

THE UNITED STATES FISH AND WILDLIFE SERVICE

its responsibilities and functions



Circular 97



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UNITED STATES DEPARTMENT OF THE INTERIOR

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FISH AND WILDLIFE SERVICE

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Hunting and fishing are enjoyed by millions of Americans--one aspect of the great recreational and commercial value of our fish and wildlife resources.

THE UNITED STATES FISH AND WILDLIFE SERVICE

Its Responsibilities and Functions

By Edna N. Sater, Office of Information
Office of the Commissioner

Fish and wildlife are products of the land and waters and rank among the Nation's most important renewable natural resources. Their value is measured not only in terms of their annual monetary worth but also in terms of their intangible worth as a source of outdoor recreation and pleasure available to all Americans.

The problems of wildlife and fishery conservation are as varied and as changing as the resources themselves. Yet basically, the principal problem is always the same--how to keep fish and wildlife populations high enough to satisfy the needs of modern civilization, a civilization that demands more and more benefits from these resources but at almost every step impairs or destroys the environment that fish and wildlife must have to survive.

Americans look to their fish and wildlife resources for many things. Broadly speaking, wild animals--mammals, birds, and fishes of our land and inland waters--are primarily a recreational resource, although large economic values are involved in the pursuit of hunting and sport fishing. The marine fishes, on the other hand, are principally a commercial resource. Each year the fishing industry produces around 5 billion pounds of food and related products estimated to have a retail value of more than a billion dollars. In recent years marine sport fishing has been increasing in popularity.

America's fish and wildlife resources have become a vital factor in the American way of life. In 1955, a nationwide survey showed that 25 million American anglers and hunters spent nearly \$3 billion and 500 million days pursuing their favorite sport. In 1959 the national wildlife refuges recorded nearly 10 million

visitors who came to fish, picnic, swim, watch the birds, photograph the wildlife, and hunt.

Vitally important as these resources are, perpetuating them for future generations poses grave problems for Federal and State wildlife administrators. Fish and wildlife are under tremendous pressure today in the keen battle for land and water that is so characteristic of our expanding population and industrialization. The demands of civilization are reducing their natural habitats at an alarming rate. An exploding population requires new homes, new industrial plants, and new networks of highways, progressively crowding fish and game into smaller and less suitable areas. The basic problem becomes that of trying to cushion the impact men are making on our natural resources by setting aside small areas in which trained wildlife managers through new techniques compensate in part for the great losses in fish and wildlife habitats.

The demands of civilization are inexorable. But this need not mean the complete destruction of our fish and wildlife resources if we give proper consideration to their conservation in the course of development.

Fortunately, there is a growing awareness of the critical situation confronting American wildlife and of its vital importance to our people. Most people realize that although not everyone hunts or fishes, everyone does have a stake of some kind in wildlife, whether it be as a source of food or of recreation to relieve the tensions of life.

Yellowfin tuna, part of the five billion pounds of fish which American commercial fishermen bring in each year.



THE FEDERAL GOVERNMENT'S ROLE IN WILDLIFE CONSERVATION

Protecting, conserving, and restoring our fish and wildlife resources is a public problem. For this reason the status of these resources is very much a concern of the Federal Government and has been since 1871 when the Congress established the U.S. Fish Commission to study the depletion of the fisheries of our seacoasts and lakes.

The Fish and Wildlife Service of the United States Department of the Interior is the agency through which the Federal Government assumes leadership in the management and protection of fish and wildlife. The responsibilities of the Fish and Wildlife Service are so broad that they affect, directly or indirectly, almost every species of fish and wildlife found in this country. Concisely stated, in performing its duties, the Service--

- Formulates, issues, and enforces annual regulations for the hunting of migratory waterfowl.

- Enforces international treaty acts.

- Acquires land for new refuges and fish hatcheries.

- Manages and develops a system of refuges for waterfowl and other species of wildlife, particularly endangered species.

- Operates nearly 100 fish hatcheries to propagate fishes for stocking public waters and farm ponds.

- Controls predatory animals and injurious rodents.

- Enforces Federal conservation laws.

- Administers the fur seal industry of Alaska.

- Carries on biological and technological research on fishes, birds, and mammals to learn their habits and living needs and economic utilization.

- Conducts studies on commercial species of fish to find ways to improve catching methods, preservation, utilization, and marketing.

- Conducts river basin studies to ensure that fish and wildlife are included in water development plans.

- Administers the Federal Aid in Wildlife and Sport Fishery Restoration Acts.

The goal of the Fish and Wildlife Service is to maintain our fish and Wildlife resources at a level that will have the greatest economic, esthetic, and recreational value possible for all of our citizens.

ORIGIN OF THE FISH AND WILDLIFE SERVICE

All of us familiar with history books have read of the abundance of fish, shellfish, birds, small game, and furbearers that early settlers in this country found readily available. Fish and shellfish from the Atlantic Ocean saved some of the early coastal settlements from starvation. Frontiersmen obtained their food from the meat and their clothing from the skins of bear, elk, moose, deer, bison, beavers, raccoons, and other game animals. Before long the commercial fisheries became a cornerstone of New England's economy and fishery products were among the first items exported abroad; fur trapping was the foundation for many of America's early family fortunes.

But little thought was given in those early days to husbanding our natural resources. As long as they had new streams to fish and new fields to hunt, Americans maintained that the supply of fish and game was boundless and that they had the inherent right to hunt and fish when, how, and as much as they desired.

As settlement of the country progressed and the population grew, the American people were forced to revise their concept of an inexhaustible supply of fish and game. Gradually they came to recognize that the mounting numbers of hunters and anglers were a tremendous drain on these natural resources and that the requirements of an ever-increasing human population were steadily reducing the living space of our game and fish. What to do to keep these resources at a high productive level, and how to do it, were debatable subjects even back as far as the 1860's.

The U. S. Fish Commission and the Bureau of Fisheries

Because fish were an important source of food, the fisheries were the first renewable resource to receive public attention in this country. Concerned lest over-fishing destroy this natural resource, the Congress recognized the national aspect in the conservation of fisheries in 1871 by authorizing appointment of a

Commissioner of Fish and Fisheries to study the "decrease of the food fishes of the seacoasts and lakes of the United States, and to suggest remedial measures."

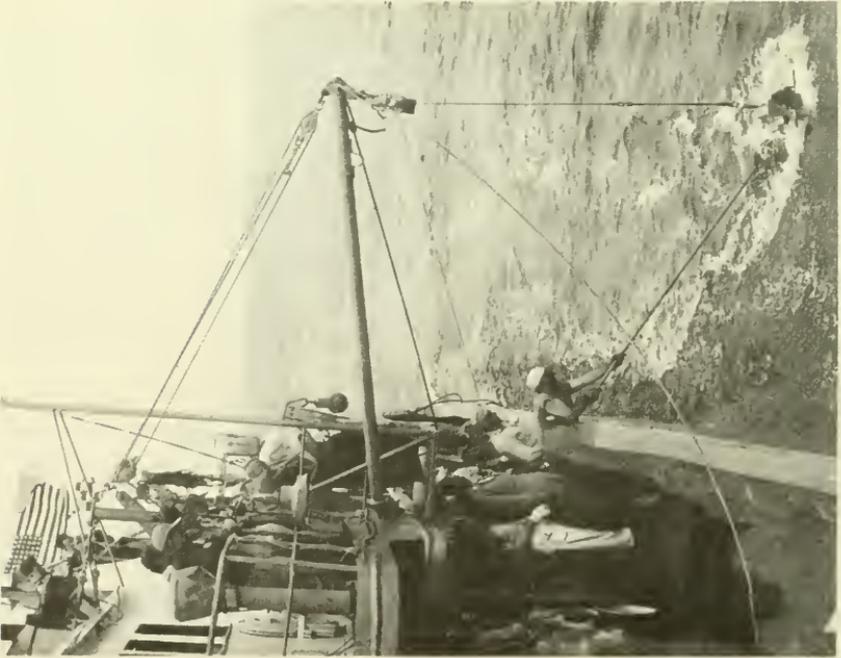
The new Commission, which started out with an initial appropriation of \$5,000, functioned as an independent establishment of the Government from 1871 to 1903. In 1903, it was placed in the newly established Department of Commerce and Labor and was renamed the Bureau of Fisheries. In 1913, the Department of Labor was separated from Commerce and the Bureau of Fisheries remained in the Department of Commerce until 1939.

