

T11.8 LAND MAMMALS

SPECIES

Fifty-seven land-mammal species have been recorded in Nova Scotia (Table T11.8.1). The mammal fauna of Nova Scotia includes fewer species than are found, for example, in southern Ontario. This is because a number of central-continental species which occupy habitats similar to those in Nova Scotia have not yet penetrated this far north and east. This difference is generally more pronounced in the diversity of small mammals, which are less mobile and are constrained by tighter habitat restrictions than the larger, more mobile mammals.

The composition and distribution of the mammal fauna in Nova Scotia is influenced by a number of factors:

1. climatic change and colonization routes
2. life zones
3. variety of available environments
4. natural barriers
5. introductions and extinctions, and the impacts of human settlement

COLONIZATION

The existing mammal fauna populated Nova Scotia after the last retreat of the ice sheet by four different routes:

1. moving in from the glacial refugia on what is now the continental shelf
2. moving in from unglaciated areas on the coastal side of the Appalachians via the Chignecto Isthmus (land bridge) (Unit 533)
3. over sea by swimming, rafting on ice, or crossing ice bridges
4. by human introduction

Of these four routes, the land bridge was the major entry point for the largest number of species. Thus, the interaction between the relative mobility of different species and the shifting of climatic zones in relation to the position of the landbridge is significant. As the ice retreated, the first animals to appear would be those with more northerly affinities. Certain southern species, such as the porcupine, raccoon, skunk and woodchuck, have arrived comparatively recently. Coyotes are a western species and are the most recent colonizers in Nova Scotia.

LIFE ZONES

Nova Scotia lies within the Canadian Biotic Province, which includes New England, southern Quebec, southern Ontario and parts of the western Great Lakes. Nova Scotia can be subdivided into two life zones.

The Atlantic Upland (Regions 100, 200, 300, 400, 800) is cool and humid with many conifers and bogs. Here the species include Varying hare, Lynx, Red Squirrel, Moose, Marten, Beaver and Deer Mouse. The Acadian Plain (Regions 500, 600, 700) is low, fertile, flat, and well drained with large agricultural areas. It is sometimes included in the Alleghanian Life Zone, which is, in turn, part of the more southerly Austral Region. Here the species include Raccoon, Skunk, White-tailed deer, Short-tailed Shrew and White-footed Mouse. Beyond this broad division, it is not easy to delineate distinct regional fauna, although certain species (e.g., the White-footed Mouse) do show a marked regional distribution. In general, however, mammals are too mobile, and habitats in the province too widely distributed, for distinct mammal regions to develop.

ENVIRONMENTS

Nova Scotia encompasses a variety of terrestrial and aquatic environments for mammals, including forests, wetlands, agricultural areas, mountains, valleys and seashores. Browsing mammals thrive in areas of new hardwood and shrub growth associated with early-successional forests in disturbed areas. Others, like the marten, require mature vegetation. Certain species, like the fox and the raccoon, favour more open areas and edge habitats. The lynx needs large areas of wildland; however, it can exist next to human habitation if there is no competition and appropriate habitat.

NATURAL BARRIERS

A large expanse of water presents a very definite barrier to the distribution of mammals. Cape Breton is an island separated from the mainland by the Strait of Canso, which is over a mile in width. A causeway was built in the 1950s. Compared with other islands in the Gulf of St. Lawrence, Cape

Breton has a relatively rich mammalian fauna. Only seven of the mainland Nova Scotia species are missing: the Fisher, Porcupine, Skunk, Arctic Shrew, Smoky Shrew, Long-tailed Shrew and White-footed Mouse. The Raccoon was also originally missing but has been recently introduced. The islands which are more isolated (Newfoundland, Magdalen and Anticosti) have approximately half the species found on the adjacent mainland.

It is highly probable that Cape Breton had a land connection to the mainland within the last 12,000 years. This theory is reinforced by the presence of native mice and shrews. These small animals would have had little chance of making the crossing safely on an ice raft. Several of the missing species were comparative latecomers to the region and would have therefore been too late to take advantage of the landbridge. The raccoon, for example, reached northern New Brunswick only in the last century. Now that a causeway is in place, a solid ice bridge regularly forms between Cape Breton and the mainland, which no doubt assists the movement of larger mammals in both directions. No insular races of mammals have developed on Cape Breton. The moose is a different subspecies, but only because some moose from the western provinces were released on the island after the native subspecies had almost become extinct in the 1940s.

The barriers to the colonization of Sable Island (District 890) are obviously more formidable. Only marine mammals are native to the island, which they share with feral horses.

INTRODUCTIONS AND EXTINCTIONS

Four rodent species have been introduced, three of them presumably inadvertently. The Black Rat subsequently failed to compete successfully with the Norway Rat and has not become established. Grey Squirrels were deliberately introduced to southwest Nova Scotia in the 1930s but disappeared from there within a few years. They occasionally appear in other areas.

