

## USA *PHYTOPHTHORA RAMORUM* NURSERY CHRONOLOGY

The following information is a summary of the status of *Phytophthora ramorum* in United States nurseries. For information on Europe's *Phytophthora ramorum* nursery infestations, please go to the United Kingdom's Department for Environment, Food and Rural Affairs ([DEFRA](#)), The [Forestry Commission](#) of Great Britain, or the European Union's [Europe Agriculture](#) website.

### 2/08

- California has three *P. ramorum*-positive nursery confirmations. A Los Angeles County production nursery is found to have one *P. ramorum*-positive *Camellia sinensis* and a production/retail nursery in the county has one positive *Camellia japonica* 'Kramer's Supreme' confirmed. Both nurseries' compliance agreements have been suspended. CNP is underway at both facilities. The third confirmation is at a retail nursery in Humboldt County. Positive soil samples are found as a result of a soil delimitation sampling following a 2007 positive.

### 1/08

- Oregon's Curry County quarantine area is officially expanded to 162 square miles, following the State's amendment to their *P. ramorum* quarantine. For the first time, nurseries and a lumber mill are located within the quarantine area. ODA is working with affected businesses to set up the compliance agreements and inspection schedules necessary to meet federal interstate shipping requirements.
- A Florida nursery is found to have *P. ramorum*-positive *Camellia sasanqua* at two of its facilities. Both sites were found positive for the pathogen in 2007. The USDA CNP is underway at both locations.

### 12/07

- A total of 21 positive nursery finds are made in 2007. The states with positive detections are CA(7), OR(2), WA(7), FL(1), GA(3), and MS(1).
- *Corylopsis spicata* (spike witch hazel - Hamamelidaceae) and *Physocarpus opulifolius* (ninebark - Rosaceae) are added to the list of federally regulated associated host plants. The CFIA found both plants naturally infected in a BC, Canada nursery. Spike witch hazel symptoms were identified as leaf necrosis and ninebark symptoms included leaf necrosis and dieback.
- USDA APHIS issues a new protocol for retail nurseries found infested with *P. ramorum*, "Official Regulatory Protocol for Retail Nurseries Containing Plants Infected with *Phytophthora ramorum*."

## 10/07

- *P. ramorum* inoculum was baited from Norton Creek (a small coastal stream in northern Humboldt County in the town of McKinleyville) early in the summer of 2006, with a repeat detection in the spring of 2007. The recovered isolates have been genotyped, revealing that two lineages are present: the Northern American (NA1) and European (EU1). This is the first find in North America of the EU1 lineage in a wildland environment. Efforts are being made to determine the spore source location, including exhaustive streamside surveys. A small retail nursery in downtown McKinleyville has been found to have *P. ramorum*-positive plants, including three plants confirmed with the EU1 strain, but the nursery is located in a different watershed than the infested stream. No definitive linkages between the nursery and stream have been established.

## 9/07

- *Garrya elliptica* and *Mahonia aquifolium* are now regulated by the USDA APHIS for *P. ramorum*. Nurseries operating under a compliance agreement may continue to ship hosts and associated plants, including the newly listed plants. However, all other nurseries containing these newly listed plants must be properly inspected, sampled, tested, and placed under a Compliance Agreement by September 7, 2007 in order to be able to move regulated plants interstate.

## 8/07

- The EU implements changes to their *P. ramorum* regulations. The decision amends the list of plants, wood, and bark susceptible to *P. ramorum*; increases from one to two the number of official inspections of specific species of susceptible plants in places of production and extends eradication measures to cover growing media and plant debris as well as sanitizing the surface upon which infected plants have been standing.
- CDFA nursery inspectors are now conducting two inspections per year on "medium-risk" plants (*Viburnum*, *Pieris*, and *Kalmia*) and three inspections per year on "high-risk" plants (*Camellia* and *Rhododendron*).

## 7/07

- Rhododendrons planted along a residential roadway are found *P. ramorum* positive in Thurston County, WA. WSDA has implemented the landscape protocol; all rhododendrons along the roadway have been destroyed. The positive plants were provided to the landscaper from an out of state West Coast nursery.
- Canada sets aside more than \$24 million in *P. ramorum* compensation funds for wholesale and retail nurseries as well as individuals impacted by pathogen eradication efforts. Compensation ranges from \$4 for young plants to \$300 for the largest trees. Affected parties can also claim costs incurred in the

disposal and treatment of plants and related materials, either via incineration or deep burial.

#### 6/07

- Following the April *P. ramorum*-positive stream baiting sample taken from the Sammamish River in King County, WA, WSU and WSDA collaborated with USDA ARS to genotype 40 isolates sampled from 12 nurseries both within and outside the Sammamish watershed in an attempt to trace the origin of the river isolate. Upon analysis, the Sammamish River isolate has a unique fingerprint that matches an isolate from a landscape supplier located outside of the watershed. While not a conclusive study, the finding does suggest the Sammamish River isolate may have been introduced from nursery stock originating from this wholesaler.
- Two California nurseries are identified as *P. ramorum*-positive. A San Diego County production nursery is found PCR-positive for *Pieris japonica* 'Amamiana'. This facility is under compliance for *P. ramorum* and does ship interstate. Trace-forward investigations include nurseries in seven western states and 10 CA counties. An Alameda County production nursery is also found infested with *Magnolia grandiflora*. The nursery is under compliance for *P. ramorum* and does not ship interstate.
- Oregon Grape (*Mahonia aquifolium* [Pursh] Nutt. - Berberidaceae Family) is found *P. ramorum*-positive for the first time at a Canadian nursery. Symptoms are primarily foliar, and include leaf spots and discoloration. This host species is native to the West Coast of the US. APHIS is reviewing the findings and anticipates adding Oregon Grape to the list of *P. ramorum*-regulated hosts soon.

#### 5/07

- APHIS has updated the "Official Regulatory Protocol for Wholesale and Production Nurseries Containing Plants Infected with *Phytophthora ramorum*." The revised CNP is to be used by any nursery found *P. ramorum*-positive.
- The first US findings of *P. ramorum*-positive *Loropetalum* are found at a Sacramento County, CA nursery that has previously been identified with the pathogen. Symptoms, unlike other foliar hosts, can include large and small pin-prick size lesions on the underside of leaves, surrounded by red rings.

#### 4/07

- Four *P. ramorum*-positive nurseries are identified in CA. Three of the nurseries are retail facilities in quarantined counties. None of the three retailers are under compliance or ship out of the quarantined area. Two of the three sites have been *P. ramorum*-positive before. The fourth *P. ramorum* confirmation was made on *Loropetalum chinense* at a production nursery during an annual compliance agreement inspection. The nursery is under compliance and ships out of state (to NV only). This nursery was also found *P. ramorum*-positive in 2006 during a compliance agreement inspection.

- *P. ramorum* is found at two Oregon production nurseries. One nursery in Washington County was confirmed to have an infested block of *Camellia* and an infested block of *Rhododendron*. The second nursery, located in Clackamas County, had a *P. ramorum*-positive *C. sasanqua* 'Yuletide' plant.
- Twelve *P. ramorum*-positive nursery sites in five states have been identified to date in 2007 through federal or state inspections, nursery surveys, and/or other detections. Positive finds by state include: CA(5), FL(1), MS(1), OR(2), and WA(3).

### 3/07

- The European *P. ramorum* lineage has been reported for the first time in CA. It was recovered from three Humboldt County nursery isolates taken in spring of 2006 and analyzed as part of a genetic study of *P. ramorum* isolates from CDFA. Current samples have been taken at the nursery; results are pending. Trace-back investigations are underway for the 2006 confirmations.
- To date in 2007, WA has had three *P. ramorum*-positive nursery confirmations. The first two positive nurseries were found in King and Snohomish counties, and were discovered as a result of the new trace-back protocol, which requires trace-back nurseries to supply trace-forward information for a period of 30 days prior and 30 days after the shipments were sent to the positive nursery. The third *P. ramorum*-positive nursery was in Cowlitz County and was discovered as the result of a Compliance Certification Inspection.
- A Hinds County, MS nursery is found to have a *P. ramorum*-positive *Camellia* sp. The inspection was a follow-up inspection to eradication efforts performed last year.

### 2/07

- Sixteen silk tassel bush (*Garrya elliptica*) plants are found *P. ramorum*-positive for the first time in the UK. This host species is a West Coast US native. APHIS is reviewing the findings and anticipates adding silk tassel bush to the *P. ramorum*-regulated host list soon.
- The new USDA APHIS *P. ramorum* regulation "Phytophthora ramorum; Quarantine and Regulations" is published February 27, 2007 in the Federal Register. This rule primarily codifies the Federal Order issued in December 2004 that established restrictions on the interstate movement of nursery stock from nurseries in nonquarantined areas in CA, OR, and WA. The rule also incorporates all updates (SPROs) issued since the original APHIS regulation was published in 2002, most of which are updates to the host list.

### 1/07

- A retail nursery in Tallahassee, FL is found *P. ramorum*-positive. The nursery was also found positive in 2006. The confirmations were made on three

cultivars of *Camellia japonica*. Trace-back surveys failed to identify a source for the infestation.

