



Successional White Pine forest. Photo: Tara Huguenin, NHESP.

**Description:** Old field white pines form the canopy of Successional White Pine Forests which occur on abandoned agricultural land, usually former pastures. The near monoculture of white pines in the canopy is a combined artifact of human land-use history, seed ecology, and shade tolerance that resulted in a minor component of the pre-colonial forest becoming the most abundant tree in Massachusetts in the widespread post agricultural conditions of the late 1800s. The semi-natural forest with dominant white pines may be maintained by selective logging, without which pines tend to be replaced by hardwoods such as oaks and red maples. The forest floor is often carpeted with needles, with only a sparse herbaceous layer.

The canopy of Successional White Pine Forests is old field white pine with low but variable amounts of oaks and red maple. The proportions of tree species change over time, with many occurrences becoming White Pine - Oak Forests.

### Characteristic Species:

Successional White Pine Forests have a near monoculture of white pine (>75% cover) in the canopy, with scattered associates that vary with geography and prior land use, including white oak, red oak, red maple, and early successional trees such as birches and aspens. The shrub layer is variable, from sparse to thick, and may include black elderberry, black cherry, maple-leaved viburnum, and non-native species such as glossy alder-buckthorn, bush honeysuckles, and/or multiflora rose. Blackberry vines may form thickets, and poison ivy often covers the ground near openings or in formerly open disturbed areas. Low bush blueberries form patches mixed with black huckleberry on sites with less disturbed soils. Bracken fern may be in the shrub layer. The herbaceous layer is



White pine needles new growth. Photo: Becca MacDonald, Sault College, Bugwood.org.

variable; large patches of Canada mayflower, and starflower with clubmosses are particularly common on formerly plowed soil. Partridgeberry, fringed polygala, and pink lady slipper grow in many longer established sites.

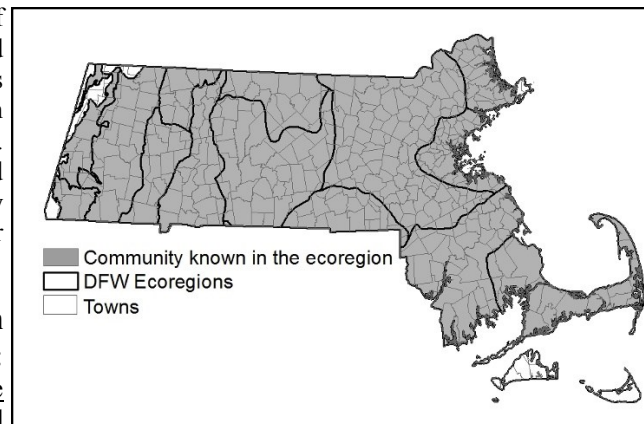
### Differentiating from Related Communities:

Successional White Pine Forests are best distinguished

by the >75% canopy cover of white pine. They are often in a successional sequence leading to White Pine - Oak Forests which have 25-75% cover of white pine and the inverse, 75-25%, of oaks, making the oaks clearly sharing dominance with the pine. Successional White Pine Forests grade into Northern Hardwood - Hemlock - White Pine Forest in northern areas and the general matrix of Oak - Hemlock - White Pine Forest to the south. In southern areas white pine forests may grade into Pitch Pine - Oak Forests. Pine plantations usually have rows of trees that produce a dense canopy over a generally low diversity understory that often includes native species. Plantations, being culturally created and managed, are not included as natural community types.

### Habitat for Associated Fauna:

There are no species known to be restricted to the Successional White Pine Forests. The canopy monoculture and overall acidity from conifer needles restrict diversity. Blackburnian warblers are probably the bird species are most



closely associated with dense white pine forests. Other birds of the community include Ovenbird, Yellow Warbler, Cooper's Hawk, and Northern Goshawk, as well as generalists such as the Black-capped Chickadee, and Red-breasted Nuthatch.

### Examples with Public Access:

Townsend State Forest, Townsend; Douglas State Forest, Douglas; Oxbow NWR, Harvard.



White pine regeneration in a white pine forest. Photo: Tara Huguenin, NHESP.

