

PLANT HEALTH CARE REPORT



Eastern White Pine

Eastern white pine (*Pinus strobus*) is one of the most beautiful native pines in North America. It is commonly seen as a specimen tree or screen for large yards, estates, and commercial properties. This species was historically used to build ship masts and was heavily logged across its native range. Eastern white pine is a long-lived tree commonly reaching 200 years old on suitable sites. 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.

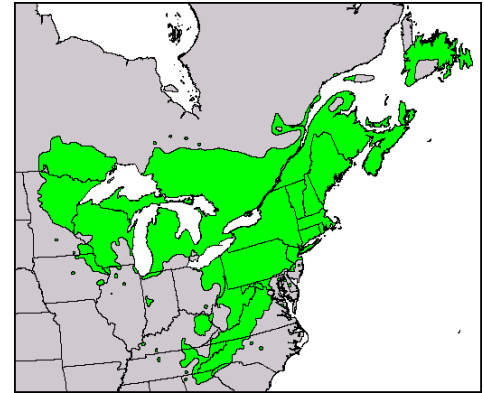


Pinus strobus
'Pendula'
Photo courtesy of [Wikimedia](#)

Eastern white pine grows well throughout a wide range of the eastern United States and southeastern Canada. However, this species is often stressed and dies when planted in the urban landscape. Recent research into white pine decline indicate certain site conditions are necessary for eastern white pine to thrive:

Soil conditions: Eastern white pine grows best on well-drained, sandy, moderately acidic (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.

Climate: The natural range of eastern white pine (see map at right) is cool and humid. A limiting factor in the US South and in northern cities is intolerance for sustained high temperatures and low humidity.



Planting depth: Eastern white pine is often planted too deeply; the top of the root ball should be at or slightly above the soil line. It is particularly sensitive to having the root collar covered with soil or wet mulch. Excavating the root collar will correct this problem.

Salt: Eastern white pine is very susceptible to damage by salt. Damage can occur both in the root zone when exposed to sidewalk salts and to the foliage when placed along windy coastal areas. This species is also considered sensitive to air pollution, particularly ozone.

A total of 277 insects and 110 disease organisms are known to attack eastern white pine. However, the following are commonly damaging in the landscape:

1. **Root rots:** caused by *Verticicladiella procera*, *Phytophthora*, and many other fungi; a problem in poorly drained soils.

2. **White pine weevil** (*Pissodes strobi*): This beetle kills the terminal shoot of young white pines (pictured at right).

3. **Pine bark beetles** (*Dendroctonus* spp. and *Ips* spp.): 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** (*Pineus strobi*): Sucks sap from the bark and can form high populations rapidly.



Damaged terminal shoot caused by white pine weevil

Photo courtesy of [Steven Katovich, Bugwood.org](http://StevenKatovich.Bugwood.org)

6. White pine aphid (*Cinara strobi*): Sucks sap from the twigs and drops large quantities of honeydew.

7. Needlecast: caused by *Lophodermium* and other fungi; diseases of white pine needles are most common on stressed trees.

8. Nematodes: Many species attack the roots of white pine.

Monitoring and Treatment Considerations for Eastern White Pine

Early to mid-winter

Inspect plants for deer browse; apply repellent treatment and fencing as needed. Expose and inspect root collar for problems; add mulch as needed. Remove dead, dying, diseased, and broken branches. Reduce or remove branches to promote appropriate structure; subordinate co-dominant stems.

Late winter

Inspect plants for deer browse; apply repellent treatment and fencing as needed. Apply dormant treatment to suppress aphids, scales, adelgids, and sawflies. Remove winter-damaged branches. Improve soil structure and decrease soil compaction where possible. Sample needles if needlecast symptoms are evident.

Early spring

For young trees (less than 15' tall), apply treatment to prevent white pine weevil from infesting terminal leader. Apply bark treatment to prevent pine bark beetle attack if tree is drought stressed or attack occurred in previous year. Check irrigation system to ensure it is functioning properly and water is not pooling around the base of the tree.

Mid-spring

Monitor for aphids, scales, adelgids, and sawflies; treat as needed. Remove new “candle” growth if a dense tree form is desired.

Late spring

Repeat bark treatment to prevent pine bark beetle attack if needed. Monitor for aphids, scales, adelgids, and sawflies; treat as needed.

Early summer

Apply fungicide treatment to suppress needlecast if confirmed; repeat treatment after one month twice more. Monitor for aphids, scales, adelgids, and sawflies; treat as needed. Monitor irrigation and soil moisture to minimize water stress and prevent root disease. Inspect mulch levels and adjust as needed. Sample soil for nutrient and pH levels. If decline is evident,

submit root samples for Phytophthora root rot testing. If nematode damage is suspected, submit soil sample for nematode analysis.

Midsummer

Monitor for aphids, scales, adelgids, and sawflies; treat as needed. Remove terminals killed by white pine weevil prior to adult emergence. Reduce or remove branches to subordinate co-dominant stems. Monitor irrigation and soil moisture to minimize water stress and prevent root disease. Inspect mulch levels and adjust as needed.

Late summer

Monitor for aphids, scales, adelgids, and sawflies; treat as needed. Monitor irrigation and soil moisture to minimize water stress and prevent root disease. Inspect mulch levels and adjust as needed.

Early fall

Inspect plants for deer browse; apply repellent treatment and fencing before injury becomes severe. Monitor irrigation and soil moisture to minimize winter injury. Remove mulch from stem to reduce risk of disease and rodent injury. Fertilize, adjust pH, and amend soil according to soil analysis.
