife agents are stationed at Ketchikan, Petersburg, Juneau, Dillingham, Anchorage, and Fairbanks. Agents at the two latter points cooperate in airplane patrols of the entire interior of Alaska.

Highways and sections adjacent to populated areas are kept under surveillance by regular automobile and foot patrols. Despite the thoroughness

with which coordinated patrols are carried on, there is urgent need for more agents, additional plane and automobile equipment, and speedier patrol vessels, the report stressed.

"In spite of handicaps, the Service is doing everything it now can do to protect the Territory's wildlife so that when the war is over Alaska will again hold its position as the greatest game field on the continent. It is certain that developments brought about by the war will be used to build a greatly increased permanent population. Then, more than ever, there will be a vital need for the wildlife."

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## ALASKA

### FISH PIRACY DAYS OF ALASKA RECALLED

In a fishery violation case reminiscent of the early days of "fish piracy" in southeastern Alaska as described in Barrett Willoughby's Spawn of the North, two fishermen were fined \$100 each and two trap watchmen for one of the large salmon-packing companies were fined \$300 each in a United States Commissioner's Court at Juneau recently, the Fish and Wildlife Service has advised Secretary of the Interior Harold L. Ickes.

The original charge of conspiracy involving fish piracy was reduced to one of illegal fishing after a hearing in court and the four men, who were taken by surprise when a fisheries patrol vessel belonging to the Service arrived at the trap site during a weekly closed period, pleaded guilty to the charge and paid their fines.

The fish taken in the illegal operation were confiscated and sold for the account of the Government.

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## CALIFORNIA

### RABBITS INJURE RUBBER PLANTS

In order to protect rubber-yielding plants on the Guayule Emergency Rubber Project in California from further depredations by jack rabbits, rabbit control has been instituted on the growing area, according to the Fish and Wildlife Service, United States Department of the Interior.

Harold Haecher, district agent in California for the Service, has reported that jack rabbits clipped as much as 15 percent of the plants, which resulted in a 10 percent reduction in the survival rate for the plants.

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## IDAHO

### MARAUDING COYOTES CAPTURED IN IDAHO

L. Doyle Matthews, junior district agent engaged in predatory animal work for the Fish and Wildlife Service, United States Department of the Interior, recently reported the taking of one adult male coyote, one adult female, and 6 pups in Jefferson County, Idaho.

The adult male coyote was a peg-leg and had been responsible for the killing of 22 lambs during last May and June, 10 of which were pure bred Romneys. The coyotes had crossed the frozen Snake River during the winter from the desert area on the west and after the ice had broken up in the spring, they became marooned in a relatively small brushy area east of the river and the killings occurred there when the sheep were turned out to pasture.

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## MASSACHUSETTS

### TAGGED SCUP BREAKS TWO TAGGING RECORDS

Two records were broken when a fish dealer at Fall River, Massachusetts recently sent to the U. S. Fisheries Station at Woods Hole a tagged scup which had turned up among his purchases. The scup, Fish and Wildlife Service records revealed, was the oldest one of the species on record and also set a new high for the length of time a tagged fish has carried its marker.

When tagged by Government scientists at Woods Hole in June, 1932 the fish was about 7 years old, making its present age 18 years, and the time between tagging and recovery 11 years. The previous record for long retention of a tag was eight years, established by two fish recovered in 1940 from the same tagging experiment.

Out of the group of scup tagged at Woods Hole in 1932, 18 have been recovered during the past 11 years. Of these, two were caught in 1932 immediately following their release; six in 1933, 4 in 1934; one in 1935, two in 1936; two in 1940; and one in 1943.

Besides furnishing interesting information on the age of fishes, tagging experiments serve a more important purpose--that of revealing the often extensive migrations of fishes. By tagging some 5,000 specimens, the Fish and Wildlife Service found that the scup caught along the coast of southern New England in the spring are the same group of fish taken in the winter off the coasts of New Jersey, Virginia, and North Carolina in the important

winter trawl fishery of that area.

