

Endangered Canadian Mammals¹

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Abstract. A brief survey of the extinct and vanishing mammals of Canada shows twelve species in danger of extinction and three species already extinct by our hand in our brief history in Canada. As the endangered species and those in restricted habitats can be destroyed as much by damage or modification of their environment as by hunting the management and preservation of the habitats in which they live is vital. The critical population status of some of the species is stressed.

The rare and endangered mammals of Canada need to be identified so that the public may become aware that modern man's influence on the environment is significant and that an erosion of wildlife populations and their habitat is occurring. Some once-abundant species are now either rare or extinct, and unique ecosystems have been wholly or partially destroyed. However, rehabilitation of some endangered species is still possible.

The International Union for the Conservation of Nature and Natural Resources has, through its Survival Service Commission, published a Red Data Book on rare and endangered species throughout the world. The Canadian list given in that publication is incomplete and a more definitive work which hopefully will inform the Canadian public is now being written. This paper is intended to summarize that work and to provide a medium by which new information on other species inadvertently omitted can be brought to our attention.

In general, those animals of high economic and recreational value to Canadians are managed carefully for the public good. Those species, generally the larger ungulates or fur-bearing animals, are specified as game in provincial and territorial game regulations or ordinances. But "economic man" has not yet realized that other mammals also have a significant role in the ecosystem.

The designation of rare or endangered species is a complex matter especially since

enough information on populations, taxonomy and distribution of the smaller and/or rarer mammals is lacking. The status and importance of the species listed here have, therefore, been evaluated subjectively.

"Rare" species either occupy an extremely restricted habitat or are low in numbers. "Endangered" species, on the other hand, were once either abundant or generally well distributed throughout Canada and are now being threatened by destruction of the habitat or by deliberate attempts to eliminate them. The bison is a case in point. "Peripheral" species have not been classified because they are distributed on the periphery of Canadian territory and thus may appear rare to Canadians.

1. THE ROOSEVELT ELK, *Cervus canadensis roosevelti* (Merriam).

The Roosevelt Elk was found on the mainland in southern British Columbia and is now found in limited numbers only on Vancouver Island. It is now protected. This subspecies also is distributed in the states of Washington, Oregon and northern California in limited numbers. However, Canada's population is isolated and vulnerable without complete protection.

2. THE CALIFORNIA BIGHORN, *Ovis canadensis californiana* (Douglas).

This species, formerly present throughout southern interior British Columbia is now restricted in separate herds—the Chilcotin-Riske Creek group, the Ashnola group, the Vaseaux Lake group in the Okanagan, and smaller groups associated in the same general area which total approximately 1,200 animals. The California bighorn is still hunted legally, and probably also illegally, but attempts are being made

¹Solicited by the Editor

to create sanctuaries for the species by securing and protecting summer and winter range. Competition for range with cattle is still a problem.

3. THE WOOD BISON, *Bison bison athabasca* (Rhoades).

The wood bison was once numerous numbering in the many thousands particularly in northern Alberta and the southern Mackenzie District of the Northwest Territories. It probably ranged along the Foothills of the Rocky Mountains southward into the United States. Due to hunting, severe climatic factors and hybridization in the last century the wood bison was thought to be extinct. However, a small group in Wood Buffalo Park was identified, isolated and transplanted to its historic range where it is now under protection. A breeding herd to provide further wood bison stock for transplant is now isolated in Elk Island National Park. The total population of this subspecies is now approximately 75 animals.

4. THE NORTHERN KIT FOX. *Vulpes velox hebes* (Merriam).

This species, once common on the Great Central Plains in Manitoba, Saskatchewan and Alberta, is now found only in southern Alberta and southern Saskatchewan. It is extremely limited in number and an increase can only be possible under complete protection, probably in a sanctuary such as a national park. Their status is so critical that if no attempts are made at rehabilitation soon the subspecies will become extinct.

5. THE VANCOUVER ISLAND WOLF. *Canis lupus crassodon* (Hall).

The Vancouver Island wolf is restricted to Vancouver Island in British Columbia. Because of earlier extermination programs and present day expansion of development

activities on Vancouver Island, the habitat is becoming continually restricted and numbers are very limited.

6. THE NORTHERN ROCKY MOUNTAIN COUGAR. *Felis concolor missoulensis* (Goldman).

This geographical race was once distributed along the Rocky Mountain chain in the foothills, the Central Great Plains and extending from Alberta to Saskatchewan and Manitoba. This large range was doubtless a result of the many discontinuous series of hills stretching from the foothills into Manitoba, where some of these animals have been taken in the last few decades. Because of continual hunting and poisoning programs, numbers have been diminishing rapidly and the animal is becoming more and more restricted to the isolated areas of the Rocky Mountain chain. It is protected in the national parks of Canada but not elsewhere.

7. THE EASTERN COUGAR. *Felis concolor cougar* (Kerr).

The eastern cougar was once distributed throughout Ontario, Quebec and the Maritime Provinces. It is now very nearly extinct. Authorities in the Province of New Brunswick believe there are three separate groups of the eastern cougar in New Brunswick, and unconfirmed reports seem to indicate that a few might also be found in eastern Quebec, south of the St. Lawrence River. There is no protection for the species.

