



International Plant Sentinel Network



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EPPO Council Technical Colloquium and Visit on Forestry
Riga, 2015-09-17



Our Aim

The IPSN aims to provide an early warning system to recognise new and emerging pest risks



BGCI

Plants for the Planet

The Power of Plant Sentinels



The main aim is to identify 'unknowns'

Other research opportunities to inform Plant Health include:

- Increase understanding
- Identify new pest-host associations
- Identify potential biocontrols
- Aid in integrated management tools

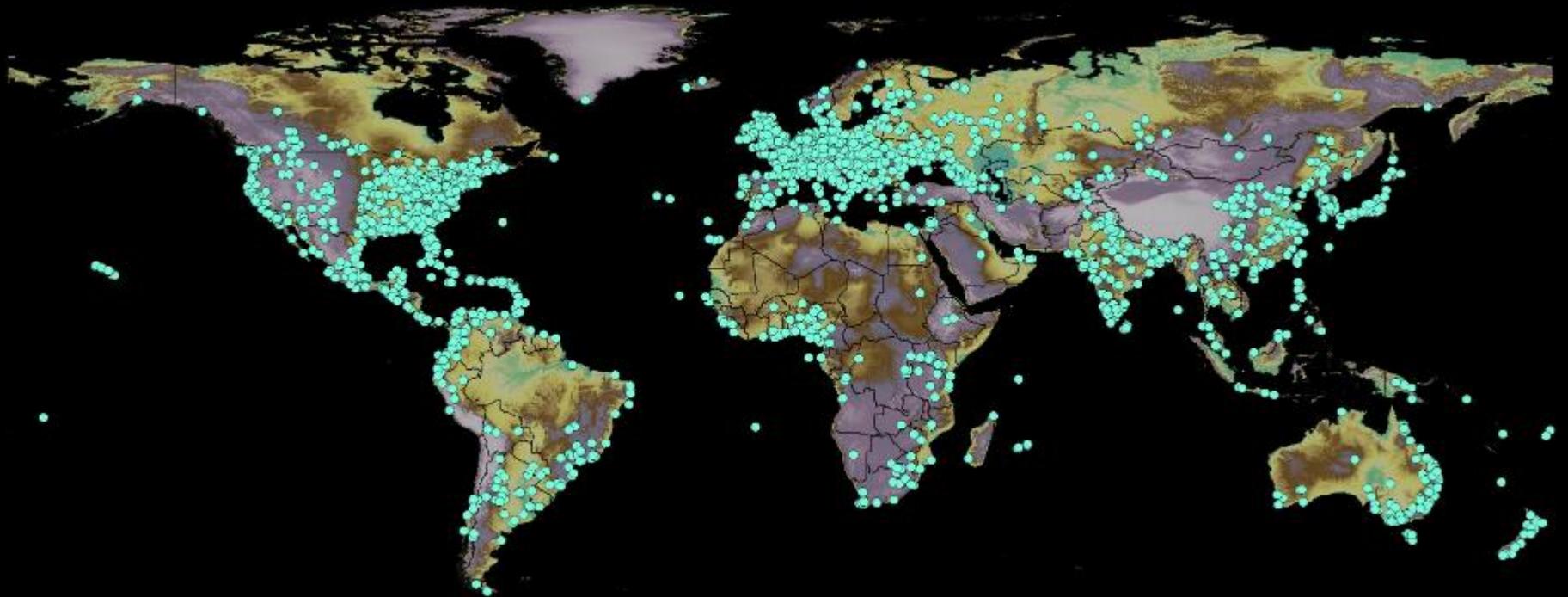


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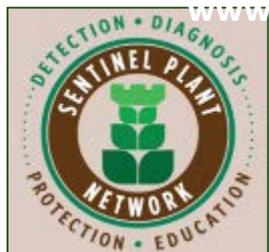
Botanic Gardens and BGCI



Map of known botanic gardens courtesy of BGCI's GardenSearch database

BGCI - Worldwide botanic garden networking organisation

IPSN Participation



Dept. Plant Protection,
FCA/UNESP - Campus
de Botucatu



Materials and resources



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Standard Disinfectant Kit



Contact for disinfection



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Language

What to take pictures of...

