DEPARTMENT OF FOOD AND AGRICULTURE

PROPOSED CHANGES IN THE REGULATIONS

Title 3, California Code of Regulations

Section 3700, Subsection(c), Oak Mortality Disease Control

INITIAL STATEMENT OF REASONS/

POLICY STATEMENT OVERVIEW

Description of the Public Problem, Administrative Requirement, or Other Condition or Circumstance the Regulation is Intended to Address

This regulation is intended to address the obligations of the California Department of Food and Agriculture to protect the agricultural industry of California and prevent the introduction and spread of injurious plant pests.

Specific Purpose and Factual Basis

The specific purpose of Section 3700 is to provide authority for the State to mitigate the effects of oak mortality disease (sudden oak death) on the agricultural industry, which includes native tree stands, by establishing a program to arrest the artificial spread of the disease to additional areas; thereby protecting California's agricultural industry and environment. Subsection 3700(c), lists the articles and the commodities covered under this regulation.

The factual basis for the determination by the Department that the emergency amendment of Section 3700(c) was necessary is as follows:

The Secretary of the Department of Food and Agriculture found that an emergency existed due to the issuance of Federal Order on October 23, 2013 pertaining to *Phytophthora ramorum* which became effective on November 27, 2013. The United States Department of Agriculture added one new associated host. The Secretary of the Department of Food and Agriculture found that oak mortality disease (sudden oak death) caused by a fungus, *Phytophthora ramorum*, presents a clear and present danger to the native stands of oak and other trees, the nursery industry, other agricultural commodities and plant life (including ornamental plantings) of California.

Phytophthora ramorum is a serious disease and host material is subject to State regulation for intrastate movement and federal regulation for interstate movement.

In Europe, prior to 2009 SOD occurred primarily on shrubs in nurseries. By 2011, it had shifted to being a major forest pest of both European and Japanese larches and destroyed a forest planted by Paul McCartney in memory of his wife Linda. Great Britain's Forestry Commission implemented emergency measures which require landowners to fell and dispose of infected trees. There are significant concerns that ancient or native woodlands will be severely impacted. These sites must be managed in accordance with the Practice Guide for Ancient and Native Woodland which is to: help prevent spread and re-infection from the disease; give advice on reforestation; state the legal position if considering change of land use after tree felling and to help conserve the environmental value and heritage interest of the sites.

The ability of the pathogen to change its behavior by immediately taking advantage of new hosts is cause for concern. On April 18, 2012, the USDA issued a new Federal Order restricting the international importation of host plants of SOD. This is a result over concern of the SOD pathogen's genotypic diversity and expanding host range. There are now three distinct virulent genotypes of the SOD pathogen which have been identified; EU-1, NA-1 and NA-2.

Section 3700 implements a program to arrest the artificial spread of the disease which is also known as Sudden Oak Death (SOD). Continued action is necessary to contain and minimize the destructive impact of this pest and disease at the earliest possible time and be harmonized with the new requirements of this federal order. Without a parallel State regulation that is substantially the same as the federal domestic quarantine and related federal orders, the USDA cannot regulate less than the entire State.

The Department has determined that *Phytophthora ramorum* is a serious forest pest for which quarantine control is required to prevent further artificial spread and harm to forests, parks, commercial and urban landscapes, and watersheds. This disease is known to occur in the environment in 14 California counties. Oak mortality disease is serious due to the fact that it kills

tanoak, coast live oak, and black oak trees. The pest has been confirmed as infecting Shreve's oak and non-oak species such as rhododendron, huckleberry, bigleaf maple, California buckeye, California coffeeberry, manzanita, and toyon and other hosts causing foliar and stem disease symptoms. *Phytophthora ramorum* has the capability of causing significant irreparable harm to California's agricultural industry and environment. Through the issuance of this federal order the following plant will be added to the associated articles list: *Gaultheria procumbens* (wintergreen, Eastern teaberry, boxberry). The associated hosts have been determined by the USDA as those which can be artificially inoculated to produce disease symptoms but which have not fully completed "Koch's Postulates." The USDA has determined hosts to be those for which "Koch's Postulates" have been completed or plants which have been found naturally infected in the environment. Without a parallel State regulation for the intrastate movement of associated articles and host material that is substantially the same as the federal domestic quarantine and related federal orders, the USDA cannot regulate less than the entire State. Therefore, to ensure harmonization with the federal order, this plant has been added to Section 3700(c) as an "associated article."