8. THE BLUE BEAR OR GLACIER BEAR. *Ursus americanus emmonsii* (Dall).

This bear is found in southwest Yukon Territory and in southeast Alaska. It is protected in Alaska by regulations, because the population is within the Glacier Bay National Monument. In the Yukon Territory it is protected and found only in

the Kluane Game Sanctuary. It occurs as a colour phase of the black bear but is considered a separate race. The population although extremely limited has stabilized under protection.

9. BROWN BEAR. *Ursus arctos*.

At least four particular geographic races of the brown bear are extremely rare. At present the taxonomic status of these races is under review and they will be discussed under their common name.

(a) THE BARREN-GROUND GRIZZLY. This race is now found throughout the mainland Northwest Territories, but generally only in the tundra regions and near treeline, where they may grade imperceptibly into the mountain grizzly. The barren-ground grizzly is protected over most of its range by legislation but increased activity by exploration crews poses a new danger to the limited population as undoubtedly bears will be shot supposedly in defence of life or property.

(b) THE LILLOOET GRIZZLY. Originally found in southern interior British Columbia, the Lillooet grizzly was never abundant and because it was subjected to heavy hunting pressure it is now extremely rare and may be extinct.

(c) THE BIG PLAINS GRIZZLY. Originally this race was found in the Central Great Plains area of Alberta, Saskatchewan and Manitoba in those areas that are now the major agricultural areas of Canada. Probably retreated and is now synonymous with the Rocky Mountain grizzly. There are reports that the race still exists in the Swan Hills of Alberta and specimens have been taken from that area for taxonomic studies. The Swan Hills area is presently under permit for oil exploration and legislation to protect this race is required.

(d) THE CHELAN GRIZZLY. This geographic race ranged only in western British Columbia on the mainland and is now found in wild-

erness areas in small isolated populations. It has been reduced by hunting pressure and may eventually be protected.

10. THE BLACK-FOOTED FERRET. *Mustela nigripes*. (Audubon and Bachman). This interesting species was once common in southern Alberta and southern Saskatchewan and was generally associated with prairie dog colonies. A predator of the prairie dog, the ferret was reduced in numbers as a result of poisoning campaigns to reduce the number of prairie dogs which interfered with ranching operations and cultivation. There are very few records of any black-footed ferret being sighted and the animal may be more common in the United States than in Canada. If so rehabilitation is a possibility.

11. THE NEWFOUNDLAND PINE MARTEN. *Martes americana atrata* (Bangs.)

This species was once found throughout Newfoundland and Anticosti Island. Because of extreme hunting pressure and a reduction in its habitat, the pine marten is now found only in the lower Grand Lake and Gamble Lake areas in Newfoundland. It is difficult to provide protection for such a wide ranging animal but the populations are sufficiently isolated to be secure if only in limited numbers.

12. THE BLACK-TAILED PRAIRIE DOG. *Cynomys ludovicianus ludovicianus* (Ord).

The prairie dog was once common in the Great Central Plains area of southern Saskatchewan and southern Alberta. Their colonial habits made it simple to eradicate them, generally by poisoning. Consequently, only a few live colonies exist in the Frenchman River Valley area of southern Saskatchewan. One of these colonies has been fenced off and is under protection by the Saskatchewan Natural History Society. That colony is east of Val Marie, Saskatchewan in the valley of the Frenchman River.

Extinct Mammals

Extinction, the complete elimination of a species, can occur in many different ways. The most important in geological times are tectonic upheavels, changes in climatic conditions and specialization of species unable to adapt to changing conditions. Man, as a modifier of the environment, can also change the conditions for the existence of a species by habitat destruction or by reducing the number of animals to such a low level that they cannot perpetuate themselves. In Canada, only a few animals have become extinct as a result of man's action.

These are:

- (a) THE QUEEN CHARLOTTE ISLANDS CARIBOU. *Rangifer tarandus dawsoni* (Seton).

This race, also called the Dawson caribou, was at one time present but never abundant in the Queen Charlotte Islands of British Columbia. They became extinct about 1935 due to hunting pressure from fishermen who used the various harbour-ages in the islands.

- (b) THE GREAT PLAINS WOLF. *Canis lupus nubilus* (Say).

The Great Plains wolf roamed the Central Great Plains of southern Manitoba, Saskatchewan and Alberta. This subspecies was the "buffalo wolf" which roamed with the vast herds of bison on the Central Great plains. When the bison vanished, the buffalo wolf then preyed on livestock and became an enemy of the rancher. It was gradually eliminated by hunting, trapping and poisoning and became extinct in the 1930's. Intergrades with other subspecies may still exist but this is a very slim hope indeed.

- (c) THE NEWFOUNDLAND WOLF. *Canis lupus beothucus* (Allen and Barbour).

The Newfoundland wolf was found throughout Newfoundland and was exterminated by the late 1930's. Settlement and continued persecution over centuries contributed to extinction.

Peripheral to Canada

VIRGINIA OPOSSUM. *Didelphis marsupialis virginiana*.

