



The California Oak Mortality Task Force

The California Oak Mortality Task Force brings together public agencies, non-profit organizations and private interests to address the issue of elevated levels of oak mortality. The Task Force will implement a comprehensive and unified approach for research, management, education and public policy.

ACTION PLAN AND COMMITTEE SUMMARIES, JANUARY 2001

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OVERVIEW

Goals:

- Minimize the impacts of Sudden Oak Death on oak forests and individual trees
- Coordinate an integrated response by all interested parties to address Sudden Oak Death

Objectives:

- Assist communities affected and 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 education to interested parties relating to causes, treatments and consequences of Sudden Oak Death
- Coordinate efforts to prevent the spread of pathogens and insects associated with Sudden Oak Death
- Identify the needs for, and potential sources of, funding, staffing and other resources for addressing Sudden Oak Death

High Priority Tasks:

- Identify causes of high levels of oak and tanoak mortality and ecological characteristics of causal agents
- Identify the effects of high levels of oak and tanoak mortality and develop management strategies to mitigate their impacts
- Provide management recommendations for dead and live trees
- Assess fire and other hazards created by Sudden Oak Death and develop hazard reduction strategies
- Determine the current distribution of Sudden Oak Death and monitor its change.
- Maintain a Geographic Information System (GIS) database of incidence
- Evaluate appropriate strategies to limit the spread of Sudden Oak Death, including but not limited to, regulations and best management practices.
- Provide information to all interested public agencies, non-profit organizations and private entities to limit the spread of Sudden Oak Death

Task Force Structure: COMTF has a six-member board and seven standing committees.

Board Members:

| | | |
|-----------------------|--|----------------------------|
| Stacy Carlsen | Agriculture Commissioner, Marin County | scarlsen@marin.org |
| Susan Frankel (Chair) | Plant Pathologist, USDA Forest Service | sfrankel@fs.fed.us |
| Doug McCreary | Manager, IHRMP, UC Berkeley | ddmccreary@ucdavis.edu |
| Ron Paolini | Superintendent, Marin Parks and Open Space | rpaolini@marin.org |
| Mark Stanley | Assistant Deputy Director, CDF | mark_stanley@fire.ca.gov |
| Andrew Storer | Research Entomologist, UC Berkeley | storer@nature.berkeley.edu |

Committees:

| | Chair |
|-----------------|--|
| Education | Nicole Palkovsky, nkpalkovsky@ucdavis.edu |
| Fire Protection | Bill Ruskin, bill_ruskin@fire.ca.gov |
| Funding | Scott Johnson, johnsonsa@jtfco.com |
| Management | Don Owen, don_owen@fire.ca.gov , Jack Marshall jack_marshall@fire.ca.gov |
| Monitoring | Maggi Kelly, mkelly@nature.berkeley.edu |
| Regulation | Stephen Brown, sbrown@cdfa.ca.gov , John Westoby, jwestoby@sonoma-county.org |
| Research | Rick Standiford, standifo@nature.berkeley.edu |

| | |
|--------------------------------------|--|
| Liaison: | Steve Jones, stephen_jones@fire.ca.gov |
| Special Projects Coordinator: | Steve Wert, steve_wert@fire.ca.gov |
| Public Information Officer: | Nicole Palkovsky, nkpalkovsky@ucdavis.edu |

EXECUTIVE SUMMARY OF COMMITTEES

The Board: The Board oversees the task force, and is the primary decision-making unit utilizing information and recommendations provided to it by the committees.

Executive Committee: The executive committee consists of the members of the Board, the liaison, the public information officer, the special projects coordinator, and all committee chairs. This group meets on a regular basis to discuss progress, and review information provided by other committees.

Education Committee: The education committee is charged with communicating information about Sudden Oak Death to all interested parties and groups. This includes preparing educational materials, including web-based information, conducting workshops, and maintaining an up-to-date set of written guides, interpretive materials and presentations on Sudden Oak Death.

Fire Protection Committee: The fire protection committee identifies changes in fire hazard in areas affected by Sudden Oak Death. It also works to identify practices that will help mitigate increased fire risk.

Funding Committee: The funding committee identifies sources for funding and communicates these to the relevant committees. This committee will also work to secure funding to support task force activities.