As this federal order became effective on November 27, 2013, the Department proposed this emergency amendment to Section 3700(c) to continue to provide the necessary regulatory framework for a State program to continue to arrest the intrastate and interstate artificial spread of this disease. Immediate amendment of this regulation was necessary to mitigate the effects of this disease on the agricultural industry, which includes native tree stands. Additionally, it was necessary to immediately amend this regulation by November 27, 2013, to prevent the USDA, APHIS from considering the entire state as infested with *Phytophthora ramorum*, rather than just the current 14 regulated counties. If this were to occur, there would be additional detrimental quarantine requirements directed against California commodities by our international trade partners.

Project Description

The federal order specifically affects the interstate movement of nursery stock from several states, including California. Under authority of this federal order, nurseries operating under a

compliance agreement may continue to ship “host plants” and “associated plants” including these newly listed plants. Any nurseries containing this newly listed associated plant must be properly inspected, sampled and tested and placed under a Compliance Agreement to be able to move plants interstate. The Department also uses the same Compliance Agreement as a basis to ship intrastate outside the regulated area.

Anticipated Benefits from This Regulatory Action

Existing law, FAC section 22, finds that the planned production of trees shall be considered a branch of the agricultural industry of the state for the purposes of any law which provides for the benefit or protection of the agricultural industry of the state.

Existing law, FAC subsection 23(a), finds that the planned production of bushes, ornamental plants, floricultural crops, and other horticultural crops is distinguishable from the production of other products of the soil only in relation to the time elapsing before maturity, plants and floricultural crops that are being produced by nurseries, whether in open fields or in greenhouses, shall be considered to be "growing agricultural crops" for the purpose of any laws that pertain to the agricultural industry of the state, and those laws shall apply equally to greenhouses and open field nursery operations.

Existing law, FAC section 24, states that as a matter of legislative determination, that the provisions of this section are enacted in the exercise of the power of this state for the purpose of protecting and furthering the public health and welfare. It is further declared that the floriculture and nursery industry of this state is affected with a public interest, in that, among other things:

(a) The production, processing, manufacture, and distribution of floriculture and nursery products constitute a paramount industry of this state which not only provides substantial and required revenues for the state and its political subdivisions by tax revenues and other means, and employment and a means of livelihood for many thousands of its population, but also furnishes substantial employment to related industries that are vital to the public health and welfare.

Existing law, FAC section 24.5, states “Inasmuch as plants growing in native stands or planted for ornamental purposes contribute to the environmental and public health and welfare needs of the people of the state, the Legislature hereby finds and declares that such plants shall be considered as a part of the agricultural industry for the purpose of any law that provides for the protection of the agricultural industry from pests.”

Existing law, FAC section 403, provides that the department shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.

Existing law, FAC section 407, provides that the Secretary may adopt such regulations as are reasonably necessary to carry out the provisions of this code which she is directed or authorized to administer or enforce.

Existing law, FAC section 5321, provides that the Secretary is obligated to investigate the existence of any pest that is not generally distributed within this State and determine the probability of its spread, and the feasibility of its control or eradication.

Existing law, FAC section 5322, provides that the Secretary may establish, maintain, and enforce quarantine, eradication, and such other regulations as are in her opinion necessary to circumscribe and exterminate or prevent the spread of any pest which is described in FAC section 5321.

The existing law obligates the Secretary to investigate and determine the feasibility of controlling or eradicating pests of limited distribution but establishes discretion with regard to the establishment and maintenance of regulations to achieve this goal. The amendment of this regulation benefits the nursery industry (growers, wholesalers, retailers, exporters) and its consumers, Christmas tree growers and their consumers, firefighters (local, State and federal), local governments, home owners, indigenous people, the State’s public and private forests, the State’s economy, the general population of this State and the environment by having a control program to prevent the artificial spread of SOD over long distances.

There are more nurseries located outside the regulated area than inside the regulated area. It should be noted that most all of the larger nursery stock producers are located outside the existing regulated area. The same holds true for Christmas tree plantations.

Consumers benefit by having access to higher quality host material free from the symptoms of SOD available at an overall lower cost. It is assumed that any increases in statewide production costs would ultimately be passed on the consumer.

The amendment of this regulation benefits homeowners who already have host material which is planted as ornamentals in various rural and urban landscapes and it helps protect property values.

