

**Sudden Oak Death and  
*Phytophthora ramorum* Workshop:**

**A Forestry Perspective...**

**Steve Jeffers**

Dept. of Entomology, Soils, & Plant Sciences  
Clemson University – Clemson, SC



# Introduction & Disclaimer

- These remarks are not exclusively my own
  - represent those from a group of forest health experts
  - Regulatory Working Group Report was shared with the NORS-DUC Forestry Committee
  - providing detailed written comments
- Primary objective:
  - initiate conversations among the people and agencies present here that lead to a better and stronger system to protect forests in the USA and worldwide from *P. ramorum* and other invasive, exotic pathogens

# Thanks!

- I appreciate
  - the excellent turnout of key personnel
  - support of the Continental Dialogue/TNC
  - assistance of RESOLVE in organization
- I hope this workshop will help to
  - improve lines of communications between APHIS, NPB, states, and the Forest Service
  - incorporate forestry concerns into the *P. ramorum* regulatory process
- *Remember: We all are on the same team!*

# Why are we here today??

- *P. ramorum* does **not** pose a new primary threat to plants in nurseries or to the nursery industry
  - at least 10 other species of *Phytophthora* are known to attack ornamental plants in nurseries and landscapes
  - some much more damaging than *P. ramorum*
- But, container-grown nursery plants provide the avenue for introducing *P. ramorum* into the natural ecosystem

# *Phytophthora ramorum* National Regulatory Program Review 15-16 Dec 2009

## Vision Statement

“The program will take a proactive approach to protect native biodiversity, wild lands, and managed landscapes from *Phytophthora ramorum* through a system of voluntary and mandatory (best management practices) approaches focused on critical control points.”

# Why me??

- Current position:
  - Research & Extension responsibilities for diseases of ornamental plants in nurseries, greenhouses, and landscapes in South Carolina
  - Diseases of urban and forest trees in SC
- Studied *Phytophthora* spp. for 30+ years
  - specializing in detection and identification
- Worked on *P. ramorum* in the southeastern USA since 2004 – surveys, detection, ID
  - collaborating with USDA-APHIS and USDA-FS

# An Inherent Problem in Regulating Spread of Forest Pests

- APHIS has the authority & responsibility to regulate plant pests in the USA
- Most efforts focus on agricultural commodities – which are moved interstate
- Forests are stationary – with pests moving into them
  - destroying contaminated plants, when necessary, becomes a problem!
- The regulatory needs of stationary forests are different from those of mobile agriculture



## *Phytophthora ramorum*: Threat to eastern forests?

This question has been asked –  
more frequently in recent years.  
Some assume the answer is "NO".  
Are we ready to take this chance??

