



Forest Facts

SUDDEN OAK DEATH

March 2007

A relatively new disease

Sudden Oak Death (SOD), caused by the non-native pathogen *Phytophthora ramorum*, is a relatively new disease in Oregon. It was first discovered in California and has killed hundreds of thousands of oak trees in the San Francisco Bay area. In July 2001, it was discovered at five sites on the southwest coast of Oregon near the town of Brookings.

Tree species and shrubs are susceptible

The pathogen invades susceptible trees through the bark, killing the entire tree or portions of the tree. Death can occur rapidly. Highly susceptible tree species include tanoak, coast live oak, and California black oak. Tanoak is by far the most susceptible species in Oregon, and unchecked spread of the disease seriously threatens the future of this species. *P. ramorum* also causes leaf blight or shoot dieback on a number of other hosts including rhododendron, evergreen huckleberry, Douglas-fir, and Oregon myrtle.

P. ramorum spreads during rainy periods when spores produced on infected leaves or twigs are released into the air and are either washed downward or transported

in air currents. The pathogen also has a tough resting spore stage, called a chlamydospore, which allows the pathogen to survive harsh conditions for months or years in soil or infected plant parts.

Attempts to eradicate Sudden Oak Death

Since fall of 2001, state and federal agencies have been attempting to eradicate Sudden Oak Death from infested sites in Oregon by cutting and burning all infected host plants and vegetation nearby. Twice a year, soil and vegetation samples are monitored at each eradication site to see if the pathogen can be found. During the first few years of the eradication effort, it was discovered that on most sites the pathogen was surviving initial treatments. Beginning in 2003, new sprouts hosting the disease were chemically treated (non-federal lands only) and herbicide was injected in tanoaks prior to cutting them. This additional treatment has dramatically reduced the reoccurrence of *P. ramorum* on treated sites. The pathogen has been recovered from soils at several eradication sites, but with very low frequency.

Sudden Oak Death slowly spreads

During the first four years of the eradication effort, the number of new infested sites and infected trees decreased each year. That trend ended in 2005 when the number of trees and the number of new infested acres increased compared to the previous year. During 2006, 36 new infested sites were discovered (143 infected tanoak trees), however, most of the new sites were small and near the center of a quarantined zone along the North Fork Chetco River and its tributaries. In addition to the new sites, six existing eradication sites were expanded to include infected trees found near their perimeters. It is believed that the uncommon and unexpected spread of the pathogen can be attributed to two consecutive years of unusually wet spring and early summer weather, which appears to help spread *P. ramorum* over longer distances.

Eradication efforts appear to be helping

Aerial surveys and numerous ground-based surveys have shown that, despite several new occurrences of *P. ramorum* in 2006, only a very small area near Brookings has been affected overall. This suggests that eradication efforts are slowing the spread of Sudden Oak Death. The forested area in Oregon under quarantine by the Oregon Department of Agriculture and USDA- Animal and Plant Health Inspection Service was 11 mi² in 2005, increased to approximately 22 mi² in early 2006, and will increase soon to 26 mi² to include recent discoveries. Efforts to eradicate the pathogen from Oregon forests will likely continue for several years.

A complete *P. ramorum* host list can be found at:

http://www.aphis.usda.gov/ppq/ispm/pramorom/pdf_files/usdaprlist.pdf

For more information on Sudden Oak Death, go to:

<http://nature.berkeley.edu/comtf/>