Originally, the Fish Commission was organized to carry on scientific, statistical, and economic investigations of the fisheries. In 1872, however, on the insistence of the American Fish Cultural Association, the Congress authorized the Commission to establish fish hatcheries for the propagation of food fishes and appropriated \$15,000 for this work.

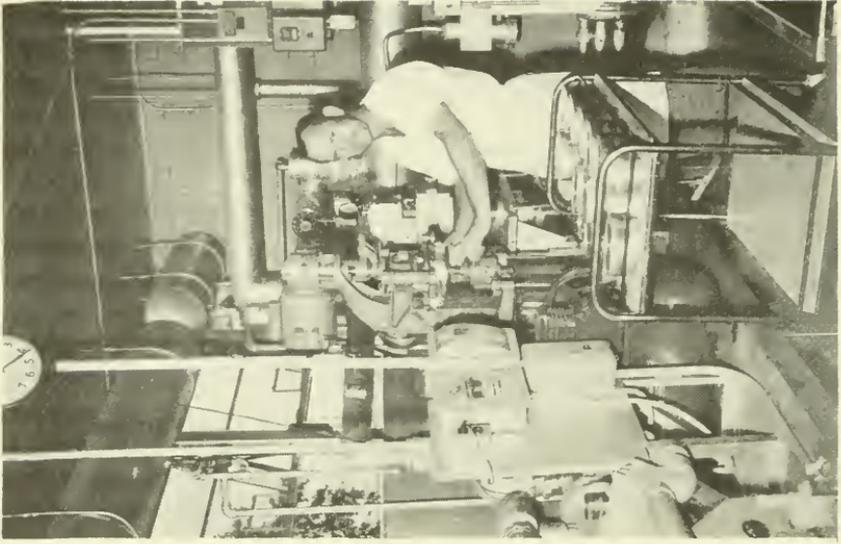
New duties were added through the years. In 1905, the Bureau became responsible for the administration and enforcement of the laws protecting the salmon fisheries of Alaska, and in 1910 it was given control of the fur seals and foxes of the Pribilof Islands in Bering Sea.

In 1906 the Bureau became responsible for enforcing an act to regulate the taking of sponges in waters of the Gulf of Mexico and off the coasts of Florida. In 1920 it was given supervision of the conservation of sea otters, walruses, and other aquatic mammals in Alaska. Enforcement of the act relating to the interstate transportation of black bass was entrusted to the Bureau in 1930; administration of the act authorizing cooperative associations of producers of aquatic products, in 1935; and certain functions connected with the administration of the Whaling Treaty Act, in 1936.

Since its origin in 1871, the primary functions of the Federal fishery agency however, have been investigational and advisory. With the exception of Alaska while a territory, the Bureau has been without power to regulate the fisheries, either sport or commercial. Control of the fisheries within its borders is vested in the State and is one of the powers that was not given to the Federal Government under the Constitution of the United States.



A research job being done by modern means--collecting plankton for use in a study of the productivity of the sea.



In a fishery technology laboratory this biologist is developing better ways of canning fish.

The Bureau of Biological Survey

The wildlife functions of the Fish and Wildlife Service had their genesis in the activities of a private organization, the American Ornithologists' Union founded in 1883. In 1885 the Union memorialized the Congress to establish a unit in the U. S. Department of Agriculture to take over an unexpectedly large amount of data that the Union had received in response to questionnaires circulated by committees studying bird migrations and the relation of the introduced English sparrow to agriculture. The Congress responded with an appropriation of \$5,000 for the promotion of "economic ornithology, or the study of the interrelation of birds and agriculture, an investigation of the food, habits, and migration of birds in relation to both insects and plants."

The new unit began its work on July 1, 1885, in the Department of Agriculture and grew steadily from the beginning. In 1886, with a doubled appropriation and a broadened research scope, it became known as the Division of Economic Ornithology and Mammalogy. In 1896 it was designated the Division of Biological Survey and in 1905 it was given Bureau status.

During its first 20 years, the Survey confined its work almost exclusively to scientific research. In 1900, however, some functions of game law enforcement were added with the passage of the Lacey Act. This act prohibited the importation into the United States of certain species of birds and animals "declared to be injurious to the interests of agriculture or horticulture."

In 1903 President Theodore Roosevelt by an Executive order established the first wildlife refuge of a steadily growing system of refuges. The scope of the Bureau's wildlife conservation work was extended by the passage of the Alaska game laws in 1902, 1908, and 1925, and the Migratory Bird Treaty Act of 1918. The Migratory Bird Conservation Act of 1929 and the Migratory Bird Hunting Stamp Act of 1934 provided for the acquiring of land for the present extensive system of national wildlife refuges. These laws were designed to carry out the provisions of the Migratory Bird Treaty of 1916 with Great Britain for the protection of birds migrating between the United States and Canada. In 1936, the Migratory Bird Treaty Act was amended



The Whooping Crane, picturesque at rest, graceful in flight, the most beloved migratory bird, because of its great fight against extinction.



These three whitetailed deer are typical of the deer family which is responding so well to management practices often financed by Federal Aid.

to extend its provisions to a similar treaty with Mexico.

In 1909, the Bureau began a series of experiments, which have continued over the years, to develop methods for controlling predatory and noxious animals. In 1931, the Congress formally recognized the predatory animal and rodent control program as a Bureau function. Fur-resources investigations were initiated in 1912. Bird banding, which previously had been conducted by the American Bird Banding Association, was taken over by the Biological Survey in 1920.

In 1934 the original version of the Coordination Act was passed. This act, for the first time, recognized the importance of conserving fish and wildlife resources in the planning of the Nation's water development program.

In 1937 the Pittman-Robertson program to provide Federal aid to the States for wildlife restoration was approved, permitting the new activity to start in 1938.

Transfer and Merger

On July 1, 1939, under the authority of the President's Reorganization Plan II, the Bureau of Fisheries, U. S. Department of Commerce, and the Bureau of Biological Survey, U. S. Department of Agriculture, were transferred from their respective Departments to the Department of the Interior. A year later, on June 30, 1940, in accordance with Reorganization Plan III, the two Bureaus were merged to form the Fish and Wildlife Service. Policies and programs for the restoration and protection of fishery and wildlife resources were coordinated and, with only a few exceptions, the lines of work formerly authorized were continued.

The merger of these two relatively small Federal agencies into a single, large organization in 1940 was considered one of the most significant and forward steps taken in conservation history in many years. In recognition of this, the Congress granted increased appropriations and additional authority to the new Fish and Wildlife Service that permitted it to expand its regular activities and to enter new fields of management and research, such as the badly needed exploration of the high seas.

Thus, the demands of the American public for wiser use and better administration of the national fish and wildlife resources and increased economic and recreational pressures have brought expansion each year in the Service's activities. The period since 1940, when the Fish and Wildlife Service was created, has been one of tremendous growth in the field of natural-resource conservation.

Reorganization in 1956

To expand and improve national programs concerned with the conservation of our fishery and wildlife resources and to strengthen these important segments of our national economy, the Fish and Wildlife Act of 1956 was passed by the 84th Congress at its second session. It was signed into law by President Eisenhower on August 8, 1956.

This act established a new national policy for the development, protection, and wise use of the country's fish and wildlife resources, as this brief quotation from the "Declaration of Policy" indicates:

The Congress hereby declares that the fish, shellfish, and wildlife resources of the Nation make a material contribution to our national economy and food supply, as well as a material contribution to the health, recreation, and well-being of our citizens.

Among other provisions, the new law called for a complete reorganization of the fishery and wildlife activities of the United States Department of the Interior. The Fish and Wildlife Service, as it had previously existed, was replaced by a United States Fish and Wildlife Service that was increased in stature by the creation of two new administrative posts--an Assistant Secretary for Fish and Wildlife and a Commissioner of Fish and Wildlife. Two bureaus were established as components of the new Service, the Bureau of Commercial Fisheries and the Bureau of Sport Fisheries and Wildlife, realining the functions of the earlier Service. This reorganization, prescribed by law, became effective on November 6, 1956, and was completed in 1959.

Organization of the Service

The Fish and Wildlife Service is now under the supervision of the Commissioner of Fish and Wildlife. The Commissioner, in turn, is subject to direction from the Assistant Secretary of the Interior for Fish and Wildlife.

