



CALIFORNIA OAK MORTALITY TASK FORCE REPORT OCTOBER 2010

MANAGEMENT

The northern Humboldt County Redwood Creek watershed *P. ramorum* infestation appears to be restricted to one discrete location, according to collaborators who have implemented intensive surveying efforts over the past several months. Surveying efforts have taken place since the end of June, when the pathogen's presence was confirmed in water samples taken near the mouth of Redwood Creek at Orick. They have consisted of (1) numerous rhododendron leaf baits placed in the 67-mile-long river (~200,000 acre watershed) and several of its tributaries from locations high in the watershed all the way downstream; (2) two aerial survey flights conducted by the USDA Forest Service, State and Private Forestry, Forest Health Monitoring, in July and September; and (3) ground surveys of vegetation along nearly the entire lower 40 miles of river.

The net result of these surveys is that the pathogen has only been found in one location centered near the community of Redwood Valley. This continues the pattern of *P. ramorum* generally being found near residences. The pathogen has been detected on symptomatic tanoak, California bay laurel, huckleberry, and Douglas-fir. Its effects on the latter three appear to be negligible. However, it is killing tanoaks in all size classes, including very large ones that are undetectable from the air because of the density of the Douglas-fir and redwood canopy in that location. Genetic work conducted by the UC Berkeley Garbelotto Lab on the *P. ramorum* isolate taken from Redwood Creek near Orick confirmed that the pathogen is of the North American (NA1) lineage.

Treatment has begun on one forested property containing the majority of the infected trees. Treatments include a 300-foot treatment buffer around infected trees. Discussions are underway with neighbors who own other infested parcels to present them with similar treatment options. Efforts are under way to secure funds to support these control projects.

This situation remains a very high priority for California Sudden Oak Death management, given its still-small size and remoteness from the nearest infested forests in southern Humboldt County, along with its proximity to uninfested Del Norte County, Redwood National Park, the Hoopa and Yurok Reservations, and highly productive timberlands of the north coast. For more information, contact Yana Valachovic at yvala@ucdavis.edu.

***P. ramorum*-infested Japanese larch (*Larix kaempferi*) has been confirmed at 68** southwest England plantations (see <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infid-86ajqa>). Larch plantations with similar symptoms were also discovered in south Wales where *P. ramorum* was also isolated at multiple sites. Overall an estimated 600,000 mature larch over 2400 ha have been affected to date in the United Kingdom. A large area of juvenile larch is also affected. This is the first widespread and lethal damage caused by *P. ramorum* to a conifer and the first to a commercial plantation tree. Adjacent to some affected larch sites in southwest England, secondary infection of European beech (*Fagus sylvatica*),



roble beech (*Nothofagus obliqua*), European chestnut (*Castanea sativa*), European white birch (*Betula pendula*), *Rhododendron ponticum*, western hemlock (*Tsuga heterophylla*), and Douglas-fir (*Pseudotsuga menziesii*) is also occurring, apparently a result of the high levels of *P. ramorum* inoculum produced from larch foliage.

Three new areas of *P. ramorum*-infected Japanese larch trees in Northern Ireland's Antrim and Down Counties were confirmed in September. Since first identifying the pathogen in August, the Department of Agriculture and Rural Development's (DARD) Forest Service has inspected its northern woodlands. Surveys have also been conducted within a 3 km zone around the original three confirmed sites. These surveys resulted in the confirmation of the new locations. Two of the sites are located on the Antrim plateau with a third small area located in County Down. This brings the total number of sites affected to six, four of which are on land managed by DARD and two within privately owned woodland. Bio-security precautions already in place at the three original sites will now be extended to the three new sites. Felling of infected Japanese larch at the sites will also be required. In addition to ground inspections, DARD has also conducted an aerial survey across its forest estate. As a result, a small number of additional sites are being investigated further. For more information, go to <http://www.northernireland.gov.uk/news/news-dard/news-dard-270910-japanese-larch-tree.htm>.

