

The threat to England's trees

from Invasive Non-Native Species of Pest and Disease

A briefing from Zac Goldsmith MP

in collaboration with the Countryside Restoration Trust



“ A mysterious disease that is threatening to wipe out England’s oaks could alter the landscape even more than Dutch Elm Disease, foresters have warned. ”

Daily Telegraph, 29th April 2010¹



Oak showing symptoms of Acute Oak Decline with staining from bleeding and decline of canopy.

The threat to England's trees

from Invasive Non-Native Species of Pest and Disease

The UK's trees are under threat from an increasing range of invasive pests and diseases. Over the past decade, at least a dozen tree pests and diseases have been found here for the first time, or have become more damaging.

Much loved species like the horse chestnut, the 'conker tree' of childhood, as well as the once commercially important Corsican pine have suffered catastrophic damage:

- **70% of horse chestnut trees in parts of England are affected by 'Bleeding Canker'**
- Once hailed as the conifer species best able to cope with a changing climate, Corsican pine's susceptibility to Red Band Needle Blight means it is no longer regarded as commercially viable in the UK.
- **25 new pests and diseases are either already established, recently arrived, on their way or seen as likely threats to our trees, woods and forests.**
- Even our iconic English oaks are in trouble, declining under assault from two new, as yet incompletely understood conditions.

A high proportion of trees that are currently or are likely to be under threat are those most frequently planted in urban areas, such as London's plane trees. Any losses to urban trees would cause significant and highly-visual impacts to our city environments, to the diversity of wildlife that urban trees support and reduce their role in providing welcome 'urban-cooling' services through the creation of local micro-climates.

The '4 Ts'

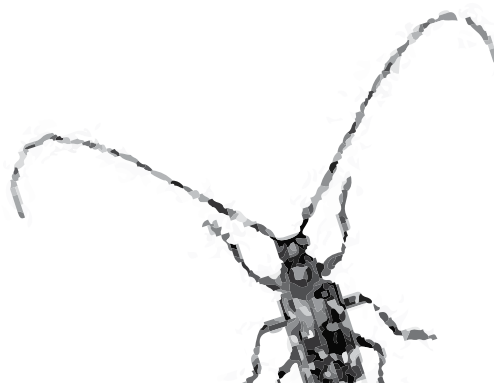
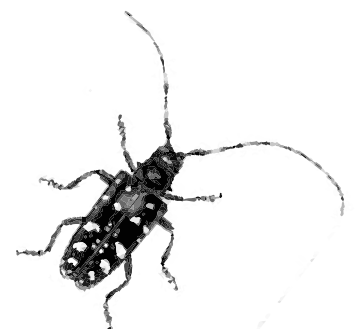
Trade, Transport, Travel, Tourism are the key entry routes for **Invasive Non-Native Species** - or **INNS**, the acronym by which they are often referred to.

Research from the US and UK highlights the greatly expanded horticultural trade in imported exotic and mature species from around the world as the main 'Trojan Horse' for new pests and diseases – accounting for 70% of invasive introductions to the US and 90% to the UK.

Greater vigilance by the horticultural trade, as well as enhanced surveillance and biosecurity measures generally are essential tools in reducing risk – but as the Institute of Chartered Foresters observe (see end quote), none of these are 'fool-proof'. The arrival of more pests and diseases is inevitable. Different, more sophisticated strategies are needed.

Annual costs to UK forestry from pests and diseases have been put at around £130 million. That is bound to be an underestimate, reflecting the low value given to our trees, woods and forests and the many benefits they provide – economically, culturally and environmentally.

In October 2011, the Secretary of State, Caroline Spelman announced that £7 million was to be allocated over 3 years for research and development into tree pests and diseases. Putting that figure into perspective - were the Asian Long-horn beetle (as illustrated on this page) to become established in the UK (as is perfectly possible), then based on the experience and efforts of the US authorities to eradicate that same invasive pest, it would cost £1.3 billion to attempt to do the same in the UK. Yet, as was the outcome in the US, that would be an expenditure of money and effort with no guarantee of success.



Dutch Elm Disease

The most infamous ‘tree plague’ to hit the UK in recent years was the catastrophic outbreak of Dutch Elm Disease during the 1970s through into the 1980s - when over 30 million English elms died as a result of Elm Bark beetles spreading a ‘new’ more virulent form of a fungus (genus *Ophiostoma*) that had been present in the country for 60 years previously without causing major damage.

