

in a major program of preserving wetlands by purchase and long-term lease. In 1967, after completion of pilot studies a program to preserve about 4,000,000 acres of wetlands at an annual cost of over \$5,000,000 was begun.

Much time was devoted to species greatly reduced in number or in danger of extinction, such as the trumpeter swan and whooping crane. Six eggs of the latter species were taken from Wood Buffalo National Park to provide the nucleus of a captive breeding population. Five of the eggs were hatched successfully. The progeny will be released into the wild as soon as a large enough supply of breeding birds has been developed. A country-wide harvest survey will be made possible by the Canada Migratory Game Bird Hunting Permit, sold for the first time in 1966. About 385,000 waterfowl hunters purchased permits. A second survey will ascertain the species and age composition of the harvest. Other continuing programs include an annual survey of crop damage in the Prairie Provinces, Arctic bird banding and participation in a program to reduce bird hazards at airports. Substitutes for lead shot are being studied in order to eliminate the large annual loss of waterfowl from lead poisoning. Pesticide research, just now developing, aims at measuring effects on wild animals of the environmental contamination by toxic chemicals; populations of songbirds, gulls and falcons are currently under study. Subjects of research in limnology include productivity of National Park waters and the biology of fish and associated fauna. Adequate stocks of game fish are provided and maintained through modern methods of management where they can be applied without detriment to the aesthetic values of the areas concerned.

The Service's research staff totals about 70. Specialists covering mammalogy, limnology, migratory bird populations, migratory bird habitat, ARDA, pesticides, pathology and biometrics are stationed at the head office in Ottawa. Offices are located in Fort Smith and Inuvik, N.W.T.; Whitehorse, Y.T.; Vancouver, B.C.; Edmonton and Calgary, Alta.; Saskatoon, Sask.; Winnipeg, Man.; Ottawa and Aurora, Ont.; Quebec City, Que.; Fredericton and Sackville, N.B.; Halifax, N.S.; and St. John's, Nfld. Headquarters for the Western Region is in Edmonton and for the Eastern Region in Ottawa. Sixteen officers are engaged in an inventory of wildlife land capability under the ARDA program (see Chapter X). A number of university graduates and undergraduates are engaged annually to assist in summer field work and 16 scholarships of \$1,200 each were awarded in 1967 to graduate students in wildlife and allied fields.

ANIMAL LIFE IN CANADA TODAY*

Introduction

The animals of Canada range over some 3,852,000 square miles of territory that, with Alaska, makes up the northern part of the North American Continent. Except in some southern coastal areas, the climate of the region consists of long severe winters and short warm summers. Consequently, the animal life is relatively sparse (compared to the tropics) and consists mainly of widely eurytopic species, able to survive and propagate under extreme physical conditions.

Of Canada's estimated 100,000 different kinds of animals, only 1,500 species are vertebrates (animals with backbones); all others are invertebrates. In other words, of every 100 kinds of animals occurring in a given part of Canada, only one or two are likely to be a mammal, bird, reptile, amphibian, or fish. The overwhelming majority of species will be animals without backbones such as insects, spiders, crustaceans, worms, molluscs, jellyfish, sponges, and single-celled animals. The vertebrates, because of their large size and living habits, are much more conspicuous and familiar to us, and occupy a more important place in our concept of nature than is merited on the basis of numbers alone.

* Prepared by scientists of the Zoology Division, National Museum of Canada as follows: Introduction, E. L. Bousfield, Chief Zoologist; The Mammals of Canada, P. M. Youngman, Curator of Mammals; The Birds of Canada, W. Earl Godfrey, Curator of Birds; Amphibians and Reptiles in Canada, Francis R. Cook, Curator of Herpetology; Canada's Fish Fauna, D. E. McAllister, Curator of Fishes; The Arthropods of Canada, E. L. Bousfield; The Mollusca of Canada, A. H. Clarke, Jr., Curator of Molluscs; and Canadian Marine Invertebrate Life, N. A. Powell, Curator of Invertebrates, and E. L. Bousfield.