The Office of the Commissioner includes his immediate staff and the Offices of Information, International Relations, and Program Review.

The Bureau of Commercial Fisheries, under a Director, is responsible for matters relating primarily to the commercial fisheries, whales, seals, and sea-lions. It consists of the Office of the Director and the four Divisions of Biological Research, Industrial Research, Resource Development, and Administration.

The Bureau's field activities, formerly under the direct supervision of the Central Office in Washington, have been decentralized. Regional headquarters are as follows:

Pacific Region, Seattle, Wash.; Gulf and South Atlantic Region, St. Petersburg Beach, Fla.; North Atlantic Region, Gloucester, Mass.; Great Lakes and Central Region, Ann Arbor, Mich.; and the Alaska Region at Juneau. In southern California an area office has been established at Terminal Island to supervise activities concerned with some of the Nation's largest fisheries in that area. Another area office comprising the former Pacific Oceanic Fishery Investigations is located in Honolulu, Hawaii. In all, the Bureau operates 177 biological laboratories and field or experimental stations.

Organization of the Bureau of Sport Fisheries and Wildlife includes the Office of the Director, and the Divisions of Sport Fisheries, Technical Services, Wildlife, and Administration. It operates 500 wildlife refuges, management areas, fish hatcheries, experiment stations and field stations; is responsible for conservation and management of migratory waterfowl; conducts research on the sport fisheries and on wildlife; carries on specific fish and wildlife management on Federal lands; and administers Federal assistance and coordination programs for fishery and wildlife conservation in the States.

Regional offices of the Bureau, to which considerable authority formerly held in the Washington Office

has now been delegated, are located at Boston, Mass.; Atlanta, Ga.; Minneapolis, Minn.; Albuquerque, N. Mex.; Portland, Oreg.; and Juneau, Alaska. Except for those field installations engaged in fundamental research whose officials report directly to the Central Office in Washington, D. C., officials of the 500 subordinate field installations report to the Regional Directors.



Shellfish helped avert famine in the early colonies and today are still important for food and commerce.

FUNCTIONS OF THE BUREAU OF COMMERCIAL FISHERIES

With the Fish and Wildlife Act of 1956 its basic legislative guide, the Bureau of Commercial Fisheries engages in biological and technological research, carries on studies and market promotion programs, collects and publishes statistical data, conducts economic studies, spearheads the program to develop the Columbia River fisheries, and manages the fur seal resources of the Pribilof Islands in Alaska.

The objective of all Bureau activities is the maintenance of the domestic fishing industry in a healthy and competitive state to provide needed animal protein foods in variety and abundance for human use and fishery products for industrial use.

Biological Research

The living resources in the oceans, rivers, lakes, and estuaries supply the raw material for the fishing industry. Sound management--the development and application of measures to obtain the greatest sustained public benefit from the resource--depends on a knowledge of these resources that is provided, in large part, by biological research.

The fishery biological research carried on today by the Bureau of Commercial Fisheries is a direct outgrowth of the scientific investigations of the old Fish Commission and these studies form the foundation of all activities for the protection and utilization of the commercial fishes. The most important phase of work in the field of biological research is concerned with learning the causes for the great fluctuations in abundance of the fishery resource that so deeply affect the fishing industry. Complicated interrelationships, fishing intensity, rate of growth, age at maturity, time and amount of spawning, feeding habits, extent and direction of migrations, and natural enemies are the subject of intensive studies.

Biological research is conducted in four principal areas: anadromous fisheries, inland fisheries, marine fisheries, and shellfisheries.



Underwater television helps biologists study fish behavior; it also helps in studying the effect of gear upon fish.



A baited fish trap with underwater television in position is going over the rail of a Bureau gear research vessel.

Anadromous fishes spawn in fresh water and spend part of their lives in the sea. These species, which include the Pacific and Atlantic salmons, Atlantic shad, and striped bass of both coasts, are sought by sport fishermen as well as by commercial fishermen.

Because part of their life is spent in streams, we can "do something" about the anadromous fishes. Stream conditions can be improved, pollution abated, fishways built, and adequate numbers of adult fish permitted to escape to spawn. Anadromous fishery research now being conducted by the Bureau is designed to provide the information needed to do these things.

Of all our inland waters, the Great Lakes produce the choicest freshwater fishes. But the fisheries fluctuate widely; fisheries for certain species collapse or sporadically expand to the ultimate disadvantage of all concerned. These fluctuations and their underlying causes are not completely understood although specific causes such as sea lamprey invasions have received considerable attention.

To save the lake trout and other fish from the predatory sea lamprey and restore the livelihood of many fishermen, the Bureau, the States bordering the Great Lakes, and Canada conduct research and test control measures against the lamprey. Chemicals that destroy lamprey larvae without significantly harming fish and other aquatic organisms have been found and are used to control sea lampreys in streams tributary to the Great Lakes.

Research on marine fishery resources encompasses the waters of the Atlantic Ocean from the Grand Banks to Florida, the entire Gulf of Mexico, and the eastern and central Pacific Ocean. The Bureau is carrying on projects dealing with life history, migration, distribution, racial identity, abundance, growth, mortality, relation to environment, predation, and general biology for various species of commercial importance. In addition to the economic species, their food and their enemies, the conditions in their environment which favor or injure their wellbeing--the whole field of oceanography is an important area of research.

At six laboratories along the Atlantic coast from Maine to Florida, Bureau scientists are conducting research on oysters, clams, scallops, and mussels. They are studying ways to propagate these shellfish

artificially so they can breed them later for resistance to disease and parasites; they are studying the causes of mass deaths, such as occur among oysters some years; they are searching for and finding ways to control predators, such as the drill and starfish; and they are developing new and improved culture methods.

The results of the Bureau's biological research are the basis for recommending management or conservation measures to the States and to international commissions for regulations and other actions to ensure conservation compatible with maximum use of the resource.

Industrial Research

Industrial research of the Bureau of Commercial Fisheries ranges from exploration for new fishing grounds to technological studies to improve quality and find better ways to utilize the fishery resource.

Research involving exploratory fishing and gear development is concerned with planning and conducting exploratory fishing programs to locate new fishing grounds and determine their extent and estimate the size and character of the resource. It is also concerned with developing, designing, and testing new and conventional types of fishing gear and fishing craft, and demonstrating the most efficient means and methods of operation.

Three Bureau vessels figured in recent discoveries: the Delaware found commercial quantities of bluefin tuna in the Gulf Stream areas of the western North Atlantic; the John N. Cobb located commercial quantities of shrimp in central Alaska waters; and the Oregon found at least six species of fish, now little used or not used at all, in possible commercial quantities in the Gulf of Mexico.

Through technological research, the Bureau develops better and more economical ways of handling and processing fish and shellfish and new ways of using fishery byproducts and seaweed products.

Technological research on fish oils and fish meals has resulted in some valuable findings. Fatty acids derived from certain fish oils, particularly menhaden, have potential medicinal value. They markedly lower

the cholesterol level of the blood that is associated with the common circulatory disease, atherosclerosis. Fish oils are useful, too, in dressing hides in certain kinds of leathers. Scientific studies have shown conclusively that fish meal added to commercial animal food provides important but still unknown growth factors and is more economical than other supplements.

Essential Services

For many years the Bureau of Commercial Fisheries has provided numerous distinct and unique services to the fishing industry and to the general public. For example, fishery statistics have been collected, analyzed, and published since 1880. It was one of the first functions of the old U. S. Fish Commission. Each year detailed statistical surveys on employment in the fisheries, volume and value of the catch, and the production of manufactured fishery products for all sections of the country are completed and published. With the ever-increasing use of our national fishery resources, the need for such information also increases. Statistics supply Federal and State resource agencies with the information needed to protect and develop the fishing industry without depleting the resource.

The Fishery Market News Service, organized in 1937, operates as "the eyes and ears of the fishing industry." It collects and circulates current information from widely scattered fishery centers of the United States on production, receipts, supply and demand, market prices, cold storage holdings, and imports and exports of fishery products. The information is released in daily reports and monthly and annual summaries from seven field offices located in Boston, Mass., New York City, Hampton, Va., New Orleans, La., San Pedro, Calif., Seattle, Wash., and Chicago, Ill.

Voluntary quality standards have been developed for a number of fish and fishery products through the combined efforts of the commercial fishing industry, the U. S. Department of the Interior (through the Bureau of Commercial Fisheries), and the U. S. Department of Agriculture. The first standard to be

established covered frozen fried fish sticks and became effective in August 1956.