- The UK finds *Schima wallichii* (Chinese guger tree) to be a new *P. ramorum* host. The symptomatic foliar samples were taken outdoors from a historic garden near Cornwall in 2006. USDA APHIS is reviewing the findings and anticipates adding Chinese guger tree to either the host or associated host list soon.
- *Arctostaphylos uva-ursi* (Kinnikinnik), *Prunus laurocerasus* 'Nana' (Dwarf English Laurel), and *Osmanthus delavayi* (Delavay Osmanthus) nursery stock are found *P. ramorum*-positive in King County, WA. As Koch's postulates have not been completed, all three species will be added to the "APHIS List of Regulated Hosts and Plants Associated with *Phytophthora ramorum*" as associated plants, and regulated only as nursery stock.
- Two new *P. ramorum* A2 isolates from the EU lineage are identified in Belgium. The finding was made as a result of a Belgian research project that began in 2006 and screened all stored Belgian isolates of *P. ramorum* for their mating types. Both new isolates originated from nurseries in northern Belgium from two separate sites and from different hosts (*Rhododendron* and *Viburnum*).

## 12/06

- In 2006, USDA APHIS reported 62 sites in 11 states as having had nursery-related *P. ramorum* detections. Positive findings by state are: AL(1), CA(28), CT(1), FL(2), GA(1), IN(1), ME(1), MS(1), OR(13), PA(1), and WA(12).

## 11/06

- A CA production nursery in Santa Clara County is confirmed *P. ramorum*-positive. The positive *Vancouveria planipetala* (redwood ivy) was collected during an initial compliance agreement inspection. The nursery is not currently under compliance and does not ship or intend to ship out of the quarantined counties.

## 10/06

- The CFIA detects *P. ramorum* at four retail garden centers (two sites have the same owner) in early September and October. *P. ramorum* was found at the sites in 2004; all four sites were found free of the pathogen in 2005. All four centers source plants both locally and from the US and were sampled as post eradication sites due to the previous detections. The plants found infected were *Rhododendron* and *Viburnum*.
- Eradication efforts continue at a wholesale nursery in British Columbia, where *P. ramorum* was detected in late 2005. As a repeat site, stringent controls have been implemented. Trace-forwards from this nursery site this year have detected two residential/commercial landscape sites with 11 positive *Gaultheria shallon* plants.

## 9/06

- A Santa Cruz County production nursery is identified as *P. ramorum*-positive as a result of a positive growing media sample collected from a camellia pot during CNP activities. The pot was located directly under a California bay laurel tree which is rooted in a stream known to be positive for *P. ramorum*. The samples submitted from the bay tree are pending. This nursery also tested *P. ramorum*-positive in 2003, 2004, and 2005.
- Koch's postulates are completed for: *Acer pseudoplatanus*, *Aesculus hippocastanum*, *Laurus nobilis*, and *Michelia doltsopa*. Consequently, these hosts will be reclassified from the APHIS "Plants Associated with *P. ramorum*" list to the list of "Proven Hosts Regulated for *P. ramorum*."
- To date, 56 nurseries have been positive for *P. ramorum* in 2006. The breakdown by state is: CA (26), OR (13), WA (8), AL (1), CT (1), FL (2), GA (1), IN (1), ME (1), MS (1), and PA (1).
- Forty-six participating states have reported *P. ramorum* National Nursery Survey results. To date, 3,513 nurseries have been visited and 95,295 samples collected. Out of the samples collected, 352 have been confirmed *P. ramorum*-positive.

## 8/06

- *Ceanothus thyrsiflorus*, *Cinnamomum camphora*, *Kalmia angustifolia*, *Nerium oleander*, *Osmanthus fragrans*, *Osmanthus heterophyllus*, and *Quercus acuta* are officially added to the APHIS list of regulated "Plants Associated with *P. ramorum*."
- *Fagus sylvatica*, *Kalmia latifolia*, *Quercus cerris*, *Salix caprea*, and *Viburnum* spp. are transferred from the APHIS "Plants Associated with *P. ramorum*" list to the "Proven Hosts Regulated for *P. ramorum*" list, based on the completion of Koch's postulates.
- *Eucalyptus haemastoma* Sm. (Myrtle family), *Cornus kousa* x *Cornus capitata* (Dogwood family), and *Castanopsis orthacantha* Franchet (Beech family) are added to the UK DEFRA list of Plants Reported as Natural Hosts of *P. ramorum*. All three hosts were found *P. ramorum*-positive in the UK. APHIS is researching the findings and anticipates adding these plants to APHIS "Plants Associated with *P. ramorum*" list soon.
- Canada adds five new genera to the CFIA *P. ramorum* host list: *Loropetalum*, *Distylium*, *Manglietia*, *Parakmeria*, and *Ilex*. These additions are the result of positive confirmations from the species: *Loropetalum chinese*, *Distylium myricoides*, *Manglietia insignis*, *Parakmeria lotungensis*, and *Ilex purpurea*. APHIS is reviewing the findings and anticipates adding the new hosts to the APHIS "Plants Associated with *P. ramorum*" list in the near future.

- Researchers report findings of *P. ramorum* infecting Camellia flower buds. This is the first report of camellia flower bud infection in the field with the North American genotype of *P. ramorum*.
- A San Joaquin County, CA production nursery is found to have five *P. ramorum*-positive Camellia varieties ('Jean May,' 'Bonanza,' 'Showa-no-sakae,' 'Chansonette' and 'Nuccio's Pearl') during a compliance agreement inspection. The facility was also found to be *P. ramorum* positive in 2004. CNP is under way.

## 7/06

- An Alabama retail nursery is confirmed positive for *P. ramorum*. The infected Camellia sp. is found on the nursery cull pile during a *P. ramorum* National Nursery Survey inspection.
- A *P. ramorum*-positive *Viburnum mariesii* is found at a small Indiana retail outlet as the result of a trace-forward investigation from a production nursery in Clackamas County, OR.
- *P. ramorum*-positive Pieris sp. 'Mountain Fire' is found at a Georgia retail nursery during a trace-forward investigation from a production nursery in Clackamas County, OR. CNP is underway.
- *P. ramorum*-positive *Syringa vulgaris* 'Ludwig Spaeth' is identified at a small Maine retail nursery as a result of a trace-forward investigation from a production nursery in Clackamas County, OR.
- A MS retail nursery is confirmed to have *P. ramorum*-positive *Camellia* sp. during a *P. ramorum* National Nursery Survey inspection. Trace-back investigations are being conducted. CNP is underway at the facility.
- *P. ramorum* federal order compliance agreements, trace-forward/-back investigations, the USDA APHIS National Nursery Survey, and other investigations are ongoing. To date, 48 sites in 9 states have had *P. ramorum* detections. Positive findings by state are: AL(1), CA(25), FL(2), GA(1), IN(1), ME(1), MS(1), OR(13), and WA(3).
- *P. ramorum*-positive *Camellia japonica* 'Kramer's Supreme' is detected at a Napa County production nursery as a result of a Sacramento County nursery trace-forward investigation. The addition of this facility brings California's 2006 total number of confirmed nurseries to 25.

## 6/06

- *Osmanthus fragrans* (sweet olive) and *Osmanthus heterophyllus* (false holly), are found *P. ramorum*-positive in a Humboldt County nursery. APHIS is reviewing the findings and anticipates adding these new species to the APHIS "Plants Associated with *P. ramorum*" list in the near future.

- APHIS confirms *Nerium oleander* (Oleander) to be a new *P. ramorum*-associated host when delimitation survey samples from the Humboldt County facility are confirmed positive.
- Forty-three states have reported compliance inspection or National Nursery Survey results. Puerto Rico, AK, IA, and MO are not participating in the Survey, and WI is looking for *P. ramorum* as part of their regular nursery inspection process. To date in 2006; 2,786 nurseries have been visited, with 88,973 samples collected. Out of the samples collected, 327 have been confirmed *P. ramorum*-positive, totaling 42 positive sites in five states (CA, OR, WA, FL, and MS).
- CA has six *P. ramorum*-positive nursery confirmations. Two of the confirmations are in production facilities and four are retail nurseries. Affected counties include: Sonoma, San Joaquin, Sacramento, and San Mateo. Four of the nurseries have had prior *P. ramorum* confirmations. These new finds bring the State's 2006 total number of *P. ramorum*-positive nurseries to 24.
- ODA completes its *P. ramorum* Federal Order certification for 2006. Of the 62,045 samples collected from 1,112 growing areas, *P. ramorum* was found at 13 nurseries (about 1.0 percent). CNP has been enacted at all 13 sites. A total of 938 host and 1,000 non-host nurseries in OR now qualify for certification under the Federal Order certification program.
- ODA completes its statewide survey of Christmas tree plantations. A total of 4,480 samples were collected from 113 plantations; no *P. ramorum* was found at any of the sites surveyed. This is the fifth consecutive year no *P. ramorum* has been found in OR Christmas trees.
- A *P. ramorum* survey of OR retail nurseries is now underway. ODA plans to survey and sample approximately 150 retail nurseries that sell *P. ramorum*-susceptible plants.

