

Phytophthora ramorum **Regulations,** **Survey and Response**

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National *Phytophthora ramorum* Program

**United States Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine**

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Overview

- Regulation of *P. ramorum*
 - *Federal domestic*
 - *Federal Import*
 - *US Exports*
- Surveys – Detecting *P. ramorum* in
 - Nurseries and residences
 - Woodlands
- Response protocols – Actions taken when found in
 - Nurseries
 - Residences
 - Woodlands

Federal *P. ramorum* quarantine program goals

- Prevent the artificial spread of *P. ramorum*
- Take the least restrictive action necessary
- Determine the nationwide status of disease
- Keep the regulations current with the science and risk
- Identify where infected items have come from and went to
 - Clean up any detected infested nursery growers and dealers

***P. ramorum* Program Timeline**

1993/95 – First observations in California & Europe

2000 – PPQ first involved

2001 – 1st Oregon find, State and Foreign quarantines imposed

2002 – PPQ quarantines 10 California counties and part of Curry County, Oregon

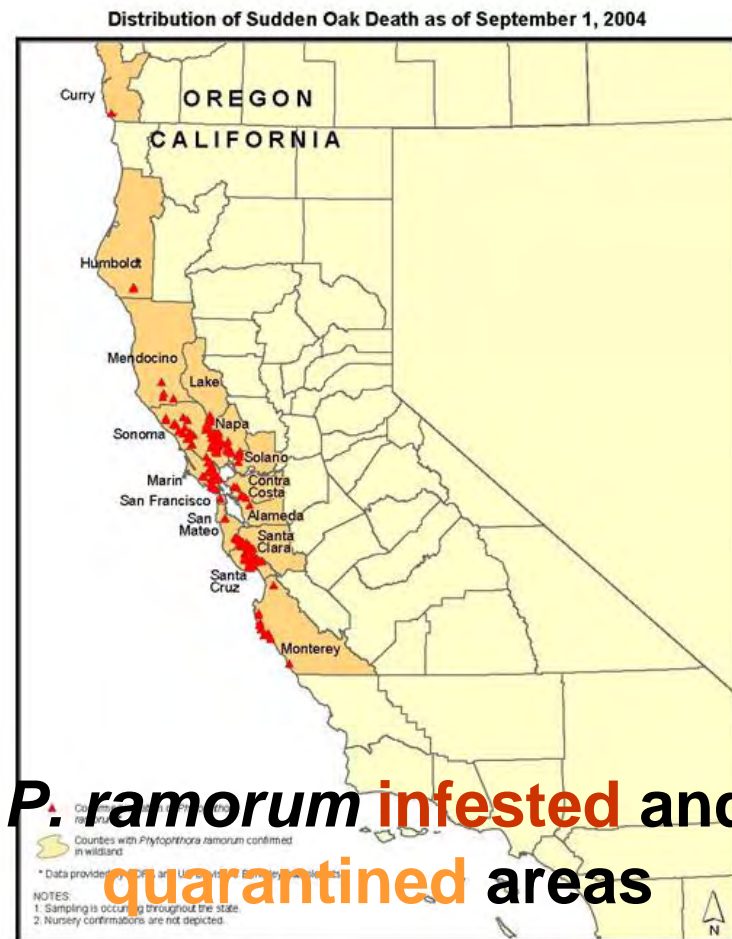
2003 – Numerous finds in EU, EU regulated by PPQ; Nursery finds in CA, OR, WA and BC, Canada

2004 – US nursery “outbreak”, 176 nurseries with *P. ramorum*; Federal Order issued on three states

2005 - 99 nursery finds in 2005

2006 - Finds in CA, OR, WA & FL

P. ramorum **quarantined** and
regulated (nurseries only) areas



Map from www.suddenoakdeath.org
Kelly, UC-Berkeley





APHIS Federal Order

Phytophthora ramorum regulations on nurseries in California, Oregon and Washington

Signed 21 December 2004 – Effective 10 January 2005

Rationale: During 2004 production nurseries on the West Coast outside the quarantine area were found infested with *P. ramorum*.

Regulates: Movement of nursery stock from nurseries in all of California, Oregon, and Washington to mitigate the potential of *P. ramorum* infected stock being shipped.

