

Forest Pest Alert: Sudden Oak Death

Sudden oak death is a disease caused by the water mold *Phytophthora ramorum*. Currently it is limited to California and Oregon and parts of Europe. This pathogen can infect a wide variety of plants, but oaks are most severely affected. Non-oak hosts may serve as important reservoirs of the disease and transport of infected ornamentals, such as rhododendron, may be important in moving this disease out of its current range.



Figure 1. Oaks killed by sudden oak death in California. Photo credit: Joseph O'Brien, USDA Forest Service, Bugwood.org

Symptoms include the wilting of new shoots, chlorosis of older foliage, and dead brown foliage that remains on the tree. Bleeding cankers exuding dark sap may appear on the lower trunk and the bark may fissure. As the tree dies back, suckers will appear the following spring only to wilt and die.



Figure 2. Bleeding cankers in an oak infected with sudden oak death. Photo credit: Bruce Moltzan, USDA Forest Service, Bugwood.org



Figure 3. Canker in coastal live oak. Photo credit: Joseph O'Brien, USDA Forest Service

The weakened trees attract insects and allow the growth of other pathogens/saprophytes. Ambrosia beetles may attack dying trees, producing fine white sawdust at their entrance holes.



Figure 4. Pitch tube of white sawdust, indicating infestation by ambrosia beetles. Photo credit: David Jenkins, South Carolina Forestry Commission

Later, bark beetles will attack, producing red sawdust. Severe infestations of bark beetles can girdle trees.

Small black domes may appear on the bark. These are the fruiting bodies of *Hypoxylon* fungus, typically a saprophyte that can only invade weakened trees.



Figure 5. Fruiting bodies of *Hypoxylon*, an opportunistic fungus that may colonize weakened

trees. Photo credit: Joseph O'Brien, USDA Forest Service, Bugwood.org

Phytophthora ramorum produces resistant spores that are able to survive winter. It also produces flagellated spores that move in fluid. The spores can spread through splashing rainwater and in streams, where it can be moved greater distances. Wounds facilitate infection but are not required for this pathogen to gain entrance to its hosts.

Like many diseases, early detection is key in controlling sudden oak death. There is no cure for infected trees. Isolating infected trees and practicing good sanitation (removing foliage and debris from shoes when leaving an infected area) help reduce the spread.

If you see symptoms consistent with sudden oak death, please contact the South Carolina Forestry Commission Insect and Disease Staff (**David Jenkins (803) 896-8838**) office; **(803) 667-1002** cell; or at djenkins@scfc.gov) or your local Forestry Commission office.