The scup, a deep-bodied fish with reddish brown sides and silvery underparts, is one of the common shore fishes of eastern United States, found from Cape Cod to South Carolina. The commercial catch--about 20,000,000 pounds a year--provides a food that is much esteemed.

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## MONTANA

### TRUMPETER SWAN STILL INCREASING IN NUMBER

America's rarest waterfowl--the trumpeter swan--once considered on the road to extinction, has trebled its numbers since 1935 when the Red Rock Lakes National Wildlife Refuge was established in Montana for the protection and perpetuation of this swan, Dr. Ira N. Gabrielson, Director of the Fish and Wildlife Service, has reported to Secretary of the Interior Harold L. Ickes.

Trumpeter swans are found nesting in no other region in this country, Dr. Gabrielson amplified.

At least 221 of these huge birds now exist in the United States, an increase of 22 over last year's figure.

Trumpeter swan populations since annual counts have been made are as follows: 73 in 1935; 114 in 1936; 168 in 1937; 148 in 1938; 199 in 1939; 185 in 1940; 211 in 1941; and 199 in 1942.

The trumpeter swan, weighing at least 25 pounds and having a wingspread of 8 feet, has been officially classified as the largest migratory waterfowl in North America.

With the exception of a few birds that have been transplanted to other wildlife refuges, the entire population of trumpeters in the United States during breeding seasons is concentrated in the Red Rock Lakes Refuge, in southwestern Montana, and Yellowstone National Park in Wyoming. Most of the birds that are not breeding apparently remain on lakes in Yellowstone Park in summer, while the majority of the breeding birds use the refuge grounds.

There were less than 70 swans in the residual population when the refuge was established on April 23, 1935, by Executive Order. This year's count revealed 134 adult birds and 34 cygnets, or young swans, on the refuge area and surrounding lakes which are used by the swan. Three adult birds were counted on the National Elk Refuge in Wyoming.

Because counts have not yet been made this year of swans on the lakes of Yellowstone National Park, the conservative figure of 50 birds for this area was assumed to complete the total estimate of 221. Service officials believe, however, that when the actual count is made, the number is likely to be greater since the records for the past 4 years gave an average of 62 birds for the Park. Serious fire conditions have prevented counts in the Park.

Dr. Ward Sharp, manager of the Red Rock Lakes Refuge, who made the census, says, "The swan situation looks most encouraging. They are doing a very good job of nesting and we have a very healthy output of cygnets each year. The count this year shows 4 adults to 1 cygnet which indicates a very good population of adults."

The trumpeter swan faced extinction in the United States in the early part of this century. Early destruction of the species, it was explained, resulted primarily from the heavy trading in the bird's down and breast skin. Later the population was further depleted by the advance of civilization, breeding grounds of the swans being taken over for farms and ranches.

The number of trumpeters had fallen so low by 1907 that many people seriously believed the bird was extinct. Then a small flock was discovered in the Red Rock Lakes and Yellowstone Park region.

In 1935 the national sanctuary was established. Although more than 200 species of birds use this refuge, the Service has developed the area especially for the protection and perpetuation of the trumpeter swan. A dam maintains constant water levels and small grass mounds built in the two main lakes are used by nesting swans. These piles of vegetation resemble muskrat houses on which swans habitually nest.

Today, vegetation on the sanctuary is not cut for hay or grazed by livestock. Service officials assert that this, in part, explains the return of the trumpeter.

Red Rock Lakes Refuge is one of the most outstanding areas administered by the Service for waterfowl conservation. It is an area of great scenic beauty, at an altitude of 7,000 feet--a naturally attractive refuge and a fitting environment for the magnificent trumpeter swan.

In concluding his report, Dr. Gabrielson emphasized, "Survival of this rare, stately species depends on continued watchfulness for many a year to come. Loss of only one bird, say the naturalists, often means the loss of an entire breeding pair as far as increases are concerned, because the trumpeter swan mates for life and seldom takes another companion when its mate is killed."

