



# DEPARTMENT OF THE INTERIOR

## INFORMATION SERVICE

BUREAU OF BIOLOGICAL SURVEY

For Release SUNDAY, JUNE 30, 1940.

55 YEARS OF WILDLIFE HISTORY ARE RECALLED  
AS BIOLOGICAL SURVEY, FISHERIES CONSOLIDATE

Consolidation today of the Bureau of Biological Survey and the Bureau of Fisheries to form the new Fish and Wildlife Service under Secretary of the Interior Harold L. Ickes, will recall the rise of the Biological Survey from a small section of economic ornithology established in the Department of Agriculture 55 years ago to its present status as a Bureau with a world-wide reputation of leadership in wildlife conservation.

Since the handful of ornithologists under C. Hart Merriam, first Bureau Chief, organized their work in 1885 to study migration and distribution and the economic relations of birds to agriculture, the functions of the Biological Survey have expanded to include all phases of wildlife conservation and all forms of vertebrate wildlife except fishes and marine mammals.

Under a succession of six chiefs, the Biological Survey probably has done more outstanding work in the field of wildlife conservation than any other single organization in the world. Its list of past and present personnel reads like a who's who in biological science.

## Wildlife Paradise Depleted

Historians agree that when the early colonists settled in the new world they literally found themselves in a wildlife paradise. Game of all types abounded. Buffaloes were numbered in the millions; antelopes were said to be even more numerous; wild turkeys were plentiful in woods and fields; passenger pigeons were so numerous they darkened the skies. There were few species that could not boast of tremendous populations. Fur bearing animals alone were responsible for many great American fortunes.

But the inroads of civilization, wanton slaughter of birds and mammals by the hundreds and thousands, disease, lack of understanding management, greed for large bags and long seasons, all these combined to reduce the nation's wildlife to a pitifully small number of its once flourishing population. Scarcely more than scattered remnants of what had once been the richest resource of its kind on earth were to be found anywhere in continental United States by 1930.

Several valuable species had vanished entirely by 1930--the heath hen, the passenger pigeon, the Carolina parakeet, to mention a few. The migratory waterfowl which as recently as 1890 existed in incredible abundance were, by 1930, so diminished as to be in great danger of extermination. Big-game animals, all forms of small game, furred and feathered, were in no better case. It is more apparent now than it was in the early days that the wildlife resources of America could not long have escaped irreparable damage or destruction if the conditions were not corrected.

### Wildlife in Good Condition, Prospects Hopeful

During its 55 years of service in the preservation of the nation's wildlife the Biological Survey has made important studies on all forms of wild animals and recommended practices to insure their protection. Conditions have improved considerably since the turn of the century. In the last 5 years, the results have become apparent. Many forms are completely out of danger; others are well on their way to safety; still others require continued study and protection to insure their preservation.

In all, however, there is a more hopeful outlook for the wildlife resources of the continent than ever before in the present century.

A review of the accomplishments of the Biological Survey's workers would fill volumes. Food habits investigators, migration and distribution experts, refuge managers, taxonomists, predatory-animal and rodent control workers, law-enforcement agents, all have contributed materially to the detailed knowledge on the life histories, habits, distribution, and status of the various forms of wildlife, knowledge acquired in the effort to preserve a great natural resource.

### Biologists Find and Describe Many Mammals

Survey scientists collected more than 136,600 specimens of mammals in North America during their years of research. The largest collection of its kind in the world, it includes the smallest mammal on the continent, a three-inch shrew, and a Kodiak bear, the largest existing meat eater. The collection is indispensable in connection with the administration of wildlife along the many lines embraced in the general activities of the Survey.

While some workers collected mammals in Death Valley, the mountains of Mexico, or the frozen lands of the Arctic, other Survey workers spent years in other fields and in the laboratory observing wild animals as they fed and examining the food contents of the stomachs of various mammals and birds. Information obtained by food habits investigators is invaluable to Federal, State, and private organizations interested in planting foods to attract or maintain various species of animals.

On the basis of 40 years research, a recent Biological Survey publication describes the "Food of Game Ducks" and another, "Food Habits of Diving Ducks."

In 1920, the Biological Survey began bird-banding activities, work that formerly was done by the American Birdbanding Association. Since then, more than 3,000,000 birds in North America have been tagged with numbered bands. Records of date and place of banding and the date and place the birds are recaptured have given the Survey information that shows what routes are taken by various species of birds during migration.

This phase of the Survey's work is described in a mimeographed leaflet, BS-145, entitled "Birdbanding."

