



White Pine

Eastern white pine (*Pinus strobus*) is one of our most beautiful native pines. White pine is considered a handsome specimen tree or screen for large yards, estates, and commercial properties. This species withstands yearly spring shearing or “candling”, making it suitable for hedges.

White pine is a long lived tree commonly reaching 200 years old on good sites. The tallest known white pine is a 158 foot tall specimen in Michigan. Rapid growth is a key characteristic. Young trees can grow as much as three feet in height per year.

Cultivated varieties have been selected based on growth form. Several of these are dense, small shrubs, while others are narrow and upright. *Pendula* has an interesting weeping shape with long branches which sweep the ground.

White pine grows well throughout a wide range of eastern United States. However, this species is often stressed and dies when planted in the landscape. Recent research into white pine decline indicated the following causes:

1. White pine grows best on well drained, sandy, moderately acid (pH = 5.5) soils. When planted in poorly drained, compacted soil with high clay content or a pH above 6.5, this species will usually not survive.
2. The climate over the natural range of white pine (see Figure 2) is cool and humid. A limiting factor in the South and in northern cities is intolerance for sustained high temperatures and low humidity.
3. Most plants are injured by planting too deeply. White pines are particularly sensitive to having the “root collar” covered with soil or wet mulch. Root collar excavation will correct this problem.
4. White pine is very susceptible to damage by salt. This species is also considered sensitive to air pollution, particularly ozone. There are a total of 277 insects and 110 disease organisms known to attack white pine. However, the following are commonly damaging in the landscape:



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1. Root rots: Caused by *Verticicladiella*, *Phytophthora*, and many other fungi. A problem in poorly drained soils.
2. White pine weevil, *Pissodes strobi*: This beetle kills the terminal shoot of white pines.
3. Turpentine pine, *Dendroctonus*: These bark beetles invade pines that are water stressed, construction damaged, storm damaged and overaged.
4. Pine sawflies, *Neodiprion spp.*: Several species feed on the foliage of white pine.
5. Pine bark adelgid, *Pinus strobi*: Sucks sap from the bark.
6. White pine aphid, *Cinari strobi*: Sucks sap from the twigs and drops large quantities of honeydew.
7. Needlecast, *Lophodermium* and other fungi: Diseases of pine foliage most common on stressed trees.
8. Nematodes: Many species attack the roots of white pine.

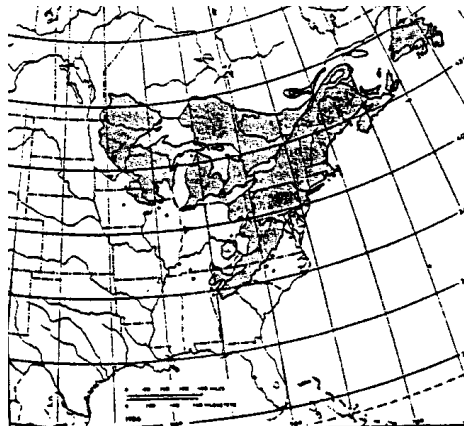
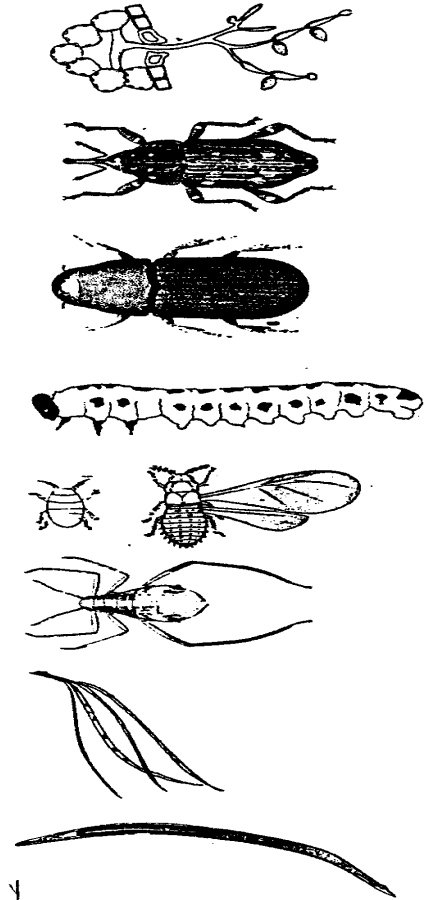


Figure 2. The native range of Eastern White Pine

Recommended Monitoring for White Pine

Timing	Treatment
Winter	Inspect and treat* for deer damage. Corrective prune crowns. Remove dead, dying, diseased, and conflicting limbs. Inspect root collar and excavate.
Late Winter	Inspect and treat for deer damage. Apply oil for aphids, bark adelgids and other pests. Prune out winter damaged limbs. Submit sample of dead needles if needlecast symptoms are present.
Early Spring	Apply preventative treatments* for white pine weevil and turpentine beetle.
Mid Spring	Inspect and treat* for aphids, scales, adelgids and sawflies. Prune (“candle”) new growth where a dense tree is desired.
Late Spring	Apply preventative treatments for turpentine beetle. Inspect and treat* for aphids, scales, adelgids and sawflies.
Early Summer	Inspect and treat* for aphids, scales, adelgids and sawflies. Sample soil for nutrient and pH levels especially if nutrient deficiency symptoms are evident. If plants exhibit decline, sample roots or root crown for <i>Phytophthora</i> root rot and nematodes. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary. Apply fungicide treatments* for needlecast.
Mid Summer	Inspect and treat* for aphids, scales, adelgids and sawflies. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary. Remove leaders killed by white pine weevil prior to adult emergence. Corrective prune to maintain a dominant leader. Apply fungicide treatments* for needlecast.
Late Summer	Inspect and treat* for aphids, scales, adelgids and sawflies. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary.
Early Fall	Apply fertilizers and soil treatments to adjust pH as needed based on soil test results. Inspect plant for evidence of deer browse. Begin applying repellents before deer injury becomes severe. Inspect and treat* for aphids, scales, adelgids and sawflies.
Late Fall	Inspect plant for evidence of deer browse. Begin applying repellents before deer injury becomes severe. Apply fertilizers and soil treatments to adjust pH as needed based on soil test results. Ensure adequate soil moisture levels prior to onset of winter to minimize injury. Remove any mulch from stems to reduce risk of rodent injury. Treat soil with systemic insecticide to suppress sawflies, bark adelgids, aphids and scales next year.

* Apply treatments only when inspection has established that they are warranted.