The LTOA *Ceratocystis platani* surveys 2014-16

Transport for London

John Parker

National Tree Officers Conference

Telford | November 9th 2016

Ceratocystis platani

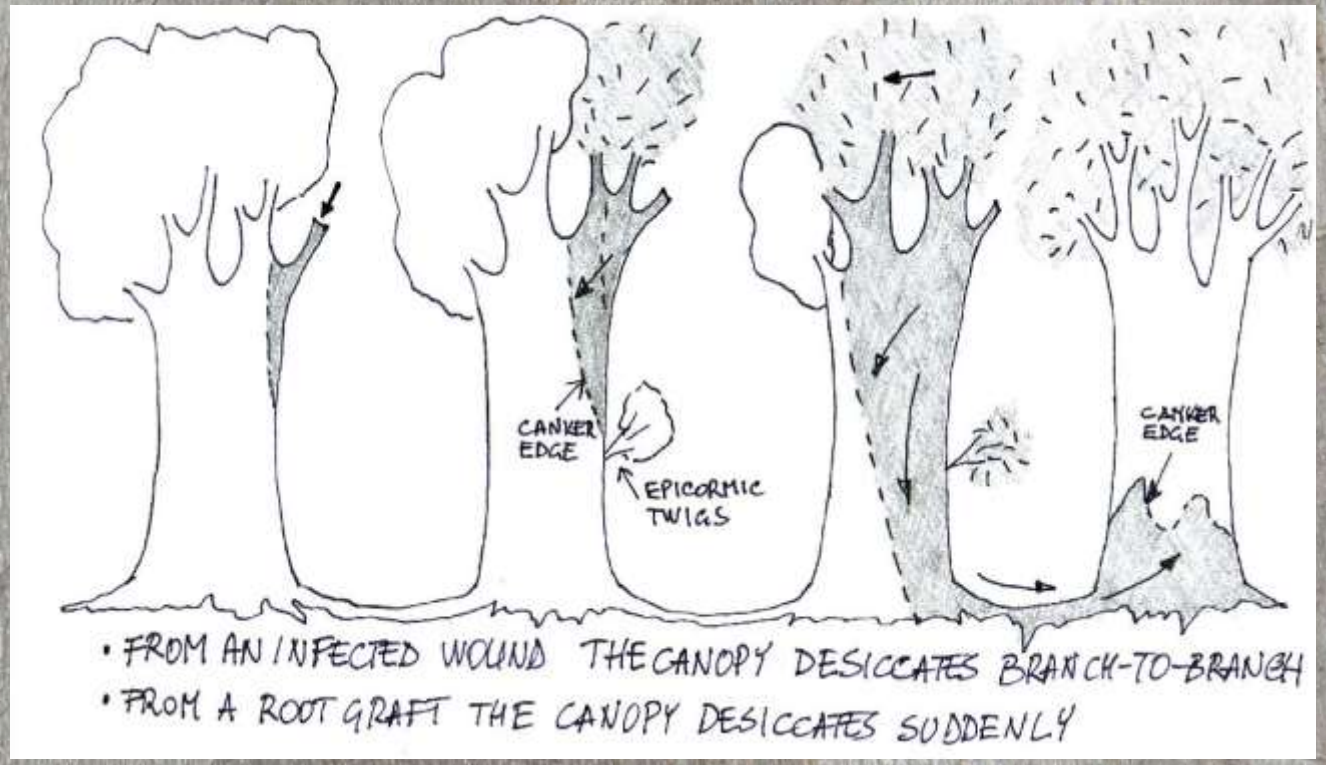
- Also known as

CANKER STAIN OF PLANE (CSP) or PLANE WILT.

- Only affects the genus *Platanus.*
- Non-native to Europe.
- Human-assisted Quarantine pest.

Ceratocystis platani

- Invasive fungal pathogen;
- Efficient wound parasite;
- Mycelium develops longitudinally and tangentially into sapwood of host;
- Blocks vessels in vascular system, causing wilting and death;
- Trees of 30-40cm diameter can be killed after just 2-3 years.



