



Successional White Pine Forest

- Community Code:** CT1A1A0000
- State Rank:** S5
- Map:** No Successional White Pine Forests are documented in the NHESP database.
- Concept:** Oldfield white pine, several decades since establishment. Other species co-occur with the white pine, but seldom share dominance. The forest floor is often carpeted with needles, with only a sparse herbaceous layer.
- Environmental Setting:** Oldfield 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, resulting in a minor component of the pre-colonial forest becoming the most abundant tree in Massachusetts in the post-agricultural conditions that became widespread during the late 1800s. This 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.
- Vegetation Description:** Successional White Pine Forests have a near monoculture of white pine (*Pinus strobus*) (>75% cover) in the canopy, with scattered associates that vary with geography and prior land use, including white oak (*Quercus alba*), red oak (*Quercus rubra*), red maple (*Acer rubrum*), and early successional trees such as birches (*Betula* spp.) and aspens (*Populus* spp.). The shrub layer is variable, from sparse to thick, and may include black elderberry (*Sambucus nigra* ssp. *canadensis*), black cherry (*Prunus serotina*), maple-leaved viburnum (*Viburnum acerifolium*), and non-native species such as glossy buckthorn (*Frangula alnus*), bush honeysuckles (*Lonicera morrowii* complex), and/or multiflora rose (*Rosa multiflora*). Blackberry (*Rubus* spp.) vines may form thickets, and poison ivy (*Toxicodendron radicans*) often covers the ground near openings or in formerly open disturbed areas. Lowbush blueberries (*Vaccinium angustifolium* and *V. pallidum*) form patches mixed with black huckleberry (*Gaylussacia baccata*) on sites with less disturbed soils. Bracken fern (*Pteridium aquilinum*) may be in the shrub layer. The herbaceous layer is variable; large patches of Canada mayflower (*Maianthemum canadense*) and starflower (*Lysimachia borealis*), with clubmosses (such as ground-pine (*Dendrolycopodium obscurum*), southern ground-cedar (*Diphasiastrum digitatum*), and staghorn clubmoss (*Lycopodium clavatum*)), are particularly common on formerly plowed soil. Partridgeberry (*Mitchella repens*), fringed polygala (*Polygala paucifolia*), and pink lady's-slipper (*Cypripedium acaule*) grow in many longer established sites.
- Differentiating Occurrences:** 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% cover, of



oaks, making the oaks clearly sharing dominance with the pine. Successional White Pine Forests grade into Northern Hardwood - Hemlock - White Pine Forests in northern areas and into Oak - Hemlock - White Pine Forests to the south. In southern areas, white pine forests occur near Pitch Pine - Oak Forests and grade into them. Determining types along the gradients may require careful, or even arbitrary, application of the definitions, or a decision to map at a more general scale while noting the existence of variation within map units. 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.

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 (*Dendroica fusca*) are probably the bird species most closely associated with dense white pine forests. Other birds of the community include Ovenbird (*Seiurus aurocapillus*), Yellow Warbler (*D. dominica*), Cooper's Hawk (*Accipiter cooperii*), and Northern Goshawk (*Accipiter gentilis*), as well as generalists such as the Black-capped Chickadee (*Poecile atricapillus*), and Red-breasted Nuthatch (*Sitta canadensis*).

Public Access:

Townsend State Forest, Townsend; Douglas State Forest, Douglas; Oxbow National Wildlife Refuge, Harvard.

Threats:

Non-native species such as glossy buckthorn (*Frangula alnus*), Morrow's honeysuckle (*Lonicera morrowii*), and privet (*Ligustrum obtusifolium*).

Management Needs:

These are successional semi-natural forests: they are expected to change over time. No management is needed.

USNVC/NatureServe:

A3227 *Juniperus virginiana* - *Pinus virginiana* - *Pinus echinata* Ruderal Forest Alliance - *Pinus strobus* Ruderal Forest (CEGL007944).