The fishery-product inspection program--transferred from the Department of Agriculture to the Department of the Interior on July 1, 1958--furnishes continuous inspection services to fish-processing plants that meet the specifications. Lot inspection services are provided State, Federal, institutional, and private purchasing agencies. Approximately 60 different products are inspected on the basis of approved product specifications. This program contributes materially toward maintaining the quality of fishery products and increasing their popularity.

The Fish and Wildlife Service is required by law to promote the use of domestically produced fishery products. To meet this responsibility the Bureau of Commercial Fisheries conducts consumer-education and market-development programs. Efforts to interest the consumer in using United States produced fishery products usually coincide with industry-sponsored campaigns, such as the annual "Fish 'n' Seafood Parade." Recorded radio "spot" announcements and television "drop cards" and slides promoting the nutritional advantages of fishery products are prepared under the supervision of Bureau specialists and are given country-wide distribution. Recipe folders are distributed through food stores and supermarkets, and educational material and kitchen-tested fishery recipes are sent to food editors, schools, institutions, factory cafeterias, and restaurants.

Educational films on fishery subjects are distributed through 160 film libraries and Government distribution channels.

To benefit United States fishermen, Bureau economists study the costs of fishing and production. These studies have a special significance for many segments of the fishing industry.

The transportation of fish and fishery products is vital to the fishing industry and the Bureau is conducting studies on the importance of exempting trucks carrying fishery products from interstate regulation. Special studies also are made on the reaction or motivation in consumer buying habits for fishery products to provide the industry with information that it needs to satisfy the public demand.

Developments in the fisheries of other countries continue to affect the fishing industry of this country. These conditions are carefully analyzed by Bureau specialists and reports on trends and developments in foreign fisheries are prepared for the information of the Congress, other Government agencies, the trade, and the general public.

An agreement recently signed by the Department of the Interior with the Department of State will result in better coverage of the foreign fisheries by expanding the foreign reporting program. Under this agreement, each Department assumes certain responsibilities in the selection, assignment, and determination of the duties of fishery attachés to be stationed in American embassies in countries with important fisheries. Attachés are now stationed in Mexico City and Tokyo. This program, when fully implemented, will achieve worldwide coverage of foreign fishery developments of importance to the United States industry.

The Bureau is also responsible for the administration of the Fishery Cooperative Marketing Act of June 25, 1934, and must maintain contacts with fishery cooperatives to obtain detailed information about their activities and to advise them.

Commercial Fisheries of Alaska

The old U. S. Fish Commission, and the succeeding Bureau of Fisheries, had no administrative control of the fisheries in any part of the country because these functions were vested in the States within whose waters the fisheries were located. By order of the Secretary of Commerce on February 15, 1905, for the first time the Bureau of Fisheries was charged with the administration of the salmon fisheries of the Territory of Alaska. Subsequently, by law, this jurisdiction was extended to include all of the fisheries of Alaska. Since then, and until January 1, 1960, when the new State assumed this responsibility, the Fish and Wildlife Service managed the fisheries of Alaska.

The management of the fisheries of Alaska along 10,000 miles of coastline, was a threefold task. It included research on the fisheries, developing appropriate regulations annually for taking the fish, and enforcing these regulations and other fishery laws.

Although nearly six decades of Federal management of Alaska's commercial fisheries ended December 31, 1959, the Federal Government will still conduct numerous activities in Alaska through its Bureau of Commercial Fisheries. The Bureau will continue to carry on a large-scale fishery research program, enforce our obligations under the international conventions for halibut and fur seals, and enforce the Federal law that prohibits the netting of salmon outside the territorial waters of Alaska.

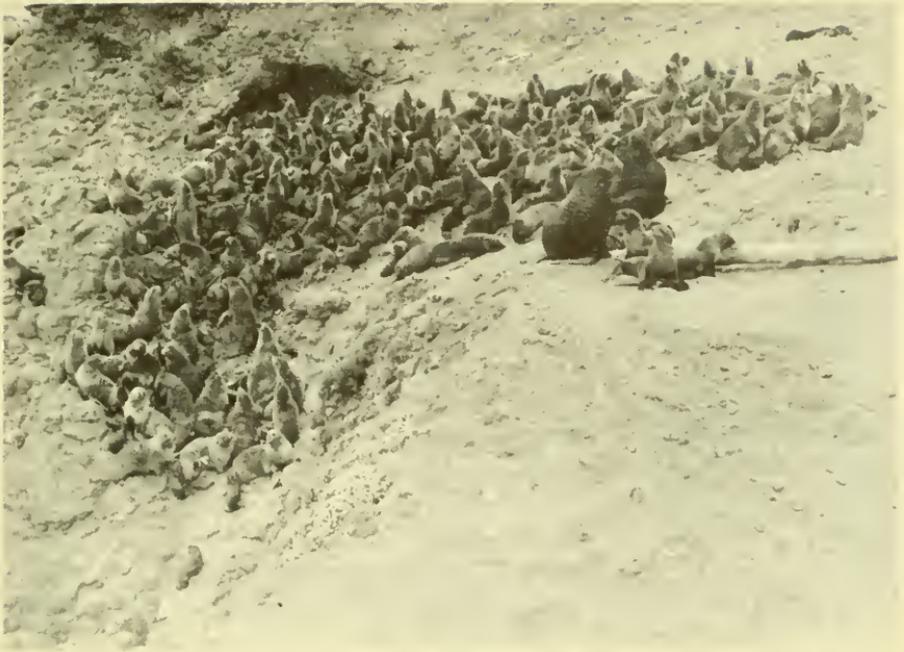
Fur Seal Industry of Alaska

Other important responsibilities of the Bureau in Alaska are administering the fur seal industry and providing for the welfare of some 600 Aleut residents of the Pribilof Islands, who are employed by the Bureau in this industry.

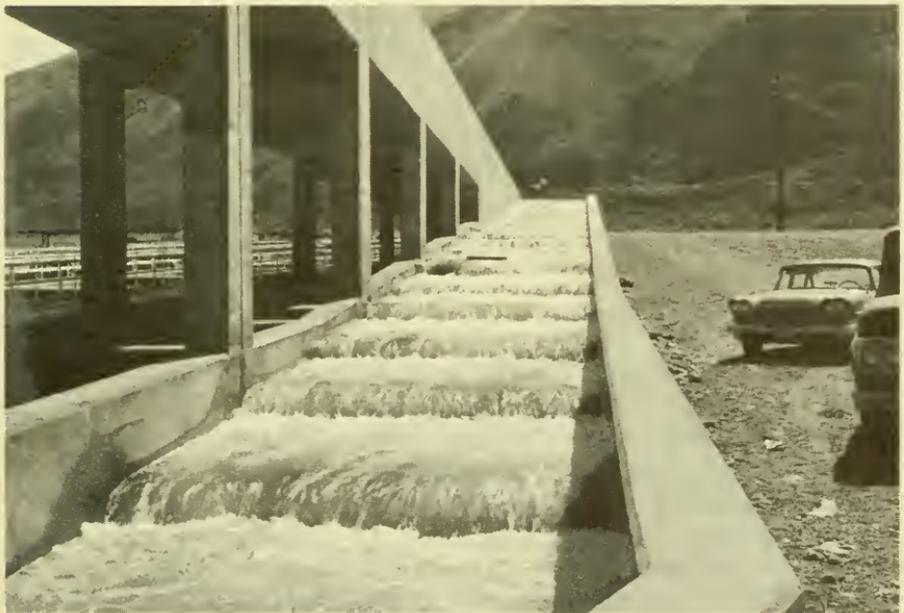
The Alaska fur seal herd contains approximately 80 percent of the known fur seal population of the world. The animals come ashore only on the Pribilof Islands in Bering Sea, congregating there during the period from May to October to breed and bear their young.

The story of the Pribilof Islands fur seal herd is one of the world's classic examples of wildlife "conservation in action." From a decimated population of about 150,000 seals in 1911, the herd has increased to about 1,500,000 animals, protected by treaties with Canada, Japan, and Russia. Since 1941, about 65,000 skins have been taken annually--the sales of the United States' share bringing from \$1 to \$2 million per year in excess of operating costs.