Unsuccessful attempts were made to re-introduce caribou in the Liscomb area (District 410) in 1939 and in Cape Breton in 1968 and 1969. More successful was the release of fishers in various parts of the mainland in the 1940s and again in the 1960s. The Arctic Hare was also been introduced on Scatarie Island (District 870), where it thrived for a few years before disappearing. Marten were re-introduced to Nova Scotia in Kejimikujik National Park (Region 400) in 1987 and subsequent years. The newest mammal to appear in Nova Scotia is the coyote. The

coyote originally had an exclusively western distribution, but in the 1900s (for reasons that are not wholly clear) it began moving eastwards. It is now found throughout the entire province, including Cape Breton Island and Brier Island.

Three native species are known to be extinct or extirpated. Little is known about the Sea Mink except that it was trapped for fur in the Bay of Fundy. The last specimen was taken in 1894 at Campobello Island. The animal is now extinct. The wolf was probably never common in Nova Scotia and was extirpated from the Maritimes in the late 1800s. The caribou were forced out by hunting and climatic changes, which caused vegetation changes.

GENERAL REQUIREMENTS

The two most important requirements for mammals are food and cover. Many mammals will eat a wide variety of foods, although they do have preferences. Food sources for the insectivores and very small herbivores are linked to soil productivity and the diversity of ground vegetation. These mammals are therefore most abundant in the more productive habitats, such as hardwood forests and floodplains, and more depleted in such less, productive habitats as Jack Pine stands and barrens. In the case of carnivores this link still exists, but is less direct. The largest carnivores, which eat higher on the food chain and do not need to eat as frequently as smaller animals, are more mobile. Therefore they are not necessarily confined at all times to habitats which contain a suitable food supply.

Cover provides shelter from extreme environmental conditions, concealment from predators, and a secure place to rest, sleep, or raise young. Snow accumulation is an important factor. Deer often winter at lower elevations or near the coast where snowfall will be less; this enables them to move about and to feed close to the ground. Many small mammals, on the other hand, rely on persistent snow cover over leaf litter for their winter shelter.

Family	Species	Distribution	COSEWIC Status History	Seasonal Activity
ORDER INSECTIVORA				
Soricidae	Arctic shrew (Black-backed Shrew)	Locally common, mainland only, disjunct	Native	Active year round
Soricidae	Common Shrew (Masked Shrew, Cinereous Shrew)	Common throughout	Native	Active year round
Soricidae	Smoky Shrew	Common, mainland only	Native	Active year round
Soricidae	Gaspé Shrew	Rare, local, Cape Breton Highlands only	Vulnerable, Native, discovered 1971	Active year round
Soricidae	Long-tailed Shrew (Rock Shrew)	Known from only two localities in the Cobequids	Native, discovered 1984	Active year round
Soricidae	Water Shrew	Locally common throughout	Native	Active year round
Soricidae	Pygmy Shrew	Uncommon, local, throughout	Native	Active year round
Soricidae	Short-tailed Shrew (Mole Shrew)	Common throughout	Native	Active year round
Talpidae	Star-nosed Mole	Locally common throughout	Native	Aquatic in winter
ORDER CHIROPTERA				
Vespertilionidae	Little Brown Bat	Common throughout	Native	Hibernator
Vespertilionidae	Long-eared Bat	Uncommon throughout	Native	Hibernator
Vespertilionidae	Eastern Pipistrelle	Uncommon to rare, western mainland	Native	Hibernator
Vespertilionidae	Silver-haired Bat	One record, southwest N.S.	Native	Probably hibernates
Vespertilionidae	Red Bat	Rare, probably widespread	Native	Migratory/Hibernator
Vespertilionidae	Hoary Bat	Uncommon throughout	Native	Migratory/Hibernator
ORDER PRIMATES				
Hominidae	Human Beings	Common throughout	Native/Introduced	Active year round

Table T11.8.1: Species of land mammal recorded in Nova Scotia.

Family	Species	Distribution	COSEWIC Status History	Seasonal Activity
ORDER CARNIVORA				
Canidae	Wolf (Grey Wolf, Timber Wolf)	Never as common as elsewhere in Canada	Native; Extirpated in late 1800s	
Canidae	Coyote	Common throughout	Invaded from N.B. around 1977	Active year round
Canidae	Arctic Fox	Three Cape Breton records from ice-floe stragglers	Extralimital vagrant	Active year round
Canidae	Red Fox	Common throughout	Native	Active year round
Ursidae	American Black Bear	Common throughout	Native	Partial hibernator
Procyonidae	Raccoon	Common on mainland, recently established in southern Cape Breton	Native	Active year round
Mustelidae	American Marten	Local in southwest mainland and Cape Breton Highlands	Native; Extirpated and then reintroduced in Kejimikujik Nat. Pk.	Active year round
Mustelidae	Fisher	Southwestern Nova Scotia and eastern mainland	Native; Extirpated in NS 1922; reintroduced in southwest mainland	Active year round
Mustelidae	Ermine (Weasel)	Common throughout	Native	Active year round
Mustelidae	American Mink	Common throughout	Native	Active year round
Mustelidae	Sea Mink	Reported to have occurred along southwest NS coast	Extinct, c. 1894; Native	
Mustelidae	Striped Skunk	Common in agricultural areas of mainland	Native	Active year round
Mustelidae	River Otter	Common throughout	Native	Active year round
Felidae	Cougar (Mountain Lion)	Many sightings/tracks, but no photo or specimen	Endangered Native; Status uncertain in N.S.	Active year round
Felidae	Lynx (Canada Lynx)	Local in Cape Breton Highlands and northern mainland	Native	Active year round
Felidae	Bobcat (Wildcat)	Common on mainland, absent from Cape Breton	Native	Active year round

