

Eastern White Pine

Cultural Problems and Decline

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White pine (*Pinus strobus*) is a native forest species with many cultural problems that arise because it is not generally well adapted to landscape use outside its native range (Figure 1). White pine decline refers to a combination of environmental stress factors and soil pathogens. White pines are sensitive to heat, soil pH and the compacted soil common in landscapes.

White pine is also one of the tree species most sensitive to air pollution damage. Low levels of sulfur dioxide, ozone, and fluorides will lead to needle chlorosis and tip-burn. The older needles will often fall off prematurely. White pine is also commonly grown from seed. Because of this there is genetic variability and trees from the same nursery may perform differently in the landscape.

White pine decline in landscapes has been the subject of several recent research projects. It has been determined that summer temperatures above 75° F, salt spray, and disturbed soil profiles (poor drainage) are serious stresses on white pine. In addition, white pine is subject to a greater array of diseases than any other North American tree species. White pine root decline, caused by the fungus *Leptographium* (syn. *Verticicladiella*) *procera*, is often associated with the death of weakened pines. This disease in its later stages produces an obvious canker at the base of the tree that is covered with bleeding white sap.

Mulching appropriately around white pines and watering deeply once a week during hot spells is recommended. A fertilization and pest control program should also be established. Soil pH should be maintained between 5.2 and 5.6 and micronutrient deficiencies (such as iron) should be corrected. Soil compaction can be mitigated with a variety of soil aeration procedures.

Figure 1: Native range of *Pinus strobus*



Declining white pines will frequently die, even with the best of care. When this happens the following is recommended:

1. Do not replant white pine in the same location.
2. Replant with a tree species known to have tolerance to landscape conditions in your area. Check with your Bartlett Arborist Representative for lists of appropriate trees.
3. If white pine must be used in the same location, select a locally grown tree which should be better adapted to your conditions. Plant in the fall or early spring, avoiding late-spring and summer planting.



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