Nurseries with hosts and associated plants: Must be inspected, sampled, tested and found free of *P. ramorum* as a condition to ship interstate.

Nurseries with "non-hosts": Must to be visually inspected for *P. ramorum* as a condition to ship interstate. Allowances are made for dormant stock.

Duration: The requirements for certified movement of hosts and associated plants and the annual inspections are to continue for three years, subject to review and revision.



USDA, APHIS, PPQ Jan 2005

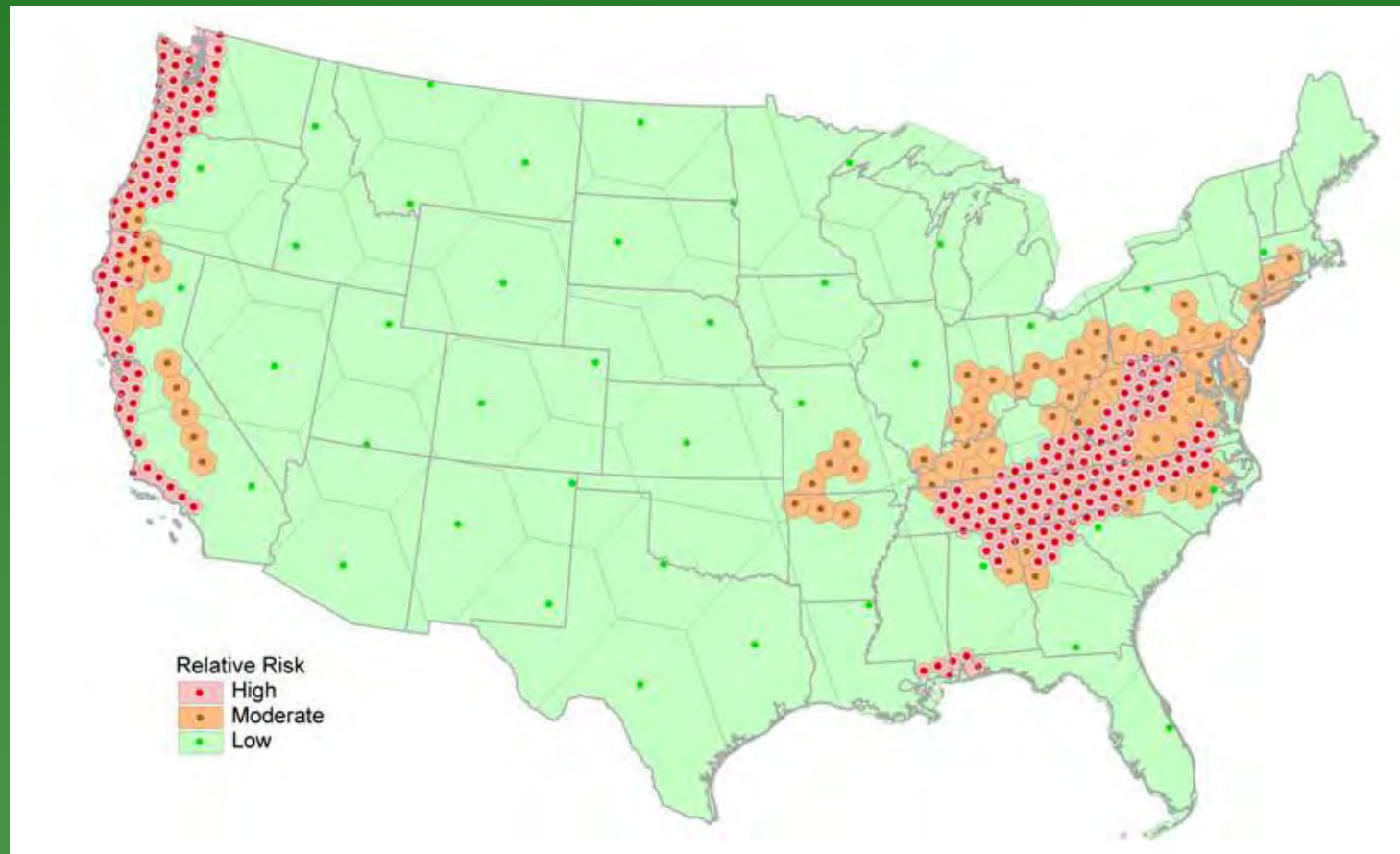


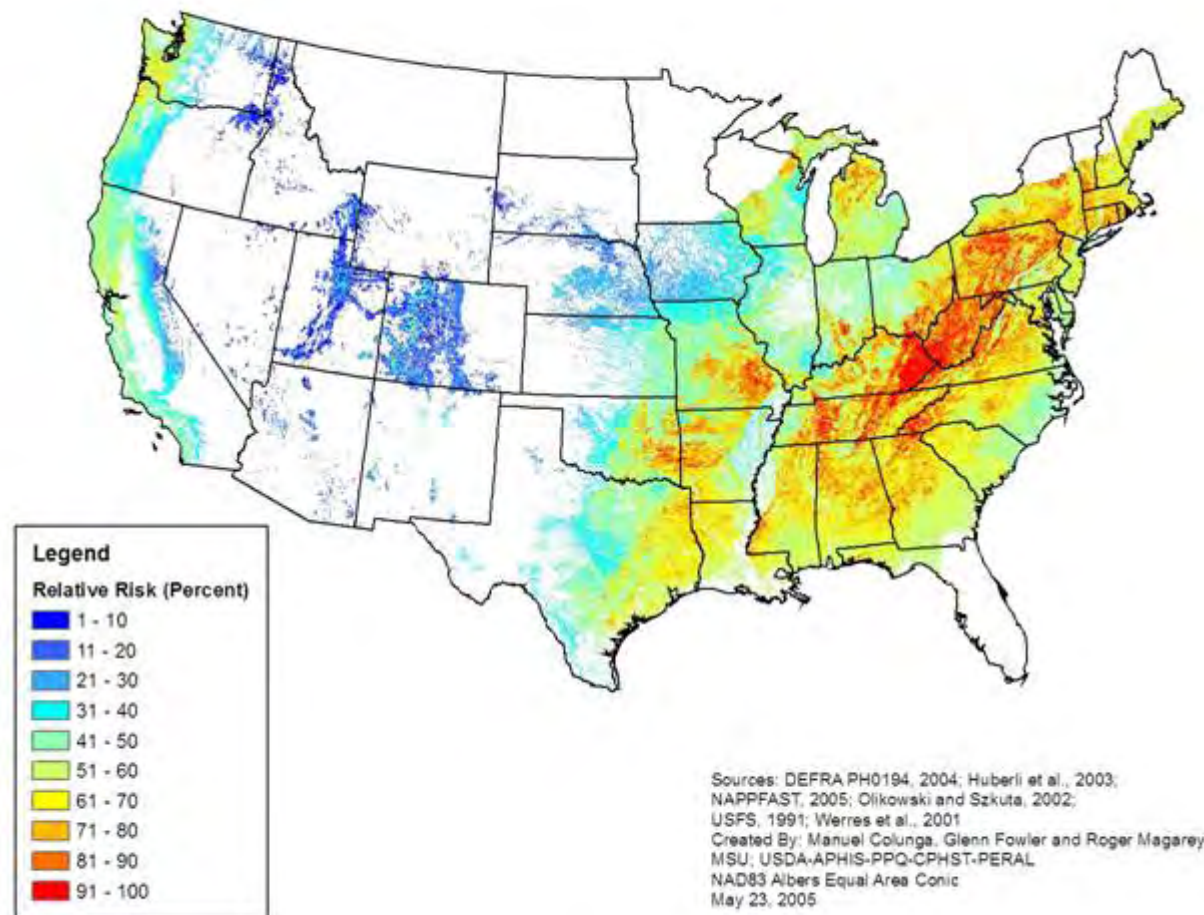
Yellow are regulated counties
Only nursery stock is regulated

Orange are quarantine
(infested) counties
Nursery stock and articles
presenting a risk of spreading
P. ramorum are regulated

Article	Action	Criteria
Areas of CA, OR, WA not infested	Regulated	Certain nurseries inspected and tested
Infested areas	Quarantine	14 CA and 1 OR (partial) counties
Nursery Stock	Regulated	Annual inspection & test; Shipment inspection (subject to testing)
Wood	Regulated	Must be bark free
Forest stock & Bark	Prohibited	
Soil	Prohibited	NS must be free of duff, Contaminated soil must be treated
Redwood & Doug fir	Prohibited	Only sprouts, twigs, needles
Wreaths & greenery	Regulated	Hot water dip or heat treat bay lvs

Survey – What areas are at risk?