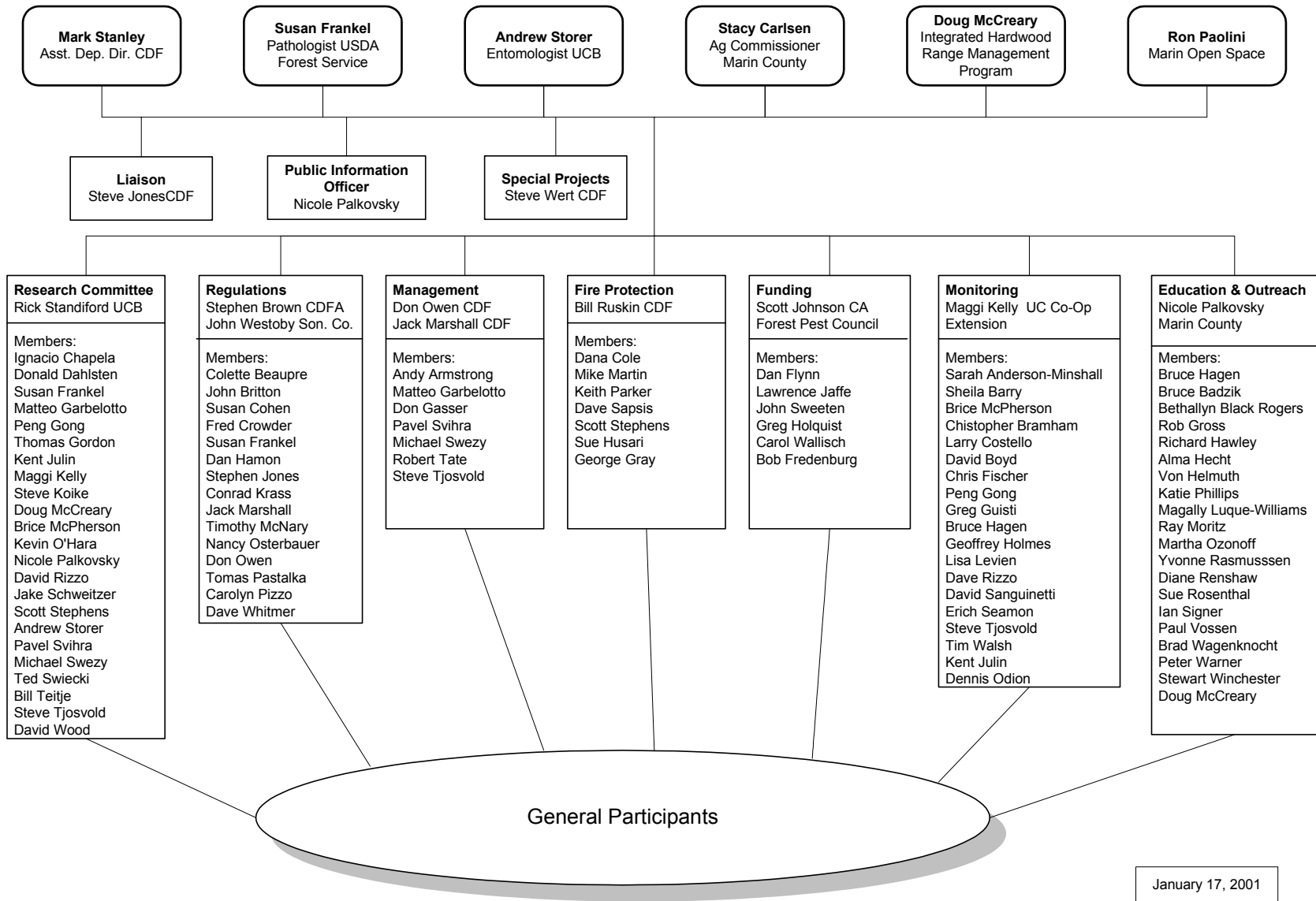
Management Committee: The management committee works to identify up-to-date management strategies to successfully mitigate the impacts of Sudden Oak Death. It utilizes and evaluates all available sources of information.