The research program on the Pribilof Islands provides a constant check on the general welfare of the fur seal herd and the effects of management practices on the various population components and total numerical strength of the herd. Also, fur seal migrations and food habits at sea are being studied. Under provisions of the Interim North Pacific Fur Seal Convention of February 9, 1957, which became effective on October 14, 1957, Canada, Japan, and the Soviet Union also participate in this pelagic research.



A group of fur seals on a Pribilof Island rookery.



When dams interfere with spawning runs, fishways are used to help the fish reach their historical spawning grounds.

Saltonstall-Kennedy Program

An important piece of legislation which benefits the commercial fisheries of the United States was enacted as Public Law 466 by the 83d Congress, and has come to be known as the Saltonstall-Kennedy Act. This act, effective since July 1, 1954, provided that an amount equal to 30 percent of the duties collected on imports of fishery products under the customs laws be transferred annually, for 3 years, from the Department of Agriculture to the Department of the Interior. (This provision has since been made permanent.)

The legislation had as its purpose "to promote the free flow of domestically produced fishery products in commerce," and specified that expenditures in any one year be limited to \$3 million. The act authorized the Fish and Wildlife Service to carry on research and thereby lead the way for the practical application of research findings. An important section of the Fish and Wildlife Act of 1956 placed the S-K program on a permanent basis, and removed the \$3 million annual limitation. As a result, the Saltonstall-Kennedy Act has enabled the Bureau of Commercial Fisheries to give better and more far-reaching aid and service to the commercial fisheries than was previously possible.

Before passage of the Saltonstall-Kennedy Act, annual Congressional appropriations were the only source of Bureau funds, and research and service activities of the Bureau fluctuated in an unpredictable fashion. Although funds provided by the Saltonstall-Kennedy Act are a small percentage of the funds available to the Bureau, they serve a very useful purpose. They are spent primarily on short-term or emergency projects which previously could be undertaken only by interrupting or abandoning continuing or long-term projects.

In general, the Bureau expends Saltonstall-Kennedy funds in a three-pronged program:

1. To provide new research and services to the domestic commercial fishing industry not possible earlier because of insufficient funds and manpower;
2. To contract with private research organizations and institutions adequately equipped and staffed to perform studies and surveys needed; and
3. To augment research and services that the fishing industry requests from the Bureau.

Columbia River Fisheries Program

The Columbia River Fisheries Program is a cooperative venture in which the Federal Government and the States of Oregon, Washington, and Idaho are working together to achieve a common goal--that of perpetuating the salmon and steelhead runs despite accelerated development of the waters of the Columbia for power, navigation, flood control, and irrigation.

The Program, which started in 1949, is roughly divided into three parts:

1. Utilization of all possible natural spawning grounds by stream development and construction of fishways to permit salmon to run in side streams not hitherto so used;
2. Construction and operation of hatcheries to augment natural spawning; and
3. Installation of screens and other facilities to prevent the loss of downstream migrants at irrigation outlets or power intakes.

All construction costs are paid from Federal funds and most of the operational costs will be paid from Federal funds for the next few years.

Fishery Loan Fund

By establishing a loan fund to help fishermen, the Fish and Wildlife Act of 1956 met one of the most urgent needs of the commercial fishing industry. The broad objective of the loan fund is to give financial aid to the industry to bring about a general upgrading of both fishing boats and gear for more efficient and profitable fishing operation.

The Act authorized \$10 million to provide the initial capital for a revolving fund from which the loans would be made. The loans are granted for not more than 10 years and are subject to a 5-percent interest rate. In P. L. 85-888, the Congress increased the fund to \$20 million and \$13 million have been appropriated for fiscal year 1960.

Loans are made for financing and refinancing operations, maintenance, replacement, repair, and equipment of fishing gear and vessels, and for research into the basic problems of the fisheries.

International Fishery Agreements

The United States is represented on eight international fishery commissions. They are the International Pacific Salmon Commission (for Fraser River sockeye and pink salmon), the International Pacific Halibut Commission, the Inter-American Tropical Tuna Commission, the International Commission for the Northwest Atlantic Fisheries, the Great Lakes Fishery Commission, the International North Pacific Fisheries Commission, the North Pacific Fur Seal Commission, and the Commission for the Conservation of Shrimp in the Eastern Gulf of Mexico. The United States is represented on these commissions by officials of the Fish and Wildlife Service.

These international commissions are engaged in the study or management of important marine and inland fisheries that are of concern to the fishing industry of the United States. The objective of each commission is to provide a stable source of the raw materials--one of the primary ingredients of a profitable industry.

King crab from cold Alaskan offshore waters is another delicacy for the American table.



FUNCTIONS OF THE BUREAU OF SPORT FISHERIES AND WILDLIFE

The Bureau of Sport Fisheries and Wildlife, by law and by the authority delegated to it, is the Federal agency primarily responsible for ensuring, at the Federal level, the conservation and management of the Nation's wild birds, mammals, and sport fishes, both for their recreational and their economic values. Its principal objectives are to conserve these renewable resources for the continued enjoyment of hunters, anglers, and nature enthusiasts, and to manage them so that their abundance is most compatible with the economic, social, and aesthetic interests of all Americans.

The Bureau has direct responsibility for migratory birds, as the result of treaties with Canada and Mexico, and indirect responsibility for resident fish and other wildlife. The primary responsibility for the management of resident wildlife species rests with the States.

National Fish Hatcheries

In 1872, one year after the establishment of the U. S. Fish Commission, the Congress appropriated \$15,000 to the Commission for the propagation of fish and thus laid the foundation of the national fish-hatchery system.

At present 100 national fish hatcheries are located throughout the country, three of which are in various stages of construction. Many of those still in operation were built before 1900.

The national fish-hatchery program is based on a policy of supplying fish for stocking waters in areas primarily under Federal control and of giving maximum assistance to States that are unable to meet their stocking requirements.

This program also recognizes that stocking and fish management in reservoirs created by Federal water-development projects, streams affected by the construction of dams by Federal agencies, and farm ponds constructed under Federal programs of



Research over three quarters of a century helps make modern fish hatcheries like this one efficient fish production units.



Research, like this stream study to determine the availability of trout food, is necessary to avoid waste in stocking of waters.

soil conservation are, in part, the responsibility of the Federal Government.

As the fishing pressures on fish populations of inland waters continue to increase, many States are unable to cope with the problem of replacing fishery stocks and turn to the Bureau of Sport Fisheries and Wildlife for help. Tremendous fishing and recreational opportunities have developed below a number of major dams as a result of changes in stream ecology, some occurring in semiarid areas such as the Lower Colorado River where the sport of fishing was at a low level before the construction of the dams.

An important function of the national fish-hatchery system is the propagation of species of fish that are threatened with extinction, difficult to rear, or vital to the success of interstate or international fishery programs. Examples of such species are Atlantic salmon, lake trout, grayling, and cutthroat trout. Another contribution is that made to the spectacular Pacific salmon fisheries. The output of national fish hatcheries maintains salmon runs in the Columbia River system, in Puget Sound, and in the Sacramento River system in California--benefiting both sport and commercial fishermen.

The efficiency of the national hatcheries has constantly improved through research on problems of disease and nutrition, training programs for hatchery employees, and an alert and progressive attitude toward the development of new techniques and equipment. Agreements governing the distribution of fish from national hatcheries are in force with every State. Today's modern fish planting programs are based on actual knowledge of the waters to be stocked. Hatcheries, and their output, now are considered a management tool and as such they can be integrated into a productive and effective program for the improvement of sport fishing throughout the country.

Sport Fishery Research

Fishery managers are faced continually with the problem of how to improve sport fishing. Since management is largely based on research, it becomes the problem also of the fishery biologist. The biologist

directs his research toward increasing the number of fish and the quality of the fish raised in the hatchery with the final objective of the fisherman being able to catch more fish in our natural and impounded waters, and to do it regularly.

Of the many biological approaches to develop better sport fishing, four are preeminent. They include disease studies, nutritional research, education of the public against excessive use of pesticides, and study of stream stocking problems.

The disease research program includes not only a study of plagues, which can ruin a year's output of a hatchery in a matter of hours, but also the training of personnel in diagnoses of hatchery diseases and the providing of technical aid to State and private hatcheries when an epidemic starts. Research of this type is being carried on at the Eastern Fish Disease Laboratory, Leetown, W. Va., and the Western Fish Disease Laboratory, Seattle, Wash.