RESEARCH

A 2010 Research Needs Assessment for Sudden Oak Death/*Phytophthora ramorum* in Wildland and Nursery Environments" has been posted at <http://www.fs.fed.us/psw/programs/sod/documents/P.ram.Res.Needs.Assmt.09.10.10.pdf>. Top wildland research needs include evaluation of management approaches, spread in forests, eradication and remediation, detection and diagnostics, and ecological impacts. Nursery research needs include best management practices, eradication and remediation, diagnostics and detection, and pathogen characterization and spread. Understanding pathogen behavior in potting media, soils under pots, and water were also ranked high for nurseries. The assessment was conducted by the USDA Forest Service, Pacific Southwest Research Station and the California Oak Mortality Task Force.

Webber, J.F.; Mullett, M.; and Brasier, C.M. 2010. [Dieback and mortality of plantation Japanese larch \(*Larix kaempferi*\) associated with infection by *Phytophthora ramorum*](#). *New Disease Reports*. 22, 19. DOI: 10.5197/j.2044-0588.2010.022.019.

Pending California Department of Pesticide Regulation approval, the following five projects will soon be underway at the National Ornamentals Research Site at Dominican University of California (NORS-DUC). All projects have been funded through the fiscal year federal Farm Bill. For more information on the projects or the NORS-DUC program, contact Sibdas Ghosh at sibdas.ghosh@dominican.edu.



Bostock, R.M. and Roubtsova, T. [Episodic abiotic stress and ramorum blight in nursery ornamentals: impacts on symptom expression and chemical management of *Phytophthora ramorum* in Rhododendron.](#)

Chastagner, G. and Elliott, M. [The risk of asymptomatic *Phytophthora ramorum* infection on fungicide treated rhododendrons.](#)

Jeffers, S.; Meadows, I.; Hwang, J.-S. [Studies on Soil Mitigation of *Phytophthora ramorum*.](#)

Tjosvold, S.; Chastagner, G.; and Elliott, M. [Effect of fungicides and biocontrol agents on inoculum production and persistence of *Phytophthora ramorum* on nursery hosts.](#)

Widmer, T. and Shishkoff, N. [Use of *Trichoderma* spp. to remediate *Phytophthora ramorum*-infested soil.](#)

RELATED RESEARCH

Hong, C.X.; Gallegly, M.E.; Richardson, P.A.; Kong, P.; Moorman, G.W.; Lea-Cox, J.D.; and Ross, D.S. 2010. *Phytophthora hydropathica*, a new pathogen identified from irrigation water, *Rhododendron catawbiense* and *Kalmia latifolia*. Plant Pathology 59, 913–921. DOI: 10.1111/j.1365-3059.2010.02323.x.

Hulvey, Jon; Gobena, Daniel; Finley, Ledare; and Lamour, Kurt. 2010. Co-occurrence and genotypic distribution of *Phytophthora* species recovered from watersheds and plant nurseries of eastern Tennessee. Mycologia, 102(5), pp. 1127–1133. DOI: 10.3852/09-22.

Guo, L.; Zhu, X.-Q.; Hu, C.-H.; and Ristaino, J.B. 2010. **Genetic Structure of *Phytophthora infestans* Populations in China Indicates Multiple Migration Events.** Phytopathology, Volume 100, Number 10, Pages 997-1006. DOI: 10.1094/PHYTO-05-09-0126.

EDUCATION AND OUTREACH

“Predicting Behavior of Forest Diseases as Climate Changes” webinars will be offered 11/3/10 and 12/2/10. The free online workshops will address the potential synergistic effects of climate change and forest diseases on tree and forest health. Speakers will present case studies of sudden aspen decline, Swiss needle cast, Alaska yellow cedar decline, and other diseases. Management options to minimize the undesirable effects of forest diseases as climate changes will also be discussed. The hour will conclude with an open discussion among speakers and participants. For more information, see the “Calendar of Events” below.

