

Northern Hardwoods - Hemlock - White Pine Forest

State Rank: S5 - Secure



Young NHHWP Forest with scattered evergreen ferns. Photo: Patricia Swain, NHESP.

Description: The Northern Hardwoods - Hemlock - White Pine Forest (NHHWPF) is the prevailing forest in higher elevations of western and north-central Massachusetts, with smaller occurrences throughout on north facing slopes and in ravines. It is an uneven aged forest with a closed canopy dominated by a mix of long lived deciduous and evergreen trees, with sparse shrub and herbaceous layers. The forest structure is dominated by single tree fall and replacement with occasional small to medium blowdown events; stand replacement events are uncommon. The neutral to moderately acidic soils have moderate levels of nutrients and retain some moisture except during extreme droughts. Leaf litter decomposes rapidly resulting in a shallow layer of leaf litter.

The closed canopies of Northern Hardwoods - Hemlock - White Pine Forests are generally deciduous with a mix of conifers. The shrub and herbaceous layers are sparse. NHHWPF occur in cool areas.

Characteristic Species: NHHWPF are generally deciduous with scattered hemlocks and white pines but may have internal patches of nearly pure conifers. Canopies include variable combinations of sugar maple, white ash, yellow birch, American beech, black cherry, red oak, and bitternut hickory with eastern hemlock and usually emergent white pine. Red maple, paper birch, and aspen are occasional. A subcanopy includes any of the tree species, as well as hop-hornbeam or striped maple. The shrub layer is usually open, but often has scattered clumps of hobblebush, red-berried elderberry, fly-honeysuckle, or tree saplings. The herbaceous layer is sparse, but fairly diverse, with intermediate woodfern, Christmas fern, clubmosses, Canada mayflower, white wood aster, and wild oats. Occasional spring herbaceous species include trilliums, early yellow violet, broad-leaved spring beauty, and trout-lily.

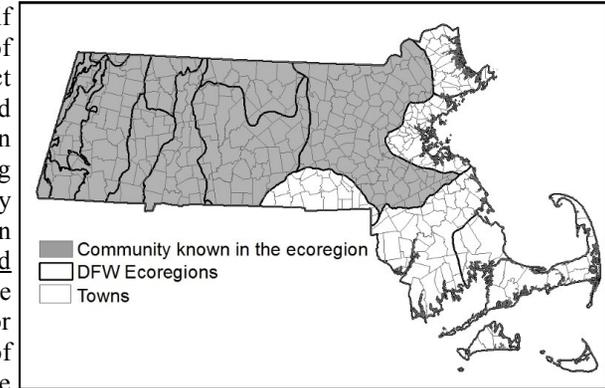
Differentiating from Related Communities: To the north and upslope of NHHWPF are Spruce - Fir - Northern Hardwoods Forests (SFNHF). Red spruce is abundant in SFNHF, and white pine uncommon. NHHWPF has 25-50% of hemlock plus white pine overall:



Striped maple in flower, typical shrub of NHHWPF. Photo: Patricia Swain, NHESP.

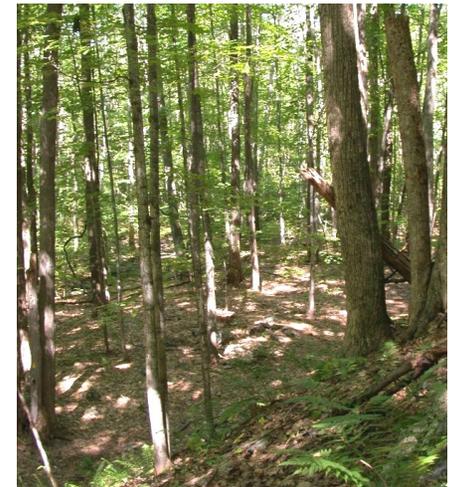
red spruce are uncommon if present. Within the matrix of NHHWPF, subtypes with distinct species assemblages are named separately. All types of northern hardwood forests, including NHHWPF are dominated by northern hardwoods. In Successional Northern Hardwood Forests northern hardwoods are generally in the subcanopy or shrub layer with an abundance of white birch and/or aspens in the canopy. Rich, Mesic Forest (RMF) is nutrient- and species-rich, usually within the NHHWPF area: RMF lack conifers, beech, and red oak. The understory has dense spring ephemerals and lacks intermediate wood fern, Christmas fern, and wild sarsaparilla. Red Oak - Sugar Maple Transition Forest has red oak as a dominant, with sugar maple, American beech, and black birch. Other northern hardwoods are occasional associates. Spring ephemerals are not abundant. Oak - Hemlock - White Pine Forests occur to the south and in warmer areas; they are dominated by a mix of oak species and lack sugar maple. The shrub layer is dominated by blueberries and huckleberries.

Habitat for Associated Fauna: NHHWPF are the common type of forest in the cooler parts of the state. They provide habitat for common wide ranging species. The best occurrences of NHHWPF are large and incorporate variation in species and structure including multiple layers of vegetation, snags, tree cavity den sites (used by a variety of bird and mammal species) and fallen large woody material (used by



various amphibian, reptile, and invertebrate species). Covering large areas means inclusion of variation such as interior forest, dense conifer stands, beech seed production, seeps, pockets of wetland, and small patches of dense, earlier successional shrub species.

Examples with Public Access: Chalet WMA, Cheshire; Mohawk Trail SF, Charlemont; Three Mile Pond WMA, Sheffield; Tully Mtn. WMA, Orange.



Light flecks in young NHHWP Forest. Photo: Patricia Swain, NHESP.

