



## CALIFORNIA OAK MORTALITY TASK FORCE REPORT AUGUST 2022

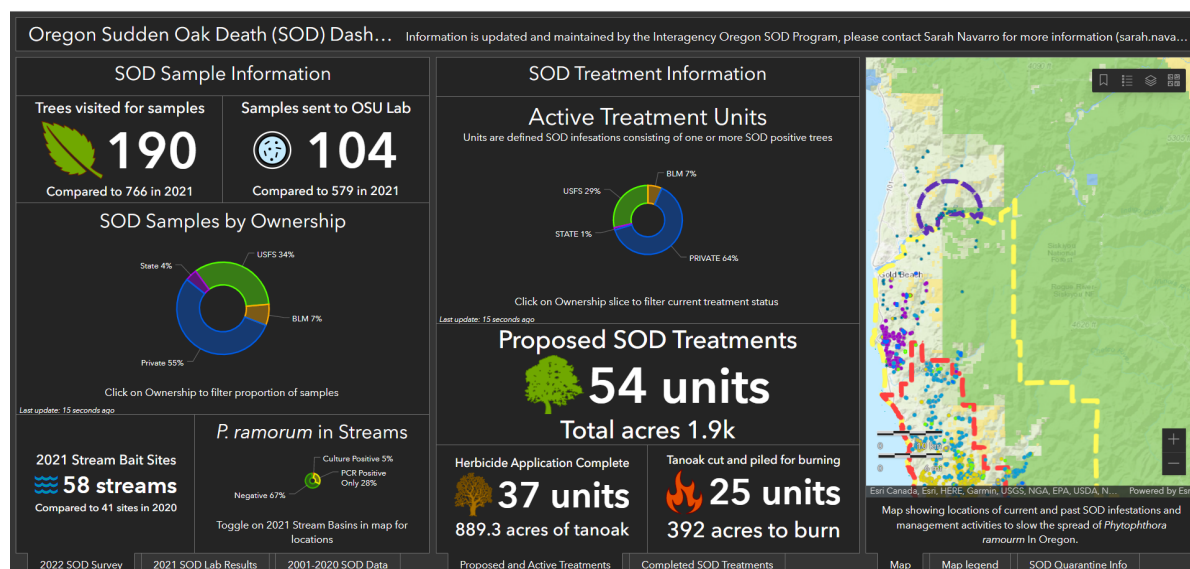
**Editor's note.** This month we include some exceptional "Related Research." These papers mention *Phytophthora ramorum*, or sudden oak death, but they do not focus on this pathogen or the diseases it causes. Reviewing them can add important context to understanding tree diseases in the western U.S. and elsewhere.

### SUDDEN OAK DEATH IN OREGON - WILDLANDS

Efforts to quarantine and slow the spread of *P. ramorum* continue along the southwestern Oregon coast. A third clonal lineage of *P. ramorum*, NA2, was detected outside Port Orford in spring 2021. Since then, this infestation has been the Oregon Sudden Oak Death Program's top priority. Over 400 ac have been surveyed with ground transects and aerial observations, resulting in over 200 samples and 154 detections of the NA2 variant. Previously found only in nurseries, this is the first time this variant has been found in wildlands. A tentative 600 ft treatment buffer has been placed around the confirmed positive trees, comprising a 581 ac buffer zone. Treatment has been completed on 141 ac, with treatment currently underway on 130 ac.

Surveys of high-priority sites identified in 2021 in the Port Orford area and north of Rogue River have been completed. None of the points checked outside of the current treatment areas were positive for *P. ramorum*.

The annual fixed-wing U.S. Forest Service/Oregon Department of Forestry cooperative aerial detection survey, and the helicopter survey across forested lands between the California border and Coos County, were completed in June 2022. Analysis and processing of the Aerial Detection Survey data has begun. Analysis of the 2022 high-resolution imagery results is pending.



**Figure 1. Oregon Sudden Oak Death Dashboard statistics in late July 2022.**

A real-time summary and map of sudden oak death management activity in Oregon is available at the Oregon Sudden Oak Death Dashboard

<https://www.arcgis.com/apps/dashboards/775c52bb94b646a1929f0b35dca4a1ad>. For additional information contact Gabriela Ritokova, Gabriela.RITOKOVA@odf.oregon.gov.