Oaks and tanoaks and understory plants are used by indigenous tribes and the mortality and resulting ecological changes are of significant concern to them and the prevention of the artificial spread benefits them by helping preserve the cultural uses of host material outside the regulated area..

FAC Section 401.5 states, “the department shall seek to protect the general welfare and economy of the state and seek to maintain the economic well-being of agriculturally dependent rural communities in this state.” The amendment of this regulation is preventing the artificial spread of SOD to uninfested areas of the State which contributes towards this statutory goal.

Existing federal law, the 2005 Public Land Corps Healthy Forests Restoration Act, has as its primary focus reducing the damages from forest invasive species. The SOD pathogen is clearly an invasive species of California’s forests and one of the goals of this regulation is to prevent the artificial movement of the pathogen to California forests located outside the regulated area and this is consistent with this federal statutory goal.

This regulation is also consistent with the federal domestic and international orders pertaining to the movement of associated host and host material.

The artificial spread of the SOD pathogen leads to increase hazards from falling trees and branches, increase in severity of fire danger, loss of heritage and shade trees, loss of soil stability in the environment, loss or habitat and food for wildlife, aesthetic losses and economic losses if it is allowed to spread to new uninfested areas. Preventing the artificial spread of this pathogen then benefits public safety and worker safety by preventing additional hazardous trees in uninfested areas, increased fire severity for firefighters (local, State and federal) and arborists from being exposed to hazardous trees which are more prone to unpredictable branch and trunk failures due to the SOD pathogen.

This amendment provides the necessary regulatory authority to prevent the artificial spread of a serious insect pest which is a mandated statutory goal.

The Department is the only agency which can implement plant quarantines. As required by Government Code Section 11346.5(a)(3)(D), the Department has conducted an evaluation of this regulation and has determined that it is not inconsistent or incompatible with existing state regulations.

Economic Analysis

The prevention of the artificial spread of the SOD pathogen in California through the implementation of this regulation economically benefits:

- The general public
- Homeowners
- Tourism
- Local governments
- Federal and State agencies
- The affected and potentially affected businesses
- The State's general fund

Preventing the artificial spread of this pathogen also prevents unnecessary damage to oak woodlands, timberland, hazards from falling trees, potential increases in fire danger, loss of heritage and shade trees, loss of soil stability, loss or habitat and food for wildlife, other ecological changes is impacted areas, aesthetic losses, increase use of pesticides, and cultural losses to indigenous tribes.

Additionally, without this regulation the USDA and other countries would regulate the entire State as if the entire State was infested with the SOD pathogen rather than just the existing 14 counties.

The Department's operational program costs for the implementation of this control program for fiscal year 2011/2012 was $2,755,776. However, this is all federal funding obtained by the Department under contract with the USDA. The Department's program costs related to staff time, laboratory supplies, etc. was derived from this source of funding. Additionally, the remaining federal funding are then dispersed by the Department to participating California County Agricultural Commissioners through cooperative agreements with each county. The Department federal funding for the fiscal year of 2012/2013 is $2,491,204. No State general fund money, other than staff dedicated to the promulgation of any regulation changes is used to sustain this program.

The use of this federal funding by the program creates California business opportunities within the regulate area. This source of funding enables the certification of host material which otherwise would be unable to move and which then facilitates the sales of host material for intra, inter and international movement. The sale of this host material then also serves as an important source of California tax revenue. The 2011 value of Christmas trees was approximately $4.5 million, cut-foliage was approximately $26 million, potted plants were approximately $510.5 million and woody deciduous and evergreen ornamentals were approximately $957 million.

While it is impossible to determine the specific value of all of the associated hosts and host plants of SOD and how much of the exact production is located outside the current regulated area; these would be the crop areas at risk.

There are approximately 489 interstate shippers of host nursery stock. Of these, 102 are located within the regulated area. Without this regulation, the USDA and other countries would regulate an additional approximate 80 per cent of the nurseries located outside the current regulated area. As it happens to be, many of the nurseries located outside the regulated are also larger nurseries.

From 2005 through 2011, the Department was able to obtain the actual costs of seven nurseries which were confirmed positive for SOD. Two nurseries were located in Alameda County, two nurseries were located in Contra Costa County, one nursery was located in Santa Cruz County and one nursery was located in Solano County. The cost of eradicating the disease based upon implementing the USDA's Confirmed Positive Nursery Protocol ranged from $300 to $94,540. The average cost was $16,199.