## 5/06

- Six California nurseries are identified as *P. ramorum*-positive, bringing the State's 2006 total number of positive nurseries to 18. Confirmations are made in Humboldt, Marin, Mendocino, Los Angeles, Tulare, and Santa Clara Counties. Two of the nurseries do ship interstate and two of the nurseries have had *P. ramorum* detections in previous years. Positive plants include: *Viburnum tinus*, *Camellia sasanqua*, *Camellia japonica*, *Rhododendron*, *Laurus nobilis*, and *Magnolia grandiflora*.
- The first detection of *P. ramorum* on *Magnolia grandiflora* in a US nursery is made at a Santa Clara County, CA production facility. The nursery does ship interstate, and was also found *P. ramorum*-positive in 2005.

#### 4/06

- Four CA *P. ramorum* nursery confirmations are made, including: a San Mateo County producer, a Sacramento County producer, and two Alameda County retail nurseries. All four sites identified have positive *Camellia*, with one facility also having positive *Rhododendron* and *Pieris*. Three of the four nurseries have previously been found to have *P. ramorum*-positive plants. These 4 confirmed facilities bring the State's 2006 total to 12.
- As of April 14<sup>th</sup>, ODA has identified *P. ramorum* at 4 sites surveyed as part of the *P. ramorum* 2006 Federal Order Inspection. Three of the sites are small grower facilities located in Polk, Washington, and Lane Counties. The fourth site is a small retail facility located in Lane County. Positive plants include *Camellia japonica*, *Rhododendron*, and *Pieris japonica*. Two of the small grower nurseries ship a small volume of host plants out-of-state; trace-forward investigations are underway. CNP has been initiated at all sites.

#### 3/06

- New Zealand issues a public notice addressing nursery stock importation concerns, including risk mitigation measures and the host list for *P. ramorum*. With the exception of high-value plants for which the risk of *P. ramorum* is mitigated, hosts of *P. ramorum* are only permitted to be imported from countries recognized by New Zealand as Pest-Free Areas, which currently include: Australia, Canada, Israel, and South Africa. The proposed date of adoption and enforcement is May 29, 2006.
- Taiwan, Penghu, Kinmen, and Matsu issue a public notice proposing a draft amendment of the "Quarantine Requirements for the importation of plants or plant products." Among the changes is the designation of *P. ramorum* as a quarantine pest, whereby: "The importation of living plants (excluding flowers, fruits and seeds) of its hosts will be prohibited. Regions or countries affected include: Belgium, British Channel Islands, Denmark, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Slovenia, Spain, Sweden, Switzerland, UK, BC, CA, FL, GA, OR, and WA.
- CA confirms three nurseries to be *P. ramorum*-positive, including: a Sacramento production facility, a retail nursery in Alameda County, and a Solano County production facility. All confirmations made were on *Camellia*. One facility has previously been found positive. *P. ramorum*-positive nurseries for CA in 2006 now total eight.
- Florida confirms two *P. ramorum*-positive nurseries. Of the 23 *Camellia* plants found infected, five species were identified, including *japonica*, *sasanqua*, *sinesis*, *hiemalis*, and *vernalis*. Both of the Tallahassee nurseries were also found positive in 2004 surveys, following trace-forward investigations from a Southern California wholesale facility. It has not been determined if the pathogen was re-introduced or if it has persisted at the nurseries in soil and/or water since the initial findings.

## 2/06

- A water sample taken from a seasonal stream in Pierce County, WA is confirmed *P. ramorum*-positive. Plants from the adjacent nursery tested positive in 2004 and 2005. Agencies are monitoring the water upstream and downstream from the positive site to determine the extent of water contamination. Monitoring for signs of infestation throughout the immediate watershed area outside of the nursery will also be conducted.
- APHIS issues a SPRO Letter, adding 13 new plant species to the federal *P. ramorum* associated host list. The SPRO can be found on the APHIS website under "Revision of Listed and Regulated Articles" dated 2/10/06 at: [http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/pram/regulations.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/regulations.shtml).
- Koch's postulates are completed for *Frangula purshiana* (formerly listed as *Rhamnus purshiana*), *Adiantum aleuticum*, and *Adiantum jordanii*. Consequently, APHIS reclassifies these associated hosts as hosts.
- APHIS issues a Trace-Forward Protocol for Nurseries that Received Plant Material Shipped from a Confirmed *P. ramorum*-Infested Nursery. The new protocol is intended to establish a set of procedures that are used to determine if a nursery that has received plants from a *P. ramorum*-positive nursery acquired infected nursery stock, thus becoming infested as well.
- CDFA identifies four *P. ramorum*-positive nurseries: a production facility in Contra Costa County, a retail nursery in Alameda County, a retail nursery in Nevada County, and a Napa County retail nursery. Plants found positive for the pathogen included *Camellia* and *Pieris*; all four nurseries have previously been identified as having *P. ramorum*-positive plants.

## 1/06

- The first 2006 *P. ramorum*-positive nursery is identified during a CA compliance agreement inspection. The find was made on a *Camellia japonica* in a Los Angeles County production nursery that only sells plants to local landscapers and does not do any shipping of plant material. This nursery was also found *P. ramorum*-positive during last year's compliance agreement inspection, and had completed CNP in May 2005.
- The Canadian nursery industry implements a *P. ramorum* Nursery Certification Program. Key program components include annual sampling and testing, training, and independent audits. For more information, go to the CNLA website: <http://www.canadanursery.com/Page.asp?PageID=122&ContentID=750&SiteNodeID=102>.

## 11/05

- A WSU researcher isolates *P. ramorum* from California red fir (*Abies magnifica*) symptomatic shoots at a Christmas tree farm near Los Gatos, CA. Koch's Postulates have not been completed. The findings are being evaluated and considered by APHIS for the potential addition of California red fir to the regulated host list.

## 10/05

- For the fourth year in a row, *P. ramorum* has not been found in OR Christmas tree plantations. Based on these results, Christmas tree plantations in all OR counties surveyed are officially declared *P. ramorum*-free for 2005.
- *Viburnum opulus* (= *V. trilobum*), or American cranberry viburnum, is found to be *P. ramorum*-positive at a nursery in Clackamas County, Oregon on June 6, 2005. APHIS has reviewed the findings and expects to add American cranberry viburnum to the *P. ramorum* associated host list soon.
- Real-time PCR is validated by USDA APHIS PPQ CPHST for providing diagnostic determinations for the *P. ramorum* federal emergency program.
- The HRI (research division of the ANLA) convenes a national working group to explore the role of nursery management practices in the battle to limit *P. ramorum* spread. The group will develop RMPs that can be used by nurseries nationwide to establish or improve management plans. Long-term goals include building a working model for response to emerging plant pests.
- APHIS confirms the detection of *P. ramorum* at two nurseries in Washington State. These two additional infested nurseries are located in Snohomish County and King County. Infected species at both nurseries are varieties of Rhododendron.
- To date this year, 99 sites in seven states have had nursery-related *P. ramorum* detections. Positive findings by state are: CA(55), GA(4), LA(2), OR(20), TN(1), SC(1), and WA(16).

## 9/05

- CDFA confirms the detection of *P. ramorum* on *Abies concolor* (white fir) at a Christmas tree farm in the quarantined county of Santa Clara. This is the first report of the pathogen on this species of *Abies*. With Koch's Postulates not complete, APHIS expects to add *A. concolor* to the official list of associated host plants soon.
- APHIS issues an updated SPRO Letter, adding the eight new associated host plants to the list of *P. ramorum*-regulated plants. The addition of these eight plants brings the list of regulated *P. ramorum* host and associated hosts to 83. To access the SPRO, go to the APHIS website and refer to the 9/14/05 SPRO at: <http://www.aphis.usda.gov/ppq/ispm/pramorom/>.

- The USDA issues a strategic plan for *P. ramorum* titled: "Plant Diseases Caused by *Phytophthora ramorum*: A National Strategic Plan for USDA." The report addresses the goals for the *P. ramorum* detection, control, management, research, and restoration programs of the Department.
- As of 9/05, England has had 380 *P. ramorum* retail and nursery confirmations, and Wales has had 26.

