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EXOTIC MAMMALS AND BIRDS IN CANADA -
A Historical Review by:

N.S. NOVAKOWSKI

ASSISTED BY: G. MORE, P. REILLY REPORT

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REPORT

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EXOTIC MAMMALS AND BIRDS IN CANADA

A Historical Review

N.S. Novakowski
CANADIAN WILDLIFE SERVICE.

Technical Assistance of:

G. More
P. Reilly

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EXOTIC ANIMALS IN CANADA

Canada, much like its neighbour to the south, has until recently, had an ambivalent attitude with respect to the introduction of non-indigenous species (exotics) into natural or primitive areas.

European man has favoured domestic and game animals for many hundreds of years. As he has successfully colonized more of the world he has traditionally brought with him his favoured animals. Consequently, the natural assemblage of indigenous animals was upset. Although Canada is now a relatively settled and industrialized nation the process of introductions is still going on and it is perhaps timely that the justification for any further erosion of natural areas and their native fauna be investigated.

Thus, an examination of the extent of introductions into Canada, both historical and present, the attitudes of governments, the public and the scientific community needs to be documented. On the one hand, there is a growing concern that natural areas are continually being modified and that the land managers, or wildlife agencies, are inclined to favour a segment of the population (the hunter) by providing him with a greater and more diversified experience by using exotics than the ecologist or naturalist is willing to accept. Hence, the confrontation. Added to this is the increased proliferation of pet shops and the selling of exotic species to private individuals which pose a particular threat of accidental releases into the wild. These usually do not survive, however the diseases they harbour may. At the same time the increased sale of exotics has been largely responsible for the depletion of wildlife resources in countries where such species are indigenous. This has led to the Convention on International Trade in Endangered Species of Wild Fauna and Flora among other forms of regulation and control. Canada has very few such controls except relating to domestic stock.

Both problems are mutually interdependent as policies relating to one cannot exclude the other. The ambivalence, however, still exists as an examination of legislation and practices will show. For example some provinces may have legislation controlling the importation of exotics into that province but on the other hand, may still be proceeding with attempts to establish exotics in areas where they are definitely alien in order to enhance hunting opportunity. The general feeling among the scientific community on the above can best be exemplified in three resolutions, relating to the transplant of exotics on to Crown lands and to the importation of exotics into Canada:

1. The Technical Caribou Committee, a group of caribou experts representing the provinces, territories and the federal government, met in 1973 and resolved that: "Whereas reindeer, if released to the wild state might threaten the genetic character of indigenous caribou and could have other detrimental effects, such as competition with caribou for food, therefore it is recommended that reindeer not be released to the wild state in Canada."
2. A resolution of the Canadian Veterinary Medical Association 1973 stated that: "Whereas the Council of the Canadian Veterinary Medical Association recognizes that the keeping of exotic pets may lead to the unnecessary suffering of the animals involved through the lack of adequate care and transportation and in merchandizing and whereas many species which may be considered as exotic pets are in fact endangered species and whereas many exotic pets may present a public health hazard and whereas these pets may succumb rapidly if they escape from the confines of their owner's care, this council resolves that steps should be taken to ban the importation of exotic pets".

3. Thirty-Second Federal-Provincial Wildlife Conference, Whitehorse, 1968, Recommendation No. 5: "As the import of wildlife from other lands is presently under the aegis of numerous agencies, federal and provincial, and since introduced species may represent an environmental pollutant either in themselves, by direct destruction or degradation of their environment, by degradation of compatible indigenous species through hybridization, or by introduction of diseases or parasites, it is recommended:

- (a) That responsible federal and provincial authorities prohibit the import of non-indigenous species into any province or territory of Canada, except in those cases and for those species which are shown by the importer to the satisfaction of the responsible authorities not to constitute an environmental pollutant now or in the future, either in themselves or through their progeny...."

Such views held by a small but influential group of people need to be considered seriously. A documentation of the situation as it now exists in Canada also needs to be presented so that some policy or major direction can be presented for examination by legislators and for the information of the general public.

Few people realize the number of exotic species that have been introduced into the individual provinces. Most of those introductions have failed for one reason or another but some have been very successful. Among the latter are popular game birds such as the gray partridge, the ring-necked pheasant and the wild turkey. Other successful exotics are not so welcome, such as the Norway rat, the house mouse, the starling and the English sparrow.

There are several kinds of introductions in Canada. There have been intentionally released exotics from other countries

(mostly of game birds but also some mammals); accidentally introduced exotics from other countries; introduced Canadian species to provinces to which they are not indigenous; re-introduced Canadian species of a different sub-species to replace an extinct sub-species in a different province (such as the eastern elk in Ontario); and finally species that have expanded their range into a province from another province or country (such as the coyote in Quebec or the opossum in British Columbia and Ontario).

In Canada certain domestic species have become feral and have been reproducing successfully for many generations in the wild. This includes the 'wild' horses of Sable Island, and those in Alberta and British Columbia, as well as dogs, goats, sheep, cats and numerous birds. These species, removed from the selective influences of man, have reverted to the natural selection process and are adapting to their environment. Some in fact have adapted to the best of both worlds. Many dogs may cavort among "deer yards" at night harassing or killing deer and may be the ideal household pet during the day.

LEGISLATION REGARDING EXOTIC SPECIES

There is little concrete legislation dealing with the importation of exotic species. Canada is a country with thirteen governments, each with their own legislation dealing with wildlife but not specifically dealing with exotics. The provincial and territorial governments are responsible for their wildlife resource and can thus control exports out of their provinces by requiring permits to possess and another to export but imports are a different problem. The federal government has control of imports into Canada, the provinces and territories can control such imports by requiring a permit for possession but few do. There are certain checks and balances but these are relatively inefficient.

At the federal government level there is no concrete legislation dealing with importation of exotics that is comparable to the Lacey Act of the United States or the new Endangered Species Act or the Marine Mammals Protection Act.

a) Federal Legislation

- i) Department of Industry, Trade and Commerce.

At present, control of animals by the Export and Import Permits Act places restrictions on domestic stock only. However, Canada will use this Act as enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which Canada signed July 2, 1974.

ii) Department of National Revenue.

On Schedule C (a list of Prohibited Goods) of the Customs Tariff, the following animals are not allowed to be imported into Canada.

- 1) Common mongoose (Herpestes griseus) or mongoose of any kind.
- 2) Any bird of the starling family (Sturnidae), except the European starling (Sturnus vulgaris)
- 3) Any other non-game bird, except for the following:
 - a) a domestic bird of a kind kept for food purposes;
 - b) a kind intended solely for exhibition in a public zoological park;
 - c) a kind intended solely to be kept in confinement in a cage or to be used for purposes of public entertainment.

This list was drawn up in 1958, presumably as a result of the adverse effects of the introduction of the mongoose into Jamaica and the starling and house sparrow into the United States in the 19th century. (For a more complete description, see Laycock 1966 "The Alien Animals".)

iii) Department of Agriculture.

This Department administers the Animal Contagious Diseases Act and controls the importation of animals based on that Act. Their legislation involves the prevention of introducing infectious or contagious diseases into Canada, not the control of species that may become biological pests.