Nurseries at a high risk may voluntarily elect to implement a water disinfection program, treat host material with prophylactic fungicides, redesign their host crop blocks to be smaller and interspersed with non-host material, not carrying high risk crops which may be popular sellers. According to a paper published in the Gianni Foundation of Agricultural Economics, a University of California economic survey of 45 managers of nurseries located within the regulated area determined 63 percent of these nurseries changed their inventory management strategy which increased their average costs by 10 percent; 40 percent changed their fungicide use which increased their average cost by 16 per cent; seven per cent changed their irrigation practice or implemented water treatment which increased their average cost by three per cent; three per cent changed their treatment of cut greens which increased their average costs by three per cent; 13 per cent changed their soil management which increased their average costs by three per cent; and , 13 per cent changed their green waste disposal practices which increased their average costs by 34 percent. Their estimate of these increased pest management costs under

the current regulatory scheme was approximately $13,500 per year. In the event that all California counties became under quarantine for SOD, the estimated cost increase for the average nursery would be $29,500. Without the ability to prevent the artificial spread of SOD through this regulation the average nursery costs could double. The paper states that, “These relatively moderate aggregate costs are likely the result of the regulatory scheme adopted by the CDFA…” and concludes …”while the effects of *P ramorum* on California’s environment are likely profound, private costs to the nursery industry have been limited.”

There are approximately 387 nurseries located outside the current regulated area. Assuming their average voluntary mitigation costs without the regulation is $29,500; this would result in increased preventive costs of over $11.5 million annually.

Preventing the artificial spread of the SOD pathogen economically benefits all Californian’s and businesses involved in the production or sale of host material located outside the infested regulated area. Tourism in the unregulated area isn’t negatively impacted by restricted access to parks and forests either to prevent disease spread or to ensure protection from hazardous trees and there are no visual aesthetic losses of the host trees. Local governments do not face unexpected costs when they have to remove infected trees when they die or become a hazard in parks, parkways, along roadsides or adjacent to public buildings.

Home owners do not have to use protective sprays to protect their specimen oaks; face costs for the removal of hazardous trees and the loss of their property values. Property discounts of two to five per cent occur for homes located near infested oak woodlands and from five to eight per cent occur if the dying oaks are on the properties of homeowners. From 2010 to 2020, the estimated discounted property losses to single family homes do to SOD are estimated to be $135 million.

The SOD pathogen’s behavior may be unpredictable if it infests a new unregulated county. The Sonoma County Department of Emergency Services and the University of California Cooperative Extension prepared a “Sonoma County Sudden Oak Death Strategic Response Plan in January

2008. It stated that over the last three years 7.5% of the land (75,000 acres) in the county had been affected by new SOD mortality. This was twice as many acres of new mortality than any other regulated county in California. The report highlighted the following threats due to SOD: hazards from falling trees, potential increase in fire danger, loss of heritage and shade trees, loss of soil stability, loss or habitat and food for wildlife, aesthetic losses, and economic losses due to the spread to new areas within the county.

The California State Board of Forestry and Fire Protection approved the establishment of a Zone of Infestation for SOD which covers all 14 counties listed under this regulation. Each Notice of Timber Operations must identify and list feasible measures to mitigate the adverse infestation or infection impacts of SOD from the timber operations within the regulated area. Additionally, those completing the timber harvest plans must complete a formal SOD survey at least once a year and are responsible for reporting any SOD infestations. By preventing the artificial spread of the SOD pathogen to new forested areas, this extra work does not have to be performed by those in the timber industry. The Department does not have any way to monetarily quantify these savings.

The USDA's Forest Service recognizes the SOD pathogen as a serious pest threat to California's and the nation's forests. From 2002 through 2011, the USDA's Forest Service has distributed approximately $13.6 million dollars to various scientists for research on the epidemiology and impacts of SOD in forests (http://www.fs.fed.us/psw/partnerships/sod/).

The SOD pathogen changes the forest's ecology. The pathogen attacks plants in both the over and understory. The disease is lethal to black oaks, coast live oaks, Shreve oaks and tanoaks. The disease also attacks Douglas-fir, grand fir, red fir, white fir and coast redwoods, California bay laurel and others. Although it cannot be empirically verified, the SOD pathogen is alleged to have killed hundreds of thousands of oak and tanoak trees in California. Redwood national and State parks hold approximately 45% of the last protected old growth redwood forests in California. Tanoak is a major component of these forests. In some areas, tanoak mortality approaches 100%. The ecological impact of the SOD pathogen on these parks may be severe.