## 8/05

- A Nursery Pest Advisory Task Force (NPATF) is created at the request of California's Secretary of Agriculture, A.G. Kawamura. The Task Force is comprised of representatives from the USDA, CDFA, CDF, UC Davis, county agricultural commissioners, and the nursery industry. The group will address issues related to new and/or emerging nursery pests. Their present focus is working in concert with the California Oak Mortality Task Force in its efforts to address *P. ramorum* issues.
- CDFA has identified 53 *P. ramorum*-positive CA nurseries in 2005. Ten of the confirmed nurseries ship interstate, with two of the ten shipping only to Nevada outside of California's borders. Eight of the confirmed nurseries have had recurrent infestations.
- USDA APHIS issues an updated State Plant Regulatory Official (SPRO) Letter, adding eight new associated host plants and two new host plants to the list of plants regulated for *P. ramorum*. The addition of these 10 plants brings the list of regulated *P. ramorum* host and associated hosts to 75. To refer to the SPRO, go to: <http://www.aphis.usda.gov/ppq/ispm/pramorom/>.
- Six hosts are moved from the associated host list to the host list, with all having Koch's Postulates complete and having been approved by USDA APHIS. The six newly classified hosts are: *Castanea sativa*, *Fraxinus excelsior*, *Quercus falcata*, *Quercus ilex*, *Syringa vulgaris*, and *Taxus baccata*.
- The UK officially identifies and reports to USDA APHIS three new *P. ramorum*-infected plants. *Acer laevigatum* (Evergreen maple), *Michelia doltsopa* (*Michelia*), and *Quercus petraea* (Sessile oak) were found in outdoor, green areas with natural infection. Koch's Postulates have not been completed, so these plants will join the APHIS associated host list.
- Five new *P. ramorum* hosts are identified in California's quarantined county forests. The newly confirmed *P. ramorum*-susceptible plants are: *Adiantum aleuticum* (Maidenhair fern), *Fraxinus latifolia* (Oregon ash), *Osmorhiza chilensis* (Sweet Cicely), *Torreya californica* (California nutmeg), and *Vancouveria planipetala* (Redwood ivy). Koch's Postulates have not been completed, so these plants will be added to the USDA APHIS associated host list.
- A South Carolina wholesale nursery/broker is found to have a *P. ramorum*-positive *Camellia japonica*. The nursery is part of a chain of 25 nurseries in five states, all of which deal primarily with the landscape industry. Surveys of the remaining 24 related nurseries are underway.

- WSDA identifies eight additional *P. ramorum*-positive nurseries, bringing the total number of confirmed WA nurseries to 10 in 2005. Eight of the 10 positive WA nurseries in 2005 were found positive for *P. ramorum* in 2004. Of the eight new confirmations, six were retail nurseries and two were wholesale facilities. Identified hosts included primarily *Rhododendron*, but also *Kalmia*, *Viburnum*, and *Pieris*.
- Oregon confirms six new *P. ramorum* findings, bringing the state's 2005 confirmation total to 20. Four of the *P. ramorum*-positive sites were wholesale nurseries and 13 were retail facilities. Three of the *P. ramorum*-positive nurseries do ship out-of-state; all three ship primarily to the West Coast.
- *P. ramorum* federal order compliance agreements, trace-forward/-back investigations, the USDA APHIS National Nursery Survey, and other investigations are ongoing. To date, 91 sites in seven states have had *P. ramorum* detections. Positive findings by state are: CA(53), GA(4), LA(2), OR(20), TN(1), SC(1), and WA(10).

## 7/05

- The first *P. ramorum*-infected *Taxus media* is reported from the Netherlands, making this the third yew to be identified as susceptible to *P. ramorum*. With Koch's postulates not completed, this plant is being added to the USDA APHIS list of *P. ramorum*-regulated associated host plants
- ODA identifies five additional nurseries in four counties with *P. ramorum*-confirmations. Affected plants include: *Pieris*, *Rhododendron*, and *Magnolia*. The *Magnolia* confirmation is the first to be reported in the US.
- WSDA confirms two *P. ramorum*-positive nurseries during the National Nursery Survey. One facility has infected *Rhododendron* and the other has infected *Viburnum*, *Rhododendron*, and *Pieris*.
- Two additional retail garden center nurseries are found infested with *P. ramorum* in Georgia. One has infected *Rhododendron* and *Camellia*, while the other has infected *Camellia sasanqua*.

## 6/05

- A retail nursery in Bradley County, Tennessee is confirmed to have *P. ramorum*-positive *Rhododendron elegans* "Elegans" and *Rhododendron* spp. "Boursault" during their *P. ramorum* National Nursery Survey inspection.
- A production nursery in Lincoln County, Oregon is found with *P. ramorum*-infected *Rhododendron* sp. The confirmation is made during a compliance agreement renewal.
- A Los Angeles County, CA retail nursery is found to have *P. ramorum*-positive plants that have been shipped directly to customers, not nurseries or garden

centers. Shipments went to 32 states nationwide as well as 9 foreign countries. Regulatory officials are informing affected states of the shipments.

- Six additional California nurseries are identified as *P. ramorum*-positive; one had been found positive for the pathogen previously. Five of the nurseries are production facilities and one is a retail site. Of the two nurseries that ship interstate, one only ships stock to Nevada.
- To date this year, 62 sites in 5 states have had *P. ramorum* detections. Positive findings by state are: CA(48), GA(2), LA(2), OR(9), and TN(1).

## 5/05

- *P. ramorum*-positive mountain laurel (*Kalmia latifolia*) and camellia are confirmed at a Gwinnett County, GA wholesale nursery. The plants are identified as a result of the USDA APHIS National Nursery Survey. The nursery had a previous camellia *P. ramorum* confirmation in 2004.
- A second GA retail nursery is found positive for *P. ramorum*. The facility was a positive trace-forward in 2004.
- Two LA nurseries are found to have *P. ramorum*-positive camellias during the USDA APHIS National Nursery Survey. One of the nurseries was found to have the pathogen in 2004; the other is an initial find.
- CDFA identifies 16 additional CA nurseries with *P. ramorum*-positive plants; four of the nurseries ship interstate. Two of these confirmations are from previously positive nurseries.
- An updated "[Nursery Guide for Diseases Caused by \*Phytophthora ramorum\* on Ornamentals: Diagnosis and Management](#)" is available free of charge at the University of California Agriculture and Natural Resources website.

## 4/05

- APHIS confirms the presence of *P. ramorum* on an OR jasmine plant sample. As a result, ODA, APHIS, and others are working to determine jasmine's status as a host of *P. ramorum*.
- Monrovia implements a plant replacement program for retail customers whose plants originated from their Azusa facility. Customers replacing plants should **NOT** bring them to garden centers.
- ODA identifies two *P. ramorum*-positive nurseries while conducting Federal Order compliance surveys. One was a small retail nursery in Washington County with infected *Pieris japonica* and the other a production and wholesale facility in Clackamas County with infected *Rhododendron* 'Unique.'
- OR reports four trace-forward positives in residential settings. The residential finds originated at a nursery found positive in 2004. Delimitation surveys

confirmed the disease has apparently not spread to other plants already in the landscapes. Infected plants have been removed and incinerated.

- CDFA reports additional *P. ramorum*-positive plants found at the Sacramento, CA, retail nursery found positive in March. Infected plants include rhododendron, camellia, viburnum, and pieris.
- CDFA has confirmed 32 *P. ramorum*-positive California nursery in 2005. Twenty-two of the confirmations have been made outside of the 14-county quarantined area, while ten have been found within it. Of those nurseries found to be infested, seven have previously tested positive for the pathogen.
- The first *P. ramorum*-positive *Acer pseudoplatanus* (Planetree maple) is confirmed at a *P. ramorum* woodland garden site in Cornwall, UK. Pending USDA review and approval, it will be added to the US list of *P. ramorum*-regulated plants.
- The UK completes Koch's postulates on: sweet chestnut (*Castanea sativa*), Holm oak (*Quercus ilex*), and European ash (*Fraxinus excelsior*). Following USDA review and approval, plants will be moved to the US *P. ramorum* host list.
- [The CFIA issues an updated \*P. ramorum\* directive 3/1/05](#), superseding the 9/25/03 order in response to the USDA APHIS 12/21/04 Emergency Order. USDA APHIS is provided \$9.5 million in emergency funds through the USDA CCC to help support *P. ramorum* regulatory activities in 2005.

### 3/05

- A Sacramento, CA retail nursery is found to have *P. ramorum*-infested *Rhododendron* sp. v. Colonel Coen. CDFA has delimited the infestation and destroyed infected lots. Trace-back investigations are underway.
- 2004 *P. ramorum* nursery detection statistics are updated to account for an additional bonsai camellia confirmed positive in February 2005. The Pennsylvania sample was confiscated in June 2004. With this new confirmation, the total number of USDA APHIS *P. ramorum*-positive detections (in or associated with nurseries) for 2004 has been adjusted to 177 positive finds in 22 states, with Pennsylvania having 2 detections.

### 2/05

- CDFA completes delimitation and perimeter surveys of the Los Angeles County, CA nursery confirmed to have *P. ramorum* in January. To date, one culture sample from a block of 898 *Camellia japonica* plants has been confirmed positive by APHIS. Four other samples from the block have tested positive by CDFA. All 898 plants in the infected block have been destroyed. The nursery has resumed shipping non-host plants from outside the destruction block and buffer areas. Host and associated host plants, to the genera level, are still being held and will not be released until all test results

are complete. No plants from trace-forward investigations have tested positive to date.

## 1/05

- A previously identified *P. ramorum*-positive nursery in Los Angeles County, CA has detected infection on camellia. The symptomatic plant was identified following a series of rainstorms. Leaf samples were taken and cultured on-site. Following the CDFA review and confirmation of the nursery's camellia culture sample, the USDA's Confirmed Nursery Protocol (CNP) was implemented.
- The Canadian Food Inspection Agency (CFIA) lifts its restriction on *P. ramorum* host cut flowers (including roses) from non-quarantine California counties as a result of the new USDA Animal and Plant Health Inspection Service (APHIS) Federal Emergency Order.
- The UK's Department of Environment, Forestry, and Rural Affairs (DEFRA) has identified six new plants associated with *P. ramorum*: *Griselinia littoralis* – Cornaceae (NZ privet); *Hamamelis mollis* – Hamamelidaceae (Chinese witch-hazel); *Magnolia stellata* – Magnoliaceae (star magnolia); *Magnolia x loebneri* – Magnoliaceae (Loebner magnolia); *Magnolia x soulangeana* – Magnoliaceae (saucer or Japanese magnolia); and *Parrotia persica* – Hamamelidaceae (Persian Parrotia or iron tree). It is anticipated that APHIS will soon be adding these species to their official *P. ramorum* associated host list. Once included on the US list, these plants will fall under federal *P. ramorum* regulations.