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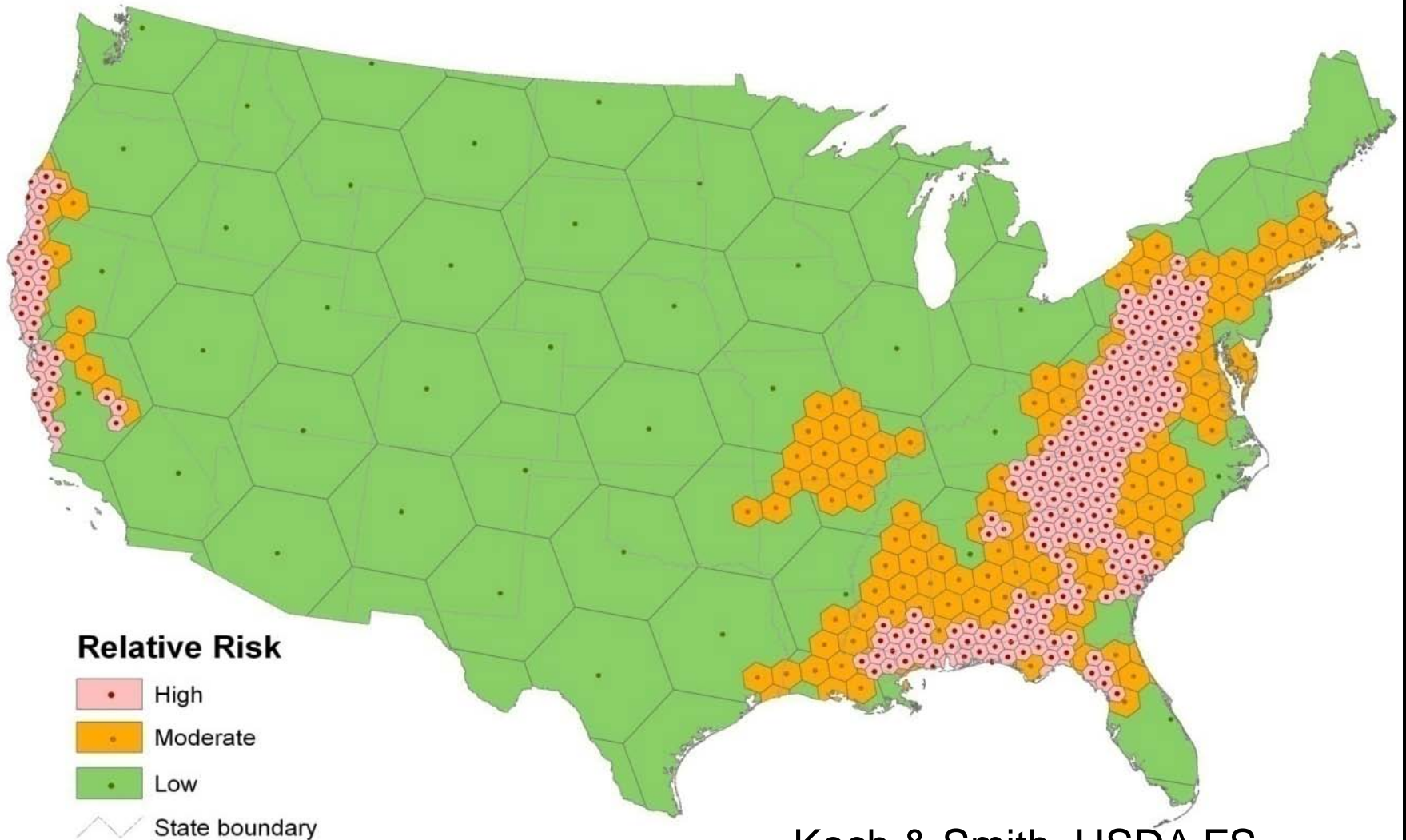
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# USDA Forest Service *P. ramorum* Risk Map