Under the regulations of the Animals Contagious Diseases Act, every animal to be imported into the country must have an Import Permit from the Department of Agriculture. They must also obtain a Certificate of Health from an official veterinarian of the national government of the country of origin certifying that the animal is free of any infectious or contagious diseases.

Usually the animal (s) undergo a period of quarantine in the country of origin and then again in Canada. This period will vary from fourteen days in England and another thirty days in Canada if the country of origin is the United Kingdom. This period will increase depending on the danger and prevalence of diseases in the county of origin. In general the United Kingdom, Ireland, Australia, New Zealand, Norway and the United States all have good disease control and are less hazardous areas, i.e.: with less occurrence of disease. There is little problem importing animals from these countries. (Lewis, A.E. personal communication August 13, 1973). In fact, there are almost no restrictions on importations from the United States.

There are special restrictions placed on parrots due to the high number of infectious diseases harboured by these birds. A permit must be obtained from the Minister of Agriculture which limits the holder to importation of six birds per year. These birds must be in good health and are quarantined for 90 days in their country of origin before importation.

B. Provincial Legislation

i) Newfoundland has a doubly complex problem because part of the province is a large island and part is a portion of the mainland of Canada. No one is allowed to bring any live wild animal, bird, fish or reptile into the Province of Newfoundland or to bring the same to the Island of Newfoundland from Labrador without written permission of the Minister of Tourism. Nor is anyone allowed to release imported wildlife in the province or release on the island wildlife brought from Labrador or propagated from stock from Labrador. (The Wildlife Act, Ch. 197. Regulations S.60, Ss a, b, c.).

ii) Prince Edward Island defines "exotic" as an animal of a species or type that is not indigenous to the province and is usually found wild in its natural habitat. The Fish and Game Division has responsibility for exotic animals. No one is allowed to have "live in his possession" or to release into natural cover, any bird or animal of non-native stock without permission of the Minister. (The Fish and Game Act, Ch.13, S1, Ss ee, and S.39, Ss 2 & 3).

iii) New Brunswick has no laws regarding exotic species.

iv) Nova Scotia has no laws regarding exotic species.

v) Quebec has no laws regarding exotic species.

vi) Ontario prohibits the release of any animal or bird propagated from stock imported into Ontario without written authority of the Minister of Natural Resources. (The Game and Fish Act Ch.186. S.31, Ss.8).

vii) Manitoba defines an exotic animal as a species or type of vertebrate animal excluding fishes that is not indigenous to the province and is usually found wild in its natural habitat. Permits must be obtained prior to bringing an exotic into the province. (The Wildlife Act, Ch.W, 140, S.2(d), and Regulations).

viii) Saskatchewan prohibits the importation, release or introduction of any animal or bird that is wild or foreign, or the egg or young of any such

bird or animal without written permission of the Minister of Natural Resources. (The Game Act, Ch.78, S.57, Ss. a, b).

ix) Alberta defines "non-indigenous" as any mammal or bird that is not indigenous to Alberta and is deemed to be exotic wildlife. The antithesis is that indigenous wildlife is a mammal or bird that occurs, is found naturally, or belongs to Alberta (including animals that migrate through the province). Alberta is responsible for the transport into and out of the province of any species of wildlife. No one can transport, control or have possession of any exotic wildlife or release an exotic species without written authority. (The Wildlife Act, Ch.B.91, S.2, Ss.9, S.17, Ss.a, b, c, d).

x) British Columbia prohibits the import of any live mammal, game bird, or the egg of a game bird into the province without a permit. (The Wildlife Act, Ch.55, S.17, Ss.1 a).

xi) Yukon Territory necessitates a licence from the Director of the Game Branch to import a fur-bearing animal or an animal normally wild by nature and foreign to the territory. A certificate of health for fur-bearing animals signed by a veterinarian must be produced prior to issuance of a permit. (Ordinances of the Yukon Territory, Ch.50, Part VII, S.1, Ss.1 and 2).

xii) Northwest Territories states that no fur-bearing animal may be brought into the Territory unless a licence is obtained. An applicant must provide a certificate of health signed by a veterinarian in respect to the animals to be imported. (The Game Ordinance, Ch.2, S.19, Ss.1, Col.1, No. 13).

INTRODUCED MAMMALS AND BIRDS BY PROVINCES AND TERRITORIES

Although many introductions were either actively supported by the provinces or territories, or, at the very least, done with their knowledge and approval, others had neither and those invariably became major pests and widely distributed throughout Canada. It is obvious that the adaptability of the

animals had much to do with their success. Those animals are listed below to avoid being repeatedly mentioned in the individual provincial or territorial lists:

Mammals

(a) Norway rat (Rattus norvegicus) - was introduced from Europe by ship although they originated in Japan. It arrived in North America about 1775. It's northern limit is generally at the northern most railway depots. It is generally well established in settled areas but Alberta where a great deal of effort is expended to keep the province rat-free.

(b) House Mouse (Mus musculus) was introduced from Europe probably at the same time as the first Europeans. It is established across Canada around areas of human habitation. It has not yet reached the most coastal islands and the Queen Charlottes in British Columbia.

Birds

(a) English sparrow (Passer domesticus) was introduced into North America in Brooklyn, New York in 1850 from England. Later releases took place in Quebec City, Quebec and Halifax, Nova Scotia. The species has spread its range and is widely established across Canada reaching British Columbia around 1890.

(b) Common starling (Sturnus vulgaris) was introduced in New York City in 1890 and 1891. The species spread across Canada reaching Oliver, British Columbia in 1947. By the end of the 1960's it was established throughout that province. The following dates are the first records of that species for each province: Ontario 1916, Nova Scotia 1915, Quebec 1917, New Brunswick 1926, Prince Edward Island 1930 or 1931, Newfoundland 1943, British Columbia 1947, Alberta 1934, Northwest Territories 1954. It has been found as far north as Lookout Point, Northwest Territories and Povungnituk and Sugluk, Quebec.

(c) Rock dove (Columba livia) was brought to Canada by Lascabot in 1906-07. Later introductions are probable as well. It is established across Canada, mainly around human settlements.

PROVINCIAL AND TERRITORIAL LISTS

A. Newfoundland is unique because of the few species of mammals that are indigenous to the island. Of fourteen indigenous species one, the wolf, is extinct. To a great extent introductions to Newfoundland were attempted to compensate for the low number of species.

Mammals

(a) Moose (Alces alces) were introduced in 1878 when a bull and a cow from Nova Scotia were released near Gander Bay and in 1904 when two bulls and two cows from New Brunswick were released near Howley. Most of the island was populated by 1945 and there is a regular harvest.

