

# Coniferous Forests



## Vermont Fish and Wildlife Habitat Fact Sheet

As a forest of lower elevations, the coniferous forest occupies much of Vermont's Northeastern Highlands and the northern portions of the Piedmont, a good deal of which is swampy or boggy. These regions have much in common with New Hampshire and Maine—as well as the obvious affinity with Canada—even more in common than with other low-elevation areas of Vermont. Its isolation from the rest of the state is well expressed in "the Northeast Kingdom," a term coined by the revered late governor and senator George Aiken.

The coniferous forest reaches farther down the state, but at higher elevations in the mountains—this "Appalachian Extension" continues all the way south to the Great Smokey Mountains, though it climbs progressively higher in the warmer climates. The coniferous forest begins at about 3,000 feet in central Vermont but in North Carolina it starts at 5,500 feet; roughly 1,000 feet of altitude bring the same biological changes as 500 to 600 miles of latitude.

In the higher mountains in Vermont the boreal forest extends up to the tree line, or about 4,000 feet. As elevation increases, the spruces and firs become progressively smaller, more twisted, and stunted. At tree line they may be only a foot or two high, prostrate, and looking more like shrubs than trees. This stage, in which the branches are

contorted and pruned by wind and ice, is known by the German word *Krummholz*, meaning crooked wood.

Below 3,000 feet, the spruce-fir forest begins to merge with the hemlock-northern-hardwoods association, with white pine as a common associate.

### Plants

The deep shade under a dense evergreen canopy and the acidic soils derived from slow-rotting needles make the boreal forest a difficult place for most plants to grow. The understory flora, what there is of it, is scarce and poorly diversified, and only a few small trees and shrubs enter the spaces between the canopy and the ground. Most frequent are mountain maple, hobblebush, and mountain ash (not an ash at all but a member of the rose family that has been used as an ornamental for its attractive orange-red berries). On the ground, the few flowering plants are often evergreens, such as goldthread (so called for the color of its root), shinleaf, patridgeberry, and, under pines especially, trailing arbutus, with its delicate violet-on-white flowers showing through the late snows of April. Other herbaceous plants (plants without woody tissue) are sometimes found here that are move widely distributed throughout the mixed forests in the state. Starflower, bunchberry (a relative of the dogwood tree),

clintonia, the circumboreal (appearing in the boreal forest worldwide) twinflower, intermediate woodfern, and bristly clubmoss are some of these more cosmopolitan species.

### Mammals

As one passes on the earth from arctic, through temperate, to tropical regions, the number of species, whether plant or animal, grows, encouraged by the increasingly favorable conditions that last ever longer throughout the year.

The boreal forest in Vermont has a richer flora and fauna than the small tundra areas, but compared with the deciduous forest it is rather poor. On the other hand, the boreal forest, both alpine and lowland, is a refuge for some of the rarer and more intriguing wildlife of the state. This is owing in part to the special type of vegetation the forest possesses, but also in part to the large unpopulated and undeveloped stretches it encompasses, where the more secretive and elusive species can live without disturbance.

Two of the rarest mammals in Vermont are members of the group of boreal species, both of which were far more abundant everywhere before the white settlers entered the territory. Then they were trapped in considerable numbers all over the Northeast. The lynx and the marten (formerly

"pine marten") are the phantom emblems of this forest and are now virtually restricted to the boreal habitat. The lynx is a wildcat, resembling the bobcat of the hardwood forests but with more grizzled fur and wide, furry snowshoe-type feet, good for traveling over deep snow. The marten is a fair-sized weasel that weighs 2 to 4 pounds and, though not particularly fast, is very agile and a proficient tree climber. It not only looks like a large squirrel but can act like one, as well.

### **Birds**

Birds of the spruce-fir forests are an interesting and changing group: the few and notable year-round residents, the unpredictable and sporadic winter visitors from farther north, the ephemeral summer nesters, and the seasonal migrants.

Though winter is a lean time for the bird-and therefore the bird watcher- it can be a most rewarding period, for unexpected an unfamiliar species then come into Vermont. Many of the birds that visit the state's feeders, fields, and mixed forests in winter are true boreal species, breeding only in Canada. They move into the United States to spend the winter here, to proceed farther south in New England or beyond, or to wander from place to place. Their appearances are quite unpredictable, since their movements are not a true migration, but more a quest for food.

Most of such winter visitors are finches, a family of small to medium-sized birds with strong bills that can crack open the shells of seeds and nuts. In the summer their diet is broad, from berries and

seeds to insect larvae, spiders, beetles, and other "animal" matter. But in the winter their choices are narrowed, to seeds that still cling to branches, buds, or the occasional hibernating insects they discover.

Excerpted from Charles Johnson's book  
*Nature of Vermont*