Take pictures representative of the problem



Damage and/or symptoms (the more detail the better)

Pests (when possible) or traces of pests

If roots are exposed, include pictures showing any damage/deformities

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EMERGING PEST AND DISEASE THREATS TO TREES IN THE UK

New **European Ash** *Fraxinus excelsior*

Not the same as the ash you know. It is a different species, coming from the east of Europe, and is very different to the ash you know. It is a different species, coming from the east of Europe, and is very different to the ash you know.

Emerald ash borer (EAB) *Amblyopine*

Adults are 7.5-13.5 mm long and light greenish green.

Damage: Disrupts cell walls from within, and causes the bark to emerge as a white web.

Larval feeding on the cambium can result in tree death.

Millions of these in North America have done a lot of damage. It has now reached the Moscow area of Russia.

Ash dieback *Hymenoscypha fraxineae*

A fungus spread by wind-borne seed and spore dispersal (including wood).

Causes necrosis, leaf loss, crown dieback and stem hole death in extreme cases.

First reported in the UK in 2012, first identified in 2014.

Black timber bark beetle *Xyloterminus pubescens*

Adult beetles (April-September) are approximately 6mm long and black or brown in colour.

The female attacks a range of deciduous and coniferous species causing the larvae to burrow within the wood causing extensive feeding in the wood.

A recent EPTN survey has shown the species is widespread in the UK.

REPORT ANY SUSPECTED SIGHTINGS TO: DATE:

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EMERGING PEST AND DISEASE THREATS TO TREES IN THE UK

New **English Oak** *Quercus robur*

They are English trees and can be found in most of the UK. They are very different to the ash you know. It is a different species, coming from the east of Europe, and is very different to the ash you know.

Goldspotted oak borer *Agrilus auripunctatus*

Adults are 10-15 mm long, dark green in colour and have 5 yellow spots on the wings (Image 1).

Larvae are small and white in appearance.

Feeding causes bark galleries as they burrow through the wood (Image 2).

The larvae is spread through vehicle movement and since 2002 has caused widespread tree damage in California and has not yet arrived in Europe but is on the EPTN list.

Oak wilt *Ceratocystis fagacearum*

Infected oak leaves have a distinct reddish-brown leaf margin, which leads to leaf loss and in extreme cases tree death (Image 3).

Orange-red latex that flows through small bark wounds, which act as a vector.

The fungus is already widespread across many states within the US including Minnesota.

Red oak borer *Enchytraeus rufus*

Adults (June-August) are light brown, covered in very fine hairs and have distinct brown lines along their body (Image 4).

The larva takes a two-year cycle in the first year the larvae feed and overwinter in the bark. In the second year the larvae burrow into the heartwood feeding small burrows.

Found on the Iberian Peninsula and in the UK and other parts of Europe (Image 5).

Currently found in California and the eastern part of the USA and is high on the EPTN list.

REPORT ANY SUSPECTED SIGHTINGS TO: DATE:

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IPSN ELIPRESSO partners:

- The Plant and Environment Research Agency (ERA), UK
- John Innes Institute, Norwich
- Department for Innovation in Knowledge, Agriculture and Rural Systems (DIKARS), University of York, UK
- Netherlands Food and Consumer Product Safety Authority (VWA), Netherlands
- Rijkswaterstaat Conservation International (RWS), The Netherlands
- Forest Research, UK
- CSIRO Ecosystem Health, Australia

To find out more please go to: www.plantsentinel.org

IPSN brief overview

The International Plant Sentinel Network (IPSN) aims to provide an early warning system to identify pests and emerging plant and animal species risks to plants.

The IPSN is a developing network of national and international partnerships bringing plant protection agencies and botanic gardens and arboreta around the world.

The IPSN will:

- Develop a distributed network of plant protection agencies and botanic gardens for identifying plant pests and pathogens.
- Provide training materials to increase capacity among member gardens.
- Share and share knowledge of best practice.
- Facilitate access to diagnostic support.
- Develop databases in order to share and utilize information and
- Facilitate inter-agency collaboration between agencies and partners working to plant health in the world.

A global network of botanic gardens, arboreta, plant health institutes and National Plant Protection Organisations working together to provide an early warning system for new and emerging plant pests and pathogens.