Koch & Smith, USDA FS



**Sudden oak death in tanoak: Austin Creek State Recreation Area;  
Sonoma County, CA.**

Photo courtesy of the California Oak Mortality Task Force

Redwood – tanoak – Douglas fir forest

Mt. Tamalpais, Marin Co., CA;  
Marin Municipal Water District Photo

08/09/2006

Distribution:  
*Rhododendron catawbiense* Michx. ***Rhododendron catawbiense***

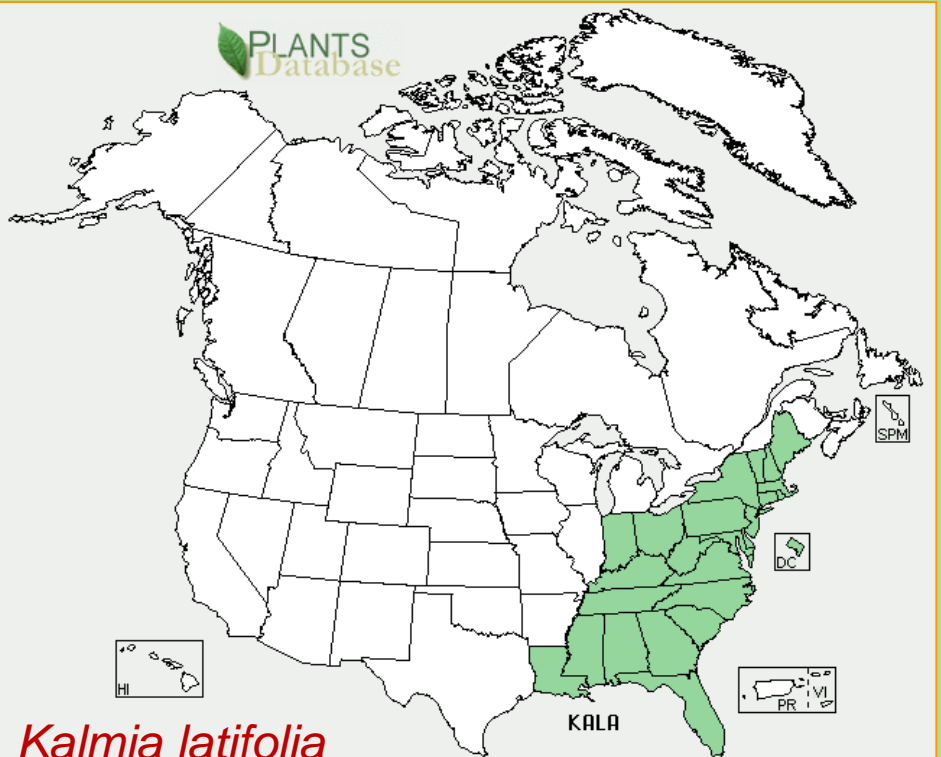
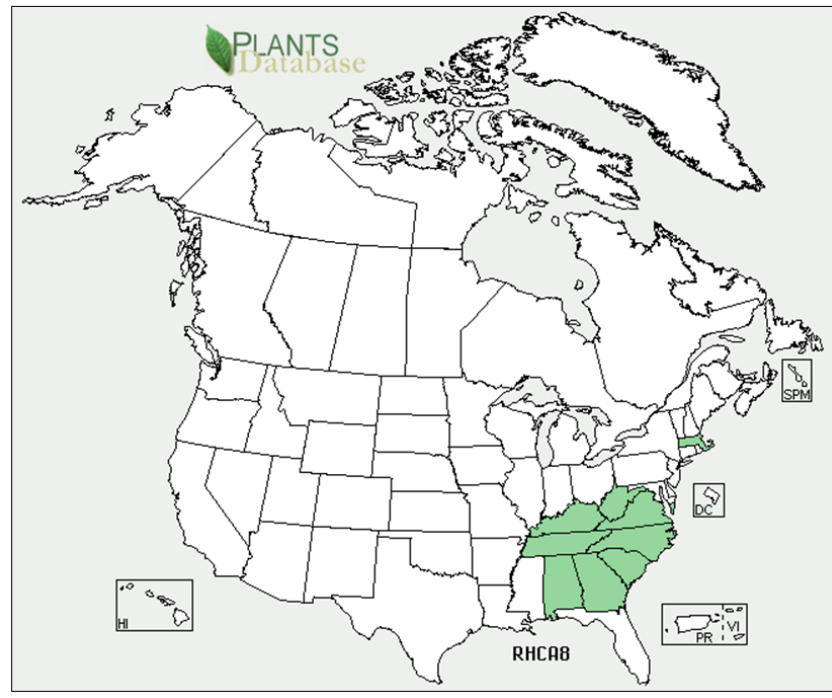
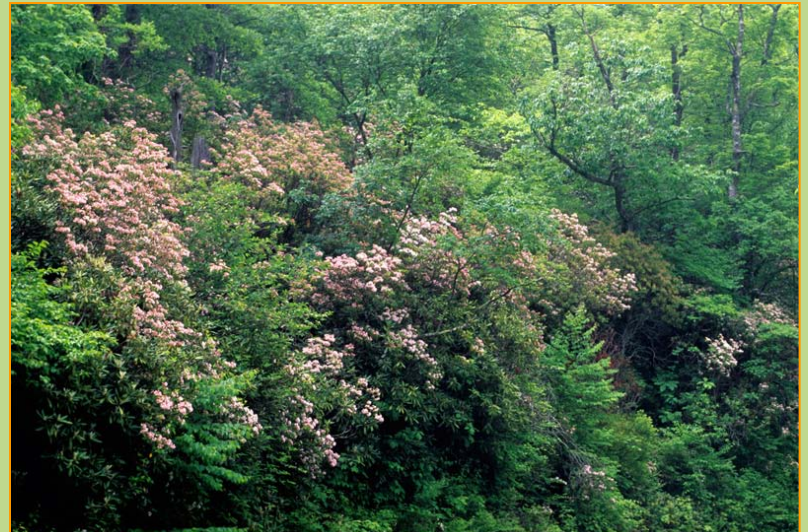
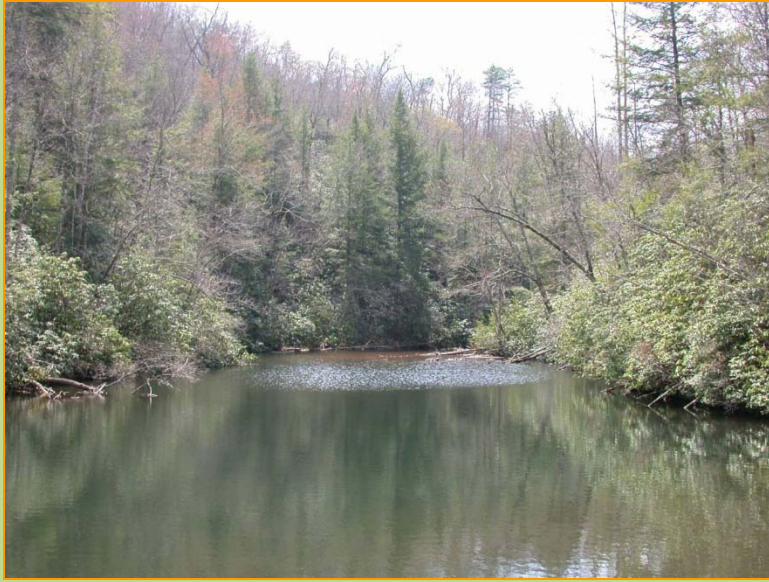


