



RESOURCE MANAGEMENT

Forest Entomology and Pathology

Insects and diseases, both native and introduced, are the top killers of trees in California. Sudden oak death and bark beetles attacking drought-stressed trees have been the leading causes of tree mortality in recent years, but many other pests have impacted and/or will impact California's forests. These impacts include increased wildfire risk and changes in forest diversity and structure.

Forest pests (insects and diseases) annually destroy 10 times the volume of timber lost due to forest fires. Native bark beetles took hold in the Sierra Nevada and Southern California forests following severe drought years and caused unprecedented tree mortality. Bark beetles are currently being found elsewhere in the state too. The introduced Pitch Canker Disease has attacked Monterey pine along the central coast. Sudden Oak Death, caused by *Phytophthora ramorum*, has been found in 16 counties in California and has killed thousands of oaks.

CAL FIRE's Entomology (the study of insects) and Pathology (the study of diseases) program staff evaluate pest outbreaks, recommend preventative measures and treatment alternatives, assist landowners with the management of dead and dying timber, evaluate fire-damaged trees for survival and hazard, provide training, produce publications, conduct surveys and applied research, and provide leadership for stakeholder groups. They also work with Forest Practice staff on forest health issues related to timber harvest activities.

In 1923, the Forest Insect Eradication Law was enacted, authorizing the State Forester, with Board of Forestry and Fire Protection approval, to establish Zones of Infestation for insect control. In subsequent years, the law was amended and expanded. Zones are declared when large-scale pest infestations require a coordinated, area-wide response. They provide CAL FIRE greater latitude in conducting pest management activities and require commercial timber harvests to use appropriate mitigation measures.

Zone establishment authorizes CAL FIRE participation in multiple-landowner pest control projects; without CAL FIRE assistance, private landowners would not have the technical expertise or resources needed to conduct projects on their own. About 25 million acres are currently in Zones across California. State, and federal entomologists and pathologists collaborate on training, survey, monitoring, trapping and research efforts, as pest issues do not recognize jurisdictional boundaries.