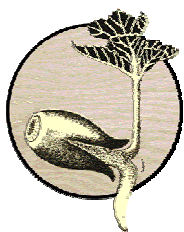
Monitoring Committee: The monitoring committee maintains up-to-date information on the incidence of Sudden Oak Death and other reported oak mortality. It utilizes the most modern methods for disease detection and survey, and provides avenues for people to participate in the monitoring of Sudden Oak Death and find out where it has been reported.

Regulation Committee: The regulation committee works to identify needs for regulations relating to Sudden Oak Death, and to provide input into other regulatory efforts aimed at preventing the spread of Sudden Oak Death.

Research Committee: The research committee undertakes scientific research into all aspects of Sudden Oak Death. In doing so it serves as a tool for other committees by providing the necessary research answers needed for the effective operation of those committees.

Oak Mortality Task Force Board Structure





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FACTS ABOUT SUDDEN OAK DEATH (FEBRUARY, 2001)

Causal Agents: A complex of biological and environmental factors are involved with Sudden Oak Death. A new fungus (a species of *Phytophthora*) has been isolated from many symptomatic trees, and is considered to be the primary causal agent of Sudden Oak Death. This appears to be the same pathogen that has been isolated from diseased Rhododendrons in Europe since 1993, and that has recently been isolated from Rhododendrons in Santa Cruz County. Work is underway to understand how the pathogen interacts with other associated organisms and the environment.

Mode of Spread: Currently under investigation. The new *Phytophthora* species favors cool, moist conditions, and likely can be spread to new areas via transport of contaminated soil, water, and infected tree material. Based on field observations of distribution, aerial spread is also suspected. The pathogen may also be vectored by insects or the feeding activities of insects may provide infection courts.

Symptoms of Sudden Oak Death: Seeping of dark viscous liquid from bark is usually the first symptom, followed by a rapid color change of the entire crown from green to

brown. Beetle attack and black domed fruiting structures of the fungus *Hypoxyton* are often associated with the latter stages of the decline. In tanoak, wilting branch tips and branch dieback may occur.

Impacted Areas: The new *Phytophthora* species has been confirmed in Marin, Monterey, Napa, Santa Cruz, San Mateo and Sonoma counties. It is suspected to be present in Mendocino, and Santa Clara counties. Affected areas appear to be limited to within about 35 miles of the coast.

Tree Species Affected: Coast live oak (*Quercus agrifolia*), black oak (*Q. kelloggii*) and tanoak (*Lithocarpus densiflorus*). At present, there is no evidence that this complex affects oak species in the white oak sub genera including blue oak and valley oak.

Estimated number of trees affected: Hundreds of thousands (including seedlings and saplings).

Percent of trees affected in heavily impacted areas: 40-95%

Other Causes of Oak and Tanoak Mortality: Many agents are associated with mortality of oaks in California. These include fungi such as *Armillaria* and *Hypoxyton*, insects such as bark beetles and defoliating caterpillars, and abiotic factors such as over-watering. The death of oak trees usually occurs as a result of interactions among these types of factors whereby different agents act to predispose trees to other agents.

The death of an oak tree usually takes many years, and the presence of native insects and fungi in natural forests is not considered undesirable. These native agents of tree decline, and ultimately mortality, are considered to be an important part of natural ecosystems.



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ACTION PLAN 2001

The California Oak Mortality Task Force maintains an up-to-date action plan consisting of goals for the upcoming year, and a strategic plan that takes a long view on the three to five year time horizon. In both cases the plans are organized around the standing committees of the task force.

Education Committee

Current goals:

- To develop and implement an educational strategy that effectively meets the needs of stakeholder groups affected by Sudden Oak Death (tree care industry, homeowners, resource managers, policy makers)
- To be the leading provider of educational training and materials on Sudden Oak Death throughout California.

Current objectives:

- Maintain Task Force website at www.suddenoakdeath.org
- Create Educational and Communication Materials
 - Produce written guides
 - Produce an educational video and poster
 - Produce an educational slideshow available in PowerPoint
 - Create quarterly newsletter to update general members
- Conduct Educational Training
 - Create speakers bureau to conduct educational presentations for target audiences
 - Conduct training seminars as need arises
- Facilitate in hiring of Education Coordinators for infested counties (Marin, Sonoma, Santa Cruz, Monterey, Napa and San Mateo) and other affected counties as need arises.