Nutrition studies at Cortland, N. Y., and Willard, Wash., are resulting in more pounds of hatchery fish for a given amount of food fed. These studies also increase our fund of knowledge on the nutritional requirements and biochemistry of wild populations of fish. Cutting down disease losses and producing more pounds of fish per dollar are important items to sportsmen in all parts of the country.

But if the fish so saved and developed are to be lost because they were planted at the wrong time, in the wrong place, or under wrong conditions, then the advances made in disease and nutrition are lost. Hence, there is a continuing study on how to plant fish to assure maximum survival. This research naturally leads to another phase of research--how to meet the problem of the misuse of pesticides. Studies are underway to determine the kinds of pesticides which will do the task the farmer needs done with a minimum loss of fish and wildlife. Still more studies are being carried on to ascertain the proper time and the conditions for applying pesticides.

The Appalachian Sport Fishery Investigations at Leetown, W. Va., and the Rocky Mountain Sport Fishery Investigations in Logan, Utah, are working on experimental management programs on trout waters of National Parks. The California-Nevada Sport Fishery Investigations at Reno, Nev., concen-

trates on comparing the survival of wild and hatchery-reared trouts in controlled environments under varying conditions.

Fishery Management Services

Sport fishing continues to be the most popular form of outdoor recreation in America. The Federal areas, including more than one-fourth of the total land and water areas of the country, hold a key spot in providing such recreation. The excessively heavy use made of our fishing waters has reduced our natural fish populations; consequently, both the Bureau of Sport Fisheries and Wildlife and the States, wishing to maintain the sport of fishing, try to restore fish numbers in many fished-out waters. This is where fishery management enters the picture. Management involves the application of the knowledge gained from fishery research to the fish and to their habitat or environment so as to provide the optimum in fishing and at the same time preserve an adequate brood stock.

In the field of fishery management, the Bureau provides services to improve sport fishing on its own areas and on lands administered by other federal agencies. Technical assistance is given the Department of Defense, Veterans Administration, Bureau of Indian Affairs, National Park Service, and the Department of Agriculture on some National Forests in cooperation with State fish and game departments. When they request it Bureau biologists help these agencies plan and carry out sport fishing projects.

In its fishery management program, the Bureau sends trained and experienced biologists to make stream and lake surveys. They determine the condition of the fish populations such as, are the fish healthy, of the right size range, are there too many small fish, are there too many fish for the water area; whether the waters need additional fish stocked; what species, numbers, and sizes of fish should be stocked; need for removing undesirable fishes; and habitat improvements that should be made. Reports on the findings of the surveys and recommendations are then prepared for the agency and technical assistance is provided in carrying out the recommendations.

Only a few States have maintained inventories on their marine sport-fishery resources. It is evident that a coordinated effort, assisted by a Federal agency, is necessary to obtain the required information on a national basis. In inland waters, an inventory should include the larger publicly owned waters such as reservoirs, lakes, and whenever possible, natural streams that are accessible to the public. Some States already have inventories covering parts of this fishery resource. The Federal Government would assist the States where the information is lacking to establish programs for collecting data on their sport fisheries.

National Wildlife Refuge System

The dual objective in establishing and maintaining national wildlife refuges is to protect migratory birds and indigenous and endangered wildlife and to safeguard adequate segments of habitat needed to perpetuate them. While a great variety of wildlife is found on our national refuges, most of the refuges were established for a particular species or group, as ducks and geese, bison, key deer, trumpeter swan, and whooping crane.

The national wildlife refuge system began more than 50 years ago with the establishment of the Pelican Island Bird Refuge in 1903. This small 3-acre island in the Indian River on Florida's east coast was reserved by Executive order of President Theodore Roosevelt to protect a colony of brown pelicans.

By Executive order, other refuges also were set aside for the protection of colonial nesting birds and for migratory birds that used reclamation reservoirs or drainage sumps. By 1908, 36 areas were reserved. The Federal Government also had acquired several big-game refuges during this period, either through donation of land by conservation organizations or by special acts of Congress. By 1929, there were 87 Federal refuges of all types, including 61 bird reservations.

In 1929, the Migratory Bird Conservation Act was passed. This legislation outlined a definite refuge program and was an added incentive to the

people who were helping in the struggle for restoration of the wildlife resources. This Act authorized the U. S. Biological Survey to purchase large tracts of land for waterfowl preservation.

With the early thirties came the Depression. This could have meant curtailment of the refuge program had it not been for the enactment of the Migratory Bird Hunting Stamp Act in 1934 which gave a boost to the lagging refuge program. This act, generally called the "Duck Stamp Act," required all waterfowl hunters over 16 years of age to purchase a hunting stamp for \$1. These sales provided revenue for the purchase, development, and maintenance of refuges. The refuge program was further aided at that time by special emergency funds which were allocated from drought relief appropriations to purchase land suitable for wildlife restoration within drought-stricken areas.

The approximately 290 wildlife refuges contain about 28-1/2 million acres. Areas primarily for migratory waterfowl include about 2 million acres in Alaska and 3-1/2 million acres in other States. About 4 million acres have been designated for other migratory birds and wildlife in general. There are now 15 big-game refuges with about 14-1/2 million acres, protecting bison, pronghorn antelope, elk, bighorn sheep, Texas longhorn cattle, Arctic caribou, Dall sheep, moose, and bear. Five game ranges covering 4-1/2 million acres are administered jointly by the Bureau of Sport Fisheries and Wildlife and the Bureau of Land Management.

Many national wildlife refuges are located along the four flight lanes used by waterfowl and other birds migrating between nesting grounds in the north and wintering grounds in the south. On refuges located within the breeding ranges of ducks and geese,

wildlife managers place especial emphasis on developing good nesting and feeding habitat by manipulating the water levels in impounded areas. On refuges managed primarily for great numbers of transient waterfowl and shorebirds, producing sufficient food and maintaining a suitable marsh habitat to provide attractive resting areas for the birds on their long migrations are important. On wintering grounds, management practices center about protection so that the birds can return to their northern breeding grounds in the following spring.

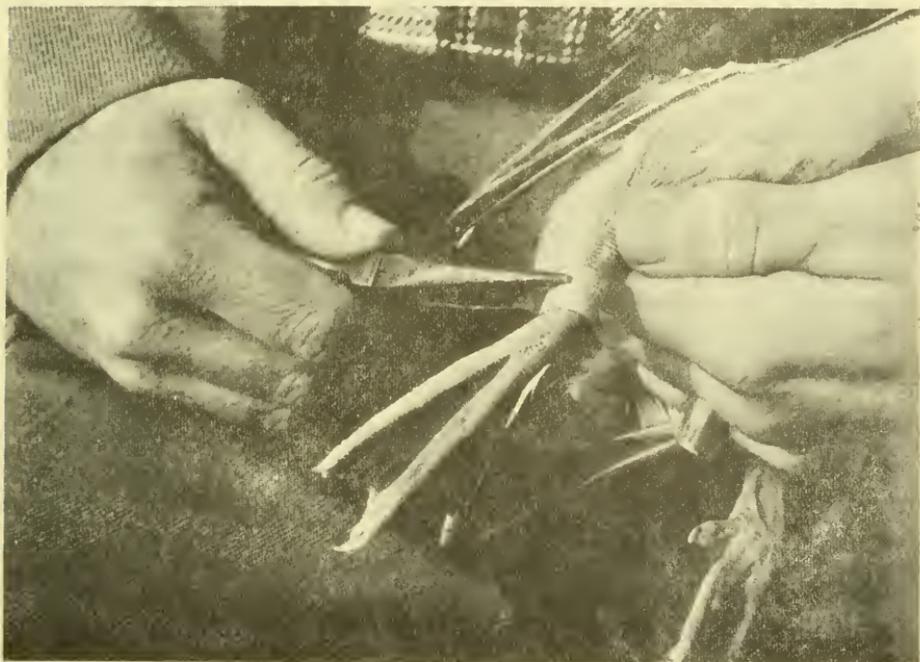
Other refuges are designed to protect endangered species and the special habitat they require for survival. A number of refuges protect animals that could not survive without this assistance. At present, additional lands are needed to safeguard such species as the whooping crane, California condor, Everglade kite, prairie chicken, and many other rare or vanishing species.