“The Mighty Oak Faces Challenges in the Pacific West” USDA Forest Service, Pacific Northwest Research Station’s fall Science Update features four serious challenges oaks are facing that may trigger major changes in oak ecosystems. To access the Update, go to <http://www.fs.fed.us/pnw/pubs/science-update-20.pdf>.



“Sudden Oak Death - Integrated Pest Management in the Landscape” (PEST NOTES Publication 74151, September 2010) is now available. The eight-page handout includes information on pathogen biology, identification, diagnosis, damage, management, and online resources. To access the Pest Note, go to <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74151.html>.

***P. ramorum* Preventative Treatment Training sessions are being offered this fall** on the UC Berkeley campus. Each two-hour outdoor session will cover basic Sudden Oak Death information, integrated pest management approaches, how to select candidate trees for treatment, and proper preventative treatment application. CEU credits are being applied for with DPR, ISA, SAF, and California Urban Forestry Council. For more information, see the “Calendar of Events” below.

CALENDAR OF EVENTS

- 10/5 – 10/6** – Continental Dialogue on Non-Native Forest Insects and Diseases Sixth Dialogue Meeting; Brandeis University; 415 South Street, Waltham, Massachusetts; To register, go to <http://www.continentalforestdialogue.org/>.
- 10/6** – SOD Treatment Workshop; meet at oak outside of Tolman Hall, UC Berkeley Campus; 1 – 3 p.m.; Pre-registration is required. This class is free and will be held rain or shine. To register, email kpalmieri@berkeley.edu, and provide your name, phone number, affiliation (if applicable), and the date for which you are registering. For more information, go to <http://nature.berkeley.edu/garbelotto/english/sodtreatmenttraining.php> or contact Katie Palmieri at (510) 847-5482 or kpalmieri@berkeley.edu.
- 10/20**– SOD Treatment Workshop; meet at oak outside of Tolman Hall, UC Berkeley Campus; 1 – 3 p.m.; Pre-registration is required. For more information, see the 10/6 listing above.
- 10/29** – NORS-DUC 2011-2012 Request for Proposals (RFP) deadline; Approximately \$200,000 is available to fund projects ranging from \$15,000 to \$50,000. For more information on the RFP, go to <http://www.dominican.edu/academics/hns/sciencemath/norsduc/proposals.html>. For questions, contact Sibdas Ghosh at sibdas.ghosh@dominican.edu or (415) 482-3583.
- 11/3** – SOD Treatment Workshop; meet at oak outside of Tolman Hall, UC Berkeley Campus; 1 – 3 p.m.; Pre-registration is required. For more information, see the 10/6 listing above.
- 11/3** – Predicting Behavior of Forest Diseases as Climate Changes Webinar; 1:15-2:15 p.m.; The toll-free call-in number and webinar link will be provided upon registration. Space is limited, so please register early at



- http://ucanr.org/wwetac_registration. For more information, contact Janice Alexander at jalexander@ucdavis.edu or (415) 499-3041.
- 11/16 – 17** – 59th Annual Meeting of the California Forest Pest Council; Wildland Fire Training and Conference Center; 3237 Peacekeeper Way; McClellan; Agenda and registration information can be found at <http://caforestpestcouncil.org/2010/08/2010-california-forest-pest-council-59th-annual-meeting/>. For more information contact Kim Camilli at (805) 550-8583 or kim.camilli@fire.ca.gov.
- 11/19** – Coast Redwood Forests in a Changing California: A Symposium for Scientists and Managers paper submission deadline; For more information, go to <http://ucanr.org/sites/redwood>.
- 12/2** – Predicting Behavior of Forest Diseases as Climate Changes webinar; 9:30-10:30 a.m.; The toll-free call-in number and webinar link will be provided upon registration. Space is limited, so please register early at http://ucanr.org/wwetac_registration. For more information, contact Janice Alexander at jalexander@ucdavis.edu or (415) 499-3041.
- 6/21 – 6/23/2011** - Coast Redwood Forests in a Changing California: A Symposium for Scientists and Managers; University of California, Santa Cruz; For more information on the conference, go to <http://ucanr.org/sites/redwood>.