Efforts were made to remove tanoaks and California bay laurels to prevent the spread of the pathogen by creating a buffer area. It was determined that this approach costs from $1,500 to $3,000 per acre.

California's total oak woodlands contain about 5 billion cubic feet of wood valued at over $275 million and the total California timberlands contain 5.8 billion cubic feet of oaks, which are worth over $500 million for forest products alone. Oak products exported from California from 1996-2000 averaged almost $50 million per year (According to the USDA's website: (http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/downloads/pdf_files/pra-cphst-08.pdf.) The Department has not been able to determine of these values, how much is located in the regulated and unregulated areas of the State.

Studies have shown that predominantly coast live oak forests may lose from 15 percent (in a low infestation area) to 69 percent (in a high infestation area) of their basal area (meters squared over hectare). These stands generally have California bay laurel present in them. There is evidence that the California bay laurel is increasing its dominance in these stands which may impact understory light levels and the ecology of existing understory shrubs and other plants. This forest dieback of coast live oak can result in changes in insect populations, impacting insectivorous birds by forcing them to switch prey, change foraging substrates or increase foraging time. This may lead to changes in the survivorship of nestlings. Studies suggest that oak-dependent birds may decline in species richness and diversity by five to 15 percent. The changes in forest ecology will also lead to changes in the populations of small mammals, snakes and amphibians.

Tanoaks suffer the highest mortality rates and scientists are concerned about being able to preserve adequate germplasm and ecosystems for future work. The destruction of large tanoak stands by the SOD pathogen could contribute to increased sediment input which is harmful to salmon, steelhead and sea run cutthroat populations preventing them from being able to lay their eggs in suitable gravel beds. Additionally, this could also lead to bank failures along the river.

Tanoak acorns are an important mast crop (having bumper years). In low mast years bears are known to cause increased damage to conifers by stripping the bark for food.

There is evidence that widespread tree mortality due to the SOD pathogen reduces bionome production and carbon uptake and increases future carbon emissions from decaying and burning of the course woody debris and dead trees.

California Environmental Quality Act

"Specific actions necessary to prevent or mitigate an emergency" are exempt from the California Environmental Quality Act [CEQA]. Public Resources Code Section 21080(b)(4). "Emergency means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services." Public Resources Code Section 21060.3.

Categorical Exemption

Title 14, California Code of Regulations Section 15308, "Class 8 consists of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment."

Estimated Cost or Savings to Public Agencies or Affected Private Individuals or Entities

The Department of Food and Agriculture has determined that Section 3700(c) does not impose a mandate on local agencies or school districts, except that the agricultural commissioner of a county under regulation has a duty to enforce it. No reimbursement is required under Section 17561 of the Government Code because the 14 affected county agricultural commissioners requested that when established as a new host or associated article by a federal order, Section 3700, subsection (c) be changed to reflect that.

The Department has also determined that the amended regulation will involve no additional costs or savings to any state agency, no nondiscretionary costs or savings to local agencies or

school districts, no reimbursable savings to local agencies or costs or savings to school districts under Section 17561 of the Government Code, and no costs or savings in federal funding to the State.

The Department has determined that the proposed action will not have a significant adverse economic impact on housing costs. The Department of Food and Agriculture has made an initial determination that the proposed action will not have a significant, statewide adverse economic impact directly affecting California businesses, including the ability of California businesses to compete with businesses in other states.

The Department is not aware of any additional cost impacts that a representative private person would necessarily incur in reasonable compliance with the proposed action. There was an ongoing program in place prior to this emergency amendment of the regulation. After consulting with the known affected individuals/businesses and/or the county agricultural commissioners in the regulated area, the program concluded there are no anticipated new economic impacts or newly affected parties due to this proposed action.

Therefore, the proposed action will not result in any new costs for compliance for individuals/businesses previously regulated in the 14 counties prior to this emergency amendment. Therefore, the cost impact of the amended regulation on a representative business is not expected to be significantly adverse.

Assessment

Based upon the above Economic Analysis, the Department has made an assessment that this amendment to the regulations would not (1) create or eliminate jobs within California, (2) create new businesses or eliminate existing businesses within California, or (3) affect the expansion of businesses currently doing business within California.

Alternatives Considered

The Department of Food and Agriculture must determine that no alternative considered would be more effective in carrying out the purpose for which the action is proposed or would be as effective as and less burdensome to affected private persons than the proposed action.

