

T11.11 SMALL MAMMALS

There are several different criteria, based on weight and size, for classifying small mammals. We chose all mammals weighing less than one kilogram, plus those closely related (such as the hare) which may weigh more. In this context, small mammals include bats, rodents, insectivores, and hares. They form an important part of the terrestrial food web by eating large amounts of seeds, plants and insects, and then themselves becoming a vital food resource for larger predators (with the exception of bats).

SHREWS, MOLES AND SMALL RODENTS

Most small-mammal populations undergo drastic fluctuations and may determine the levels of predatory species such as the fox, weasel and some hawks. Typically, the smaller mammals like shrews have high metabolic rates which require large and constant energy inputs. They are therefore closely confined to habitats that provide ample and accessible food. Common Shrews or Water Shrews require high levels of soil moisture and are associated with open water. A thick litter layer is often an important factor, allowing small animals to make runways and stay mobile under snow cover in winter. In Nova Scotia, few small mammals are true hibernators, and they are therefore vulnerable to severe winter conditions, especially extremely low temperatures with little or no snow cover.

Common and widespread small mammals include the Common Shrew, the Short-tailed Shrew, Red-backed Vole, Meadow Vole (numbers of which sometimes reach plague proportions) Deer Mouse (see Figure T11.11.1) and the Woodland Jumping Mouse. Five species of the squirrel family are present in Nova Scotia; two (the chipmunk and woodchuck) are ground dwellers.

T11.11
Small Mammals

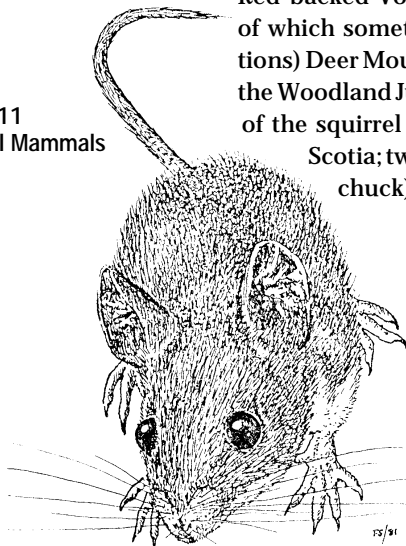


Figure T11.11.1: The Deer Mouse is found throughout the Province, but is most common in the northern mainland and Cape Breton Island. It inhabits forested and edge habitats.

DISJUNCT SPECIES

Several species are disjunct, meaning that there is a gap between their range elsewhere and their occurrence in Nova Scotia (see T11.18). These include the Gaspé Shrew, the Long-tailed Shrew, the Arctic Shrew and the Rock Vole, all of which have more northerly distributions. The Southern Flying Squirrel and the White-footed Mouse have more southern affinities. So far, the former is known to exist only in a pocket around the Kejimikujik area, which has very warm summer temperatures, and at a site in the Gaspereau Valley (Region 400).

Small coastal islands in Nova Scotia support unusually high populations of some species, such as the Common Shrew and Meadow Vole.

BATS

Only one species of bat, the Little Brown Bat, is common throughout the province. Another five species are uncommon or rare. Three species hibernate in Nova Scotia, while the other three are migratory. Hibernation requires a stable temperature- and humidity regime and security from disturbance. Caves and abandoned mines are usually selected. Hayes Cave in Hants County (District 510), 4.5 km west-southwest of South Maitland, is the only known large hibernaculum in Nova Scotia at present. In winter it is occupied by between 3800 and 8000 bats.¹ Miller's Creek Cave, also in Hants County, was used by about 6000 bats prior to the early 1970s, when gypsum-quarrying operations caused it to be abandoned.

HARES

Two species of hare are found in Nova Scotia: the Snowshoe (or Varying) Hare and the Arctic Hare. Like Moose and deer, the Snowshoe Hare is a browsing animal, eating herbaceous material in summer and woody material in winter. They favour early- to mid-successional stages of mixed forests, dense alder thickets and softwood swamps. Population cycles occur every 8–10 years (see Plate T11.11.1). The Arctic Hare, which was introduced on Scatarie Island (District 870), is larger and can withstand colder winters. Its present status on Scatarie is unknown.²



Plate T11.11.1: The Snowshoe Hare is commonly and mistakenly called rabbit. There are no native species of rabbit found in Nova Scotia.

Photo: M. Elderkin

The beaver and Muskrat are both largely aquatic. The beaver is associated with deciduous trees, especially aspen, in upland areas, while the Muskrat favours freshwater swamps and cattail marshes in lowland areas, and also tidal creeks (see Plate T11.11.2).



Plate T11.11.2: Beaver above and Muskrat below lodges in Lake Egmont, Halifax County (sub-Unit 511a). In Nova Scotia, Muskrats and beavers generally den in banks where conditions are right, i.e., shallow water, both species build lodges out in open water. Photo: B. Wright



For both species, water levels are an important factor, as dramatic rises (especially in spring) can wash out dens and drown the young. Beavers are found throughout the province, although popula-

tion densities are not as high in western Nova Scotia because appropriate habitat is less common. The beaver was threatened by extermination at the end of the nineteenth century, but numbers rebounded after the trapping season was closed. Muskrats are most common in the Carboniferous Lowlands (Region 500). The porcupine is a comparative latecomer to Nova Scotia. It prefers hemlock, pine and second-growth birch and poplar.



Associated Topics

T8.2 Freshwater Environments, T11.8 Land Mammals

Associated Habitats

H3 Freshwater, H4 Freshwater Wetlands, H5 Terrestrial Unforested, H6 Terrestrial Forested

References

- 1 Morris, L. (1985) *The Hayes Cave Site, South Maitland, Nova Scotia*. Nova Scotia Museum. (Curatorial Report #50).
- 2 Dodds, D.G. (1987) *Nova Scotia's Snowshoe Hare Life History and Management*. N.S. Dept. of Lands and Forests.

Additional Reading

- Gilhen, J. and F. Scott (1981) Distributions, habitats and vulnerability of amphibians, reptiles, and small native mammals in Nova Scotia. Nova Scotia Museum, Halifax. (Curatorial Report No. 45).
- Herman, T.B. and F.W. Scott (1992) "Protected areas and global climate change: assessing the regional or local vulnerability of vertebrate species." In *Science and the Management of Protected Areas*. Elsevier Science Publishers B.V., Amsterdam.
- Kirkland, G.L., Jr. and D.F. Schmidt (1982) "Abundance, habitat, reproduction and morphology of forest-dwelling small mammals of Nova Scotia and southeastern New Brunswick." *Can. Field Nat.* 96.
- Milton, G.R. and J. Towers (1992) Amphibian and small mammal captures on conventional clearcut and whole-tree harvested sites. St. Mary's River Forestry-Wildlife Project, Canadian Institute of Forestry, Antigonish, N.S. (Report No. 17).