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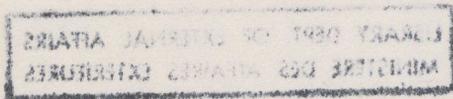
Wildlife in Canada

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When Europeans first came to North America, they found natural resources plentiful beyond their imagination — deer, bear, elk, wild turkey and bison, duck, goose, passenger pigeon and other edible birds, dense forests, and rivers rich in fish. Although the first settlers probably overestimated the amount of wildlife, game and fish in large numbers were certainly available to people who had never before been able to hunt and fish without restriction.

Wildlife was free to all — no royal prerogatives or social distinctions inhibited a man's right to hunt and fish as he pleased. The resulting conception of wildlife as a resource for the use and enjoyment of all remains an essential part of the North American attitude to fish and game.

As the colonists began to clear and break the land and sow crops, wildlife, as well as the dense forest, became an impediment, if not a threat, to the establishment of stable, peaceful settlements. The impact of European settlements on North America's wildlife was apparent as early as the seventeenth century. The advance of agriculture inland from the eastern coast reduced the wildlife in many regions. Species that threatened human life or crops were slaughtered, while others were deprived of their habitats.

The fur trade

The fur trade was of far-reaching significance in the uneasy relation between animal and man on the North American continent. It placed fur bearing animals at the mercy of a voracious commercial demand. The most eagerly sought-after animal, the beaver, was trapped relentlessly so European gentlemen might be properly hatted. Even in the early 1600s, the de Caens were shipping as many as 22,000 beaver skins a year from Canada to France. By 1743 British and French fur traders were exporting more than 150,000 beaver pelts a year, along with large numbers of skins such as marten, otter and fisher.

The impact of the fur trade was felt for more than three centuries. In pursuit of new and unexploited fur resources, the traders moved ever deeper into the land, acquiring in the process geographical knowledge that prepared the way for detailed exploration and settlement. The Indians and Eskimos became willing participants in the trade and, with the more efficient weapons obtained in exchange for furs, they began to destroy wildlife almost as effectively as the white men with whom they dealt.

While the trade had a stimulating effect on exploration and on economic and social development, its influence

on the country's wildlife was far from salutary. Although over-trapping, the characteristic vice of the fur trade, became evident first, with the large decline in the beaver population, there were other human activities that caused even greater destruction.

Nineteenth-century destruction

Agriculture, developing after the fur trade, often upset the soil cover and the natural plant growth on which wild animals depended, and destroyed the specialized ranges and habitats of many mammals and birds. An attitude that justified the extermination of wildlife on economic grounds alone dominated the continent during the first half of the nineteenth century. At least the fur traders were practical businessmen who realized that there were limits to the fur bearing crop they harvested. No considerations of economics and common sense restricted those who shot buffalo for hides and tongues, wildfowl for the food market and birds with bright feathers for the milliners. The exploitation of wildlife that began with the fur trade reached its climax in the slaughter of the last herds of plains bison late in the nineteenth century.

Early conservationists

Appalled by the record of wildlife destruction, the first handful of conservationists enunciated the principle that the renewable natural resources of wildlife, forests, water and land should

be protected and their use should, in some degree, be regulated. Land and water, and the plants and wildlife they supported, were recognized by these pioneers as resources that were not unlimited — that were not simply for the benefit and appetite of the current generation but were to be preserved for future generations.

Public opinion was slow to recognize the basic importance of this principle. The doctrines of the *laissez-faire* economists, the interests of the industrialists, and the illusion of unlimited natural resources constituted too strong an opposition. It was not until late last century that the people, and hence their governments, began, however grudgingly, to accept the need to conserve renewable resources and protect wildlife.

The national parks

This more enlightened attitude was responsible for the passage of the first provincial game acts and the creation of national parks. The first of these, now Banff National Park, was established in the Rocky Mountains in 1887. Protection of wildlife was not the primary purpose of the parks — birds and animals were considered an important part of a natural heritage that should be preserved for people to enjoy and appreciate. However, in effect, national parks are sanctuaries in which species native to these areas can exist free and protected.

Outside the national parks, the legislative responsibility for wildlife rests with the provincial and territorial governments, which enact, administer and enforce laws and regulations respecting hunting, trapping and other activities that affect wild animals.

There is one exception — the responsibility of the Federal Government for migratory birds.