Information Relied Upon

The Department relied upon the following studies, reports, and documents in the amendment of Section 3700:

For Information/Action, DA-2013-41, October 23, 2013, *Phytophthora ramorum* (ramorum blight, dieback, sudden oak death): Listing and Regulation of a Plant Species Reported to be Associated with *P. ramorum*, Osama El-Lissy, Deputy Administrator, Plant Protection and Quarantine and its attached federal order.

Pest Exclusion Advisory No. 16-2012, *Phytophthora ramorum* Funding, May 15, 2012.

"Estimating the Costs of Sudden Oak Death: Results of a Survey of California Nurseries," Giannini Foundation of Agricultural Economics, University of California.

Nursery Advisory No. 03-2012, March 6, 2012, Value of California Nursery Products, fiscal Year 2010-2011, Pest Exclusion/Nursery, Seed, and Cotton Program, Plant Health and Pest Prevention Services.

"Protecting Trees from Sudden Oak Death before Infection," February 2011, Publication 8426, University of California Natural Resources.

"Predicting the Economic Costs and Property Value Losses Attributed to Sudden Oak Death Damage in California (2010-2020)," January 9, 2011, Journal of Environmental Management.

"Supplementary Guidance for Sites Felled Due to *Phytophthora*," November 4, 2011, Forestry Commission England.

"*Phytophthora ramorum* in Larch Trees – Update," 2011, Forestry Commission Great Britain.

"Official Regulatory Protocol for Wholesale and Production Nurseries Containing Plants Infected with *Phytophthora ramorum,*" March 31, 2010, United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and quarantine.

"Official Regulatory Protocol for Retail Nurseries Containing Plants Infected with *Phytophthora ramorum,*" December 19, 2007, United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and quarantine.

The following scientific papers presented at the "Proceedings of the Sudden Oak Death Fourth Science Symposium," held June 15-18, 2009:

"Development of a Pest Risk Analysis for *Phytophthora ramorum* for the European Union; the Key Deliverable from the EU-Funded Project RAPRA;"
"Evidence of the Dynamic Response of Housing Values to a Sudden Oak Death Infestation;"
"Sudden Oak Death Mortality and Fire: Lessons from the Basin Complex;"
"Waiting for SOD: Sudden Oak Death and Redwood National and State Parks;"
"The Big Sur Ecological Monitoring Plot Network: Distribution Impacts of Sudden Oak Death in the Santa Lucia Mountains;" and,
"Mapping the Impacts of Sudden Oak Death Tree Mortality on Severity of the Big Sur Basin Complex Fire."

"Sonoma County Sudden Oak Death Strategic Response Plan," January, 2008.

The following scientific papers presented at the “Proceedings of the Sudden Oak Death Third Science Symposium,” held March 5-9, 2007:

“An Update on *Phytophthora ramorum* in European Nurseries;”
“Estimated Economic Losses Associated With the Destruction of Plants Owing to *Phytophthora ramorum* Quarantine Efforts in Washington State;”
“Contemporary California Indian Uses for Food of Species Affected by *Phytophthora ramorum;”* and,
“Preservation of *Lithocarpus densiflorus* Diversity on California’s Central Coast: A Cooperative Project With Area Residents.”

“A Christmas Tree Grower’s Guide to Sudden Oak Death (*Phytophthora ramorum*),” November 2006, California Oak Mortality Task Force.

The following scientific papers presented at the “Proceedings of the Sudden Oak Death Second Science Symposium,” held January 18-21, 2005:

“Forecasting the Future of Coast Live Oak Forests in the Face of Sudden Oak Death;”
SOD-Induced Changes in Foraging and Nesting Behavior of Insectivorous Cavity-Nesting birds;”
“Potential Effects of Sudden Oak Death on the Oak Woodland Bird Community of Coastal California;”
“Vegetation and Small Vertebrates of Oak Woodlands at Low and high risk for Sudden Oak Death in San Luis Obispo County, California;”
“Potential Effects of Sudden Oak Death on Small Mammals and Herpetoflora in Coast Live Oak (*Quercus agrifolia*) Woodlands;” and,
“Potential Effects of Sudden Oak Death on Birds in Caostal Oak Woodlands.”

“Sudden Oak Death Addressed by the California Board of Forestry and Fire Protection,” August 8, 2002, CDF News Release.