With the knowledge supplied by migration investigators plus information obtained by other scientists, the Survey was able to determine where it might best locate the more than 260 areas in the nation-wide system of wildlife refuges.

With the cooperation of more than 750 active birdbanders, and the aid of other Federal, State, and private agencies and individuals, Survey personnel have devised methods of conducting migratory waterfowl inventories that indicate the trends in population from year to year.

These annual inventories indicate that the program of the Biological Survey is succeeding. In 1900, observers believed there were about 120,000,000 migratory waterfowl in North America. By 1935, the population had decreased to less than 30,000,000. The Biological Survey recommended drastic hunting regulations and intensified its action program in that same year, basing its program on the data compiled during the previous 50 years. Today, the population is about double that of 1935, being estimated in 1940 to be in the neighborhood of 65,000,000.

#### Putting Information to Work

In 1903, President Theodore Roosevelt established the Pelican Island Bird Refuge in Florida, the first wildlife sanctuary in the country. The Biological Survey soon began to administer a series of sanctuaries and refuges that developed into what is now a nation-wide system of wintering, resting, and nesting areas for all types of animals.

In 1934, the refuge system began suddenly to expand more rapidly than ever before. There were 104 wildlife areas in 1934. As of December 31, 1939, there were 266 national wildlife refuges with more than 13,500,000 acres of land.

Selected on the basis of need and suitability to wildlife and on areas where wildlife is the major consideration, the refuge system today includes 178 refuges primarily for waterfowl, 50 chiefly for colonial birds, 26 for wildlife in general, and 12 for big game.

#### Control Necessary for Preservation

Paradoxically, the preservation of wildlife sometimes requires the reduction of some forms. Predatory animals and rodents sometimes endanger some species or become so numerous in certain areas that livestock or farmers' crops are damaged

by the depredating animals. Then, it is necessary to adopt corrective measures--- either removing the animals to other areas or destroying them. This need for control of animals resulted in an appropriation by Congress in 1915 delegating to the Biological Survey the task of controlling predatory animals and rodents.

With the cooperation of various Federal and State agencies, private firms, and individuals, Biological Survey workers have devised scientific methods to control injurious species without harming other forms, and these methods are so applied that even the injurious species is extirpated only locally.

During the past decade the Biological Survey and cooperating agencies have done much to reduce losses from predators and rodents and to protect public health. Since the Survey's participation in control operations, more than 1,174,000 predators have been taken; 5,128 stock killing bears; 1,031,951 coyotes; 21,410 wolves; 4,953 mountain lions; and 110,642 bobcats.

Among the important phases of the control work are the destruction of house rats, the prevention of spread of typhus fever, sylvatic plague, and other public health menaces in which rodents are involved.

#### Study Fur Animals

For many years, the Biological Survey has also concerned itself with the status of the continent's fur-animal resources. Regulation of trapping and hunting of fur animals, however, rests with the States. Fur experts of the Survey declare that unless more stringent control is exercised in the taking of fur animals, this valuable resource will become so depleted that many of the animals may even be exterminated.

Exactly how many fur animals are trapped and pelted each year is not known. Recent nation-wide investigations by Biological Survey workers revealed that few States have adequate information as to the number of fur animals within their jurisdiction and the number being taken each year.

"Though accurate figures are not available, and we do not know whether we are producing 10,000,000 fur animals a year and taking 15,000,000 or producing 15,000,000 and taking 25,000,000, one thing is certain," fur investigators declared, "and that is that we are taking many more fur animals than are being raised each year. We are rapidly depleting one of the most valuable sources of income in the country."

#### Investigate Diseases

When fur farmers and breeders in the United States were losing many animals because of disease a few years ago, the Biological Survey appointed special disease investigators to study the situation and devise methods of prevention or control.

In the past 5 years, the wildlife disease investigators, among other things, have worked on the control of distemper in foxes, the prevention of coccidiosis in rabbits, and have curbed the spread of lung disease in silver foxes. The work has since expanded to include research into all fields of wildlife diseases. In recent years these workers have made valuable contributions to knowledge in preventing the ravages of the dread waterfowl disease, botulism.

#### 66 Agents Enforce Game Laws

The Migratory Bird Treaty Act, passed by Congress following the signing in 1916 of a treaty between the United States and Great Britain for the protection of North American migratory birds, is the basis on which the regulations of migratory

bird hunting are established and enforced. Mexico signed a similar treaty with the United States in 1936. The Migratory Bird Conservation Act, passed in 1939, authorized the purchase of areas for waterfowl refuges. Without this legislation, it is doubtful that the waterfowl resources of the continent could have been preserved.