Survey – Nurseries

- Have had surveys – national in scope – starting 2002
- Target nurseries with hosts; recipients from risk areas
- Surveyed perimeters 2002-2005
- Survey at best time to find - in the spring
- Sampling and testing by protocol
- Cooperative effort with States
- “Results” in late 2003, 2004, 2005 and 2006



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Photo: Jonathan Jones, APHIS, PPQ

Response in a nursery

When confirmed positive find, the Confirmed Nursery Protocol invoked; calls for:

- Holds
- Delimiting of entire nursery w/ inspection of all blocks; testing of soil and water
- Destruction of infested block
- Monitoring
- Release with follow up surveys



P. ramorum CSREES PRED* Program

- Early in 2004 CSREES worked with APHIS, Forest Service, States and COMTF to develop outreach program with training
- Embraced as resource effective manner to deal with public and yard plantings
- Training presented in October of 2004
- Ongoing in many states with active outreach activities
- Good web presence with a number of resources
- <http://www.ncpmc.org/sod/>

*PRED = *P. ramorum* Educate to Detect program

Response at a residence

When confirmed positive find, the Residential Protocol invoked; calls for:

- Limiting use of immediate area
- Delimiting of area and testing of soil and any water downslope
- Destruction
- Release with follow up surveys



Photo: University of Delaware



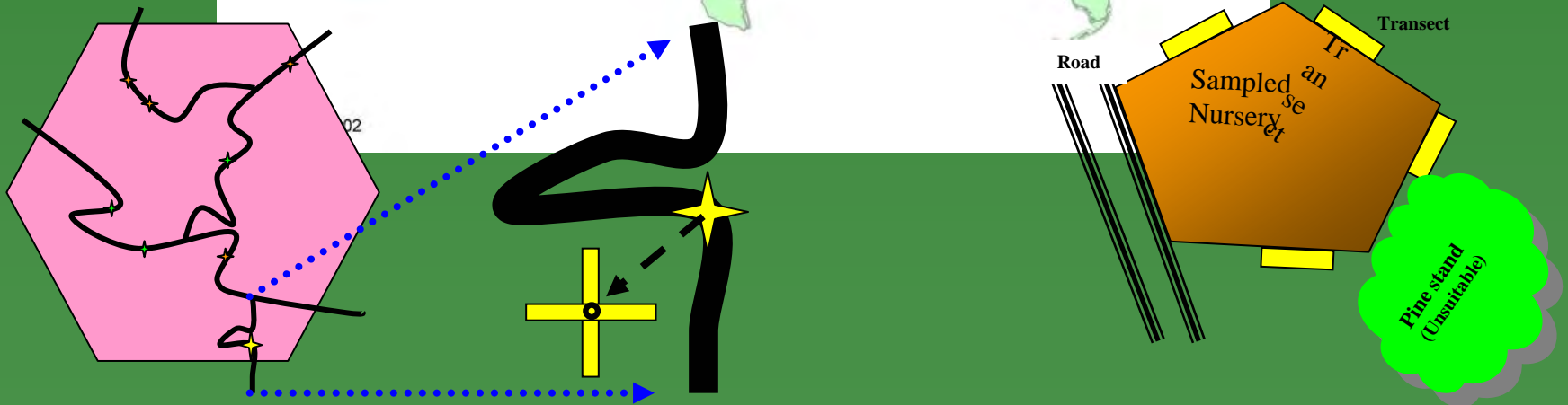
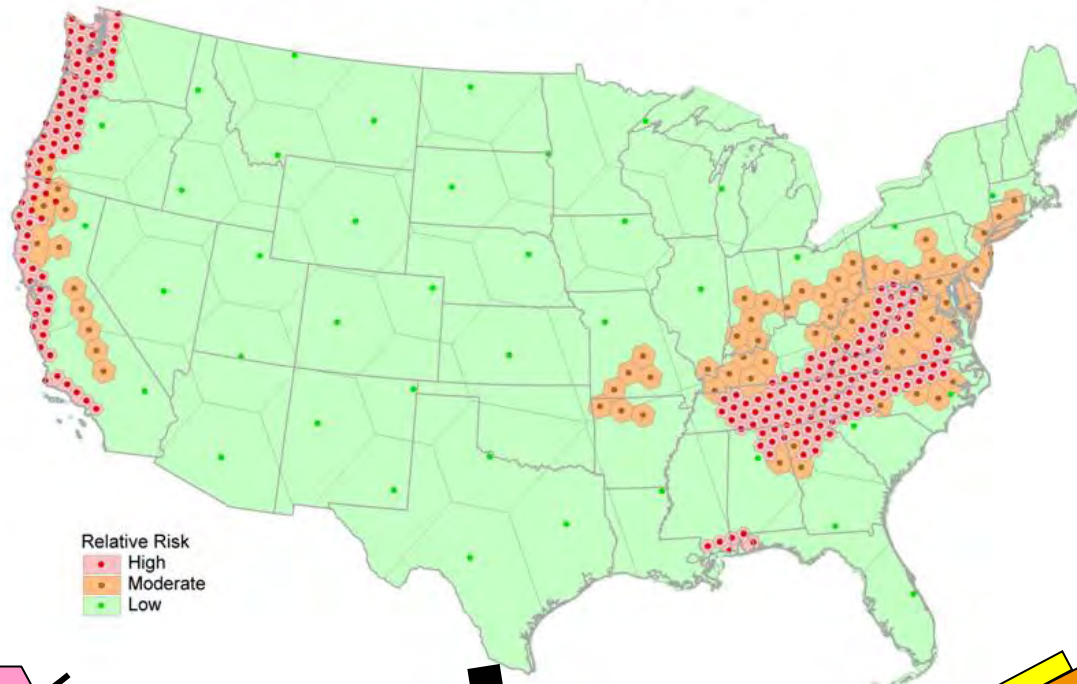
Survey – Woodlands