Dutch Elm Disease has only died down due to the decimation of available host trees and so habitat for both beetles and fungus – but it is still present, attacking the surviving elm ‘suckers’ that still emerge from the remaining rootstock.

Aided by the geological barrier of the South Downs, East Sussex has held on as the last bastion of the English elm – with some 50,000 trees surviving thanks to a 40-year campaign maintaining constant vigilance for infected trees, which once identified are swiftly felled and burnt. Excluding the salaries of staff engaged in the campaign, East Sussex spends over £50,000 annually maintaining that programme of surveillance and culling.

An overall cost of £2 million spent seeking to contain just one disease in one small part of England. ²



PHOTO: EAST SUSSEX COUNTY COUNCIL

Dutch Elm Disease: gallery of Elm Bark beetles cause this shotgun wound effect when they emerge.

Pests and diseases...

Some half dozen pests and diseases classified by the Forestry Commission as ‘top threats’ to our trees and shrubs are already present in Britain. All are relatively novel, invasive threats and include:

- **Phytophthora ramorum** (‘Sudden Oak Death’)
- **Acute Oak Decline**
- **Chronic Oak Decline**
- **Bleeding Canker of horse chestnut**
- **Oak Processionary Moth**
- **Red Band Needle Blight**

Phytophthora ramorum - first detected on an imported nursery shrub in Cornwall in 2002, this fungus-like organism initially affected mainly rhododendron and some heathland shrubs (bilberry), but in 2009 was found to have ‘jumped species’ to the commercial plantation tree, Japanese larch (*Larix kaempferi*) - which make up some 10% of all commercial conifer planting in Britain.

In larch, *P. ramorum* generates an exponentially greater quantity of disease-spreading spores released high-up in the forest canopy to be broadcast far and wide by the wind – hence it has now spread right up the length and breadth of the warmer, wetter maritime western coastal areas of Britain. Despite an extensive on-the-ground and airborne-monitoring programme conducted by the Forestry Commission to identify infected stands of trees and then fell them in an attempt to contain the disease, *P. ramorum* has led to landscape-scale change easily visible to the naked eye, as well as causing significant economic impacts locally and regionally.

P. ramorum’s populist name of ‘Sudden Oak Death’ may be accurate for the US, where it devastated the Tan oak species, but is a misnomer for the UK where fortunately as yet, our native English oaks have not been affected.

Acute and Chronic Oak Decline - however, our native oaks are suffering from other devastating conditions; the precise causes of which haven’t been identified by scientists. Current scientific thinking is that they are due to a combination of factors – fungal and insect damage, bacteria, and climate stress. Acute Oak Decline is hitting native oaks in the Midlands particularly hard; with over 50% of oaks in Charnwood Forest, Leicestershire displaying symptomatic profuse ‘bleeding’ from their trunks. Since its last upsurge in the 1990s, there has also been a resurgence of Chronic Oak Decline.

here and causing harm



Oak Processionary Moth (OPM)

- first reported in Richmond, South West London in 2006, OPM is known to have been brought in as larvae on imported Cypress oaks. By 2009, 2,380 nests had been found in the outbreak area - with a 4-fold increase in just one year. Whilst the caterpillars of the moth can strip trees bare of their leaves, the key concern is the caterpillars' hairs, which cause severe allergic, potentially fatal, reactions in people and animals.

Horse Chestnut Bleeding Canker

- in some parts of the country over 70% of trees are affected. Although not a commercially important species, horse chestnuts with their candelabras of white and pink flowers, and of course 'conkers', are a much-loved feature of our urban tree-scapes and parks.

Red Band Needle Blight

- currently the most significant disease of conifers in Britain, Red Band Needle Blight has made the planting of Corsican pine, once regarded as one of our most useful commercial conifers (given its resilience against climate change), commercially unviable. 20% of the Forestry Commission's conifer plantations are made up of stands of Corsican pine - Thetford Forest being a prime example. All stands of Corsican pine in the UK are affected by outbreaks of Red Band Needle Blight.

Removing an OPM nest in the upper canopy of an oak tree. OPM control demands rigorous personal protective measures.