Under the Migratory Bird Conservation Act, the Migratory Bird Hunting Stamp Act, and the Lacey Act, law-enforcement agents of the Biological Survey have been empowered to apprehend violators of Federal hunting regulations. The acts enable the United States game management agents to protect wildlife for both Federal and State agencies. Sixty-six agents are assigned throughout the country.

The passage of these acts has enabled the Biological Survey to reduce the shooting of migratory waterfowl and to create refuges for these birds. While other factors have to some extent aided in the recovery of waterfowl populations since 1934 the principal cause of the increase has been the reduction of shooting in the United States.

#### Federal Aid Act Helps States

Another important act of Congress affecting wildlife conservation was passed in 1937 when the Federal Aid to Wildlife Restoration, or the Pittman-Robertson Act, approved the appropriation of sums to be used by the States for the development of their wildlife resources. Appropriations cannot exceed the amounts collected on the 10 percent excise tax on sporting arms and ammunition. Last year the excise tax amounted to some \$3,000,000.



Since the Federal Aid Act was passed, more than 260 wildlife conservation projects in 43 States have been approved by the Biological Survey, which administers the Federal funds for the Secretary of the Interior. On each project, the Federal Government bears 75 percent of the costs and the State 25 percent.

No attempt is made to influence the type of conservation work the various State game commissions may wish to do. Projects submitted for approval are checked only to see that they are feasible. The Survey offers advice to the game commissions only when it is requested.

In 1938, Congress allotted \$1,000,000 for Federal Aid work, and in 1939 it allotted \$1,500,000 and the appropriation act for 1941 carries \$2,500,000 for this purpose.

The money is apportioned to the various States on the basis of the acreage of the State and the number of hunting license holders it has.

#### Cooperative Research Units Established

In 1935, another important development in wildlife conservation began with the establishment of cooperative wildlife research units. These units, 10 in all, are located throughout the country so that as a group the units can study all types of wildlife in various environments. Sponsored and financially supported by State game commissions, land-grant colleges, the American Wildlife Institute, and the Biological Survey, the units emphasized research and practical phases of wildlife management.

Cooperative units study the status of various forms of wildlife, seek means to improve conditions for wildlife in the States, and attempt to devise practical management techniques that may be adopted to maintain desirable animal populations.

Units are now located in Alabama, Iowa, Texas, Virginia, Maine, Utah, Ohio, Oregon, Missouri, and Pennsylvania. Eight of the units are now in their fifth year, while Missouri began in 1937 and Pennsylvania in 1938.

Since 1935, more than 35 projects have been completed, and about 375 manuscripts dealing with various management phases have been published.

#### Duck Stamps Help Refuge System

With the passage of the Migratory Bird Hunting Stamp Act in 1934, all migratory bird hunters more than 16 years old are required to purchase a "duck stamp" each year. The duck stamp, which sells for \$1, is about the size of a special delivery stamp and is sold at all first and second-class post offices and certain third-class post offices. Ninety percent of the money received from the stamps is used for the acquisition and development of waterfowl refuges; 10 percent is used for administrative purposes--to enforce the law, to print and distribute the stamps, and to print posters announcing regulations.

Since the duck stamp was first inaugurated, the stamp sales each year have been as follows: 635,001 (1934); 448,204 (1935); 603,623 (1936); 783,039 (1937); and 1,002,715 (1938). More than 1,000,000 stamps were sold in 1939, but complete figures are not yet available.

In Alaska, the Biological Survey conducts research on wildlife problems and maintains refuges. Its other functions are handled through its operating agency, the Alaska Game Commission. Eleven wildlife agents headed by a representative of the Biological Survey, who also acts as the Commission's Executive Secretary, enforce the hunting and trapping regulations, study the status of the various

forms of wildlife, and take other measures to maintain adequate populations of all species and prevent the extirpation or extermination of any form.

Name Changes, Work Continues

Though the Biological Survey is consolidated with the Bureau of Fisheries in the Fish and Wildlife Service, Dr. Ira N. Gabrielson, newly appointed director of the Service, contemplates no change in the type of work to be done by the organization. Assistant Director W. C. Henderson, who will be directly responsible for the functions formerly assigned to the Biological Survey, was Associate Chief of the Biological Survey for 24 years. He expects to continue the work under his direction in the same general lines taken by the Survey for the past half century.

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