Photo: Wikipedia commons

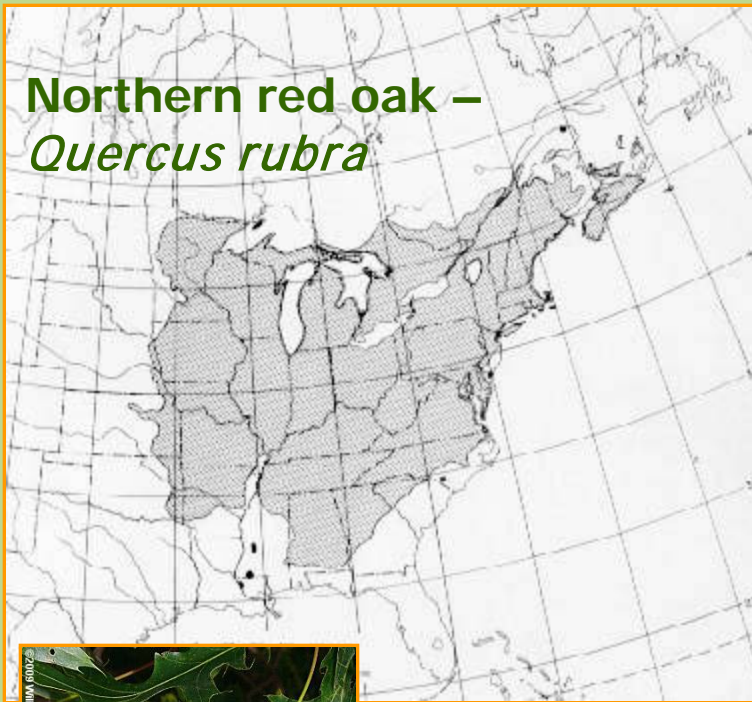


Gary Kaufman photo, Allegheny NF. Pennsylvania

# Native Flora in Western NC Forests



**Northern red oak –  
*Quercus rubra***



**Tree hosts of *P. ramorum***

- Northern red oak, *Q. rubra*
- Southern red oak, *Q. falcata*
- Magnolias
- Beech, *Fagus* spp.
- Birch, *Betula* spp.

