

## T11.10 UNGULATES

### RANGE

Three species of ungulate have at one time inhabited Nova Scotia, and their respective fortunes illustrate the effects of long-term climatic change, habitat alteration and hunting pressures. The Caribou is the most northerly species, with a range extending high into the Arctic. It is an animal of the tundra and the true boreal forest. The range of the Moose substantially overlaps that of the Caribou, but is restricted to the forested regions and reaches farther south. The White-tailed Deer has a much more southerly range, extending well down into South America. Habitat requirements also show a successional gradation through the three species: Woodland Caribou primarily eat lichens associated with the climax forest; Moose prefer near-climax vegetation with shrubby growth; deer thrive on early-successional stage vegetation associated with cut-over, forest fires, mixedwood forests, natural grasslands and forest opening, abandoned farms and “edge effect” associated with roads and powerlines.

### CLIMATIC CHANGE

Archeological evidence (the contents of native peoples’ middens) proves that deer were present in Nova Scotia long before the first European settlers arrived. This would be consistent with the warming trend after the Wisconsin glaciation. As the climate started to cool, deer populations diminished and the Caribou became more firmly established. By the time the first white settlers appeared the last deer had probably gone, but a new warming trend was beginning to decrease Caribou numbers. Caribou were affected not only by climatic change but also by widespread hunting and by the destruction of the climax forests by cutting and (particularly in south-western Nova Scotia) by fire, which killed tree and ground lichens. Caribou are migratory and apparently moved from the Cobequid Hills (Unit 311) to winter in south-western Nova Scotia. Lichens grow very slowly and once burned they may take 80–100 years to re-establish themselves. Caribou were extirpated on the mainland by 1905 and in Cape Breton by 1921.

### THE ARRIVAL OF DEER

The destruction of the Caribou range and the subsequent new shrub growth benefited Moose, but they were also vulnerable to hunting pressures, particularly in winters of deep snow. Moose numbers thus fluctuated with changes in hunting legislation. The forest disturbance and gradual warming trends favoured deer even more and they started to reappear in the 1890s, both through deliberate introductions and by the movement of herds in from New Brunswick. Before European settlement, deer were plentiful in North America only where natural fire and windfalls created forest openings. After settlement, the distribution pattern showed a boom in deer numbers on the northern lumbering frontier and a decline in southern areas, as permanent agriculture became entrenched. Deer populations in Nova Scotia followed this trend with rapid expansion occurring 1945–55 following the widespread abandonment of farm lands during the Depression years. Between 1955 and 1965, a decline occurred, possibly due to the population having exceeded the carrying capacity of the range.

### MOOSE SICKNESS

The effects of land clearing resulted in a greater overlap of deer and Moose ranges. In the 1940s it became evident that Moose were dying in large numbers of a mysterious disease labelled “Moose sickness”. Moose appeared to prosper only in those areas where deer were not abundant. It was not until 1964 that the cause of Moose sickness was identified as a nematode parasite, *Parelaphostrongylus tenuis*, carried by, but not harmful to, deer.

Unsuccessful attempts were made to reintroduce Caribou in the Liscomb Game Sanctuary in 1938 and in Cape Breton in 1968 and 1969. But climatic and habitat conditions no longer favoured Caribou presence. Caribou were also susceptible to Moose sickness. Moose numbers fluctuated with the changes in hunting legislation, and Moose all but disappeared from Cape Breton. Attempts to reintroduce individuals from the mainland did not appear to help, but in 1947 and 1948 eighteen Albertan Moose were released with more success. Moose in Cape Breton



Plate T11.10.1: White-tailed Deer congregated in a deer yard, where they feed on the twigs, buds and leaves of both softwood and hardwood trees.  
Photo: R. Hall

today belong to the western subspecies *Alces alces andersoni*, while mainland Moose are *A.a. americana*. On the mainland, hunting regulations fluctuated with changes in Moose numbers which were likely influenced by the introduction and spread of *P. tenuis*.

#### HABITAT AND FOOD FACTORS

Moose and deer eat herbaceous vegetation in summer and switch to woody browse in winter. Moose also eat aquatic plants, although these are not an indispensable item in their diet. Favoured deer browse includes Red Maple, White Birch, Sugar Maple, Yellow Birch, Mountain and Striped Maple. Moose particularly favour White Birch stands. Both species have benefited from the depredations of the Spruce Budworm, where this has been followed by accelerated harvesting, which in turn promotes new growth. However, the increase in hardwood browse may eventually be outweighed by the decrease in cover.

#### WINTER

Deer are southerly animals and more stressed by hard winters than Moose. They feed close to the ground for as long as possible, but they always have to balance their food requirements with the need for winter cover. Long periods of deep snow force them to come down from higher elevations to find shelter in valleys, where suitable hardwood browse is often available in conjunction with softwood shelter (see Plate T11.10.1). In southern Cape Breton, deer concentrate on the coast in winter and feed on kelp and other seaweeds.<sup>1</sup>

Moose will also yard in hard winters but usually at higher elevations. Those which winter at lower elevations with more shallow snow are exposed to *P. tenuis*. Orientation is important because south and southwest slopes offer a more favourable microclimate. The shelter requirements of Moose are not as stringent as for deer, and they are usually able to select areas with greater food resources.

At present, Moose appear to be increasing in numbers, particularly in western Nova Scotia and Cape Breton. Deer reached a population peak in 1986 and have subsequently declined.

**Associated Topics**

T4.1 Post-glacial Climatic Change, T4.3 Post-glacial Colonization by Animals, T10.6 Seed-bearing Plants, T10.6 Trees, T10.11 Lichens, T11.8 Land Mammals, T11.15 Land and Freshwater Invertebrates, T12.11 Animals and Resources

**Associated Habitats**

H5.2 Oldfield, H6 Terrestrial Forested

**References**

- 1 Harris, D. (1992) "Nova Scotia's coastal deer adapt to winter." *Nova Scotia Conservation* 16(4).

**Additional Reading**

- Benson, D.A. and D.G. Dodds (1977) *The Deer of Nova Scotia*. N.S. Dept. of Lands and Forests.