In 1953 a few moose from the island were released in the St. Lewis River area of Labrador and were established by 1963. (Acc. to Hewitt, pg. 327)

(b) Reindeer (Rangifer tarandus) were introduced in 1907 by Dr. W.T. Grenfell. Three hundred were purchased in Norway and released at Cremelière, near St. Anthony. This herd peaked at 1,300 animals but declined after 1912. Some were used for transplants elsewhere. (See Quebec and Northwest Territories.) In 1918, Grenfell transferred remnants of the herd to the mainland near Lobster Bay. (Acc. to Hewitt, pg. 328)

(c) Bison (Bison bison) originating from Alberta, were introduced on Brunet Island several years ago. The original thirty declined to ten animals. After several successful breeding seasons the population stood at eleven animals in 1973.

(d) Varying hare (Lepus americanus struthopus) introduced in the early 1870's, now has an established population and is harvested annually.

(e) Mink (Mustela vison) were first raised on fur farms in Newfoundland in 1937. Some animals escaped. As mutations were not common before the 1940's, the escaped animals likely resemble the wild type mink but are genetic exotics nonetheless. There is an established population which is harvested annually.

(f) Shrew (Sorex cinereus cinereus) were introduced in 1958 by Dr. C.S. Holling. Ten males and twelve females from New Brunswick were released near St. George's to counteract an outbreak of larch sawfly, by Dr. C.S. Holling. The population is established on the west coast and is spreading rapidly eastward.

(g) Chipmunk (Tamias striatus) were released in two provincial parks in 1962 and 1964. The populations are established and there has been little egress from the parks.

(h) Red squirrel (Tamiasciurus hudsonicus) obtained from Labrador, were released by the game department on an island in Notre Dame area of Newfoundland. A person or persons, whose identity is unknown, released animals on the Northern Peninsula. Both populations are established.

(i) Voles (Clethionomys spp.) were released on islands in Notre Dame Bay by Dr. W.O. Pruitt. Their status is unknown.

Birds

(a) Ruffed grouse (Bonasa umbellus) are established and harvested annually.

(b) Spruce grouse (Canachites canadensis) population uncertain.

(c) Ringneck pheasant (Phasianus colchicus) escaped about ten year ago, from a commercial poultry establishment near St. John's. Broods of pheasants are seen annually and several killed each year. The population appears established in this area.

(d) Cattle egret (Bulbulcus ibis) were sighted in Newfoundland in 1952. These birds, native to Africa, became established in Surinam between 1877 and 1882, thence in British Guiana in 1911-12 and later became established in Florida in the 1940's. The Newfoundland sighting was the first in Canada, but sightings across Canada, including the Northwest Territories, are now common.

B. Prince Edward Island

Mammals

- (a) White-tailed deer (Odocoileus virginianus) were introduced but are now extirpated in the wild.
- (b) Striped skunk (Mephitis mephitis) are established and reported to be plentiful.
- (c) Raccoon (Procyon lotor) are established and reported to be plentiful. They were released in 1912 and by 1953 a bounty had been placed on them.
- (d) Beaver (Castor canadensis) were native but were later trapped out. They have since been re-introduced and are common in the eastern part of the province.

Birds

- (a) Ringneck pheasant was introduced and has a low population.
- (b) Northern Japanese green pheasant (Phasianus versicolor robustipes) was introduced and extirpated.
- (c) Chukar partridge (Alectoris graeca) was introduced and extirpated.
- (d) Wild turkey (Meleagris gallopavo) was introduced and extirpated.
- (e) Bobwhite quail (Colinus virginianus) was introduced and extirpated.
- (f) Prairie sharp-tail grouse (Pedioecetes phasianellus) was introduced and extirpated.
- (g) Gray partridge (Perdix perdix) was introduced and are now common. Twelve pairs were released by Mr. J.D. Jenkins in 1930 near Charlottetown and two pairs near Tyron.

C. Nova Scotia

Mammals

- (a) Eastern gray squirrel (Sciurus carolinensis pennsylvanicus) was introduced from southern Ontario into

isolated areas.

(b) Fisher (Martes pennanti) were reintroduced to Queen's County after they were thought to be extinct.

(c) Wild horses (Equus caballus) are thought to have been introduced to Sable Island in 1739 by Andrew Le Mercier. This is thought to have included 20-30 horses. However, there are possibilities that their history may go back as early as the 16th century from Spanish or French shipwrecks. Their number has fluctuated from between 150 to 300 animals over the present century. The population is entirely wild.

Birds

(a) Cattle egret was sighted in 1957.

(b) Gray partridge occur locally in Nova Scotia. In 1926, Mr. H.B. Willis released 100 birds at Elderbank, Halifax County, and 40 at the Nappan Experimental Station in Cumberland County. The birds are from Czechoslovakia.

(c) Chukar partridge were introduced in the 1890's.

(d) Black game () were introduced in 1929 by Mr. F.B. McCurdy at South Brookfield, Queen's County. Five pairs were released.

(e) Capercaillia () were introduced in 1929 by Mr. F.B. McCurdy at South Brookfield, Queen's County. Ten pairs were released.

(f) Willow ptarmigan (Lagopus lagopus albus) were released by Mr. H.B. Willis near Waverley, Halifax County in 1933. The 14 birds were from northern Manitoba. One had been previously shot in 1922 but is believed to have been blown over from Newfoundland.

D. New Brunswick

Mammals

(a) Fisher was reintroduced about 1950 in south central New Brunswick.

(b) Eastern gray squirrel was introduced to southern

New Brunswick from south Ontario. It was released in the Fredericton area and has spread to at least 60 miles.

Birds

(a) Cattle egret was sighted in 1961.

(b) Gray partridge were released in southern New Brunswick but few or none exist now. Fourteen birds were released in 1926 by Mr. S.M. Robinson at Rothesay in St. John's County in 1926. In 1930, 50 more pairs were released.

(c) Ringneck pheasant were introduced. They are much reduced in numbers but still are hanging on.

(d) Chuker partridge were released in the St. John City area but disappeared.

E. Quebec

Mammals

(a) Eastern gray squirrel was introduced to southern Quebec from Ontario.

(b) Varying hare was introduced to Anticosti Island in 1902-1903, by H. Menier, six hundred were released. The population is established.

(c) Coyote (Canis latrans) has naturally increased its range from western Ontario prior to 1900 to western Quebec by the 1950's.

(d) Gray fox (Urocyon cinereoargenteus) has increased its range in southern Quebec between 1930-40. It was found in southern Ontario but disappeared about 300 years ago.

(e) Mink were introduced to Anticosti Island in 1912 by H. Menier. Twelve were released and in 1926 were reported to be increasing but were thought to be extinct by 1936.

(f) Fisher were introduced to Anticosti Island by H. Menier. Two were released but one died immediately. The other died several years later.

(g) Moose were introduced to Anticosti Island. Originally 20 were released but only a few persist.

(h) Reindeer were introduced in 1918 to Rocky Bay on the north shore of the St. Lawrence and were moved later to Anticosti Island. These were 150 animals of Dr. Grenfell's Newfoundland herd. The introduction was unsuccessful.

(i) Elk (Cervus canadensis) were introduced on Anticosti Island in 1903 and 1911. The introduction failed by the late 1930's.

(j) White-tailed deer (Odocoileus virginianus) were introduced to Anticosti Island by H. Menier. In June 1896, about 50 deer from L'Ilet, Quebec, were released. Another 50 from Cap Chat were released in July, 1896. In the summer of 1897, 100 were released and another 20 followed in November, 1897. The population is established.