## 12/04

- The Animal and Plant Health Inspection Service (APHIS) issues an emergency [federal order that will take effect on 1/10/05](#), superseding the 4/22/04 emergency order. The new order regulates the interstate movement of host and non-host plants from nurseries in California, Oregon, and Washington to help prevent the spread of *P. ramorum* to uninfested areas of the US.
- False Solomon's seal (*Maianthemum racemosum*, formerly *Smilacina racemosa*), *Calluna vulgaris* (Scotch heather), and *Photinia fraseri* (Red tip photinia) are moved from the APHIS associated host list to the host list in the 12/21/04 Federal Order. These changes are made because of the completion of Koch's postulates for each species.
- With the new USDA APHIS emergency *P. ramorum* order taking effect, Canada will rescind regulations implemented as a result of the Monrovia event last March. Following the Monrovia confirmations, Canada quarantined rose plants and cut roses as well as all host genera plants and plant parts from anywhere in CA. Canada's updated regulation will only affect CA's 14 quarantined counties. Additionally, Canada is no longer considering quarantine regulations for WA and OR. With the new federal order in place, Canada will accept any material that is in compliance with US rules.

- Currently there are 176 USDA APHIS confirmed positive *P. ramorum* sites in 22 states from trace-forward, national, and other surveys. The breakdown per state is: AL(3), AR(1), AZ(1), CA(55), CO(1), CT(3), FL(6), GA(16), LA(5), MD(3), NC(9), NJ(1), NM(1), NY(1), OK(1), OR(24), PA(1), SC(4), TN(2), TX(11), VA(2), and WA(25). The newly identified Maryland nursery tested positive after being sampled as part of the Hines Nursery (OR) trace-forward investigation.

## 11/04

- Omnibus appropriations for federal *P. ramorum* funding in 2005 is \$9.89 million. The Agricultural Appropriations Bill earmarked \$1.45 million for the Agricultural Research Service; \$94,000 for the Cooperative State Research, Education, and Extension Service; and \$3 million to the Animal and Plant Health Inspection Service. The Interior Appropriations Bill earmarked \$2 million to USDA Forest Service (FS) Cooperative Lands Forest Health Management and \$2.5 million to USDA FS Forest and Range Land Research.
- The Oregon Department of Agriculture receives and approves a revised federal label for the use of Agrichem's Agri-Fos® on landscape, golf course, nursery, forestry, and park sites for Phytophthora and Pythium diseases, including Sudden Oak Death. Oregon will allow all uses listed on the approved product label. Note: California currently has a Special Local Needs registration for Agri-Fos® use on oaks and tanoaks to prevent *P. ramorum*.
- *P. ramorum* is detected at six additional Oregon nurseries while conducting compliance agreement surveys. *P. ramorum* has now been found at 13 nurseries as a result of the survey. No infected plants were found at Christmas tree plantations. Additionally, trace-forward investigations from a positive nursery in Forest Grove, OR results in pathogen identifications in three Connecticut nurseries.
- The Washington State Department of Agriculture (WSDA) inspects more than 100 Christmas tree plantations for *P. ramorum* on a fee-for-service basis. Additionally, WSDA and the Department of Natural Resources complete surveys on 98 Noble fir (*Abies procera*) sites. As part of the *P. ramorum* National Wildland Survey, 93 nursery perimeters and 26 wildland sites have been surveyed. *P. ramorum* was not found. To date, no Washington conifers have been found to harbor the pathogen.
- The federal "Confirmed Residential Protocol for *P. ramorum* Detections in Landscaped Residential or Commercial Settings" is now posted to the [USDA APHIS PPO website](#). The protocol describes actions to be taken by regulatory officials when *P. ramorum*-positive plants are found in home gardens and other landscaped areas.

## 10/04

- Four additional Oregon nurseries are identified with *P. ramorum*-positive plants. Three of the nurseries are small and do not routinely ship interstate, while the fourth does do some out-of-state shipping. Three of the nurseries are located in the northern part to the Willamette Valley and the fourth is in southwestern Oregon.
- "[P. ramorum – a guide for Washington nurseries](#)" is now available. The guide covers host and associated plant species, host symptoms, pathogen biology, disease prevention, cultural management, protection and suppression with fungicides, and detection and eradication.
- The USDA APHIS PPQ *P. ramorum* National Nursery Survey activities are complete in 38 states and Puerto Rico. To date, participating states throughout the US have surveyed 3,095 sites and have collected 50,820 samples. Fifteen survey sites have been confirmed positive.
- UK Minister for Plant Health and Forestry Ben Bradshaw announces [conditional financial assistance](#) for nurseries suffering hardships related to actions taken to protect the wider UK environment from *P. ramorum*.

## 9/04

- The Oregon Department of Agriculture Plant Division posts a list of 119 nurseries and 287 Christmas tree growers that are participating in [Oregon's P. ramorum-free program](#). To be posted to the list, nurseries and Christmas tree growers must have been inspected, tested, and found *P. ramorum*-free, and must have signed a compliance agreement with the state.
- APHIS PPQ *P. ramorum* National Nursery Survey activities are complete in AK, AR, AZ, CA, IA, ID, LA, MO, MT, NE, ND, OK, and SD; diagnostic results are pending. To date, participating states have surveyed 2,166 sites and have collected 39,406 samples, with 15 sites being confirmed positive (total positive national survey sites have been adjusted downward due to re-categorization of WA finds).
- The US Forest Service *P. ramorum* Nursery Perimeter Survey is underway. To date, 2,430 samples have been taken from 610 locations. All completed results have been reported as negative for *P. ramorum*.
- USDA APHIS PPQ confirms *P. ramorum* at two production areas owned by a large wholesale nursery in Washington County, OR, and at a bark supply company in Columbia County, OR.
- The Washington State Department of Agriculture begins testing symptomatic and asymptomatic plants coming into the state before unloading shipments in an effort to prevent new *P. ramorum* introductions on host nursery stock.
- Effective September 9, 2004, the National Plant Quarantine Service, Ministry of Agriculture and Forestry, Republic of Korea (NPOS), modified its "Tentative phytosanitary measures to prevent the introduction of Sudden Oak Death

(SOD) Disease." Updates to the regulation include the addition of Nassau County, NY, as well as 22 new plant species. These emergency measures prohibit the importation of any propagative host material, such as nursery stock and cuttings, as well as wood (with bark) and growing media from the prohibited areas.

#### 8/04

- The [Oregon Department of Agriculture \(ODA\) lifts its quarantine](#) of Columbia County nurseries and compost production facilities after determining that the pathogen did not spread beyond the initial confirmation location identified in May 2004. However, ODA will continue to inspect and test all Oregon nurseries with hosts as part of its statewide *P. ramorum* nursery certification program.
- The USDA Animal and Plant Health Inspection Service (APHIS) adds *Calluna vulgaris* – Scotch Heather (Ericaceae), [Drimys winteri - Winter's-bark](#) (Winteraceae), [Laurus nobilis – Sweet bay laurel](#) (Lauraceae), and [Salix caprea – Kilmarnock willow](#) (Salicaceae) to the *P. ramorum* associated host plant list.
- APHIS removes *Vaccinium vitis-idaea* (lingonberry) from the *P. ramorum* associated host plant list because the Plant Protection and Seed Service of Poland is unable to validate their original association of lingonberry with *P. ramorum*.
- To date, 157 *P. ramorum*-positive locations in 21 states have been identified via trace-forward, national, and other surveys. This total includes three residential finds (two in GA and one in SC) as well as one find in a natural setting in NY.

#### 7/04

- The California Association of Nurserymen (CAN) files a federal suit against Kentucky, charging the state with violating federal law by banning the importation and sale of California's *Phytophthora ramorum* host and associated plants. The lawsuit is based on a provision in the federal Plant Protection Act that gives the USDA authority over interstate plant movement. A federal district judge for the [Eastern District of Kentucky signs a consent decree](#) on 7/30 permanently enjoining Kentucky from having *P. ramorum* regulations that are inconsistent with the federal standard.
- The states of AK, AR, AZ, CA, LA, OK, and SD complete their *P. ramorum* National Nursery Survey sampling.
- [Mississippi updates its emergency P. ramorum regulations](#) on 7/9/04. The newly expanded regulation prohibits the importation of California, Washington, and Oregon *P. ramorum* host and associated plants at the genus level.

