

Successional Northern Hardwood Forest

State Rank: S5 - Secure



Birch in Successional Northern Hardwood Forest. Photo: Sarah Maier, NHESP.

Description: In Massachusetts cooler (generally northern, western, and higher elevation) areas, Successional Northern Hardwood Forests precede Northern Hardwood - Hemlock - White Pine Forests (NHHWPF) when land has been left to natural processes after large scale land opening events. They include a broad time sequence of predominantly deciduous forests growing where major disturbances such as fires, tornados, severe hurricanes, logging, or clearing for farm fields occurred a few to many decades in the past. The canopy, dominated by shade intolerant trees, is seldom completely closed and the

Successional Northern Hardwood Forests include young to more mature forests that have had past major disturbances that continue to affect the diversity and structure of the forest in the northern and western parts of Massachusetts.

subcanopy is generally composed of more shade-tolerant tree species. The shrub layer may be dense with low diversity tree saplings or sprouts, or more diverse deciduous broad-leaved species in older stands. There is usually an herbaceous layer of perennial forbs. Sites are generally dry-mesic to mesic.



Dense red maple saplings in a young forest. Photo: Patricia Swain, NHESP.

Characteristic Species: The vegetation of successional communities is highly variable: it changes over time and depends on surrounding seed sources and the type of disturbance that removed the original forest. Typically, the canopy of Successional Northern Hardwood Forests includes trembling and big-toothed aspens, white birch, red maple, and/or black cherry, with gray birch on very well drained soils. There may be low percentages of white pine or red spruce. Pin cherry is a very early colonizer after heavy logging or fire. As the forest matures, young northern hardwoods such as sugar maple, red maple, white ash, yellow birch, American beech, and red

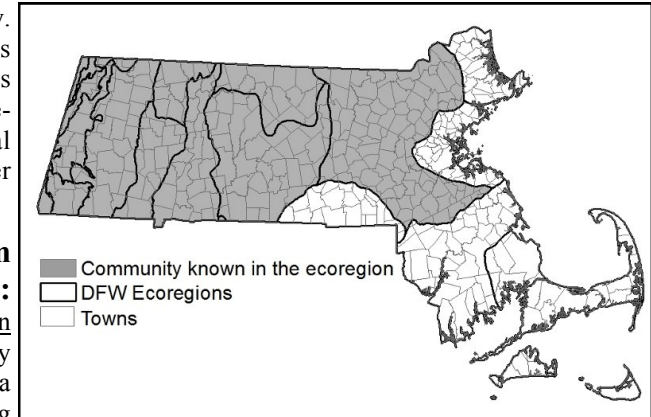
oak dominate the understory. Shrubs and herbaceous species are variable, sometimes including shade tolerant pre-disturbance species or residual early post-disturbance pioneer species.

Differentiating from Related Communities:

Successional Northern Hardwood Forests are highly variable forests, usually in a successional sequence leading to Northern Hardwood - Hemlock- White Pine Forests (NHHWPF) or one of its named variants. The successional forest is best distinguished by the abundance of white birch and/or aspens in the canopy. All types of northern hardwood forests, including NHHWPF are dominated by sugar maple with other northern hardwoods such as white ash, yellow birch, American beech, and red oak, with low cover of white pine and hemlock; in the Successional Northern Hardwood Forest, the northern hardwoods generally occur predominantly in the subcanopy or shrub layer, not the canopy.

Habitat for Associated Fauna:

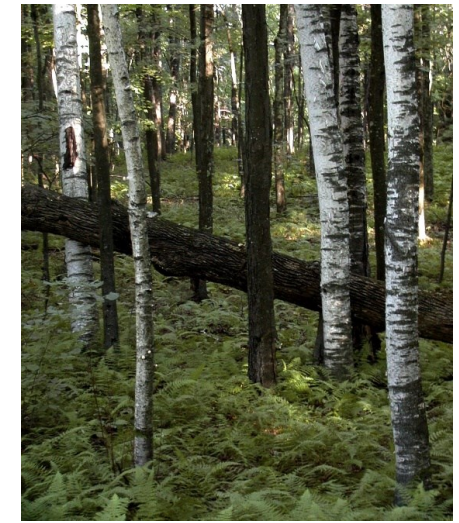
The structure of a community is important to animals. Successional communities change in structure quite quickly, and the animals inhabiting them change as the vegetation grows. For 0 to 10 years trees are dense but small, often with blackberry below. Fugitive bird species such as Chestnut-sided Warblers and Mourning Warbler are common in the first 5 years after a major disturbance, especially if there are dead snags left for singing perches. Ruffed Grouse and American Woodcock inhabit taller, but still young



forest, as does the New England cottontail if there is a dense shrub layer. After 30 years, Successional Northern Hardwood Forests are used by many generalist animals as part of their habitats.

Examples with Public Access:

Birch Hill WMA, Athol; Sandisfield SF, Sandisfield; Leadmine WMA, Sturbridge; Minute Man National Historical Park, Concord.



White birch growing over hay-scented fern. Photo: Chris Buelow, NHESP.