Logo: BGCI Plants for the Planet



Plants for the Planet



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2 Feb

Pests without borders - photo competition for budding photographers
phytosanitary.info/pests-without-...
[@ippcnews](#)

Expand



IPSN

@IPSN_BGCI

27 Jan

Read about the @APHAgovuk RHS Chelsea 2015 Garden which highlights the key aims of the IPSN plantsentinel.org/news/1207/

Expand



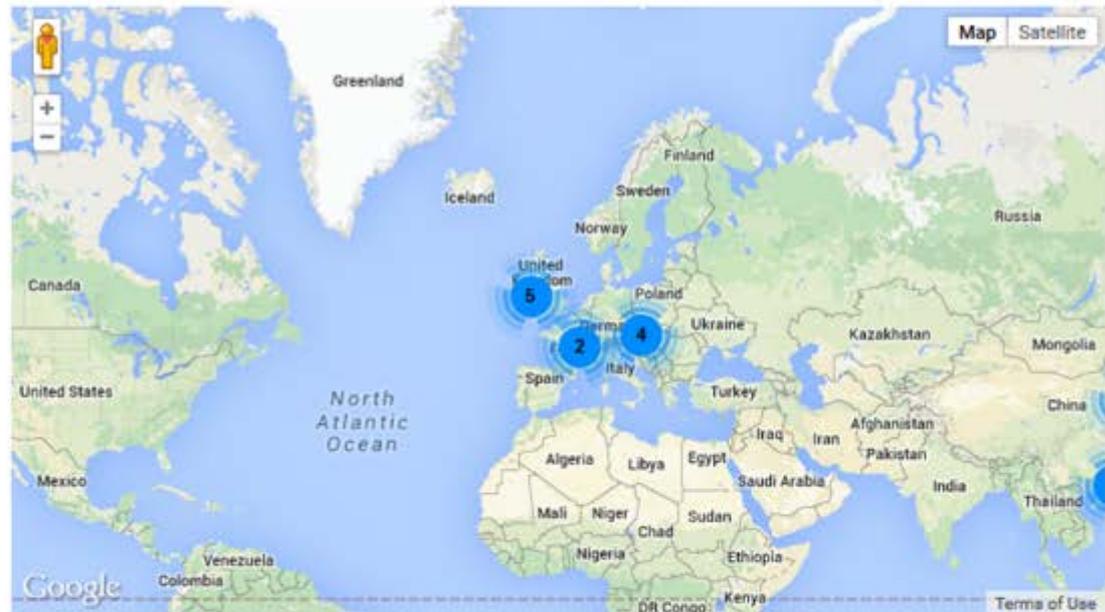
APHA

@APHAgovuk

23 Jan

Come and see our tree sentinels our.br/4Dz71 in partnership with

Tweet to @IPSN_BGCI



You can find a complete list of IPSN member gardens [here](#)

AN EARLY WARNING
SYSTEM OF NEW AND

The increasing globalisation of trade in plants and plant material, together with the impacts of climate change, has led to an increase in the introduction and spread of new and damaging plant pests and pathogens. Past examples of the devastating impact these organisms can have on plant populations (prime examples are [Durch elm disease](#) on UK elm trees and the [emerald ash borer](#) on U.S. ash populations) illustrate the significant threat these alien pests and pathogens pose to global

www.plantsentinel.org

Workshops & training



Huntington Library, Art Collections and Botanical Gardens, U.S.



Shenzhen Fairy Lake Botanical Garden (CAS), China



Royal Botanic Gardens Kew, UK



Next steps



- Online reporting form with supporting app
- Increased global participation
 - Including NPPOs
- Continued awareness raising and training for botanic gardens
 - Workshops, webinars etc.
- International sentinel research projects
 - Farm Bill Funding FY 16 – Offshore monitoring

Operationalising the IPSN

- Current funding April 2013-2016
- Looking for additional European partners
 - Provide relevant, useful information for plant health policy
 - International research opportunities
 - Facilitate communication (outreach)



The Future...

Creating a sustainable and viable network with the support of botanic gardens, NPPOs and diagnostic institutes worldwide



Observatree/IPSIN Conference on Tree and Plant Health Early Warning Systems in Europe

23-24 February 2016, Royal Botanic Gardens Kew, UK

- 2 day conference to discuss early warning systems in Europe
- Free registration
- Registration and abstract submission now open

For more information please go to
<http://www.observatree.org.uk/events/>



Thank you for your attention

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