PHOTO: © GABRIEL HEMERY

And more on the way

At a gathering of ‘tree experts’ in July 2011³, a more extensive list of 4 categories totalling 23 tree pests and diseases was drawn-up:

- **5 were considered to be established in the UK** – Acute Oak Decline; Bleeding Canker of horse chestnut; Red-Band Needle Blight; Large Pine Weevil; Great Spruce Bark Beetle.
- **5 were classed as recent arrivals** – Oak Processionary Moth; 3 types of Phytophthora fungi - ramorum/kernoviae/lateralis; Pine Tree Lappet Moth.
- **7 already present in Europe and threatening to make their way into the UK** - 8-toothed Europe Spruce Bark Beetle; Citrus Long-horn Beetle; Asian Long-horn Beetle; Pinewood Nematode; Pine Pitch Canker; Ash dieback; Brown Spot Needle Blight.
- **6 likely suspects inexorably approaching from other parts of the world** - Spruce Budworm; Sweet Chestnut Gall; Emerald Ash Borer; Emerald Birch Borer; Oak Wilt; Plane Wilt (NB – as below, Plane Wilt is only a hop across the Channel away).⁴

One of those ‘likely suspects’, **Plane Wilt**, threatens to ravage a characteristic feature of our capital city and its environment. Across the Channel in France, Plane Wilt is affecting up to 80% of all plane trees - the same species as those planted widely in our cities, *Platanus × acerifolia* due to its tolerance of urban pollution. **Ceratocystis platani**, the fungus, responsible for Plane Wilt, is a classic INNS introduced into Italy via wooden packing crates bringing wartime supplies from the US.

Whilst American plane tree species are not seriously affected, the naïve’ European varieties are vulnerable. Last year, just after Caroline Spelman’s announcement of a modest £7m for tree pests and diseases R&D over 2-3 years, French officials revealed that all 42,000 plane trees lining France’s historic Canal du Midi would have to be felled due to the disease.

One-tenth of all the trees in Greater London are plane trees – not surprising that they are popularly known as ‘London planes’.

“ ***As the disease continues to spread, it is likely to eliminate planted planes from the cities of western and northern Europe. At the same time, the spread of the disease in the native range of oriental plane is an ecological disaster, on a par with the loss of elms throughout Europe in the mid-to-late 20th Century.*** ”

Dr Steve Woodward, tree pathologist, University of Aberdeen⁵

STOP PRESS!

Ash dieback (*Chalara fraxinea*) now established in UK native trees and woodland

When we drafted this background briefing on invasive species of pests and diseases, **Ash dieback** was still on the list of 7 pests and diseases 'present in Europe and posing a threat to the UK'.

In fact, it turns out **Ash dieback** has been with us for some months, first found in February 2012 on young ash trees in a nursery in Buckinghamshire imported from The Netherlands. Over subsequent months several other infected locations were found, all linked to imported nursery stock from Europe. Then just last month in October 2012, **Ash dieback** was confirmed in older, native trees in woodlands in East Anglia.

With no obvious links to nursery stock, officials are speculating that these infections of native trees in native woodland might be due to the fungus blowing on the wind or brought in by migrating birds.

Whatever the cause of those particular infections, all the other, earlier findings were clearly identified as connected to imported young ash saplings - raising the questions:

Why weren't import controls brought in immediately back in February, rather than waiting for the disease to become established over the following 8 months?

Why on earth are UK nurseries importing Ash trees from Europe – rather than growing native stock here, especially when Ash is one of the easiest trees to seed, hence its forester's nickname of the 'weed tree'.

For more information and details of the symptoms of Ash dieback see:
www.forestry.gov.uk/chalara

Chestnut-blight hops Channel!

Another new disease not on any of the above lists, **Chestnut-blight**, has made the jump across the Channel. On the 19th March 2012, Chestnut-blight caused by the fungus **Cryphonectria parasitica (C. parasitica)**, was confirmed by Forestry Commission scientists in two small orchards of European sweet chestnut (*Castanea sativa*) sourced from the same nursery in France. The sites in Warwickshire and East Sussex are the first findings in Britain, although the disease is widespread throughout much of Europe since being identified in Italy in the 1930s.⁶

C. parasitica infection is usually fatal to European sweet chestnut and its North American relative, *Castanea dentata*. Originating from eastern Asia, it was introduced to North America in the late 19th century, where it caused devastating losses totalling an estimated 3.5 billion trees in chestnut forests in the eastern USA.

