

# You Can Help Slow the Spread!

The best defense against Sudden Oak Death is to follow established regulations and best management practices to help slow the “artificial” or human-aided spread of the disease. All of the cleanliness measures listed below are helpful to avoid unintentionally spreading *P. ramorum* as well as a variety of other plant pathogens from one area to another.

- Do not collect and move plants from SOD-infested areas.

- Removing mud and plant material from shoes, mountain bikes, horses’ hooves, pets’ paws, vehicles, and recreational equipment prior to leaving an infested area is the most important part of the sanitation process. Remove material with a brush and pressurized water (not from a local natural waterway as it may be infested) and disinfect surfaces with Lysol® or a diluted 10% bleach solution.



- When hiking and biking, stay on established trails and respect trail closures.

- Clean and disinfect equipment (saws, shovels, pruning equipment, etc.) that has been used in infested areas.

- Report hosts exhibiting symptoms to your local County Agricultural Commissioner, California Department of Forestry and Fire Protection, or UC Cooperative Extension, or online at [www.oakmapper.org](http://www.oakmapper.org).

- Before purchasing known *P. ramorum* host plants, ask the nursery about their best management practices for the prevention of the pathogen. Consider quarantining newly purchased plants for 8 weeks before planting them in your yard and check for suspicious symptoms during that time.

## For More Information

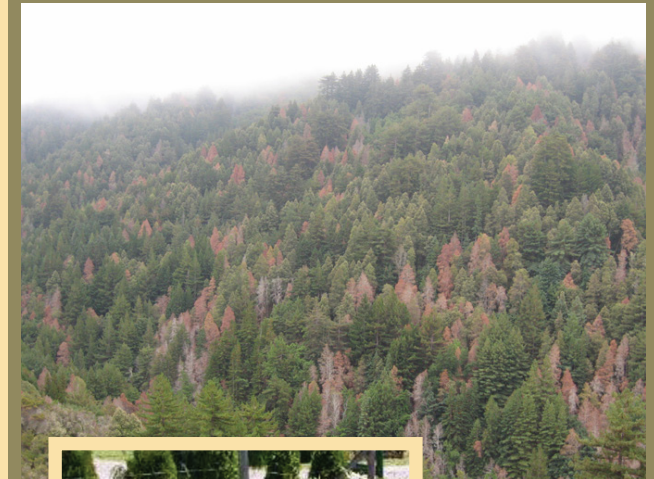
The California Oak Mortality Task Force (COMTF) brings together over 1,000 members from more than 80 organizations, including public agencies, non-profit organizations, and private interests, to address the issue of elevated levels of oak mortality. The Task Force facilitates a comprehensive and unified approach for research, management, education, and public policy.

Visit us online to learn more about the pathogen, symptoms, disease impacts, best management practices, local contacts, and much more at:

[www.suddenoakdeath.org](http://www.suddenoakdeath.org)

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## Our Forests At Risk From *Sudden Oak Death*



Information on *Phytophthora ramorum* in California’s wildlands, nurseries, and communities



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

# What are Sudden Oak Death and Ramorum blight?



Coast live oak, California black oak, canyon live oak, Shreve oak, and tanoak trees are dying in 14 coastal California counties due to a disease known as Sudden Oak Death (SOD), which is caused by the non-native plant pathogen *Phytophthora ramorum*. SOD is often fatal for these trees as the pathogen disrupts the vascular system, inhibiting the tree's ability to transport nutrients and water. These trees are also more susceptible to pests such as bark beetles and decay fungi and are subsequently more prone to structural failure.

The pathogen can also infect a number of other host plants found around the globe, ranging from common nursery plants to trees. While these hosts do not contract Sudden Oak Death, they can get a less severe disease known as

Ramorum blight, which is a foliar and twig infection. For the most current list of regulated host plants, go to [www.suddenoakdeath.org](http://www.suddenoakdeath.org).



Symptoms on an oak trunk

## Oaks and Tanoaks

A common symptom found on SOD-impacted trees is the “bleeding” of a thick sap, seen on the bark surface and originating from a canker beneath the bark. On true oaks, this bleeding is usually found on the main stem of the tree, within 10 feet from the ground, and not below the soil line; on tanoaks, it can be found anywhere on the above-ground parts of the tree, including branches. Tanoaks can also suffer from leaf and twig infections.

## Foliar Hosts

Plants with Ramorum blight show symptoms of leaf spots and twig dieback. Pathogen spores can build up rapidly on the leaves and twigs of these hosts. California bay laurel (*Umbellularia californica*) is the single most important foliar host driving natural *P. ramorum* spread in California wildlands, while a varied group of common ornamental plants, including *Rhododendron*, *Camellia*, *Viburnum*, and *Pieris*, are involved in most nursery infestations.



Symptoms on California bay laurel leaves



Symptoms on a rhododendron leaf

## In the Wild

SOD-related tree mortality may result in changes to the ecology of the forests, impacting wildlife, fire susceptibility, and the safety and aesthetics of our wildlands. As of 2010, fourteen counties in coastal California and one county in southwest Oregon have infestations in their forests.



- Monitoring *P. ramorum* in the wild is difficult due to its often subtle symptoms and wide distribution throughout California's coastal forests.
- Efforts to restrict the movement of plant material and soil from infested counties help reduce the unintentional spread of the pathogen.
- Resistance to *P. ramorum* in oak and tanoak trees is being explored; however, resistant planting stock is not available at this time, nor is it known if it will ever be available.

## In Your Community

Urban areas are not immune to *P. ramorum*. The best defense against SOD is to use good management and sanitary practices and to monitor spread in your local area.

- Regulations limit the movement of host material out of infested counties. Whenever possible, infested materials should remain onsite, and susceptible plant material should move as little as possible. Take precautions to limit the movement of *any* soil, organic material, and wood.
- After pruning host plants, clean all pruning, cutting, and chipping tools.
- Monitor plants for symptoms. Laboratory diagnosis is necessary to truly confirm the presence or absence of the pathogen.



- Participate in a local SOD-Blitz to help with monitoring SOD in your community ([www.matteolab.org](http://www.matteolab.org)).

## In Nurseries

Nurseries, gardens, and plantations around the world have been found infested with *P. ramorum* at some point. Still, nurseries offer the greatest hope for monitoring and eliminating the unintentional spread of *P. ramorum*-infested ornamental plants.



- For California nursery growers, there is a best management practices manual to use when developing a *P. ramorum* prevention plan, developed jointly by the California Association of Nurseries and Garden Centers (CANGC) and national groups (HRI/ANLA).
- Additional resources from other states and national groups provide further guidance on preventing the spread of *P. ramorum* through the nursery trade. To access these resources, go to the Nursery section of the COMTF website at [www.suddenoakdeath.org](http://www.suddenoakdeath.org).