Migratory Birds Treaty

The Migratory Birds Treaty of 1916 between Canada and the United States was intended to provide more effective protection for migratory birds than was possible under unco-ordinated provincial and state laws or under the laws of either country. The treaty lists groups of migratory birds protected by both countries. Both non-game and insect-eating birds are protected completely; game birds are safeguarded by hunting regulations that are revised each year.

Under the treaty, the federal governments of Canada and the United States, after consultation with the states and provinces, set bag, possession and season limits. Within the federal framework, the states and provinces may add other restrictions on waterfowl hunting if they wish. The prohibition of hunting on Sunday is an example of a provincial regulation found in some but not all, provinces. The migratory birds regulations are enforced in Canada by the Royal Canadian Mounted Police.

The Canadian Wildlife Service, originally formed to administer the Migratory Birds Convention Act passed in 1917, now also carries out both wildlife research and management. As a branch of the Department of the Environment, it has federal responsibility for wildlife. Besides its work with migratory birds, the CWS conducts scientific research into wildlife problems in the Northwest Territories and the Yukon and in the national parks, and also co-operates with administrative agencies when wildlife management programs are instituted.

As a result, the Wildlife Service acquires and distributes much information useful to managers of the wildlife resource. Research findings are made available in a number of publications, including monographs on individual wildlife subjects, reports and papers on individual projects, and notes containing interim data. Pamphlets on topics of interest to persons concerned about the wildlife around them are issued as the need arises or demand dictates. The Service has sponsored a number of feature films on wildlife, and has produced a series of short television clips on species native to Canada. These clips are keyed to a popular publication series entitled *Hinterland Who's Who*, for which there are over 100,000 requests annually.

The CWS staff of over 80 biologists includes mammalogists, ornithologists, limnologists, pathologists, toxic-chemical biologists and biometricians. About a quarter are assigned exclusively to research in Northern Canada and the rest are distributed among research projects in other parts of the country. The ornithologists work in close association with the provincial governments, with Ducks Unlimited (Canada) and with the United States Fish and Wildlife service. The mammalogists concentrate on the mammals of the national parks and northern territories, in co-operation with the territorial governments and other agencies. Because sport fishing is such an important activity in the national parks, limnologists carry out research on fish-management programs. Pathologists, working with other CWS staff and wildlife agencies, investigate disease problems in wildlife and develop, and frequently implement, measures for disease prevention and control. The effects of pesticides in Canada are studied by the toxic-chemical biologists, while the biometricians provide a link between the computer and the biologists, analyzing data from the field and studying the means to improve the statistical design and analysis of the migratory-birds hunter permit and survey system.

The Canadian Wildlife Service has established 80 sanctuaries for migratory birds, frequented largely by waterfowl that may be hunted elsewhere in

season. Five wildlife centres have also been established. In addition, the Service administers a program aimed at preserving wildlife habitats. Under that program more than 40 national wildlife areas have been established.

Other wildlife agencies

The provinces carry the chief responsibility for the management of wildlife resources. They develop and enforce the regulations that affect the majority of hunters, trappers and fresh-water fishermen. This involves difficult problems of balancing the interest of sportsmen, naturalists, farmers and stockmen and other groups with special concerns.

Each province has established a department responsible for the administration of wildlife resources, often in association with other renewable resources, such as forests. The progress made in wildlife management reflects the efficiency of these agencies and of their personnel engaged in research, enforcement and education.

Federal-provincial wildlife conferences, at which delegates of provincial and federal game agencies meet to co-ordinate their activities, are held annually. The subjects considered vary widely, from the perennial topics concerned with setting bag limits and season dates for waterfowl hunting and the effects of pesticides on wildlife to briefings on the Convention on International Trade in Endangered Species.

Provincial and federal wildlife activities are supplemented by a great number of private and public associa-

tions active in wildlife conservation. Fish and game associations composed of hunters and fishermen study and practise wildlife conservation with intense interest. Provincial federations of fish and game clubs have a national voice in Ottawa, the Canadian Wildlife Federation. Youth organizations like the Boy Scouts and Girl Guides introduce their members to wildlife conservation as part of their experience of the outdoors.

The Canadian Nature Federation fosters appreciation of wildlife and supports measures for its protection. Provincial museums and the National Museum of Natural Sciences of Canada stimulate public interest in animals, fish and birds and carry out basic biological and taxonomic research.