(k) Bison were introduced to Anticosti Island in 1896 by H. Menier. Several were released but died in two years. Two more were released later but also failed to establish themselves.

(l) Red fox (Vulpes fulva) were introduced to Anticosti Island.

(m) Beaver (Castor canadensis) were introduced to Anticosti Island in 1897 or 1898 by H. Menier. About 40 or 50 were released and the population is established.

(n) Muskrat (Ondatra zibethicus) were introduced to Anticosti Island by the Consolidated Paper Company during the 1930's and are established.

Birds

(a) Cattle egret were sighted in 1960.

(b) Gray partridge occur in southwestern Quebec.

(c) Coturnix quail (Coturnix coturnix) from Italy were

released in 1875 during the "coturnix craze". Thirty-two pairs were released at Sutton in 1932. They were seen at Valleyfield and Caughnawaga and St. Martine in 1947.

F. Ontario

Mammals

(a) Elk (Cervus canadensis manitobensis or nelsoni) were introduced in 1932 at Pembroke Crown Game Preserve. About 25 western elk were released to replace the eastern elk (Cervus canadensis canadensis) which were once found in Ontario and Quebec but were extinct by 1850. In 1935 some of the stock was transferred to Algonquin Park and the Bruce Peninsula.

Also in 1933, six train carloads from Wainwright National Park, Alberta, were released in Burwash, Chapleau, and Nipigon-Onaman Game Preserves.

In 1934 some were released at the Goulais River - Ranger Lake Game Preserve. Most releases have been unsuccessful.

They were found to be a vector in the transmission of the large liver fluke (Fascioloides magna). The Department of Agriculture raised doubts due to the habit of elk grazing with cattle. There was also a risk of the introduced parasite infecting deer and moose.

Some introductions failed because of unsuitable habitat as its former range is now agricultural land. Herd build-up was discouraged due to the parasite and elk have then been considered as white-tailed deer for hunting purposes since 1946. Each year one or two are killed but the elk are almost extirpated from Ontario.

(b) Bison were introduced to a fenced area of a reformatory at Burwash and were probably from the Wainwright National Park. They went through the fence and have persisted for many years in woods between Burwash and the French River. About four or five exist including one or two calves. Although now classified as a fur-bearer and protected for all intents and purposes with no open season, it is anticipated that they will disappear.

(c) Opossum (Didelphis marsupialis virginiana) has extended its range on four occasions (1850-60, 1890-1910, 1930-35 and 1947 to present) in Ontario. The present expansion is the most extensive reaching south eastern Ontario.

(d) European hare (Lepus e. europaeus) was introduced into Ontario in 1909. They were released in Brant County in 1912 when 7 females and 2 males from Germany escaped from Brantford Island and spread over, and is well established in agricultural southern Ontario and has recently extended its range to Kemptville. Introductions were made in the Fort William-Port Arthur region in 1942, 1943 and 1945 but apparently had failed by 1950. They were introduced to Thunder Bay in 1950.

(e) Eastern fox squirrel (Sciurus niger rufiventer) was introduced to Pelee Island from southern Ohio by Mr. C. Mills in about 1903.

(f) Gray fox has re-extended its range to two areas in southern Ontario between 1930-40.

(g) Nutria (Myocastor coypus) have been trapped near Fort William in the Thunder Bay District.

Birds

(a) Cattle egret was first sighted in 1956 and nested in 1962 in Presqu'ile Provincial Park.

(b) House finch (Carpodacus mexicanus) was introduced into New York City in 1930 and has spread into southern Ontario. It occurs naturally in British Columbia.

(c) Gray partridge were introduced in the late 1930's in Ontario. Introductions near Chester and Kemptville were successful and have been hunted for many seasons. A northerly introduction in the vicinity of the Clay Belt was not successful. A few occur in the Niagara Peninsula. Birds were released in 1909 from Essex County to Leeds County and from Mischoka to North Frontenac. The Ottawa Fish and Game Society released 42 birds from Saskatchewan at Gracefield in 1938. Other birds were released at the Canaught Rifle Range, Ottawa.

(d) Ringneck pheasant was introduced around 1900. It was reasonably successful and is now treated more like a native bird.

This population has declined due to habitat loss because of urban development and agricultural practices. An introduction to Pelee Island of 100 pheasants from Ohio is particularly famous for the tremendous increase of birds and incredible fall populations of five birds.

(e) Coturnix quail were recently released on Griffith Island in the Georgian Bay and a private Island near Kingston. Their success is not known. Coturnix had been introduced as early as 1875 during the "coturnix craze".

(f) Bobwhite quail have been introduced in some areas other than the range of the native strain. This includes Griffith Island and other private Islands.

(g) Capercaillie (Tetrao urogallus) was introduced in the 1930's. Three cocks and two hens were released by the Tadenac Club on the Georgian Bay. The experiment was not successful.

(h) Brewer's blackbird (Euphagus cyanocephalus) prior to 1943 was restricted to Manitoba west. By 1962 it had extended its range and was found breeding as far east as Ruher, Ontario.

G. Manitoba

Mammals

(a) Plains Bison (Bison bison bison) were re-introduced on an experimental basis into an area near The Pas. Most bison moved through the Saskatchewan River Valley into Saskatchewan. The last bison was shot and the experiment was considered unsuccessful.

(b) Raccoon (Procyon lotor) a natural invader moving northward presumably from North Dakota.

(c) Nebraska cottontail (Sylvilagus floridanus) was first recorded in 1914 at Tresbank and has spread in Manitoba.

(d) Merriam or Minnesota gray squirrel (Sciurus carolinensis hybaeus) crossed into Manitoba in 1930 during a flood of the Mississippi River.

Birds

(a) Bobwhite quail were introduced but were unsuccessful and sightings are rare.

(b) Chukar partridge were introduced in 1938 at four points in the province by the game branch. Forty-four were released in the spring and 56 in the fall but were unsuccessful and sightings are rare.

(c) Gray partridge were introduced and are established in western and southwestern Manitoba and are hunted annually.

(d) Ringneck pheasant have been released in private programs over the last 20 years. They are present in small number but have not responded to attempts to increase their range.

(f) Cattle egret were sighted in Manitoba in 1961.

H. Saskatchewan

Mammals

(a) Plains bison introduced into Manitoba moved on their own into Saskatchewan in the area of the Pasquia Hills. A transplant of bison was made by the Saskatchewan Government in 1969 in the Thunder Hills area near Montreal Lake and these have spread southward and westward into many areas including Prince Albert National Park.

Birds

(a) Ringneck pheasant were introduced over 30 years ago and are well established in portions of the southern area of the province. A moderate scale releasing program is carried out by the Saskatchewan Wildlife Federation. A pheasant season is held annually.

(b) Chukar partridge were first introduced in 1938 near Battleford by the game branch and in selected areas of southern Saskatchewan for over 20 years. Some releases seem to survive two or three years but it seems unlikely that a population will become established.