**EU-RAPRA Database: Natural infections**

Reporting Country	Host (cultivar/hybrid) / common name / taxonomic family	Situation	Symptoms	First discovery or subsequent record	First record type	Reference
	<i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor	chlorotic leaves, leaf spot, leaf spot	Subsequent report	-	PHSI.
2288	UK (England & Wales) <i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor		Subsequent report	-	Personal communication from CSL.
2295	UK (England & Wales) <i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor	chlorotic leaves	Subsequent report	-	PHSI
2286	UK (England & Wales) <i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor	chlorotic leaves	Subsequent report	-	PHSI
2296	UK (England & Wales) <i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor	chlorotic leaves, leaf spot	Subsequent report	-	PHSI; 55303/2013
1600	UK (England & Wales) <i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor	Spots on leaf	Subsequent report	-	Defra PHSI survey DOM 53618/2020/2/1
2297	UK (England & Wales) <i>Magnolia species</i> cv Not applicable Magnolia Family:Magnoliaceae	Outdoor	leaf necrosis	Subsequent report	-	PHSI

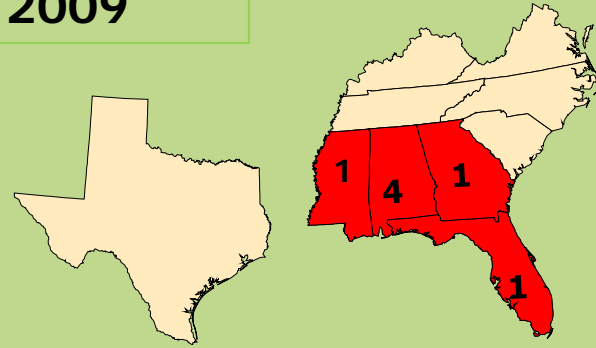
# *P. ramorum* in Streams: A Potential Pathway for Spread into Eastern Forests