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**NURSERIES AND MANAGED LANDSCAPES**

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**California Department of Food and Agriculture (CDFA) *P. ramorum* program update: Spring compliance inspections completed with negative results.** Eight California nurseries that were previously positive for *P. ramorum* were inspected, sampled, and found to be free from *P. ramorum* during spring 2022 inspections. A trace-forward investigation from a positive nursery in Oregon that shipped plants to homeowners in California has been completed and yielded no positive samples. There have been no *P. ramorum* detections in nurseries in California in 2022. For more information contact Carolyn Lambert, Carolyn.Lambert@cdfa.ca.gov.

**Oregon Department of Agriculture *P. ramorum* Nursery Program update.** Currently, there are seven nurseries participating in the Oregon *P. ramorum* Nursery Program. Six of the nurseries are interstate shippers under federal compliance agreements (7 CFR 301.92). Those nurseries are in the following counties: Washington (2), Columbia (1), Linn (1) and Marion (2). One enrolled nursery (Nursery A) is an intrastate retail nursery in Clackamas County under a state compliance agreement (both 7 CFR 301.92 and OAR 603-052-1230).

The intrastate retail nursery, Nursery A, was confirmed positive for *P. ramorum* for the first time in June during a routine nursery inspection. Five foliar samples were collected, and the Oregon Department of Agriculture (ODA) lab detected *P. ramorum* from two samples. An initial Confirmed Nursery Protocol (CNP)/delimitation survey resulted in 10 more positive foliar samples. No additional positives were found during a second delimitation inspection. Nursery A completed plant and soil mitigation. Five nurseries, all in Oregon, were impacted as part of the traceback investigations. Results from these traceback investigations are pending.



**Figures 2 & 3. Two positive plants identified during the delimitation inspection at Nursery A. On the left is a *P. ramorum* positive *Rhododendron*, on the right, a symptomatic *Pteris*.**

During a routine nursery inspection at a retail nursery in Marion County, inspectors observed rhododendron plants in poor health sourced from a nursery in the program in Columbia County (Nursery B). Four foliar samples were collected; the ODA lab detected *P. ramorum* on one



sample with another sample currently inconclusive and undergoing further testing. All comingled host plants at the retail location were double bagged and discarded and the concrete floor was cleaned and sanitized with a bleach solution. No plants remained at the source nursery (Nursery B), but the ground was steamed by the nursery and only non-host plants were placed in the area.

Fall compliance inspections are planned for early October. To be released from the program, nurseries must have six consecutive negative results from compliance inspections over three years. One nursery will be eligible to be released from the program this fall if negative results are found. For more information, please contact Chris Benemann ([chris.benemann@oda.oregon.gov](mailto:chris.benemann@oda.oregon.gov)) or Kaitlin Gerber ([kaitlin.gerber@oda.oregon.gov](mailto:kaitlin.gerber@oda.oregon.gov)).

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## MEETINGS

**The 10th Meeting of the International Union of Forest Research Organizations (IUFRO) *Phytophthora* in Forests and Natural Ecosystems Working Party** was held June 19 - 25, 2022 at UC Berkeley. Organizers Matteo Garbelotto and Doug Schmidt welcomed about 60 researchers, representing more than 15 countries, for this in-person meeting which featured field trips to view sudden oak death in Marin County and *P. cinnamomi* caused manzanita dieback in the Sierra Nevada foothills. The indoor sessions stressed the importance of considering pathogen behavior and impacts in the context of climate change, wildfire, and other stressors. Keynote talks featured women researchers on diagnostics, taxonomy, and *Phytophthora* spread in nurseries, gardens, and restoration areas. The workgroup plans to meet again in New Zealand in September 2024. The book of abstracts describes more than 50 presentations including about a dozen on *P. ramorum*.

**Schmidt, D. and Garbelotto, M. (eds.) 2022.** Book of Abstracts. 10th Meeting of the International Union of Forest Research Organizations (IUFRO), Working Party S07.02.09. *Phytophthora* in Forests and Natural Ecosystems, June 19 - 25, 2022, Berkeley, California, [https://nature.berkeley.edu/matteolab/wp-content/uploads/2022/06/Schedule-and-Program-UFRO2022-v3\\_9.pdf](https://nature.berkeley.edu/matteolab/wp-content/uploads/2022/06/Schedule-and-Program-UFRO2022-v3_9.pdf).