(c) Wild Turkey have been released occasionally by the Saskatchewan Wildlife Federation but no long term establishment has resulted. It is unlikely that a population will become established.

(d) Gray partridge is well established in the southern agricultural areas and has scattered populations in northern agricultural areas. Its introduction was highly successful and harvests have ranged between 80,000 and 20,000 birds in the last 10 years.

I. Alberta

Mammals

(a) Raccoons have been accidently released in Alberta.

(b) Wild horses were present before the advent of white man and probably originated from stock spread northwards by Indians. They were originally introduced by the Spanish in the 16th century. Because of direct competition between native species such as elk, bighorn sheep and deer on rangelands population control is exercised but small populations still exist.

(c) Bison (Bison bison bison) were extirpated in the prairies before the turn of the century. Between 1907 and 1912, 716 bison were released in Elk Island National Park, near Edmonton. Later animals were released at Wainwright in Buffalo National Park. In 1965 wood bison (Bison bison athabasca) were released in Elk Island National Park. The only wild bird, bybirds of the wood bison and plains bison is found in Wood Buffalo National Park (Alberta and NWT) and environs.

Birds

(a) Ringneck pheasants have been introduced from various sources and a variable population exists in southern Alberta.

(b) Chukar were released in 1937 by Mr. F.S. Green of the Calgary Fish and Game Association near Midland. Two hundred were released that year and a smaller number near Baintnee in 1938.

(c) Wild Turkey has been transplanted experimentally over the past 5 or 6 years. Their status is not known.

(d) Bobwhite quail introductions were unsuccessful. Nineteen were released by Mr. D. Patam near Midnapore in 1929 but were last seen in 1929.

(e) Gray partridge introductions have been successful. Variable populations are found throughout the parkland. They were first introduced in 1908 when F.S. Green released seven pairs near Calgary. In 1909 he released 95 more pairs in the same area. Later in 1913 another 10 pairs were released. Birds were released later in the north around Edmonton. The North Alberta Game and Fish Protection League released 200 in 1908 and 1909 around Calgary. Sixteen pairs were released at Alix in 1909 but disappeared by 1911. Later in 1927, the League released a total of 230 birds at Grands Prairie, Fort Saskatchewan, St. Albert, Morinville, Hastings Lake, Cooking Lake.

J. British Columbia

Mammals

(a) Opossum has extended its range from its original introduction in 1925 in Washington State. Since 1969 it has spread up the Fraser Valley as far north as Point Grey.

(b) European rabbit (Oryctolagus cuniculus) was introduced by early settlers. British Columbia stock was released on Bare Island, Chatham Island, Strongtide Island, Piers Island, Vancouver Island, the Highland District, McGee Swamp, South Pender Island, Graham Island, Queen Charlotte Islands, and Triangle Island and Vancouver Island from Sooke to Goldstream have established populations.

(c) Eastern Cottontail rabbit (Sylvilagus floridanus) was introduced to Washington State between 1926 and 1933 and extended its range to British Columbia by 1950. Stock from Ontario was introduced to Vancouver Island in 1964-65 and is established in the Sooke-Metchosin area.

(d) Eastern Gray Squirrel were introduced to Stanley Park shortly before 1914. By 1920 a population from the original 3 or 4 pairs had become firmly established at a stable level.

(e) Black rat (Rattus rattus rattus) well established on Queen Charlotte Islands and in mountains next to Vancouver, and has been recorded on Vancouver Island and the lower mainland. (This species may also occur around seaports in eastern Canada but is not established). It was accidentally introduced after the Norway rat.

(f) Alexandrian rat (Rattus rattus alexandriuns) is established on Queen Charlotte Islands and has been recorded on Vancouver Island and the lower mainland.

g) Nutria (Myocaster coypus bonariensis) have been imported for fur farms since 1938. Escaped animals have been reported from Vancouver Island and the lower mainland. No large feral populations have become established. Eastern Canada may also have escaped animals but they apparently cannot survive the winters.

(h) Red deer (Cervus elaphus) were introduced in 1913 by the Game Commission. A buck and three does were imported from New Zealand and kept at Chilliwack until 1918 and then were released near Masset on the Queen Charlotte Islands. The herd increased but declined during the early 1940's. These are no recent authentic reports and the red deer is considered extinct.

(i) Fallow deer (Dama dama) were introduced to James Island about 1895 by Irving H. Wheatcroft. The Game Commission released transferred animals on Saltspring and Pender Islands and in the Alberni District of Vancouver Island. The first transfer was in 1931 with later transfers in 1934 and 1935 on Saltspring and near Alberni. Fallow deer are now present on James, Saltspring and Sidney Islands. There are no reports from Pender Island since 1930 and the last fallow deer seen in Alberni was in 1952.

(j) Wild horses were introduced from stock that was spread northwards by Indians from the Santa Fe region

about 1600, reaching the Flathead area by 1700. They created problems in the southern and central grasslands of British Columbia and efforts were made to destroy them. Small populations still exist.

(k) Bactrian camels (Camelus bactrianus) were introduced in 1862 during the Cariboo goldrush. Some of the original 22 were turned loose in the Lac Lahache area and near Westwold. They went feral and the last one died about 1905.

(l) Sea otter (Enhydra lutris) were released on Burnaby Island in 1969. The 29 released animals were from Amchitka Island, Alaska. Another 13 were released in 1970. The result is unknown but some have been sighted.

(m) Mountain goat (Oreamnos americanus) were introduced in 1924 to Shaw Creek on Vancouver Island. The four animals were obtained from Banff National Park, Alberta by the Game Commission. They were reported extinct by 1936.

(n) Rocky Mountain Sheep (Ovis canadensis canadensis) were introduced from Banff, Alberta to Squilax. This consisted of 60 ewes and 10 rams. Also in 1927, 35 ewes and 13 rams from Banff National Park were released at Spences Bridge.

(o) Elk (Cervus canadensis nelsoni) were released at Adams Lake in 1932. The 25 animals were from Jasper, Alberta. Five elk from Stanley Park Zoo were released at McNab Creek in 1933. Eight were released on Graham Island. All transfers were successful and populations were established by 1970. In 1971, 30 elk from Banff National Park were released by the Fish and Wildlife Branch in Grand Forks and are doing well.

(p) Other transfers within the province to coastal islands included chipmunks, red squirrel, beaver, white-footed mice, muskrat, red fox, raccoon, mink, elk, blacktail deer, and California bighorn sheep. These are not strictly transfers of exotics by the definition used in this report, however, they have the element of manipulation and description of naturally evolving island ecosystems.

Birds

(a) Sage grouse (Centrocercus urophasianus) were introduced to Richter Pass in 1958 from Oregon. The transfer of the 57 grouse by the Fish and Wildlife Branch was unsuccessful by 1960.

(b) European gray partridge were introduced into Washington State. By 1917 they had spread north into the southern Interior of British Columbia. In 1904, fifty-seven birds were released near Vancouver. Then, in 1905 thirty-two were released, 167 in 1907 to 1908 and 277 in 1909. In 1915 the first open season was held.