Drawing courtesy of Lucio Montecchio

Symptoms

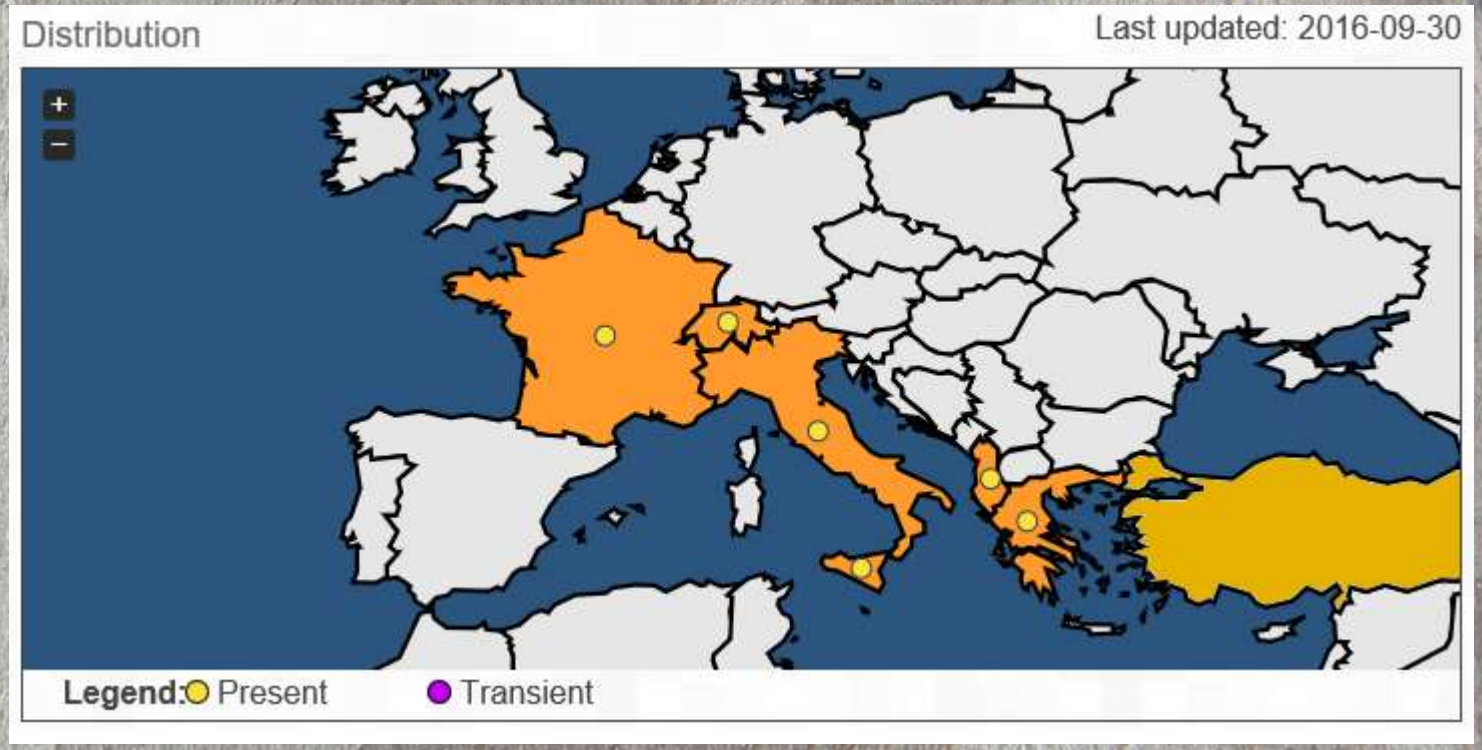
- Desiccation of leaves above the fungal infection.
- Retention of desiccated leaves.
- ‘Blisters’ on bark. Patches of necrotic wood.
- Radial necrosis of internal tissues visible after bark removal.
- Production of epicormic growth below the canker.
- Diagnosis only confirmed in the laboratory.

Spread

- Wound or root graft is required for colonisation.
- Spread via:
  - *Contaminated equipment;*
  - Root grafts;
  - Spores;
  - Sawdust;
  - Soil;
  - Water;
  - Insects/birds.
- Italian/Swiss examples.
- *C. platani* as a saprophyte (Pilotti research).

European distribution

- Present in Europe since the 1940s;
- As of 2016 confirmed in France, Greece, Italy, Switzerland, Albania and Turkey;
- Eradicated in Spain.



