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California \_\_\_\_\_  
Oak Mortality Task Force

## Public Inquiry Guide:

Tips to answer calls or questions from arborists, landscape professionals, homeowners, or the general public. See also the FAQ section of the COMTF website at [www.suddenoakdeath.org](http://www.suddenoakdeath.org).

### **How to check for symptoms and the need to sample for *Phytophthora ramorum* in oaks and tanoaks**

#### **First, determine if the suspect tree is a susceptible species:**

Bleeding symptoms only occur on coast live oak, California black oak, Shreve's oak, and tanoak. Bleeding on maple, Douglas-fir, or other foliar hosts (with the exception of poison oak and Pacific yew) usually indicates a different causal agent. Leaf and twig symptoms do not occur on in the red oak group, but may on tanoak and canyon live oak.

#### **Second, determine if the tree is in an infested area:**

The following California counties have confirmed infestations of *P. ramorum* in natural settings:

Alameda	Mendocino	Santa Clara
Contra Costa	Monterey	Santa Cruz,
Humboldt	Napa	Solano,
Lake	San Francisco	Sonoma
Marin	San Mateo	

To check maps of the location of confirmed finds go to:  
<http://kellylab.berkeley.edu/SODmonitoring/>

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### **Third, rule out other causes:**

Unless a suspected tree is on property that abuts a park, a woodland, or woodland remnant, it probably does not have *P. ramorum*. There are many diseases and pests that produce symptoms similar to those of Sudden Oak Death. The following is a partial list of some of the more common of these look-alike diseases. For a full list, see Pest Alert 6, pp. 7 – 10, which can be found in the Publications section of this binder, or on the COMTF website.

A bacterial infection known as **wetwood** causes bleeding on trunks and large branches of oak trees and can resemble the bleeding associated with Sudden Oak Death. Bleeding from wetwood is often associated with a crack, is black and watery, and has a foul odor. This is in contrast to bleeding caused by Sudden Oak Death, which tends to be reddish, more beady, and sticky. Wetwood is usually a secondary condition following a wound.

**Hypoxylon** is a fungus that grows on dead woody tissue. It is often associated with the later stages of Sudden Oak Death, but can appear on the trunks of trees or logs that are dead or dying from any number of causes. It is identified by the presence of dark brown or black ball-shaped growths, up to the size of a quarter, on the bark or exposed wood.

**California oakworm**, a caterpillar with green or yellow stripes and a round, tan head, can cause heavy to complete defoliation of coast live oaks, making trees look as though they are dead or dying. On the defoliated trees, twigs and buds will be alive, caterpillars will be visible, and accumulations of droppings (frass) found beneath the tree. Healthy trees will releaf in the spring. A tree is rarely defoliated two years in a row.

Determine if the suspected oak tree is being irrigated, especially if the trunk or base of the tree is being watered. *Armillaria mellea* and *Phytophthora cinnamomi* are common pathogens that cause trees to decline, and can be associated with over-watering.

Compare the tree's symptoms to photos in this binder (Diagnostic Guide, Pest Alert #6, or Forest Service Pest Alert) or to photos on the COMTF website. Also see "A Field Guide to Insects and Diseases of California Oaks" at [http://nature.berkeley.edu/comtf/pdf/psw\\_gtr197.pdf](http://nature.berkeley.edu/comtf/pdf/psw_gtr197.pdf).

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### **Fourth, check for symptoms on other bark and foliar hosts nearby**

Only laboratory analysis can determine whether a tree is infected by *P. ramorum*. If a number of susceptible species in the vicinity of the symptomatic trees show symptoms of the disease, it may indicate the need for further investigation. In particular, check California bay laurel for leaf spots typical of *P. ramorum* infection. Symptoms on many hosts are shown in the Publications section or on the COMTF website.

Samples for regulatory purposes may only be taken by qualified University of California, Cooperative Extension, or California Department of Food and Agriculture staff. Registered professional foresters (RPFs) and tree care professionals who have attended the COMTF *P. ramorum* Wildland Training may send samples to confirm the presence of the disease in a particular tree or property. A list of these professionals is contained in this binder, and on the COMTF website.

### ***Phytophthora ramorum* on foliar hosts:**

*Phytophthora ramorum* produces leaf blotches, twig cankers, and shoot die-back on plants identified by the leaf symbol in the Host section. In some cases the shoot die-back may be severe enough to kill the plants (e.g., huckleberry and madrone), but in general they do not usually die as a result of *P. ramorum* infection.

Foliar hosts may be damaged by fungi, insects, the sun, or other environmental conditions, and these can cause leaf symptoms similar to those of *P. ramorum*. This can make it very difficult to identify the pathogen on these species. Bigleaf maple, California buckeye, and coast redwood all naturally shed foliage. Buckeyes are summer deciduous, meaning they lose their leaves in the summer. Maples and redwood may turn brown in the summer or early fall in response to drought conditions. This can make them look sick, but this is normal for these species.

