

Current tree Health Issues

Acute Oak Decline

- Sandra Denman

Phytophthora diseases

- Joan Webber

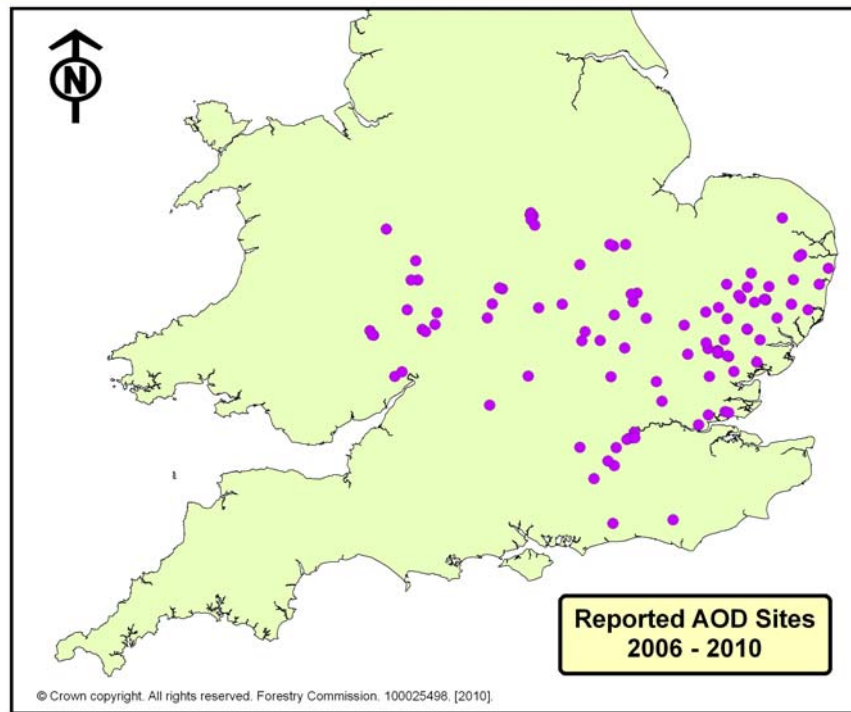
Dothistroma Needle Blight

- Anna Brown

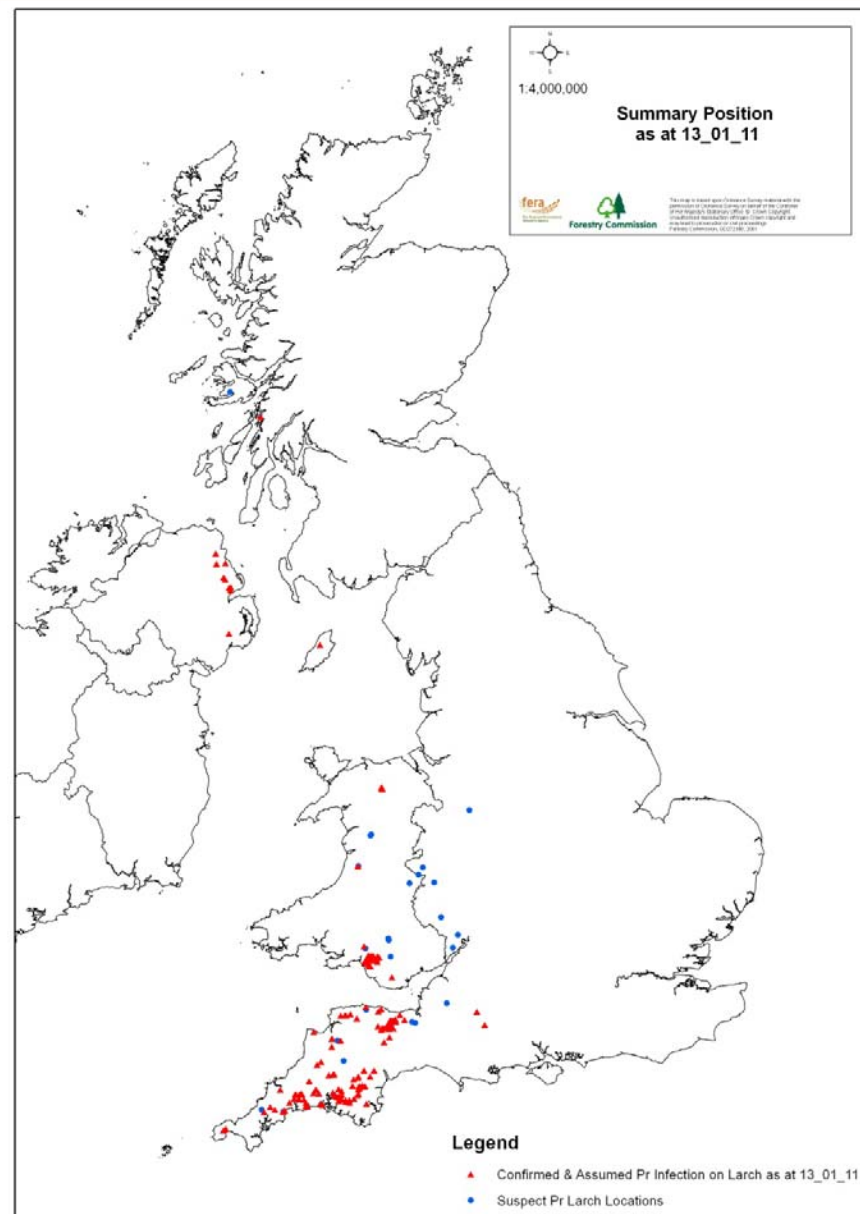
- Declines are of complex cause, often involving many biotic and abiotic factors/agents:
- Tests underway to determine roles played by :-
 - Bacteria: Several species, e.g. *Gibbsiella quercinecans*, consistently isolated (90% of sites)
 - *Agrilus biguttatus* : Also present at 90% sites, some trees exit holes no bleeds
 - Other factors: Root pathogens and environment stress factors e.g. climate change etc



