



CALIFORNIA OAK MORTALITY TASK FORCE REPORT JUNE 2010

REGULATIONS

As of June 21, 2010, USDA APHIS will require written pre-notification to destination states of all interstate shipments that include *Phytophthora ramorum* host plants from quarantine or regulated areas. The new rule, under *Phytophthora ramorum* 7 CFR 301.92, is intended to allow states receiving *P. ramorum* host nursery stock to assign and prioritize resources, assure rapid response, and provide direct traceability for any nursery stock known to be positive for *P. ramorum*. Commodities shipped without providing prior notification to the destined state(s) may be returned to their point of origin or destroyed at the expense of the owner. Contact information for the SPRO in various states can be accessed at <http://www.nationalplantboard.org/member/index.html>. For more information, contact Prakash K. Hebbar at prakash.hebbar@aphis.usda.gov or (301) 734-5717.

MONITORING

A new Redwood National Park, Humboldt County *P. ramorum* water detection has been made upstream from Orick, and not far from the Del Norte County border. (Del Norte County is not known to be infested with *P. ramorum*). While very little disease advancement has been witnessed in the County over the last few years, this find substantially changes the known distribution of the pathogen in Humboldt County. The isolated location is 24 miles north from the nearest known stream positive in McKinleyville and approx. 70 miles north from the nearest known infected tree in the South Fork Eel River watershed.

In response to this confirmation, an increased number of bait stations have been implemented in the waterway to assist in identification of the spore source. The US Forest Service Aerial Survey team has also been alerted to the new confirmation, and will be flying the area in the next few weeks. Identifying the spore source as quickly as possible will be key to a successful rapid response and containment effort. For more information, contact Yana Valachovic, County Director and Forest Advisor, University of California Cooperative Extension- Humboldt and Del Norte at yvala@ucdavis.edu.

NURSERIES

California has had five *P. ramorum*-positive nurseries identified since April 30, 2010, and found *Trachelospermum jasminoides* (star jasmine) as *P. ramorum* positive for the first time. (1) A Santa Clara County production nursery, confirmed positive for the pathogen on 4/30, was found to have infected *Camellia sasanqua* 'Cleopatra' and 'White Purity' during an annual nursery certification inspection. The nursery is an interstate shipper and has not previously been positive for *P. ramorum*. Trace-back and -forward investigations are underway. (2) A Sonoma County wholesale nursery was found to have infected *Camellia japonica* 'Bella Rosa' on 5/20 during an inspection not related to *P. ramorum*. The nursery was previously positive for the pathogen in 2003 and 2006; it does not ship interstate. A nursery stock Standards of Cleanliness program is being implemented at the site to address the infestation. (3) A Stanislaus County production nursery was determined to have *P. ramorum*-positive *Camellia sasanqua* 'Cleopatra' and



Magnolia sp. on 5/21 as a result of a compliance inspection. The nursery has not been previously positive for the pathogen, and does not ship interstate. The Wholesale Production Confirmed Nursery Protocol has been implemented. (4) A San Joaquin County production nursery was found to have *P. ramorum*-positive *Camellia japonica* 'White Purity' and *Camellia sasanqua* 'Cleopatra' on 6/1 as the result of a trace-back investigation of plants from a production nursery in Santa Clara County, CA. The nursery is an interstate shipper and has not previously been positive for the pathogen. Trace-back and -forward investigations are underway. The Wholesale Production Confirmed Nursery Protocol will be implemented. (5) A Sacramento County production nursery was found to have *P. ramorum*-positive *Osmanthus fragrans* and *Trachelospermum jasminoides* on 6/1 as the result of a compliance agreement inspection. The nursery is an interstate shipper, and was previously positive in 2009. Trace-back and -forward investigations are underway. *Trachelospermum jasminoides* (star jasmine) is a new host report. If a second confirmation occurs, the species will be added to the USDA Animal and Plant Health Inspection (APHIS) *P. ramorum* host list. This first confirmation was determined by morphology and sequencing.