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## MONTANA

### RODENT CONTROL PAYS DIVIDENDS

Farms in Flathead and Ravalli Counties, Montana, consider money spent for ground squirrel control a sound investment which yields excellent returns, the Fish and Wildlife Service has reported to Secretary of the Interior Harold L. Ickes.

Previous to control work in Flathead County, according to the Service, losses to wheat, oat, barley and truck crops from ground squirrel depredations amounted to about 3 percent annually, or around \$54,000.

Organized rodent control conducted under Service supervision during the past year, which cost only \$6,200, reduced the losses to \$5,400, so that the farmers realized a net saving of \$48,600, or about \$8 for each dollar invested in rodent control.

In Ravalli County, where sugar beet, pea, and truck crops were damaged; the returns from the rodent control investment were even higher than in Flathead County--being \$10 for each dollar invested.

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## NEW MEXICO

### COYOTE CONTROL REDUCES CATTLE LOSS FROM RABIES

Coyote control work conducted in Dona Ana and Otero Counties, New Mexico, during the past July and August, has very markedly reduced rabies infection among coyotes in that area and has stopped livestock losses caused by the disease, advises the Fish and Wildlife Service of the United States Department of the Interior.

Before the inauguration of concentrated coyote control work in the counties, Louis H. Laney, district agent for the Service in New Mexico, reports that 16 cows and 2 registered bulls, bitten by rabid coyotes, succumbed to rabies on one range.

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## TEXAS

### PREDATORS IN TEXAS CAUSE HEAVY DAMAGE

Five coyotes, recently captured in Bastrop County, Texas, by predatory animal hunters of the Fish and Wildlife Service, United States Department of the Interior, were responsible in the last year for the killing of 500 turkeys and 450 mutton sheep having a market value of \$2,700 according to C. R. Landon, district agent in Texas for the Service.

Three hundred Rhode Island Reds and White Leghorn chickens were killed by coyotes on a farm near Robstown during the same period.

A Service hunter took a 32-lb. bobcat on a ranch in Culbertson County which had killed 30 lambs during the two weeks previous to its capture. The bobcat was suckling 5 kittens which were also captured.

Another bobcat was trapped that had killed 50 lambs on a ranch in Presidio County last April.

Mr. Landon reported an unusual series of depredations inflicted by a lone crippled male coyote in Jeff Davis County, which started in November 1942 and continued until the coyote was captured by a Service hunter on June 29, 1943. During this period the coyote killed 28 yearlings and two year-old buck sheep, valued at \$20 each, on the ranch of M. O. Means and Son; 152 yearling ewes, valued at \$10 each, in an adjoining pasture owned by C. A. Means; and almost the complete destruction of a lamb crop from 450 ewes during the 1943 lambing season in April.

Although this coyote was continually chased by dogs and sought by amateur trappers, its depredations continued until at the request of the ranchmen concerned, Service hunter Guy West, working outside his assigned territory, placed 7 traps in the area and caught the animal.

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## WYOMING

### LOSS FROM PREDATORS IS LARGE IN WYOMING

Predators preying on sheep and poultry caused unusually heavy losses in Wyoming during the quarter ended September 30, District Agent Owen W. Morris has advised the Fish and Wildlife Service, United States Department of the Interior.

As examples of the seriousness of the predator problem in the western range states, Morris reports that on July 29 a bear stampeded a band of sheep on a ranch near Cody, causing the loss of 39 sheep which were driven over a steep embankment by the bear.

A rancher near Van Tassell lost 32 ewes and lambs to coyotes in one night.

At Cokeville a rancher lost 11 purebred rams to stock-killing bears during a single week in July. Further livestock losses ceased when Predatory Hunter Ted Hale removed two bears from the locality.

A farmer near Torrington lost 17 turkeys to coyotes during the night of September 14; the following night 30 of his chickens were killed in the same manner. A neighboring farmer lost 60 turkeys in three successive nights during the same month. Further losses in the area were stopped, however, when a Service hunter trapped seven coyotes during the following week.

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