Table T11.8.1: Continued

Family	Species	Distribution	COSEWIC Status History	Seasonal Activity
ORDER ARTIODACTYLA				
Suidae	Wild Boar	Feral on a fenced private reserve (Roberts, I.) in Yarmouth Co., some have escaped	Introduced	Active year round
Cervidae	Caribou (Woodland Caribou)		Extirpated 1925, Native; Unsuccessfully reintroduced in CBI in 1960s	Non-migratory
Cervidae	White-tailed Deer	Common throughout	Native; Invaded/introduced 1894-1910.	Active year round
Cervidae	Moose	Common throughout	Extirpated on CBI 1924, Native; Reintroduced from Alberta	Active year round
ORDER RODENTIA				
Sciuridae	Eastern Chipmunk	Common throughout	Native	Partial hibernator
Sciuridae	Woodchuck (Groundhog)	Common on mainland, recently invaded CBI	Native	Hibernator
Sciuridae	Grey Squirrel	Infrequent; Urban areas	Introduced repeatedly but unestablished	Partial hibernator
Sciuridae	American Red Squirrel	Common throughout	Native	Partial hibernator
Sciuridae	Southern Flying Squirrel	Relict population	Native; Discovered in Kejimikujik NP 1971, Gaspereau Valley 1984	Partial hibernator
Sciuridae	Northern Flying Squirrel	Common throughout	Native	Partial hibernator
Castoridae	American Beaver	Common throughout	Native	Active year round
Cricetidae	Deer Mouse	Throughout, but local in SW mainland, common elsewhere	Native	Active year round
Cricetidae	White-footed Mouse	Mainland only, common in SW, Rare/local in N and E	Native	Active year round
Arvicolidae	Red-backed Vole	Abundant throughout	Native	Active year round
Arvicolidae	Southern Bog Lemming	Uncommon and local throughout	Native	Active year round

Table T11.8.1: Continued

Family	Species	Distribution	COSEWIC Status History	Seasonal Activity
ORDER RODENTIA continued				
Arvicolidae	Muskrat	Common throughout	Native	Active year round
Arvicolidae	Meadow Vole (Meadow Mouse, Field Mouse)	Common throughout	Native	Active year round
Arvicolidae	Rock Vole (Yellow-nosed Vole)	Cape Breton Highlands	Native; Discovered 1974	Active year round
Muridae	Black Rat (Roof Rat)	Ports	Introduced repeatedly in seaports but unestablished	Active year round
Muridae	Norway Rat (Brown Rat)	Common in urban and agricultural areas	Introduced	Active year round
Muridae	House Mouse	Common in urban and agricultural areas	Introduced	Active year round
Zapodidae	Woodland Jumping Mouse	Common throughout	Native	Hibernator
Zapodidae	Meadow Jumping Mouse	Locally common throughout	Native	Hibernator
Erethizontidae	American Porcupine	Common on mainland; possibly invading CBI	Native	Active year round
ORDER LAGOMORPHA				
Leporidae	Snowshoe Hare (Varying Hare, "Rabbit")	Common throughout	Native	Active year round
Leporidae	Arctic Hare		Introduced and established on Scatarie Island, off eastern Cape Breton. Not known if it is still present	Active year round
ORDER PERISSODACTYLA				
Equidae	Horse	Sable Island	Introduced	Active year round

Table T11.8.1: Continued

POPULATION FLUCTUATIONS

Such animals as the Snowshoe Hare, the Muskrat and several species of mice and voles show marked population fluctuations. Their numbers can vary considerably from year to year. These fluctuations often appear to be synchronised over a large area and therefore do not relate to short-term weather or habitat-quality changes. The cycles will also affect certain other species that are heavily dependent on one item in their diet. Numbers of lynx, for example, reflect the abundance of Snowshoe Hare, while the bobcat, which has a more varied diet, is less affected.

**Associated Topics**

T4.3 Colonization by Animals, T11.9 Carnivores, T11.10 Ungulates, T11.11 Small Mammals, T11.12 Marine Mammals, T11.16 Land and Freshwater Invertebrates, T11.18 Rare and Endangered Animals, T12.11 Animals and Resources

Additional Reading

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