Fire Protection Committee

Assess fire risk, fire protection, and fire prevention strategies given the increased number of dead trees as a result of Sudden Oak Death.

- Fire Risk
 - Develop and validate custom fuel models incorporating actual/predicted oak and tanoak mortality
 - Illustrate fire risk and change analysis on geographic basis (Farsite) in conjunction with monitoring data
 - Tabulate potential economic impacts
- Fire Protection
 - Augment initial attack resources in affected areas, including:
 - A call when needed (CWN) helicopter during peak season
 - Fire Crews
 - Peak season engine staffing
 - Staging Area activation - Severe weather
 - Prepare and distribute safety message for firefighters attacking incidents in these areas
- Fire Prevention
 - Substantially increase implementation of Interface Fuel Reduction projects in affected areas:
 - Increase grants and matching funds for project support
 - Hire additional project coordinators
 - Develop and distribute public information message regarding increased fire hazard in conjunction with the Education committee

Funding Committee

- To act as an information gathering and networking vehicle to connect those with funds to those who need funds for work related to Sudden Oak Death
- Identify potential sources of funding for work associated with Sudden Oak Death
- Maintain a database of funding requests relating to Sudden Oak Death

Management Committee

- Coordinate and facilitate a pest risk assessment for Sudden Oak Death in California and North America
- Establish rapid diagnostic service for accurate and timely identification of Sudden Oak Death
- Prepare and maintain up-to-date IPM guidelines for:
 - Individual trees
 - Urban and rural woodlands
- Establish projects to evaluate restoration and mitigation strategies in response to Sudden Oak Death
- Develop guidelines for reducing the spread of pathogens associated with Sudden Oak Death
- Develop funding programs to:
 - fund local government hazard tree removal projects
 - fund restoration and mitigation efforts on a landscape scale
 - to assist local governments with implementation of guidelines for reducing the spread
- Participate in detection surveys, oak pathology research and fire hazard assessment

Monitoring Committee

- Monitor the incidence and severity of oak and tanoak mortality in CA
- Maintain an up-to-date GIS database
- Develop a standard sampling and monitoring protocol
- Determine patterns of spread over time and space for oak mortality and Sudden Oak Death
- Develop a landscape model of incidence to assist in management planning and fire planning
- Assist other committees with this information

Regulations Committee

- Evaluate current federal/state/local statutory and regulatory authorities relating to Sudden Oak Death
- Evaluate the possibility of effectively preventing the artificial spread of Sudden Oak Death through the implementation of new federal/state/local quarantine regulations
- Make recommendations to other COMTF committees regarding information needs concerning Sudden Oak Death to ensure any regulatory pest risk mitigation strategies implemented are biologically sound
- Review and make recommendations to the COMTF regarding any proposed federal/state/local quarantine regulations
- Evaluate and make recommendations for any appropriate interim pest risk mitigating strategies as an alternative to enacting new federal/state/local quarantine regulations

Research Committee

- Determine whether pathogens isolated from oaks and tanoaks are native, introduced or new species
- Determine the environmental limits of pathogens isolated from dead and diseased trees
- Determine the mode of spread of the pathogens, and their relative importance in Sudden Oak Death
- Evaluate the potential host range of isolated fungi, and evidence for resistance to them
- Determine the role of insects and environmental influences on Sudden Oak Death
- Identify additional causal agents of oak and tanoak mortality
- Evaluate fungicide and insecticide treatments as tools for management of Sudden Oak Death
- Evaluate alternatives to pesticides for management
- Evaluate the survival of pathogens and insects in oak and tanoak products such as firewood and chips
- Determine the effects of fire on Sudden Oak Death
- Determine the effects of Sudden Oak Death sod on live fuel moisture content and impacts on potential fire behavior
- Evaluate silvicultural practices that may reduce the impact of Sudden Oak Death
- Determine ecological impacts of the changing species composition in oak forests
- Develop economic models of tree disposal, effects of mortality on property value, cost/benefits of management
- Evaluate tree management practices (pruning, fertilization, etc.) on risk of *Phytophthora* infection



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COMMITTEE MEMBERSHIP AND AFFILIATION LISTS

Education Committee

Chair: Nicole Palkovsky, nkpalkovsky@ucdavis.edu

Current Members:

Bruce Badzik, Golden Gate National Recreation Area
Bethallyn Black Rogers, University of California Cooperative Extension;
Rob Gross, California Oak Foundation
Bruce Hagen, California Department of Forestry and Fire Protection
Richard Hawley, Greenspace, The Cambria Land Trust
Alma Hecht, Friends of the Urban Forest
Von Helmuth, USDA – Forest Service
Katie Phillips, USDA - Forest Service
Magally Luque-Williams, California Department of Food and Agriculture
Doug McCreary, Integrated Hardwood Range Management Program

Ray Moritz, Arborist and Chair of MOMTF Education Committee
Martha Ozonoff, California Releaf
Yvonne Rasmussen, University of California Cooperative Extension Napa,
Diane Renshaw, Santa Cruz Mountains Bioregional Council
Sue Rosenthal, Friends of Regional Parks Botanic Garden
Ian Signer, SFSU Geography
Paul Vossen, University of California Cooperative Extension Sonoma;
Brad Wagenknocht, Napa County Board of Supervisors;
Peter Warner, Golden Gate National Recreation Area
Stewart Winchester, California State Parks Educator
California Native Plant Society Representative
Fire District Representative

Fire Protection Committee

Chair: Bill Ruskin, bill_ruskin@fire.ca.gov

Current Members:

Dana Cole, Division Chief, CDF Sonoma-Lake-Napa
Mike Martin, Acting Chief, East Bay Regional Parks Fire Dept.
Keith Parker, Fire Marshall, Marin County Fire
Dave Sapsis, Fire and Fuels Specialist, CDF

Scott Stephens, Associate Professor, U.C. Berkeley
Sue Husari, Fire and Aviation Management, USFS
George Gray, Resource Ecologist, Cal. Dept. of Parks and Rec

Funding Committee

Chair: Scott Johnson, Vegetation Management Specialist, Wilbur-Ellis Company, johnsonsa@jtfc.com

Current Members:

Steve Archibald, Chief Consultant, CA State Assembly Appropriations Committee
Dan Flynn, Principal Consultant, Assemblymember Patricia Wiggins
Bob Fredenburg, Consultant, Senator Wes Chesbro's Office
Greg Holquist, Forester, Pacific Gas and Electric Company
Lawrence Jaffe, Field Representative, Assemblymember Patricia Wiggins

Claudia B. Reid, Policy Specialist, University of Calif. Governmental Relations
John R. Sweeten, Assistant County Administrator, Marin County Administrator's Office
Carol Wallisch, Chief of Staff, Senator Sheila James Kuehl

Management Committee

Chairs: Don Owen, don_owen@fire.ca.gov and Jack Marshall, jack_marshall@fire.ca.gov

Current Members:

Andy Armstrong, Mendocino Redwood Co.
Matteo Garbelotto, UCB
Don Gasser, PG&E, CDFA
Pavel Svihra, UCCE, Marin Co.

Michael Swezy, Marin Municipal Water District
Robert Tate, Western Chapter, ISA
Steve Tjosvold, UCCE Monterey Co. and Santa Cruz Co

Subcommittee: Biomass and Utilities (Don Gasser and Greg Holquist, PG&E, Co-Chairs)

Monitoring Committee

Chair: Maggi Kelly, mkelly@nature.berkeley.edu

Current and Prospective Members:

Anderson, Dave, Bartlett Tree Experts
Anderson-Minshall, Susannah, Midpeninsula Regional Open
Space District
Badzik, Bruce, National Park Service
Barry, Sheila, Natural Resources Advisor, Santa Clara Co
Batchelder, Steve, Consultant
Beaupre, Colette, NRM Corp
Black-Rogers, Bethallyn, Master Gardener Program -
Alameda Co.
Boyd, David, Dept. Parks and Rec., Marin District
Bramham, Christopher, Marin Co. Dept. Parks, Open Space,
and Cultural Ser
Branson, Mike, City of Carmel
Campbell, Sally, USFS- For Inv & Monitoring
Ciardi, Guido, S.F. Water San Mateo County
Costello, Larry, UCCE San Francisco Co. and San Mateo Co
Crowder, Fred, Marin County Ag. Comm.
Donaldson, Dean, Environmental Horticulture, Cooperative
Extension
Fischer, Chris, CDF
Fontaine, Bill, U.C. Berkeley
Gaman, Thomas, East-West Forestry Associates
Garcia, Sergio, CE - San Benito County
Gasser, Don, PG&E
Gong, Peng, UC Berkeley
Guisti, Greg, Mendocino CE
Hagen, Bruce, CDF – Sonoma
Hale, John, Jones & Stokes
Herman, Jane, SFPUC San Mateo County
Ken, Matt, Midpeninsula Regional Open Space District