Canal du Midi, France

- 42,000 planes.
- 15,000 felled, destroyed and replaced as of 2015.
- Speculated that the remaining trees will be lost.
- Spread accelerated due to watercourse, boat damage and root grafts.
- Threat to UNESCO World Heritage Site status?

Workers in 2012 removing plane trees in Villeneuve-les-Beziers along the Canal du Midi.
Photograph: Pascal Guyot/AFP/Getty Images

Greece

- First observed in Greece in 2003.
- Greatest impact is on natural stands of *P. orientalis*, particularly alongside streams and rivers.
- Spread accelerated by anastomosis and water.
- Riverside stretches of up to 100m with no surviving planes.
- Risk of extinction in Greece (Ocasio-Morales, 2007).

Image reproduced from Nikoleta Soulioti

Turin, Italy

Image: Gianmichele Cirulli

Turin

- First identified in Turin in 1979.
- Culture change:
  - Control of works near infected trees;
  - Limited pruning operations;
  - Administrative procedures;
  - Fines for non-compliance.
- Still planting planes:
  - *P. acerifolia* in non-infected zones;
  - PLATANOR™ *Vallis clausa* elsewhere.
- Create an organisational jigsaw.

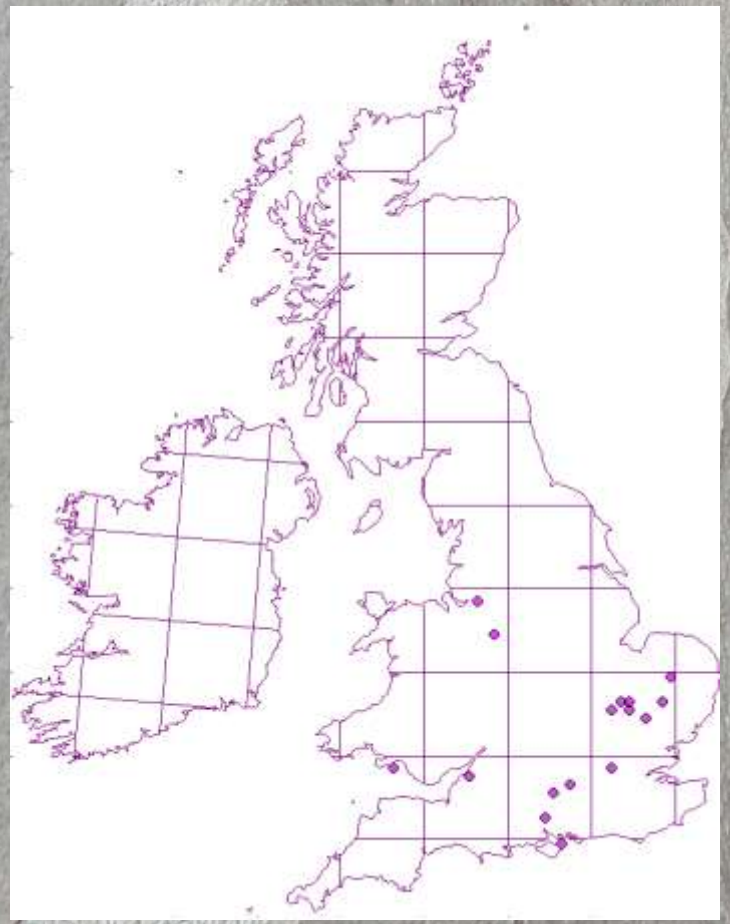
- *Bad, but not a tragedy.*

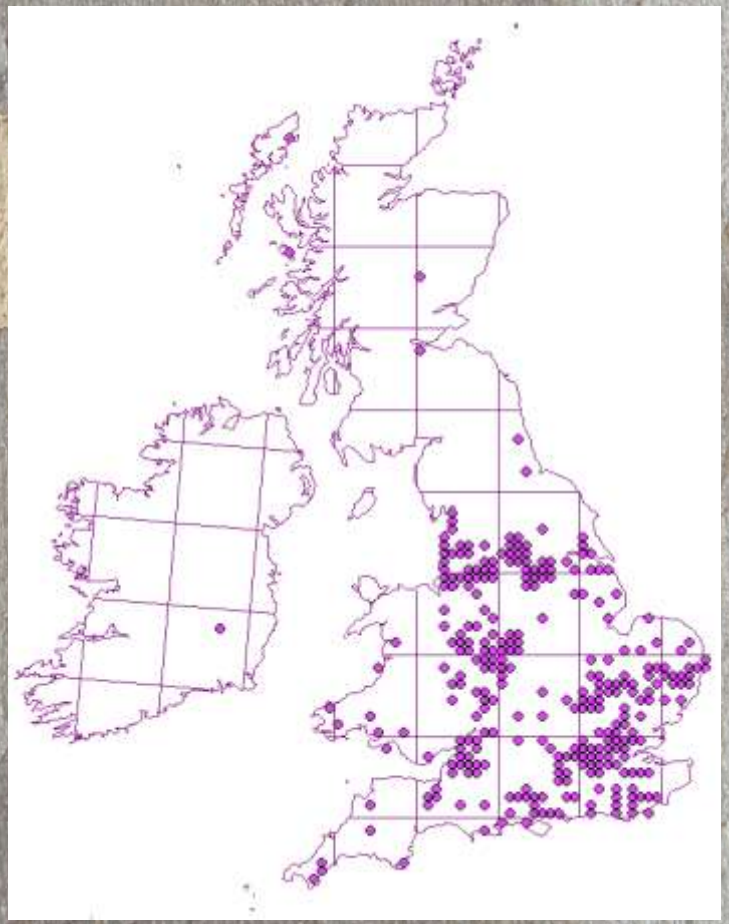
Images: Gianmichele Cirulli

Significance to the UK

- FERA report that 10% of all trees in Greater London are planes;
- 2015 London i-Tree Eco estimated that 1.43% of all trees in Greater London are planes;
- 23% of all TfL street trees are planes;
- Biomass volume and canopy cover importance far exceeds any percentage estimate.

UK distribution of *P. orientalis and P. acerifolia*





Maps reproduced from The Food & Environment Research Agency (2013). Rapid pest risk analysis for *Ceratocystis platani*

Legislative control

- EPPO A2 quarantine species.
- EU Directive 2000/29/EC.
- UK Protected Zone Status (2014).
- *Ceratocystis platani* is one of the Observatree 21 key species.
- http://www.observatree.org.uk/
- Forestry Commission Contingency Plan published 2016.
- PZS survey requirements & LTOA.