Two Oregon nurseries were found *P. ramorum* positive in May. (1) A Marion County, OR wholesale/retail nursery was found to have *P. ramorum*-positive *Rhododendron* 'Molalla Red' and 'Dora Ametis' plants on 5/14 as a result of a nursery compliance inspection. This nursery ships interstate and was previously positive for *P. ramorum* in 2008 and 2009. Trace-forward and -back investigations are underway. (2) A Washington County, OR production nursery was found to have *P. ramorum*-positive *Rhododendron* sp. 'English Roseum,' 'Skookum,' and 'Vulcan' on 5/20 as a result of a nursery compliance inspection. The nursery ships interstate and was previously found positive in 2004. Trace-forward and -back investigations have been conducted at the nursery and a trace-forward list sent to APHIS and recipient states. The Wholesale Production Confirmed Nursery Protocol has been implemented.

Washington was found to have two *P. ramorum*-positive nurseries in May. (1) On 5/3 a Thurston County wholesale/production nursery was found to have *P. ramorum*-positive *Mahonia nervosa* and *Viburnum tinus* as a result of a nursery compliance inspection. This nursery ships interstate and was previously positive for *P. ramorum* in 2008. Trace-forward and -back investigations are underway. (2) A Snohomish County wholesale nursery was determined to have *P. ramorum*-positive *Rhododendron* sp. on 5/6 as a result of a nursery compliance inspection. This nursery ships interstate and was previously positive for *P. ramorum* in 2008. Trace-forward and -back investigations are underway.

RESEARCH

The Proceedings for the Sudden Oak Death Fourth Science Symposium are now available. The Symposium provided a forum for current *P. ramorum* research. Ninety submissions describing papers or posters on the following sudden oak death/*P. ramorum* topics are included in the Proceedings: biology, genetics, nursery and wildland



management, monitoring, ecology, and diagnostics.

The Proceedings may be accessed online at http://www.fs.fed.us/psw/publications/documents/psw_gtr229/ or ordered using the following citation information: Frankel, S.J.; Kliejunas, J.T.; Palmieri, K.M., tech. coords. 2010. Proceedings of the Sudden Oak Death Fourth Science Symposium. Gen. Tech. Rep. PSW-GTR-229. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 378 p.

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Bulajić, A.; Djekić, I.; Jović, J.; Krnjajić, S.; Vučurović, A.; and Krstić, B. 2010.
Phytophthora ramorum occurrence in ornamentals in Serbia. Plant Disease 94:703-708.

Abstract: In a survey to determine the presence of *Phytophthora ramorum* in Serbia, ornamentals from garden centers, nurseries, and private and public gardens, as well as imported plant material, were inspected. In total, 577 plant, soil, and potting media samples were tested using various detection methods: lateral flow diagnostic test, enzyme-linked immunosorbent assay, conventional polymerase chain reaction, and isolation, followed by identification based on growth characteristics in culture and morphological features. *P. ramorum* was not detected in any of the 162 soil or potting media tested by the baiting method. *P. ramorum* was detected in 12 *Rhododendron* samples from one private garden in Zemun (City of Belgrade District) exhibiting symptoms of leaf necrosis and blight and petiole necrosis, and in three samples of *Pieris* spp. from one garden center exhibiting symptoms of leaf necrosis. Eight *Phytophthora* isolates were obtained from the positive *Rhododendron* plants and three isolates from *Pieris* plants, and all were identified as *P. ramorum* on the basis of their uniform morphological and growth characteristics. *P. ramorum* conformation was also made by sequencing of the internal transcribed spacer regions for a single isolate taken from one infected rhododendron and one pieris plant. Serbian isolates were determined as A1 mating type, due to formation of a few typical sexual structures when crossed with the A2 mating type of *P. cinnamomi* and *P. cryptogea*. Pathogenicity test on nonwounded detached leaves of 19 popular ornamentals, as well as the most frequently imported ones, revealed that 10 host species were susceptible, including *Robinia pseudoacacia*, which is widely distributed in Serbia. During this study, *Cotoneaster horizontalis* and *C. dammeri*



were determined to be new experimental hosts of *P. ramorum*. This article provides evidence of *P. ramorum* introduction into Serbia. Although *P. ramorum* has not been detected in Serbian production nurseries, its presence outdoors might cause severe damages on susceptible common urban plants in public green and natural ecosystems.