- Have had risk-based surveys outside California starting 2001
- Target woodlands with hosts with supportive climate
- Surveyed woodlands of nursery perimeters since 2002
- Surveys timed in the spring, south to north
- Sampling and testing by FS protocol on web
- Results in 2004 with detection in San Francisco wooded area – resulting in new county under quarantine
- Cooperative effort with State Foresters
- Piloting stream baiting 2006 – more sensitive and cost effective?



Preliminary SOD Risk/Hazard Map



Response in a Woodland

When confirmed positive find, the Forest and Wildlands Protocol invoked; calls for:

- Limiting use of immediate area
- Delimiting of area and testing of soil and water
- Options for the State – Eradication, Containment or Management
- Monitoring
- If and when eradicated, release with follow up surveys



Photo JJones, Marriottsville, MD



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Photo: Everett Hansen, Oregon State University

P. ramorum infested and
quarantined areas, also
showing management and
eradication areas

Map from www.suddenoakdeath.org
Kelly, UC-Berkeley



Map produced on 09/01/04 by UCB CAMFER: <http://kellylab.berkeley.edu/SODmonitoring/>
For more information about Sudden Oak Death, please visit the California Oak Mortality Task Force website at <http://www.suddenoakdeath.org>



US IMPORT REGULATIONS:

- APHIS is regulating host and associated plant nursery stock from the EU (Emergency Regulations)
- An Interim Rule is in process
- Reported from: Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Slovenia, Spain, Switzerland, Sweden, & United Kingdom.

US Export Restrictions

2001 – Canada regulates California, Germany and Netherlands;

South Korea regulates California

2002 – EU restricts host shipments from quarantined area

2003 - Australia, New Zealand and Czech Republic
(nursery stock & wood)

2005 – Mexico (Xmas trees)

2006 – Taiwan

For More Information - APHIS web site:
<http://www.aphis.usda.gov/ppq/ispm/pramorum/>



NPB, CSREES, COMTF, and FS web sites:
www.nationalplantboard.org, www.ncpmc.org/sod/
www.suddenoakdeath.org, & www.fs.fed.us/



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