- The Canadian Food Inspection Agency's (CFIA) national survey for *P. ramorum* is underway. To date, survey results have identified 7 infected plants, including Viburnum, Arbutus, Rhododendron, and Camellia, at 3 facilities. One of the BC *P. ramorum*-positive nurseries shipped potentially infected plants to Washington (9 recipients), Oregon (4 recipients), and California (6 recipients); these shipments are being investigated. While both the North American (A2) and European (A1) *P. ramorum* mating types were found in BC during the national survey, only the North American type was potentially shipped to the US.
- [British Columbia conducts a recall](#) of *P. ramorum* host plants sold from retail centers that received trace-forward material from Monrovia Nursery. An estimated 50% of the plants sold were returned from private residences. Of the 1,400 plants recovered and sampled, 9 *Camellias* were found to be positive. CFIA estimates that an additional 1,500 plants are still unaccounted for in the greater Vancouver area.
- [Mexico is considering quarantining](#) Douglas-fir (*Pseudotsuga*) and fir (*Abies*) Christmas trees from areas with *Phytophthora ramorum* to prevent introduction of the pathogen into Mexico.
- The states of DE, FL, KY, LA, MS, and WV request a Special Needs Exemption from the current *P. ramorum* federal regulations. USDA APHIS denies the requests. Some states plan to appeal the decision.
- PPO *P. ramorum* National Nursery Survey sampling is complete in AK, AR, AZ, CA, IA, ID, LA, MO, OK, and SD; diagnostic results are pending. To date, participating states have surveyed 1,573 sites and have collected 31,230 samples; 18 sites have been confirmed positive.
- The first finding of *P. ramorum* in Switzerland is found in a Swiss Plateau nursery on a wilting viburnum plant.
- There currently are 147 positive *P. ramorum* confirmations in 21 states.

## 6/04

- The USDA Animal and Plant Health Inspection Service (APHIS) announces the regulation of *Camellia spp.* (including all species, hybrids, and cultivars) at the genus level.
- *Clintonia andrewsiana* (Andrew's clintonia bead lily), *Dryopteris arguta* (California wood fern), *Smilacina racemosa* (false Solomon's seal), and *Taxus brevifolia* (Pacific yew) are added to the *P. ramorum* associated host list.
- The [Oregon Department of Agriculture \(ODA\) adopts a temporary rule](#) calling for all Oregon growers and dealers of *P. ramorum*-susceptible plants to be annually inspected, tested, and certified free from the pathogen before host plants are allowed to be sold.

- Genotyping of *P. ramorum* isolates linked to the Monrovia infestation verifies the pathogen is the North American population type (A2).
- The [ODA adopts an emergency 90-day quarantine](#) for all nurseries and compost production facilities in Columbia County.

#### 5/18/04

- US Department of Agriculture Secretary Ann Veneman transferred \$15.5 million from the USDA Commodity Credit Corporation (CCC) to Plant Protection and Quarantine (PPQ), Animal and Plant Health Inspection Service (APHIS), to help halt the spread of *Phytophthora ramorum* to non-infested areas of the United States. When added to the \$2.5 million that APHIS has already provided for the national survey and the \$2 million of appropriated funds, the USDA PPQ has committed \$20 million to the program in fiscal year 2004. USDA PPQ will apply the funds to quarantine actions, nursery inspections, sampling and testing, and Sudden Oak Death education and outreach. The PPQ Western Region received more than \$12 million dollars; with nearly \$7 million going to support activities in California. The Eastern Region received \$2.5 million to support emergency actions and the national survey in states east of the Mississippi River. Additionally, nearly \$500,000 has been dedicated to laboratory diagnostics through the National Plant Diagnostic Network and other laboratories.
- *P. ramorum* is confirmed at a Columbia County nursery. The pathogen is recovered from a composite potting media sample taken from several plants in one hoop house. It is also confirmed on three rhododendron plants at a neighboring business. The plants had been donated to the business from the nursery.

#### 5/10/04

- North Carolina confirms a ninth *P. ramorum*-positive nursery. The find is on trace-forward plants from California's Monrovia Nursery.

#### 5/4/04

- A fifth retail nursery in Louisiana is found to have *P. ramorum* on Monrovia Nursery trace-forward stock.

#### 5/04

- *P. ramorum* is detected at a Pennsylvania nursery on a bonsai camellia house plant. The plant was from a San Diego County mail-order nursery.
- Twenty-five states have begun conducting National Nursery Survey activities. The 15 eastern states underway with survey activity are AL, CT, DE, FL, GA, KY, MD, MS, NJ, NC, RI, SC, TN, VA, and WV. The 10 western states underway with survey activity are AZ, AR, CA, ID, IA, LA, MO, OK, OR, and WA.

- West Virginia revises its *P. ramorum* quarantine, allowing nursery stock from certified nurseries to ship into West Virginia. Pre-notification of all nursery stock as well as non-host nursery stock certification are required.
- North Carolina and Oregon enact regulations that parallel the USDA Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ) emergency order for *P. ramorum*.
- Alabama detects *P. ramorum* in 3 nurseries.
- Arkansas detects *P. ramorum* in 1 nursery.
- A Columbia County, Oregon nursery is found to have *P. ramorum* on four rhododendron plants following a trace-back survey from a Maryland nursery found to have the disease in late April. Following delimitation surveys within and outside the nursery, *P. ramorum* was also recovered from the potting media of a single plant as well as three plants in nearby landscaping that were from the nursery.

#### **4/30/04**

- The USDA APHIS amends the *P. ramorum* Federal Confirmed Nursery Protocol of 4/7/04 pertaining to holding and stopping of nursery sales for nurseries that only state intrastate. Under the new amendment, nurseries that are found to be positive, and only ship intrastate, are only required to place host nursery stock on hold until delimitation within and outside of the nursery are complete.

#### **4/27/04**

- *Phytophthora ramorum* is confirmed at a Colorado nursery. The find is on a trace-forward stock from Monrovia Nursery.

#### **4/26/04**

- The week of 4/26 - Louisiana's ban on CA nursery stock now allows for the shipment of plant material from nurseries that have undergone sampling and testing according to the protocols outlined in the USDA APHIS April 22, 2004 Order and are certified to be free from *P. ramorum*. Prior notification of each shipment is to be provided to Louisiana Department of Agriculture and Forestry (LDAF), along with a copy of the Compliance Agreement between CDFR/USDA and the nursery.

#### **4/22/04**

- USDA APHIS issues an amended emergency order. The amended order restricts the movement of nursery stock from California nurseries, requiring nurseries that ship *P. ramorum* hosts or associated plants interstate to be inspected by a regulatory official, sampled, and tested for the disease before shipping. Until testing is complete and the nursery is found to be free from the pathogen, all out-of-state shipments of host nursery stock and associated articles, as well as plants within the same genus as any host or associated

article, and any plant located within 10 meters of a host or associated article, must remain on hold.

- A Butte County nursery in Chico is found to have *P. ramorum* during California's Statewide Detection Survey, part of the National *P. ramorum* Nursery Survey.

#### **4/19/04**

- A Stanislaus County nursery previously found to be infested with *P. ramorum* in 2002 is confirmed to have new *P. ramorum* -infected plants. The find came during California's Statewide Detection Survey.
- A Sonoma County nursery in Santa Rosa is confirmed to have *P. ramorum* on trace-forward stock from Monrovia Nursery.
- The Georgia Department of Agriculture verifies the presence of *P. ramorum* in eight more Georgia nurseries on camellias imported from Monrovia Nursery.
- The week of April 19th, *P. ramorum* samples from two Tennessee nurseries are confirmed positive. The infected plants originated from California. Tennessee is participating in the *P. ramorum* National Nursery Survey and will continue to monitor these sites.

#### **4/15/04**

- USDA Undersecretary Hawks hosts a National Association of State Departments of Agriculture meeting to discuss the Emergency *Phytophthora ramorum* Order in Riverdale, Maryland.
- *P. ramorum* is detected in one nursery in New Mexico. The plants are trace-forwards from Monrovia Nursery.

#### **4/13-14/04**

- The National Plant Board calls an emergency meeting at USDA Headquarters, Riverdale, Maryland to discuss the April 9 USDA APHIS PPQ *Phytophthora ramorum* order.

#### **4/9/04**

- The USDA Animal and Plant Health Inspection Service (APHIS) issues an [emergency order](#) restricting the interstate movement of hosts and associated plants from commercial nurseries in California located outside of the 12 quarantined counties. Nurseries wishing to ship hosts and associated plants must first be visually inspected and determined to have no evidence of *P. ramorum* infection before shipping can occur.
- Through the California Statewide Nursery Survey, a nursery in Linden, San Joaquin County, is found to have camellia plants positive for *P. ramorum*.

- *P. ramorum*-infected rhododendron plants were detected in a nursery in Livermore, CA (Alameda County) as part of a trace forward done from Monrovia nursery.
- *P. ramorum* is confirmed at a retail garden center in Virginia; the infected plants came from Monrovia Nursery.

#### 4/8/04

- [Oregon issues an emergency quarantine](#) of California nursery stock, prohibiting shipment of susceptible plant material unless the nursery or area from which it is grown has been inspected, tested, and found free of *Phytophthora ramorum*. Each shipment itself must also be inspected and found free of the pathogen before being allowed into Oregon. Soil must also be sterilized.
- [Alabama](#) updates its quarantine, removing Oregon, Washington, and British Columbia from their regulation. California remains banned from shipping into Alabama.