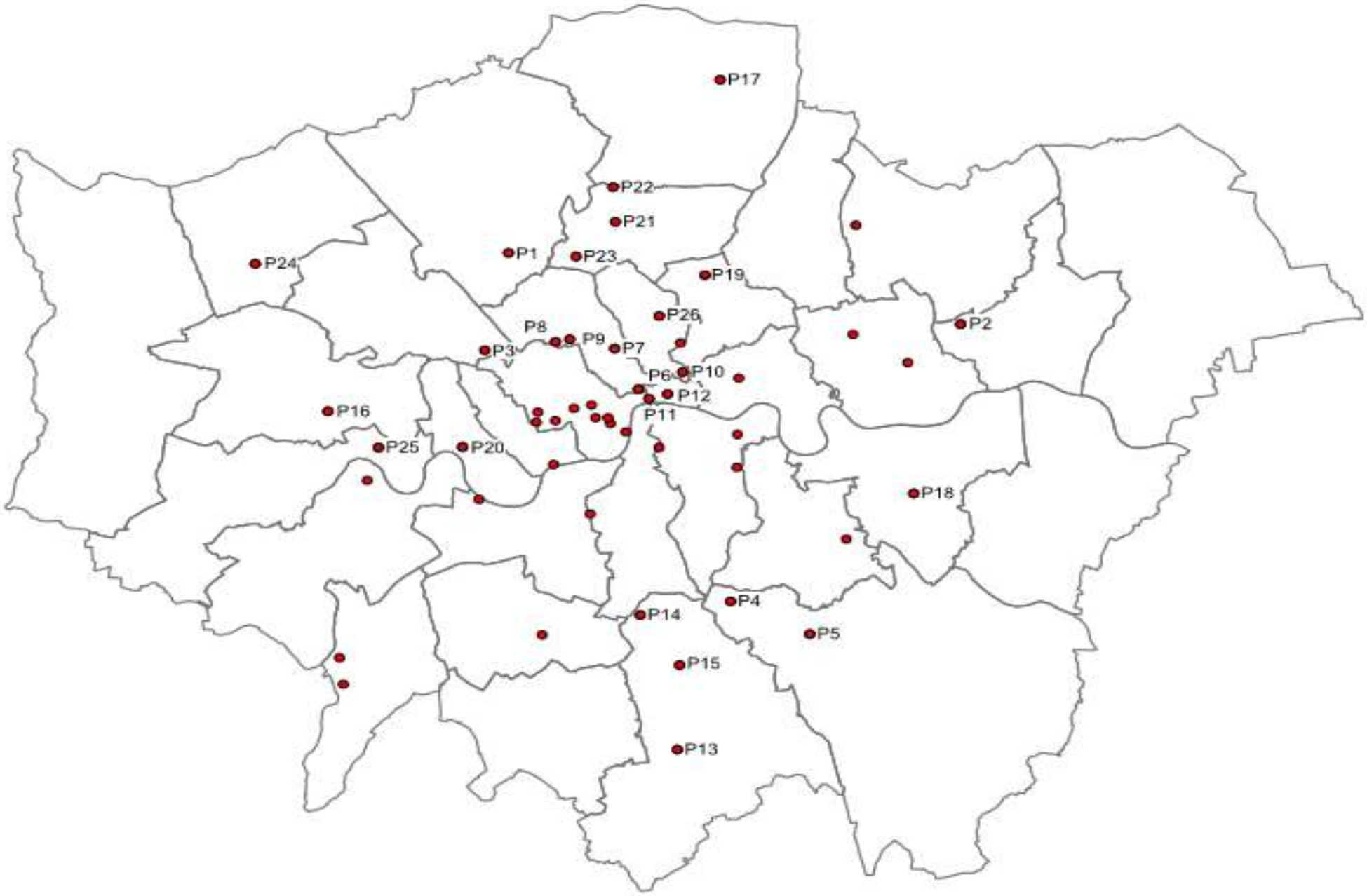
LTOA PZS Survey: Methodology

- Background;
- Plots: Minimum 20 planes in a single location, preferably containing recently-planted trees;
- FR identification training;
- http://www.forestry.gov.uk/treealert
- LTOA surveys in 2014, 2015 and 2016.
- Other surveys in the UK following the LTOA model.

The London Tree Officers Association

Survey Sites 1 - 26
10 December 2014

GiGL



P1 Temple Fortune Lane, Barnet
P2 Barking Park, Barking & Dagenham
P3 Queens Park, Brent
P4 Crystal Palace Park, Bromley
P5 Overbury Avenue, Bromley
P6 Lincolns Inn Fields, Camden
P7 Pancras Road, Camden
P8 Primrose Hill NW, Camden
P9 Primrose Hill NE, Camden
P10 Bunhill Fields, Islington
P11 Inner Temple, City of London
P12 St Paul's Cathedral, City of London
P13 Brighton Road, Croydon
P14 Norbury Park, Croydon
P15 Whitehorse Road Rec, Croydon
P16 Walpole Park, Ealing
P17 Enfield Playing Fields, Enfield
P18 Well Hall Road, Greenwich
P19 Stamford Hill, Hackney
P20 St Paul's Green, Hammersmith & Fulham
P21 Alexandra Palace, Haringey
P22 Bounds Green Road, Haringey
P23 North Hill, Haringey
P24 Drury Road, Harrow
P25 Chiswick High Road, Hounslow
P26 Highbury Fields, Islington

Scale 1:190000

Produced by Greenspace
Information for Greater London
www.gigl.org.uk

2016 LTOA PZS Survey: Results

- 10 inspectors (tree managers/officers);
- 56 plots;
- 31/33 London boroughs;
- 28/56 plots contained new trees;
- 2801 planes surveyed in total;
- NO CONFIRMED FINDINGS