Ramage, B.; Forrestel, A.; Moritz, M.; and O'Hara, K. 2010. Long Term Monitoring of the Ecological Impacts of Sudden Oak Death in Point Reyes National Seashore: 2007-2009. National Park Service Internal Report. Available at http://nature.berkeley.edu/~bsramage/Ramage_et_al_2010--SOD_at_Pt_Reyes.pdf.

Abstract: Sudden oak death, an emerging disease caused by the exotic pathogen *Phytophthora ramorum*, is impacting forests and woodlands throughout coastal California. Tanoak (*Lithocarpus densiflorus*), the most abundant broadleaf tree in the conifer-dominated forests of the infested area, is the most severely affected species; several lines of inquiry have suggested that sudden oak death could eventually drive tanoak to extinction, at least in certain parts of its current range. In this study, we used data collected in 2007 and 2009 to examine disease-induced tanoak mortality rates, vegetation dynamics, and fuel loading within the redwood (*Sequoia sempervirens*) and Douglas-fir (*Pseudotsuga menziesii*) forests of Point Reyes National Seashore, a popular tourist destination approximately one hour north of San Francisco. In order to facilitate comparisons between forest types, our protocol imposed an equivalent minimum tanoak basal area across all sample plots. To detect differences between severely diseased and relatively intact areas, we used a randomized split-plot design (which was made possible by the stochastic and highly patchy local distribution of the disease), along with a mixed effects analytical framework. We investigated impacts of sudden oak death as well as baseline differences between redwood and Douglas-fir forests in our study area.

We found that new tanoak mortality occurred from 2007 to 2009 throughout all sampling strata – redwood and Douglas-fir, “diseased” and “healthy” (as of 2007) – but that the rate of increase, as well as the cumulative impact, was much greater in Douglas-fir forests. In 2007, proportional mortality was higher in the redwood forest type, but by 2009 nearly 100% of tanoak basal area was dead in diseased Douglas-fir plots, as compared to approximately 75% in diseased redwood plots. Our analyses also revealed several indirect effects of this mortality. In redwood forests, tanoak mortality reduced canopy cover, reduced herbaceous cover, and increased fuel loading (especially 1000-hour fuels). In Douglas-fir forests, tanoak mortality reduced canopy cover, increased herb species richness, and increased 1-hour and 10-hour fuels. We also detected important baseline differences between these two forest types; Douglas-fir forests exhibited higher tree diversity and greater abundance of non-tanoak hardwoods (i.e. greater functional redundancy), suggesting divergent responses to equivalent levels of tanoak mortality.



EDUCATION AND OUTREACH

The California Oak Mortality Task Force annual meeting will be held 6/8 – 6/11 at the Embassy Suites and Dominican University in San Rafael. The meeting includes a welcome reception, a National Ornamental Research Site (NORS-DUC) field trip and a Sudden Oak Death (SOD) field trip to China Camp State Park. Indoor sessions include nurseries, policy and research updates, a panel discussion on impacts and management of SOD, and a Research Needs Assessment for Forestry and Nursery issues. There will also be a COMTF Nursery Committee meeting as well as the first meeting of the Continental Dialogue's *Phytophthora ramorum* Initiative working group. The agenda, registration, and hotel accommodations for the meeting are available online at http://www.suddenoakdeath.org/html/comtf_annual_meeting_2010.html. Hotel rooms at the discounted rate are limited, so be sure to make a reservation soon. For more information, contact Katie Palmieri at (510) 847-5482 or kpalmieri@berkeley.edu.