#### 4/6/04

- [Georgia verifies the presence of Phytophthora ramorum](#) at five of its nurseries on plants imported from Monrovia Nursery in California.
- [Washington issues an emergency rule](#) requiring susceptible species of nursery plants from California be inspected and issued a certificate confirming they are free of *Phytophthora ramorum* before shipment. A copy of the certificate must be sent to Washington regulatory officials prior to shipment.

#### 4/4/04

- A nursery in Lodi, San Joaquin County, is found to have *Phytophthora ramorum* on camellia and viburnum plants during inspection as part of the California Statewide Nursery Survey.
- CDFA issues a [Pest Exclusion Advisory](#) regarding shipments into California from other states and Canada, requiring all shipments containing *Phytophthora ramorum* hosts and associated plants to be visually inspected for *Phytophthora ramorum* symptoms upon arrival.

#### 4/2/04

- Florida confirms *Phytophthora ramorum*-infected camellias in two more nurseries that received shipments from Monrovia, bringing the total number of infested nurseries in Florida to five.
- A Napa County nursery is found to have *P. ramorum* -infected nursery stock that originated from Monrovia Nursery.

#### 4/1/04

- *P. ramorum* is found at a San Mateo County garden center and an Alameda County nursery. Both finds are on Monrovia Nursery trace-forward stock.
- A Santa Clara County nursery under a compliance agreement is found to have *P. ramorum* -infected plants that originated from Monrovia Nursery.

#### 4/04

- A nursery in Sonoma County is found positive for *P. ramorum* during its initial annual inspection. The inspection was the result of the nursery's interest in entering into a compliance agreement, allowing for shipment of *P. ramorum* host and associated host material out of the regulated area. The nursery had not shipped out of the regulated area before the inspection.
- It is announced that State and federal personnel will be conducting a survey in 37 states during the 2004 *P. ramorum* National Wildland Survey. The highest priority for survey sampling will be forests adjacent to nurseries that may have received infected CA nursery plants. The USDA Forest Service, Forest Health Protection is spending \$1,084,200 for the surveys, including an emergency supplemental allocation of \$530,000 for follow-up efforts on trace-forward surveys from infested CA nurseries.
- Formosa firethorn (*Pyracantha koidzumii*) is added to the *P. ramorum* associated host list, following a Canadian Food Inspection Agency (CFIA) find at a Vancouver area nursery. The infected nursery stock was detected as part of the Monrovia trace-forward inspections. If Koch's postulates results are positive for *P. ramorum*, Formosa firethorn will be transferred to the USDA APHIS regulated host list.
- Texas confirms the presence of *P. ramorum* at five nurseries on trace-forward stock from Monrovia.
- Louisiana confirms the presence of *P. ramorum* at four retail nurseries. The finds are trace-forward stock from Monrovia Nursery.
- The North Carolina Department of Agriculture and Consumer Services confirms the presence of *P. ramorum* at eight North Carolina nurseries. The infected plants were shipped from Monrovia Nursery.
- *P. ramorum* is confirmed on a rhododendron from a retail garden center in Maryland. The plant has been traced to a nursery in Columbia County, OR.

#### 3/31/04

- [Florida confirms that 3 of its nurseries](#), having received shipments from California's Monrovia Nursery, have *Phytophthora ramorum*-infected plants.

### 3/30/04

- [Indiana](#) quarantines all plants in the genera of host and associated host plants unless certified to be free from the pathogen.

### 3/29/04

- [Kentucky](#) issues a quarantine banning all plants and nursery stock from California. The ban includes soil and unprocessed wood or wood products.
- Virginia enhances their current inspection process, requiring nurseries to report receiving California shipments of *P. ramorum* regulated plant material, so that regulatory officials can conduct visual surveys for *P. ramorum* symptoms.

### 3/26/04

- [Montana](#) quarantines all hosts and associated plants from California; Curry County, Oregon; and Washington's King, Pierce, and Pacific Counties unless certified to be *Phytophthora ramorum*-free. Host and associated host plants originating from a nursery with a compliance agreement are able to ship. Prior notification of arrival must be given to the Montana Department of Agriculture.
- *P. ramorum* is confirmed at a Contra Costa County nursery and a San Mateo County nursery. The finds are on Monrovia Nursery trace-forward stock.

### 3/24/04

- [Alabama](#) updates its quarantine to prohibit shipments of soil, humus, compost, manure, and regulated host plants from California, Oregon, Washington, and British Columbia.

### 3/23/04

- [Louisiana](#) bans all California nursery stock shipments.
- West Virginia bans all plants and nursery stock from California as well as all soil and wood products.

### 3/19/04

- U.S. Department of Agriculture Plant Protection and Quarantine program announces a Sudden Oak Death (SOD) hotline (1-888-703-4457). Specialists are staffing the Animal and Plant Health Inspection Service Emergency Operations Center in Riverdale, MD to handle nationwide calls from the nursery and landscape industry, news organizations, and the general public in response to positive *Phytophthora ramorum* confirmations in two Southern California nurseries.

- Statewide *Phytophthora ramorum* Survey information is posted to the California Department of Food and Agriculture (CDFA) website at: [http://www.cdfa.ca.gov/phpps/pe/sod\\_survey](http://www.cdfa.ca.gov/phpps/pe/sod_survey), providing current information on California's *Phytophthora ramorum* nursery situation.
- [Tennessee](#) announces a ban on new imports of selected plant materials from California and halts the movement of susceptible nursery stock that may have already reached Tennessee nurseries and plant dealers.
- [Utah](#) prohibits incoming shipments of soil, humus, compost, manure, and 28 regulated host plants from California, Oregon, Washington, British Columbia, and all other areas found to have *Phytophthora ramorum*. This Prohibition is changed to include both hosts and associated hosts shortly thereafter.
- [Georgia](#) updates its quarantine, banning the 59 regulated and associated hosts instead of all nursery stock from California.

### 3/18/04

- [Florida](#) stops the importation of all plant nursery stock from California, as well as the sale of products that have already reached Florida nurseries.
- [Mississippi](#) announces a quarantine of all *Phytophthora ramorum* host plants into Mississippi from California.
- [Delaware](#) quarantines shipments of all regulated and associated *Phytophthora ramorum* host plants that originate from and/or are shipped from California. Nurseries within Delaware that have received shipments of nursery stock from California are prohibited from selling, moving, or transporting this material until being released from Plant Industries, Delaware Department of Agriculture.

### 3/17/04

- The [Alabama](#) Department of Agriculture issues a stop sale of certain camellia plants that have been shipped to Alabama from California.

### 3/15/04

- [Georgia](#) issues a quarantine against all nursery plants from California.

### 3/12/04

- *Phytophthora ramorum* is confirmed via culture and PCR at Specialty Plants Inc., San Marcos, California. The survey was part of the California's National *Phytophthora ramorum* nursery survey.

### 3/10/04

- [Washington issues an emergency order](#) requiring nurseries receiving trees and plants from out-of-state to hold them for 24 hours until the state Department of Agriculture is notified.

### 3/8/04

- *Phytophthora ramorum* is confirmed on several varieties of camellia at Monrovia Nursery, Azusa, California. The nursery was surveyed as part of the National *Phytophthora ramorum* Survey.

### 3/4/04

- The Oregon Department of Agriculture confirms the presence of *P. ramorum* in nine nurseries on trace-forward Monrovia Nursery Stock.
- Three Alameda County nurseries are confirmed to have *P. ramorum*-positive Monrovia trace-forward stock.

### 2/27/04

- The Oregon Department of Agriculture (ODA) finalizes an interim rule requiring recipients of out-of-state tree and shrub nursery stock deliveries to notify ODA of the shipment within 24 hours for possible inspection of the plants.

### 2/23/04

- Several varieties of *Camellia japonica* and *Kalmia latifolia* plants at a nursery in Sonoma County were found to have *Phytophthora ramorum*. The infected plants were detected as part of a routine quarantine inspection required for all nurseries moving host plants out of the regulated area.

### 2/17/04

- *Phytophthora ramorum* is detected on five, 5-gallon containerized *Camellia japonica* "Shiro Chan" plants at a wholesale nursery in San Mateo County. The infected plants were detected as part of a routine quarantine inspection required for all nurseries moving host plants out of the regulated area.

### 2/04

- The Gig Harbor Washington nursery found to have *Phytophthora ramorum* in December 2003 is found to have new infections on fifteen variety blocks of camellia. Two of the recently identified infected variety blocks were received in October and November, 2003, from California nurseries outside of the *Phytophthora ramorum* quarantine area. These new finds were not detected until early 2004 and were not located near the other infected blocks.

## 1/28/04

- The California Oak Mortality Task Force offers its first *Phytophthora ramorum* nursery training session in Watsonville, CA. A January 2004 draft California *Phytophthora ramorum* nursery [diagnostic guide](#) is distributed.

