REGENERATION CONCERNS IN AREAS IMPACTED BY SUDDEN OAK DEATH

Douglas D. McCreary
University of California Integrated Hardwood Range Management Program
Browns Valley, CA 95918

Sudden Oak Death (SOD) is a new disease affecting several oak (*Quercus* spp.) species in California. It is caused by *Phytophthora ramorum*, a fungus-like water mold that causes bark cankers that girdles and kills mature trees. To date, this disease has been reported on four of California's twenty species of native oaks. Three are members of the black oak subgenus; coast live oak (*Quercus agrifolia* Nee), California black oak (*Q. kelloggii* Newb.), and Shreve oak (*Q. parvula* v. shrevei): one is a member of the intermediate oak subgenus; canyon live oak (*Q. chrysolepis* Liebm.). To date, it does not appear that members of the white oak subgenus are susceptible. *P. ramorum* has also been confirmed on dozens of other species of plants, including tanoak (*Lithocarpus densiflora* (Hook. & Arn.) Rehd.), closely related to true oaks (also in the Fagacae family). There are also another thirty associated species that are believed to harbor the organism, but have not yet been officially confirmed as hosts.

In areas impacted by SOD, there is concern that invasive weeds could replace the dying vegetation. This concern is based on repeated observations that highly competitive exotic plants often invade and occupy sites that lose their existing tree and shrub communities. This usually occurs in the aftermath of catastrophic events such as wildfire, but is also a risk following loss due to insects or disease. In spite of the name, loss of trees and shrubs following SOD infection on forested sites is usually gradual, rather than sudden, complicating restoration strategies. In addition, there is currently little information available regarding genetic resistance of oaks, and a poor understanding of how susceptible oak seedlings are to the disease. At present, oak seedlings of the four confirmed host species do not display SOD symptoms and are thought not to harbor the disease organism. Yet this does not mean that these oak seedlings will not become infected as they grow older and larger.

This uncertainty has made land managers reluctant to replant susceptible oak species in areas suffering high levels of tree loss. Until more is known about the disease, including identifying genotypes that are resistant, it is unlikely landowners or managers will seriously undertake efforts to replants oaks in areas affected by sudden oak death.