THOMAS'S BAT. *Myotis lucifugus carissima*.

FRINGED-TAILED BAT. *Myotis thysanodes thysanodes*.

MERRIAM'S MASKED BAT. *Myotis subulatus melanorhinus*.

SAY'S MASKED BAT. *Myotis subulatus subulatus*.

LITTLE CALIFORNIA BAT. *Myotis californicus californicus*.

WESTERN RED BAT. *Lasiurus borealis teliotis*.

LEATHER-WINGED BAT. *Nycticeius humeralis humeralis*.

LARGE BIG-EARED BAT. *Antrozous pallidus cantwelli*.

SOUTHERN SADDLE-BACKED SHREW. *Sorex arcticus laricorum*.

KLAMATH SHREW. *Sorex bendirii bendirii*.

TROWBRIDGE'S SHREW. *Sorex trowbridgii trowbridgii*.

WISCONSIN WATER SHREW. *Sorex palustris hydrobadistes*.

MONTANA SHREW. *Sorex vagrans longiouus*.

SEATTLE MOLE *Neurotrichus gibbsii minor*.

SHOALWATER BAY MOLE. *Scapanus orarius orarius*.

TOWNSEND'S MOLE. *Scapanus townsendii*.

PRAIRIE MOLE. *Scalopus aquaticus machrinus*.

IOWA COUGAR. *Felis concolor schorgeri*.

WISCONSIN GREY FOX. *Urocyon cinereoargenteus ocythous*.

EASTERN GREY FOX. *Urocyon cinereoargenteus cinereoargenteus*.

NORTHERN GREY FOX. *Urocyon cinereoargenteus borealis*.

NORTHERN LONG-TAILED WEASEL. *Mustela frenata spadix*.

PACIFIC WOLVERINE. *Gulo luscus luteus*.

PUGET SOUND SPOTTED SKUNK. *Spilogale gracilis latifrons*.

MCCARLEY'S SPOTTED SKUNK *Spilogale putorius*.

PUGET SOUND STRIPED SKUNK. *Mephitis mephitis spissigrada*.

- BROWN MOUNTAIN BEAVER. *Aplodontia rufa rufa*.
- YELLOW-BELLIED MARMOT. *Marmota flaviventris nosophora*.
- WASHINGTON DOUGLAS SQUIRREL. *Tamiasciurus douglasii douglasii*.
- BANG'S FLYING SQUIRREL. *Glaucomys sabrinus bangsi*.
- TOWNSEND MEADOW MOUSE. *Microtus townsendii townsendii*.
- NORTHERN PINE MOUSE. *Microtus pennatorum scalopsoides*.
- PALLID PYGMY VOLE. *Lagurus curtatus pallidus*.
- ALASKA VARYING LEMMING. *Dicrostonyx groenlandicus rubricatus*.
- DUSKY HARVEST MOUSE. *Reithrodontomys megalotis megalotis*.
- OLIVE-BACKED POCKET MOUSE. *Perognathus fasciatus olivaceagriseus*.
- MONTANA KANGAROO RAT. *Dipodomys ordii terrosus*.
- MISSISSIPPI VALLEY POCKET GOPHER. *Geomys bursarius bursarius*.
- CALIFORNIA PORCUPINE. *Erethizon dorsatum epixanthum*.
- WASHINGTON COTTONTAIL. *Sylvilagus nuttallii*.
- NEW ENGLAND COTTONTAIL. *Sylvilagus transitionalis*.
- WESTERN WHITE-TAILED JACKRABBIT. *Lepus townsendii townsendii*.
- EASTERN AMERICAN ELK. *Cervus canadensis canadensis*.

Conclusion

The list has been compiled from scattered records and, no doubt, excludes many authors and important mammals. Marine mammals are not included for they are the responsibility of the federal Department of Fisheries and Forestry. The list is far from complete for a thorough review of all Canadian mammals has yet to be made and, undoubtedly, some species have never been recorded or taxonomically defined. It does, however, point out many mammals which have had little attention.

A few species are extinct. Some species need rehabilitation which can be done with proper management—once the public becomes aware

of, and is sufficiently concerned about, the necessity for it. With many of the larger, more spectacular species, it is relatively easy to stir the imagination of the public. But with many of the smaller species, new kinds of motivations are required. Ecosystem management is necessary before they can be secure. And we will all—the conservationists and the public at large—have to face the fact that many of the smaller species may be vanishing because of uncontrolled destruction of the habitat.

Such northern mammals as the polar bear, barren-ground caribou and muskoxen have been classed by the Canadian government as “in danger of extinction”. However, they are hunted for food and pelts and it would be inappropriate to arouse public sentiment at this time unless, of course, their extinction was imminent. In any case the population status of these mammals is being continually assessed.

A complete re-evaluation of our rare and endangered mammals is now being made so that a more complete list can be given to the Survival Service Commission of the International Union for the Conservation of Nature and Natural Resources.

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Received January, 1970.

Accepted February, 1970.



Novakowski, N. S. 1970. "Endangered Canadian Mammals." *The Canadian field-naturalist* 84(1), 17–23. <https://doi.org/10.5962/p.342915>.

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