There are an estimated 12,000 hectares (30,000 acres) of woodland in Britain in which sweet chestnut is the main tree species. Most sweet chestnut woodland is located in southern Britain, where it was in the past the basis of a significant fencing and fire-wood industry – which in recent years has been enjoying some revival.

What's causing this upsurge in invasive pests and diseases?

Global Trade

The increased trade in live trees, shrubs and horticultural plants has been recognised worldwide as an important pathway for non-native plant pests and diseases. This is a long-term trend: Scientists estimate that nearly 70% of damaging forest insects and pathogens established in the US between 1860 and 2006 probably entered the country via imported live plants. A higher percentage of 90% has been cited for the introduction of pests into the UK due to the plant trade, with less than 5% being attributed to apiculture, biological control, timber imports, transport stowaways and deliberate releases.^{7,8}

According to a report by the National Audit Office, the number of recorded outbreaks of pests and diseases (for agricultural crop, as well as trees and shrubs) has been rising, from an average of 150 a year over the period 1993 to 2000 to more than 200 in 2001 and with some 370 identified in 2002.⁹ The rise in invasive pests and diseases tracks the rise in the value of plants and shrubs imported into the UK - increasing from £197 million in 2000 to £340 million by 2008.

One factor behind the rise in invasive pests and diseases has been the fashion for bringing in much larger, semi-mature trees and shrubs complete with large root balls enabling landscape gardeners and developers to create 'instant landscapes' – but also providing greater opportunities for bugs and other nasties to sneak in as stowaways.

P.ramorum came in on one viburnum shrub imported from the EU to a nursery in Cornwall in 2002.

OPM infestations have been tracked back to large specimen oaks brought in from Holland.

A batch of maples imported into EU and Britain from China, despite being certified 'pest-free' by the Chinese authorities were found to be infested with Asian Long-horn Beetles. That same highly-destructive wood-boring beetle has also stowed-away in wooden packing cases bringing ornamental stone into the UK.

Wooden packing crates introduced the Plane Wilt fungus to Italy that now threatens our own London plane trees – that inadvertent introduction was excusable

under the emergency of wartime. Yet over 60 years later, wooden crates and packing material, known as 'Dunnage', are still giving pests and diseases a piggy-back around the world.

The Asian Long-horned Beetle is known to have entered America in wooden packing material from China and is now established in New York and Illinois, despite an eradication programme costing £1.3 billion to date.

The US Department of Agriculture has intercepted over 50 different insects in solid wood packaging materials (SWPM).¹⁰

The burgeoning biomass energy market offers a new route in for pests and diseases. UK woods and forests cannot meet the demand for wood-chip from power stations; consequently 278,000 cubic metres was imported into the country in 2009. With wood-chips stored for some time before going into the burners and individual chips large enough to allow pest larvae to survive intact, the risk of viable, breeding adults emerging is high. The forestry industry body Confor (Confederation of Forestry Industries) has carried out research that indicates that if all the proposed wood energy heating and power plants are built then demand for wood chip for burning as biomass could reach 27 million tonnes per annum by 2025 – with UK sources only capable of supplying a tenth of that – and only then, if diverting wood from more sustainable uses in construction and processing.¹¹

Over-reliance on too few species

Globally, only about 10% of invasive organisms become established in a new environment. Two factors can help them to gain a foot-hold: a tolerable climate and an available large body of a suitable host species. Although there has been a shift away from mono-cropping in UK forestry over recent decades, commercial forestry still relies upon just 4 main conifer species: **Sitka spruce** (60% of UK conifer area); **Douglas fir**; **Scots pine** and **larch**.

As in agriculture, such reliance on a small number of 'crop' species reduces resilience and increases vulnerability to pest and disease outbreaks. **P. ramorum** rampaged through Japanese larch plantations, like bird 'flu through a shed of densely-packed factory-farmed broiler chickens, because it had 'found' a perfect host tree planted en masse from which to sporulate and spread itself further.

Urban planting, whilst not driven by industry demands for standardisation of the end product, has also relied on too narrow a range of species – evident in the vulnerability of London's tree-scape where one-tenth of the Capital's street trees are made up by a single species, the London plane.