Address *Phytophthora ramorum* Initiative - You are encouraged to stay the morning of Friday, June 11 for a meeting to discuss and shape the Continental Dialogue's Address *Phytophthora ramorum* Initiative. The Continental Dialogue on Non-Native Forest Insects and Diseases is a multi-stakeholder, interdisciplinary, problem-solving group aimed at encouraging collaborative, integrated efforts to prevent adverse impacts from non-native forest insects and diseases on North American forests and trees (<http://www.continentalforestdialogue.org/>). The Continental Dialogue's Address *P. ramorum* Initiative will work with private industry and public sector partners to encourage a collaborative, integrated effort to prevent the spread of *P. ramorum* to uninfested areas, and particularly to prevent its establishment in the wild in areas remote from current wildland/suburban/urban infestations. Toward this end, the Initiative will 1) support and encourage APHIS and USFS actions to develop and implement a strategic plan at the national level to prevent *P. ramorum* movement into new wild areas (this may well begin as an expanded version of the planned APHIS-USFS framework); 2) support and encourage private sector, academic, and APHIS efforts to develop and implement effective and cost-effective systems approaches to prevent *P. ramorum* spread via nursery production; and 3) implement communications efforts to improve public and professional understanding of *P. ramorum* and to encourage actions to minimize the likelihood of pathogen spread via multiple pathways. The Initiative is unique in its focus on the intersection of science, management, and public policy encompassing all aspects of *P. ramorum* for the U.S. The June 11th meeting will help to determine specific actions moving forward. For more information, contact any of the Initiative co-leads: Susan Frankel, sfrankel@fs.fed.us; Jerry Lee, jlee@monrovia.com; or Ken Rausher, rauscherk@michigan.gov.

RELATED RESEARCH

Venette, R.C.; Kriticos, D.J.; Magarey, R.D.; Koch, F.H.; Baker, R.H.A.; Worner, S.P.; Gómez Raboteaux, N.N.; McKenney, D.W.; Dobesberger, E.J.; Yemshanov, D.; De Barro, P.J.; Hutchison, W.D.; Fowler, G.; Kalaris, T.M.; and Pedlar, J. 2010. Pest Risk Maps for Invasive Alien Species: A Roadmap for Improvement. *BioScience* 60: 349–362. DOI: 10.1525/bio.2010.60.5.5.

**PERSONNEL**

Don Givens, after 32 ½ years of federal service, will be retiring on July 3, 2010. He served 2 ½ years with the US Navy, 4 years with the Smithsonian Institution, and 26 years with USDA APHIS Plant Protection and Quarantine (PPQ). His PPQ career has taken him from Los Angeles to Long Beach, CA, Anchorage, AK, and Portland, OR, where as Port Director he first became involved with the *P. ramorum* program. Don has spent the past eight years in Fort Collins, CO as USDA APHIS PPQ Western Regional Program Manager (RPM). He has been one of the leaders of the *P. ramorum* federal regulations team, and will certainly be missed.

Beginning July 4, 2010, Stacy Scott will assume the *P. ramorum* program RPM position until a permanent replacement has been chosen. Stacy Scott is a PPQ Regional Program Manager in Fort Collins, CO for the Biotechnology Inspection Program; Pest and Soil Permitting; the Containment Facility and Imported Fire Ant Programs; and ePermits, and is the New Pest Advisory Western Region (NPAG) Liaison. She has also served as the Executive Secretary and Chair of NPAG for CPHST, and assisted PPQ Emergency and Domestic Programs with the *P. ramorum* program in California. Please include Stacy in all PPQ Western Region correspondence as it relates to *P. ramorum*. Her contact information is (970) 494-7577 or stacy.e.scott@aphis.usda.gov.

Steve Jones, after working nearly 30 years for the State of California, will be retiring from the California Department of Forestry and Fire Protection (CAL FIRE) as the Deputy Chief of Forestry Assistance Programs. However, he does plan to continue serving as the Treasurer for the COMTF, a position he has held since 2001. Steve's new contact information after June 25, 2010 will be: 612 Martha Way, Roseville, CA 95678; (916) 340-4454; sjones.forester@gmail.com.

CALENDAR OF EVENTS

6/8 – 6/11 – COMTF-wide meeting, Dominican University, 50 Acacia Avenue; Address *Phytophthora ramorum* Initiative, Embassy Suites, 101 McInnis Parkway; San Rafael, CA 94901-2298; This meeting is intended for all interested parties. The agenda, registration, and hotel accommodations are available online at http://www.suddenoakdeath.org/html/comtf_annual_meeting_2010.html. For questions, contact Katie Palmieri at (510) 847-5482 or kpalmieri@berkeley.edu.



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