- Distributed in Midlands, increasing reports from the south east; two reports in Wales, but none in Scotland or Ireland
- 176 sites reported since 2006, 22 visited and tested, reports still coming in
- On average 25% of trees on a site are symptomatic; over 1 year 10% increase of symptomatic trees and 1% mortality of symptomatic trees.



- Dieback and widespread mortality of Japanese larch (JL) on the public forest estate reported in August 2009 in SW England
- *Phytophthora ramorum* was isolated from the resinous cankers and symptomatic foliage, although difficult to culture the pathogen from conifer tissue
- JL now know to be affected in in England, Wales, N. Ireland and most recently confirmed in Scotland
- Disease is at different stages in different parts of the country, so protection of more northerly larch is an option



- Symptoms on affected larch - needle loss, dieback of fine branches, cankers on main branches and trunk
- Trees found with multiple cankers, eg 35cm dbh tree, with more than 80 individual resinous canker
- JL also found to be a sporulating host thus felling required to counter risk to other hosts
- Apart from JL, new canker hosts include birch, hemlock, Douglas fir, Lawsons cypress, grand fir



Phytophthora pseudosyringae

- Newly named *Phytophthora pseudosyringae* (2005)
- Causes bleeding stem cankers and girdling:
 - Affects beech, hornbeam but most damaging on *Nothofagus*
- On *Nothofagus obliqua*, damage can be extensive with 70% dieback and mortality on some affected sites
- Reported from *Nothofagus* plantations in England, Scotland and Wales



Phytophthora lateralis

- Well known as the highly damaging pathogen to native *Chamaecyparis lawsoniana* (Lawson's cypress) in Oregon, USA
- 2008 & 2010 found in Taiwan – likely area of origin, but causing little or no damage to native trees
- Recently found causing dieback to Lawson's cypress in France at 3 sites)
- In November 2010, found killing mature Lawson's in Scotland at a single location – causing both root and aerial infections



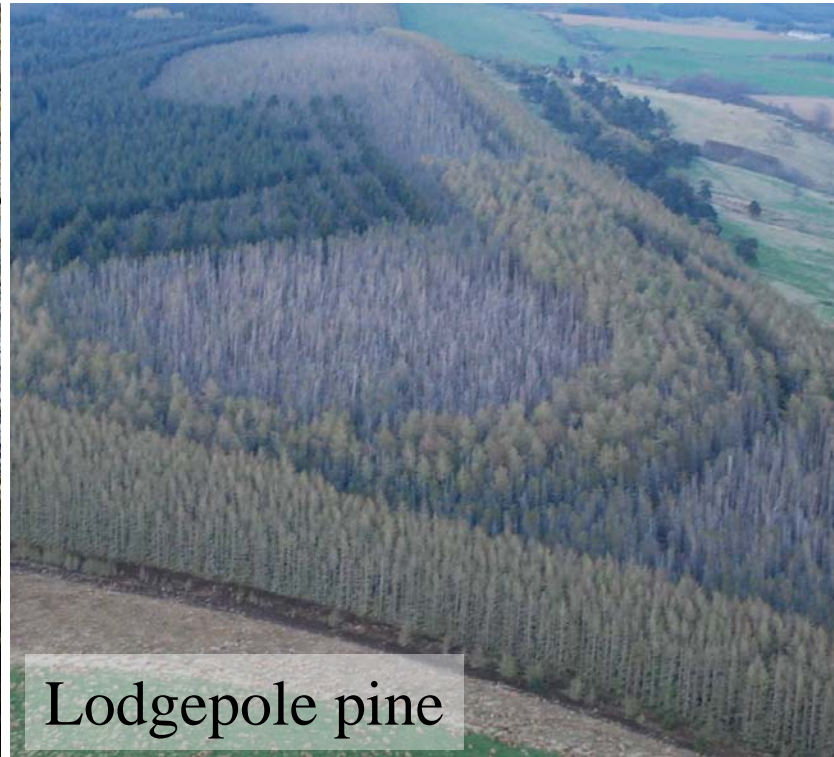
- Dothistroma needle blight is serious pathogen causing defoliation, loss in yield and tree death.
- It is caused by two fungal pathogens, *Dothistroma septosporum* and *Dothistroma pini*. To date only *D. septosporum* has been identified in GB, although *D. pini* is present in Europe, including France.
- Over 80 *Pine* sp., five *Spruce* sp., *Douglas fir* and *larch* are known to be susceptible to varying degrees.