In 1908 and 1909 about 500 birds were released on Vancouver Island, 72 on James Island and 32 on Sidney Island by J.L. and A.C. Todd. In 1909, 10 birds were released on South Pender Island by A.R. Spalding and H.R. Pooley.

The gray partridge was abundant in the Okanagan Valley in 1925-26 but declined in 1927 and has maintained a low population since. Only small flocks were present in 1958 on the lower Mainland. Only a few recent sightings have been made so the partridge is not established here.

All of the smaller insular introductions failed after a short while. Two flocks persisted on Vancouver Island. Only one still lives near the Victoria Airport.

(c) Chukar partridge were introduced at Alkali Lake and Dog Creek in 1940 by A.D. Hitch. This introduction failed.

Seventeen birds were released by the Game Commission at Harper Ranch near Kamloops in 1950. In 1951 another 52 were released there as well as 80 near Savona, and 139 near Oliver. Releases were continued until 1956. The population increased greatly and spread along the Thompson and Fraser Rivers. Open seasons were started in 1955. Declines have occurred during the winters of 1964-65 and 1968-69.

(d) Bobwhite quail were introduced to the lower mainland with a release of 156 birds. In 1900, 130 were released near Ashcroft, 32 near Shuswap in 1905, and 35 near Vernon in 1907. In 1922 birds were released on Vancouver Island.

The population did not establish itself except for a few years in the southern Interior.

(e) California quail (Lophortyx californica) were introduced in 1860 to 1861 near Victoria by C. Wylde. Birds from San Juan Island were released by H.M. Peers of Calquitz Farm. In the 1870's more birds were released in the same areas. In 1890's introduction was made in southern Vancouver Island and the lower mainland. In 1908 and 1910 releases were made near Nicola in the southern Interior and the Queen Charlotte Islands. Between 1907 and 1909, 30 birds were released on South Pender Island. Birds of Washington State may have spread north into the Interior.

This species is well established on Vancouver Island but numbers are relatively low. Small numbers are established in the Interior. Introduction to the lower mainland, and the Queen Charlotte Islands were unsuccessful, but a few exist on Pender Island.

(f) Mountain Quail (Oreortyz picta) were introduced at Victoria in 1860 or 1861 by C. Wylde. Other introductions were made in the Fraser Valley. These were unsuccessful. Releases in the 1870's and '80's were successful on Vancouver Island. Small numbers are established in several areas.

(g) Ringneck pheasant were introduced by C.W.R. Thompson in 1882. The 22 birds from England died but in 1883 Mr. Thompson released 25 birds from China at Esquimalt which survived. In 1886 E. Musgrave released 12 Chinese birds on Saltspring Island, and in 1890, 20 were released on Prevost Island. In 1890 the Mainland Protective Association released 20 pheasants at Point Grey and 23 at Sadner in 1893. Between 1890-1900, 82 were released in the Province, including Pender Island. In 1910 the Game Commission took over raising and breeding pheasants (until 1933 after which they purchased them from breeders) to release for hunting until 1959. Introduction to the Queen Charlotte Islands and the Vanderhoof area during the period was unsuccessful.

(h) Black game (Lyrurus tetrix) were introduced in

1906 by Mr. Chaldecott and Mr. Musgrave. Nineteen birds from Copenhagen were released on Vancouver Island and adjacent islands and 16 near Nicomen on the mainland. The introductions were unsuccessful.

(i) Capercaillie (Tetraco urogallus) were introduced in 1906 by Mr. Chaldecott and Mr. Musgrave. Fourteen birds from Denmark were released near Cowichan Lake on Vancouver Island and at Lake Bunsen on the mainland. The introductions were unsuccessful.

(j) Wild turkey were introduced to James Island by R. McBride and associates in 1910. The original two pairs multiplied but the species disappeared by 1929.

Two hundred birds were raised at the Game Commission's game farm at Saanich. In 1954 at its close, about 30-40 birds were released on Sidney Island and some on Prevost Island.

In 1931 L.H. Walker released a dozen birds on South Pender Island. None of the introductions were successful. Only a small protected population exists on Sidney Island which J. Todd introduced in 1962.

(k) English Skylark (Alauda arvensis) were introduced in 1903 by the National History Society of British Columbia. One hundred pairs were released near Victoria. In 1913 another 49 were released in the same areas and some on the lower mainland.

G.H. Wallace releases some skylarks, red breasts, British blue tits (Parus caeruleus obscurus), linnets (Acanthis flommea) and goldfinches (Carduelis carduelis) from Britain in 1908 or 1910 and released on Saanich Penninsula. Only the skylark introduction were successful.

Populations are established near Victoria, in the Saanich Penninsula and on Sidney Island.

(l) Crested mynah (Acridotheres cristatellus) were introduced by Oriental immigrants or were accidentally introduced aboard ships. They were first sighted in 1897. The population is established mainly in the Vancouver area with a few records from Nanaimo on Vancouver Island. The population has decreased to only 2,000 to 3,000 birds.

(m) The following birds have been transferred and released on coastal islands: Canada Goose (Branta canadensis canadensis), blue grouse (Dendragapus obscurus), willow grouse (Bonasa umbellus), California quail and ringneck pheasants.

K. Yukon Territory

Mammals

(a) Plains Bison were introduced about 20 years ago in the Braeburn area near Lake Laberge. Six animals from the Delta herd in Alaska were released but the herd didn't increase. The last animal sighting was in the Nisling River area in 1972.

(b) Elk were introduced about 20 years ago in the Braeburn area. About 50 elk from the Elk Island National Park, Alberta were released. The population is established but has not increased. In 1972-73 a total of 51 elk were observed in three herds.

(c) Muskoxen (Ovibos moschatus) have crossed the Yukon border from the Arctic Wildlife Range, Alaska, where they were recently introduced by the Alaska Fish and Wildlife Branch.

(d) Mule deer (Odocoileus hemionus) have increased their range into the Yukon and are common in certain areas.

(e) White-tailed deer (Odocoileus virginianus) have also increased their range and have been sighted.

(f) Coyote have extended their range northward into the Yukon.

Birds

(a) Ringneck pheasants were introduced about 20 years ago. The introduction was not successful.

L. Northwest Territories

Mammals

(a) Reindeer were introduced in 1911 to the Great

Slave Lake area. Fifty animals from Newfoundland were purchased from Dr. W.T. Grenfell by the Department of Interior. By 1916 the herd had declined to one animal due to deaths and straying. The last animal was eaten by the herder to end the \$60,000 project.

In 1921 the Hudson's Bay Company introduced 550 reindeer purchased in Norway at Amadjuak Bay on southern Baffin Island. The project was run by the Hudson's Bay Reindeer Company under V. Stefansson. The reindeer scattered when released and only 260 were rounded up. During the winter of 1924-25 most disappeared and in 1925 the project was cancelled for a total cost of \$200,000.

In 1929, 3,000 reindeer were ordered from the Lomen Reindeer Company of Alaska. After a drive of five years the animals arrived in the McKenzie River delta. Only 10% of the 2,382 that arrived were of the original herd. The herd increased to 9,347 by 1942. Until 1967 the number fluctuated between 5,000 and 9,000. The herd declined to 2,800 animals in 1967.

