

Forest Disease Management Notes

United States
Department of
Agriculture

Forest Service
Pacific Northwest
Region



White Pine Blister Rust

White pine blister rust is caused by the fungus *Cronartium ribicola*. This is the most serious pest of 5-needle pines in the Pacific Northwest. Annual losses are estimated to be about 5 million cubic feet.

Hosts: Primary hosts- western white, sugar, and white bark pines. Alternate hosts- members of the genus *Ribes*.

Recognition: Yellow and red needle spots; spindle-shaped swellings often with small Cup-like depressions on branches; cankers with dead roughened bark, margins greenish-yellow to orange; flagging of branches and tops; tree mortality; defoliation of *Ribes*.

Clear, sappy ooze (pycnia) and white to yellow-orange spore pustules (aecia) appear on swollen portions of pine stems in spring-, reddish spore pustules and brown tails (uredia and telia, respectively) develop on the underside of *Ribes* leaves in spring and summer.

Disease Spread: 5 spore stages in life cycle; both pine and *Ribes* hosts are essential for completion of life cycle; spores that initiate infections on both pines and *Ribes* are windborne; 48 hours with saturated air and with a maximum temperature of not over 68°F are necessary for infection of pines; cool, moist conditions during summer and autumn greatly favor the disease while warm, dry conditions are unfavorable.

Management: Rate sites for infection hazard; reforest with resistant 5-needle planting stock on medium and high infection hazard sites; retain uninfected or very lightly infected trees for seed sources when cutting severely infected stands; branches with cankers more than 4 inches and less than 24 inches from the stem can be pruned; attempts to eliminate the alternative host (*Ribes*) or develop chemical controls have proven unsuccessful.

May be Confused With: Mountain pine beetle damage.

Branch infection that has
spread to the stem



Aecial stage of
Cronartium ribicola



Telial stage of
Cronartium ribicola on Ribes