Climate Change

One of the impacts of climate change predicted by scientists is that we will see more pests and diseases taking hold,

'The increase & severity of tree disease & pest outbreaks will increase. A warmer climate and, particularly, warmer winters will allow tree pests and pathogens to extend their range'.¹²

A classic, current example of that would seem to be **P. ramorum**. Changing climate conditions are enabling introduced pests and diseases to survive more readily than they might have in previous decades. The increased numbers of and survival of these introductions into our naïve populations of host trees (i.e. our native tree species that have not co-evolved defence mechanisms against those exotic pests and diseases over thousands of years) is of major concern to scientists and already having a significant economic impact.



PHOTO: geograph.org.uk

Conifer forest: commercial forestry still relies upon just 4 main conifer species.

Costs to the forestry industry and UK economy

The total current annual cost of Invasive Non-Native Species (INNS) to the British economy has been estimated by FERA (the Government agency partly responsible for tree and plant health) at £1,291,461,000 for England, £244,736,000 for Scotland and £125,118,000 for Wales.¹³ At least £130 million of that annual cost is attributed to INNS affecting forestry.

A total annual cost of INNS to the British economy of approximately £1.7 billion.

The recent programme to control and attempt to eradicate the two main types of *Phytophthora* currently affecting our trees and shrubs has been costed at £25 million over 5 years.



PHOTO: ADRIAN DAVIES/NATURE PICTURE LIBRARY

“ **Strategies needed to increase the resilience to plant health threats. Such as, increasing the genetic & species diversity of woodland. A mixture of tree species at a site, as well as genetic diversity within species, may increase the chance of a woodland habitat of some type surviving a pest or disease threat at that site.** ”

Invasive Tree Pests and Diseases, Houses of Parliament Postnote briefing paper 394¹⁴

Solutions and strategies

80% of the timber, board and paper used in the UK is imported. Whilst the UK could and should increase the proportion of home-grown timber, our reliance on imported timber is set to continue.

Enhanced surveillance at potential points of entry – ports, airports, nurseries, sawmills, wood processing plants, biomass power stations as well as maintain monitoring stations in woods and forests close to such ‘jumping off’ hot-spots for pests and diseases is essential. But it is unrealistic to expect such measures to be fool-proof or for governments in a time of economic challenge to focus efforts on measures that can be criticised as hampering trade.

Climate Change and the more favourable conditions it offers for many existing and potential INNS establishing themselves in the UK is a reality that we have to live with and adapt to. Therefore, improving the resilience of our trees, woods and forests against - and where possible their resistance to - pests and diseases is key.

That means moving even further away from standardisation and reliance upon a limited number of species in both commercial forestry and urban tree planting towards a much more diverse composition of species and varied age structure and most crucially, keeping one step ahead of the pests and diseases before they come into the country, rather than ‘fire-fighting’ once they’ve arrived. So research and development efforts need to be focused on strategies for combating the next most likely wave of INNS, not just devising ‘management’

strategies for containing those already present.

‘Citizen Science’

In 2011, there were three confirmed sightings (and captures!) of the Citrus Long-horn beetle – all three thanks to the vigilance of the public and following an awareness campaign launched the previous year by Fera.

One of those citizen insect-detectives was a 9-year old primary schoolboy from Rutland.¹⁵ Highlighting the value of public engagement in amplifying official efforts, such as the tree and forestry charity the Sylva Foundation’s Tree Watch set up to encourage greater public awareness and action against the threat to our trees and woods from invasive pests and diseases. (See: www.TreeWatch.com)

Non-native tree species needed to combat non-native pests and diseases

Understandably much focus has to date been on protecting and restoring native ancient woodland and respecting the regional provenance of tree species following decades of unsympathetic non-native, single species plantation forestry. In the face of invasive non-native species of pests and diseases threatening our current populations of native or long-introduced tree species, we may well need to consider introducing some currently non-native tree species that offer greater resistance to and so can provide ‘fire-breaks’ and buffers against new pests and diseases.

What's being done by whom?

Is it enough?

The Forestry Commission is the 'competent authority' identified in the Plant Health Act 1967 with responsibility for the protection of forest trees and timber. Forestry Commission GB (based in Edinburgh) oversees Plant Health policy overall for the Forestry Commission across England, Wales and Scotland currently – although Forest Research (Alice Holt and elsewhere) 'does' the majority of the science.