All these agencies — federal, provincial and private — are closely concerned with aspects of wildlife management. Effective co-operation among them is essential in dealing with many wildlife problems. This co-operation has been achieved not only through formal meetings like the Federal-Provincial Wildlife Conference but also through the development of effective working arrangements to exchange information and co-ordinate activities.

A natural resource

The economic value of Canada's wildlife resources in relation to recreation like photography, nature study and casual sightseeing is difficult to estimate, but it probably exceeds that of fishing and hunting. For thousands of people it is a rare privilege to observe a wild animal or bird in its natural surroundings and preserve the experience on film.

While recreation appears to be the major use for wildlife, many Canadians still rely directly on game for their livelihood, and even for their existence. Fur-trapping is still an important occupation. In 1977-78, Canadian wild-fur sales totaled more than \$47.6 million. Many Eskimos and Indians earn their livelihood from fur-trapping, and need wildlife for food and clothing. Much of the economic and social difficulty that has been experienced by some groups of Eskimos stems directly from a decline in the number of caribou, which formerly provided meat for food, hides for warm clothing and bone for implements.

Wildlife also controls insects and small mammals that damage crops. The coyote preys on the field-mouse, and the extent of its control is only being properly appreciated now that it has been killed off in many western agricultural areas. Birds feed on a great many insects that harm agricultural

production and damage and kill commercial timber stands and shade-trees.

The main object of Canadians concerned with the future of wildlife is that it should be managed properly as a renewable natural resource of great value. It should not be regarded as a competitor of other resources for attention but as an integral part of the whole complex of natural resources that are of value and benefit to man. The relation between resources is a difficult subject to understand and man's attempts to put comparative artificial valuations on resources have complicated the subject further.

Wildlife management in Canada must place stress on the preservation of natural habitat as much as it stresses the preservation of the mammals and fish that live there. A wild animal and its surroundings cannot be separated; one cannot be preserved without preserving the other.

Management must also solve the problems arising, ironically, from under-use of wildlife. The scientific training and practical experience of the wildlife biologist may enable him to effect increases in wildlife population, but as yet he has only a very limited knowledge of rational and acceptable methods of influencing men to harvest a surplus wildlife crop. The modern wildlife scientist is as often concerned

with a surplus of some species as he is with the preservation of another threatened with extinction. Many species multiply so rapidly that overpopulation and control rather than protection may easily become a problem. Changes in habitat intensify this effect. The replacement of evergreen by deciduous forests in British Columbia enabled moose to multiply until their population exceeded the land's capacity to support them. Similarly, beaver flourish when forests are deciduous and decline when the evergreens become dominant.

With protection and suitable habitat, the beaver, for example, more than recovered from over-trapping and its population is probably greater now than at the height of the fur trade. About 1930, the eccentric naturalist Grey Owl started a beaver colony in Prince Albert National Park, Saskatchewan, with two animals, Jelly Roll and Rawhide; today, the park, which was almost empty of beaver in 1930, contains many thousands of the hard-working creatures — a population too large to be treated with indifference by park officers. Even in densely-populated urban areas beavers flourish. Within a short drive of Canada's

capital, there are so many beaver that several farmers make a respectable part-time income from trapping them for their pelts.

This ability of wildlife to recover quickly from losses and exploitation creates other problems for wildlife officers. Because most wild species are not easily observed, they can multiply rapidly before their increase is detected. Inventories must be repeated frequently in case significant population changes pass unnoted.

Research is, of course, basic to any improvement in wildlife management. One relatively neglected area is the pathology and diseases of wildlife. Another is the effect of chemical-control agents such as insecticides. CWS investigators have found that fish-eating birds and raptors such as falcons are unable to reproduce adequately when certain persistent insecticides have been introduced into their environment; insecticides are also known to have adverse effects on fish reproduction. The responsibility for increased research will be that of the wildlife biologists; this handful of scientific investigators and advisers will have to be strengthened and given more public backing if they are to provide the sound factual basis for improved wildlife management programs.

The report *National Wildlife Policy and Program*, tabled in 1966 in the house of Commons, was intended to translate national concern about wildlife into guidelines for co-ordinated action by federal and provincial agencies and to meet the needs expressed by conservationists and wildlife officials throughout the country. From this program evolved the Canada Wildlife Act, passed by Parliament in 1973. The act provides the Federal Government and the Canadian Wildlife Service with a broader legislative basis for implementing programs outlined in the policy. It gives the federal government authority to acquire and manage habitats for migratory birds and, with the agreement of the provinces or territories, for other species of wildlife.



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