

# White Pine (Pinus strobus)

An evergreen tree from the Pine Family (Pinaceae)



3-8

40'

80'

rapid

full

irregular

moist, rich, well-drained,  
acidic



**White Pine**, an evergreen conifer, is today widely distributed throughout eastern North America, including all of Ohio. It was originally confined to Appalachia, New England, and southern Canada at the time of European settlement, and occurred primarily in northeastern Ohio.

Today, it is logged for the production of lumber, creosote-soaked telephone poles, and as pulp for the production of paper. White Pine is commonly transplanted today as a landscape evergreen tree, and is also sold as a cut Christmas tree. Also known as Eastern White Pine, this towering evergreen easily grows to 80 feet tall by 40 feet wide or larger under optimum conditions, with a rapid growth rate. Its shape is upright pyramidal when young, but becomes irregular with maturity.

The very straight trunk of White Pine is punctuated by a whorl of lateral branches every one to two feet, and from this sequential arrangement, a close approximation of the age of the tree can be determined. Simply count the number of whorls from bottom to top. As a member of the Pine Family, it is related to other Pines as well as the Firs, Larches, Spruces, and Hemlocks.

**Planting Requirements** - White Pine performs best in evenly moist, rich, well-drained, acidic soils in full sun. It is often intolerant of soils that are alkaline in pH and poorly drained; therefore, the heavy clay soils of much of central and western Ohio cause it to struggle in parts of this region, while it often thrives in eastern Ohio. Needle chlorosis (yellowing) and stunted growth are prime symptoms of a soil-related problem. Its rapid growth rate allows for a quick result in terms of a harvestable timber tree, a mature landscape tree, or as a cut Christmas tree. It grows in zones 3 to 8.

**Potential Problems** - In spite of thriving in many natural settings, White Pine is very susceptible in urban settings to alkaline soil pH causing chlorosis, (resulting in yellowing of the needles and stunting of growth), winter salt spray, air pollution, compacted clay soils, and poor water drainage.

Young transplants and saplings are also subject to deer and rabbit browsing in any setting. White Pine suffers from white pine blister rust, a fungus that attacks the inner bark. This primary disease can be controlled by removing all gooseberry and alpine currant shrubs within a quarter mile of the tree, since they serve as alternate hosts. White Pine is also attacked by the white pine weevil, which bores into the terminal shoots and distorts the growth of the upper canopy. This primary pest may severely impact mass plantings, such as those that occur in pure forests stands, nursery plantations, and Christmas tree farms.



White Pine is distinguished from all other eastern pines by the fact that its soft, thin, bluish-green needles occur in bundles of five. In addition, the sheath that wraps around the four-inch

long needles at the base of the bundle soon falls away.

Needles generally remain on the thin twigs for one and a half years, then turn yellow in the interior canopy and fall in autumn. The combination of new shoot and needle growth on all pines in spring is collectively termed "candles".



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## Other Identification Features



The pollen-bearing staminate (male) yellow flowers of White Pine emerge with the new shoots (candles) in mid-spring, and fertilize the nearby pistillate (female) flowers that become immature pinkish cones. White Pine is therefore a monoecious species, like all Pines.



By summer, the light green fruits (or cones) of White Pine show characteristic splotches of silvery-white that dapple their surfaces. With maturity, the six-inch long fruits become slightly curved, their scales reflex to release the hidden seeds, and the brown cones eventually fall to the ground. The slender cones of White Pine do not have prickles on the backside of their scales, as many pines do.



White Pine is distinctive as it reaches middle age, as its whorled branches and the spaces between them create a layered visual sight. With time, the top of the canopy becomes flat-topped or scalloped, and the middle of the canopy grows wider.



The gray-green bark of White Pine remains relatively smooth for a number of years, until it finally begins to develop furrows and ridges that are dark gray to dark brown. Sap drippings from the bark are often a common sight and turn white upon exposure to air.