(b) Coyote have extended their range northward into the Northwest Territories.

(c) Plains Bison (Bison bison bison) were released in Wood Buffalo National Park about 1922. The 6,700 animals interbred with the Wood Bison (Bison bison athabasca) and almost swamped the wood bison gene pool. Wood bison were transferred to McKenzie Bison Sanctuary, Northwest Territories in 1963 and to Elk Island National Park, Alberta in 1965 to maintain this sub-species.

Birds

(a) Cattle egret was sighted in 1971 near Fort Smith.

DISCUSSION

Very few introductions of mammals foreign to Canada have become established. On the other hand, introductions of indigenous Canadian mammals to other provinces have been generally successful.

Some species of exotic birds (generally from the Old World) have become well established. Many of the game bird species intentionally introduced have become established. The ringneck pheasant and gray partridge have become so successful that they are not considered exotics anymore by the game departments involved.

Introduced species may compete for food, shelter or territory with native species. This is true for the English sparrow and the starling which competes against and displaces native cavity-nesting birds; and for wild horses which compete with mountain sheep, elk and deer in Alberta and British Columbia.

Exotic species may become pests (i.e. causing excess economic damage or health risks) such as English sparrows, starlings, house mice, and Norway rats in agricultural areas. Norway rats and rock pigeons are health hazards. Pigeons are suspected of carrying psittacosis in urban areas. These species are difficult to control.

Exotic species may introduce new parasites or diseases that may be highly dangerous to native fauna that have no resistance to the new disease. The introduction of the large liver fluke with the western elk in Ontario is a good example. However, because of rigid health standards required for the importation of exotics into Canada by the Federal Department of Agriculture, chances of such introductions are considerably reduced.

There is a danger of introduced species breeding with closely related native species and polluting the gene pool of a native species. The introduced reindeer are an example. The wood bison almost became extinct because of such a procedure when the plains bison were introduced among them.

Many exotic or translocated species are not covered by provincial regulations. Bison had to be accorded special status in Ontario as a fur-bearer. In southern Alberta bison are not recognized as a wild species south of the 22nd baseline. There is no control over this species. Wild horses are another statusless species. This is confusing to the public and causes animosity when no one will accept responsibility for the control or protection of a species.

Much time, money and manpower has been spent on the introduction of exotic species. Often this effort could have been spent improving or preserving the habitat of native species which probably would have provided better results. Reindeer introductions in Canada is one such example. In 1911, \$60,000 was spent introducing reindeer into Newfoundland when the Newfoundland woodland caribou was already an indigenous species. In 1921, another \$200,000 was spent trying to introduce reindeer to Baffin Island. Again barren-ground caribou were already found there.

The importation of reindeer to the Reindeer Preserve near Inuuik, Northwest Territories, was not entirely successful. A Royal Commission Report of 1922 suggested that to improve the economic conditions of the native people in the area following the decrease of wildlife (especially caribou) that reindeer should be brought in. An 18,000 square mile preserve called the Preserve was established and it was estimated that a carrying capacity of 30,000 reindeer was possible. The actual number never exceeded 9,000 animals.

A variety of minor factors such as losses to migratory caribou, predation, diseases and parasites (especially warble fly), malnutrition resulting in bone weakness and foot rot, and severe weather appeared to depress reindeer numbers. More important however, is the lack of motivation of the local to manage the herds. Culturally and socially this was a departure from the traditional hunting and gathering culture and herding was alien to that culture.

At present caribou are increasing in the area. Biologists tend to be concerned with potential competition for food between caribou and reindeer and that mixing will cause contamination of the caribou gene pool. Although it is biologically feasible for reindeer to survive it does not appear feasible socially to maintain reindeer in the Canada's North. Canadian scientists are worried about the effects of introduced species.

CONCLUSIONS

Although this paper cannot begin to be a complete account of introductions of mammals and birds in Canada, it does give an account of the major introductions. A statement by Dr. E. Raymond Hall most appropriately sums up the conclusions of the author: "Introducing an exotic species is a destructive action resulting from the ignorance of well-meaning persons... Introducing exotic species of vertebrates is unscientific, economically wasteful, politically short-sighted, and biologically wrong." In the meantime, however, the importation of exotics continues unabated as exemplified in the most recent import lists. (Appendix A). Although some of the trade is directed to well organized zoological gardens or game farms as identified in Appendix B, a large number find their way from pet shops into the hands of individual owners most likely to inadvertently or otherwise release such animals into the wild. This report deals only with a historical review. Obviously the next phase must deal with present practice and some recommendations for the future.

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APPENDIX A

MAMMALS, BIRDS, AND REPTILES

IMPORTED INTO CANADA

- 1973-1974 -

MAMMALS PERMITTED ENTRY INTO CANADA 1973-74

Marsupialia

Didelphidae	*Opossum	8
Macropodidae	*Wallaby	29

Chiroptera

Bat	6
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Primates

Tupaiidae	Tree shrew	98
Lemuridae	*Lemur	10
Lorisidae	*Loris	14
Cebidae } Cercopithecidae }	*Monkey	3515
Pongidae	*Gorilla	5

Edentata

Myrmecophagidae	*Anteater	1
Bradypodidae	*Sloth	1
Dasypodidae	*Armadillo	5

Rodentia

Sciuridae	*Squirrel	113
	*Prairie dog	1
	*Chipmunk	24
Cricetidae	Hamster	132
	Gerbil	3
Hystricidae } Erethizontidae }	Porcupine	16
Caviidae	Guinea Pig	854

Hydrochoeridae	Capybara	2
Dasyproctidae	Agouti	10
	Paca	1
Chinchillidae	*Chinchilla	36

Carnivora

Canidae	Coyote	1
	*Fox	1
	Jackal	1
Ursidae	*Bear	3
Procyonidae	Cacomistle	4
	Coatimundi	10
	Kinkajou	6
Mustelidae	*Ferret	37
	Mink	155
	Polecat	3
	Skunk	503
Viverridae	Civil	24
	Genet	3
	*Mongoose	11**
Hyaenidae	Hyaena	4
Felidae	African lion	1
	*Cheetah	12
	*Cougar	4
	*Jaguarundi	2
	*Leopard	5
	*Ocelot	8
	Thai Jungle Cat	4
	*Tiger	22

Pinnipedia

Otariidae	Sea lion	8
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Hyracoidea

Procaviidae	Hyrax	17
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Artidactyla

Hippopotamidae	*Hippopotamus	5
Camelidae	Camel	1
	Llama	1
Cervidae	*Deer	35
Bovidae	*Assorted	
	antelope	3
	Springbok	7
	Wisent	2

BIRDS PERMITTED ENTRY INTO CANADA 1973-74

Struthioniformes

Rheidae	*Rhea	12
Casuariidae	Cassowarie	2

Sphenisciformes

Spheniscidae	*Penguin	37
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Ciconiiformes

Ciconiidae	*Stork	2
Threskiornithidae	*Ibis	12

Phoenicopteriformes

Phoenicopteridae	*Flamigo	8
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Anseriformes

Anatidae	*Swan	27
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Falconiformes

Accipitridae	Hawk	2
Falconidae	*Falcon	2

Galliformes

Phasianidae	Grouse	3
	Partridge	4
	*Quail	820
	Wild Turkey	50
	Peafowl	31
	*Pheasant	2156

Cruiformes

Gruidae	*Crane	61
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Charadriiformes

Scolopacidae	Ruff	6
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Columbiformes

Columbidae	*Pigeon	2538
	Dove	312

Psittaci

Psittacidae	Kea	2
	Cockatoo	11
	*Macaw	1
	*Turaco	28

Coraciiformes

Bucerotidae	*Hornbill	12
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Piciformes

Ramphastidae	Toucan	20
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Passeriformes

Sturnidae	*Starling	5
Corvidae	Magpie	10

REPTILES PERMITTED ENTRY INTO CANADA 1973-74.

