

If you have white pine on your property you may have been looking at it and thinking that it just doesn't look quite right, and you maybe right. For the past several years a number of diseases have been affecting white pine both locally and throughout the northeast. One of the culprits, white pine blister rust (WPBR), is making its return after being all but absent in New England for quite awhile. White pine blister rust was introduced into North America around 1900. It affects five needle pines and has nearly wiped out western white pine throughout much of its natural range(1). The only five needle pine found in the northeast is eastern white pine. Over the years WPBR has killed numerous pines in New England. The WPBR requires two unrelated hosts to complete its life cycle. The second host for this disease in New England is *Ribes* species such as gooseberry and currants. During the 1920s the sale and planting of black currants and other host plants were banned as part of an effort to limit the damage to white pine. For the next few decades an intensive eradication program aimed at these alternate hosts was undertaken that greatly reduced the *Ribes* population and the incidence of WPBR in New England. The fungus enters through the needles and travels through the branches to the main stem where it may eventually girdle the tree and kill it. Seedlings are at greatest risk as the environmental conditions close to the ground; higher humidity, shade, and moisture are more favorable for the fungus to develop. Also, since the distance from the needles to the main stem is less when trees are young it has a shorter distance to travel. Symptoms of the disease include top dieback, browning needles and numerous rupturing blisters with oozing and hardened resin(1). In 2008 researchers determined that a new strain of the disease had developed in northeast North America. This new strain is able to use variants of *Ribes* that were cultivated to be immune to the disease and allowed to be planted for berry production.

Another disease affecting white pine is Caliciopsis canker. This is a native canker that is not well understood. It is most often found in dense white pine stands on well drained sandy soils. The most obvious symptoms of infection is copious resin seen on the mid to upper part of the main stem of the tree and a thinning crown(2). The cankers are found in between the branch whorls while resin from WPBR is found where branches and the main stem intersect. In these dense stands it is not unusual to see more than 50% of the trees affected as spores are probably spread from tree to tree by rain splash. Mortality from this disease is thought to be low, but with a thinning crown tree vigor and growth is probably being reduced which may make the tree more susceptible to other stressors. It may also be degrading the quality of products from the areas of the tree that are affected. Keeping the crowns healthy and exposed to more sunlight by thinning those overstocked stands may help decrease this disease.

The third stressor of white pine are fungi causing needle casts and brown spot, the symptoms of these diseases are similar to each other ó yellow and brown discoloration of needles that eventually drop from the tree causing the crown to look thin. These diseases can be present on

trees of all ages and sizes. Wet springs which are favorable to disease development, during several consecutive years has led to an outbreak of foliar diseases (3). Thinning damaged trees during these conditions is not recommended as these trees are already stressed by repeated defoliations (3). However, if a stand has not suffered much stress, getting it thinned and opened up may help improve the health of individual trees(4).

(1)Source URL: <http://extension.umass.edu/landscape/news/white-pine-blister-rust-new-strain-has-developed>. Dr. Nicholas Brazee.

(2)USDA Forest Service News Release, June 20, 2012, Glenn Rosenholm.

(3)*Eastern White Pine Needle Damage Survey, 2011 In Maine, New Hampshire, and Vermont*. May 16, 2012. Isabel Munk, Forest Health Protection, Durham Field Office, US Forest Service.

(4)Bangor Daily News, July 5, 2014, *Ailing pine trees prompt calls to Maine Forest Service*, Tim Cox.