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## RESEARCH

**Suslow, K.; Abeysekara, N.; Huffman, V. and Schweigkofler, W. 2022.** Surface and irrigation types have a big impact on water splash in nurseries. Choose wisely! *Ecesis* 32(2): 2 – 5.

In nurseries, plant pathogens can spread via water splash from the ground to container plants growing on benches. We used suspensions of fluorescent microspheres the size of *Phytophthora* spp. propagules to compare the vertical water splash resulting from three irrigation methods on five surface types. Using hand watering, the number of water droplets that splattered to a maximum height of 3 ft was significantly higher from concrete than from dry bare soil, weed barrier fabric, gravel, or a mud puddle. Hand watering and impact spray generated limited water splash at heights between 2.5 and 3 ft. However, spray sprinklers resulted in no water splash above 2.5 ft. Our results indicate that spread of plant pathogens from the nursery surface to plants placed on raised benches is possible, but unlikely to reach levels needed for successful infection, and that the risk for such transmission can be further reduced by choosing adequate surface types, watering systems, and bench heights.

**RELATED RESEARCH**

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**Bourret, T.; Fajardo, S.N.; Frankel, S.J. and Rizzo, D. 2022.** Cataloging *Phytophthora* species of agriculture, forests, horticulture, and restoration outplantings in California, USA: a sequence-based meta-analysis. Plant Disease. First Look. <https://doi.org/10.1094/PDIS-01-22-0187-RE>.

**Bowcutt, F. 2022.** Bay nuts and pepperwood leaves: Ethically expanding commercial use of a cultural keystone species. In *The Cultural Value of Trees*, pp. 46-74. Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780429320897-5/bay-nuts-pepperwood-leaves-frederica-bowcutt>

**Brasier, C.; Scanu, B.; Cooke, D. and Jung, T. 2022.** *Phytophthora*: an ancient, historic, biologically and structurally cohesive and evolutionarily successful generic concept in need of preservation. IMA Fungus 13: 12. <https://doi.org/10.1186/s43008-022-00097-z>. Note the supplementary files contain tables of *Phytophthora* diseases and other summary material.

**Feau, N.; McDonald, M.; Van Der Meer, B.; Zhang, Y.; Herath, P. and Hamelin, R.C. 2022.** *Phytophthora* species associated with red alder dieback in British Columbia, Canada. Canadian Journal of Plant Pathology. 1-10. <https://doi.org/10.1080/07060661.2021.2022763>.

**Marchand, M.; Allery, T.; Massot, M.; Capdevielle, X. and Robin, C. 2022.** Resistance, tolerance and competence for a root pathogen in six woody species. Plant Pathology. <https://doi.org/10.1111/ppa.13608>.

**Qongqo, A.; Nchu, F.; Geerts, S. 2022.** Relationship of alien species continues in a foreign land: The case of *Phytophthora* and Australian *Banksia* (Proteaceae) in South African Fynbos. Ecology and Evolution. 12(7). <https://doi.org/10.1002/ece3.9100>.

**Walton, A. and Smith, A.R. 2022.** How effective are methods to induce or facilitate the natural resistance of temperate trees to exotic *Phytophthora* species? A systematic review. Arboricultural Journal. <https://doi.org/10.1080/03071375.2022.2085917>.

**Ward, S.F.; Liebhold, A.M.; Fei, S. 2022.** Variable effects of forest diversity on invasions by non-native insects and pathogens. Biodiversity and Conservation. 1-12. <https://link.springer.com/article/10.1007/s10531-022-02443-4>.

**CALENDAR – SAVE THE DATE**

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**The annual meeting of the California Oak Mortality Task Force will be held online, November 8 – 10, 2022** from 1 pm to 3 pm each day. Day 1 will feature science and international *Phytophthora* updates; Day 2 highlights sudden oak death in Oregon and California; Day 3, organized by the *Phytophthoras* in Native Habitats Work Group, will focus on pathogens in restoration sites and native plant nurseries. More details will be available shortly or contact Janice Alexander, [jalexander@ucanr.edu](mailto:jalexander@ucanr.edu).