Levien, Lisa, Remote Sensor, USFS
Lockwood, Jeremy, CDF
Lu, Shengjun, Bitterroot Restoration
Martinez, Carlos, U.C. Berkeley
McPherson, Brice, Postdoctoral Researcher
Meentemeyer, Ross, Assistant Professor, SSU
Moore, Dave, San Mateo Park District Ranger
Mortimer, Dave, Arborist, Mortimer Tree Service
Odion, Dennis
Palkovsky, Nicole, Marin County CE
Pellorin, David, East Bay Regional Park District
Rasmussen, Yvonne, UCCE Napa
Renshaw, Diane, Santa Cruz Mtns Biodiversity Council
Rizzo, Dave, UC Davis
Sanford, Ken, California Department of Parks and Recreation
Sanguinetti, David, Midpeninsula Regional Open Space
District
Schweitzer, Jake, CAMFER Research Assistant
Signer, Ian, SFSU Geography
Slaughter, Garey, UC Davis
States, Christopher, CalTrans Dept. of Transportation
Suchel, Karel
Tidwell, Tim, CDFA Plant Pest Diagnostics
Tjosvold, Steve, UCCE Monterey Co. and Santa Cruz Co
Vossen, Paul, Farm Advisor, Sonoma and Marin Counties
Walsh, Tim, Marin Co. Fire Dept.
Warner, Peter, GGNRA
Woodbury, Wayne, San Anselmo Parks Dept

Regulations Committee

Chairs: Stephen Brown, sbrown@cdfa.ca.gov and John Westoby, jwestoby@sonoma-county.org

Current Members:

Colette Beaupre, Natural Resources Management Corporation
Stephen Brown, California Department of Food and
Agriculture (CDFA)
John Britton, Britton Tree Services
Susan Cohen, Solano County Agricultural Commissioner
Fred Crowder, Marin County Department of Agriculture
Susan Frankel, USDA/FS
Dan Hamon, USDA, Animal and Plant Health Inspection
Service (APHIS), Plant Protection and Quarantine (PPQ)
Stephen Jones, California Department of Forestry and Fire
Protection (CDF)

Conrad Krass, CDFA
Jack Marshall, CDF
Timothy McNary, USDA/APHIS/PPQ
Nancy Osterbauer, Oregon Department of Agriculture (ODA)
Don Owen, CDF
Tomas Pastalka, CDFA
Carolyn Pizzo, USDA/APHIS/PPQ
John Westoby, Sonoma County Department of Agriculture
Dave Whitmer, Napa County Department of Agriculture

Research Committee

Chair: Rick Standiford, standifo@nature.berkeley.edu

Current Members:

Ignacio Chapela, UC Berkeley
Donald Dahlsten, UC Berkeley
Susan Frankel, USDA Forest Service
Matteo Garbelotto, UC Berkeley
Peng Gong, UC Berkeley
Thomas Gordon, UC Davis
Kent Julin, Marin Co. Fire Dept.
Maggi Kelly, UC Berkeley
Steve Koike, UCCE Santa Cruz Co.
Doug McCreary, Manager, IHRMP, UC Berkeley
Joe McBride, UC Berkeley
Brice McPherson, UC Berkeley

Kevin O'Hara, UC Berkeley
Nicole Palkovsky, UCCE Marin Co.
David Rizzo, UC Davis
Jake Schweitzer, UC Berkeley
Scott Stephens, UC Berkeley
Andrew Storer, UC Berkeley
Pavel Svihra, UCCE Marin Co.
Mike Swezy, Marin Municipal Water District
Ted Swiecki, Phytosphere Research
Bill Tietje, UC Berkeley
Steve Tjosvold, UCCE Monterey and Santa Cruz Co.
David Wood, UC Berkeley