



California Oak Mortality Task Force 2002/03 Sudden Oak Death Program December 2002

This document outlines an adaptive management approach to address Sudden Oak Death in California. The California Oak Mortality Task Force (COMTF) goals for 2002-2003 are:

- ❑ **Minimize pathogen spread, provide management strategies and information to sustain California forests, and promote public safety.**
- ❑ **Further the understanding of Sudden Oak Death, *Phytophthora ramorum*, associated organisms, and environmental factors that contribute to tree and plant mortality, as well as identify ecological impacts.**
- ❑ **Plan and coordinate California's Sudden Oak Death program.**

Background information on Sudden Oak Death and the COMTF, a synopsis of accomplishments for 2001-2002, and the COMTF's priorities for 2002-2003 are provided below. Sudden Oak Death is a new forest disease; the next few pages outline how local, state, and federal agencies are working together with organizations and communities to respond to the ever-evolving demands of this disease.

Contents:

Background

About the Task Force

How should California respond to Sudden Oak Death?

COMTF Goals for 2002-2003

1. Minimize pathogen spread, provide management strategies and information to sustain California forests, and promote public safety.
2. Further the understanding of Sudden Oak Death, *Phytophthora ramorum*, associated organisms, and environmental factors that contribute to tree and plant mortality, as well as identify ecological impacts.
3. Plan and coordinate a sustained Sudden Oak Death management program for California.

Summary

Background

Sudden Oak Death, a forest disease, was first reported in 1995 in Marin County. In summer 2000, Dr. David Rizzo (UC-Davis) and Dr. Matteo Garbelotto (UC-Berkeley) identified the cause of this tree die-off to be a new pathogen, now known as *Phytophthora ramorum*. Since identified, *Phytophthora ramorum* has been found in 12 coastal California counties and one county in Southern Oregon.

Phytophthora ramorum has killed tens of thousands of tanoak (*Lithocarpus densiflorus*) and coast live oak (*Quercus agrifolia*) in the 12 California counties. It also kills California black oak

(*Quercus kelloggii*) and Shreve oak (*Quercus parvula* var. *shrevei*). Sapling-sized madrone (*Arbutus menziesii*) have died from the disease, but the effects on mature madrone are still being evaluated. It causes leaf spots and/or twig dieback on coast redwood (*Sequoia sempervirens*), Douglas-fir (*Pseudotsuga menziesii*), California bay laurel (*Umbellularia californica*), rhododendron, huckleberry, big leaf maple, and six other woody plants. The pathogen's impact on coast redwood and Douglas-fir needs further investigation. To date, the pathogen has been associated with branch and needle dieback on these species. On coast redwood, *P. ramorum* also causes basal sprout dieback.

Since this pathogen is new to science, we are having to learn about it at the same time we are having to take steps to protect the natural and human environments it has invaded. Sudden Oak Death erupted in an urban wildland interface that is utilized for living and recreation by over 7 million people. It is killing trees on lands that are owned by federal, state, county, and local governments as well as private individuals and companies. Consequently, this disease has to be addressed through the cooperative efforts of many landowners and managers.

About the Task Force

In August 2000, the California Oak Mortality Task Force (COMTF) was created by the California Department of Forestry and Fire Protection, and the California Forest Pest Council, to bring together public agencies, nonprofit organizations, and private interests to address the issue of elevated oak mortality. The Task Force is a consensus group that is addressing Sudden Oak Death in a comprehensive and unified manner, focusing on research, management, education, and public policy surrounding the disease. Since its formation, the COMTF has grown to over 75 agencies and has more than 1000 members.

How should California respond to Sudden Oak Death?

Phytophthora ramorum poses a serious threat to forests world-wide. Since the pathogen's distribution is limited, an aggressive and comprehensive program is needed to minimize its spread. Individuals, agencies, and businesses need guidance on how to prevent pathogen establishment and spread, recognize symptoms, practice proper sanitation and where to go for additional assistance. Communities need assistance to maintain public safety in infested areas.

The Task Force is coordinating California's response to Sudden Oak Death. COMTF's founding purpose was to respond to Sudden Oak Death as expressed in the following objectives.