Currently, the Forestry Commission and Forest research spend just under £2 million annually on research focused on non-native pest and disease species. As a comparison, just one agricultural research body, the Scottish Crop Research Institute receives funding to the tune of £15 million per annum from a combination of government and commercial sources to research pests and diseases affecting agricultural plants.¹⁶

The Forestry Commission is on record as stating that it intends to increase research spending on tree health by 31 per cent between 2011-12 and 2014-15. Yet the Commission has been subject to 25 to 30% cuts in its overall budget, which has led to the shedding of a significant number of staff jobs:

- Forestry Commission GB has shed nearly 450 staff (13%) due to the spending review cuts
- Forestry Commission England has lost 140 staff (13%)
- And of greatest concern, the internationally-respected Forest Research has made a 21% reduction in its staff numbers.¹⁷

It is not yet clear what impact these cuts will have on its ability to fulfil its role as the competent authority overseeing work to control tree pests and diseases.

Although, the Forestry Commission is not without its critics over its monitoring of and action on invasive pests and diseases. For example, it has been suggested that the Forestry Commission tried to keep the first Asian Long-horn Beetle outbreak a secret (first spotted in 2009 at Paddock Wood and now affecting many trees locally) through a policy of only telling people on a very limited 'need to know' basis. Assuming that is accurate, then it contradicts stated official support for a citizen science/stakeholder engagement approach.

The Food and Environment Research Agency (FERA) has a distinct plant health strand when it comes to pests and diseases of plants and shrubs – FERA was the lead body on *P. ramorum* whilst it was still mainly found on rhododendron. FERA provides the personnel to carry out the surveillance of imported plants through its Plant Health Service. However, in its Tree Health Strategy published in 2011, the Forestry Commission commented,

"Of greater concern is the threat posed by the increasing number and species of imported plants for nurseries and gardens. In England and Wales, the Food & Environment Research Agency (FERA) provides the inspection service for these imports through its Plant Health Service... Given the pressure on the service

from increasing numbers of plant imports, we consider this to be a high-level risk.”¹⁸

The joint Forestry Commission/ Fera ‘Phytophthora taskforce’ is being made redundant and science and inspection staff in other parts of FERA, for example imports, quarantine, pest and disease identification, are being laid off. How does this square with the Government’s stated commitment to tree and plant health?

With regard to the overall approach by the Government and official bodies, there have been concerns raised that the current list-based system for pests and diseases is fine for contending with known threats, but can be an obstacle to action when an ‘unknown’, not previously listed threat emerges.¹⁹ For example, it took almost two years to get the Oak Processionary Moth listed as a quarantine pest - because it ‘wasn’t expected in the UK’.

A number of new diseases are also believed to be hybrids of non-pathogenic organisms, for example *Phytophthora alni* which is devastating alder in many parts of the UK.

EU Plant Health regime – The European Community plant health regime was set up to protect the Community against the harm caused by the introduction and spread of pests and diseases affecting plants, including trees, and products thereof. This regime has been under review for a number of years and the European Commission has stated that it will put forward a proposal for a new Plant Health law in 2012.²⁰

Countries like Holland and Italy receive container loads of large plants from places like China and these are often despatched direct to site with minimal checks. The EU plant health regime is implemented to very different standards across EU countries. This is a major weakness of the ‘free trade within the EU’ approach preventing the UK from capitalising on the natural biosecurity benefits of being an island.

UK Government initiatives –

The UK Government established the Forestry Commission Biosecurity Programme Board in 2010. Its aims are to:

“Preserve the health and vitality of our forests, trees and woodlands through strategies which exclude, detect, and respond to, existing and new pests and pathogens of trees, whether of native or exotic origin.”²¹

In October 2011, the Secretary of State, Caroline Spelman announced that the government will invest £7 million over 3 years to tackle tree diseases, as part of its Tree Health & Plant Biosecurity Action Plan. But that £7m is not additional, but reallocated money from within Defra budget.



PHOTO: © GABRIEL HEMERY

An oak tree under treatment in Richmond Park..