Scots pine

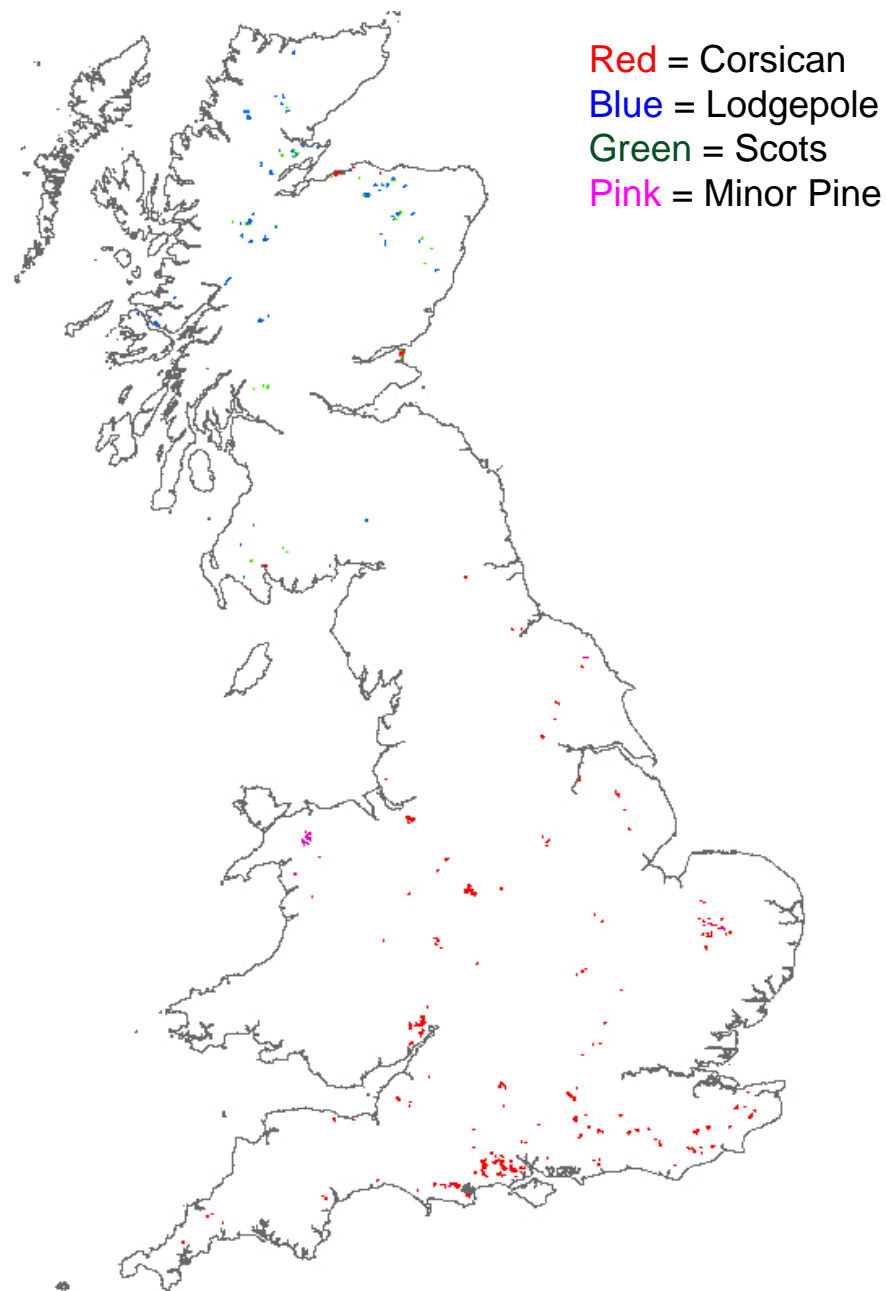


Corsican pine



Lodgepole pine

- The disease was first reported in the 1950/60's but was confined to a nursery in Dorset, and one stand in South Wales.
- The next outbreak was in 1989 in Southern England, and during the late 1990's it spread rapidly.
- Both mating types of the pathogen are present but do not appear to be equally distributed, and in England the pathogen appears genetically diverse.
- Current management methods included silvicultural manipulation (thinning, clearfell etc), use of alternative species, and in nurseries, chemical control.



Acute Oak decline :

<http://www.forestry.gov.uk/fr/INFD-7UL9NQ>

***Phytophthora ramorum* :**

<http://www.forestry.gov.uk/website/forestry.nsf/byunique/wcas-4z5jll>

***Phytophthora lateralis* :**

<http://www.forestry.gov.uk/website/forestry.nsf/byunique/wcas-4z5jll>

Dothistroma needle blight :

<http://www.forestry.gov.uk/forestry/INFD-74JJFK>

<http://www.forestry.gov.uk/fr/redbandneedleblight>