- Assist communities threatened by Sudden Oak Death to maintain a safe and healthy environment;
- Develop and maintain an adaptive integrated pest management program for Sudden Oak Death;
- Provide information and educational materials on Sudden Oak Death; and
- Identify sources of funding, staffing and other needed resources for Sudden Oak Death.

COMTF's original and current strategy is based on:

- **Research** to acquire knowledge about the disease that will assist in slowing pathogen spread;
- **Education** so professionals and the public are aware of, and understand, the latest information available on the disease;
- **Monitoring** to follow the impact and distribution of Sudden Oak Death and *P. ramorum*; and
- **Regulations** to limit human-caused spread of the pathogen.

Management activities are being designed and considered for future use. Work on stand manipulation and resistance programs are underway, but more research is needed to understand oak forests and woodlands and how the pathogen spreads before these efforts can be more fully developed. Chemical treatments are being tested, but until adequate data are available to evaluate pesticide effectiveness, none are recommended.

During 2001-2002, the COMTF

- Continued to build a coalition for Sudden Oak Death (SOD) and coordinated California's SOD program.
- Provided a forum for information exchange and kept members up to date on key SOD issues and findings. Assisted agencies/individuals working on Sudden Oak Death by providing them with the latest information available.
- Hired a new statewide coordinator and two new regional education coordinators dedicated solely to providing SOD-affected parties with information and assistance.
- Provided technical information on Sudden Oak Death to legislators, the media, and others. Identified SOD budgets, priorities, and needs for research, management, and education.
- Problem-solved and improved relationships between agencies working on Sudden Oak Death.
- Provided a vision of state priorities for Sudden Oak Death, articulated key tasks necessary to meet priorities, and identified appropriate people to handle tasks.
- Coordinated research funding so that limited dollars were targeted at highest priority needs.
- Provided credibility for California's Sudden Oak Death program that instilled confidence and encouraged additional funding.
- Provided SOD field training for over 600 professionals in disease recognition, sampling protocol, and regulations.
- Heightened awareness and raised financial support to address Sudden Oak Death. In fall 2002, total Sudden Oak Death funding surpassed \$12 million. Since the COMTF is an advisory group, it does not administer funding. The COMTF assists in coordination efforts and provides educated suggestions to funding parties, lawmakers, management agencies, research institutions, and other interested parties.

For further details of Task Force accomplishments, see California Oak Mortality Task Force 2001/2002 Accomplishments (December 2002) posted at www.suddenoakdeath.org.

COMTF Priorities for 2002-2003

For 2002-2003, the COMTF has identified goals in which our efforts will be concentrated. The following sections explain these goals and priorities.

1. Minimize pathogen spread, provide management strategies and information to sustain California forests, and promote public safety.

The pathogen that causes Sudden Oak Death is now found in 12 California counties, one county in southern Oregon, and is confirmed to infect 17 different woody species. The extent of future infection and spread is not yet clear, though the potential is great. Currently, there is no known cure or preventative measure for Sudden Oak Death, therefore the only defense available to us is to minimize the artificial spread of the pathogen to uninfected areas. There are a number of strategies to do this, including:

- Implement regulations that prohibit human-caused pathogen spread.
- Provide sanitation guidance to recreationalists, forest users, managers, landowners, and related industries to contain the pathogen.
- Carry out early detection programs to find infestations before they expand.
- Develop an Integrated Pest Management program for Sudden Oak Death to assist industries and communities in limiting pathogen spread.

The following projects have been identified:

- Design a regulation enforcement program based on new state and federal regulations
- Develop regulation enforcement guidelines for all user groups so enforcement is consistent
- Assemble and distribute educational materials on quarantine enforcement for each user group and industry
- Provide protocols for prevention, early detection, rapid response, control, management, and restoration
- Develop management tools for Sudden Oak Death, including:
 - Free-from survey
 - Improve risk assessment
 - Environmental monitoring methods
 - Improved training materials for nursery inspections
 - Improved diagnostic techniques and guides
 - Evaluate/assess eradication protocol
 - Collate wash station technology
 - Pest-free zone certification for nurseries in the regulated area
- Support registration of an effective fungicide for use in California
- Provide science-based information for arborists
- Work with infested and uninfested counties in early detection, monitoring, and educational outreach
- Continue training professionals in disease recognition, sampling protocols, and current regulations

2. Further the understanding of Sudden Oak Death, *Phytophthora ramorum*, associated organisms, and environmental factors that contribute to tree and plant mortality, as well as identify ecological impacts.