## 1/04

- [Phytophthora ramorum a guide for Oregon nurseries](#), by J. Parke, J. Pscheidt, and R. Linderman is published by Oregon State University Extension Service.
- *Camellia sasanqua* and *Camellia japonica* plants at a Marin County nursery are found to have *Phytophthora ramorum*. The nursery had also been found to have infected plants the previous spring.
- The Washington State Department of Agriculture (WSDA) detects *Phytophthora ramorum* in a third Washington nursery near Long Beach, Pacific County. The positive *Rhododendron* v. Unique finds came as the result of a trace-back survey from a King County Washington nursery found to have *Phytophthora ramorum* in fall, 2003.

## 12/03

- As a result of the National *Phytophthora ramorum* Nursery Survey, a retail nursery in Gig Harbor, Pierce County, Washington, is found to have *Phytophthora ramorum*-infected host plants.

## 11/03

- CDFA's revised enforcement guideline policy for California's *Phytophthora ramorum* regulation goes into effect. The revisions allow unrestricted movement of host plants and most nursery stock within the 12 regulated counties. Nurseries within the regulated area shipping out of the regulated area continue to be inspected, and infected nursery stock still cannot be shipped.

## 10/03

- California, Oregon, Washington, the United States Department of Agriculture (USDA), and Canada agree to [protocols for nursery delimitation](#), eradication, post-treatment monitoring, investigations of sources of infected plants, and notification. The plan will be used by USDA Animal and Plant Health Inspection Service (APHIS) and the states to respond to new *P. ramorum* nursery detections (outside of California's 12-county regulated area) as guidance for the federal *Phytophthora ramorum* quarantine.

## 9/03

- Canada releases the [9th revision](#) of its *P. ramorum* regulations

- *Phytophthora ramorum* was detected on two, 5-gallon *Camellia sasanqua* "Showa-no-Sakae" plants at a retail nursery in Placer County. The finding came as the result of a trace-forward survey being conducted to locate infected varieties of camellia from an infested Stanislaus nursery. The Placer County shipment was received in March, 2003.

### 8/03

- The [Oregon Department of Agriculture \(ODA\) adopts an emergency rule](#) that requires all recipients of out-of-state tree and shrub nursery stock to notify ODA of the shipment for possible inspection of the plants. The requirement is in response to several instances of *Phytophthora ramorum*-infected nursery stock entering Oregon this year.
- Plants from a nursery in Oregon and its sister nursery in Washington are found to have both the North American *Phytophthora ramorum*, A2 mating type, and the European *Phytophthora ramorum*, A1 mating type. This is the first report of the European A1 mating type in the United States. It is also the first time both mating types have been found in close proximity to one another in the U.S. All plants sold from the Oregon nursery are traced down, confiscated, and destroyed.

### 7/03

- The Oregon Department of Agriculture (ODA) recalls camellia plants sold in retail nurseries in Oregon that may have been infected with *Phytophthora ramorum*. A trace-back survey identifies an infested nursery in Stanislaus County, California, as the location from which the camellias originated.
- CDFA issues a [Pest Exclusion Advisory](#) requiring incoming shipments of *Phytophthora ramorum* hosts and associated plants from Oregon, Washington, and British Columbia to be visually inspected by California county inspectors at the destination location before being released for sale.

### 6/03

- *Phytophthora ramorum* is detected on *Camellia sasanqua* container plants at two nursery locations in Jackson County, Oregon, as the result of trace-forward information received from CDFA. The plants originated from an infested nursery in Stanislaus County, CA.
- *Phytophthora ramorum* is detected on rhododendron container plants at a nursery in King County, Washington. This is the first detection of *Phytophthora ramorum* in Washington State.
- *Phytophthora ramorum* (European, A1 mating type) is detected on a rhododendron container plant at a nursery in Greater Vancouver, B.C.
- The Czech Republic imposes a quarantine for *Phytophthora ramorum*-susceptible plants from the U.S., Germany, and The Netherlands.

- *Camellia sasanqua* at a Sacramento County nursery is found to have *Phytophthora ramorum*. It is intercepted via a trace-forward.

### 5/03

- *Phytophthora ramorum* is confirmed on containerized *Viburnum bodanantense*, *Pieris japonica*, *Pieris japonica x formosa*, *Viburnum plicatum tomentosum*, and *Rhododendron 'Unique'* at a nursery in Clackamas County, Oregon.
- *Camellia sasanqua* "Bonanza" plants from a wholesale nursery in Stanislaus County are found to have *Phytophthora ramorum* as the result of a trace-back survey from a Santa Cruz County nursery found positive for the pathogen in April.

### 4/03

- A rhododendron shipped from a Santa Cruz County nursery to a Berkeley nursery in Alameda County tests positive for *Phytophthora ramorum*. It was one of five rhododendrons and three camellias shipped to Berkeley. Alameda County inspectors detected the symptomatic leaves the day the shipment arrived.
- The first report of *Phytophthora ramorum* on *Camellia japonica* and *Viburnum tinus* in the U.S. is confirmed at a nursery in Marin County. The portion of the holding area where the symptomatic material was detected is adjacent to a stand of *Phytophthora ramorum*-infected California bay laurel trees.
- A 5-gallon *Camellia sasanqua* "Bonanza" tested positive for *Phytophthora ramorum* at a nursery in Soquel, Santa Cruz County. The symptomatic plant material was detected during an annual inspection. A trace-back survey found that the infected camellia was shipped from a nursery in Stanislaus County.
- The United Kingdom has 264 *Phytophthora ramorum* outbreaks recorded on *rhododendron* (7 species), *viburnum* (11 species), *Camellia japonica*, *Kalmia latifolia*, *Pieris japonica*, *Pieris Formosa* var. *forestii*, *Arbutus*, and *Syringa*. Some of the findings have been in large gardens open to the public and associated with plant nurseries or garden centers. An intensive survey is ongoing.

### 12/02

- *Phytophthora ramorum* is isolated from over 150 nurseries in the United Kingdom. France, Belgium, The Netherlands, Sweden, Germany, and other European countries also report widespread nursery infestations.

### 11/02

- The European Union issues regulations for *Phytophthora ramorum* to prevent pathogen spread within the Union and importation of the North American genotype and A2 mating type.

## 10/02

- The Canadian Food Inspection Agency adds a certification program to their *Phytophthora ramorum* regulations allowing shipments of field-grown plants into Canada from uninfested counties of California following inspection.

## 9/02

- Australia introduces regulations preventing the import of host species from countries known to have *Phytophthora ramorum*.
- The California Oak Mortality Task Force establishes a Nursery Subcommittee for all interested industry members to use as a forum for coordinating *Phytophthora ramorum* efforts.

## 5/02

- The United Kingdom bans imports of plants and wood from infested counties in California and Oregon to prevent spread of *Phytophthora ramorum*.

## 3/02

- *Phytophthora ramorum* is officially linked to Sudden Oak Death in Plant Disease 86: 205-214. 2002. *Phytophthora ramorum* as the cause of extensive mortality of *Quercus* spp. and *Lithocarpus densiflora* in California. D.M. Rizzo, M. Garbelotto, J.M. Davidson, G.W. Slaughter, and S.T. Koike.

## 2/02

- 2.27.2002 – The first of two public hearing on California's interim APHIS Sudden Oak Death regulations is held in Petaluma, CA. The second hearing was held shortly after in Riverdale, MD.
- 2.14.2002 - USDA APHIS releases interim [federal regulations](#) that will oversee interstate movement of *Phytophthora ramorum* host material from the California counties known to be infested.

## 8/01

- South Korea imposes a *Phytophthora ramorum* quarantine on infested counties in California and Oregon prohibiting the importation of known host species.

## 7/01

- Oregon discovers *Phytophthora ramorum* infesting 40 acres in Curry County.

## 5/01

- The California Department of Food and Agriculture enacts emergency regulations, requiring permits to be issued by an authorized agricultural

official before moving *Phytophthora ramorum* host plants or materials within or from infested areas.

#### 4/01

- The new *Phytophthora* is formally named *Phytophthora ramorum* in Mycological Research 105(10): 1155-1165. 2001. *Phytophthora ramorum* sp. nov: a new pathogen on *Rhododendron* and *Viburnum*. Werres S., R. Marwitz, W.A. Man in 't Veld, A.W. De Cock, P.J.M. Bonants, M. De Weerd, K. Themann, E. Ilieva, and R.P. Baayen.

#### 3/01

- Canada issues a quarantine against California for the new *Phytophthora*.
- Oregon's emergency quarantine becomes permanent.

#### 1/01

- The new *Phytophthora* associated with dying oaks is recovered from rhododendron container plants in a Santa Cruz nursery.
- Oregon bans the new *Phytophthora*'s host plants and other plant products coming from California unless they have been treated. This emergency rule applies for 90 days.

#### 11/00

- Clive Brasier, UK Forestry Commission, recognizes that an unknown *Phytophthora* from rhododendron in Germany and the Netherlands, that had been originally isolated in 1993-94, appears identical to the new *Phytophthora* isolated from dying oak trees in CA.

#### 7/00

- U.C. researchers identify the cause of Sudden Oak Death to be a previously unknown *Phytophthora* species.

#### 1995

- Arborists, urban foresters, and others begin to report unusual tanoak mortality and symptoms, including bleeding cankers and rapid crown color change from green to brown in a few weeks.