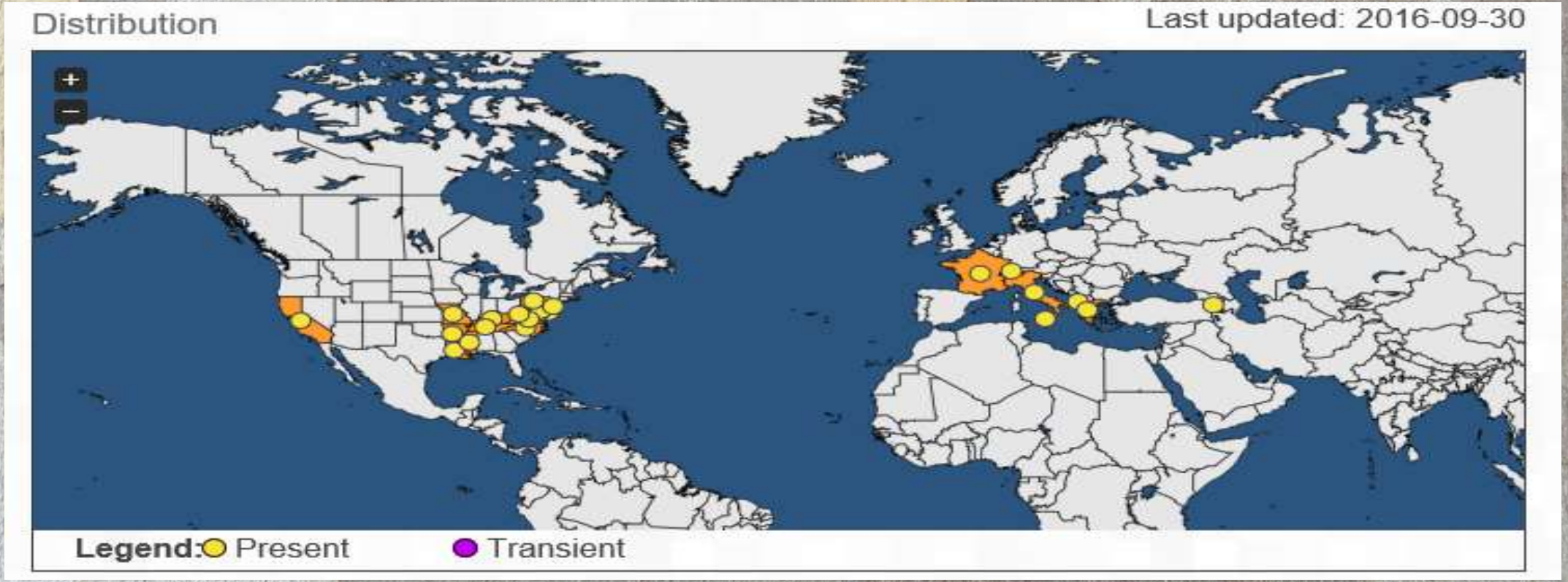
- 2015 suspect trees.
- Importance of training and consistency.

2016 recommendations

- Annual re-inspection;
- Biosecurity reassurances required in view of UK EU referendum;
- Closer UK and international collaboration.

International collaboration

- Just because a pathogen is new to the UK, doesn't mean it is new.
- Lots of experience available worldwide.
- The challenge is to make contacts, communicate ideas and share experiences.



Castelfranco Veneto, June 24-26 2016

de rebus plantarum

PAN srl Spin-off dell'Università di Padova

Treework Environmental Practice


BUNKER
Birreria


STOP


STOP

Padua experience

- Identification and diagnosis;
- Misleading symptoms;
- Italian management model;
- Laboratory sessions.

- Biggest danger is in movement of infected equipment, NOT infected saplings..
- Implications for control measures?

Euphresco Meeting
Rome, October 2016


ANDREA
GANNINI

Euphresco project: CERACRY

- Inaugural project meeting.
- Hosted by Massimo Pilotti, Plant Pathology Research Centre, Roma.
- Identification and early detection of *Cryphonectria parasitica* and *Ceratocystis platani* occurring on trees in Europe.
- Partners from Italy, Belgium, the Netherlands, Ireland, Portugal, Hungary and the UK.

Detecting and identifying canker stain of plane (2016)

- Lucio Montecchio booklet.
- LTOA & Treework Environmental Practice.

- Morphology and infection strategies.
- Symptoms and identification.
- Sample collection and fungal identification.
- Control (UK and Italian models).
- A biosecurity mentoring model.

- Launching today!

Thank you.

John Parker

john.parker@tfl.gov.uk | +447545 200101 | www.ltoa.org.uk

www.ltoa.org.uk

The London Tree Officers Association

Caring for the Capital's Trees