Compare symptoms with those in the diagnostic guide or consult with a landscape professional for diagnosis.

In forests, the only foliar treatment available is removal of the infested plant or removal of susceptible host plants; however, in wildland areas that may not be desirable or practical. In particular, California bay laurel appears to be a major reservoir of inoculum for the spread of *P. ramorum*. In areas where Sudden Oak Death is present, the removal of California bay laurel trees or foliage from around individual valued oaks or tanoaks **may** help lower the risk of infection if it is determined that the trees are currently free of the disease.

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### **Spraying trees with insecticides:**

Insecticides will not prevent infection by, or growth of, *P. ramorum*.

Insecticides can be sprayed on high-value landscape trees to protect them from beetles, secondary invaders that may attack and hasten the death of the tree. Beetles only attack trees that are already weakened, so there is no need to spray healthy trees or any of the foliar hosts. The pathogen alone can kill the tree, so the treatment will usually not save the tree, but it may prolong its life for a relatively short time.

Astro (the most common insecticide used for bark beetles) should only be applied in the spring (March, April) or fall (Aug., Sept.) when the beetles are active.

Astro has adverse environmental effects, especially on bees and aquatic organisms. It should not be applied near waterways or bee activity.

### **Chemical treatment:**

A phosphonate material has been approved for preventative treatment of uninfected oaks and tanoaks. This treatment may be appropriate for individual high-value trees in landscape or park situations, but not for large-scale use in wildland situations. Information on the use of this material is contained in the last section of this binder.

### **Fertilization:**

Unless there is a nutrient deficiency, there is no need to fertilize mature oak trees.

Yellowing foliage (on oaks or other nearby plants) is a sign that there may be a nutrient deficiency, but it can also be a sign of too much water, poor drainage, disease, or herbicide damage.

To confirm a nutrient deficiency, soil samples should be taken by a professional.

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### **Pruning, tree removal, and hazard trees:**

Do not prune more than 20% of the live crown of an oak or tanoak. Only prune when necessary (to remove dead or heavy branches from old trees); avoid pruning in wet winter or spring months.

Trees are killed by *P. ramorum*, and they may quickly become falling hazards due to secondary beetle and decay organisms.

When removing a tree, **leave wood on site** whenever possible. Split wood and use on site as firewood. Pile wood in a sunny area to promote drying, away from oak trees, as beetles are likely to be present.

Also chip brush and scatter leaves and chips on site in a sunny area to promote drying. **Avoid moving leaves of tanoak, rhododendron, huckleberry, bay, madrone, buckeye, honeysuckle, camellia manzanita, toyon, bigleaf maple, coffeeberry, or any of the other foliar hosts, as the leaves of these hosts have many spores on them and can be a source of infection.**

If it is not feasible to leave wood or green waste on site, ensure that it is transported to an approved Sudden Oak Death collection facility and with the necessary permits. For information on permitting and a list of approved disposal facilities, contact your County Agricultural Commissioner's office.

*P. ramorum* is not toxic to humans or other animals.

### **Regulations/Quarantine:**

The California Department of Food and Agriculture (CDFA) has instituted regulations that prohibit the movement of all *P. ramorum* host plants (whether they show symptoms or not) and unprocessed materials (leaves, branches, wood, etc.) from infested to uninfested counties without a compliance agreement originating from the County Agricultural Commissioner's office. This restriction applies to material from the fourteen infested counties : Alameda, Contra Costa, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma. For current CDFA quarantine information, go to: <http://pi.cdfa.ca.gov/pgm/manual/pdf/455.pdf>. A copy of the regulations is also included in this binder.

Federal regulations have been in place since February 2002. For up-to-date information on federal regulations, go to:

[http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/pram/index.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/index.shtml). A copy of the regulations is also included in this binder.

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### **Handouts for the public:**

If people would like to have information mailed to them, send them a copy of the COMTF "A Homeowners Guide to Sudden Oak Death," "Stop the Spread" brochure, "A guide for recreational users: Simple precautions to prevent the spread of Sudden Oak Death," the Forest Service Pest Alert, or IPM Pest Note Publication 7498. Many of these publications can be downloaded directly from the COMTF website.

### **For more information on Sudden Oak Death and *P. ramorum*, see the following websites:**

California Oak Mortality Task Force - <http://www.suddenoakdeath.org>

Marin County Cooperative Extension - <http://cemarlin.ucdavis.edu>

UC Berkeley Monitoring Site - <http://kellylab.berkeley.edu/SODmonitoring/>

**This desk reference guide needs to be updated on a regular basis as new information is made available.**