



Hemlock Forest on a slope. Photo: Patricia Swain, NHESP.

**Description:** Hemlock Forests have a dense canopy with at least 50% cover of eastern hemlock. The closed conifer canopy allows little light through and restricts growth in lower layers. Hemlock Forests are often on rocky, north or north-west facing slopes in sheltered ravines, and along high-gradient streams. The soils are usually acidic and nutrient-poor with a thick, poorly decomposed duff layer. The forest floor is covered by needles, twigs, and small branches.

**Characteristic Species:** Hemlock Forests are dominated by eastern hemlock. In this widespread community, associated species, all occurring at very low percentages, vary with location: red spruce or white pine may be present with maples, American beech, yellow or black birch, or oaks. The shrub layer is sparse with saplings of the canopy species and small patches of mountain laurel, witch hazel, striped maple, or hobblebush

Hemlock Forests are dominated by eastern hemlocks whose dense canopies restrict light and plant growth in lower layers. These acidic conifer forests occur statewide on north facing slopes or along north facing ravines.

growing in occasional canopy gaps created by windthrows. Eastern hemlock saplings may persist in the understory for decades until canopy gaps occur and they can mature. The herbaceous layer is essentially non-existent except in scattered opening that may have Canada Mayflower, starflower, wild sarsaparilla, rock polypody, hay-scented fern, intermediate wood fern, or mountain wood fern with occasional patches of shining fir-moss. Non-vascular plants may form dense patches. The non-native invasive species hemlock woolly adelgid is killing eastern hemlock across the state: black birch is common following the death of hemlocks.



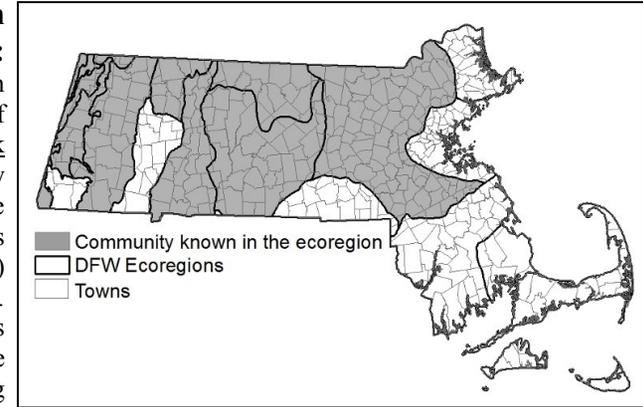
Dense foliage on an eastern hemlock branch. Photo: PA Dept. of Conservation & Natural Resources - Forestry, Bugwood.org.

## Differentiating from Related Communities:

Many forests have eastern hemlock as a component of the canopy but Hemlock Forests are differentiated by having eastern hemlock as the dominant canopy species (>50% canopy cover) throughout the community. Forests with scattered patches of hemlock that are part of the variation of the surrounding forest include Oak - Hemlock - White Pine Forest and Northern Hardwoods - Hemlock - White Pine Forest. These mixed forests have much greater diversity in all layers than do Hemlock Forests. Hemlock Swamps are also dominated by eastern hemlock, but are wetlands; Hemlock Forests are upland communities.

## Habitat for Associated Fauna:

Birds that nest or forage in canopies or mid-sections of conifers don't differentiate between wet or dry sites: many birds of upland conifer forest also use conifer swamps. Acadian Fly-catchers are a near obligate of Hemlock Forests in Massachusetts, although their habitats are broader to the north. Other species that use Hemlock Forest tend to be northern or conifer preferring forest species, including birds such as Black-throated Green Warbler, Blackburnian Warbler, Louisiana Waterthrush, and Winter Wren. In the winter, mixed flocks are common with chickadees, kinglets, and nuthatches.



Mammals include those that are widespread and typical of northern and coniferous forests: red squirrels, red-backed voles, smoky shrew, and white-footed mouse.

## Examples with Public Access:

Mt. Everett SR, Mount Washington; Otis SF, Sandisfield; Windsor SF, Windsor; Monroe SF, Monroe.



Old Growth Hemlock Forest with typically open understory. Photo: Patricia Swain, NHESP.