In the broadest sense, the wildlife refuges make their greatest contribution to Americans in the recreational opportunities they afford. Because of them, millions of hunters are assured the continuance of their favorite sport of wildfowling. They offer more tangible contributions to America's recreation by providing opportunities for boating, fishing, swimming, and observing and photographing wildlife in its natural habitat. In 1959 nearly 10 million people visited the national wildlife refuges. This recreational use has increased steadily since 1951 when $3\frac{1}{2}$ million persons were on the various areas.

As you travel over the country, watch for the flying goose signs--they identify the national wildlife refuges. Depending on the time of year, a visit to a wildlife refuge can be a rewarding experience. In fall, the southern migration along the Pacific Flyway is spectacular. Peaks of several million ducks and geese may be seen on the refuges in the Klamath Basin of Oregon and northern California and on the Sacramento Refuge farther south. In late August and September migrant birds concentrate in great numbers on the Bear River Refuge in Utah. The spring migrations of blue and snow geese in the Central and Mississippi Flyways arouse great public interest. Along the Atlantic coast, refuges often have large



A scene on a lake in the Pacific Flyway, which can be duplicated in many parts of the Nation, thanks to migratory bird management policies.



This little band, if recovered and returned to the Fish and Wildlife Service, can give biologists important information.

flocks of whistling swans and some are guardians of the Atlantic snow goose, protecting the total world population of this species.

More and more people are visiting national wildlife refuges to see the flocks of herons and shorebirds and to watch the buffalo roundups on the big-game refuges and the winter feeding of the elk herds that move down from the mountains on to the National Elk Refuge in Jackson Hole, Wyoming. Thousands of visitors travel to the Aransas Refuge along the coast of Texas to see the rare whooping cranes on their wintering grounds and to the Red Rock Lakes Refuge, 7,000 feet above sea level in the western mountains, for their first glimpse in many cases of the great trumpeter swan.

Wildlife Research

The study of the food habits of birds in relation to farm crops and to the insects that destroy those crops was the first wildlife research undertaken by the Section of Ornithology (a predecessor of the Bureau of Sport Fisheries and Wildlife) after its establishment in 1885 in the U. S. Department of Agriculture.

It soon began biological surveys of the country to map the natural life zones and crop zones, and from this work acquired its name, the Biological Survey. Knowledge of American wildlife was then so meager that it was necessary to collect specimens, determine animal ranges, and assemble data on life histories, habits, economic status, and abundance of the various wildlife species in order to answer fundamental questions that arose concerning them.

The wildlife research program today of the Bureau of Sport Fisheries and Wildlife is double-pronged: on the one hand it studies measures to increase American wildlife and on the other to control nuisance and depredating wildlife that can cause great financial losses in agricultural areas and create unsightly and unsanitary conditions in urban areas. For in addition to developing techniques that protect and improve living conditions for valuable wildlife species, the Bureau develops safe methods for controlling pocket gophers, mice, and other animals that are

injurious to forests and range plants. The development of chemical formulations for treating seeds has made possible the reseeded of thousands of acres of cut-over forest lands in the Northwest which otherwise would have been difficult to revegetate because of seed-eating rodents.

Through its studies of birds, mammals, and other wild animals and their habitats, the Bureau seeks out facts and develops techniques for improved management of wildlife. (When wildlife workers speak of "managing" wildlife they are referring to the protection given a species and the preservation and improvement of the environment in which it lives.) One of its particular functions is investigating wildlife problems in the National Forests, the National Parks, and other public lands used so extensively by persons seeking recreation.

The principal wildlife research stations are the Patuxent Wildlife Research Center near Laurel, Maryland, and the Wildlife Research Center, at Denver, Colorado. Numerous investigations are being undertaken by cooperative wildlife research units located in sixteen States, including Alaska. These units make important contributions in the training of professional wildlife managers and in conservation-education work which leads to greater appreciation and better use of our wildlife and other natural resources. In addition, the Bureau working with various State fish and game departments studies the suitability of introducing certain game birds and animals into areas of this country that are deficient in game.

Wildlife research is not limited to migratory species of birds or animals. Federal laws place definite responsibility on the Bureau to conduct investigations on resident big and small game animals, nongame birds, rodents, and other animals, including the sea otter, walrus, and polar bear.

Law Enforcement and Game Management

One of the primary functions of the Bureau is enforcement of the various Federal statutes and regulations enacted for the protection and conservation of wild birds, mammals, and fish.

The most important Federal conservation laws enforced by the present staff of 126 United States game management agents, in cooperation with State enforcement officers, are the Migratory Bird Treaty Act, as amended, which gives effect to the treaties with Great Britain (on behalf of Canada) and Mexico for the protection of birds migrating between Canada, the United States, and Mexico; the Migratory Bird Hunting Stamp Act; and the Lacey Act, regulating interstate and foreign shipments of game.

In addition, U. S. game management agents check hunters' bags, make midwinter inventories of migratory game birds, and nesting-ground surveys of waterfowl, study nesting conditions on the northern breeding grounds, band birds, assist in wildlife extension programs, investigate damage to agricultural crops by injurious waterfowl, demonstrate depredation-control techniques, and otherwise assist and advise farmers and agriculturists on problems arising from depredations to agricultural crops. The Federal agents maintain a close working relation with the States, for the Bureau emphasizes a Federal-State game enforcement program that involves enforcement of both Federal and State hunting regulations.

An important management responsibility of the Bureau for migratory game birds under the treaties with Canada and Mexico is that of recommending to the Secretary of the Interior the necessary amendments to the annual regulations for the hunting of migratory waterfowl. These amendments include length of the season, bag and possession limits, and shooting hours.

The basic data used to guide the Bureau's technical staff in making decisions on changes in the hunting regulations come from migratory gamebird surveys on the breeding grounds, midwinter inventories and banding projects. These surveys are conducted by Bureau biologists and game management agents, technicians of State game departments, wildlife experts of the Canadian Wildlife Service, the Provincial Game Departments, and field personnel in Canada of Ducks Unlimited and the Wildlife Management Institute.

For management purposes, the waterfowl populations within the United States are divided into four

units, or flyways--the Atlantic, Mississippi, Central, and Pacific Flyways. This concept of waterfowl management has been accepted since 1948.

A flyway is actually a vast biotic region that has extensive breeding grounds and wintering areas connected by a complicated system of migration routes. These migration routes are not necessarily uniform and may vary between species. The breeding grounds that supply one flyway often overlap those supplying another flyway; this is especially true in Canada. Also, a considerable mixing of birds from two or more flyways occurs on the wintering grounds, particularly along the Gulf of Mexico and the east coast of Mexico. An important point to remember is that during the fall migration period the flyway populations, for the most part, are distinct by the time the birds produced in Canada reach the United States.

Breeding population and production surveys are conducted annually on the waterfowl breeding grounds to estimate changes in the relative size of the fall flight from each of the breeding areas. Two surveys are required. The first is made during May and June to measure the distribution and relative size of the various breeding populations. The second survey is carried out during July for the purpose of forecasting the relative number of young of each species produced.

Extensive banding programs in Canada and the United States clarify migration routes of these game birds. Recoveries of bands from waterfowl taken during the hunting season bring out facts not only on the relative importance of specific waterfowl breeding areas to the four flyways but also on hunting pressures, mortality rates, and bird distributions. This information guides waterfowl administrators in their attempts to maintain a proper balance between the waterfowl populations available to the hunters and the estimated number of birds taken by the hunters.

Each January the Bureau conducts an aerial survey throughout the United States, Mexico, and the West Indies to determine the status of the continental waterfowl populations after the hunting season. More than 1,000 wildlife technicians from the Canadian Wildlife Service, Provincial game departments, and

State game departments cooperate with Bureau personnel in this annual operation.

Data from all of these activities are analyzed and evaluated for presentation to members of the Waterfowl Advisory Committee who meet with the Director of the Bureau and his technical staff in Washington early in August.

The Waterfowl Advisory Committee is composed of representatives from each of the four Waterfowl Councils¹ and from various wildlife organizations. The suggestions of the Committee and the recommendations of the Bureau for changes in the hunting rules are considered in executive sessions. Following these meetings, the Bureau makes its recommendations to the Secretary of the Interior relative to the bag and possession limits, opening and closing dates, and the number of days hunting is to be permitted. After careful review of the proposed regulations, the Secretary issues the formal regulations. They are the framework for the next year's hunting season, and the States select their individual seasons within that framework.