PHOTO: DAVID NORTON/NATURE PICTURE LIBRARY

Protecting our trees, woods and forests against Invasive Non-Native Species of Pests and Diseases

- **A Single Plant Health Policy and Authority** – as is obvious, pests and diseases have no respect for borders or devolved authorities. Therefore, a single authority is needed to set and oversee UK-wide plant health policy and which leads on all EU negotiations and legislative work.
- **A secure and funded science base** - the scientific expertise and repository of knowledge inherent in Forestry Research must be maintained. The UK government must invest in research on many aspects of woodland and forest management, including tree health, if it is to realise the goals set by the Independent Panel on Forestry. Forest Research should be sufficiently independent to be able to attract funds from commercial sources, charitable bodies like the Woodland Trust and other parts of government (www.defra.gov.uk/forestrypanel).
- **Greater responsibility taken by highest-risk sectors** - with 90% of INNS attributed to imports of trees and shrubs, the horticultural and landscaping sector must bear a proportion of the costs of preventing and containing outbreaks of invasive pests and diseases. Therefore, a levy should be imposed on all imported plants, especially higher-risk larger, exotic specimen trees and shrubs, to help support the inspection services and Forestry Research.
- **Greater emphasis on local, sustainable planting schemes** - local planning should require planting schemes to consider sustainable sourcing of plants from local sources first and foremost for landscaping projects and discourage imports.

“ We can take steps now to protect more effectively our present natural environment and its constituent species. Alternatively we must resign ourselves to it becoming a global melting pot of imported diseases, resulting in further ecological destabilisation and extinctions. ”

Professor Clive Brasier, Emeritus Mycologist, Forest Research²²

Other Voices of Concern

From professional foresters:

The Institute of Chartered Foresters is so concerned at the increase in pests and diseases threatening the concerns and commercial interests of its members and the forestry sector as a whole it has considered launching a public campaign and appeal – to bolster what it considers to be insufficient government funding for R&D to tackle the threats.



“Greatest single threat is ravages of pests and diseases both already present and new arrivals. The UK’s island status is a blessing in that many pests in Europe are not present here. They can easily become established if it were not for port inspections of imported wood and plant material looking for infections, decay and insect damage. This is not fool-proof and pre-entry study of life-cycles and rapid response to reports of new insects and diseases is a crucial research role to devise responses, and manage problems to maintain forest and tree health.

Threats also increase through climate change adding additional stresses rendering trees and forests themselves more at risk. Stressed trees suffer more pest and disease damage.

Substantial reduction to the small investment in publicly funded research will, quite simply, risk undermining the future well-being of much of UK’s trees and forests and all that they offer.”

Institute of Chartered Foresters, July 2011 ²³

From conservation groups:

“Defra’s promise to reallocate £7 million for new research into tree health over the next three years is welcome but you would imagine that an issue that the government describes as ‘a top priority’ would receive new rather than reallocated funding.”