In order to make effective decisions, managers need the best information possible. Sudden Oak Death research and monitoring provide the foundation for public outreach, management recommendations, and policy guidance. Regulations and monitoring techniques must be science-based. Coast redwood, Douglas-fir, rhododendron, and 14 other species are known to be susceptible to *Phytophthora ramorum*. Each species responds to the pathogen differently. Much research is needed to understand both how the pathogen impacts each species, as well as what role the species plays in pathogen spread. In addition, research is needed to develop treatments and prevent future outbreaks.

The Task Force will continue to:

- Identify research needs and coordinate research efforts
- Coordinate monitoring for Sudden Oak Death; determine disease incidence, impact, and changes over time; and maintain a web-accessible database of pathogen distribution
- Deliver findings to managers, landowners, professionals, industries, policy makers, and appropriate clientele.

The following priority research and monitoring projects have been identified:

- Standardize PCR protocols for diagnosis
- Complete research to determine if compost maybe used as a treatment for *Phytophthora ramorum*
- Coordinate and assist the Sudden Oak Death aerial survey program, and answer technical questions
- Work with cooperators, researchers, and technical experts to improve *Phytophthora ramorum* monitoring methods and California's monitoring program
- Help design and evaluate environmental monitoring techniques for *Phytophthora ramorum* to test for recovery in soil, water, and air as well as compare effectiveness to plant (symptom-based) procedures
- Continue early detection survey for *P. ramorum* in the Sierra Nevada.

3. Plan and coordinate a sustained Sudden Oak Death management program for California

As Sudden Oak Death has spread to more counties and jurisdictions, the need to facilitate communication and coordination between disparate entities has greatly increased. Sudden Oak Death impacts many people with diverse interests and needs. A coordinated plan to address Sudden Oak Death is needed to explain issues, strategies, actions, resources, and funding needs. The plan will provide a comprehensive, but concise statement of funding history and budget needs. It will assess the Sudden Oak Death related-needs for nurseries, homeowners, arborists, foresters, landowners, utility companies, recreationalists, lands, green

waste, cottage industries, regulators, legislators, general public, fire fighters, international researchers, academics, educators, media, environmentalists, Native Americans, policy makers and public agencies, agribusinesses, horticulturalists, and others.

The Task Force will continue to:

- Identify issues, funding, resources and activities needed to address Sudden Oak Death and develop networks to carry-out priorities and goals
- Foster and facilitate collaboration between agencies, non-profits, businesses, and others impacted by SOD.

To address these concerns, the following projects have been identified:

- Complete and maintain the COMTF website
- Improve briefing and educational materials for user groups
- Produce a budget history for SOD
- Draft a 5-year plan for SOD management in California.

Summary

COMTF is coordinating California's Sudden Oak Death program. For 2002-2003, the COMTF goals are to:

- ❑ Minimize pathogen spread, provide management strategies and information to sustain California forests, and promote public safety.
- ❑ Further the understanding of Sudden Oak Death, *Phytophthora ramorum*, associated organisms, and environmental factors that contribute to tree and plant mortality, as well as identify ecological impacts.
- ❑ Plan and coordinate a sustained Sudden Oak Death program for California.

Phytophthora ramorum poses a serious threat to forests world-wide. Since the pathogen's distribution is limited an aggressive and comprehensive program is needed to minimize pathogen spread. Individuals, agencies and businesses need guidance on how to prevent pathogen establishment and spread, recognize symptoms, practice proper sanitation and where to go for additional assistance. Communities also need assistance to maintain public safety in infested areas.

The Task Force is coordinating research, monitoring, education, and management programs to sustain California forests and promote public safety. For further information see www.suddenoakdeath.org or contact the California Oak Mortality Task Force Coordinator, Lucia Briggs, at lbriggs@nature.berkeley.edu or 510-642-5938.