Federal Aid to Fish and Wildlife Restoration

The Federal Government also promotes the conservation of the Nation's fish and wildlife by giving Federal funds to the States to assist in paying for their fishery and wildlife restoration projects.

Recognizing that much of the land of potential wildlife value is under State or private ownership, the Congress in 1937 enacted the Federal Aid to Wildlife Restoration Act. Commonly called the Pittman-Robertson Act after its Congressional sponsors, it provides for an 11-percent excise tax to be levied against sporting arms and ammunition, with the proceeds allocated among the various States according to a specified formula. These funds are used by the States to increase their wildlife populations by setting up management areas, improving wildlife habitat, and carrying on research for new and improved management techniques.

¹See Waterfowl Councils - A Conservation Partnership, 1959, U. S. Fish and Wildlife Service, Circular 78, 10 p.

Under this act a cooperating State selects the work to be done and submits proposals to the Bureau of Sport Fisheries and Wildlife for approval. All project staffs are employed by the States. All equipment and lands bought with the help of these funds become the property of the State. Initial expenditures are from State funds and periodic and final reimbursement claims are paid by the Federal Government on the basis of not to exceed 75 percent of the costs. The remaining 25 percent is paid by the State.

In 1950, the Congress passed the Dingell-Johnson Act to give similar assistance to the States for developing and restoring their sport fisheries.

The Federal Aid programs have not only increased the fishing and hunting opportunities in the United States, but have broadened the base of scientific research and contributed greatly to the number and quality of scientific and technical personnel who are now engaged in fish and wildlife work in all sections of the country. The impact of the two programs on the overall approach to fish and game restoration, and their contributions toward making these resources available to greater sections of the general public cannot be overemphasized.

Management of Predatory Animals and Rodents

The prevention of an overabundance of predatory animals and injurious rodents is necessary to the best interests of agriculture, forestry, beneficial wildlife, and the public health. The objective of the predatory and rodent control work of the Bureau is to control the depredations and interference of the species involved, not to exterminate it. The rodent control programs are conducted by the Bureau on public, State, and private lands under cooperative agreements with Federal or State agencies or with local organizations. The work usually is under the guidance of representative State predator and rodent-control advisory groups.

Federal control activities date back to 1915 when aid was requested by several Western States faced with large livestock losses and serious human hazards from a widespread epidemic of rabies among coyotes in the Great Basin. Under present-day intensive

land use, the work is still concerned primarily with coyote, bobcat, wolf, and mountain lion predation in the Western States, wolf predation in Alaska, epidemics of rabies among wildlife, and damage by field rodents and common rats and mice throughout the country.

The control methods used are based on careful research and are designed to cause as little harm as possible to other animals or to humans. A large part of the program is carried out on public lands in the Western States where the Federal Government is responsible for land management practices on some 400 million acres along with more than 300 million acres of adjoining lands under private ownership. In other parts of the country, the program is directed toward development and field testing of new or improved control methods, demonstrations, and distribution of information on depredations control through extension facilities of Federal, State, and local agencies.

Livestock raisers in the West report that losses by predators today, using modern methods of control, generally remain below 2 percent a year. Tree farmers throughout the Pacific Northwest are saving up to \$18 an acre in reforestation costs by using direct seeding which was recently made possible by Bureau control of seed-eating rodents, using chemically treated seeds--a method developed by the Bureau's wildlife research laboratories. Southern growers of truck crops, especially watermelon growers, have saved money and crops by using similar methods.

River Basin Studies

The period following World War II was a time of considerable development on the streams and rivers of the United States. Harnessing our rivers for domestic water supply, power, irrigation, flood control, navigation, and related purposes--activities that had been suspended during the war--was pushed with renewed vigor. Scarcely a major stream in the country escaped the attention of various planning agencies.

The effects of all these water developments on wildlife and fish became of major concern to conservationists since there was public demand that fish and wildlife values be preserved in industrial and agricultural developments whenever and wherever possible. The responsibility of the Federal Government for preserving these resources was given the Fish and Wildlife Service by the amended Coordination Act of August 14, 1946.

Under this law the Service was charged with investigating all Federal water-use projects and those of public and private agencies under Federal permit to determine the effects of the developments on fish and wildlife resources and to recommend measures for the prevention of losses and damages to these resources. To handle this work, a Branch of River Basin Studies was established in April 1945 and staffed with wildlife and fishery biologists, technicians, and administrators.

It was recognized, after 10 years of operation, that the Coordination Act needed strengthening to include the conservation of fish and wildlife resources among the primary purposes of water-development projects, and to clearly authorize the enhancement of these resources in connection with such projects. Following a proposal made in September 1956 at the annual meeting of the International Association of Game, Fish, and Conservation Commissioners, the Department of the Interior drafted amendments to the act.

The amended Coordination Act, signed by the President on August 12, 1958, is a milestone in conservation legislation. It specifies that wildlife and fishery conservation receive equal consideration and be coordinated with other features of water-resource development programs and that conservation measures be incorporated in the plans for Federal water-development projects including those that are not more than 60 percent completed.

The Bureau is also responsible for promoting the conservation of wetlands, especially those vital to waterfowl production. Its biologists investigate the programs of Federal agencies and of other agencies concerned with water and related land use and report their findings to the Central Office in Washington for further study. When a program is found to affect the

wetlands adversely, the Bureau makes every effort to obtain the appropriate modifications needed to preserve the wetlands and increase their value to waterfowl.

Alaska's Sport Fish and Game

As long as Alaska remained a Territory, the U. S. Department of the Interior, through the Bureau of Sport Fisheries and Wildlife, managed its sport-fishery and wildlife resources. Before this responsibility could be turned over to the State of Alaska, provisions of the Statehood Act had to be met. The act required certain actions by the Alaska Legislature, followed by certification by the Secretary of the Interior, that the resources will be protected in the national interest. All of these actions have been accomplished and, since January 1, 1960, Alaska has managed its own fish and wildlife like any other State. To accomplish that, a Department of fish and game was created for Alaska.

While the responsibilities of the Bureau of Sport Fisheries and Wildlife in Alaska have been reduced, they still are substantial. The nearly 19 million acres in national wildlife refuges still require management attention. Also, cooperation is given the State in the problem of controlling predators of livestock and wildlife. The Bureau will continue to assist the State in enforcing Federal fish and wildlife laws, including the protection of migratory birds, especially waterfowl. The Bureau will also continue its Federal Aid programs for the restoration of sport fishes and of wildlife.

A LOOK TO THE FUTURE

As we look into the future, there is little prospect that the demands on our wildlife and fishery resources for food, industrial products, and recreational use can lessen. Instead, these demands are more likely to increase. There is also every prospect that our civilization which has been so destructive of these resources in the past will be no less destructive in the future unless a public conservation conscience can be developed.

The challenges of the future are many. To meet some of them, the U. S. Fish and Wildlife Service is increasing its efforts to plumb the ocean depths as its part of an accelerated national oceanographic program to acquire vital information for our Nation's defense and economy. It is seeking solutions to the problems arising from the increased demand for more recreational facilities on the national wildlife refuges. It is studying how to produce more fish to meet the needs of fresh-water anglers. It is developing new legislation leading to comprehensive continuing studies of the migratory marine fishes of interest to sport fishermen of the United States. It is greatly concerned with the loss of valuable estuarine areas to industrial and housing developments and with the general loss of waterfowl habitat. It is seeking ways to produce more game birds on continually dwindling areas and to develop means for a selective harvesting of those species that are abundant.

Vastly expanded programs of fishery and wildlife research and management are necessary in the interest of national welfare.

The population of our Nation is expanding explosively--it is expected to reach 200 millions by 1970--and at least 300 millions by 2000 A. D. In terms of national recreation, more people means more demands on our fish and wildlife resources. The national fish and wildlife program of the future must continue to be a full partnership effort with constant and close cooperation between the U. S. Fish and Wildlife Service, the State fish and game departments, and private conservation organizations. Federal activities must effectively supplement but not duplicate State

and local conservation efforts. In that way only will the various conservation agencies be able to achieve their joint objectives.

To sum it up, if we are to maintain our national fish and wildlife resources satisfactorily, we must not only continue but we must accelerate the vigilance and aggressiveness of our conservation efforts. The survival of fish and wildlife can never be taken for granted.

GPO 904458

The Canada goose, a stately bird, which is holding up well under wise conservation efforts.



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