Reptilia

Alligatoridae

*Alligator 2

ASSORTED REPTILES 1516

* Some species of this family are included in
Convention on International Trade in Endangered
Species of Wild Fauna and Flora.

** Prohibited entry in Canada.

APPENDIX B

CANADIAN ZOOLOGICAL GARDENS, AQUARIUMS
AND GAME FARMS

CANADIAN ZOOS, AQUARIUMS, AND GAME FARMS

BRITISH COLUMBIA

Vancouver Game Farm
ALDERGROVE, B.C.

The Ranch Zoo
BOSTON BAR, B.C.

Petland
COMOX, B.C.

B.C. Wildlife Park
KAMLOOPS, B.C.

Surrey Zoo
NORTH SURREY, B.C.

Okanagan Game Farm
PENTICTON, B.C.

Caribou Game Bird Farm and Zoo
QUESNEL, B.C.

Wildlife Conservation Centre
SAANICHTON, B.C.

Northern Zoo and Park
TAYLOR, B.C.

Stanley Park Zoo
VANCOUVER , B.C.

Vancouver Public Aquarium
VANCOUVER , B.C.

Bird Park "Orioles"
VICTORIA, B.C.

Rudy's Petpark
VICTORIA, B.C.

Sealand of the Pacific
VICTORIA, B.C.

Undersea Gardens
VICTORIA, B.C.

ALBERTA

Alberta Game Farm
ARDROSSAN, Alberta

Calgary Brewery Aquarium
CALGARY, Alberta

Calgary Zoo
CALGARY, Alberta

Diamond E. Ranch
ROUND HILL, Alberta

Smeeton's Game Farm
COCHRANE, Alberta

Stewart's Game Farm
LETHBRIDGE, Alberta

Storyland Valley Zoo
EDMONTON, Alberta

SASKATCHEWAN

Dai's Petland
LLOYDMINSTER, Saskatchewan

Golden Gate Animal Park
SASKATOON, Saskatchewan

Interprovincial Steel and Pipe
Corporation Limited
Game Sanctuary
REGINA, Saskatchewan

SASKATCHEWAN CONTINUED

Moose Jaw Wild Animal Park
MOOSE JAW, Saskatchewan

MANITOBA

Assiniboine Park Zoo
WINNIPEG, Manitoba

ONTARIO

African Lion Safari & Game
Farm Limited
ROCKTON, Ontario

Bowmanville Zoo
BOWMANVILLE, Ontario

Cedar Trail
PUSLINCH, Ontario

Children's Animal Zoo
BRANTFORD, Ontario

Debord Circus
Travelling Menagerie
BEDFORD, Ontario

Ennismore Zoo
PETERBOROUGH, Ontario

Fairyland Farms
ST. AGATHA, Ontario

Fairytale Park
LINDSAY, Ontario

High Park Zoo
TORONTO, Ontario

Hunt's World of Animals
AMHERSTBURG, Ontario

John N. Corbett Gravel Supply
and Wild Game Farm
MOUNT ELGIN, Ontario

Jungle World
PHELPSTON, Ontario

Jungle World
FERGUSONVILLE, Ontario

Jungle World
SARNIA, Ontario

Kitchener Park
KITCHENER, Ontario

L.B.K. Buffalo Ranch
ORO STATION, Ontario

Lions Wildlife Display
Waterloo Park
WATERLOO, Ontario

Marineland and Game Farm
NIAGARA FALLS, Ontario

Metropolitan Toronto Riverdale Zoo
TORONTO, Ontario

Metropolitan Toronto Zoo
TORONTO, Ontario

McLelland Zoo
KINCARDINE, Ontario

North Valley Park
ST. AYR, Ontario

Ontario Waterfowl Research Station
GUELPH, Ontario

Ontario Zoological Park
WASAGA BEACH, Ontario

ONTARIO CONTINUED

Ottawa Valley Game Farm
EDWARDS, Ontario.

Ottawa Valley Wonderland Zoo
ROCKLAND, Ontario.

Pembroke Animal Park
PEMBROOKE, Ontario.

Peterboro Utilities Commission
PETERBORO, Ontario.

Prudholme's Garden Centre
VINELAND, Ontario.

Reptile House
PARRY SOUND, Ontario.

Riverbend Zoo
NOELVILLE, Ontario.

Riverdale Zoo
TORONTO, Ontario.

Riverside Park
PRESTON, Ontario.

Southside Park
WOODSTOCK, Ontario.

Storybook Gardens
LONDON, Ontario.

Victoria Park
GALT, Ontario.

Waterloo Park
WATERLOO, Ontario.

Wildlife Park
KIRKLAND LAKE, Ontario.

Woodland Park Zoo
MALLORYTOWN, Ontario.

Woodside Park
BROCKVILLE, Ontario.

QUEBEC

Clearbrook Game Farm
ORMSTOWN, Quebec.

Gaspesia Zoo
BONAVENTURE, Quebec.

Granby Zoo
GRANBY, Quebec.

Jardin Zoologique de Montreal
MONTREAL, Quebec.

Montreal Aquarium
MONTREAL, Quebec.

Parc Safari Africain (Quebec) Inc.
HEMMINGFORD, Quebec.

Quebec Aquarium
STE. FOY, Quebec.

Quebec Zoological Gardens
ORSAINVILLE, Quebec.

Rimouski Zoo
RIMOUSKI, Quebec.

Sherbrooke Zoo
SHERBROOKE, Quebec.

St-Edouard Zoo
MASKINONGE, Quebec.

Zoo de St-Felicien
CTE LAC ST-JEAN, Quebec.

NEW BRUNSWICK

Woolastook Wildlife Park
FREDERICTON, New Brunswick

PRINCE EDWARD ISLAND

Prince Edward Island Wildlife Park
NORTH RUSTICO, P.E.I.

Marineland Aquarium
STANLEY BRIDGE, P.E.I.

NOVA SCOTIA

Provincial Wildlife Park
SHUBENACADIE, Nova Scotia

NEWFOUNDLAND

Provincial Wildlife Park
ST. JOHN'S, Newfoundland

YUKON

Yukon Game Farm
WHITEHORSE, Yukon Territory