Hilary Allison, Policy Director, The Woodland Trust ²⁴

References

1. <http://www.telegraph.co.uk/earth/earthnews/7645505/Mysterious-new-disease-threatens-oak-trees>
2. <http://www.eastsussex.gov.uk/environment/woodlands/dutchelms/default.htm>
3. [http://www.forestry.gov.uk/pdf/Note_tree_health_expert_group1July2011.pdf/\\$FILE/Note_tree_health_expert_group1July2011.pdf](http://www.forestry.gov.uk/pdf/Note_tree_health_expert_group1July2011.pdf/$FILE/Note_tree_health_expert_group1July2011.pdf)
4. Papers provided for meeting 'Tree Health & Plant Biosecurity', London:
6 Pests & diseases established in UK: [http://www.forestry.gov.uk/pdf/Pests_established_in_UK.pdf/\\$FILE/Pests_established_in_UK.pdf](http://www.forestry.gov.uk/pdf/Pests_established_in_UK.pdf/$FILE/Pests_established_in_UK.pdf)
5 Pests & diseases newly arrived in UK: [http://www.forestry.gov.uk/pdf/Pests_newly_arrived_in_UK.pdf/\\$FILE/Pests_newly_arrived_in_UK.pdf](http://www.forestry.gov.uk/pdf/Pests_newly_arrived_in_UK.pdf/$FILE/Pests_newly_arrived_in_UK.pdf)
8 Pests & diseases present in EU threatening UK: [http://www.forestry.gov.uk/pdf/Pests_in_EU_posing_threat_to_UK.pdf/\\$FILE/Pests_in_EU_posing_threat_to_UK.pdf](http://www.forestry.gov.uk/pdf/Pests_in_EU_posing_threat_to_UK.pdf/$FILE/Pests_in_EU_posing_threat_to_UK.pdf)
6 Pests & diseases threatening UK from global sources: [http://www.forestry.gov.uk/pdf/Other_pest_threats_globally.pdf/\\$FILE/Other_pest_threats_globally.pdf](http://www.forestry.gov.uk/pdf/Other_pest_threats_globally.pdf/$FILE/Other_pest_threats_globally.pdf)
5. <http://www.bbc.co.uk/news/magazine-15305048>
6. <http://www.forestry.gov.uk/newsrele.nsf/AllByUNID/6BC4CA947067050D802579BA006AD5B2>
7. Smith, R. M., Baker, R. H. A., Malumphy, C. P., Hockland, S., Hammon, R. P., Ostojá-Starzewski, J. C. and Collins, D. W. (2007), Recent non-native invertebrate plant pest establishments in Great Britain: origins, pathways, and trends. *Agricultural and Forest Entomology*, 9: 307–326. doi: 10.1111/j.1461-9563.2007.00349.x
8. Live plant imports: the major pathway for forest insect and pathogen invasions of the US, Andrew M Liebhold, Eckehard G Brockerhoff, Lynn J Garrett, Jennifer L Parke, and Kerry O Britton: http://www.nrs.fs.fed.us/pubs/jrnl/2012/nrs_2012_liebhold_001.pdf
9. HNational Audit Office Protecting England and Wales from plant pests and diseases. 2003 London, UK: The Stationary Office.
10. Biosecurity and Forests: An Introduction with particular emphasis on forest pests, Matthew J.W. Cock with inputs from Marc Kenis and Rüdiger Wittenberg: <ftp://ftp.fao.org/docrep/fao/006/j1467e/j1467e.pdf>
11. Wood fibre availability and demand in Britain, 2007 – 2025. Confor 2010. http://www.confor.org.uk/Upload/Documents/37_WoodFibreAvailabilityDemandReportfinal.pdf
12. Climate Change: Impacts & adaptation in England's woodlands: [http://www.forestry.gov.uk/pdf/FCRN201.pdf/\\$FILE/FCRN201.pdf](http://www.forestry.gov.uk/pdf/FCRN201.pdf/$FILE/FCRN201.pdf)
13. The Economic Cost of Invasive Non-Native Species on Great Britain, November 2010: <https://secure.fera.defra.gov.uk/.../downloadDocument.cfm?id=487>
14. <http://www.parliament.uk/briefing-papers/POST-PN-394>
15. <http://www.bbc.co.uk/news/uk-england-leicestershire-10827178>
16. The Economic Cost of Invasive Non-Native Species on Great Britain ,F. Williams, R. Eschen, A. Harris, D. Djeddour, C. Pratt, R.S. Shaw, S. Varia, J. Lamontagne-Godwin, S.E. Thomas, S.T. Murphy.
17. Source: FCTU 2012 pers. comm
18. Protecting Britain's Forest and Woodland Trees against Pests and Diseases – Forestry Commission's Strategy, 2011. [http://www.forestry.gov.uk/pdf/TreehealthStrategyMinisters.pdf/\\$FILE/TreehealthStrategyMinisters.pdf](http://www.forestry.gov.uk/pdf/TreehealthStrategyMinisters.pdf/$FILE/TreehealthStrategyMinisters.pdf)
19. [http://www.forestry.gov.uk/pdf/Brasier_Plantsman_article.pdf/\\$FILE/Brasier_Plantsman_article.pdf](http://www.forestry.gov.uk/pdf/Brasier_Plantsman_article.pdf/$FILE/Brasier_Plantsman_article.pdf)
20. http://ec.europa.eu/food/plant/strategy/index_en.htm
21. <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-7xugl2>
22. 'Preventing invasive pathogens: deficiencies in the system', The Plantsman, March 2005.
23. Evidence submitted by the Institute of Chartered Foresters (Forest 04): The Effect of the Spending Review on Forest Research, Threats to Forest Research in the UK, House of Commons Science and Technology Committee Forest research Volume II Additional written evidence, published 13 July 2011:
24. <http://www.woodlandtrust.presscentre.com/content/Detail.aspx?ReleaseID=2368&NewsAreaID=2>

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For further information please contact:



**Zac Goldsmith,
MP for Richmond Park and North Kingston**

www.zacgoldsmith.com

zac@zacgoldsmith.com

020 8939 0321

372 Upper Richmond Road West, London SW14 7JU



The Countryside Restoration Trust

www.countrysiderestorationtrust.com