

## The Mammals of Canada

Mammals are the most successful and intelligent of the land vertebrates. They are warm blooded, have a four-chambered heart, possess hair at some stage of development, and suckle their young after birth. They evolved from a mammal-like reptile stock in the Triassic. Living mammals are members of three major evolutionary lines, the monotremes (Echidna and Duckbilled Platypus of Australia); the marsupials (the Opossum and numerous Australian forms); and the placentals (all other living orders of mammals).

Since the end of the Mesozoic, mammals have increased rapidly in numbers and diversity. Even within the three major areas of habitation, terrestrial, aquatic and aerial, there has been much specialization. Various terrestrial mammals have developed many modifications for running, leaping, burrowing and arboreal locomotion. Aquatic mammals have developed modifications for various stages of life in the water from amphibious types such as water shrews and otters to strictly aquatic mammals such as the whales and sea cows. A number of arboreal mammals have developed gliding membranes, between fore and hind limbs, to assist in leaping through the air. True flight has been developed only by the bats.

Canada harbours about 193 species of mammals varying in size from the giant Blue Whale (*Balaenoptera musculus*) to the minute Pigmy Shrew (*Microsorex hoyi*). The kinds of mammals differ greatly from tundra to boreal forest, prairies, and eastern deciduous forest. The greatest density of species occurs in the western mountains and the least density in the high Arctic.

Since Canada was almost entirely covered by glaciers only a few thousand years ago, the terrestrial mammal fauna is a reflection of the movement of various species from northern and southern unglaciated refugia back into the deglaciated area. Some South American species, such as the Opossum (*Didelphis marsupialis*) and the Porcupine (*Erethizon dorsatum*), have pushed north into Canada, but the greatest number of species were derived from North America and Asia.

Terrestrial species occurring both in Canada and the Old World include Arctic Hare (*Lepus timidus*), Least Chipmunk (*Eutamias minimus*), Beaver (*Castor fiber*), Arctic Ground Squirrel (*Spermophilus undulatus*), Northern Red-backed Mouse (*Clethrionomys rutilus*), Northern Vole (*Microtus oeconomus*), Singing Vole (*Microtus gregalis*), Siberian Lemming (*Lemmus sibiricus*), Arctic Fox (*Vulpes lagopus*), Red Fox (*Vulpes vulpes*), Brown Bear (*Ursus arctos*), Polar Bear (*Ursus maritimus*), Ermine (*Mustela erminea*), Least Weasel (*Mustela nivalis*), Wolverine (*Gulo gulo*), Wapiti (*Cervus elaphus*), Moose (*Alces alces*) and Caribou (*Rangifer tarandus*). Numerous other species have close relatives in the Old World.

Examples of species with broad ranges in Canada are Masked Shrew (*Sorex cinereus*), Water Shrew (*Sorex palustris*), Little Brown Bat (*Myotis lucifugus*), Varying Hare (*Lepus americanus*), Woodchuck (*Marmota monax*), Red Squirrel (*Tamiasciurus hudsonicus*), Deer Mouse (*Peromyscus maniculatus*), Heather Vole (*Phenacomys intermedius*), Meadow Vole (*Microtus pennsylvanicus*), Gray Wolf (*Canis lupus*), Black Bear (*Ursus americanus*), Ermine (*Mustela erminea*), Mink (*Mustela vison*), Lynx (*Felis canadensis*), Moose (*Alces alces*) and Caribou (*Rangifer tarandus*).

Species with limited western ranges include Dusky Shrew (*Sorex obscurus*), Pika (*Ochotona princeps*), Hoary Marmot (*Marmota caligata*), Montana Vole (*Microtus montanus*), Northern Vole (*Microtus oeconomus*), Singing Vole (*Microtus gregalis*) and Mule Deer (*Odocoileus hemionus*).

Some species, such as the Varying Lemming (*Dicrostonyx torquatus*), Arctic Hare (*Lepus timidus*), Arctic Fox (*Vulpes lagopus*) and Muskox (*Ovibos moschatus*), have ranges limited to the Arctic while others have southern ranges barely pushing north into Canada, such as Pacific Water Shrew (*Sorex bendirii*), Shrew-mole (*Neurotrichus gibbsii*), Townsend's Mole (*Scapanus townsendii*), Nuttall's Cottontail (*Sylvilagus nuttallii*), Eastern Cottontail (*Sylvilagus floridanus*), Townsend's Chipmunk (*Eutamias townsendii*), Plains Pocket Gopher (*Geomys bursarius*), Great Basin Pocket Mouse (*Perognathus parvus*), Ord's