## Streams in southeastern USA by state in which *P. ramorum* has been detected by year

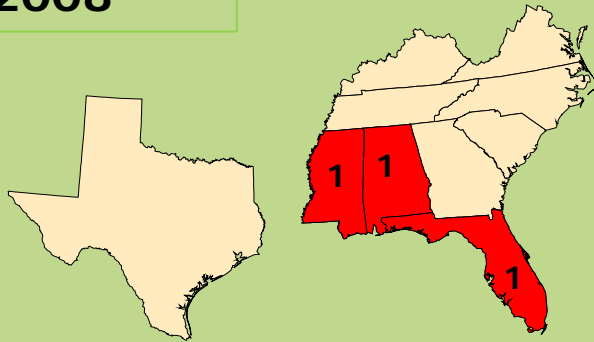
2007



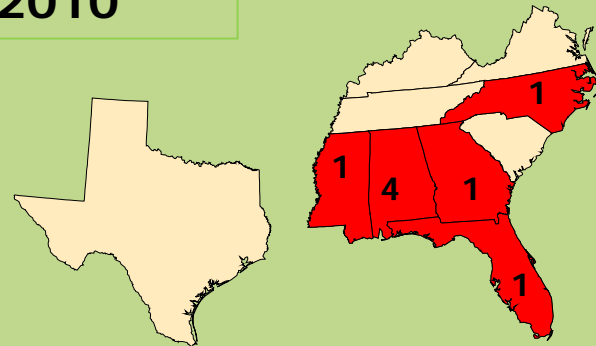
2009



2008

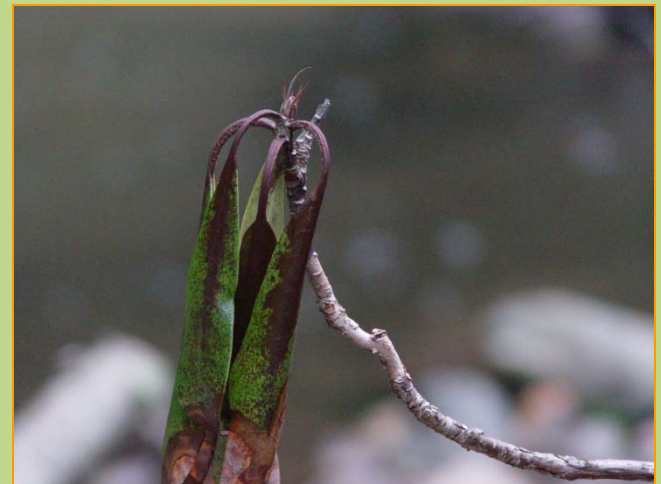


2010



# Infection of streamside plants in western North Carolina:

*P. citricola*, *P. heveae*, *P. pseudosyringae*





# *P. ramorum* has jumped from a stream to streamside salal plants in Washington



Courtesy of Gary Chastagner, WSU

*P. ramorum* detection  
off-site on salal –  
Pierce County, WA  
August 2009



# Surprise!!



**Figure 1:** Damage across a block of mature *L. kaempferi*, Somerset, April 2010

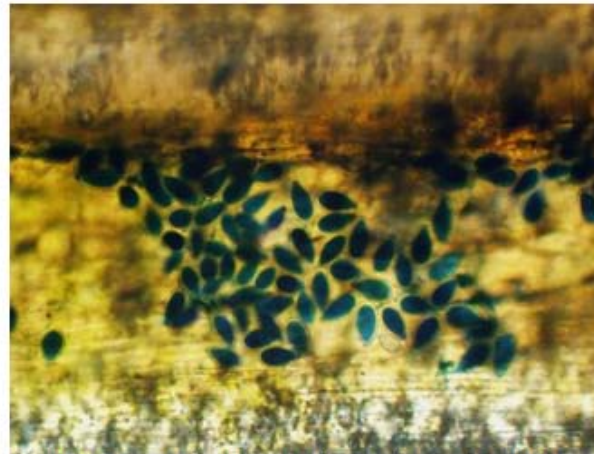


**Figure 2:** Crown dieback and mortality of mature *L. kaempferi*, Cornwall, September 2009

Aerial dissemination:  
Another possible avenue of spread...



**Figure 3:** Purple to black lesions on naturally infected needles, Cornwall, September 2009



**Figure 4:** Sward of sporangia on the surface of a young needle of *L. kaempferi* seven days after dipping in a suspension of *P. ramorum* zoospores

*P. ramorum* on Japanese larch, *Larix kaempferi*, in the UK: 2009

Webber JF, Mullett M, Brasier CM, 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]



# *Phytophthora ramorum*: Threat to eastern forests?

**YES!**

The threat is real and  
justified!!

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[/www.hort.uconn.edu/plants/](http://www.hort.uconn.edu/plants/)

# Regulatory Concerns

- Withdrawal of response protocol for wildlands
  - so – no clear direction for response to new finds
  - can this be reinstated??
- Recognition of hosts from outside US borders
  - current APHIS list is dated Feb 2010
  - does not include Jap. larch or western hemlock
    - both reported from the UK
  - regulation of commercial conifer species may adversely impact timber interests

# Regulatory Concerns

- We continue to regulate the disease and not the pathogen!!
  - discussed in Dec 2009
  - pathogen presence should trigger a response
- Soil and water infestations at nurseries
  - more serious than diseased plants
  - lead to inoculum moving off-site
    - MS, AL, FL, NC, WA
  - all *Pr+* streams have remained *Pr+*
  - still does not require a response

# In Summary...

- This has been just a brief overview from the forestry perspective
- I hope there will be increased and open dialogue among APHIS, National Plant Board, state regulators, the Forest Service, and other key players
- Remember our goal:
  - "...protect native biodiversity, wild lands, and managed landscapes from *Phytophthora ramorum*..."

A scenic view of a mountain range with lush green trees in the foreground and a large yellow 'Thank You' text overlay. The text is bold and has a red outline, set against a background of rolling green hills and a clear sky.

**Thank You**